

中国应对气候变化政策和行动

China's policies and actions on addressing climate change

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2018.10.25.

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Oct. 25, 2018



1. 全球气候治理进入全面落实《巴黎协定》的实施阶段，中国也面临新的形势和任务 (1)

Global climate governance has entered the stage of full implementation of the Paris Agreement; China is also facing new situations and tasks

- **《巴黎协定》确立了2020年后全球应对气候变化新机制。
The Paris Agreement established a new mechanism for post-2020 global response to climate change.**
- **各国 NDC 目标不足以支撑实现全球温升控制2°C目标的实现。
NDC targets of the Parties are not enough to support the realization of the 2°C global temperature rise control.**
 - **2030年存在约150亿tCO₂e的减排缺口。
There is an emission reduction gap of about 15 billion tCO₂e in 2030.**
 - **减排力度、资金支持、透明度仍是当前谈判的焦点。
Emissions reduction efforts, financial support and transparency are still the focus of current negotiations.**
- **中国经济进入新常态，加快能源和经济转型，落实减排承诺。
As the economy enters a new normal, China accelerates energy and economic transition and implements emission reduction commitments.**

1. 全球气候治理进入全面落实《巴黎协定》的实施阶段，中国也面临新的形势和任务 (2)

Global climate governance has entered the stage of full implementation of the Paris Agreement; China is also facing new situations and tasks

- **《巴黎协定》下制定有力度的自主贡献目标。**

Ambitious NDC targets are formulated under the Paris Agreement.

- **2030年GDP的CO₂强度比2005年下降60~65%，非化石能源在一次能源消费中比例提升到20%左右，2030年左右CO₂排放达到峰值并努力早日达峰。**

The targets include: CO₂ intensity of GDP fall by 60~65% in 2030 than 2005; the proportion of non-fossil energy in primary energy consumption increases to about 20% in 2030; and CO₂ emissions peak around 2030 or earlier.

- **经济新常态下新的形势有利于实现NDC目标，促进CO₂排放早日达峰，但也带来新的挑战。**

Under the new economic normal, the new situation is conducive to achieving NDC targets and promoting the early peaking of CO₂ emissions, but new challenges are also brought.

2. 国内实施应对气候变化国家战略，不断强化制度建设和政策保障体系 (1)

Domestically implement national strategies to combat climate change, continuously strengthen the system construction and policy guarantee mechanism

- **把应对气候变化纳入国家经济社会发展总体规划，统筹部署。**

Incorporate climate change into the overall plan of national economic and social development, and conduct coordinated deployment.

- **“十一五”、“十二五”、“十三五”分别制定单位GDP能源强度下降目标、GDP的CO₂强度下降目标、能源消费总量控制目标、非化石能源占比提升目标，并分解到各省市，强化各级政府目标责任制。**

China has formulated the objectives of decline in energy intensity of GDP and CO₂ intensity of GDP, the binding target of total energy consumption, and the goal of the proportion of non-fossil energy respectively since the 11th, 12th and 13th Five-Year Plans, and has divided these goals and targets into provinces and municipalities and strengthened the goal responsibility system of governments at all levels.

- **国家对国际社会承诺2020年和2030年的自主减排目标，纳入国家战略和规划目标，并分解到每个五年计划中实施。**

Incorporate the commitment of NDC goals in 2020 and 2030 to the international community into the national strategy and planning goals, and divide them into each Five-Year Plan.

2. 国内实施应对气候变化国家战略，不断强化制度建设和政策保障体系 (2)

Domestically implement national strategies to combat climate change, continuously strengthen the system construction and policy guarantee mechanism

- **全面统筹，制定并实施激励能源革命和低碳发展的政策措施。**

Coordinate comprehensively, and develop and implement policy measures to stimulate energy revolution and low-carbon development.

- **加强促进新能源技术研发和产业化**

Promote new energy technology research, development and industrialization.

- **可再生能源上网补贴，节能量奖励，节能型家用电器和电动汽车补贴，发展绿色金融**

Feed-in tariff, fuel-saving incentives, energy-saving household appliances and electric vehicles subsidies, the development of green finance.

- **制定和强化产品能效标准和产业准入政策**

Formulate and strengthen product energy efficiency standards and industrial access policies

- **结合雾霾治理，东部沿海地区制定减少煤炭消费量的目标**

Combined with smog control, the Eastern coastal areas set reduce coal consumption reduction goals

- **低碳发展城市、社区试点**

Low-carbon cities and communities pilot.

3. 中国启动全国统一碳市场，并将逐渐发展完善 (1)

China has launched a unified national carbon market and will gradually develop and improve it

- **在2013年开始的7个省、市碳市场试点基础上，2017年底启动全国统一的碳排放交易市场。**

On the basis of the seven provincial and municipal pilot carbon markets that started in 2013, a unified national carbon emissions trading market was launched at the end of 2017.

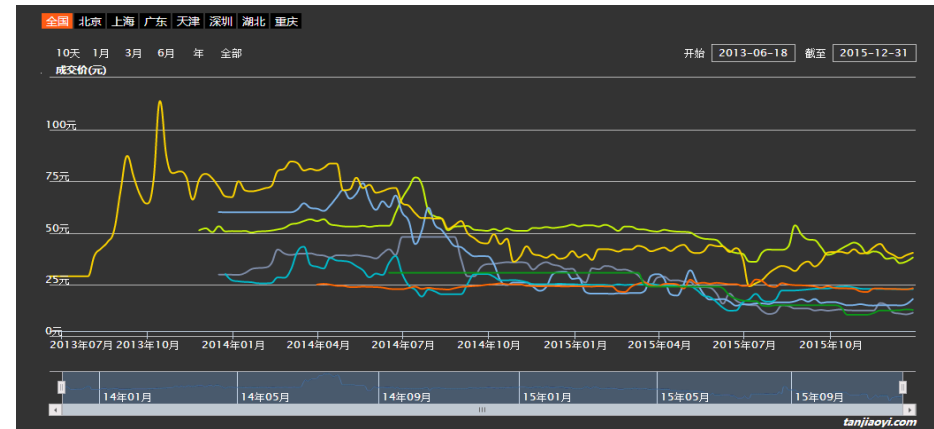
- **全国碳市场将涵盖石化、化工、建材、钢铁、有色金属、造纸、电力、航空等高耗能产业，当前首先从电力部门率先启动。**

The national carbon market will cover energy-intensive industries such as petrochemicals, chemicals, building materials, steel, non-ferrous metals, paper making, electricity, aviation and so on. At present, it starts first from the electricity sector.

3. 中国启动全国统一碳市场，并将逐渐发展完善 (2)

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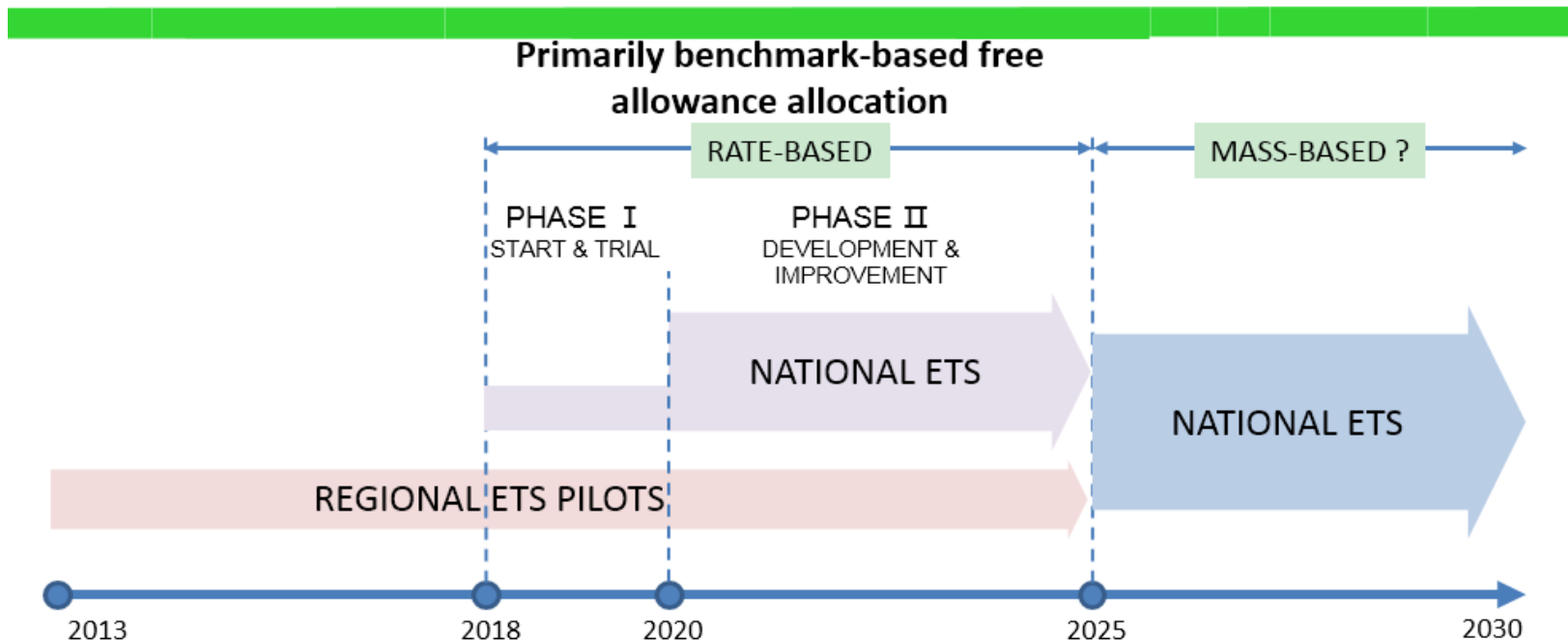
- **参与主体：2013~2015年，年综合能耗在1万tce以上的企业，包含约7500家企业。**
Participants: From 2013 to 2015, enterprises with annual total energy consumption of more than 10,000 tce, including about 7500 enterprises.
- **覆盖排放量约45亿tCO₂，占全国能源相关CO₂总排放量的一半。**
Cover about 4.5 billion t CO₂ emissions, half of the country's total energy-related CO₂ emissions.
- **包含直接排放和间接排放。**
Include direct and indirect emissions.
- **发电部门CO₂排放量约30亿tCO₂，减排潜力约5亿tCO₂。**
The CO₂ emission from the power generation sector is about 3 billion t CO₂ and still has an emission reduction potential of about 500 million t CO₂.



3. 中国启动全国统一碳市场，并将逐渐发展完善 (3)

China has launched a unified national carbon market and will gradually develop and improve it

A time stretch of China's national ETS construction

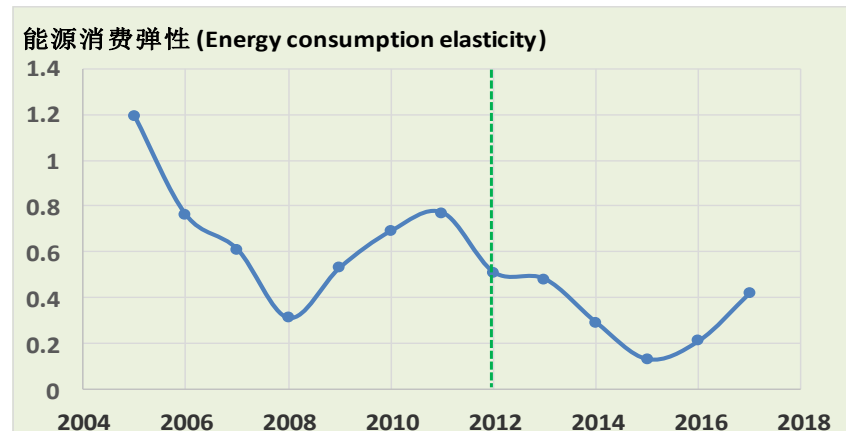


It will start with the *power generation sector* and also possibly *cement sector* and *aluminum sector*, and ultimately extend to 8 sectors, covering one half of China's energy-related carbon emissions by 2025.

4. 中国经济新常态下贯彻新的发展理念，能源消费弹性显著下降

With the new development concept under the new economic normal economy, the elasticity of energy consumption decreased significantly in China

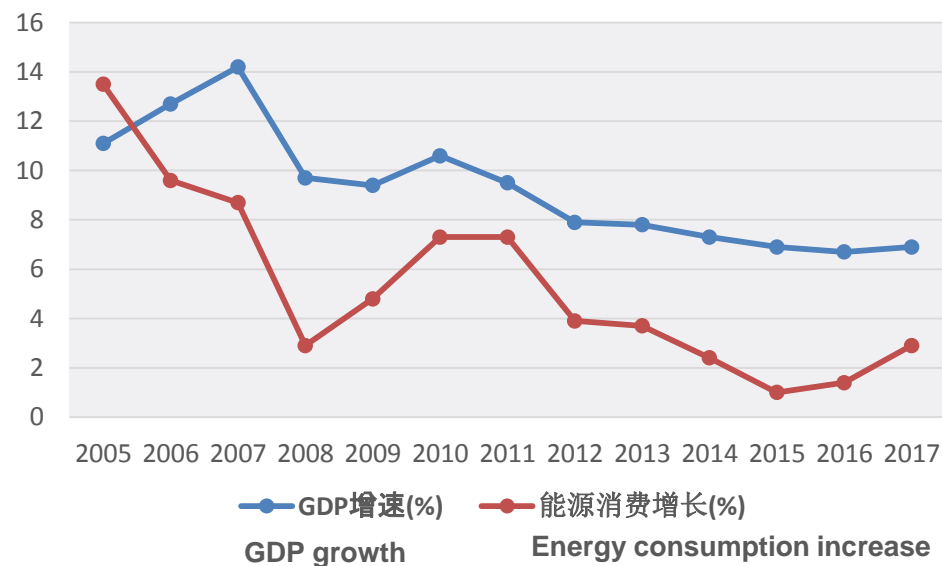
- 新的发展理念：创新驱动，走绿色低碳循环发展路径。
New development concept: innovation drive, a green, low-carbon, and cycle development path.
- 调整经济结构，产业转型升级，高耗能原材料产品趋于饱和。
Economic structure adjustment, industrial transformation and upgrading, and energy-intensive raw materials approaches saturation.
- 淘汰落后产能，提高能效。
Eliminate backward production capacity and improve energy efficiency.
- 能源消费弹性：
Energy consumption elasticity:
0.59 in 2005~2013
0.28 in 2013~2017



5. 经济新常态下GDP增速放缓，能源消费弹性下降，能源总需求快速增长趋势得到有效遏制

Under the new economic normal, GDP growth slows down, energy consumption elasticity decreases, and the rapid growth trend of total energy demand is effectively contained

- 经济增长由规模和速度型向质量和效益型转变，增速放缓。
Economic growth shifts from the increase of scale and speed to the enhancement of quality and efficiency, and the growth slows down.



	2006~2013	2013~2017
GDP growth rate (%)	10.2	6.9
Energy consumption increase rate (%)	6.0	1.9
Annual decline rate of energy intensity of GDP (%)	3.8	4.7

6. 经济新常态下新能源和可再生能源快速发展，能源结构调整加快，单位能耗的CO₂排放强度下降速度加快

Under the new economic normal, new and renewable energy develops rapidly, energy structure adjustment accelerates, and the decrease of CO₂ intensity of energy consumption also speeds up

- 可再生能源发展规模、年增长容量和投资均居世界领先，非化石能源供应年增长率：2005~2013: 10.3%；2013~2017: 9.1%，单位能耗CO₂强度年下降率分别为0.57%和1.5%。

China's renewable energy development leads the world in terms of scale, annual increased capacity and investment. The annual growth rate of non-fossil energy supply was 10.3% in 2005~2013 and 9.1% in 2013~2017, and annual decline in the CO₂ intensity of energy consumption was 0.57% and 1.5% respectively.

- 煤炭消费量2013年最高达28.1亿tce，2017年下降到27.1亿tce。Coal consumption reached the highest of 2.81 billion tce in 2013, and then fell to 2.71 billion tce in 2017.

	2005	2013	2017
Coal (%)	72.4	67.4	60.4
Oil (%)	17.8	17.1	18.7
Natural gas (%)	2.4	5.3	7.1
Non-fossil fuel (%)	7.4	10.2	13.7
CO ₂ intensity of energy consumption and the annual decline rate (%)	2.29	2.19	2.07
		0.57	1.38

7. 单位GDP的CO₂强度下降超过预期，CO₂排放量增长缓慢

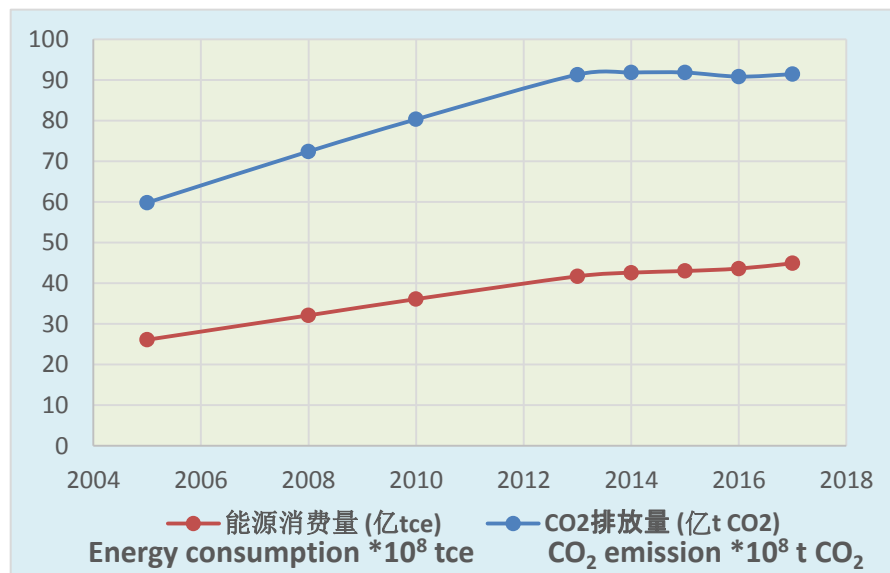
CO₂ intensity of GDP declines more than expected, and the growth of CO₂ emissions slows down

- 节能和能源结构改善的双重效果，使GDP的CO₂强度下降加速。

The dual effect of energy saving and energy structure improvement makes the decrease of CO₂ intensity of GDP faster.

- 2017年底，GDP的CO₂强度比2005年下降约45%。

At the end of 2017, the CO₂ intensity of GDP fell by about 45% than the 2005 level.



	2006~2013	2013~2017
Energy consumption growth rate (%)	6.0	1.9
CO ₂ emission increase rate (%)	5.4	0.4
Annual decline in CO ₂ intensity of GDP (%)	4.4	6.1

8. “十三五”期间，GDP能源强度和CO₂强度仍将持续大幅下降，但能源消费总量和CO₂排放呈现反弹的压力

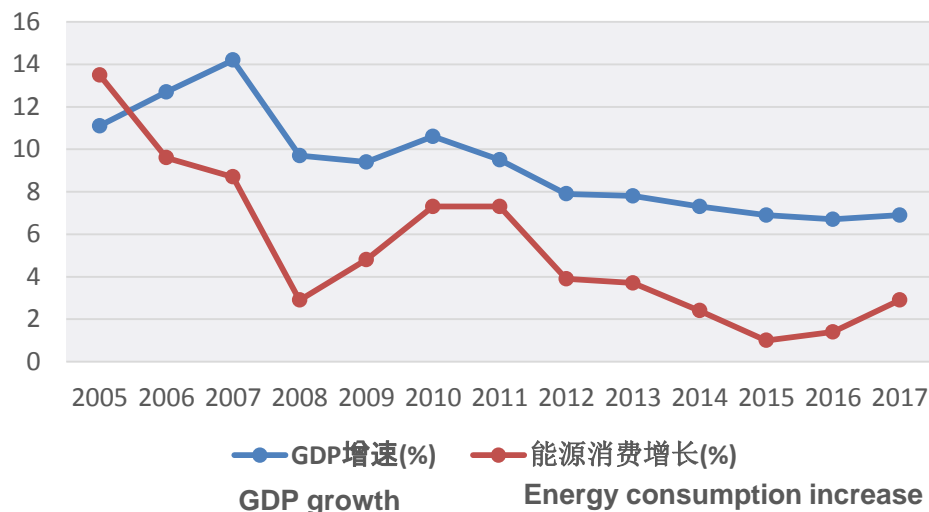
During the 13th FYP period, energy intensity and CO₂ intensity of GDP will continue to drop sharply, but the total energy consumption and CO₂ emission is likely to rebound

- 为应对GDP增速下行压力，努力减小增长率下降，重化工业产能和基础设施建设投资加大，能源消费增长出现反弹。

To cope with the downward pressure of GDP growth, efforts are made to reduce the decline in GDP growth rate; the investment in heavy chemical industry capacity and infrastructure construction increases; and the growth of energy consumption rebounds.

- “十三五”期间，GDP增速预期约6.5%。能源消费年均增长率约2%，CO₂排放年均增长率约1%。
During the 13th FYP period, GDP is expected to grow by about 6.5% annually, the average annual growth rates of energy consumption and CO₂ emissions are estimated to reach about 2% and 1% respectively.

- 2020年，单位GDP的CO₂强度比2005年可下降50%以上。
In 2020, the CO₂ intensity of GDP could decrease by more than 50% than the 2005 level.



9. 在保证经济持续增长情况下减缓能源消费增长，经济结构调整和产业升级将起重要作用 (1)

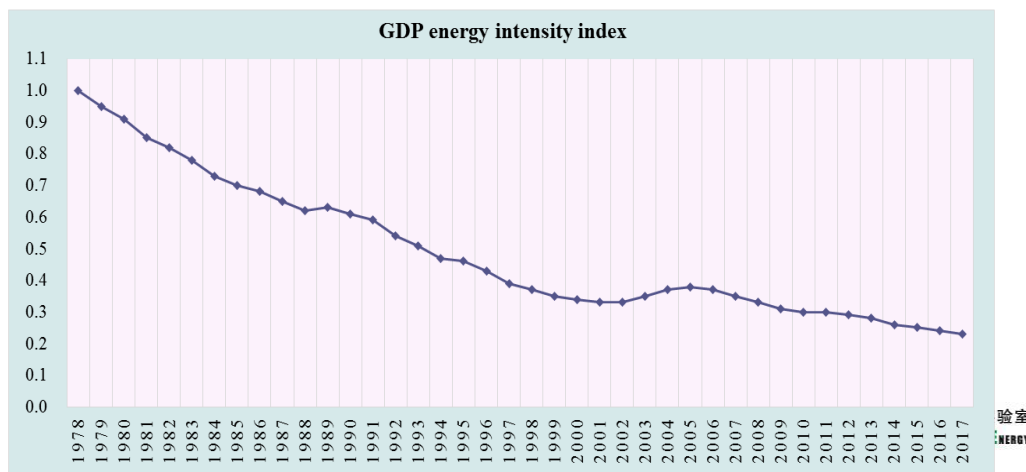
Economic restructuring and industrial upgrading will play an important role in slowing energy consumption growth while ensuring sustained economic growth

□ 大幅度降低GDP能源强度。

Significantly reduce the energy intensity of GDP.

- 经济结构调整，降低高耗能工业比重，发展高新技术产业和现代服务业。
Adjust the economic structure, reduce the proportion of energy-intensive industry, and develop high-tech industry and modern service industry.
- 产业升级，减少原材料消耗，提高产品增加值率，促进产品向价值链高端发展。
Promote industrial technology upgrading, reduce raw material consumption, improve product value-added rate, and facilitate the product to go into the high-end of the value chain.
- 提高能源使用的技术效率。
Improve the technical efficiency of energy use.

- 1978~2017年，GDP能源强度下降77%，年均下降3.72%。其中结构调整和产业升级贡献率在2/3以上。
From 1978 to 2017, energy intensity of GDP fell 77% with an annual decline of 3.72%, in which the contribution rate of structural adjustment and industrial upgrading is over 2/3.



9. 在保证经济持续增长情况下减缓能源消费增长，经济结构调整和产业升级将起重要作用 (2)

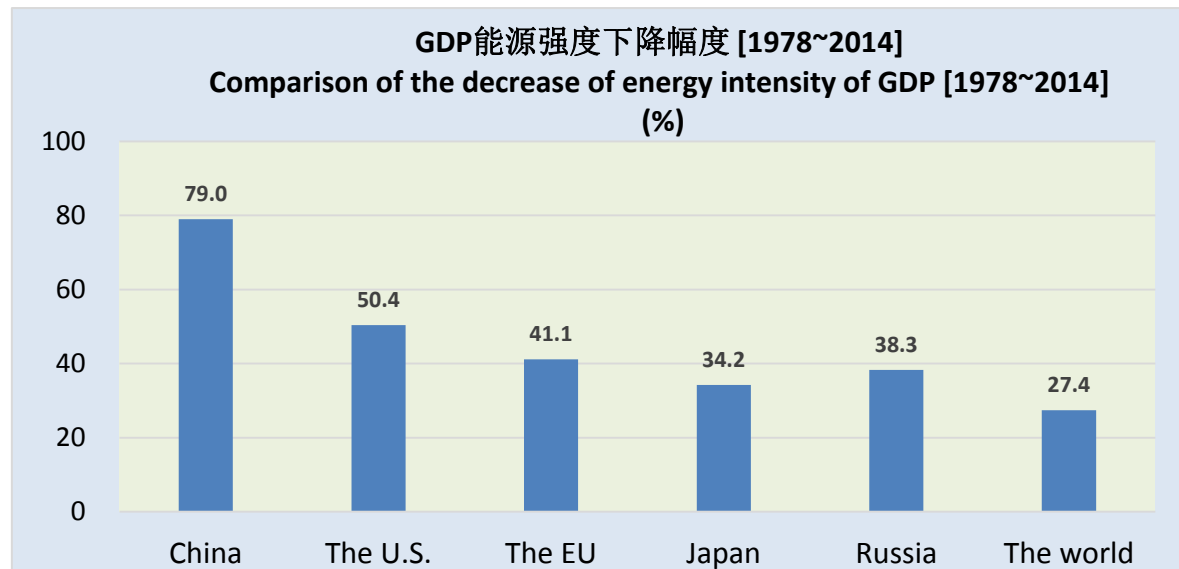
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- 改革开放以来，中国单位GDP能耗下降幅度高于发达国家，但目前仍处于较高水平，存在较大下降空间和潜力。

Since the reform and opening up, China's energy intensity of GDP has fallen more than developed countries, but it is still at a high level, and there is a large space and potential for further decline.

- GDP能源强度下降幅度远超世界大多数国家水平，为世界平均水平的2.9倍。

China's energy intensity of GDP has fallen much more than most countries in the world, being about 2.9 times of the world average level.

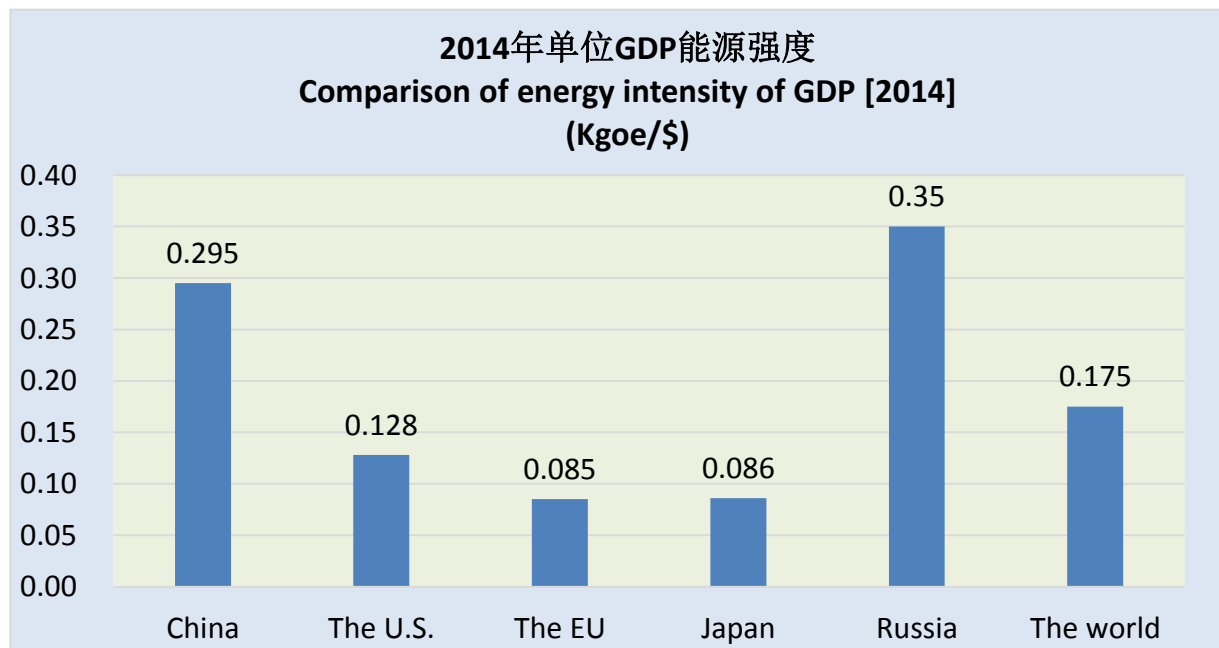


来源：EDMC 2017

9. 在保证经济持续增长情况下减缓能源消费增长，经济结构调整和产业升级将起重要作用 (3)

Economic restructuring and industrial upgrading will play an important role in slowing energy consumption growth while ensuring sustained economic growth

- 单位GDP能耗仍高于世界大多数主要国家水平，2014是世界平均水平的1.7倍。
China's energy intensity of GDP is still higher than that of most major countries in the world, and was 1.7 times of the world average level in 2014.



来源：EDMC 2017

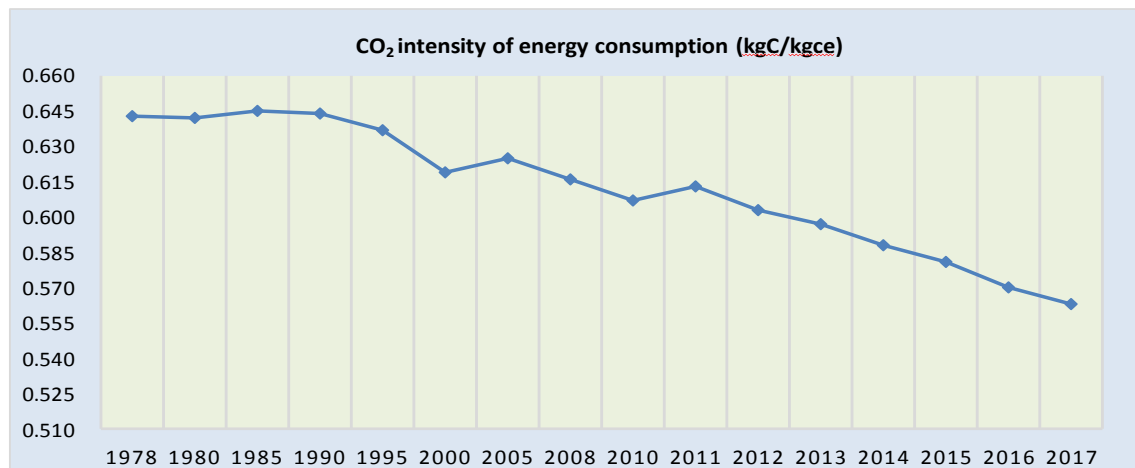
10. 大力发展新能源和可再生能源，加速能源结构低碳化将对减缓CO₂排放发挥越来越大的作用 (1)

Development of new and renewable energy and acceleration of the decarbonization of energy structure will play an increasingly important role in slowing down CO₂ emissions

- GDP的CO₂强度年下降率 ≈ GDP能源强度年下降率+ 单位能耗CO₂强度年下降率
Annual decline rate of CO₂ intensity of GDP ≈ annual decline rate of energy intensity of GDP + annual decline rate of CO₂ intensity of energy consumption
- 我国近年来新能源和可再生能源加速发展，随非化石能源比例增大和能源结构低碳化加速，单位能耗CO₂强度也呈加速下降趋势。

In recent years, the development of new and renewable energy speeds up; with the increasing proportion of non-fossil energy and decarbonization of energy structure, the decline of CO₂ intensity of energy consumption also accelerates.

- 单位能耗的CO₂强度2017年比1978年下降12.5%，近年来年下降速度已达1.5%左右。
CO₂ intensity of energy consumption in 2017 fell by 12.5% than that in 1978, and recently the annual decrease rate has reached 1.5%.



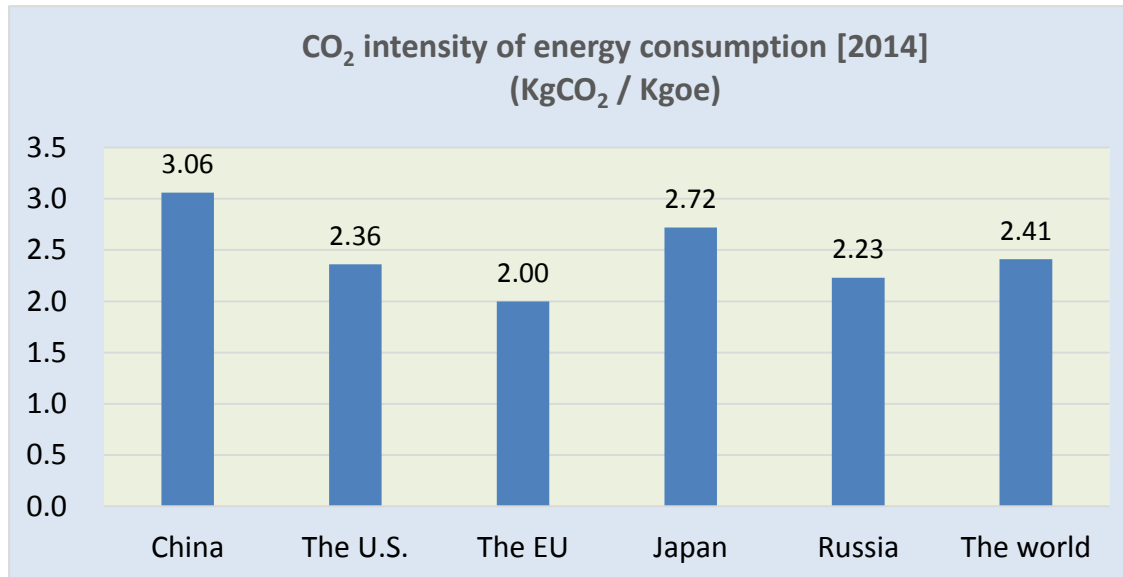
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- 以煤为主的能源结构仍未根本改变，单位能耗的CO₂强度仍比世界平均水平高30%。

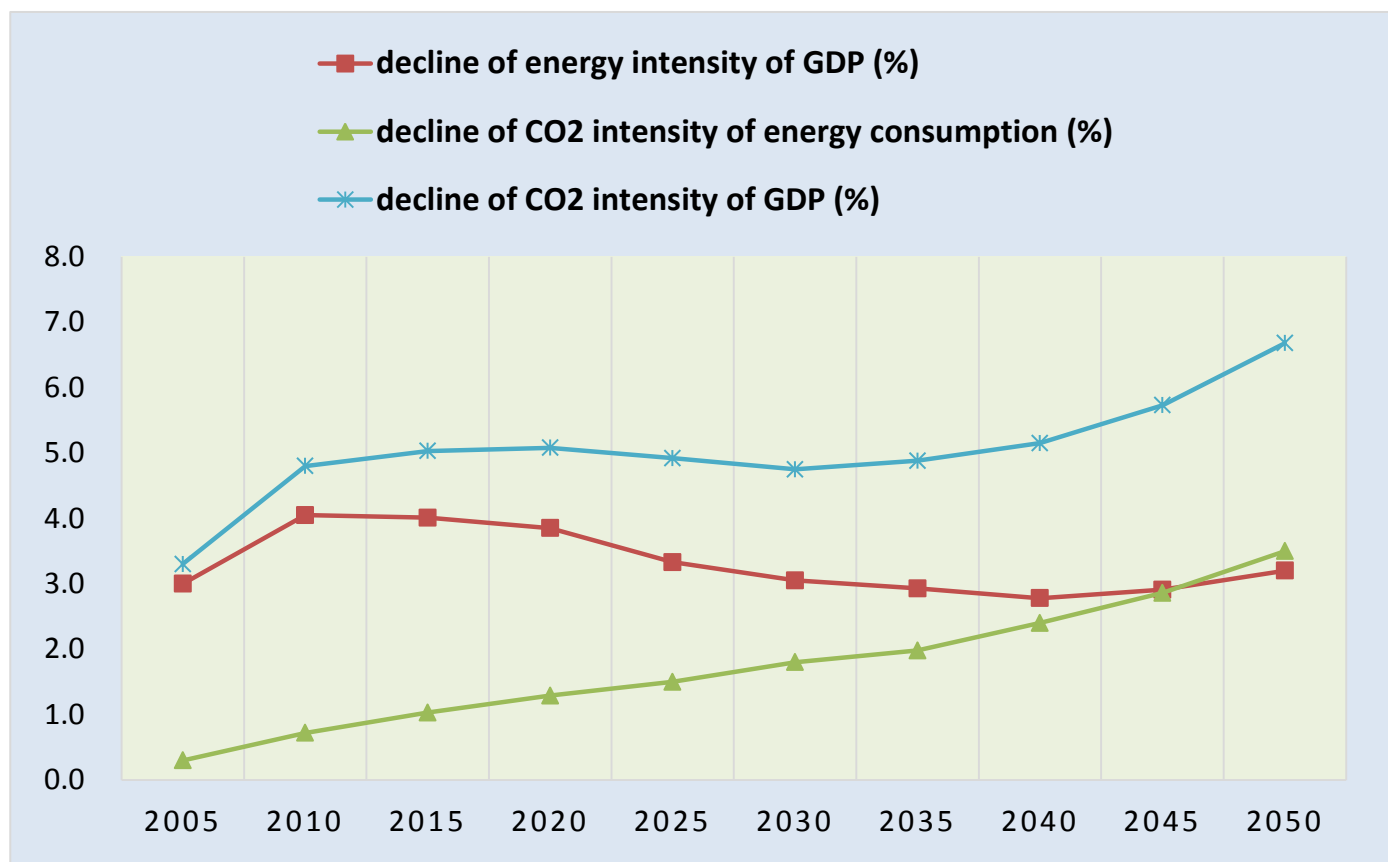
In China, the coal-dominated energy structure is still not fundamentally changed, and the CO₂ intensity of energy consumption is still 30% higher than the world average level.



来源：EDMC 2017

11. 随能源结构的低碳化发展，单位能耗CO₂强度下降率将不断加速，对GDP的CO₂强度下降的贡献率不断增大，促使GDP的CO₂强度呈加速下降趋势

With the decarbonization of energy structure, the decrease of CO₂ intensity of energy consumption will accelerate, and its contribution to the decline of CO₂ intensity of GDP will increase, which speeds up the decline of the CO₂ intensity of GDP



12. 加快GDP的CO₂强度下降速度，促进CO₂排放早日达峰

Accelerate the decline of CO₂ intensity of GDP, promote the early peaking of CO₂ emissions

□ CO₂达峰必要条件：

Necessary conditions for the peaking of CO₂ emissions:

① GDP的CO₂强度年下降率 > GDP年增长率

annual decline rate of CO₂ intensity of GDP > annual growth rate of GDP

GDP能源强度年下降率 + 单位能耗CO₂强度年下降率 > GDP年增长率

annual decline rate of energy intensity of GDP + annual decline rate of CO₂ intensity of energy consumption > annual growth rate of GDP

② 单位能耗CO₂强度年下降率 > 能源消费年增长率

annual decline rate of CO₂ intensity of unit energy consumption > annual growth rate of energy consumption

■ 一般而言，实现CO₂达峰，上述两个条件会同时实现。

Generally speaking, when CO₂ emissions reach the peak, the above conditions will be realized at the same time.

13. 中国2030年左右实现CO₂排放达峰，比发达国家CO₂达峰需付出更大努力 (1)

China needs to make greater efforts than developed countries in achieving the peaking of CO₂ emissions around 2030

- **发达国家CO₂达峰出现在后工业化发展阶段，中国制定CO₂达峰目标，在发展阶段上要早于发达国家。**

The peaking of CO₂ in developed countries appeared in the post-industrial stage; in terms of development stage, China's goal of the peaking of CO₂ emissions was earlier than developed countries.

- **中国预期2030年左右GDP增长率仍保持5%左右水平，GDP的CO₂强度年下降率也需达相应水平，将远高于发达国家CO₂达峰时的水平。**

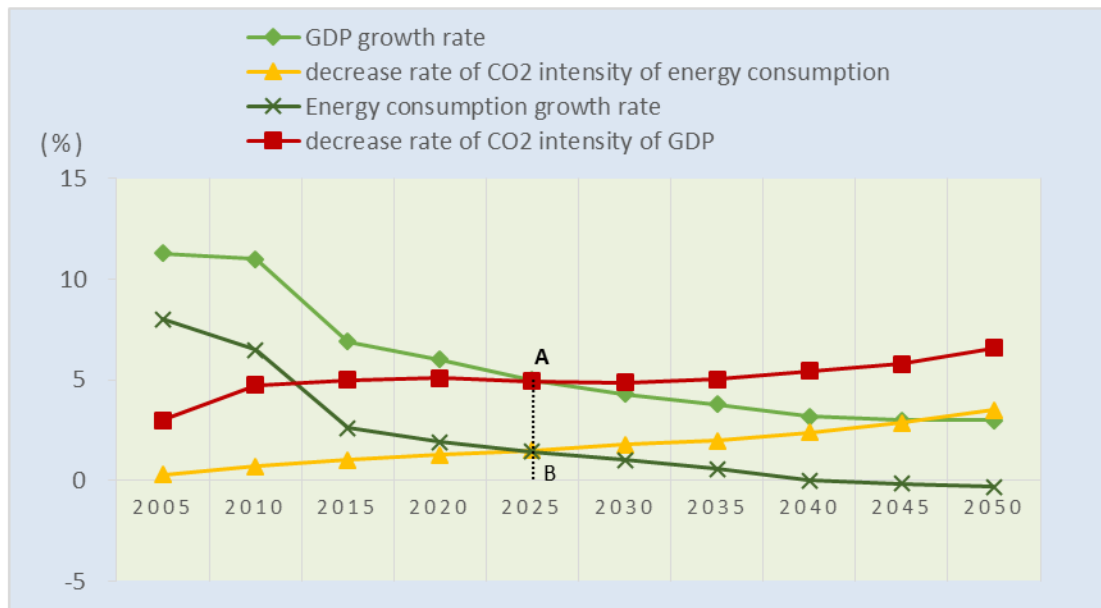
China expects the GDP growth rate to remain at about 5% in 2030; the annual decline in CO₂ intensity of GDP needs to reach the same level, which is much higher than developed countries when CO₂ emissions reach the peak.

13. 中国2030年左右实现CO₂排放达峰，比发达国家CO₂达峰需付出更大努力 (2)

China needs to make greater efforts than developed countries in achieving the peaking of CO₂ emissions around 2030

- **新能源和可再生能源必须保持快速增长态势，单位能耗CO₂强度下降率需达年均1.5~2.0%的水平，以满足能源总需求的增长。**

New and renewable energy must maintain a rapid increase and the decrease rate of CO₂ intensity of energy consumption ought to reach 1.5~2.0% annually to meet the growth of total energy demand.



14. 当前决胜全面建成小康社会，结合打好污染防治攻坚战，强化低碳转型的目标导向和协同对策

To secure a decisive victory in building a moderately prosperous society in all respects, combining the fight against pollution, China is to strengthen the goal orientation and coordinated measures of low-carbon transition

- 为使环境质量达到标准，东部地区制定减少煤炭消费量目标，加速清洁能源汽车推广，有助于减缓CO₂排放。

To make the environmental quality reach the standard, formulate coal consumption reduction targets for the eastern region, and promote clean energy vehicles. These measures will help to mitigate CO₂ emissions.

- 结合雾霾治理，终端用能以电替代煤炭和石油，促进可再生能源发展。
Combined with haze control, coal and oil will be replaced by electricity in terminal energy consumption, and the development of renewable energy power will be promoted.
- 东部沿海较发达城市CO₂排放将率先达峰。
CO₂ emissions in the developed eastern coastal cities will take the lead in peaking.

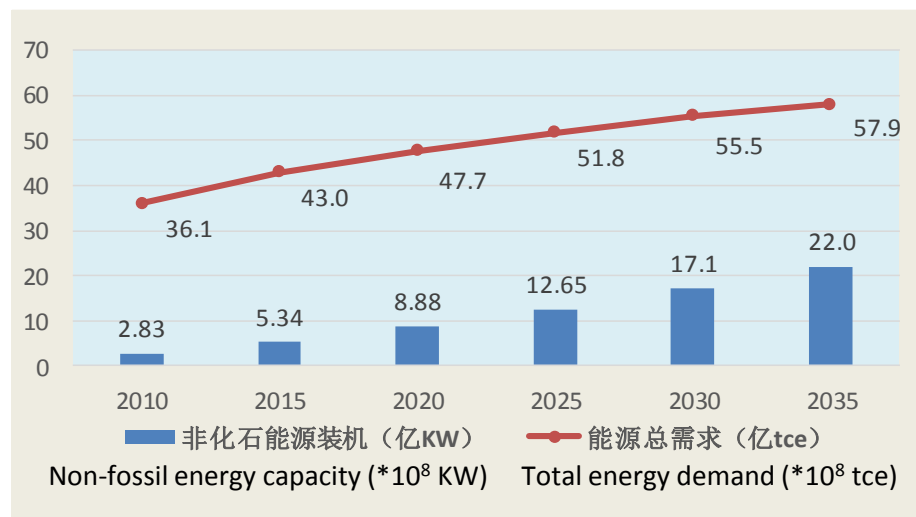
15. 与2020~2035年社会主义现代化建设第一阶段目标相契合，积极参与全球环境治理，落实减排承诺 (1)

Fit with the socialist modernization construction goals in the first stage (2020~2035) in the new era, China is to actively participate in global environmental governance and implement the commitments in emission reduction

- 在实现生态环境根本好转，美丽中国建设目标基本实现的同时，落实和强化《巴黎协定》下国家自主贡献目标（NDC）的承诺，争取CO₂排放早日达峰。

While striving to realize the fundamental improvement in eco-environment and the goal of a beautiful China, China will implement and strengthen the commitment of NDC targets under the Paris Agreement, and strive for an early peaking of CO₂ emissions.

- 控制能源消费总量2020年和2030年分别低于50亿 tce 和60亿 tce。2030年非化石能源电力占全部发电量的50%。
Control total energy consumption no more than 5 billion tce and 6 billion tce in 2020 and 2030 respectively. Non-fossil energy electricity accounts for 50% of total power generation in 2030.



15. 与2020~2035年社会主义现代化建设第一阶段目标相契合，积极参与全球环境治理，落实减排承诺 (2)

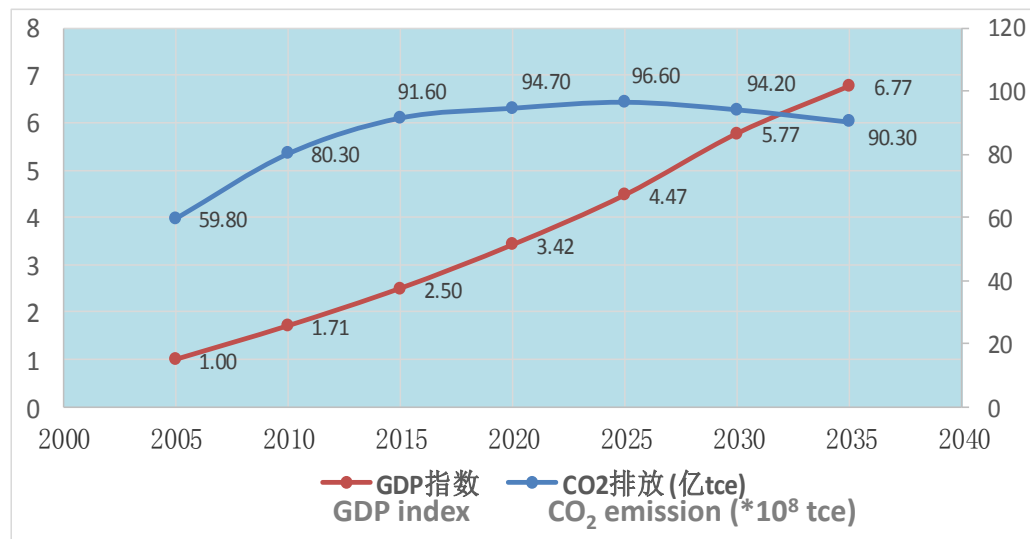
Fit with the socialist modernization construction goals in the first stage (2020~2035) in the new era, China is to actively participate in global environmental governance and implement the commitments in emission reduction

- CO₂排放努力争取在2030年前早日达到峰值，能源消费相关CO₂排放峰值排放量控制在100亿t CO₂以内。

Strive to achieve the peaking of CO₂ emissions before 2030 and control the peak emission of CO₂ related to energy consumption within 10 billion t CO₂.

- 到2030年，非化石能源在一次能源消费中比重达20%、GDP的CO₂排放强度下降60~65%的目标均有可能提前实现。

By 2030, the goals of increasing the proportion of non-fossil energy in primary energy consumption to 20% and reducing CO₂ emission intensity of GDP by 60~65 % may be achieved ahead of schedule.



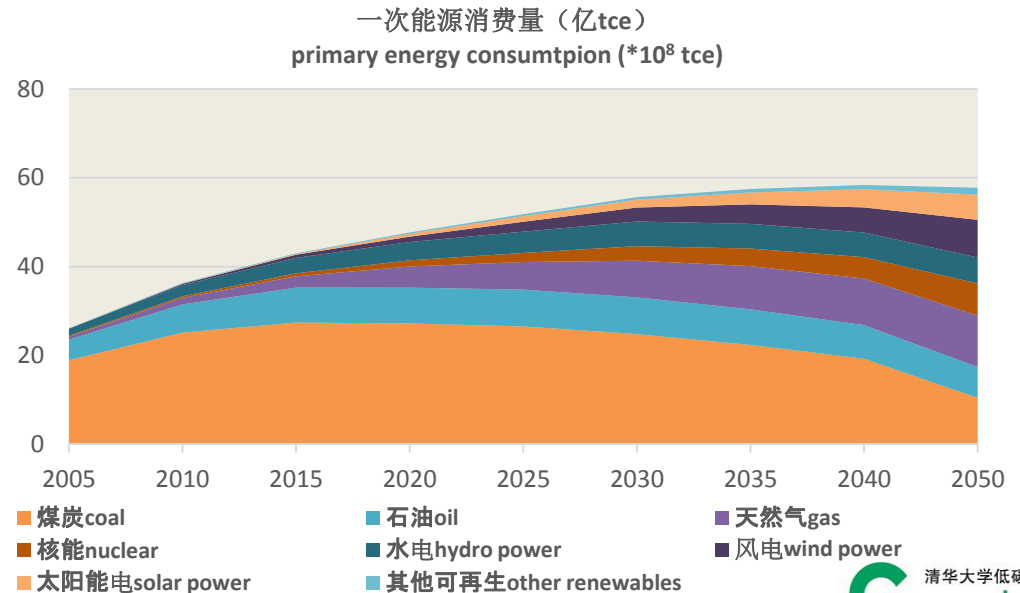
16. 以2035~2050年新时代中国特色社会主义建设第二阶段目标为指引，引领全球能源与经济的低碳化变革，为全球生态安全做出新的重大贡献

Guided by the socialist modernization construction goals in the second stage (2035~2050) in the new era, China is to lead the reform of global energy and economic decarbonization and make new important contributions to global eco- security

- 建成社会主义现代化强国，综合国力和国际影响力世界领先。
Build China into a socialist modern power with world-leading overall national strength and international influence.

- 绿色发展方式和生活方式全面形成，人与自然和谐共生，建成美丽中国。
Green development and green life style forms comprehensively. Human and nature interact harmoniously. A beautiful China is built.

- 到2050年，非化石能源占比超过50%，煤炭占比小于20%。并考虑CCS。
In 2050, non-fossil energy will account for more than 50%, while will coal account for less than 20%. CCS will also be considered.



17. 积极参与并引领全球气候治理，促进《巴黎协定》的落实和实施

Actively participate in global climate governance and promote the implementation of the Paris Agreement

- 构建人类命运共同体，推动全球生态文明建设。
Build a community of common destiny for all mankind, and promote global eco-civilization construction.
- 推动相互尊重、公平正义、合作共赢的全球气候治理机制的国际合作进程。
Push forward international cooperation under the global climate governance mechanism of mutual respect, fairness and mutual benefit.
- 促进《巴黎协定》落实，为2018年底气候大会的“促进性对话”贡献中国智慧和方案。
Facilitate the implementation of the Paris Agreement, and contribute Chinese wisdom and solution for the “facilitative dialogue” at the end of 2018.

Thank you

