



Backgrounder: China's 12th Five-Year Plan



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Opening Ceremony of the Fourth Session of the 11th National People's Congress
Source: "China Unveils Five-Year Development Blueprint as Parliament Starts Annual Session," Xinhua, March 5, 2011.

http://big5.xinhuanet.com/gate/big5/news.xinhuanet.com/english2010/china/2011-03/05/c_13762042.htm

INTRODUCTION

China's 12th Five-Year Plan (FYP), released in March 2011, attempts to restructure the Chinese economy by encouraging domestic consumption, developing the service sector, shifting to higher value-added manufacturing, conserving energy, and cleaning up the environment. Three key aspects of the 12th FYP's industrial policy are (1) a focus on scientific development, (2) government support for seven "strategic emerging industries", and (3) construction of transportation and energy infrastructure. However, some business leaders and academic experts are skeptical that the 12th FYP will solve China's structural problems, primarily due to the misalignment of central and local government priorities.

SUMMARY OF THE 12TH FIVE-YEAR PLAN

The People's Republic of China began implementing five-year plans in 1953 in order to align the economy with top policy goals and to communicate this directive throughout the government bureaucracy.¹ Five year plans are designed to be roadmaps for regulators and provincial officials, who are responsible for their implementation. Five year plans can thus be understood as "key indicators of the directions and changes in development philosophy" at the highest levels of Chinese leadership, according to Cindy Fan, a professor at the University of California, Los Angeles.²

The emphasis of both the 11th and 12th FYPs has shifted from enumerating hard production targets to describing broader principles.³ For example, the infrastructure projects and scientific development targets laid out in the 12th FYP are directed at achieving "long-term, steady and relatively rapid economic development" (*jingji changqi pingwen jiaokuai fazhan*).⁴ Both the 11th and 12th FYPs placed a high priority on improving their citizens' overall well-being through wage increases, education opportunities, and healthcare.⁵ While the 11th and 12th FYPs include clear industrial goals and policies, they have fewer numerical production targets than earlier five-year plans and rely more heavily on market mechanisms to achieve these industrial goals.

The 11th and 12th FYPs still rely upon "key indicators" to help achieve broader principles. In contrast to earlier five year plans, the 11th FYP began to distinguish between "restricted" (*yueshuxing*) and "expected" (*yuqixing*) targets among its key indicators. This distinction continued in the 12th FYP. Restricted targets are hard targets that local officials must meet in

¹ See appendix I for a description of how the 12th FYP was formulated, including the role of different government bureaus and specialists in the formulation of this plan.

² C. Cindy Fan, "China's Eleventh Five-Year Plan (2006-2010): From 'Getting Rich First' to 'Common Prosperity'," *Eurasian Geography and Economics* 47:6 (2006): 708. <http://www.sscnet.ucla.edu/geog/downloads/597/300.pdf>.

³ In the 11th FYP, the term *jihua*, meaning "plan," was changed to *guihua*, meaning "vision and guideline." This change signified a shift to a more hands-off approach by the government to direct the economy. C. Cindy Fan, "China's Eleventh Five-Year Plan (2006-2010): From 'Getting Rich First' to 'Common Prosperity,'" *Eurasian Geography and Economics* 47:6 (2006): 718. <http://www.sscnet.ucla.edu/geog/downloads/597/300.pdf>.

⁴ For the full text of the 12th FYP, see "Guomin jingji he shehui fazhan dishier ge wunian guihua gangyao" (People's Economy and Social Development 12th FYP Outline), *Zhonghua Renmin Gongheguo Zhongyang Renmin Zhengfu* (Central People's Government). http://www.gov.cn/2011lh/content_1825838.htm.

⁵ C. Cindy Fan, "China's Eleventh Five-Year Plan (2006-2010): From 'Getting Rich First' to 'Common Prosperity'," *Eurasian Geography and Economics* 47:6 (2006): 718. <http://www.sscnet.ucla.edu/geog/downloads/597/300.pdf>.

order to progress in their careers. Expected targets are soft targets to be carried out primarily through market forces with government support.⁶

Special Characteristics of the 12th FYP

The 12th FYP is distinctive in its heightened focus on economic restructuring, the environment and energy efficiency, and scientific development. Differences between key targets and how these key targets are categorized in the 11th and 12th FYP reflect changing government priorities.⁷ These indicators reveal that the 12th FYP places greater emphasis upon economic development versus simply growth, scientific education, and improving overall welfare.⁸ The 12th FYP also places a greater emphasis than the 11th FYP on expanding domestic demand.⁹ Underscoring this focus on domestic consumption, on March 5, 2011, Premier Wen Jiabao delivered his annual Government Work Report (organized around the key themes of the 12th FYP) and separately listed the expansion of domestic demand as a key aspect of the government's work in 2011.¹⁰ These changes signify a critical shift in government priorities because the career progressions of local officials are tied to meeting these goals. According to Willy Shih, professor at Harvard Business School, "Meeting targets for a city, region or province, for example, is the path to advancement for officials in the Party. Those who do a superlative job get chosen for prime leadership positions. Those who fail to meet those targets get sidetracked. So the motivation is really quite powerful."¹¹

Experts like Hu Angang, director of the Center for China Studies at Tsinghua University, have hailed the 12th FYP as China's "greenest" FYP ever. In his words:

Population goals aside, resource and environmental targets account for 33.3 percent of the total, up from 27.2 percent in the 11th FYP.... Also for the first time, the new plan puts forward an 'ecological security' strategy. In areas where development is limited or banned, ecological protection will be rigorously enforced and green buffer zones will be used to shield vulnerable land. There will also be funding for specific ecological restoration projects, so that our children and grandchildren will be able to enjoy a beautiful China.¹²

The 12th FYP includes a number of new key indicators meant to help China achieve this "greening" initiative.¹³ According to Qi Ye, director of The Climate Policy Initiative at Tsinghua University, "Emission reduction is emphasized [as a key indicator] for the 12th Five-Year Plan

⁶ C. Cindy Fan, "China's Eleventh Five-Year Plan (2006-2010): From 'Getting Rich First' to 'Common Prosperity'," *Eurasian Geography and Economics* 47:6 (2006): 711. <http://www.sscnet.ucla.edu/geog/downloads/597/300.pdf>.

⁷ See appendix II for a complete list of 11th and 12th FYP key indicators.

⁸ In the 11th FYP, there are 22 key indicators divided among four categories: economic growth (two targets); economic structure (four targets); population, resources, and the environment (eight targets); and public services and people's life (eight targets). In the 12th FYP, there are 24 key indicators, divided among four categories: economic development (three targets); scientific education (four targets); resources and the environment (eight targets); and people's life (nine targets).

⁹ See "Main direction of the offensive" in appendix III.

¹⁰ Open Source Center, "China: NPC Reconfirms China's Development Strategies, Sets Goals for 2011 and Next Five Years," March 11, 2011. OSC ID: CPF20110311786003, p. 2. <http://www.opensource.gov>.

¹¹ U.S.-China Economic and Security Review Commission, *Hearing on China's Five-Year Plan, Indigenous Innovation and Technology Transfers, and Outsourcing*, testimony of Willy Shih, June 15, 2011.

¹² Hu Angang, "Green light for hard targets," *China Daily*, March 28, 2011.

¹³ See appendix II for a complete list of 12th FYP key indicators, including resources and environment indicators.

for the first time, not just energy efficiency... and also for the 12th Five-Year Plan we're looking at the consumption side management and not just production."¹⁴ Among the 12th FYP's environmental goals, there is a restricted target for non-fossil fuels to reach 11.4 percent of total energy consumption by 2015, as a step towards achieving 15 percent of total energy consumption by 2020. According to Chinese government statistics, non-fossil fuels accounted for 8.3% of total energy in 2010. According to Trevor Houser, partner at the Rhodium Group, in order to meet this goal, China would have to generate between 320 and 480 gigawatts of nonfossil fuel energy over the next decade; that would be between a third and a half of new global non-fossil energy capacity.¹⁵ Mr. Houser's analysis of this target is that

I would be very surprised if Beijing was successful in meeting the kind of upper bound of this. It's just a dramatic expansion of capacity in a very short period of time, but even if they get halfway there, this will transform, fundamentally, the global market for clean energy technology... It will change its price points. It will change the relative economics of low-carbon technology versus high carbon technology, and not just in China, but other places.¹⁶

The economies of scale in alternative energy that China would need to achieve to meet this goal would have the potential to transform radically global energy markets and enable China to offer unmatched prices on alternative energy to the rest of the world.

Despite these differences, there are also many similarities between the 11th and 12th FYPs. Both attempt to address challenges that have emerged from the breakneck pace of economic growth China experienced in the 1980s and 1990s.¹⁷ According to Xu Chenggang, a professor at the University of Hong Kong, the 11th and 12th FYPs identify the same underlying structural problems in the Chinese economy: (1) export-led growth is not sustainable; (2) consumption as a share of China's gross domestic product (GDP) is too low due to the low income-to-GDP ratio, weak demand, and an unsustainably high savings rate; (3) socioeconomic inequalities are growing; and (4) manufacturing needs to be upgraded to allow China to move up the value chain in light of rising labor costs and environmental protection issues. According to Professor Xu, these problems worsened between the 11th and 12th FYPs, indicating that measures adopted by the 11th FYP either were not attained or were ineffective even when they were implemented.¹⁸

Faced with this worsening situation, China has placed a key focus in the 12th FYP on the country's need to transform its economic development pattern, according to Huang Yiping,

¹⁴ Qi Ye, "China's Low-Carbon Development" (The Brookings Institution, Washington, DC, May 31, 2011). http://www.brookings.edu/~media/Files/events/2011/0531_china_carbon/20110531_china_carbon.pdf.

¹⁵ In comparison, according to Mr. Houser, "The U.S. is going to add 40 gigawatts under business as usual and maybe 70 gigawatts if we actually pass comprehensive climate legislation." Trevor Houser, "China's Low-Carbon Development" (The Brookings Institution, Washington, DC, May 31, 2011). http://www.brookings.edu/~media/Files/events/2011/0531_china_carbon/20110531_china_carbon.pdf.

¹⁶ Trevor Houser, "China's Low-Carbon Development" (The Brookings Institution, Washington, DC, May 31, 2011). http://www.brookings.edu/~media/Files/events/2011/0531_china_carbon/20110531_china_carbon.pdf.

¹⁷ C. Cindy Fan, "China's Eleventh Five-Year Plan (2006-2010): From 'Getting Rich First' to 'Common Prosperity'," *Eurasian Geography and Economics* 47:6 (2006): 710. <http://www.sscnet.ucla.edu/geog/downloads/597/300.pdf>.

¹⁸ Xu Chenggang, "The United States and China: The Next Five Years" (The Brookings Institution, Washington, DC, May 19, 2011).

Peking University professor.¹⁹ This heightened focus may have been partially fueled by the global recession and a loss of faith in America's market-oriented economic model.²⁰ The 12th FYP can therefore be understood largely as an extension and acceleration of the themes of the 11th FYP.²¹ For example, although transforming the economic development model was a theme of the 11th FYP, accelerating the transformation of the economic development model was designated the primary line in the 12th FYP. Similarly, although the "scientific development concept" (*kexue fazhan guan*)²² was unveiled in the 11th FYP, the goal of thoroughly applying the "scientific development concept" is given prominence in the 12th FYP along with the "primary goal of scientific development" (*yi kexue fazhan wei zhuti*).

A number of key goals in the 12th FYP are directed at moving the economy away from export-led growth, raising domestic consumption, and narrowing income inequality. These goals include

- 7 percent annual GDP growth;
- 4 percent expansion of the service sector as a percentage of GDP by 2015;
- an increase in annual urban disposable income to >26,810 renminbi (RMB) (US\$4,143) and annual rural disposable income to >8,310 RMB (US\$1,284) by 2015. For the first time, this increase would equal or exceed projected GDP growth for the same period;
- an expansion of urban insurance coverage by 100 million people by 2015; and
- construction of 36 million new housing units to increase the availability of affordable urban housing.²³ The central government has already pledged to build 10 million units of government-subsidized housing in 2011, allocating 103 billion RMB from the central government budget, 400-500 billion RMB from the local governments, and expecting commercial developers to contribute 500-900 billion RMB for the 1.3 trillion RMB project.²⁴
- The 12th FYP includes a "well-being" target for the first time, with a goal of increasing the average life expectancy by a year over the next five years.

¹⁹ "Transformation of the economic model' is a codeword for the increasing emphasis China has given domestic demand as a driver of economic growth since the onset of the global financial crisis in 2008. Premier Wen reiterated China's current policy slogan calling for 'accelerated economic growth driven by the coordination of consumption, investment, and exports.' " Open Source Center, "China: NPC Reconfirms China's Development Strategies, Sets Goals for 2011 and Next Five Years," March 11, 2011, p. 2. OSC ID: CPF20110311786003.

<http://www.opensource.gov>.

²⁰ Huang Yiping, "The United States and China: The Next Five Years" (The Brookings Institution, Washington, DC, May 19, 2011).

²¹ See appendix III for a list of 11th and 12th FYP major objectives.

²² "The "scientific development concept," a slogan associated with CPC Chief Hu Jintao, emphasizes balanced, sustainable development tempered by concern for social justice, and for raising standards of living. Scientific development is, in essence, a euphemism that Chinese leaders use for economic growth that takes into consideration the welfare of disadvantaged people and regions as well as environmental concerns. C. Cindy Fan, "China's Eleventh Five-Year Plan (2006-2010): From 'Getting Rich First' to 'Common Prosperity,'" *Eurasian Geography and Economics* 47:6 (2006): 708-723. <http://www.sscnet.ucla.edu/geog/downloads/597/300.pdf>.

²³ The government hopes to increase the total of urban households living in partially government state-subsidized housing from 11 percent in 2007 to 20 percent by 2015. Jamil Anderlini, "Housing subsidies at heart of Beijing's 'new deal,'" *Financial Times*, May 31, 2011.

²⁴ Of the ten million units, two million will be discounted, market-available units; two million will be low-priced, rent-to-buy units; 1.6 million will be "low-cost rental housing;" and four million will be new or renovated units in "shanty areas." Jamil Anderlini, "Housing subsidies at heart of Beijing's 'new deal,'" *Financial Times*, May 31, 2011.

Some of these goals, such as building affordable housing for poor urban residents, are expected to be met. The availability of affordable housing should increase disposable income for lower-income citizens and promote broader consumer spending.²⁵ According to a report by the auditing firm KPMG China, the Chinese government may also raise minimum wages substantially (by no less than 13 percent on average) in the next five years and hold inflation at or below 4 percent per year.²⁶

The 12th FYP will also promote scientific development to upgrade China's manufacturing sector, boost local research and development (R&D), and increase the global competitiveness of Chinese firms. Key indicators include raising R&D spending from 1.75 percent to 2.2 percent of GDP (by contrast, the United States spent 2.7 percent of GDP on R&D in 2007, ranking eighth globally²⁷); increasing the number of patents per 10,000 people; and boosting educational attainment, all under the rubric of "scientific education."

PROSPECTS FOR IMPLEMENTATION OF THE 12TH FYP

Following the release of the national FYP, provincial and municipality governments and industry regulators draft similar outlines and special plans.²⁸ In practice, five-year plans are only a link in policy documents promulgated by the central government, in between longer- and shorter-term documents, and are constantly reviewed and revised over the course of five years.²⁹ These outlines and special plans allow for more concrete implementation of the objectives in the national FYP, working implementation down to the industry and issue level. These outlines and special plans are followed by implementation measures (such as policy documents) by the departments named in the special plans.³⁰

In addition to the five-year goals, China has set annual targets to implement the plan through yearly government work reports. The following targets were set for 2011 (the first year of the 12th FYP) in Premier Wen Jiabao's Report on the Work of the Government, adopted by the National People's Congress on March 14, 2011:³¹

²⁵ Jamil Anderlini, "Housing subsidies at heart of Beijing's 'new deal'," *Financial Times*, May 31, 2011.

²⁶ KPMG China, "China's 12th Five-Year Plan: Overview," March 2011, p. 3.

<http://www.kpmg.com/CN/en/IssuesAndInsights/ArticlesPublications/Publicationseries/5-years-plan/Documents/China-12th-Five-Year-Plan-Overview-201104.pdf>.

²⁷ Adam Hersh and Christian Weller, "Measuring Future U.S. Competitiveness," Center for American Progress, February 9, 2011. http://www.americanprogress.org/issues/2011/02/pdf/productivity_snapshot.pdf.

²⁸ APCO Worldwide, "China's 12th Five-Year Plan: How it actually works and what's in store for the next five years," December 10, 2010, p. 11. http://www.apcoworldwide.com/content/pdfs/chinas_12th_five_year_plan.pdf. For example, following the release of the national 11th FYP in 2006, the Beijing Municipality released its own 11th FYP that incorporated national 11th FYP objectives such as energy efficiency and innovation, "Beijing's 11th Five-Year Plan: Outline" (translated by the Beijing Association of Enterprises with Foreign Investment), March 29, 2006.

²⁹ APCO Worldwide, "China's 12th Five-Year Plan: How it actually works and what's in store for the next five years," December 10, 2010, p. 1. http://www.apcoworldwide.com/content/pdfs/chinas_12th_five_year_plan.pdf.

For an example of a longer-term goal, the State Council announced targets on November 26, 2009, for energy reduction, carbon reduction, and nonfossil fuel energy by 2020. The 2015 targets laid out in the 12th Five-Year Plan are only an intermediate step in achieving these goals. For details on these 2020 targets, see Xinhua, "China announces targets on carbon emission cuts," November 26, 2009.

³⁰ APCO Worldwide, "China's 12th Five-Year Plan: How it actually works and what's in store for the next five years," December 10, 2010, p. 11. http://www.apcoworldwide.com/content/pdfs/chinas_12th_five_year_plan.pdf.

³¹ For a full translation of the 2011 Government Work Report in English, please see <http://www.chinaembassy.nl/eng/hldt/t807415.htm>.

- 8 percent GDP growth;
- 42.3 billion RMB (US\$6.53 billion) for Employment Assistance and Job Creation;
- 16 percent increase in broad money supply (M2);³²
- capping Consumer Price Index growth at 4 percent to stabilize prices;³³ and
- expanding use of the RMB in crossborder trade and investment and pressing ahead with making the RMB convertible under capital accounts.

According to Chinese government figures, the 11th FYP met or exceeded seven out of eight restricted goals and 11 out of 14 expected goals. The only restricted goal the 11th FYP failed to meet was reducing energy intensity per unit of GDP, despite what Derek Scissors, research fellow at The Heritage Foundation, calls “belated discoveries of additional GDP and a dubiously sharp shift in energy consumption”³⁴ and what APCO Worldwide describes as “forced electricity brown-outs in several cities in late 2010 to meet those targets.”³⁵ Since the energy intensity reduction target was “around 20 percent,” and energy intensity reduction reached 19.1 percent, China officially claims that it met this indicator as well, enabling it to hit all of its restricted targets. According to APCO Worldwide, expected goals do not carry as much weight as restricted goals because local officials are highly incentivized to meet restricted goals since these are “closely tied to the official’s career progression within the Community Party of China (CPC).”³⁶ The same is not true of expected goals. The three expected goals that were not reached in the 11th FYP were (1) service sector as a percentage of GDP, (2) service sector as a percentage of employment, and (3) R&D as a percentage of GDP.

Despite meeting most of its targets, the 11th FYP was nevertheless unsuccessful because of its failure to address underlying structural problems. Even its overwhelming success in far exceeding its projected GDP goals can be seen as a failure, since the 11th FYP meant to rein in growth, and instead the GDP growth objectives for 2010 had already been met by 2007. As Derek Scissors sums up the outcome of the 11th FYP:

*The [11th] FYP reflected Chinese President Hu Jintao’s stated goal of greater income balance. On official figures, however, income inequality appeared to worsen through 2009, and any gains in 2010 were insufficient to recover lost ground. In other words, both specific targets and grand goals of FYPs should be taken with many grains of salt.*³⁷

³² The M2 money supply is the amount of money in circulation, savings, and other time deposits. It is a key indicator for inflation forecasting.

³³ See KPMG China, “China’s 12th Five-Year Plan: Overview,” March 2011, p. 4.

<http://www.kpmg.com/CN/en/IssuesAndInsights/ArticlesPublications/Publicationseries/5-years-plan/Documents/China-12th-Five-Year-Plan-Overview-201104.pdf>; Xinhua, “Highlights: Premier Wen’s Work Report,” March 5, 2011. http://news.xinhuanet.com/english2010/china/2011-03/05/c_13762942.htm; Embassy of the People’s Republic of China, “Issue 21 -- Premier Wen Jiabao Elaborated on Major Objectives and Tasks for 12th Five-Year Plan Period and 2011 in Particular at Fourth Session of the Eleventh National People’s Congress,” March 16, 2011. <http://www.chinaembassy.nl/eng/hldt/t807415.htm>.

³⁴ Derek Scissors, “China’s new five-year plan,” Reuters, March 10, 2011.

³⁵ APCO Worldwide, “China’s 12th Five-Year Plan: How it actually works and what’s in store for the next five years,” December 10, 2010, p. 2. http://www.apcoworldwide.com/content/pdfs/chinas_12th_five_year_plan.pdf.

³⁶ APCO Worldwide, “China’s 12th Five-Year Plan: How it actually works and what’s in store for the next five years,” December 10, 2010, p. 11. http://www.apcoworldwide.com/content/pdfs/chinas_12th_five_year_plan.pdf.

³⁷ Derek Scissors, “China’s new five-year plan,” Reuters, March 10, 2011.

A scorecard from The Economist Intelligence Unit provides a broader assessment of the 11th FYP. It gives the 11th FYP an A+ in Economic Growth and Jobs, a B in Inclusive Growth, a D in Economic Rebalancing, and a C in the Environment.³⁸

To better address the range of targets beyond GDP growth, the central government has begun to provide additional incentives to local officials to achieve other five-year plan goals. For example, the central government began to send out teams of officials to the provinces at the end of the 11th FYP to ensure that energy intensity targets were met and adopted other metrics (e.g., setting up the “China’s Top-1000 Energy-Consuming Enterprises Program) to make local officials prioritize reducing energy intensity.³⁹ The government appears prepared to unveil similar mechanisms to promote the completion of 12th FYP goals, at least as related to environmental goals.⁴⁰ According to Qi Ye, “[T]he 11th Five-Year Plan was the five years when we saw considerable change in the mix of the incentives, the structure of the incentives. Take the environment, for example... for the pollution reduction, not really in this energy saving, but for the pollution reduction part, that really changed quite considerably.”⁴¹

Nevertheless, there are reasons to suspect that the 12th FYP will not be any more successful than the 11th FYP, even if it does manage to meet most of its expected and restricted key indicators. Although the 12th FYP calls for economic restructuring and a preference for quality growth over growth at any cost, it is unclear whether the provinces really understand or appreciate this. For example, despite the 12th FYP’s call for a reduction in projected GDP growth, “every province and major city have growth goals that exceed the lower seven percent target. Shanghai’s 12th FYP posits eight percent growth, and several provinces already have announced growth targets of 13 percent or higher.”⁴² Therefore, a critical disconnect remains between central government planners and the local governments responsible for implementing the 12th FYP. Moreover, the political transition underway in Beijing may make it more difficult to make major changes to the incentive structure than it was for the 11th FYP.⁴³

BREAKDOWN OF THE 12TH FYP INDUSTRIAL POLICY

The 12th FYP establishes Chinese industrial policy for the next five years. The 12th FYP seeks to make scientific development a primary objective, strengthen strategic emerging industries, and build up infrastructure. These areas of focus provide a layout for future, large-scale government investments and indicate which industries will receive preferential government support.

³⁸ The complete report card, with analysis, can be found in Alexander van Kemenade, “China’s 12th Five Year Plan or how to turn an oil tanker around,” Economist Intelligence Unit, January 2011.

http://graphics.eiu.com/upload/eb/China_Five_Year_Plan_Jan2011_Public.pdf.

³⁹ “China’s 12th Five Year Plan and Related Energy and Environmental Policies” (U.S. Chamber of Commerce, May 25, 2011).

⁴⁰ “China’s 12th Five Year Plan and Related Energy and Environmental Policies” (U.S. Chamber of Commerce, May 25, 2011).

⁴¹ Kenneth Lieberthal and Qi Ye, “China’s Low-Carbon Development” (The Brookings Institution, Washington, DC, May 31, 2011).

http://www.brookings.edu/~media/Files/events/2011/0531_china_carbon/20110531_china_carbon.pdf.

⁴² Kenneth Jarrett and Carly Ramsey, “China’s 12th Five-Year Plan,” *Insight*, April 2011.

⁴³ Qi Ye, “China’s Low-Carbon Development”, (The Brookings Institution, Washington, DC, May 31, 2011).

http://www.brookings.edu/~media/Files/events/2011/0531_china_carbon/20110531_china_carbon.pdf.

Scientific Development as a Primary Objective

Scientific development and a move up the value chain sits at the heart of the 12th FYP. Jia Qinglin, chairman of the Chinese People's Political Consultative Conference National Committee, notes that "[t]he success of the 12th FYP (2011-2015) rests on science and technology and indigenous innovation capacity."⁴⁴ Although the concept of "indigenous innovation" and a focus on science were already present in the 11th FYP, the 12th FYP's increased focus upon scientific development can be seen in the four key indicators that are now categorized as "Scientific Education": (1) R&D as a percentage of GDP; (2) patents per 10,000 people; (3) rate of nine-year compulsory education enrollment; and (4) rate of high school enrollment.

- 1) R&D as a percentage of GDP was categorized as an economic structure indicator in the 11th FYP and was one of three nonrestrictive indicators that China failed to meet in the 11th FYP. R&D in China accounted for 1.75 percent of GDP in 2010, far below the government's expected goal of 2 percent for 2010.
- 2) A patent per 10,000 people is a key goal that was not present in the 11th FYP. This reflects China's focus on Chinese companies obtaining their own intellectual property so that they can create their own products rather than simply assembling products for multinational corporations. The anticipated 3.3 patents per 10,000 people in 2015 would nearly double the number approved in 2010.
- 3) and 4) The two new educational indicators replaced "average educational attainment" in the 11th FYP. These new indicators reveal the government's emphasis on providing more sophisticated, higher-level education with an emphasis on scientific achievement.

Supporting Strategic Emerging Industries

The 12th FYP designates seven strategic emerging industries (SEI) as the drivers for China's future economic development from low-end manufacturing to higher-value industries and creating sustainable growth. These industries include clean energy technology; next-generation information technology (IT); biotechnology; high-end equipment manufacturing; alternative energy; new materials; and clean energy vehicles.⁴⁵ Four of these industries (biotechnology, high-end equipment manufacturing, new materials, and next-generation IT) were previously identified as target industries in the 11th FYP.

As a reflection of China's broader development goals, three of these industries align with sustainable growth (alternative energy, clean energy vehicles, and clean energy technology), and four industries align with moving up the value chain (biotechnology, new materials, next-generation IT, and high-end equipment manufacturing).⁴⁶ The central government established a clear goal to grow these seven industries from 5 percent of GDP in 2010 to 8 percent by 2015

⁴⁴ Xinhua, "China's top political stresses indigenous innovation," April 19, 2011.

⁴⁵ A complete listing of these seven industries and 37 projects for sub-industries can be found in appendix IV.

⁴⁶ KMPG China, "China's 12th Five-Year Plan: Overview," March 2011. p. 2.

<http://www.kpmg.com/CN/en/IssuesAndInsights/ArticlesPublications/Publicationseries/5-years-plan/Documents/China-12th-Five-Year-Plan-Overview-201104.pdf>

and 15 percent by 2020.⁴⁷ According to a report by the consulting firm APCO Worldwide, the central and local government and private sector are expected to spend approximately 14 trillion RMB (US\$2.16 trillion) over the next five years to achieve this target.⁴⁸ While the 12th FYP does not specify subsidies, standard subsidies like preferred financing, tax breaks, subsidized electricity and utility fees, free or subsidized land, etc. may be made available to SEIs by local governments. According to the Ministry of Finance Chief of Staff Hu Jinglin in December 2010, the Ministry of Finance will use finance and taxation policy to support the development of the SEIs, including providing multiple channels for financing. The Ministry of Finance will also encourage its regional offices to develop local policies and will urge local governments to take a share in SEIs and develop investment funds.⁴⁹ This commitment was reiterated in the National Development and Reform Commission's (NDRC) draft, "Major Tasks and Measures for Economic and Social Development in 2011," released in March 2011:

*We will quickly formulate and implement a development plan and supporting policies for strategic emerging industries, set up a special fund for promoting their development, expand the scale of venture capital investment in them, formulate a guiding list for developing them, and work out industry standards for major emerging industries.*⁵⁰

Preferential government policies have previously been helpful in establishing "national champions" in industries such as telecommunications, steel, and railway.⁵¹ However, there are claims that some of this past success has been predicated upon forced technology transfer and technology theft.⁵²

Most of these seven strategic industries are expecting high levels of growth in the next five to ten years. For example, smart grid technology, which focuses on increasing the efficiency of current utility companies, has enormous growth potential, with utilities companies worldwide expected to invest \$375 billion by 2030.⁵³ According to Catherine Viola, a senior analyst at Innovation Observatory, "China's plans for wide-scale smart meter deployment will see it install over 360 million smart meters by 2030.... We expect China's overall spending on smart grid development

⁴⁷ APCO Worldwide, "China's 2011 National People's Congress (NPC): Fine-tuning the economy with an eye on social stability," March 2011, p. 6. http://www.apcoworldwide.com/content/PDFs/npc_briefing_2011.pdf.

⁴⁸ APCO Worldwide, "China's 2011 National People's Congress (NPC): Fine-tuning the economy with an eye on social stability," March 2011, p. 6. http://www.apcoworldwide.com/content/PDFs/npc_briefing_2011.pdf.

⁴⁹ *Zhongguo Zhengjuan Bao*, "Guli Jinrong Jigou Rongzi Zhichi Zhanluexing Xinxing Chanye (Encourage Finance Institutions to Support SEIs)," December 1, 2010.

⁵⁰ National Development and Reform Commission, *Report on the Implementation of the 2010 Plan for National Economic and Social Development and on the 2011 Draft Plan for National Economic and Social Development*, Fourth Session of the Eleventh National People's Congress, March 5, 2011. <http://online.wsj.com/public/resources/documents/2011NDRCReportEng.pdf>.

⁵¹ For example, in the railway industry, China went from producing steam engines more than ten years ago to competing internationally, including submitting a joint proposal with GE in 2010 for constructing bullet trains in California. Patrick Chovanec, "China's Been Working on the Railroad," *Business Insider*, May 25, 2011.

⁵² On claims of technology theft in the railway industry, see Thomas M. Hout and Pankaj Ghemawat, "China vs the World: Whose Technology Is It?" *Harvard Business Review*, December 2010; Robert Samuelson, "China's new world order demands stronger U.S. response," *Washington Post*, January 24, 2011.

⁵³ Smart grid technology focuses on increasing the efficiency of utility companies through grid automation, communications infrastructure, IT systems and hardware, systems integration, smart meters, and home area network equipment. *PKWeb UK*, "Ten Countries will account for 80% of global smart grid investment by 2030," February 14, 2011.

to reach US\$99 billion by that date – more than a quarter of the global total.”⁵⁴ This high demand will provide a strong, growing market for the emergence of Chinese enterprises.

Chinese government support for at least one of these industries has been successful in the past. During the 11th FYP, China designated clean energy technology (solar, wind, bio, and nuclear energy) for government support, spending approximately 2 trillion RMB (US\$309 billion) on energy efficiency and environmental protection measures.⁵⁵ Currently, Chinese companies have emerged as global leaders in wind⁵⁶ and solar power.⁵⁷ More specifically, Chinese solar manufacturing companies have become the world’s largest producer of photovoltaic solar cells and modules and control approximately 17 percent of the global market for the production of silicon.⁵⁸ The 12th FYP expands upon these developments to support more resource usage technologies such as the smart grid.⁵⁹ The Chinese government also appears set to take measures to bolster demand for its SEI products. For example, China plans to invest US\$100 million to build power projects using Chinese solar panels in 40 African nations.⁶⁰ As with clean energy, over the next five years, the Chinese central and local governments are expected to devote significant resources to all seven SEIs, creating both potential opportunities and challenges for foreign firms.

Building Infrastructure

The 12th FYP devotes significant resources to expanding China’s transportation and energy infrastructure. In regard to transportation, China will seek to relieve traffic congestion by expanding its express railway network, constructing larger capacity roads and highways, and expanding current port capabilities.⁶¹ In addition, the improved infrastructure will promote interregional trade and facilitate the growth of underdeveloped inland regions. The 12th FYP specifies:

- a 70 percent or a higher percentage of Class 2 standards or above for its national highways;⁶²

⁵⁴ PKWeb UK, “Ten Countries will account for 80% of global smart grid investment by 2030,” February 14, 2011.

⁵⁵ Donews, “China’s Five-year Plan & Renewable Energy – A Detailed Explanation” (translated by Deblock Consulting), March 21, 2011. <http://deblockconsulting.com/blog/china-news/chinas-five-year-plan-renewable-energy-a-detailed-explanation/>; APCO Worldwide, “China’s 2011 National People’s Congress (NPC): Fine-tuning the economy with an eye on social stability,” March 2011. http://www.apcoworldwide.com/content/PDFs/npc_briefing_2011.pdf.

⁵⁶ In 2009, three of the ten largest wind turbine manufacturers in the world were Chinese — Sinovel, Goldwind, and Dongfang. John Acher, “China became top wind power market in 2009: consultant,” Reuters, March 29, 2010.

⁵⁷ China has been the largest solar cell producer since 2008. In 2009, four of the ten largest photovoltaic cells and modules producers in the world were Chinese — Suntech Power, Yingli, JA Solar, and Trina Solar. W. P. Hirshman, “Surprise, surprise (cell production 2009: survey),” *Photon International* (March 2010): 176-199.

⁵⁸ Jacob Funk Kirkegaard, et al., “Toward a Sunny Future? Global Integration in the Solar PV Industry,” *Working Paper*, May 2010. p. 21. http://pdf.wri.org/working_papers/toward_a_sunny_future.pdf.

⁵⁹ Donews, “China’s Five-year Plan & Renewable Energy – A Detailed Explanation” (translated by Deblock Consulting), March 21, 2011. <http://deblockconsulting.com/blog/china-news/chinas-five-year-plan-renewable-energy-a-detailed-explanation/>.

⁶⁰ *China Daily*, “China plans African ventures,” June 8, 2011.

⁶¹ The 11-day traffic jam on the Beijing-Tibet Highway in August 2010 highlights rising traffic congestion. Lisa Liang, “China traffic jam vanishes overnight?” *Christian Science Monitor*, August 26, 2010. <http://www.csmonitor.com/World/Global-News/2010/0826/China-traffic-jam-vanishes-overnight>.

⁶² Class 2 highways are double-lane highways that can handle an average daily transportation volume of 5,000-15,000 vehicles. Ministry of Communications of the People’s Republic of China, “Technical Standard of Highway

- 83,000 kilometers (km) worth of available mileage on its National Expressway Network, with seven radial lines, nine longitudinal, and 18 transverse lines;
- an addition of 42 national integrated traffic hubs; and
- 440 10,000-ton and above deep berths to expand the capacities of its current ports;

The new energy infrastructure will increase China's alternative energy capabilities, improve current electrical power capabilities, and expand access to oil and natural gas in an effort to answer the growing demands of its economy. This construction will also meet one of the central goals of the 12th FYP—"establish a resource-conserving environmentally friendly society... deepen the thorough application of the basic national policy of conserving resources and protecting the environment... take the path of sustainable development." To achieve this goal, the 12th FYP calls for:

- a 120 million kilowatt (kW) increase in hydropower capacity;
- a 70 million kW increase in offshore, large wind power bases capacity;
- a 40 million kW increase in nuclear power capacity, though Japan's recent nuclear crisis has led to a temporary suspension of new construction;
- a 5 million kW increase in solar energy installed capacity;
- a 200,000 km increase in power transmission lines of 330 kilovolts or higher; and
- a 150,000 km increase in the total length of its oil and gas transmission pipelines.

CRITICAL ASSESSMENT

If the 12th FYP is fully implemented, some experts believe that "by 2015, China will be a fairer, greener society. Rising incomes will have boosted consumption and industry will have clambered up the technology ladder."⁶³ Economist Stephen Roach claims that the 12th FYP

*is likely to go down in history as one of China's boldest strategic initiatives. In essence, it will change the character of China's economic model -- moving from the export- and investment-led structure of the past 30 years toward a pattern of growth that is driven increasingly by Chinese consumers. This shift will have profound implications for China, the rest of Asia, and the broader global economy.*⁶⁴

However, many scholars are doubtful that China will achieve the fundamental changes to the environment, scientific development and the economy proposed in the 12th FYP.

Some analysts are skeptical that the plan will prove to really make China a greener place. According to the environmental activist group Greenpeace, the 11th FYP was successful in leading to "the closure of thousands of inefficient power plants among the numerous energy saving and emission reduction measures that were implemented." Greenpeace therefore sees the 12th FYP's call for a 16 percent reduction in energy intensity a step back from the 20 percent reduction goal in the 11th FYP and believes that the new target "is not high enough to encourage

Engineering" (translated by the Asian Development Bank), January 29, 2004, p. 9.

<http://www.adb.org/projects/prcroadsafety/news/tech-standard-hwy-engineering.pdf>

⁶³ Alan Wheatley, "Why the world should heed China's five-year plan," Reuters, March 7, 2011.

⁶⁴ Stephen Roach, "Change of model imperative," *China Daily*, February 28, 2011; see also Stephen S. Roach, "China's 12th Five-Year Plan: Strategy vs. Tactics," Morgan Stanley, March 21, 2011.

http://www.morganstanley.com/im/emailers/inst/pdf/China_12th_Five_Year_Plan.pdf

local governments and industry to change their growth models.”⁶⁵ According to Mr. Houser, the success or failure of the 12th FYP’s energy efficiency goals can be tied to its more general mandate to restructure the economy. If China can develop its service sector and reduce its reliance on heavy industry, then a 16 percent energy reduction will be easy to achieve.⁶⁶ However, China’s more ambitious goal of having nonfossil fuels account for 11.4 percent of all energy used by 2015 will be much more difficult to achieve.⁶⁷

The 12th FYP states that scientific development should be a primary support for accelerating the transformation of the economy.⁶⁸ However, some critics doubt that increasing the number of patents in China will boost domestic innovation because of the large number of minimally innovative “utility model” patents applied for within China. These “utility model” patents are alterations or upgrades to existing technology that may be registered without an inspection.⁶⁹ While the 12th FYP calls for a large increase in the number of these patents, David C. Schmittlein, dean of the Sloan School of Management at the Massachusetts Institute of Technology, has stated that China’s focus should be on quality innovation over large numbers of low-value patents.⁷⁰

As for economic restructuring more generally, the 12th FYP does not indicate how the economy will become less reliant on capital spending, have more liberalized financial markets, or fundamentally shift China’s global trade balance. According to Stephen Green, regional head of research at the Standard Chartered Bank in Shanghai, although the 12th FYP claims that it wants growth to slow and be more equitable, “[t]here’s absolutely no sign that the percentage of investment in GDP is slowing. And there are no signs of liberalization of the service sector to allow the private sector to take a bigger share of the economy.”⁷¹ Moreover, Dr. Green does not believe that the plan will enable labor to acquire a significantly larger share of GDP, which would, in turn, enable the sort of boost in consumer spending called for by the 12th FYP.⁷²

According to Eswar Prasad, professor at Cornell University, one reason that the FYP is a bit “skimpy” on details related to major structural changes--especially related to shifting to a consumption-driven economy and opening up financial systems--is the inherent tension between

⁶⁵ Greenpeace, “Insights & Commentary: China’s 12th Five-Year Plan,” March 3, 2011.

<http://www.greenpeace.org/raw/content/eastasia/press/reports/greenpeace-commentary-twelfth-five-year-plan.pdf>

⁶⁶ Trevor Houser, “China’s Low-Carbon Development” (The Brookings Institution, Washington, DC, May 31, 2011). http://www.brookings.edu/~media/Files/events/2011/0531_china_carbon/20110531_china_carbon.pdf.

⁶⁷ Trevor Houser, “China’s 12th Five Year Plan and Related Energy and Environmental Policies” (U.S. Chamber of Commerce, May 25, 2011).

⁶⁸ See “Primary Objective” in appendix III.

⁶⁹ Eve Y. Zhou and Bob Stembridge, “World IP [intellectual property] Today Report: Patented in China – The Present and Future State of Innovation in China,” Reuters, December 10, 2008, slide 22: “Approximately half of all Chinese patents filed in 2009 were utility models, which are less-rigorous, more-affordable forms of patents that provide 10 years of protection (versus 20 years for invention patents). The use of utility model patents in China has grown at a rate of 18 percent per annum since 2001.” Thomson Reuters, “China Poised to Become Global Innovation Leader,” Press Release, October 6, 2010. http://thomsonreuters.com/content/press_room/legal/626670.

See also *Economist*, “Innovation in China. Patents, yes; ideas, maybe,” October 14, 2010. <http://www.economist.com/node/17257940>.

⁷⁰ See Joy Li, “Innovation the key to future success,” *China Daily*, November 3, 2010.

⁷¹ Alan Wheatley, “Why the world should heed China’s five-year plan,” Reuters, March 7, 2011.

⁷² Alan Wheatley, “Why the world should heed China’s five-year plan,” Reuters, March 7, 2011.

China's short- and long-term objectives. For example, while significantly raising wages would certainly boost domestic consumption, it would also drive up inflation.⁷³ Moreover, structural change would not be to everyone's benefit. As Dr. Prasad stated, "...the present system works very well for a lot of people in China. For the politically well-connected state-owned enterprise bosses, for many of the bank chairmen, this is actually a very good system because it keeps profits flowing into the state enterprises, into the banks..."⁷⁴ Perhaps as a result of these tensions, Steve Dickinson, a lawyer with Harris & Moure, has noted in a well-regarded legal blog that rather than promoting real structural transformation, the plan continues to put China on an "infrastructure/industry/export led growth model... The focus of the entire project is [still] to transform China into a modern industrial powerhouse on the model of Japan/Germany/Korea."⁷⁵

⁷³ Bloomberg, "Brookings Institution's Prasad Interview on China," March 7, 2011.

<http://www.bloomberg.com/video/67377480/>.

⁷⁴ U.S.-China Economic and Security Review Commission, *Hearing on China's Five-Year Plan, Indigenous Innovation and Technology Transfers, and Outsourcing*, testimony of Eswar Prasad, June 15, 2011.

⁷⁵ Steven Dickinson, "China's 12th Five-Year Plan. A Necessary Revisiting. Part II. The Reality," *Chinalaw Blog*, April 14, 2011.

Appendix I: The Formulation of the 12th FYP

Five-year plans are prepared by the powerful NDRC with guidance from the CPC and are ratified by the National People's Congress.¹ The 12th FYP ushered in a new development by featuring extensive opinions from international and domestic experts.²

In the latter half of 2008, the NDRC requested that the Center for China Studies at Tsinghua University, the Development Research Center of the State Council, and the World Bank conduct a review of the 11th FYP. This review found that the “11th FYP’s economic growth targets would be met, but that economic restructuring was occurring only slowly.”³ In November 2008, after consulting thousands of experts and scholars, the NDRC convened a 12th FYP preparatory task force under the direction of CPC organs like the Central Committee and the Politburo.⁴ By late 2009, the NDRC had formed the principles of the plan and began drafting the 12th FYP.⁵

In February 2010, Executive Vice Premier Li Keqiang was appointed to head a drafting group for the October Party Plenum, and led the drafting group’s visits to the provinces to research conditions on the ground.⁶ After the draft was revised by the Central Committee, the 12th FYP Guidelines were endorsed by senior State Council and CPC Central Committee leaders at the Fifth Plenary Session of the 17th Central Committee of the CPC on October 18, 2010. These guidelines (*jianyi*) provide the overarching themes of the 12th FYP.⁷ Over the next four months, the National Experts Committee, consisting of 37 experts chosen by the Chinese State Council, reviewed the draft.⁸ Although the degree of influence of these comments upon the final plan is unclear, the NDRC also began to accept comments on the guidelines from the public (including foreigners) and set up a program for public hearings and a meeting chaired by Premier Wen Jiabao.⁹ On March 14, 2011, this process culminated in the ratification of the outline (*gangyao*), which includes concrete targets and is generally referred to as the “Five-Year Plan”.¹⁰

¹ APCO Worldwide, “China’s 12th Five-Year Plan: How it actually works and what’s in store for the next five years”, (December 10, 2010), pp. 10-11. http://www.apcoworldwide.com/content/pdfs/chinas_12th_five-year_plan.pdf.

² C. Cindy Fan, “China’s Eleventh Five-Year Plan (2006-2010): From ‘Getting Rich First’ to ‘Common Prosperity’”, *Eurasian Geography and Economics* 47:6 (2006): 708-723. <http://www.sscnet.ucla.edu/geog/downloads/597/300.pdf>.

³ Deborah Seligsohn and Xiaomei Tan, “How China Developed Its 12th Five-Year Plan,” *ChinaFAQs*, March 23, 2011.

⁴ APCO Worldwide, “China’s 12th Five-Year Plan: How it actually works and what’s in store for the next five years” (December 10, 2010), pp. 2, 10. http://www.apcoworldwide.com/content/pdfs/chinas_12th_five-year_plan.pdf.

⁵ APCO Worldwide, “China’s 12th Five-Year Plan: How it actually works and what’s in store for the next five years” (December 10, 2010), p. 2. http://www.apcoworldwide.com/content/pdfs/chinas_12th_five-year_plan.pdf.

⁶ Deborah Seligsohn and Xiaomei Tan, “How China Developed Its 12th Five-Year Plan,” *ChinaFAQs*, March 23, 2011.

⁷ APCO Worldwide, “China’s 12th Five-Year Plan: How it actually works and what’s in store for the next five years” (December 10, 2010), p. 11. http://www.apcoworldwide.com/content/pdfs/chinas_12th_five-year_plan.pdf.

⁸ Deborah Seligsohn and Xiaomei Tan, “How China Developed Its 12th Five-Year Plan,” *ChinaFAQs*, March 23, 2011.

⁹ APCO Worldwide, “China’s 12th Five-Year Plan: How it actually works and what’s in store for the next five years” (December 10, 2010), p. 2. http://www.apcoworldwide.com/content/pdfs/chinas_12th_five-year_plan.pdf. Deborah Seligsohn and Xiaomei Tan, “How China Developed Its 12th Five-Year Plan,” *ChinaFAQs*, March 23, 2011.

¹⁰ APCO Worldwide, “China’s 12th Five-Year Plan: How it actually works and what’s in store for the next five years”, (December 10, 2010), p. 2. http://www.apcoworldwide.com/content/pdfs/chinas_12th_five-year_plan.pdf.

Appendix II: Key Indicators in China's 11th and 12th Five-Year Plans¹¹

Economic Targetsⁱ

Target	11 th FYP (2010 Target)	11 th FYP Category	2010 (Actual)	12 th FYP (by 2015)	12 th FYP Category
Average GDP Growth	7.5% (E)	Economic Growth	11.2%	7% ¹¹ (E)	Economic Development
Average GDP Growth Per Person	6.6% (E)	Economic Growth	10.6%	N/A ¹²	N/A
Service Sector as % of GDP	43.3% (E)	Economic Structure	43%	47% (E)	Economic Development
Service Sector as % of Total Employment	35.3% (E)	Economic Structure	34.8%	N/A	N/A
Urbanization (%)	47% (E)	Economic Structure	47.5%	51.5% (E)	Economic Development
R&D as % of GDP	2% (E)	Economic Structure	1.75%	2.2% (E)	Scientific Education
Patents per 10,000 People	N/A	N/A	1.7	3.3 (E)	Scientific Education
Strategic Industry as a % of GDPⁱⁱⁱ	N/A	N/A	N/A	+8.0%	N/A

Population Targets

Target	11 th FYP (2010 Target)	11 th FYP Category	2010 (Actual)	12 th FYP (by 2015)	12 th FYP Category
Population Cap	1.36 billion (R)	Population, Resources, and the Environment (PRE)	1.341 billion	1.39 billion (R)	People's Life
Life Expectancy	N/A	N/A	73.5	74.5 (E)	People's Life
Average Educational Attainment	9 Years (E) (+0.5 Years)	Public Services and People's Life (PSPL)	9 Years	N/A	N/A
Rate of Nine-Year Compulsory Education Enrollment	N/A	N/A	89.7%	93% (R)	Scientific Education
Rate of High School Enrollment	N/A	N/A	82.5%	87% (E)	Scientific Education
New urban jobs created (5-year total)	45 million (E)	PSPL	57.71 million	45 million (E)	People's Life
Transfer of rural labor (5-year total)	45 million (E)	PSPL	45 million	N/A	N/A

¹¹ In the chart, restricted targets have an (R) next to them, and expected targets an (E).

¹² N/A indicates that this was not a designated key indicator in the relevant five-year plan.

Urban registered unemployment rate	5% (E)	PSPL	4.1%	Under 5%	People's Life
Urban annual per capita disposable income (RMB)	13,390 (+5%) (E)	PSPL	19,109 (+9.7%)	>26,810 (>+7%) (E)	People's Life
Rural annual per capita income (RMB)	4,150 (+5%) (E)	PSPL	5,919 (+8.9%)	>8,310 (>+7%) (E)	People's Life
Urban population with basic retirement insurance	223 million (+5.1%) (R)	PSPL	257 million	357 million (R)	People's Life
New Rural Cooperative Health Care Coverage^{iv}	>80% (>+56.5%) (R)	PSPL	96.3%	N/A	N/A
Working and Nonworking Urban and Rural Cooperative Health Care Coverage	N/A	N/A	N/A	+3% (R) ^v	People's Life
Construction of affordable urban housing (5-year total)	N/A	N/A	N/A	36 million housing units (R)	People's Life

Resources and Environmental Targets

Target	11th FYP (2010 Target)	11th FYP Category	2010 (Actual)	12th FYP (by 2015)	12th FYP Category
Reduction in energy intensity per unit of GDP	20% (R)	PRE	19.1%	16% (R)	Resources & Environment
Reduction of water consumption per unit of industrial value added	30% (R)	PRE	36.7%	30% (R)	Resources & Environment
Increase of water efficiency coefficient in agricultural irrigation	0.5 (E) (+0.05)	PRE	0.5	0.53 (E)	Resources & Environment
Comprehensive Utilization Rate of Industrial Solid Wastes	60% (E) (+4.2%)	PRE	69%	N/A	N/A
Farmland Reserves	120 million hectare (R)	PRE	121.2 million hectare	121.2 million hectare ^{vi} (R)	Resources & Environment
Forest Coverage	20% (R) (+1.8%)	PRE	20.36%	21.66% (R)	Resources & Environment
Forest Stock^{vii}	N/A	N/A	13.7 trillion cubic meters	14.3 trillion cubic meters	Resources & Environment
Reduction in carbon emissions per unit of GDP	N/A	N/A	N/A	17% (R)	Resources & Environment
Nonfossil fuel as a percent of primary energy consumption	N/A	N/A	8.3%	11.4% (R)	Resources & Environment

Reduction of emission of major pollutants	10% (R)	PRE	CO2 – 14.29%, COD – 12.45%	N/A	N/A
<i>Reduction in Chemical Oxygen Demand (COD)</i>	N/A		N/A	-8% (R)	Resources & Environment
<i>Reduction in Sulphur Dioxide (SO2)</i>	N/A	N/A	N/A	-8% (R)	Resources & Environment
<i>Reduction in Ammonia Nitrogen</i>	N/A	N/A	N/A	-10% (R)	Resources & Environment
<i>Reduction in Nitrous Oxides</i>	N/A	N/A	N/A	-10% (R)	Resources & Environment

ⁱ In the 11th FYP, these are designated “economic structure” targets. In the 12th 5-year plan, these are designated “economic development” targets.

ⁱⁱ Note – “Every province and major city have growth goals that exceed the lower seven percent target. Shanghai’s 12th FYP posits eight percent growth, and several provinces already have announced growth targets of 13 percent or higher.” Kenneth Jarrett and Carly Ramsey, “China’s 12th Five-Year Plan,” *Insight*, April 2011.

ⁱⁱⁱ This indicator is not officially included among key indicators in the 12th FYP, but it is stated in the body. Therefore, it is neither “restricted” nor “expected.”

^{iv} The health care target directly addressed the widespread criticism that China’s rural citizens have been shortchanged, as they are left out of the social protection system available only to urban residents. C. Cindy Fan, “China’s Eleventh Five-Year Plan (2006-2010): From ‘Getting Rich First’ to ‘Common Prosperity’,” *Eurasian Geography and Economics* 47:6 (2006): 708-723. <http://www.sscnet.ucla.edu/geog/downloads/597/300.pdf>.

^v According to Premier Wen Jiabao in a speech at the 11th People’s National Conference on March 5, 2011, “Participation in the basic medical insurance system for working and non-working urban residents and the new rural cooperative medical care system will increase and stabilize, and we will increase the proportion of expenses for medical treatment paid out of the medical insurance fund to over 70 percent in accordance with relevant policies.” *Sina*, “Report on the Work of the Government,” March 5, 3011.

http://blog.sina.com.cn/s/blog_7863401b0100pmxl.html.

^{vi} The 12th FYP lists this as 1.818 billion *mu*, which is the equivalent of 121.2 million hectares.

^{vii} In the 12th FYP, forest coverage and forest growth are included in the overarching key indicator “Forest Growth.”

Appendix III: Major Objectives in China's 11th and 12th Five-Year Plans

11 th FYP ¹	12 th FYP ²
Holistically and thoroughly implement the Scientific Development Concept (<i>quanmian guanche luoshi kexue fazhan guan</i>)	Deepen the thorough application of the Scientific Development Concept (<i>shenru guanche luoshi kexue fazhan guan</i>)
Steady and relatively rapid economic development (<i>jingji pingwen jiaokuai fazhan</i>)	Long-term steady and relatively rapid economic development (<i>jingji changqi pingwen jiaokuai fazhan</i>) ³
Primary line – Adjust the economic structure (<i>tiaozheng jingji jigou</i>)	Primary line – Accelerate the transformation of our economic development model (<i>jiakuai zhuanbian fazhan fangshi</i>)
Basic anchor point (<i>jiben lizudian</i>) – Expand domestic demand, especially consumer demand (<i>kuoda guonei xuqiu tebie shi xiaofei xuqiu</i>)	Primary objective ⁴ – scientific development (<i>yi kexue fazhan wei zhuti</i>), as a primary support for accelerating the transformation of the economy, strengthen indigenous innovation (<i>zengqiang zizhu chuangxin nengli</i>)
Basic national policy (<i>jiben guoce</i>)/ Point of Strength (<i>zhuolidian</i>) - Conserve and make efficient use of resources, transform the economy to achieve sustainable development	Main direction of the offensive (<i>zhugong fangxiang</i>) – Strategically adjust the economic structure, establish a long-term mechanism of expanding domestic demand (<i>goujian kuada neixu changxiao jizhi</i>), develop the Strategic Emerging Industries, accelerate the development of the service sector, coordinate urban and rural development, and promote urbanization
National strategy (<i>guojia zhanlue</i>) – Strengthen indigenous innovation (<i>zengqiang zizhu chuangxin nengli</i>)	Basic starting point (<i>genben chufadian</i>) - Protect and improve the lives of the people (<i>baozhang he gaishan minsheng</i>), common prosperity (<i>gongtong fuyu</i>)
Coordinate urban and rural development	Major Point of Strength (<i>zhuyao zhuolidian</i>) – Establish a resource-conserving, environmentally friendly society, deepen the thorough application of the basic national policy of conserving resources and protecting the environment, take the path of sustainable development
Source of Power (<i>dongli</i>) Continuously deepen reform and opening up (<i>buduan shenhua gaigekaiyang</i>)	Mighty Source of Power (<i>qiangda dongli</i>) - Deepen reform and opening up (<i>shenhua gaigekaiyang</i>)
Strengthen the establishment of harmonious society (<i>hexie shehui</i>), put people first (<i>yiren weiben</i>), increase employment by all means available, focus upon social justice	Harmonious and stable society (<i>shehui hexie wending</i>), protect and improve the lives of the people
	Encourage cultural production to increase China's "soft power" (<i>tisheng guojia ruan shili</i>) ⁵

¹ Chapter 2 of the 11th FYP (entitled “Thoroughly implement the Scientific Development Concept”) unveils six principles and six key points of emphasis in its second chapter.

² Chapter 2 of the 12th FYP (entitled “Guiding Thoughts”) lists five basic requirements.

³ The 12th FYP makes specific reference to the shocks of the international financial crisis in this sentence.

⁴ The term primary objective (*zhuti*) is not used in the 11th Five-Year Plan.

⁵ “Soft power” (*ruan shili*) is not mentioned among major objectives in Chapter 2 of the 12th FYP, but it is mentioned twice in the document, as opposed to zero times in the 11th FYP.

Appendix IV: The 12th FYP's Seven SEIs and 37 Projects for Sub-industries¹

Clean Energy Technology	<ul style="list-style-type: none"> • High-efficiency and energy saving • Advanced Environmental Protection • Recycling Usage • Reusing Waste Products
Next-Generation IT	<ul style="list-style-type: none"> • Next-generation mobile communications • Next-generation core Internet equipment • Smart devices • Internet of Things • Convergence of telecom/cable TV/Internet networks • Cloud Computing • New Displays • Integrated Circuits • High-end Software • High-end Servers • Digitization of culture and creative industries
Biotechnology	<ul style="list-style-type: none"> • Bio-pharmaceuticals • Innovative pharmaceuticals • Biomedicine • Bioagriculture • Biomanufacturing • marine biology
High-end Equipment Manufacturing	<ul style="list-style-type: none"> • Aerospace and space industries • Rail and transportation • Ocean engineering • Smart assembly
Alternative Energy	<ul style="list-style-type: none"> • Nuclear power • Solar power • Wind power • Biomass power • Smart power grids
New Materials	<ul style="list-style-type: none"> • New function materials • Advanced structural materials • High performance composites • Generic base materials
Clean Energy Vehicles	<ul style="list-style-type: none"> • Electric hybrid cars • Pure electric cars • Fuel cell cars

¹ U.S.-China Economic and Security Review Commission, *Hearing on China's Five-Year Plan, Indigenous Innovation and Technology Transfers, and Outsourcing*, testimony of Willy C. Shih, June 15, 2011.

