China Emission Trading Scheme : Policies and Challenges

ZHENG Shuang *Director*

CDM Management Center (Carbon Market Department)

National Center for Climate Change Strategy and International Cooperation of China (NCSC)

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OUTLINE

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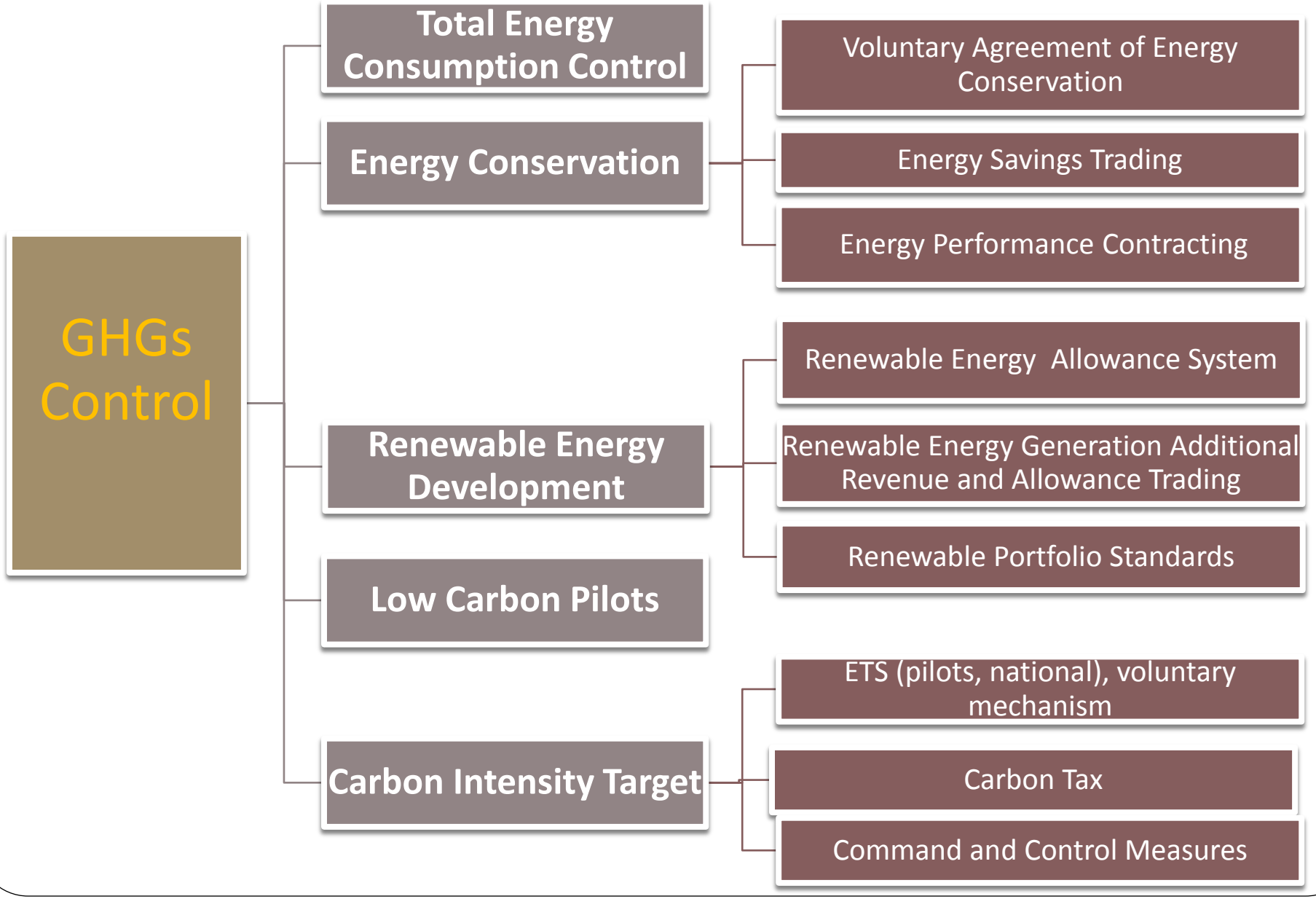
I. General Policy Map



Quantum

Policy	Index	Target
GHGs Control	Carbon Intensity	17% reduction by 2015 relative to 2010; 40% - 45% reduction by 2020 relative to 2005
	CO_2 Emissions per unit of Industrial Value-added	no less than 21% reduction by 2015 relative to 2010; ~ 50% reduction by 2020 relative to 2005
Energy Conservation	Total Energy Consumption	4 billion tce by 2015
	Total Power Consumption	615 million kWh by 2015
	Energy consumption per unit of GDP	16% reduction by 2015 relative to 2010
	Energy Consumption per unit of Above-scale Industrial Value-added	21% reduction by 2015 relative to 2010
	Energy Savings for *10,000 Enterprises*	Saving 250 million tce (in 16,078 enterprises)
Renewable Energy	Proportion of Non-fossil Fuels in Primary Energy Consumption	11.4% by 2015; 15% by 2020

II. Policies and Measures

1. Energy Conservation

- **Voluntary Agreement of Energy Conservation**: industrial enterprises (or sectors) sign energy conservation agreement voluntarily with the governments and promise to achieve the energy conservation targets in a certain time period

- **10,000 Enterprises Energy Conservation Program 2010-2015**: key energy user with annual comprehensive energy consumption over 10000 or 5000tce, total 16,078 enterprises

  - **Energy Savings Trading**: energy saved from individual actions by enterprises can be traded under certain rules

- **Energy Performance Contracting:** Project-based

2. Renewable Energy Allowance System (*in progress*)

- **Renewable energy allowance:** according to China renewable energy development strategy, power generation enterprises and local governments should meet the minimum requirements of developing, purchasing and absorbing renewable energy within a certain period.
- **Basic concept**: state develops binding renewable energy allowance requirement for national power generation companies, power grid companies, and local governments, allows them to undertake allowance trading and obtain revenues.
- **Cap:** nationwide total renewable energy allowances according to the renewable energy development target and total energy consumption target.
- **Allowance allocation**: allowances are allocated according to renewable energy resources, total economic output, power consumption, power transmission capacity of different places
- **Certification system:** renewable electricity generated by companies will be awarded green electricity certificate in the unit of 1000 kWh, may tradable in carbon market

3. Low-carbon Pilots

5 provinces of Guangdong, Liaoning, Hubei, Shanxi, Yunnan

8 cities of Tianjin, Chongqing, Shenzhen, Xiamen, Hangzhou, Nanchang, Baoding

- explore effective government guidance and economic incentives, study the use of market mechanisms to promote the implementation of the GHG emissions targets
- Strengthen the statistics of GHG emissions, establish complete data collection and accounting system

4. Carbon Tax

Provide a more favorable tax platform for resource conservation and environmental protection

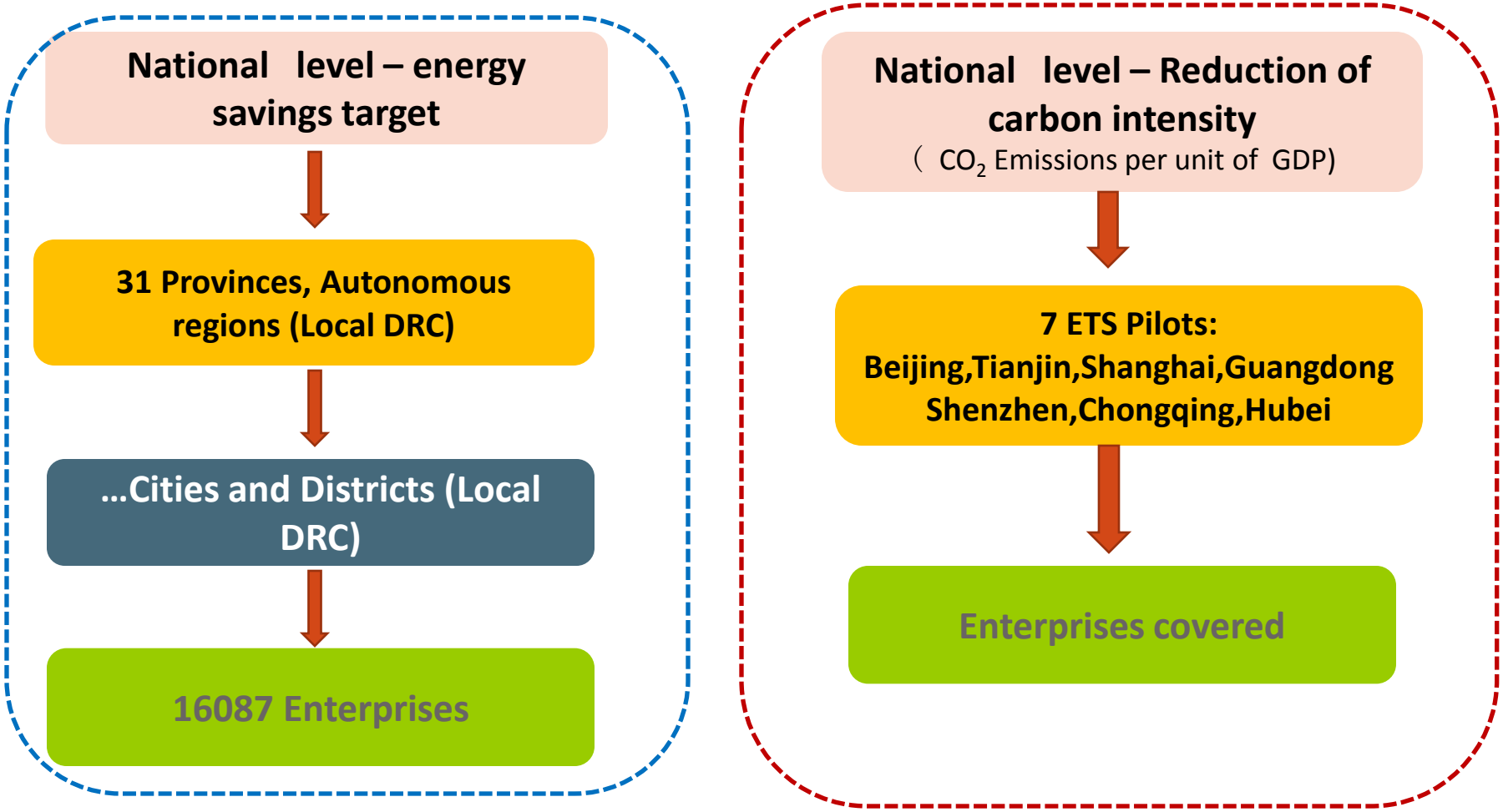
Continue to improve and implement tax policies to support energy conservation, environmental protection and comprehensive utilization of resources. ….Promote the reform of resource tax: change the coal resource tax from quantity levy to ad valorem levy and appropriately increase the level of tax burden……**Actively promote environmental tax reform，change the existing sewage charges to environmental taxes, include CO2 into tax levy, collecting authorities changed to local tax authorities instead of the environmental protection department.**

—— JIA Chen, Director General, Tax Policy Department, MoF

- **Start from 5-10 yuan/tCO2e, escalate over time**

III. Policy interaction

ETS vs. energy saving



Allocation of energy saving targets for enterprise by location

	Location	No. of enterprise	Target（10000tce）		Location	No. of enterprise	Target（10000tce）
1	Beijing	241	224.3	17	Hubei	812	995.8
2	Tianjin	211	486	18	Hunan	552	619
3	Hebei	803	2175	19	Guangdong	970	1562.6
4	Shanxi	638	1394.9	20	Guangxi	440	446.2
5	Innermongolia	697	1160	21	Hainan	45	37.4
6	Liaoning	524	1401.7	22	Chongqing	221	306.3
7	Jilin	247	437	23	Sichuan	989	1009
8	Heilongjiang	489	626	24	Guizhou	275	391
9	Shanghai	269	685	25	Yuannan	399	501.8
10	Jiangsu	1221	2205	26	Xizang	8	3
11	Zhejiang	1220	1005.9	27	Shaanxi	516	667.2
12	Anhui	349	840	28	Gansu	245	370
13	Fujian	458	525	29	Qinghai	115	83
14	Jiangxi	297	619.9	30	Ningxia	269	305
15	Shandong	1188	2530	31	Xinjiang	338	315
16	Henan	1032	1584.3	**Total**	-	**16078**	**25512.3**

10,000 Enterprises' Energy Savings Trading

Elements	Progress
Total Targets	250 million tce
Allocation of Energy Savings targets	Completion
MRV	NDRC has developed an energy utilization reporting system for *10000 enterprises* and is piloting an online monitoring of energy consumption for key energy-using units. 26 verifiers for project-based energy savings have been certificated by the NDRC; In 2013, Conducting the research program - "Calculation Method and Verification Guidance of Energy Savings under Low Carbon Action for *10,000 enterprises*" supported by CHEEP.
Trading Scheme	In 2011, Conducting the research programmed -"National Energy Savings Trading Framework: Scheme Survey and Options" supported by CHEEP
Department in-charge	Department of Resource Conservation and Environmental Protection, National Energy Conservation Center, NDRC;

Opportunities and challenges

- Provide foundations, infrastructure, capacity, data base for ETS
- Multiple targets, confusion for local governments, enterprises
- Multiple trading under different trading schemes
- Overlapping of mitigation efforts

ETS vs. Renewable Energy

- Contribute to overall energy consumption and GHG control targets
- Renewable target would be reducing the incentive for actions by fossil-fuel generators
- May lead to further emission reductions
- Rearrange abatement between sectors under the cap

ETS vs. carbon tax

- pros:
  - Strong price signal depending on the level of tax rate
  - low implementation cost
  - more revenue for local governments
- Cons:
  - Negative effect on economy
  - Uncertainty in mitigation effect
  - Overlap with ETS
  - imposes more burdens on enterprises
- Possibility of combining carbon tax and trading policies in China
  - Coverage: Same sectors and emitters?
  - Mixed price signal: tax rate vs. market price

IV. Conclusions

- Existing policies and measures target different sectors
- Complement and reinforce each other: energy saving, renewable, low carbon pilots
- May overlap and contradict: energy saving, carbon tax
- Quantum targets on GHG, renewable, energy saving need coherence, consistency and harmonization
- Policy, institution, technical barriers

Stay hungry, stay foolish