Pre-2020 emission reduction policies in China

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Key policies and targets in recent years

2009, declaring the carbon intensity target: reduction of CO2/GDP 40-45% from 2005 to 2020

2012, ***Work Plan for Controlling GHG Emissions During the 12th FYP Period***. *Reduction of CO2/GDP by 17% from 2010 to 2015*

2014, ***National Plan on Climate Change (2014-2020)***. *Raising main targets and tasks for 12FYP*

2015, ***China's INDC***. Declaring the targets for 2030: carbon emission peaking around 2030 and making best efforts to peak early; reducing CO2/GDP by 60-65% from 2005 to 2030; 20% non-fossil fuel in total energy

2016, *Work Plan for Controlling GHG Emissions During the 13th FYP Period.*
Declaring targets for GHG emission controlling, including reduction of CO2/GDP by 18% from 2015 to 2020

Low-carbon policies and measures in 2010-2015 (1)

I. Established a sound organizational foundation of low carbon innovation

- National leading group on climate change
- Department of climate change; , climate change departments on provincial level
- National Experts Committee on climate change, NCSC

II. Strengthened the regulatory system for low carbon development

- Energy intensity target and evaluation system (11th FYP)
- Dual control of energy intensity and carbon intensity, and evaluation system (12th FYP)

III. Top-level designing

- Climate change legislation
- Plans and strategies: mitigation and adaptation
- Low carbon development strategy research

Low-carbon policies and measures in 2010-2015 (2)

IV. Actions and measures in main areas

- Economy structure adjustment: eliminating backward and development new strategic industries
- Energy conservations in key areas
- Energy structure optimization: *controlling of coal consumption and development of RE*
- Increase of carbon sink
- Non-CO2 GHG emission controlling

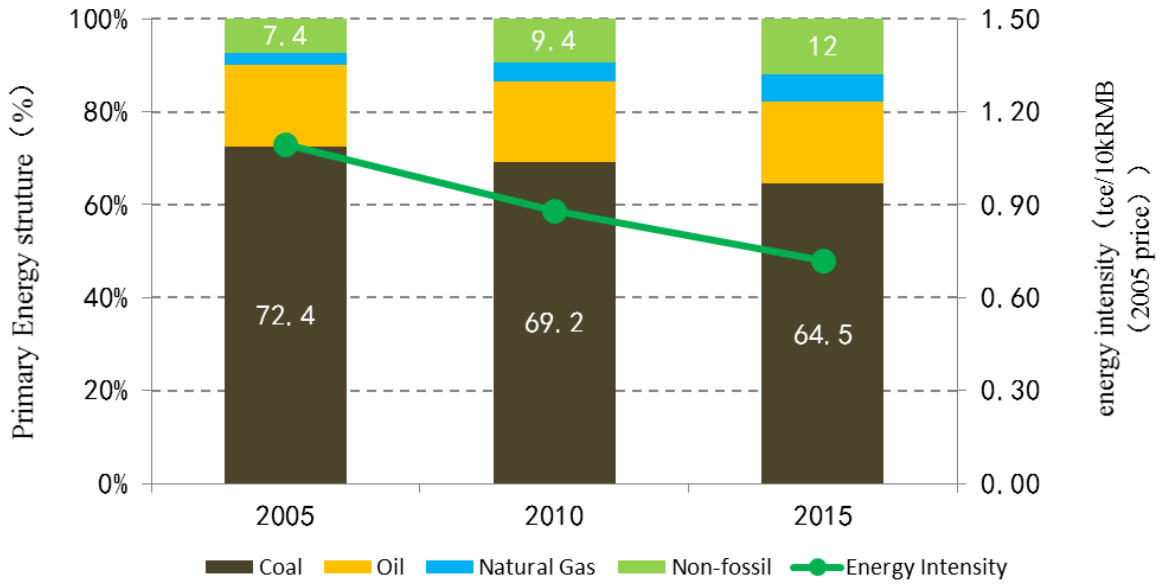
V. Pilots and demonstrations

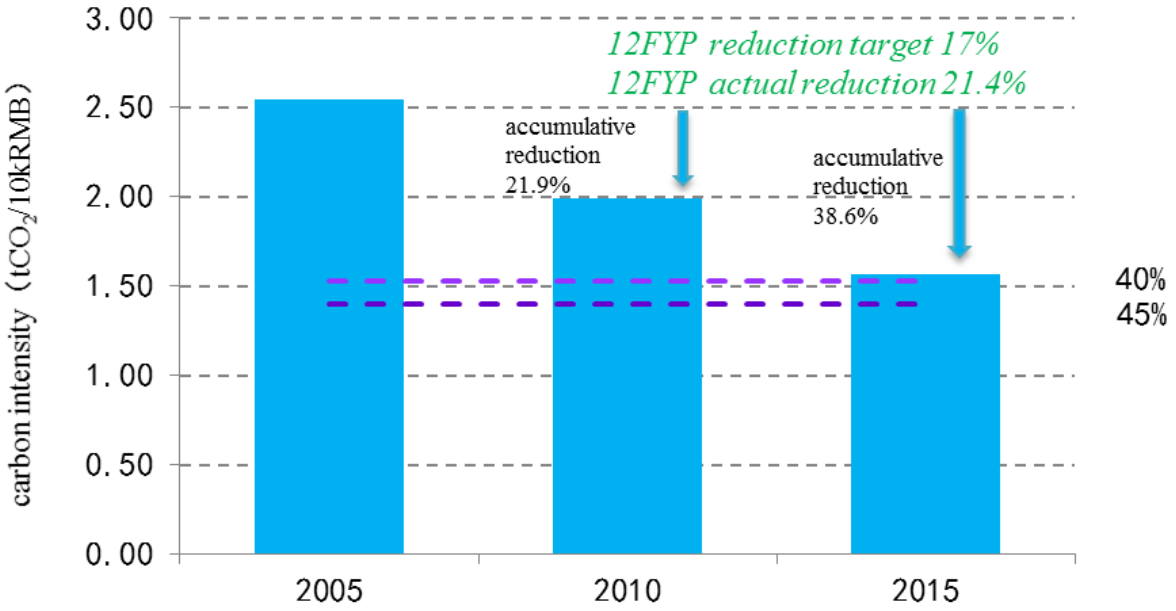
- Low carbon provinces and cities pilots
- Low carbon industrial park pilots, community pilots, product pilots
- Carbon emission trading pilots
- CCUS trial and demonstrations

VI. Strengthened the data information basis of low-carbon policy making

- National communication and inventory compilation (1st, 2nd)
- Provincial Greenhouse Gas Inventory Guidelines (Trial) and inventory compilation
- GHG emissions accounting and reporting guidelines for 11 key industry sectors

Energy related carbon emissions in China by 2015





Data resource: Estimation by NSCS based on national statistic data of China

- Huge carbon emission and high emission growth
- Emission per capita has achieved the world average level
- Carbon intensity has decreased by large degree since 2005, mainly due to energy saving measures

Key targets on GHG emission controlling by 2020

- Reducing the CO2 emission per unit of GDP: 18% reduction from 2015 to 2020
- Controlling the total carbon emission
- Enhancing the controlling of non-CO2 GHG emissions

- Early peaking of key optimization development regions
- Early peaking of some key energy-intensive industrial sectors around 2020
- Deepening the low-carbon pilots and demonstration
- Co-controlling of carbon and pollutant emissions

- Launching the national carbon emission trading market
- Establish the preliminary legal and standard system on climate change
- Completing the MRV system
- Raising the public awareness and active participation on addressing climate change

Low-carbon policy and actions in key areas by 2020

Promote the energy transformation

- Control the primary energy consumption: lower than 5Gtce by 2020
- Improve energy conservation in key areas:
  - *15% reduction of energy intensity in 2015-2020*
  - *large-scale power generation group: no more than 550gCO2/KWh by 2020*
- Control the coal use, lower than 4.2Gt by 2020; negative growth in key pollutant regions
- Promote the use of natural gas: 10% by 2020

Build low-carbon industry system

- Transformation of traditional manufacturing industries and eliminate backward capacity
- Develop strategic emerging industries and service industries: 15% by 2020
- Develop service sector: 56% by 2020
- Control the industrial GHG emissions
- Low carbon agriculture: N2O emission peaking around 2020
- Increase carbon sink: forestry coverage 23.4% by 2020

Promote the low-carbon urbanization

- Low-carbon development of buildings: 20% green buildings in newly-built buildings by 2020; zero carbon emission building pilots
- Low-carbon development of transportation: reduction of CO2/turnover of all transportation modes; new energy cars, 2 million capacity by 2020
- Promote the low-carbon disposal of urban waste
- Encourage the low-carbon lifestyle

Promote the regional low-carbon development

- Set different carbon intensity reduction targets for different regions
- Peaking earlier of carbon emission in key optimization development areas
- Promote the innovative low-carbon pilots and demonstration
- Enhance the low carbon development of poverty regions

Low-carbon Pilots and Demonstrations by 2020

Near-zero-carbon-emission demonstration projects	• In exploitation-restricted and exploitation-prohibited • 50 pilot projects by 2020
Low Carbon Provinces and Cities	• The 42 low carbon pilot provinces and cities have been approved with low carbon goals and action plans, including carbon emission peak targets • 100 pilots by 2020
Low Carbon Industrial Parks	• Proving the action plans of 51 low-carbon industrial park pilots • 80 pilots by 2020, of which 20 national-level pilots
Low Carbon Communities	• 1000 low carbon community pilots by 2020 • 100 national low-carbon demonstration community
Other pilots and demonstration	• Low Carbon commerce, low carbon tourism, low carbon enterprises • Climate financing pilots • Large-scale demonstration of CCUS projects

Formulation of national carbon emission trading market

2011 — Start the work of 7 ETS pilots

2012 — Interim Measures on the Management of Trading of Voluntary GHG Emission Reduction

2013 — Launch the first ETS pilots

2014 — *Interim Measures on the Management of Carbon Emissions Trading*

2017 — Launch the national ETS market

Establishing the regulatory system

- Legal system and regulation
- National and regional management scheme
- Quota allocation scheme

Launching the market in 2017

- Quota allocation and trading
- Market adjustment, offset and risk preventing
- Continually improving system

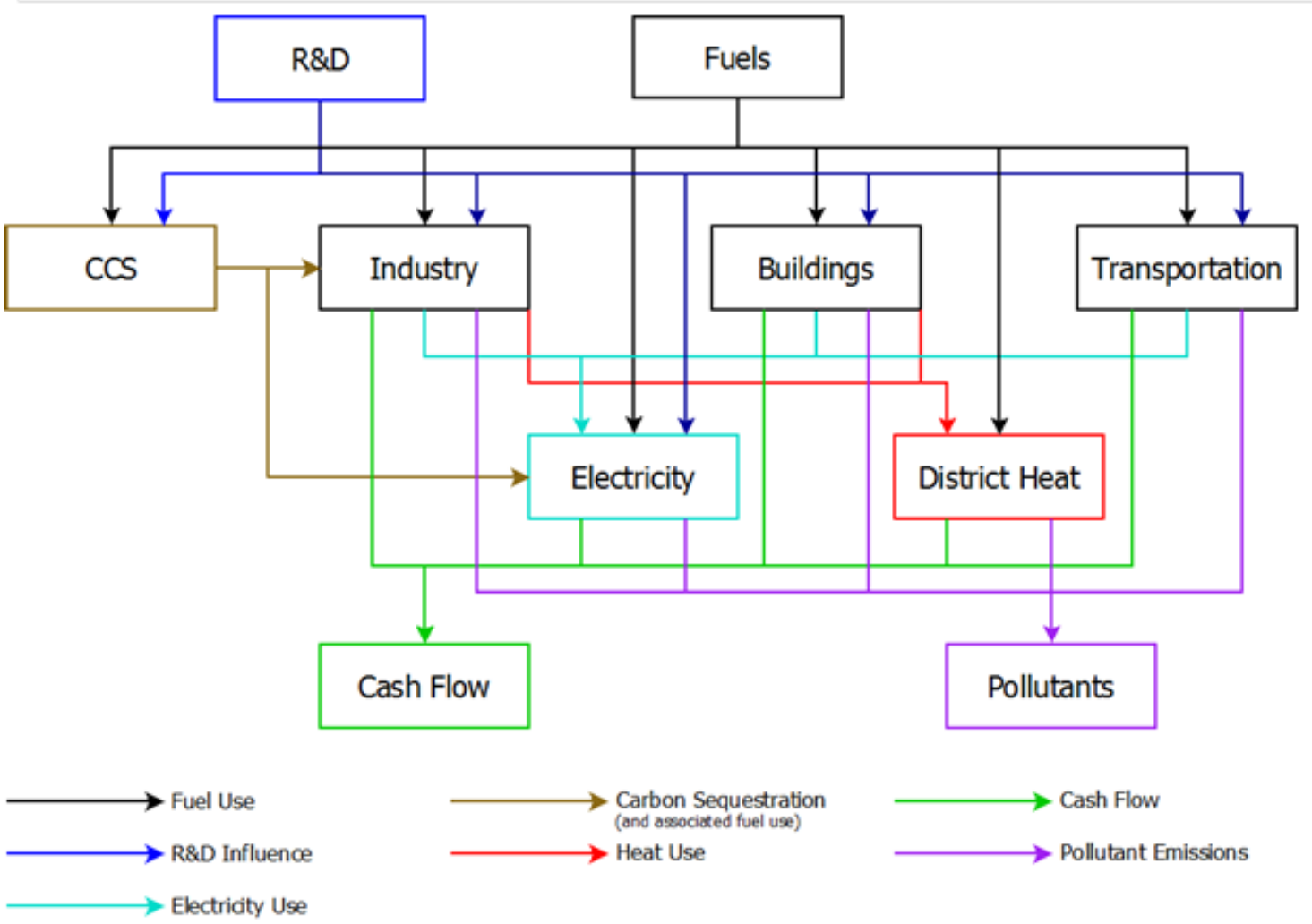
Enhancing the basic capacity

- Registry
- MRV system
- Training and research

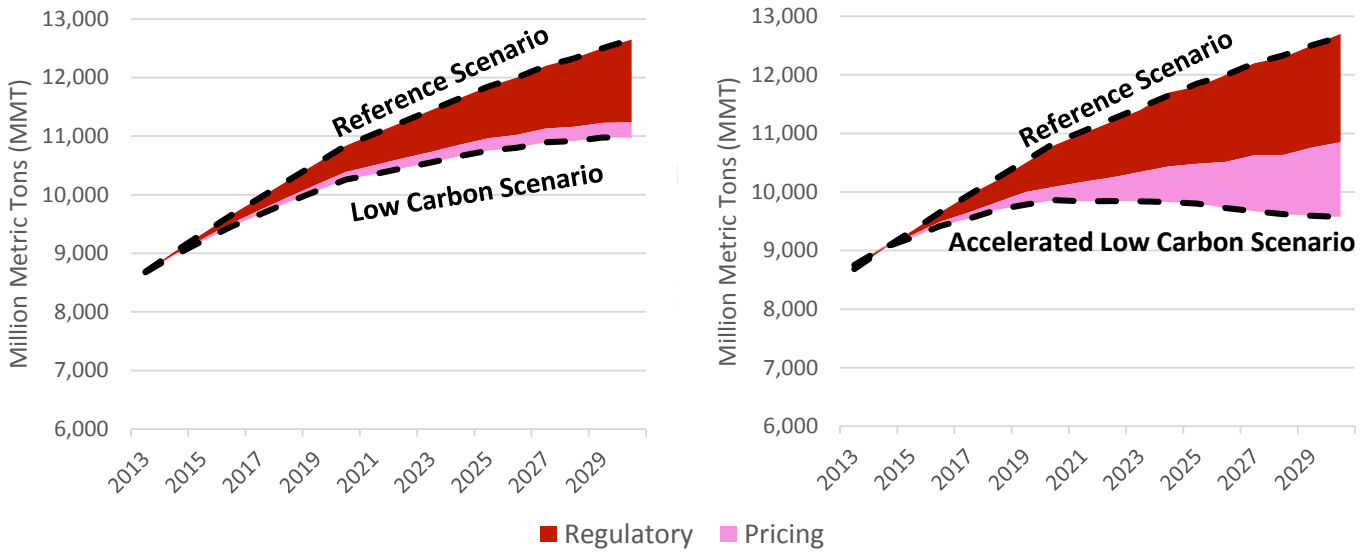
Policy evaluation for carbon emission reduction by 2030

- ***Research method*:**
  - Policy Evaluation Model

    (system analysis model)
- ***Research Targets:***
  - Make quantitative evaluation of the mitigation potential of different policies by 2030
  - Compare the effects of different categories of policies in different scenario
  - Identity the policies that can most cost-effectively drive down China's emissions
- ***Research Partner:***
  - Energy Innovation (EI), US

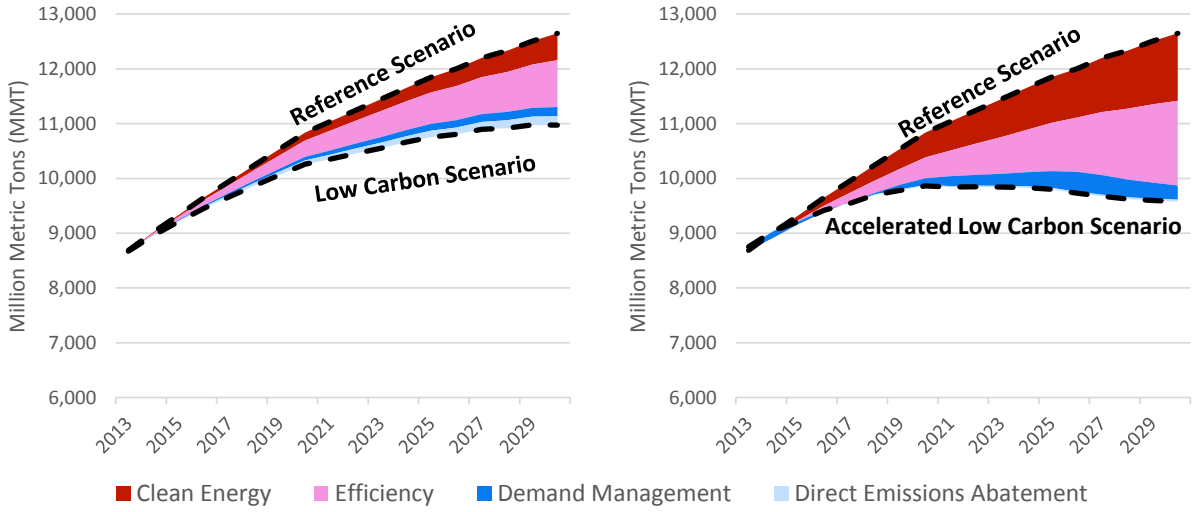


Policy evaluation for carbon emission reduction by 2030



- Regulatory policies will still play an important role in short and medium term
- Carbon pricing has far higher abatement potential than others and can drive significant carbon reductions

- Efficiency policies are the primary driver of emissions reductions, followed by clean energy policies
- Direct emissions abatement policies would appear more significant if all GHGs were included in these figures



Conclusion

- **Development pattern transition is key for low carbon development**
  - An innovative development pathway is crucial to achieve LC development and LEDs
  - It is possible to achieving carbon emission peak around 2030 and even earlier
  - Coordinate with environmental and energy policies to achieve the co-benefits and environmental integrity

- **13FYP is a key period for achieving NDC targets**
  - Slower the carbon emission growth rate by dual controlling on emission intensity and total emission
  - Control the total energy consumption and especially the coal consumption
  - Build a strong base for the scale use of renewable energy

- **Good policy environment is key for driving the low carbon transition**
  - Strengthen the legal status of carbon emission control and enhance the constraint force of relevant target;
  - Enhance the carbon pricing via market-based mechanism, e.g. ETS
  - Enhance the information disclosure of carbon emission data
  - Enhance the low carbon financing

Thank you for your attention!

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