



STRATEGIC TRANSFORMATION AND GREEN DEVELOPMENT

引导性点评

暨谈谈中国绿色发展

*COMMENTS & INTRODUCTION TO CHINA
GREEN DEVELOPMENT RESEARCH*



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BEIJING, 13 Dec 2012



一、对专家讲演的简短点评

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二、中国绿色发展指数—区域比较





中国绿色发展指数—区域编制 中国绿色发展指数的背景

Considerations for Initiating CGDI

1. To promote green development in China, especially among provinces and cities.

推进中国，尤其是各省市的绿色发展。

2. To promote public attention to resources and ecological environment and improve their participation in green development.

聚焦社会公众对资源和生态环境的关注，鼓励大众积极参与绿色发展。

3. To respond to the UN proposal of green economy and green new deal in 2008 and 2009, and better cooperate with international platforms for green development communication.

响应联合国2008年、2009年对发展绿色经济和绿色新政的呼吁，对接国际绿色发展交流平台。



已完成的中国绿色发展指数系列报告

Published CGDI Report Series





编制中国绿色发展指数的主要思路

Main Ideas of CGDI

- Firstly, we highlight the relationship between “green” and “development”. Green Development Index can help to correct the tendency of emphasizing only the development, while ignoring “green”.

一是突出“绿色”和“发展”的关系。绿色发展指数有利于纠正重发展、轻绿色的倾向。



编制中国绿色发展指数的主要思路

Main Ideas of CGDI

- Secondly, we emphasize that “green” is also indispensable in the production process.
二是强调了生产过程中不能忽视绿色。
- Thirdly, we expect to stress the responsibility of the government in promoting green development.
三是突出了政府在促进绿色发展中的责任。
- Fourthly, we strongly valued the openness and authority of data sources.
四是在数据收集中，强调了来源的公开性与权威性。



中国绿色发展指数的指标结构 CGDI Indicator Structure

Three first-class indicators include (3个一级指标) :

- Green Degree of Economic Growth (how the economic growth affects resources as well as environment)
经济增长绿化度 (生产对资源消耗以及对环境的影响程度)
- Carrying Capacity Potential of Natural Resources and Environment
资源环境承载潜力
- Support Degree of Government Policies
政府政策支持度



中国绿色发展指数的指标结构 CGDI Indicator Structure

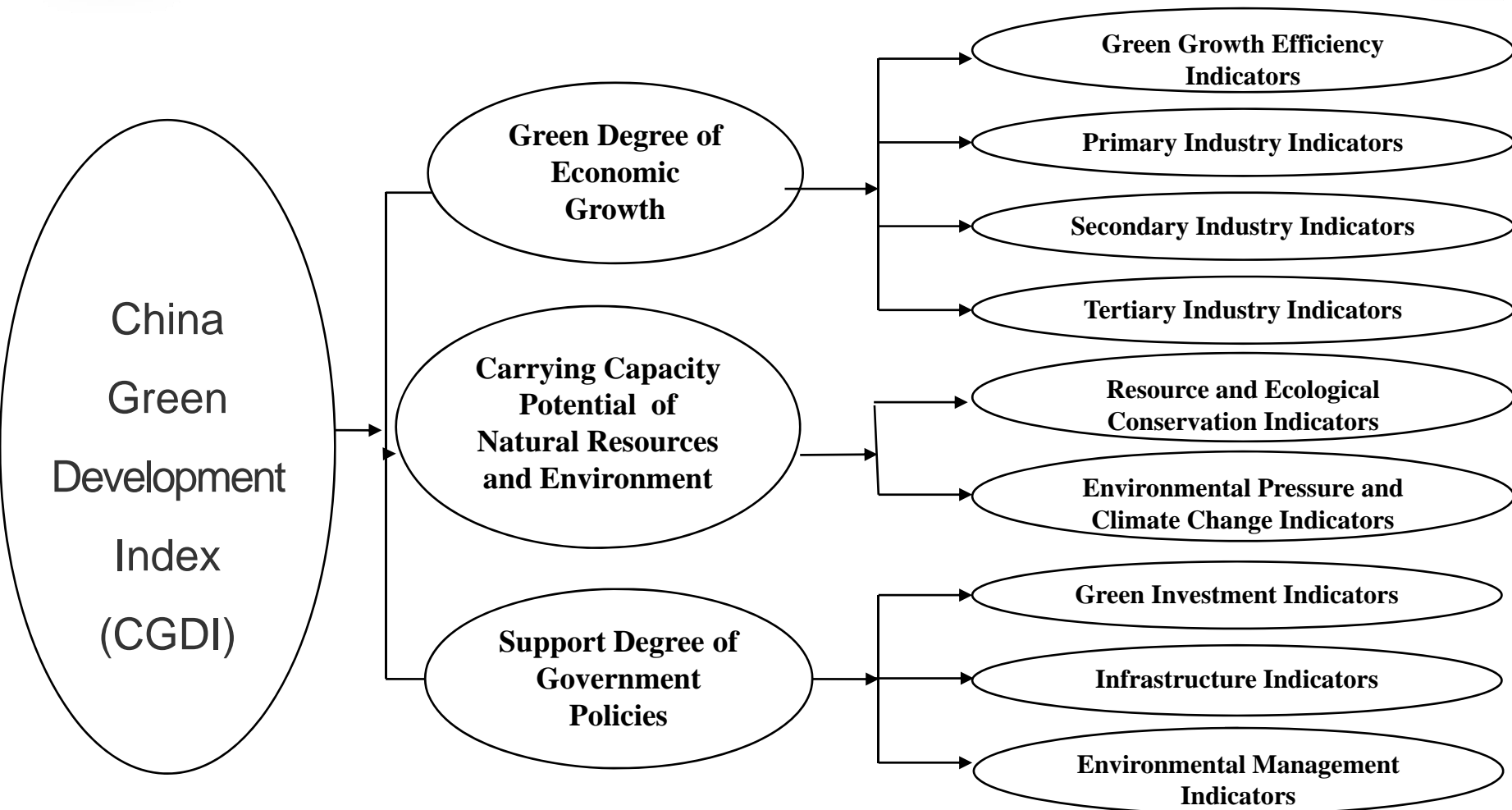
Nine second-class indicators include 9个二级指标:

- Green Growth Efficiency Indicators 经济增长效率指标
- Primary Industry Indicators 第一产业指标
- Secondary Industry Indicators 第二产业指标
- Tertiary Industry Indicators 第三产业指标
- Resource Abundance and Ecological Conservation Indicators
资源丰裕与生态保护指标
- Environmental Pressure and Climate Change Indicators
环境压力与气候变化指标
- Green Investment Indicators 绿色投资指标
- Infrastructure Indicators 基础设施指标
- Environmental Management Indicators 环境治理指标



中国绿色发展指数一级指标和二级指标

Structure of CGDI 1st and 2nd-class Indicators





中国绿色发展指数三级指标选择 Selection of CGDI Third-Class Indicators

The third-class indicators were selected from more than 1,000 related indicators. The selection principles are:

三级指标是从1000多个相关指标中经多次筛选后确定。选择标准是：

1. Indicators selected should have important links with the first and second-class indicators;

一是所选指标或与经济增长绿化度、或与资源环境承载潜力、或与政府政策支持有重要的联系，能对二级指标指数形成有实质性的贡献；

2. Data availability of the indicator;

二是数据的可得性；

3. Stressing the relationship among indicators.

三是重视指标的相互关系。



中国省际绿色发展指数三级指标



Three Indicator Levels of China Province Green Development Index

First-class indicators	Second-class indicators	Third-class indicators	
Green Degree of Economic Growth	Green Growth Efficiency Indicators	1. GRP per capita 2. Energy Consumption per unit of GRP 3. Ratio of non-fossil energy consumption to total energy consumption 4. CO2 emissions per unit of GRP 5. SO2 emissions per unit of GRP	6. COD emissions per unit of GRP 7. NOx emissions per unit of GRP 8. Ammonia nitrogen emissions per unit of GRP 9. Per capita electricity consumption by urban households
	Primary Industry Indicators	10. Productivity of primary sectors 11. Output ratio of land	12. Water-saving irrigation rate 13. Proportion of effectively irrigated area in area of cultivated land
	Secondary Industry Indicators	14. Productivity of secondary sectors 15. Water consumption per unit of industrial value added 16. Energy consumption per unit of industrial value added at a cut-off level	17. Ratio of industrial solid wastes utilized 18. Reuse rate of industrial water 19. Ratio of output value of six high energy-bearing industrial sectors to gross industrial output value
	Tertiary Industry Indicators	20. Productivity of tertiary sectors 21. Proportion of value added of tertiary sectors in GRP	22. Proportion of employees of tertiary sectors in total employees
Carrying Capacity Potential of Natural Resources and Environment	Resource Abundance and Ecological Conservation Indicators	23. Water resources per capita 24. Forest area per capita 25. Forest coverage rate	26. Proportion of area of natural reserves in total area of a region 27. Proportion of area of wetlands in total area of a region 28. Total standing forest stock per capita
	Environmental Pressure and Climate Change Indicators	29. CO2 emissions per unit of land area 30. CO2 emissions per capita 31. SO2 emissions per unit of land area 32. SO2 emissions per capita 33. COD emissions per unit of land area 34. COD emissions per capita 35. Nitrogen oxides emissions per unit of land area	36. Nitrogen oxides emissions per capita 37. Ammonia nitrogen emissions per unit of land area 38. Ammonia nitrogen emissions per capita 39. Consumption of chemical fertilizers per unit of area of cultivated land 40. Consumption of pesticides per unit of area of cultivated land 41. Nitrogen oxides emissions from road transportation per capita
Support Degree of Government Policies	Green Investment Indicators	42. Ratio of environmental protection expenditures to government expenditures 43. Ratio of investment in the treatment of environmental pollution to GRP 44. Per capita public investment of water sanitation and toilet improvement in rural areas	45. Investment in converting cultivated land into forests and grassland per unit of area of cultivated land 46. Ratio of expenditures for science and technology, education, culture, and medical and health care to government expenditures
	Infrastructure Indicators	47. Area of green land per capita in urban areas 48. Coverage rate of urban population with access to tap water 49. Treatment rate of urban waste water 50. Ratio of urban consumption wastes safely treated 51. Numbers of public transportation vehicles per 10000 urban population	52. Per capita length of public transportation in operation in urban areas 53. Ratio of rural population benefiting from water improvement projects to total rural population 54. Ratio of green covered area to completed area in city
	Environmental Management Indicators	55. Per capita area of newly increased afforestation during the current year 56. Removal rate of industrial SO2 emissions 57. Removal rate of COD in industrial waste water	58. Removal rate of industrial NOx emissions 59. Removal rate of ammonia nitrogen in industrial waste water 60. Sudden environmental accidents



中国城市绿色发展指数三级指标



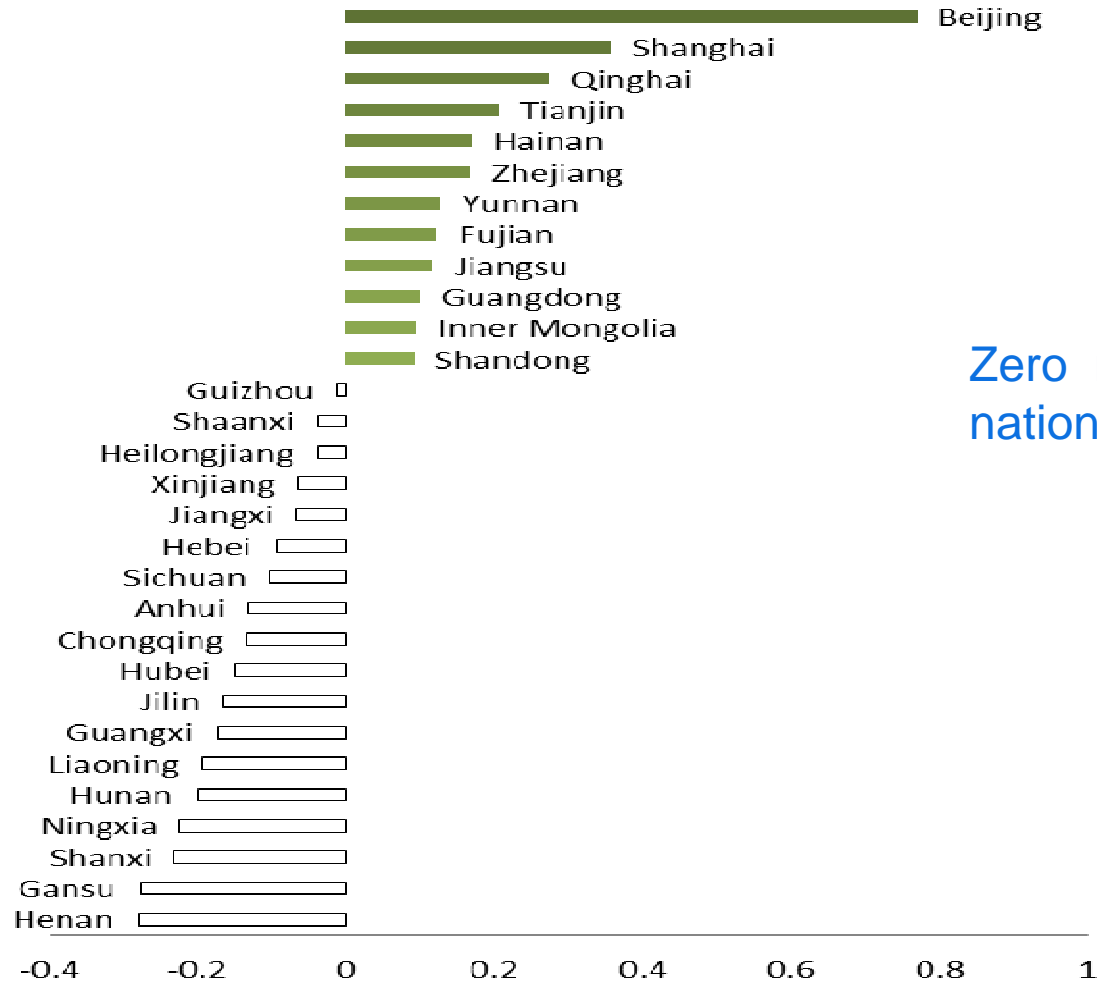
Three Indicator Levels of China City Green Development Index

First-class indicators	Second-class indicators	Third-class indicators
Green Degree of Economic Growth	Green Growth Efficiency Indicators	1. GRP per capita 2. Energy consumption per unit of GRP 3. Per capita electricity consumption by urban households 4. CO2 emissions per unit of GRP 5. SO2 emissions per unit of GRP 6. COD emissions per unit of GRP 7. NOx emissions per unit of GRP 8. Ammonia nitrogen emissions per unit of GRP
	Primary Industry Indicators	9. Productivity of primary sectors
	Secondary Industry Indicators	10. Productivity of secondary sectors 11. Water consumption per unit of industrial value added 12. Energy consumption per unit of industrial value added 13. Ratio of industrial solid wastes utilized 14. Reuse rate of industrial water
	Tertiary Industry Indicators	15. Productivity of tertiary sectors 16. Proportion of value added of tertiary sectors in GRP 17. Proportion of employees of tertiary sectors in total employees
Carrying Capacity Potential of Natural Resources and Environment	Resource Abundance and Ecological Conservation Indicators	18. Water resources per capita
	Environmental Pressure and Climate Change Indicators	19. CO2 emissions per unit of land area 20. CO2 emissions per capita 21. SO2 emissions per unit of land area 22. SO2 emissions per capita 23. COD emissions per unit of land area 24. COD emissions per capita 25. Nitrogen oxides emissions per unit of land area 26. Nitrogen oxides emissions per capita 27. Ammonia nitrogen emissions per unit of land area 28. Ammonia nitrogen emissions per capita 29. Ratio of days with air quality at and above level 2 to the whole year 30. Ratio of days with principal pollutants as respirable suspended particulate to the whole year
Support Degree of Government Policies	Green Investment Indicators	31. Ratio of environmental protection expenditures to government expenditures 32. Ratio of investment in the treatment of industrial environmental pollution to GRP 33. Ratio of expenditures for science and technology, education, culture, and medical and health care to government expenditures
	Infrastructure Indicators	34. Area of green land per capita in urban areas 35. Ratio of green covered area to completed area in city 36. Coverage rate of urban population with access to tap water 37. Treatment rate of urban waste water 38. Ratio of urban consumption wastes safely treated 39. Numbers of public transportation vehicles per 10000 urban population
	Environmental Management Indicators	40. Removal rate of industrial SO2 emissions 41. Removal rate of COD in industrial waste water 42. Removal rate of industrial NOx emissions 43. Removal rate of ammonia nitrogen in industrial waste water



2009中国省际绿色发展指数排名比较

GDI Rankings Among 30 Provinces in China(2009)



Zero means the national average level



2009中国城市绿色发展指数及排名



GDI Rankings Among 34 Cities in China (2009)

	Green Development Index		Green Degree of Economic Growth		Carrying Capacity Potential of Natural Resources and Environment		Support Degree of Government Policies	
	100%		33%		34%		33%	
	Index Value	Ranking	Index Value	Ranking	Index Value	Ranking	Index Value	Ranking
Shenzhen	0.689	1	0.341	1	0.029	13	0.319	1
Haikou	0.555	2	0.140	3	0.368	2	0.047	12
Kunming	0.496	3	-0.098	29	0.546	1	0.047	11
Beijing	0.387	4	0.267	2	-0.101	24	0.222	2
Hefei	0.260	5	0.085	8	0.167	5	0.008	18
Guangzhou	0.200	6	0.127	5	-0.068	21	0.141	4
Dalian	0.184	7	0.090	7	0.029	11	0.065	9
Qingdao	0.166	8	0.072	10	0.011	14	0.083	8
Changsha	0.156	9	0.124	6	0.042	10	-0.011	19
Fuzhou	0.111	10	-0.024	17	0.087	6	0.048	10
Xiamen	0.090	11	0.028	12	-0.107	26	0.168	3
Nanning	0.086	12	-0.093	27	0.201	4	-0.021	20
Ningbo	0.075	13	-0.039	19	0.004	15	0.110	6
Shenyang	0.041	14	0.139	4	-0.064	19	-0.034	22
Harbin	0.028	15	-0.039	18	0.202	3	-0.135	31
Shijiazhuang	-0.029	16	-0.070	25	-0.091	23	0.133	5
Hangzhou	-0.029	17	0.000	16	-0.071	22	0.041	13
Nanjing	-0.032	18	0.021	15	-0.152	31	0.099	7
Shanghai	-0.053	19	0.083	9	-0.166	33	0.030	14
Changchun	-0.066	20	0.026	14	0.072	8	-0.163	32
Jinan	-0.075	21	0.026	13	-0.110	27	0.008	17
Yinchuan	-0.097	22	-0.101	30	-0.020	17	0.024	15
Nanchang	-0.103	23	-0.044	20	-0.014	16	-0.045	23
Hohhot	-0.121	24	-0.052	24	0.029	12	-0.098	27
Zhengzhou	-0.123	25	-0.049	22	-0.047	18	-0.027	21
Guiyang	-0.168	26	-0.184	32	0.073	7	-0.057	24
Taiyuan	-0.168	27	-0.075	26	-0.102	25	0.009	16
Tianjin	-0.207	28	0.029	11	-0.136	30	-0.099	28
Chongqing	-0.249	29	-0.188	33	0.060	9	-0.121	30
Xi'an	-0.274	30	-0.048	21	-0.131	28	-0.094	26
Wuhan	-0.292	31	-0.050	23	-0.183	34	-0.059	25
Chongdu	-0.331	32	-0.094	28	-0.135	29	-0.102	29
Lanzhou	-0.390	33	-0.138	31	-0.067	20	-0.184	33
Xining	-0.711	34	-0.206	34	-0.159	32	-0.346	34



中国绿色发展指数受到各界关注 CGDI is Given Widely Attention

Many domestic and foreign Medias gave coverage of the published CGDI report.

国内外百余家媒体对中国绿色发展指数报告进行了报道。

Many provinces and cities attach much importance to the report . For example, Shanxi, Sichuan, Yunnan and Qinghai invited the research group to do survey in their regions.

各省市对报告高度重视，山西、四川、云南、青海等省市邀请课题组前往调研考察



3 Green Economy and Deepening of Structural Reform

三、绿色经济与深化体制改革





科学发展 绿色新政

Scientific Development and Green New Deal

- 建议在坚持科学发展基础上，提出绿色新政的实施理念：即：科学发展，绿色新政。

We suggest to bring forward the concept of Green New Deal based on scientific development, i.e. **Scientific Development and Green New Deal**.

- “**科学发展，绿色新政**”，会有助于制度创新，但全面的政治与经济体制改革的任务，应当及早策划，在时机成熟时推出！

‘Scientific Development and Green New Deal’ will be helpful to the institutional innovation. While the comprehensive structural reform in political and economic fields should be planned early and launched at a proper time!



科学发展 绿色新政

Scientific Development and Green New Deal

It is very important to see ‘Scientific Development and Green New Deal’ from a strategic perspective:

从战略高度看 “科学发展，绿色新政” 非常重要。

➤ The sustaining use of resources, improvement of ecological environment, sustainable economic development and enhancement of the quality of life require us to insist on the comprehensive, harmonious, and sustainable scientific development.

自然资源持续利用、生态环境的持续改善、经济持续发展和生活质量持续提高，需要坚持以人为本，全面、协调、可持续发展的科学发展。

➤ We should also encourage the green development featured with integration of urban and rural areas , as well as the harmonious development between the human and nature.

需要大力提倡城乡统筹、人与自然和谐发展的绿色发展。



科学发展 绿色新政

Scientific Development and Green New Deal

It is very important to see ‘Scientific Development and Green New Deal’ from a strategic perspective:

从战略高度看 “科学发展，绿色新政” 非常重要。

➤ Scientific development and green new deal are necessary for us to seize the opportunity of the green development in the new global competition, to accomplish the 12th Five-year Plan, to make institutional innovation and ensure the development.

抢占新一轮全球竞争的“绿色”机遇，全面完成十二五规划，创新制度保证发展，都需要科学发展，绿色新政。



从战略高度看“科学发展，绿色新政” Scientific Development and Green New Deal from a Strategic Perspective

➤ It has been 10 years since the concept of Scientific Development was put forward and the basic consensus has formed. Green development is a historical trend which provides a sustainable future for mankind, and therefore a consensus across the world has been reached. **"Green New Deal"** was brought up by the United Nations in 2008. Major developed countries and many developing countries have responded to it, proposing their own green planning and green new deal. It is clear that the use of "Green New Deal" makes it easy for us to reach a consensus with the international community.

科学发展已有10年的时间，基本共识已形成。绿色发展是历史潮流，是为人类有一个可持续的未来，因此也在全球范围内形成共识。“绿色新政”是由联合国2008年提出的。各主要发达国家及不少发展中国家均有响应，提出各自的绿色规划和绿色新政，显而易见，使用“绿色新政”的提法，容易与国际社会达成共识。



从战略高度看“科学发展，绿色新政” Scientific Development and Green New Deal from a Strategic Perspective

➤ It is workable to propel the reform from the goals easy to reach a consensus. While if we design the next step of reform from the ideological concept, such as what is the socialist market economy, it will be quite difficult for domestic parties to achieve consensus.

从容易达成共识的目标来推进改革具有可操作性。而从什么是“社会主义市场经济”的概念出发来设计下步改革，国内各方难以达成共识。

➤ In addition, compared with ‘sustainable development’, ‘Green New Deal’ is easier to become the objective and requirement of a government with the implication of term.

此外，“绿色新政”与“可持续发展”相比，因为具期限含义，也更容易成为一届政府的工作目标与要求。



“科学发展，绿色新政”的提法 有助于推进对当前重大问题的改革

Formulation of ‘Scientific Development and Green New Deal’ helps to promote the reform of current major issues

⑩ It promotes to rationalize the relationship between government and the market. For example, the resource-based state-owned enterprises will face larger social responsibility, which helps to limit the unreasonable distribution of state-owned enterprises!

——有助于理顺政府与市场的关系。比如，对占有资源型的国有企业提出更大的社会责任，有助于限制国有企业的分配不合理！

⑩ It helps to straighten out the financial distribution between the central and local governments and within various levels of local governments. For example, ecological compensation and other issues involved in green development are related to financial budget at all levels. The development of green fiscal and finance is directly associated with the macro-management reform.

——有助于理顺中央与地方及地方各级政府间财政分配关系，比如，绿色发展中涉及的生态补偿等问题，就与各级财政相关。而建设绿色财政与绿色金融，就直接具有了宏观管理改革的内容。



“科学发展，绿色新政”的提法 有助于推进对当前重大问题的改革

Formulation of ‘Scientific Development and Green New Deal’ helps to promote the reform of current major issues

➤ It contributes to improve the relationship between the urban and rural areas, ‘Scientific Development and Green New Deal’ has complete indicator system to measure the sustainable development of industrialization, urbanization and agricultural modernization.

——有助于理顺城市与农村的关系，因为“科学发展，绿色新政”对工业化、城镇化和农业现代化的可持续发展 都有比较完整的指标体系来衡量。

➤ It helps to optimize the relationship between economic and social development, because ‘Scientific Development and Green New Deal’ emphasizes on the values including people-orientation, social harmony and civil society.

——有助于理顺经济与社会发展的关系，因为“科学发展，绿色新政”强调以人为本，强调社会和谐，强调公民社会理念。



Wish the Conference a Fully Success!

Look forward to your comments!

祝会议圆满成功

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