

The First Year of China's Twelfth Five Year Plan: Success or Failure for Climate Change Efforts?

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The world is watching China, not only because it's too big to ignore, and a puzzle not well understood, but more importantly, because of its rapid economic growth and more and more important role on the international stage. The domestic dimension offers critical insights in its development and climate change policies. 2011 is the first year of China's Twelfth Five Year Plan (FYP) period. And it seems to be a good time, at the beginning of 2012, with the national statistics of 2011 released last month, to review the progress of work in the field of climate change and its results.

Recap the 12th Five Year Plan: the green blueprint

March 2011 marked the launch date for the 12th FYP (2011-2015). As many have commented, the 12th FYP seeks to achieve a more balanced approach to growth and development, focusing attention on the environment, equitable wealth distribution, increased domestic consumption, livelihoods,¹ and what officials call "administrative reforms".²

The setting of "7 percent" annual GDP growth rate is a clear signal that the central government has given more weight to quality (v.s. quantity) of economic development. Continuing the green path set by the 11th FYP, a greater emphasis on energy efficiency and clean energies, together with plans to gradually implement a carbon-market mechanism has been outlined in the 12th FYP. Key targets include:

- 1) Energy consumption per unit of GDP to be cut by 16 percent (compared to 2010);
- 2) Carbon dioxide emission per unit of GDP to be cut by 17 percent (compared to 2010);³
- 3) Non-fossil fuel to account for 11.4 % (vs. 8.3% of 2010) of primary energy consumption;
- 4) Forest coverage rate to rise to 21.66 percent and forest stock to increase by 600 million cubic meters;

¹ There is a heavy emphasis on social justice, including an eight per cent a year increase in the minimum wage, a target of 20 per cent low-income housing by 2015, and building 36 million low-income apartments. The main priority is to bring down inflation and reduce the income gap.

² The development is described as "not balanced, not comprehensive and not even" over and over within the Plan's text, the government official talks and media statements. The Plan is representative of China's efforts to rebalance its economy.

³ Increased carbon and energy intensity targets could save between 0.5 - 2.5 Gt of CO2 emissions in 2020, providing a strong domestic market in low carbon industries. "In comparison EU emissions reductions will be 0.5 Gt in 2020 under the 20 percent target or up to 1.1 Gt if that is increased to 30 percent." Dr. Shin Wei Ng and Nick Mabey, E3G, Chinese Challenge or Low Carbon Opportunity? The Implications of China's 12th Five-Year-Plan for Europe, Jan. 2011

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- 5) Reduction of Chemical Oxygen Demand and Sulfur Dioxide by 8 percent;
- 6) Reduction of ammonia nitrogen and nitrogen oxides by 10 percent.

There are both new policies to promote greater industrial efficiency, and a major push to include all other sectors of the economy, e.g. new and existing buildings. The plan prioritizes – with the aid of tax breaks and beneficial procurement policies – the development of seven “**Strategic Emerging Industries**” (**SEIs**): energy conservation and environmental protection, information technology, biotechnology, advanced manufacturing, new energy, new material and new-energy automobiles. **New energy and circular economy** are both key elements.⁴

Policy developments at central and local level

As in the past, the some-how broad-brush guideline and roadmap developed by the 12th five year plan are taken further, though out the year (and in coming years) by much more detailed sectoral and provincial FYPs with specific targets, measures and initiatives, as well as later regulations, policies and guidance. Central and local governments' ministries and departments, regions and industries have set clear targets and respective responsibilities, specify emission reduction programs, and develop appropriate work programs.

Last August, the State Council issued the **12th FYP Energy Saving and Emission Reduction Comprehensive Work Program**, breaking down the national targets into provincial and local levels.⁵ In contrast to the previous FYP, the local targets have been largely differentiated considering the respective local situation and development stage (see details in the chart below). The Program also outlined the details regarding the following: strengthen the targets' responsibilities,⁶ adjust and optimize industrial structure, implement key projects, strengthen energy conservation management, vigorously develop circular economy, accelerate technology development and application, improve relevant economic polices, strengthen the supervision and inspection, market mechanism

⁴ New energy was mentioned in energy, environment and climate related sections and in the foreign investment section. The new energy industry is defined to include the new generation of nuclear power, solar thermal and photovoltaic solar thermal power generation, wind power technology and equipment, smart grid, biomass. And it is interesting to see the large hydro, although as of non-fossil and renewable fuel, is not defined as new energy.

⁵ The work plan text: http://www.gov.cn/zwgk/2011-09/07/content_1941731.htm

⁶ Integrating the sectorial targets and regional targets; as well as five year targets and annual target; building accountability system and “veto” mechanism

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promotion, capacity building and mobilize the whole society to participate. An energy cap was also mentioned for the first time and initial discussion around 41 Million tec by 2015 has emerged.

In	Energy intensity reduction target	18%	17%	16%	15%	10%
Province	Tianjin, Shanghai, Jiangsu, Zhejiang, Guangdong	Beijing, Hebei, Liaoning, Shandong	Shanxi, Jilin, Heilongjiang, Anhui, Fujian, Jiangxi, Henan, Hubei, Hunan, Chongqing, Sichuan, Shaanxi	Jilin, Heilongjiang, Anhui, Fujian, Jiangxi, Henan, Hubei, Hunan, Chongqing, Sichuan, Shaanxi	Neimenggu, Guangxi, Guizhou, Yunnan, Gansu, Ningxia	Hainan, Xizang (Tibet), Qinghai, Xinjiang

December, the State Council issued the **12th FYP Control GHG Emissions Work Program.**⁷ The substance is not much new compared to the Energy Saving and Emisison Reduciton Comprehensive Work Program, while the focus is on GHG emissions and low carbon – yet, the separate Work Program itself is an important signal for the emphasis of the climate change work. Below are the carbon intenstity reduction targets for provinces:

Measures which are severely key high level policies	Carbon intensity reduction target	19%	18%	17%	16%	11%	10%
Province	Tianjin, Shanghai, Jiangsu, Zhejiang, Guangdong (19.5)	Beijing, Hebei, Liaoning, Shandong	Shanxi, Jilin, Anhui, Fujian (17.5), Jiangxi, Henan, Hubei, Hunan, Chongqing, Sichuan (17.5), Shaanxi	Jilin, Heilongjiang, Anhui, Fujian, Jiangxi, Henan, Hubei, Hunan, Chongqing, Sichuan, Shaanxi	Neimenggu, Guangxi, Guizhou, Yunnan (16.5), Gansu, Ningxia	Hainan, Xinjiang	Xizang (Tibet), Qinghai

⁷ The work plan text: http://www.gov.cn/zwgk/2012-01/13/content_2043645.htm

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under development (most have been drafted and in the phase of consultation): Special Plan of the National Response to Climate Change (2011-2020), National Strategy of Climate Change Adaptation, and Decision to Strength the Climate Change Work Program etc.⁸

Piloting is still a key approach to promote low carbon development. Besides carrying on existing piloting programs e.g. the Five Provinces Eight Cities Low Carbon Pilot program, and Ten Cities and A Thousand Cars Electric Vehicles program, the government also introduced pilots in other areas. The Ministry of Finance and National Development and Reform Commission (NDRC) jointly launched the Pilots for Fiscal Policy for Energy Saving and Emission Reduction in Beijing, Chongqing, Shenzhen, Hangzhou, Changsha, Guiyang, Guilin and Xinyu, to test the integration of low carbon city and integration of fiscal policy.⁹ Successful initiatives from the 11th FYP have been also strengthened, e.g. the 10,000 Enterprises Program looks like a phase two of the Top 1,000 Enterprises Program.¹⁰

NDRC and the Ministry of Finance also **updated** the Energy-Saving Products List for Government Procurement, and Energy-Saving Technology Promotion Catalog.¹¹

Key sectors like iron and steel, building materials, electricity, coal, petroleum, chemicals, nonferrous metals, textiles, food, paper, transportation, railway, construction, etc. have been asked to develop their respective work plans.

By end of 2011, **over half of the provinces** have also developed their provincial level energy saving and emission reduction work plans, including Beijing, Shanghai, Chongqing, Guizhou, Neimeng, Hebei, Henan, Shandong, Shaanxi, Fujian, Sichuan, Hunan, Jiangxi, Hainan, Guangdong, Anhui, Gansu, Jiangsu, Guangxi etc.¹² While following similar path and frameworks as national plans, the provinces also have different focuses. For example, Beijing's Whole People Action Plan gives overriding emphasis on public participation.¹³ And Shanghai emphasizes more on energy cap and emission trading system.¹⁴

⁸ NDRC Climate Change Works Meeting (2012 Feb), http://www.njdpc.gov.cn/zwxx/csfz/zyjy/201202/t20120213_876313.html

⁹ Text: http://jjs.mof.gov.cn/zhenwguxinxi/zhengefagui/201106/t20110628_568103.html

¹⁰ Text: http://www.ndrc.gov.cn/zcfb/zcfbtz/2011tz/t20111229_453569.htm

¹¹ NDRC, MOF, 2011 Dec 14 http://www.ndrc.gov.cn/wsgs/t20111219_451496.htm; NDRC, 2011 Dec 30

http://www.ndrc.gov.cn/zcfb/zcfbogg/2011gg/t20120104_454967.htm

¹² <http://news.emca.cn/n/20120314095320.html>

¹³ Text: http://bjrb.bjd.com.cn/html/2012-01/10/content_36466.htm

¹⁴ Text: http://www.sdpc.gov.cn/xwfb/t20110613_417552.htm

Other key initiatives

Three initiatives worth special attention, as they feature some key trends of climate change efforts by the government – more public participation, more market-based tools and transparency.

First, the climate change legislation.

It was announced in March 2011 that China was going to launch the development of its Climate Change Legislation. The call for the first round of public opinion collection by September 2011 was widely welcomed by NGOs as a good opportunity for participating at an early stage of such an important legislative process. Throughout an intensive preparation, a joint submission by like-minded Chinese NGOs of CCAN was developed and submitted to the government.¹⁵ The submission highlighted effectiveness, equity and transparency. The NGOs also met the responsible official from the Climate Change Department of NDRC to get updates of the process and exchange views. Officials have given very positive feedback to the submission and participation of NGOs and the engagement is carrying on.

Second, Emission trading pilots.

In the 11th FYP most measures were characterized as command and control whereas the 12 FYP introduces more market-based policy tools, which in theory is more cost effective. Last October NDRC designated seven provinces and cities, Beijing, Shanghai, Tianjin, Chongqing, Guangdong, Hubei and Shenzhen, as pilots to test Emissions Trading Schemes (ETS).¹⁶ The expectation is to start trade within each region by 2013 and cross-region or even national trade by 2015. Oversight by NDRC and local Development and Reform Commissions (DRCs), various implementation bodies e.g. local exchanges, research institutes, government associations and academics, started the preparations as early as 2010, yet still face a tough timeline to deliver. Different regions have different views on their scheme design, and differ in capacity and development speed. Despite this, common challenges include data availability, measuring capacity of potential ETS participants, cap

¹⁵ Within a working group, responsible NGOs were in charge of drafting different parts of the submission, namely: guiding principles, structure, mitigation, adaptation, institutional settings, innovation, finance, public awareness. Media clip of exchange between NDRC officials and NGOs: <http://www.c-can.cn/en/node/685>

¹⁶ Notice on Carbon Emission Trading System Pilots: http://www.ndrc.gov.cn/zcfb/zcfbtz/2011tz/t20120113_456506.htm

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setting and allocation methodologies, trading modality development and institutional capacity.¹⁷

Third, monitoring mechanism innovation.

A barometer and early warning system were developed by NDRC in order to urge and guide local governments to strengthen their energy saving and emission reduction implementation. Every quarter such a barometer based on modeling of local energy intensity per GDP, and comparison with their annual and 12th FYP targets were prepared and released by NDRC, in which there are three early warning levels: 1-3 (from very tough situation to relatively smooth progress). Barometers for the first three quarters have been already available on the NDRC website.¹⁸ Improvement could be made to release more information on local achievements or lack of such (data etc.), to enhance the public pressure and their accountability.

	Q1 early warning level	Q2 early warning level	Q2 early warning level	12 th FYP progress early warning level
Beijing	3	3	3	3
Tianjin	3	3	3	3
Hebei	3	2	2	2
Shanxi	3	3	3	3
Neimeng	1	1	1	1
Liaoning	3	3	3	3
Jilin	3	3	3	3
Heilongjiang	3	3	2	3
Shanghai	3	3	3	3
Jiangsu	1	2	2	1
Zhejiang	2	2	2	1
Anhui	3	3	3	3
Fujian	2	2	2	1
Jiangxi	1	1	2	1

¹⁷ Some external analysis even predicted the delays of their launch: Point Carbon <http://www.pointcarbon.com/news/1.1786422>

¹⁸ Q1: http://www.ndrc.gov.cn/hjhb/hjjsjyxsh/t20110613_417566.htm; Q2: http://www.sdpc.gov.cn/xwfb/t20110729_426427.htm; Q3: <http://finance.jrj.com.cn/2011/10/28162611433552.shtml>

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Shandong	3	3	3	3
Henan	3	1	2	2
Hubei	3	2	2	3
Hunan	3	3	3	3
Guangdong	3	2	3	3
Guangxi	3	2	2	2
Hainan	1	1	1	1
Chongqing	3	3	3	3
Sichuan	3	3	3	3
Guizhou	3	3	3	3
Yunnan	3	3	3	3
Shaanxi	2	2	2	3
Ganxu	1	1	2	2
Qinghai	1	1	1	1
Ningxia	1	1	1	1
Xinjiang	1	1	1	1

A mixed score at the end of 2011

On February 22, 2012, the National Statistic Bureau released the annual economic and social development statistic report for 2011.¹⁹ According to it, the score for the 2011 energy saving and emission reduction implementation is half success and half failure: among the six annual targets, three were met (SO₂, COD and ammonia nitrogen, which all exceeded the 1.5% reduction target, with actual rates of 2.2%, 2% and 1.53% respectively) and three not (energy intensity, carbon intensity and nitrogen oxides).²⁰ The energy intensity reduction only achieved 2.01% (compared to the target of 3.5%), and nitrogen oxides increased by 5.37% (against planned reduction rate of 1.5%).

With a GDP annual growth rate of 9.2%, the energy consumption grew by 7% (amounted to total of 3.48 billion tec), in which coal grew by 9.7%, crude oil 2.7%, natural gas 12% and electricity 11.7%. Strong coal and electricity consumption drove the energy use.²¹ From the

¹⁹ Text: http://news.xinhuanet.com/politics/2012-02/22/c_111556411.htm

²⁰ See also: <http://finance.chinanews.com/ny/2012/03-05/3719982.shtml>

²¹ In 2011 the energy elasticity coefficient rate (the ratio of energy consumption growth rate and economic growth) was 0.76, which is the highest since 2006. And both coal and electricity elasticity coefficient rate is greater than 1.

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demand side, 2011 energy demand grew by 0.23 billion tec, which is the largest since 2004. The statistics also indicate the extensive mode of economic structure – the value added for the Six High Energy Consuming Industries grew by 12.3%,²² and all manufactures grew more than 12%. The clean energy accounted for 27.5% of the total installed capacity, which is only 0.9% growth compared to 2010. The non-fossil fuel component of China's energy consumption and production even declined a little.²³

A series of factors contributed to such result: first of all, the main target of 2011 was “to keep stable growth” and it is the first year of the 12th FYP, so most local governments perhaps gave first priority to GDP. Secondly, the fixed asset investment boom continued. Particularly many projects and high-emission industries were controlled strongly in 2010 to meet 11th FYP targets, thus 2011 saw their “release”. Thirdly, the central and west regions of the country are under accelerated pace of urbanization and industrialization and see the large number of high energy consuming industries transferred from east to west.²⁴ Fourthly, the low hanging fruits have been, to a large extent, harvested during the previous FYP, and the rest are more tough problems to tackle.

With a deeper look, it shows that our economic and energy structure have still yet to adjust. Regarding economic and institutional mechanisms, there is still a lot of work to be done in dealing with deep-seated contradictions among coal, electricity and oil areas, including the contradictions between coal and electricity, pricing system and power system reform.

Looking forward

2011 might be the first taste for the new five-year period of the greater challenges that China face, regarding balancing the commitments of combating climate change, energy security and sustainable development, with economic development and poverty eradication, at the stage of enhanced industrialization, urbanization and population growth. Interaction, and some times tension, between central and local levels, especially the still strong local drive for GDP (so-call GDP fever), further increases the complexity and

²² They are: Chemical materials and chemical products manufacturing, non-metallic mineral products, ferrous metal smelting and rolling processing industry, non-ferrous metal smelting and rolling processing industry, oil processing and coking and nuclear fuel processing industry, electricity and heat production and supply industry.

²³ See: <http://www.21cbh.com/HTML/2012-2-24/4MMDY5XzQwNDM4Mw.html>

²⁴ The barometer in previous session also indicates that middle and west regions (with higher early warning level), have made less progress in energy saving and emission reduction.

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difficulties. The unachieved targets of reduced energy and carbon intensity of 2011 certainly add more pressure for the coming years. Determination and policies seem to be in place, and implementation and paradigm shift still need enormous efforts at all levels and time.

G:HUB Climate and Finance Policy Center

G:HUB promotes the development and implementation of sound climate and financial policies, and encourages critical dialogue among stakeholders; the Center seeks positive changes in climate and sustainable finance via high-quality research and analysis.

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