

# **Greenpeace East Asia Report**

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## **Research Report on Overcapacity Reduction in China's Steel Industry**

Greenpeace East Asia  
Beijing Custeel E-Commerce Co., Ltd.

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## **Executive Summary**

China has established the world's most robust steel industry, capable of effectively supporting both the rapid development of all steel-requiring industries and the national economy at large. However, the industry is now facing the increasingly critical problem of overcapacity.

During the 12th Five-Year Plan period (2011-2015), China's crude steel capacity utilisation rate decreased from 79% in 2010 to 70% in 2015. In 2015, China's crude steel production capacity reached 1.13 billion tons while crude steel output was 804 million tons. Large and medium-sized enterprises' debt-to-assets ratio climbed to over 70%, and what had been regional and structural overcapacity gradually gave way to absolute overcapacity.

The trend of declining demand for steel coupled with overcapacity is set to continue in the 13th Five-Year Plan period (2016-2020). The issue of overcapacity has not been resolved despite China's rapid economic growth, and as such the primary task of the steel industry over the next few years will be to find a way to tackle this problem and achieve progress.

In February 2016, the State Council of the People's Republic of China issued a guideline on 'Reducing Overcapacity in the Steel Industry to Achieve Development by Solving the Difficulties', putting forward plans to eliminate backward steel capacity by reducing crude steel production by 100-150 million tons over the next five years, slashing 45 million tons in 2016 alone. On 14 November 2016, the Ministry of Industry and Information Technology issued 'Planning for the Adjustment and Upgrading of the Steel Industry (2016-2020)', confirming China's intention to achieve a 'net' reduction of 100-150 million tons of crude steel production by 2020.

As part of the central government's strategic planning, all relevant departments, provinces, municipalities and central state-owned enterprises were set targets for resolving the steel overcapacity issue during the "13<sup>th</sup> Five-Year Plan" period. Provinces and municipalities also set themselves the target of reducing crude steel production by 159 million tons, while central state-owned enterprises set themselves the target of reducing crude steel production by 21 million tons – 180 million tons in total, exceeding the target of 100-150 million tons set by the central government for the same time period. They also set targets to reduce steel overcapacity by 84.9175 million tons and 7.19 million tons respectively (92.1075 million tons in total) in 2016 alone, more than twice the target of 45 million tons set by the central government. Through the joint efforts of all parties involved, the task of reducing steel overcapacity by 45 million tons in 2016 was completed ahead of schedule in November 2016.

This report analyses the development of the steel industry in China, the issue of overcapacity, and the policies aimed at finding a resolution to the problem. It also focuses on how China reduced steel overcapacity in 2016, as well as the increase in steel production and the closure of steel plants. The main findings are as follows:

- 1) Over 60% of the iron production capacity and over 70% of the steel production capacity reduced was actually “idle”, i.e. not operational. According to statistics for 2016, 26 Chinese provinces (not including central state-owned enterprises) reduced iron production capacity by 39.85 million tons in total, of which 24.41 million tons was idle capacity, accounting for 61.26%; and reduced steel production capacity by 84.9175 million tons, of which 61.545 million tons was idle capacity, accounting for 72.48%. It is worth noting that iron and steel overcapacity reduction in 14 provinces was idle. Overcapacity reduction in Shaanxi, Gansu and Guizhou provinces, for example, was idle, and involved outdated equipment. Iron and steel overcapacity reduction in 2016 was largely the reduction of idle capacity, and improvements in this area will be promoted considerably in 2017, with the proportion of “operating capacity” set to increase with “overcapacity reduction” becoming “production reduction”.
- 2) Market prices rebounded and over 50% of the iron production capacity that had stopped operation was resumed. In 2016, demand improved thanks to government stimulus. The previous discontinuation of production had led to a rise in the price of steel and a short-term mismatch in supply and demand. Profits were restored and idle steel plants and equipment resumed production through upgrades or being acquired by other companies. According to incomplete statistics, from 2014 to 2015, China discontinued iron production in 120 blast furnaces, reducing iron production capacity by 90.55 million tons, but has now resumed the production of 62 blast furnaces capable of producing 48.74 million tons or 54% of the total reduced capacity. Accordingly, 54.15 million tons of steel production capacity was restored.
- 3) In terms of overcapacity reduction, the operating capacity of the steel industry increased rather than declined. Whereas over 70% of the crude steel production capacity reduced in 2016 was idle, only 23.37 million tons of operating capacity was reduced. Operating capacity increased by 5.8 million tons, and 54.166 million tons of production capacity was recovered in 2016, and there was a net increase of 36.59 million tons in operating capacity. This explains why iron and steel production increased rather than declined after the task of reducing iron and steel production capacity had already been overfulfilled. From 2017 to 2020, provinces and central state-owned enterprises still need to reduce crude steel production

capacity by 74.45 million tons and 14.18 million tons respectively, but they still have to increase operating capacity by 20.9 million tons after the reduction. If most of the reduced capacity is idle, very limited operating capacity will be reduced.

- 4) Most of the equipment allocated for iron and steel overcapacity reduction in 2016 has been sealed up rather than demolished. In 2016, the iron production capacity was reduced by 12.41 million tons, accounting for 31.14% of the target figure, after which the remaining iron smelting equipment was sealed up and water and electricity supplies were cut off. Steel production capacity was reduced by 46.95 million tons, accounting for 55.29% of the target figure, and all remaining equipment was sealed up and could not be used for production. The storage of idle equipment requires strict supervision or complete demolition, to eliminate the hidden risk of production being restarted.
- 5) Due to steel production overcapacity, steel enterprises' profitability continued to decline and corporate banks' long-term borrowing and asset-liability ratio has increased year by year. Steel enterprises' long-term borrowing from banks has gradually increased since 2014. In 2016, key steel enterprises' long-term borrowing from banks increased by 7.39% from 2014 and asset-liability ratio increased by 0.88% - 69.69%. If profitability is not improved and losses continue, a high asset-liability ratio will bring the risk of bankruptcy to these enterprises.

## **I. Overview of the development of China's steel industry and the issue of overcapacity**

### **1.1. Overview of the development of the steel industry**

China's steel industry has experienced four stages of development: the initial development stage, the slow development stage, the rapid development stage, and the latter stage of slower growth. In the early days of the People's Republic of China, China's industry was in its initial development stage. Due to the low level and weak foundation of its industrial development, China had an annual industrial output of only 158,000 tons after the founding of the country in 1949. During the period from 1978 to 2000, China's steel industry entered the stage of slow development. Deng Xiaoping's speech during his South China Tour in 1992 set reform targets for the socialist market economy system and further stimulated the enthusiasm of relevant enterprises. As a result, the crude steel output rose to over 100 million tons in 1996, accounting for 13.5% of global output, and China became the world's biggest steel producer. In the twenty-first century, China witnessed a great economic boom until 2010, when the country's crude steel output reached 627 million tons, accounting for about 44.3% of global output. The first decade of the twenty-first century was known as the 'golden decade' of China's steel industry. From 2011, the industry entered the development stage of slower growth. China's crude steel output rose from 630 million tons in 2010 to 800 million tons in 2015, with an annual increase of 5%, and reached a historic peak of 820 million tons in 2014. After that, China's crude steel output declined to 804 million tons for the first time, Chinese economic growth slowed down, and the steel industry entered the stage of single-digit growth.

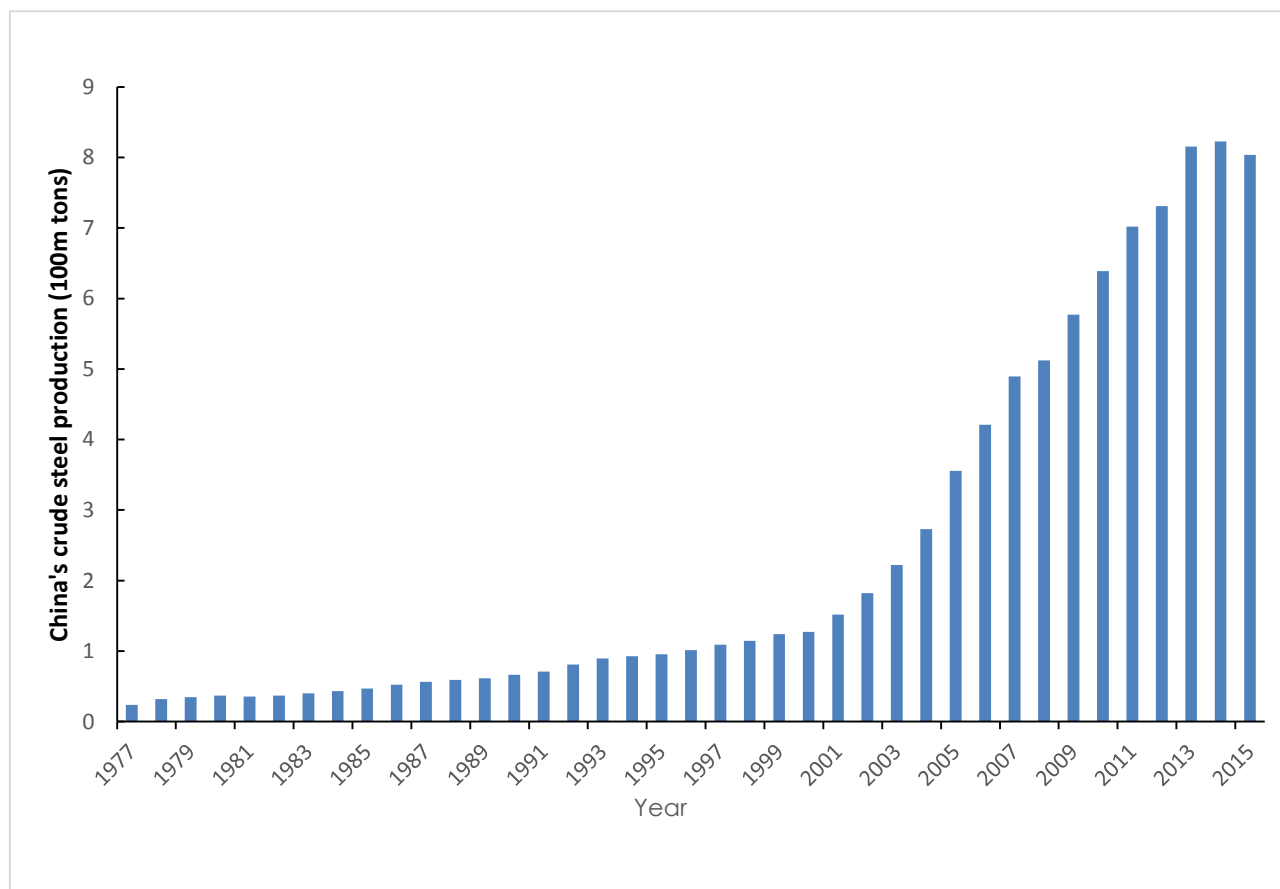


**Table 1 Development of the steel industry since the founding of the People's Republic of China (PRC)**

Time	Period	Development course
1949-1977	Initial stage	Steel production was weak in the early years of the PRC. In response, the government established a guideline policy of 'giving priority to the development of the steel industry', and launched large-scale steel production projects in order to 'catch up with the UK and surpass the US'. Without a solid economic foundation, however, growth was unsustainable. The development of the steel industry during this period was also disrupted by a number of historical events.
1978-2000	Gradual development	The Third Plenary Session of the 11th CPC Central Committee in 1978 outlined opening-up reform policy that allowed the steel industry to utilise foreign capital and technology. While on his 'Southern Tour' of China in 1992, Deng Xiaoping set out reform targets for a socialist market economy system, further stimulating the enthusiasm of relevant enterprises. As a result, crude steel output exceeded 100 million tons in 1996 and China became the world's biggest steel producer, accounting for 13.5% of global output.
2001-2010	Rapid expansion	China witnessed an economic boom after the turn of the 21 <sup>st</sup> Century. The steel industry grew rapidly as it fuelled growth in other industries, and by 2010 crude steel output had reached 627 million tons, accounting for 44.3% of global output. The first decade of the 21 <sup>st</sup> Century became known as the 'golden decade' of the steel industry.
2011 - present	Slowing growth	A 2008 investment of RMB 4 trillion into the steel industry had been used up by 2011. Around the same period, the Chinese government intensified regulation on real estate; the international debt crisis led to a decline in exports; and China's economic growth slowed. The steel industry officially entered single-digit growth.

Source: [custeel.com](http://custeel.com)

Figure 1 China's crude steel production



Source: National Bureau of Statistics, [custeel.com](http://custeel.com)

Iron and steel are the basic raw materials of industrial development, and the steel industry is a pillar of national economic development. The development of the steel industry is inseparable from national macroeconomic development and social progress. China's steel industry recorded an operating income of more than RMB 7 trillion in recent years. It ranked first in terms of operating income among all major industries in 2012, contributing 7.7% to the total operating income of said industries. In 2015, however, it ranked sixth, contributing only 5.86% to the total. In 2015, the steel industry recorded an operating revenue of RMB 7.3 trillion and made a profit of RMB 241.6 billion, providing over 4 million jobs and an important guarantee for rapid and stable national economic growth.

Table 2 The steel industry's contribution to industrial output, employment and value added tax (VAT)

Item	2012	2013	2014	2015
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<b>Operating income</b>	Operating income (RMB trillion)	7.16	7.63	7.43	7.30
	Income proportion among major industries	7.70%	7.42%	6.71%	5.86%
	Ranking among major industries	1	3	3	6
<b>Employment</b>	Direct employees (ten thousand)	340.15	342.63	404.6	-
	Proportion of the total employees among major industries	3.68%	3.64%	4.06%	-
<b>VAT</b>	VAT payable (RMB trillion)	0.16	0.14	0.15	0.14
	VAT proportion among major industries	5.29%	4.56%	4.32%	-
	Ranking among major industries	5	7	9	-

Source: National Bureau of Statistics, custeel.com

## 1.2. Current situation and causes of steel overcapacity

China's steel industry has witnessed rapid development, especially since the beginning of the twenty-first century. Market demand for iron and steel continues to increase along with this economic rise in China, stimulating the construction and delivery of steel production projects. However, poor quality, low concentration, badly designed layouts, large numbers of repetition have contributed to production overcapacity in the steel industry. During the "12th Five-Year Plan" period, China's crude steel capacity utilisation rate fell from 79% in 2010 to about 70% in 2015. In 2015, China's crude steel production capacity reached 1.13 billion tons and crude steel output reached 804 million tons. Large and medium-sized enterprises' debt rate was over 70%, and what had been regional and structural overcapacity gradually gave way to absolute overproduction.

Due to oversupply, steel prices continued to fall and the entire industry suffered serious losses. As the industry suffered from this downturn, long-term losses led to capital chain ruptures, steel enterprises suspending production and going bankrupt, and a lot of production equipment being left idle. Capital debt put pressure on banks and governments, the long-term idling of equipment was a waste of resources, and the re-employment of laid-off workers caused a series of social problems. Therefore, resolving the problem of overcapacity had become a critical task.

The main causes for overcapacity included the economic slowdown, a substantial decline in demand, oversupply

and poor structuring of industries that use steel such as manufacturing and construction, as well as the poor implementation of eliminating backward capacity.

#### **A slowdown in economic growth, a decline in demand**

In recent years, China's economic growth has slowed down amid the global economic downturn. The proportion of domestic secondary industries' output value declined, the domestic economic growth rate fell and the year-on-year industrial growth rate of the secondary industry dropped significantly, exposing contradictions covered by past economic growth.

From 2003 to 2007, China's GDP growth rate remained at 10%. It fell in 2008, but soared to 10.60% in 2009 after the announcement of an investment of RMB 4 trillion. Since 2011, the GDP growth rate dropped gradually while the growth rate of industrial output declined rapidly. When there had been rapid economic growth, the market demand for iron and steel had increased significantly. A large number of steel enterprises invested in setting up factories and rapidly expanded their production capacity. After the slowdown of economic growth, however, demand decreased and the problem of overcapacity in the steel industry became increasingly prominent. During the period of China's rapid economic growth and the investment of RMB 4 trillion, the growth rate of investment in real estate, manufacturing, and infrastructure construction remained high. After 2011, however, the growth rate of industrial added value continued to decline and the growth rate of investment in manufacturing and real estate industry fell from 30% in 2011 to less than 10% in 2015. The substantial decline in the demand of steel-using industries and the prominent problem of oversupply were the main causes of overcapacity in the steel industry.

#### **Irrational industrial structure, intensified competition**

Steel enterprises stand to make strong profits from investment projects, which also stimulate the local economy and contribute significantly to the local tax revenue. Therefore, both the government and privately-owned enterprises are highly enthusiastic for such investments, and some government departments have set a low threshold for steel enterprise investment. As a result, steel mill projects are often launched without adequate background checks into important factors such as geographical conditions, transportation issues, the purchase of raw materials, and the marketing of finished products. This led to the rapid growth of iron and steel production capacity.

When the structure of steel enterprises is badly planned, however, and the industry's profitability declines, steel enterprises witness a substantial decline in profitability and even suffer losses if restricted by the high cost of raw material and logistics services. Some enterprises, which suffer losses over a long period of time, remain in production

thanks to government subsidies. These so-called ‘zombie enterprises’ exacerbate the problem of overcapacity.

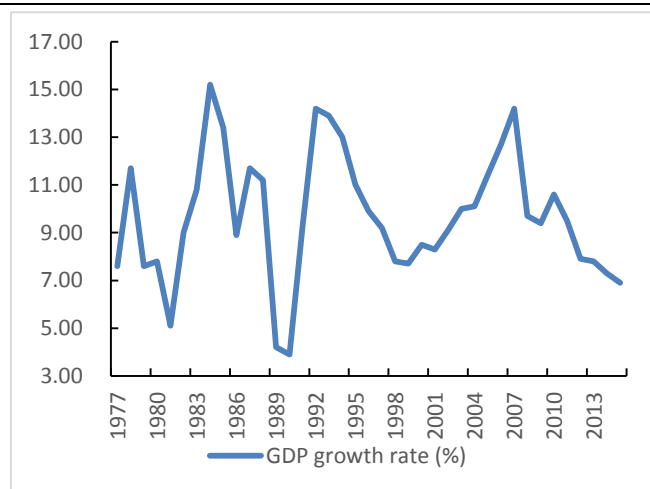
Furthermore, when more steel mills are constructed, steel products tend to drop in quality and lose their competitiveness. In 2015, the output of long timber represented by low-end rebar and wires accounted for 44.38% of the total steel output, and some high-end steel products still needed to be imported. The domestic market could not take so many low-end products and uncompetitive enterprises did not exit effectively, exacerbating overcapacity in the steel industry.

### Failure to withdraw backward capacity in a timely and complete fashion

The Chinese government developed the policy for the elimination of backward production capacity during the “11th Five-Year Plan” period and the “12th Five-Year Plan” period. The aim was to eliminate energy consuming, high polluting and backward production capacity. Due to poor supervision of the elimination of backward production capacity and its link to the economic development of local enterprises and employment levels, a lot of backward capacity was not eliminated, exacerbating the overcapacity issue.

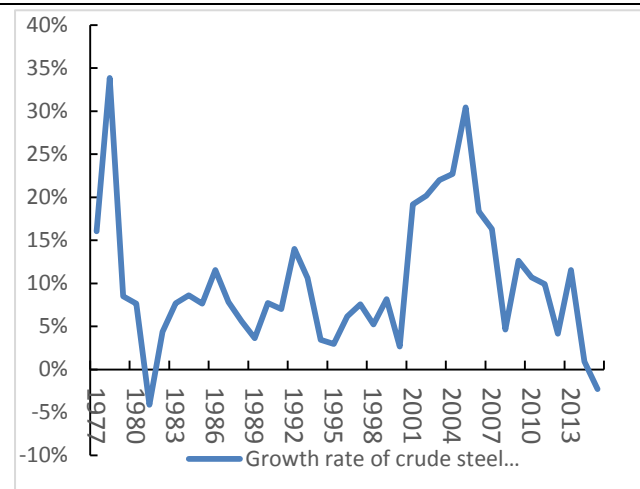
Overcapacity is a periodic problem affecting the development of the steel industry of many countries. The steel industries in the United States, Germany, the UK, Japan and South Korea, for example, all witnessed overcapacity and irrational structure in the ‘golden ages’ of their industrial development. Based on their specific circumstances, those countries achieved stable and robust development of the steel industry through industrial restructuring, mergers and acquisitions and resolving excess capacity.

Figure 2 GDP growth rate China



Source: National Bureau of Statistics, custeel.com

Figure 3 Growth rate of crude steel production in China



Source: National Bureau of Statistics, custeel.com

## II. Summary of the policies aimed at reducing overcapacity in the steel industry

### 2.1. Overview of China's policies on overcapacity reduction since 2006

China has paid close attention to the production capacity of its steel industry, issuing a number of policies aimed at regulating the industry over the years. Since the beginning of “11th Five-Year Plan” period, policies on industrial structure adjustment and accelerating the elimination of backward capacity have been issued continuously. As the source of iron production, standards for the elimination of blast furnace equipment have become increasingly strict. Standards on blast furnace size were raised from 300 cubic metres to 400 cubic metres, and standards for electric furnaces used for steel smelting were raised from 20 tons to 30 tons. During the period from 2006 to 2012, the steel industry focused on both accelerating the adjustment of the industrial structure and accelerating the elimination of backward capacity. Although the government has been continuously eliminating backward capacity and restricting the disorganised spread of production capacity, new iron and steel projects are launched and put into production every year, and production capacity continues to increase.

**Table 3 China's policies on reducing overcapacity during the period 2006-2012**

Year	Document issued	Main content	Reducing capacity in the steel industry
2006	Circular of the State Council on Accelerating the Restructuring of the Sectors with Production Capacity Redundancy  No. 11 (2006) of the State Council	It is a major and difficult task in the “11th Five-Year Plan” period to promote the strategic restructuring of the economy as well as to elevate the international competitiveness of all sectors. At the present time, some sectors make such blind investment and inefficient expansion that they have incurred production capacity redundancy, which has turned into a predominant problem in the economy. If not solved in a timely manner, the problem may further aggravate the conflict lying in the irrational industrial structure and thus impede a sustainable, fast, balanced and sound development of the economy.	Do not approve the construction of new steel mills on principle, and implement strict examination and approval of steel mill projects by taking into account relocation and the elimination of backward capacity.  Eliminate submerged arc furnaces (ferroalloy) of less than 5 million VA, and ferroalloy blast furnaces of less than 100 cubic metres as soon as possible. Eliminate iron-smelting blast furnaces of less than 300 cubic metres and steel converters and furnaces of less than 20 tons.

2006	<p>Notice of the National Development and Reform Commission (NDRC) on Preventing the Blind Re-expansion of High-Energy Consuming Industries</p> <p>No. 1332 (2006) of the NDRC</p>	<p>Due to state macro-control and healthy, sustained economic development over many years, domestic energy supply is sufficient. In particular, the divide between power supply and demand has been gradually bridged to the point where power failures have been reduced significantly this year.</p> <p>There have been cases of blind expansion among high energy-consuming industries in some areas. In order to fully implement the ‘Scientific Outlook on Development’; accelerate adjustments to the industrial structure; and transform the economic growth model so as to achieve stable and rapid economic and social development – we must take economic, legal and administrative measures to resolutely prevent the blind expansion of high energy-consuming industries.</p>	<p>Strict control of new projects should be implemented, especially those in high energy-consuming industries such as steel, aluminium, ferroalloy, coke, cement, coal and electric power.</p> <p>Power providers must stop supplying power to enterprises that expand blindly and do not eliminate backward high energy-consuming equipment and products as scheduled according to the law.</p>
2007	<p>Urgent Notice of the National Development and Reform Commission (NDRC) on Accelerating Adjustments to the Industrial Structure to Prevent the Blind Re-expansion of High Energy-Consuming Industries</p> <p>No. 933 (2007) of the NDRC</p>	<p>In order to fully implement the ‘Scientific Outlook on Development’; accelerate adjustments to the industrial structure; transform the economic growth model so as to achieve stable and rapid economic and social development; and achieve the energy-saving emission reduction goal during the "11th Five-Year Plan" period – we must take legal and economic means we must take economic, legal and administrative measures to resolutely prevent the blind expansion of high energy-consuming industries.</p>	<p>Strictly control investment in industries with overcapacity, such as steel, electrolytic aluminium, copper smelting, ferroalloy, calcium carbide, coke, cement, coal and electric power, especially high energy-consuming projects.</p> <p>Further enhance the industry access threshold, and eliminate high energy-consuming and heavy-polluting backward production capacity.</p>

2009	Blueprint for the Adjustment and Revitalisation of the Steel Industry  Office of the State Council, 20 March	To cope with the international financial crisis, carry out the overall requirements of the Central Committee of the CCP and the State Council on maintaining the economic growth, expanding the domestic demand and adjusting the industrial structure, guarantee the steady development of the steel industry, accelerate structural adjustment and promote industrial upgrading – this Blueprint is made as an action plan on the overall countermeasures for the steel industry for the period between 2009 and 2011.	Strictly control new capacity, no longer approve and support new capacity-expanding steel projects. Breakthroughs shall be made in eliminating backward production capacity. We need to eradicate blast furnaces of 300 cubic metres or below and revolving and electric furnaces of 20 tons or below as is scheduled, improve the standards for eradicating backward production capacity and do our best to wash out the production capacity for 72 million tons of iron and 25 million tons of steel. Once they have eliminated backward production, regions constructing large-scale iron and steel mills are required to raise standards for eradicating blast furnaces of 1000 cubic metres or below as well as the corresponding steel production capacity.
2009	Urgent Notice of the Ministry of Industry and Information Technology requiring Local Governments to Curb Excessive Growth in Crude Steel Output  No. 191 (2009) of the MIIT	This year, with the introduction of a series of national policies on expanding investment to stimulate domestic demand, the steel industry showed signs of picking up again. This led some enterprises, regardless of the market demand, to blindly expanded production, resulting in a serious imbalance between supply and demand and a substantial decline in the price of steel. We must carry out the overall requirements of the Central Committee of the CCP and the State Council on maintaining the economic growth, expanding the domestic demand and adjusting the industrial structure, to guarantee the steady development of the steel industry.	According to 2005 statistics, 114 million tons of backward iron production capacity and 56.78 million tons of backward steel capacity needs to be eliminated. By the end of 2011, we must eliminate a further 53.4 million tons of backward iron production capacity and 3.2 million tons of backward steel capacity, further raising standards with a view to eliminating 72 million tons of backward iron production capacity and 25 million tons of backward steel capacity.  Accelerate the elimination of backward production capacity and implement restricted differential power prices for converters and electric furnaces of 20 tons or below; converters of 120 tons and below; electric furnaces of 70 tons and below; and blast furnaces of 1000 cubic metres or below constructed after August 2005.



2009	<p>Notice of the State Council on Ratifying and Forwarding the Several Opinions of the National Development and Reform Commission and Other Departments on Curbing Overcapacity and Redundant Construction in Some Industries</p>	<p>Adhere to industrial policy, strictly implement the relevant provisions on environmental supervision, land management, financial policies and project investment management. Focus on resolutely curbing overcapacity and redundant construction of some industries within the structural adjustment and vigorously promote the work.</p>	<p>No longer approve and support the expansion of iron and steel projects. Strictly prohibit local government's independent construction of iron and steel projects in the name of eliminating backward production capacity and preventing them from avoiding the supervision, review and approval of national environmental protection. By the end of 2011, eliminate blast furnaces of 400 cubic metres or below and all converters and electric furnaces of 30 tons and below.</p>
2010	<p>No. 38 (2009) of the State Council</p> <p>Opinions of the General Office of the State Council on Further Strengthening Energy Conservation and Accelerating the Structural Adjustment of the Steel Industry</p> <p>No. 34 (2010) of the Office of the State Council</p>	<p>With the support of the State Council, opinions will be made as to how the steel industry can fully implement the 'Scientific Outlook on Development', further implement the "steel industry restructuring and revitalisation plan", achieve the targets set by the state for reducing emissions during the "Eleventh Five-Year" period, and accelerate the restructuring of the industry.</p>	<p>Strengthen the elimination of backward production capacity, improve the use of land and implement differential pricing policies. Significantly increase the pricing standards of differential pricing. Further increase the cost of backward production capacity and strengthen energy-saving emission reductions. Steel enterprises will speed up mergers and acquisitions.</p>
2010	<p>Ministry of Industry and Information Technology (MIIT) Opinions on Standard Conditions of Production and Operation in the Steel Industry</p> <p>No. 105 (2010) of the MIIT; adjusted in 2012</p>	<p>In order to further strengthen the management of the steel industry and regulate the production and operation of existing steel enterprises, we hereby issue the "Standard Conditions of Production and Operation of the Steel Industry" in accordance with the "Opinions of the General Office of the State Council on Further Strengthening Energy Conservation and Accelerating the Structural Adjustment of the Steel Industry" (No. 34 [2010] of the State Council) and the relevant laws and regulations.</p>	<p>In the name of safety, health and social responsibility, product quality, environmental protection, and the comprehensive utilisation of resources, technology and equipment must be ensured. Valid volume of blast furnaces' shall be more than 400 cubic metres and nominal capacity of the converter shall be more than 30 tons. Crude steel production from common steel enterprises shall be 1 million tons or more; crude steel production from special enterprises shall be 300,000 tons or more.</p>

<p>2011 Notice from the Ministry of Industry and Information Technology (MIIT) on the "12th Five-Year Plan" development plan for the Steel Industry</p> <p>No. 408 (2010) of the MIIT</p>	<p>As a crucial industry of the national economy, the steel industry plays an important role in the process of industrialisation and urbanisation in China. In order to promote the transformation and upgrading of the steel industry and help it embark on a path of new industrialisation with Chinese characteristics, we formulated the "'12th Five-Year Plan' development plan for the Steel Industry" in accordance with the "Outline of the '12th Five-Year Plan' for National Economic and Social Development" and the "Industrial Restructuring and Upgrading Plan (2011-2015)".</p>	<p>Eliminate blast furnaces of 400 cubic metres or below (excluding cast iron) and converters and electric furnaces of 30 tons and below. No newly construction of iron and steel bases in the Yangtze River Delta and the regions around the Bohai Sea. Hebei, Shandong, Jiangsu, Liaoning and Shanxi provinces, which engage in large-scale production of iron and steel, shall eliminate backward capacity through mergers and acquisitions and adjust the regional industrial layout. Central provinces such as Hunan, Hubei, Henan, Anhui and Jiangxi shall actively promote structural adjustment and industrial upgrading under the premise of not increasing the total iron and steel production capacity. The western regions and some areas with relatively independent markets shall undertake industrial transfer based on their resource advantages and promote the appropriate development of the steel industry according to regional policy.</p>
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Source: Official government documents

## 2.2. China's policies on overcapacity reduction in the steel industry during the period 2013-2015

In the period from 2013 to 2015, China intensified efforts to eliminate overcapacity in its steel industry. During the past decade, however, both production capacity and output have expanded, and the crude steel output did not decline until the whole industry suffered losses in 2015. Since 2013, the central government's main focus has been on supporting large enterprises' M&A activities, improving industrial concentration, increasing market competitiveness and expanding the industrial chain. While curbing the blind expansion of production capacity, measures will also be made to prevent violations, eliminate backward production capacity, and resolve overcapacity through reduction replacement.

**Table 4 China's policies on reducing overcapacity during the period 2013-2015**

Date	Document issued	Main content	Reducing overcapacity in the steel industry
22 January 2013	Guiding Opinions on Pushing Forward Enterprise M&A and Reorganisation in Key Industries No. 41 16 (2013) of the MIIT	Promoting corporate M&A is an important measure to promote industrial restructuring and upgrading, accelerate the transformation of the mode of development, and to further sharpen the international competitiveness of China's economy and further improve socialist basic economic system. It also helps improve the efficiency of resource allocation, adjust and optimise the industrial structure and foster and develop large enterprises and groups with international competitiveness.	By 2015, the concentration ratio of the top 10 steel enterprises is expected to reach around 60%. We should support restructured steel enterprises to carry out technological transformation, eliminate backward production capacity and optimise regional layout in order to enhance their market competitiveness. Encourage steel enterprises to participate in M&A deals with foreign iron and steel enterprises.
15 October 2013	Guiding Opinions of the State Council on Resolving the Contradiction of Serious Excess Capacity No. 41 (2013) of the State Council	In the current and future adjustment of industrial structure, we must focus on resolving serious excess capacity. We should actively and effectively resolve the serious excess capacity of industries such as iron, steel, cement, electrolytic aluminium, flat glass and shipbuilding, and guide the capacity reduction of other industries at the same time.	Through 5 years of efforts, major progress has been made in resolving serious excess capacity. Resolutely curb the blind expansion of production capacity, straighten out the illegal production capacity and eliminate backward production capacity. By the end of 2015, continue to eliminate overcapacity of 15 million tons of iron and 15 million tons of steel. Focus on promoting the structural adjustment of the steel industry in Shandong, Hebei, Liaoning, Jiangsu, Shanxi and Jiangxi, and reduce iron and steel output by more than 80 million tons.
31 July 2014	Notice on Promoting the Capacity Replacement of Some Industries with Serious Excess Capacity No. 296 (2014) of the MIIT	Industries with overcapacity are prohibited from increasing capacity. Promote the capacity replacement work of the industries of iron and steel, electrolytic aluminium, cement and flat glass.	Implement equivalent and reduction replacement of production capacity for the newly built projects of the industries of iron and steel, electrolytic aluminium, cement and flat glass. Accelerate the elimination of backward production capacity and resolve excess capacity. The enterprises listed in the Notice of the Ministry of Industry and Information Technology in and after 2013 must eliminate backward and excess capacity for new projects.
28 April 2015	Circular Measures for the Implementation of Capacity	Continue with measures to reduce or replace capacity. Strictly prohibit new capacity in the steel, cement, electrolytic aluminium, and flat glass industries.	Implement reduction replacement in Beijing, Tianjin, Hebei, the Yangtze River Delta, the Pearl River Delta and other environmentally sensitive areas. Backward production capacity that has already

Replacement in  
Industries with  
Serious  
Overcapacity

exceeded the national deadline will not be considered for capacity replacement. Support trans-regional capacity replacement. All eliminated projects will be used for replacement, and included as part of the annual tasks for eliminating backward and excess capacity. All eliminating tasks will be carried out so that production cannot be resumed.

No. 127 (2015) of  
the MIIT

**Source: Official government documents**

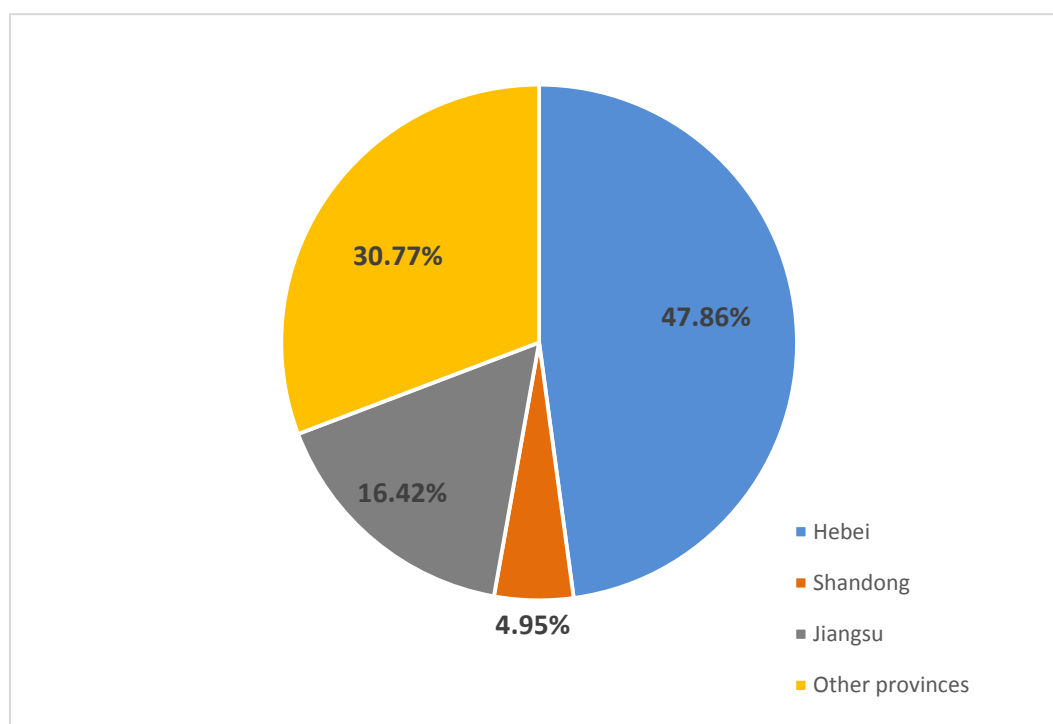
According to official data released by the Ministry of Industry and Information Technology, during the “12th Five-Year Plan” period (2011-2015), China’s steel industry eliminated 90.889 million tons of iron backward production capacity and 94.8549 million tons of steel backward production capacity. The top three provinces for steel production, Hebei, Jiangsu and Shandong, cut 62.919 million tons of iron production capacity, accounting for 69.23% of the total; and cut 53.213 million tons of steel production capacity, accounting for 56.1% of the total, contributing significantly to resolving excess production capacity. In the first year of the "12th Five-Year Plan" period, a lot of effort was put into the elimination of backward capacities. Iron production capacity was reduced by 31.924 million tons, accounting for 35.12% of the total, and steel production capacity was reduced by 28.46 million tons, accounting for 30% of the total. Similarly, 2016 is the first year of the “13th Five-Year Plan” period, and it is a difficult task to resolve excess production capacity.

Figure 4 Overcapacity reduction in the steel industry, 2010-2015



Source: Official government documents, custeel.com

Figure 5 Overcapacity reduction across China during the "12th Five-Year Plan" period



Source: Official government documents, custeel.com

### 2.3. Overcapacity reduction targets during the "13th Five-Year Plan" period

After China's steel output reached 820 million tons in 2014 and apparent consumption<sup>1</sup> reached 760 million tons in 2013, it was predicted that China's iron and steel production and consumption would enter a downturn during the "13th Five-Year Plan" period, and that domestic crude steel consumption would drop to 650-700 million tons, steel output would decline to 750-800 million tons and apparent consumption would be reduced by 50 million tons<sup>2</sup> by the year 2020, compared to the figure of 700 million tons in 2015. The most urgent task of the steel industry is to focus on resolving overcapacity and achieving development in the near future.

In 2016, the central government proposed, for the first time, to carry out supply-side reform. They attached great importance to it, stressing the "Three Cuts, One Reduction and One Improvement"<sup>3</sup>, that clearly required the steel industry to resolve overcapacity and achieve development. The central government has repeatedly stressed in relevant conferences the need to attach importance to supply-side reform and to overcapacity reduction in the steel industry. In recent years, it has stipulated, based on the elimination of backward iron and steel production capacity, that crude production capacity should be reduced by 100-150 million tons<sup>4</sup> in the five years from 2016, and that 45 million tons iron and steel production should be reduced in 2016 alone.

On 28 October 2016, the Ministry of Industry and Information Technology issued the *Circular on Planning for the Adjustment and Upgrading of the Steel Industry (2016-2020)* (No.358 (2016) of the MIIT), clearly stating that "by 2020, we must make major progress in the supply-side reform of the steel industry and achieve fundamental development in the whole industry; effectively resolve overcapacity and achieve a "net" reduction of 100–150 million tons<sup>5</sup> in crude steel production". It is worth noting that the proposed upgrading plan includes for the first time efforts to achieve a "net" reduction of 100–150 million tons in crude steel production. It also clarified that in the process of capacity replacement, four kinds of capacity cannot be used: capacity eliminated during and before 2015, backward capacity, capacity covered by the task of capacity reduction, and withdrawn capacity with subsidy and policy support from the government. The

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<sup>1</sup> The year's crude steel production minus the amount of net imports and exports (exports minus imports). As it is difficult to make statistics of the actual consumption, apparent consumption is usually used to reflect the demand for crude steel.

<sup>2</sup> Data from the "Planning for the Adjustment and Upgrading of Steel Industry (2016-2020)", <http://www.miit.gov.cn/n1146295/n1652858/n1653018/c5355576/content.html>

<sup>3</sup> "Three Cuts, One Reduction and One Improvement" refers to the five major tasks in delivering on supply-side reform: cutting excessive industrial capacity; destocking; de-leveraging; lowering corporate costs; and improving weak links.

<sup>4</sup> Guidelines of the State Council on Resolving Overcapacity in the Steel Industry to Gain Profits and Development, [http://www.gov.cn/zhengce/content/2016-02/04/content\\_5039353.htm](http://www.gov.cn/zhengce/content/2016-02/04/content_5039353.htm)

<sup>5</sup> Circular of the Ministry of Industry and Information Technology (MIIT) on Issuing the Planning for the Adjustment and Upgrading of the Steel Industry, <http://www.miit.gov.cn/n1146295/n1652858/n1652930/n3757016/c5353943/content.html>

overall purpose is to achieve a genuine decline in steel production.

**Table 5 Guidelines on resolving China's steel overcapacity in 2016**

Year	Document issued	Main content	Reducing overcapacity in the steel industry
1 February 2016	"Guidelines of the State Council on Resolving Overcapacity in the Steel Industry to Gain Profits and Development"  No. 6 (2016) of the State Council	With the increasing pressure of economic downturn, the steel market demand has declined. Overcapacity in the steel industry has become a prominent issue, leading iron and steel enterprises to be confronted with more difficulties in production and operation, and suffering from increasing losses. In order to implement the deployments of the CPC Central Committee and the State Council for promoting structural reform and overcapacity reduction, we must further defuse steel overcapacity and promote the development of iron and steel enterprises.	Reduce crude steel production capacity by 100-150 million tons in five years from the beginning of 2016. Local governments and departments mustn't approve any iron and steel projects with newly increased capacity in any name or any means, and any withdrawn capacity that enjoyed subsidies and relevant policy support cannot be used as a replacement. Immediately shut down and dismantle iron-making blast furnaces of 400 cubic metres and below and steel-making blast furnaces of 30 tons and below. Immediately shut down enterprises manufacturing low-quality steel rods, dismantle relevant equipment and punish according to law.

Source: Official government documents

**Table 6 Planning for the adjustment and upgrading of the steel industry during the period 2016-2020**

Date	Document issued	Main contents	Overcapacity reduction in the steel industry
28 October 2016	Circular of the Ministry of Industry and Information Technology (MIIT) on Issuing the Planning for the Adjustment and Upgrading of the Steel Industry (2016-2020)  No.358 (2016) of the MIIT	By 2020, we must make major progress in the supply-side reform of the steel industry, achieve fundamental development of the whole industry, and effectively resolve overcapacity. By 2025, achieve significant results in the supply-side reform of the steel industry, significantly enhance the level of supply and independent innovation, achieve the development with optimised organisational structure, reasonable regional distribution, advanced technologies, outstanding quality brands, good economic benefit and strong competitiveness, and achieve a historic leap in China's steel	To effectively alleviate the overcapacity contradiction and Achieve a net reduction of 100-150 million tons of crude steel production capacity. Implement reduction replacement in accordance with a ratio of no less than 1:1.25 in Beijing, Tianjin, Hebei, the Yangtze River Delta, the Pearl River Delta and other environmentally sensitive areas. The capacities eliminated in and before 2015, all backward capacities, capacities covered by the task of capacity reduction, and the capacities required to withdraw with the subsidy and policy support cannot be used for replacement. Comprehensively ban the use and the production capacity of intermediate-frequency furnaces for the production of "low-quality steel rods". Promote the removal of "zombie enterprises". Re-evaluate the feasibility of the construction of structural adjustment and urban steel mill relocation projects that are under construction or planned to be

industry from a large-scale industry to a powerful industry. constructed. Resolutely stop the construction of projects with poor economic benefit and with a capital ratio of less than 40% in order to prevent the emergence of new high-debt enterprises.

Source: Official government documents

In accordance with the central government's plan for reducing overcapacity in the steel industry, all provinces, municipalities and central state-owned enterprises have been set overcapacity reduction targets based on their own circumstances. Some provinces and municipalities have also developed their own specific plans on overcapacity reduction. Hebei, Shandong and Jiangsu – three major steel producing provinces – have made clear time schedules for the implementation their own specific tasks to ensure the successful reduction of overcapacity. During the "13<sup>th</sup> Five-Year Plan" period, Hebei Province is required to reduce iron production capacity by 49.89 million tons and steel production capacity by 49.13 million tons, while it plans to reduce 37.15 million tons of iron capacity and 31.17 million tons<sup>6</sup> of steel capacity in 2017.

Shandong's steel industry plans to reduce 8.5 million tons of iron overcapacity and 10.65 million tons of steel overcapacity from 2016 to 2018, accounting for 87.63% and 71% of the totals respectively. In 2019, it plans to reduce 1.2 million tons of iron overcapacity, accounting for 12.37% of the total, and reduce crude steel production capacity by 4.35 million tons in 2020, accounting for 29%<sup>7</sup> of the total. Jiangsu Province plans to reduce steel overcapacity by 17.5 million tons<sup>8</sup> in three to five years.

In accordance with the tasks and objectives set by provinces, municipalities and central state-owned enterprises for the "13<sup>th</sup> Five-Year Plan" period, China will reduce iron production by 88.47 million tons and reduce steel production by 180.74 million tons over the next five years. Provinces, municipalities and central state-owned enterprises have set targets to reduce crude steel production by 180 million tons during the "13<sup>th</sup> Five-Year Plan" period, exceeding the target of 100–150 million tons set by the central government. It is worth noting that during the "13<sup>th</sup> Five-Year Plan" period, Hebei, Shandong and Jiangsu will reduce 59.59 million tons of iron production capacity, accounting for 67.36% of the total target; and reduce 81.63 million tons of steel production capacity, accounting for 45.16% of the total. Central state-owned enterprises will reduce 21.37 million tons of steel production, accounting for 11.82% of the total, including 3.93 million tons reduced through M&A's and 1 million tons transferred to foreign markets. Central state-owned

<sup>6</sup> Adopting a tough stance in the battle against against overcapacity, <http://leaders.people.com.cn/n1/2016/0622/c58278-28467536.html>

<sup>7</sup> [http://www.sdfgw.gov.cn/art/2016/5/18/art\\_43\\_192515.html?winzoom=1](http://www.sdfgw.gov.cn/art/2016/5/18/art_43_192515.html?winzoom=1)

<sup>8</sup> [http://www.jiangsu.gov.cn/jsyw/201610/t20161015\\_453699.html](http://www.jiangsu.gov.cn/jsyw/201610/t20161015_453699.html)



enterprises also a key role in to play in reducing steel overcapacity.

Hebei, Shandong and Jiangsu's crude steel production capacity reduction tasks account for nearly half of the total, and these major steel producing provinces are the main forces for overcapacity reduction. It is worth noting that Hebei, Shandong and Jiangsu began to shut down some iron and steel mills as part of the process of reducing steel overcapacity in 2016. In the future, they will shut down more steel mills which will lead to issues such as local worker resettlement, corporate debt, and economic development, that will make it more difficult to reduce overcapacity.

A significant proportion of the task central state-owned enterprises' face includes reducing capacity that has been left idle since 2015. Therefore, they have less pressure to achieve the goal of reducing overcapacity by 21.37 million tons during the "13<sup>th</sup> Five-Year Plan" period.

**Table 7 Objectives of selected provinces, municipalities and central state-owned enterprises in reducing steel overcapacity during the "13th Five-Year Plan" period**

Province / Municipality	Hebei	Jiangxi	Anhui	Henan	Sichuan	Yunnan	Zhejiang	Inner Mongolia	Shandong	Liaoning	Fujian	Jilin	Hubei
Iron (10,000 tons)	4989	50	527	100	217	125	110	243	970	-		136	-
Steel (10,000 tons)	4913	433	663	240	420	453	368	67	1500	602	445	108	200
Province / Municipality	Hunan	Guangdong	Xinjiang	Shaanxi	Gansu	Guizhou	Heilongjiang	Jiangsu	Tianjin	Guangxi	Shanxi	Chongqing	Central state-owned enterprises
Iron(10,000 tons)	-	-	-	-	200	150	219	-	-	20	82	0	709
Steel (10,000 tons)	50	240	700	170	300	220	610	1750	900	185	-	400	2137

Source: Official government documents

## 2.4. Plans for reducing overcapacity in 2016

2016 marked the first year of the "13<sup>th</sup> Five-Year Plan" period, and the first year for the central government to implement plans to reduce crude steel production capacity by 100-150 million tons. At the beginning of 2016, the State Council, the National Development and Reform Commission and other relevant departments issued a number of

documents to align strategy on overcapacity reduction. Premier Li Keqiang presided over the Executive Meeting of the State Council, and stressed the importance of the overcapacity reduction task must. The 26 provinces and central state-owned enterprises<sup>9</sup> involved in the strategy moved to prioritise the task of capacity reduction in 2016 to ensure its successful completion. Provinces and municipalities designated tasks to enterprises based on the circumstances and established a clear time schedule. Provinces and municipalities determined targets for reducing 39.85 million tons of iron overcapacity and reducing 84.975 million tons of steel overcapacity in 2016 – nearly twice the figure of 45 million tons of crude steel production capacity to be reduced in 2016, set at the beginning of the year.

**Table 8 Specific objectives for reducing overcapacity in 26 provinces and municipalities in 2016**

Province / Municipality	Hebei	Jiangxi	Anhui	Henan	Sichuan	Yunnan	Zhejiang	Inner Mongolia	Shandong	Liaoning	Fujian	Jilin	Hubei	Qinghai
Iron (10,000 tons)	1816	50	62	100	217	125	110	224.25	270	-	-	-	-	50
Steel (10,000 tons)	1639	433	110	240	420	376	368	67	270	602	445	108	338	-
Province / Municipality	Hunan	Guangdong	Xinjiang	Shaanxi	Gansu	Guizhou	Heilongjiang	Tianjin	Jiangsu	Guangxi	Shanxi	Chongqing	Total	
Iron(10,000 tons)	-	-	-	160	160	150	219	159	-	20	82	10.8	3985.05	
Steel(10,000 tons)	50	240	90	70	144	220	610	370	690	185		516.75	8491.75	

Source: Official government documents

In accordance with the central government's requirements, the 26 provinces and municipalities determined objectives for reducing iron and steel overcapacity in 2016, and assigned specific tasks to enterprises accordingly. According to Custeel's telephone survey and visits to the relevant steel enterprises (not including central state owned enterprises Baogang Steel Group, Wuhan Iron and Steel Group and Anshan Iron and Steel Group Corporation), the 26 provinces reduced iron production capacity by 39.85 million tons, of which 24.41 million tons was idle capacity (long-term idle), accounting for 61.26% of the total. They also reduced steel production capacity by 84.9175 million tons,

<sup>9</sup> State-owned enterprises (SOE's) include: 1 - Central enterprises - directly under the supervision and management of the State Council, referred to in this report as central state-owned enterprises. Not included in province overcapacity reduction targets. 2. Local state-owned enterprises - controlled by local governments, referred to in this report as local state-owned enterprises. Included in province overcapacity reduction targets.

of which 61.545 million tons was idle capacity, accounting for 72.48% of the total. It is worth noting that overcapacity reduction in 14 provinces involved idle capacity alone, including Shaanxi, Gansu and Guizhou.

**Table 9 Proportion of idle steel production in 26 provinces and municipalities in 2016**

No.	Province / Municipality	Iron smelting reduction (10,000 tons)	Idle iron smelting reduction (10,000 tons)	Proportion of idle iron smelting reduction	Steel smelting reduction (10,000 tons)	Idle steel smelting reduction (10,000 tons)	Proportion of idle steel smelting reduction
1	Hebei	1816	692	38.11%	1639	619	37.77%
2	Jiangxi	50	50	100.00%	433	433	100.00%
3	Anhui	62	62	100.00%	110	110	100.00%
4	Henan	100	-	-	240	-	-
5	Sichuan	217	167	76.96%	420	280	66.67%
6	Yunnan	125	125	100.00%	376	246	65.43%
7	Zhejiang	110	110	100.00%	368	298	80.98%
8	Inner Mongolia	224.25	224.25	100.00%	67	67	100.00%
9	Shandong	270	-	-	270	30	11.11%
10	Liaoning	-	-	-	602	520	86.38%
11	Fujian	-	-	-	445	445	100.00%
12	Jilin	-	-	-	108	60	55.56%
13	Hubei	-	-	-	338	338	100.00%
14	Hunan	-	-	-	50	50	100.00%
15	Guangdong	-	-	-	240	240	100.00%
16	Xinjiang	-	-	-	90	90	100.00%
17	Qinghai	50	50	100.00%	-	-	-
18	Shaanxi	160	160	100.00%	70	70	100.00%
19	Gansu	160	160	100.00%	144	144	100.00%
20	Guizhou	150	150	100.00%	220	220	100.00%
21	Heilongjiang	219	219	100.00%	610	610	100.00%

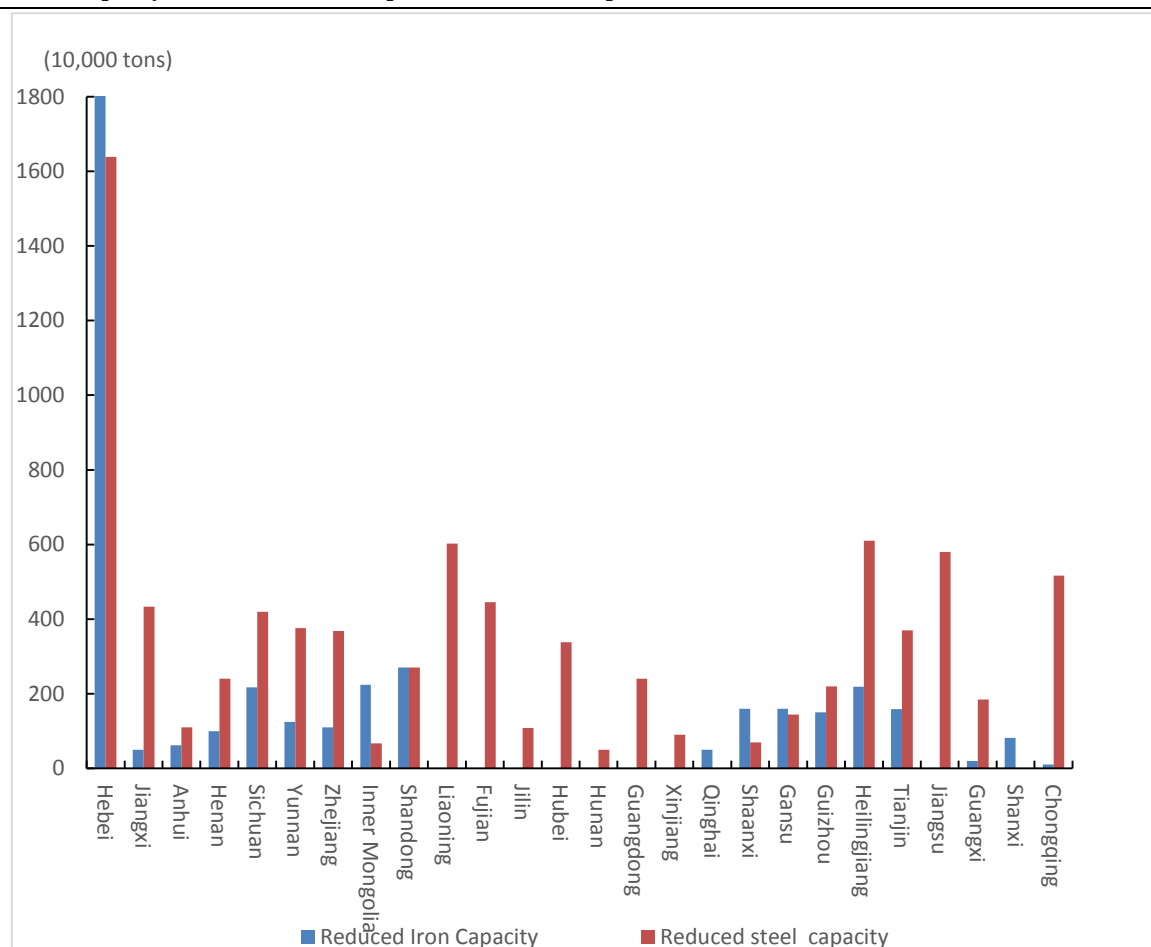
<b>22</b>	<b>Tianjin</b>	159	159	100.00%	370	370	100.00%
<b>23</b>	<b>Jiangsu</b>	-	-	-	580	500	86.21%
<b>24</b>	<b>Guangxi</b>	20	20	100.00%	185	185	100.00%
<b>25</b>	<b>Shanxi</b>	82	82	100.00%	-	-	-
<b>26</b>	<b>Chongqing</b>	10.8	10.8	100.00%	516.75	229.5	44.41%
<b>Total</b>		<b>3985.05</b>	<b>2441.05</b>	<b>61.26%</b>	<b>8491.75</b>	<b>6154.5</b>	<b>72.48%</b>

Source: Official government documents, custeel.com

In 2016, as part of plans for provinces and municipalities (not central state-owned enterprises<sup>10</sup>) to reduce iron and steel overcapacity, Hebei, Jiangsu and Shandong – three major steel-making provinces – reduced iron production capacity by 20.86 million tons, accounting for 50.33% of the total, of which 66.83% was operating capacity reduction, much higher than the national average of 37.25%. They also reduced steel production capacity by 24.89 million tons, accounting for 29.31% of the total, of which 53.84% was operating capacity reduction, much higher than the national average of 27.52%. With these figures, it is not difficult to see that major steel-making provinces made a significant contribution to the task of reducing overcapacity.

<sup>10</sup> See Section 2.5 below

Figure 6 Overcapacity reduction in selected provinces and municipalities in 2016



Source: Official government documents, custeel.com

## 2.5. Central state-owned enterprise plans for reducing overcapacity

In accordance with State Council directives, central state-owned enterprises were required to reduce crude steel production capacity by 7.19 million tons in 2016. Specialised steel enterprises among this group of central state-owned enterprises included Baogang Steel Group, Wuhan Iron and Steel Group and Anshan Iron and Steel Group Corporation (Baogang Steel and Wuhan Iron and Steel later merged to become Baowu Steel Group Co.).

As of the end of 2015, the central state-owned enterprises' crude steel production capacity was 138 million tons, accounting for 12.2% of China's total. In 2016, central state-owned enterprises were required to reduce crude steel production capacity by 15% in three years – equivalent to 21.37 million tons. Wuhan Iron and Steel Group itself set out targets to reduce iron production capacity by 3.19 million tons and crude steel production capacity by 4.42 million tons in 2016-2017, achieving these objectives and dismantling all relevant equipment ahead of schedule in 2016. Baogang

Steel increased targets for capacity reduction from 9.2 million tons to 11 million tons<sup>11</sup>.

In the “13<sup>th</sup> Five-Year Plan” period, central state-owned enterprises have taken the initiative to reduce capacity by 16.44 million tons, reducing 3.93 million tons through M&A activity and transferring 1 million tons<sup>12</sup> abroad through international cooperation. Their main task in future is to align on certain conditions that allow central state-owned enterprises to grow stronger, bigger and more effective.

Table 10 Plans for central state-owned enterprises' to resolve overcapacity during the "13th Five-Year Plan" period

Central state-owned Enterprise	Subsidiary	Iron	Steel	Iron Production Equipment	Steel Production Equipment	Plans	Status
		Production Capacity (10,000 tons)	Production Capacity (10,000 tons)				
Baogang Group	Luojiang Factory	-	510	-	Converter : 150t×3	Completed in 2016	Discontinued production
	Nantong Baogang	50	270	Blast furnace : 420m <sup>3</sup>	Converter : 50t×2, electric furnace: 100t	Sealed in 2016, to be dismantled in 2019	Discontinued production at the end of 2015
	Shaoguan Iron and Steel Co. in Guangdong	105	90	Blast furnace : 420m <sup>3</sup> , 450m <sup>3</sup>	Electric furnace: 90t	Sealed in 2016, to be dismantled in 2017	Discontinued production
	Shanghai Stainless Steel	298	340	Blast furnace : 750m <sup>3</sup> , 2500m <sup>3</sup>	Converter : 150t×2	To be sealed and dismantled in 2017	Blast furnace shutdown in June 2016
	Baicheng Bayi Iron and Steel Co.	300	280	Blast furnace : 1800m <sup>3</sup> ×2	Converter : 120t×2	To be sealed in 2017	Discontinued production in July 2015
	Wuhan Iron and Steel Group Echeng	184	222	Blast furnace : 620m <sup>3</sup> , 1080m <sup>3</sup>	Electric furnace : 70t, converter 130t	To be dismantled at the end of February 2017	Shut down in 2015

<sup>11</sup> Announcement from Baogang Group on reducing overcapacity, <http://www.baowugroup.com/contents/5171/95270.html>

<sup>12</sup> State-owned Assets Supervision and Administration Commission of the State Council on central state-owned enterprises overcapacity reduction, <http://companies.caixin.com/2016-10-23/100999729.html>

	Iron and Steel Co.					
	Wuhan Iron and Steel Group		135	220	blast furnace : - 1536m <sup>3</sup>	Equipment has been discontinued Shut down in 2016
<b>Total</b>			1072	1932	<b>Note:</b> The capacity planned to be withdrawn from the central state-owned enterprises' is larger than the production capacity targeted to be reduced, and some discontinued capacity will be used for replacement projects.	

Source: Baogang Group and Wuhan Iron and Steel Group

It is worth noting that the challenges central state-owned enterprises face in reducing steel production capacity differ from those of the provinces. Plans to reduce capacity at Baogang Group and Wuhan Iron and Steel Group, including their subordinates, are not covered as part of the capacity reduction targets of the province and municipality. In other words, central state-owned enterprises' capacity reduction tasks are independent from provinces and cities. Furthermore, central state-owned enterprises overfulfilled their capacity reduction targets, and the reduced excess capacity through replacements and international transfer.

Currently, Baogang Zhanjiang plans to launch new projects and replace some old capacity with the construction of new iron and steel bases. Due to the founding of Baowu Steel Group through the merger between Baogang Group and Wuhan Iron and Steel Group, Wuhan Iron and Steel Group's Fangchenggang project was relocated and its construction was delayed. Equipment capable of supplying 3 million tons of crude steel production capacity for the Baicheng project of Xinjiang Bayi Iron and Steel Co., an affiliate of Baogang Group, has been sealed by professional agencies and opportunities are being sought to transfer the capacity abroad as part of the implementation of the Belt and Road strategy.

In the "13<sup>th</sup> Five-Year Plan" period, central state-owned enterprises have taken the initiative to reduce crude steel production capacity by 21.37 million tons, accounting for 11.82% of the total target, and made rapid progress in implementation of reductions required by the government.

### III. Implementing overcapacity reduction in 2016

#### 3.1. Provinces' achievements in reducing steel overcapacity in 2016

By November 2016, the provinces, municipalities and central state-owned enterprises had already reached the annual iron and steel overcapacity reduction targets – a policy that involved 26 provinces and 181 iron and steel

enterprises. The task was made easier by the fact that idle capacity involving discontinued equipment accounted for a high proportion of the total capacity reduced in 2016<sup>13</sup>, and that local governments' helped oversee the process.

Operating capacity was mainly reduced in October and November 2016, to balance enterprises' operating efficiency and overcapacity reduction. By the time equipment used for operating capacity reduction in Hebei Province was shut down at the end of October, China had overfulfilled its iron and steel capacity reduction target of 45 million tons. Targets for iron and steel production capacity reduction for 2017 will soon be assigned. As most idle capacity was eliminated in 2016, it will be harder to reach the target in 2017, which is a crucial year for tackling overcapacity reduction in the steel industry.

As of 2016, 17 provinces out of the aforementioned 26 had completed the task of reducing iron and steel overcapacity for the "13<sup>th</sup> Five-Year Plan" period. The remaining 9 provinces still need a few years to complete the task. Compared with Hebei, Shandong and Jiangsu, other provinces have not been put under heavy pressure in reducing overcapacity within five years. Close attention should be paid to the work in Hebei, Shandong and Jiangsu, the biggest steel-producing provinces.

**Table 11 Objectives of selected provinces, municipalities and central state-owned enterprises for reducing overcapacity in the steel industry during the "13th Five-Year Plan" period**

Province	Completed in 2016		Targets for the "13th Five-Year Plan" period		Unfinished crude steel production capacity reduction (10,000 tons)
	Iron(10,000 tons)	Steel (10,000 tons)	Iron (10,000 tons)	Steel (10,000 tons)	
Hebei	1816	1639	4989	4913	3274
Shandong	270	270	970	1500	1230
Jiangsu	-	580	-	1750	1170
Xinjiang	-	90	-	700	610
Tianjin	159	370	-	900	530
Anhui	222	314	527	663	349
Gansu	100	140	200	300	16

<sup>13</sup> In this report, idle capacity, which has been discontinued for a long period of time, is defined as "idle capacity", which has no effect on steel production in existing markets; productive capacity is defined as "operating capacity".



<b>Shaanxi</b>	160	70	-	170	100
<b>Yunnan</b>	125	376	125	453	77
<b>Production capacity reduced by central state owned enterprises in 2016</b>		<b>Production capacity defused by central state owned enterprises during the "13th Five-Year Plan" period</b>			
	<b>Iron(10,000 tons)</b>	<b>Steel (10,000 tons)</b>	<b>Objectives</b>		
<b>Central state-owned enterprises</b>	1072	1932	To reduce crude steel production capacity by 16.44 million tons; merge and re-organise 3.93 million tons of capacity; and transfer 1 million tons of capacity abroad through international cooperation		Production capacities required to be reduced had been discontinued in 2016

Note: 17 provinces not listed in the table completed their tasks for the "13th Five-Year Plan" period in 2016.

Source: Official government documents; compiled by Custeel

2016 marks the first year that supply-side reform has been implemented as part of the "13<sup>th</sup> Five-Year Plan", and the first year of reducing overcapacity in the steel industry, attracting much attention from the central government and the relevant provinces and municipalities. Although the annual task of reduction 45 million tons of capacity was overfulfilled, the overall objective of reducing 100 - 150 million tons of crude steel capacity set by the State Council remains an arduous task. In 2016, based on the actual circumstances of the steel industry, provinces incorporated a lot of discontinued production capacity into the capacity reduction targets, which means that more production capacity reduction tasks will need to be completed in future, once the idle capacity has been withdrawn. Therefore, the industry will be faced with a more difficult task in reducing overcapacity and making substantial progress in 2017.

**Table 12 Progress made by selected provinces, municipalities and central state-owned enterprises in reducing overcapacity in 2016**

Province	Progress and achievements in reducing overcapacity
<b>Hebei</b>	In May 2016, Hebei Province held a conference on reducing overcapacity in the steel industry. The provincial government signed documents on diffusing overcapacity with the relevant cities, departments and enterprises, and made clear the targets for 2016, 2017 and the "13th Five-Year Plan" period. At the same time, the relevant cities also developed measures for reducing overcapacity. At the end of August, Hebei Province announced its overcapacity reduction plan for 2016, made detailed arrangements for the work and developed a time schedule. In early November, the province successfully completed its steel overcapacity reduction targets for 2016. ( <a href="#">Source: Hebei Provincial Development and Reform Commission</a> )
<b>Jiangxi</b>	On 19 August 2016, the Jiangxi Provincial Working Group on Overcapacity Reduction issued a notice on specific arrangements for diffusing overcapacity – announcing targets and developing a time schedule which outlined plans to

	complete the task by the end of November. On 30 August, with the demolition of blast furnaces from Pingxiang Anyuan Iron and Steel Corporation, Jiangxi Province dismantled / sealed all overcapacity equipment of the steel industry and completed the task of overcapacity reduction assigned by the state ahead of schedule. The Provincial Commission of Industry and Information Technology announced that the province had completed the five-year task (2016-2020) in one year (2016), thereby accelerating the pace of overcapacity reduction of the steel industry. ( <a href="#">Source: Jiangxi Provincial Commission of Industry and Information Technology</a> )
<b>Anhui</b>	In August 2016, the Anhui Provincial Leading Group for Diffusing Overcapacity issued their annual notice on the task of overcapacity reduction. Magang Hefei Steel Processing Co. was cited in the 2014 Plan for Eliminating Backward Production Capacity, but did not complete the task until 2016 after its relevant equipment was discontinued in 2015. At the end of November 2016, the company successfully completed the task of overcapacity reduction. ( <a href="#">Source: Anhui Provincial Economic and Information Commission</a> )
<b>Henan</b>	Henan Province and the central government signed a document on defusing overcapacity in the steel industry. When Zhumadian South Iron and Steel sealed all relevant equipment at the end of September; and Dingxin Iron and Steel sealed all relevant equipment in mid-October; the province achieved steel capacity withdrawal targets for 2016. The provincial Development and Reform Commission organised an inspection to ensure the smooth implementation of the state inspection. ( <a href="#">Source: Website of Henan Provincial Government</a> )
<b>Sichuan</b>	On 19 August, the Sichuan Provincial Economic and Information Commission announced the overcapacity reduction task of the province's steel industry to ensure that the overcapacity reduction target would be achieved by the end of October. This involved Dazhou Iron and Steel Group Co., whose blast equipment was discontinued in mid-October, marking the completion of the province's task of overcapacity reduction before the end-of-October deadline. (Source: <a href="#">Sichuan Provincial Economic and Information Commission</a> )
<b>Yunnan</b>	As part of the implementation of its overcapacity reduction plans, the Yunnan provincial government targeted the practices of Kunming Iron and Steel Co. and Yuxi Xinxing Iron and Steel Co. By the end of August 2016, when these companies discontinued all relevant equipment, the province achieved its target of discontinuing all overcapacity equipment. (Source: <a href="#">Website of the Yunnan Provincial People's Government</a> )
<b>Zhejiang</b>	Zhejiang Province announced plans for overcapacity reduction in the steel industry in June 2016. At the end of July, the Provincial Conference on Defusing Overcapacity was held after which 11 related enterprises sealed their overcapacity equipment, marking the province's successfully completion of their task of reducing overcapacity. ( <a href="#">Source: Zhejiang Provincial Development and Reform Commission</a> )
<b>Inner Mongolia</b>	Overcapacity in the steel industry of Inner Mongolia in 2016 was limited to idle capacity. All relevant equipment was discontinued in 2015, and by mid-August 2016 Inner Mongolia had cut off water and power supplies. All relevant equipment was dismantled at the end of October. ( <a href="#">Source: Inner Mongolia Autonomous Region People's Government</a> )
<b>Shandong</b>	Shandong Province's plan to resolve overcapacity in the steel industry in 2016 set the deadline of December, and was mostly focused on operating capacity. The province effectively accelerated overcapacity reduction and had completed the relevant equipment sealing and demolition work by early November. ( <a href="#">Source: Shandong Provincial Economic and Information Commission</a> )
<b>Liaoning</b>	The Liaoning Provincial Party Committee and the Provincial Government Leading Group for Overcapacity Reduction both actively promoted the implementation of overcapacity reduction in Liaoning. Required by the state to reduce crude steel production capacity by 6.02 million tons during the "13th Five-Year Plan" period, but the province itself planned to complete the task ahead of schedule in 2016. It is worth noting that most of the capacity it was required reduce is idle, involving closed-enterprises and idle equipment. In October, Liaoning Province successfully completed the task of reducing its quota of

	overcapacity for the next five-year period. ( <a href="#">Source: Industrial and Information Technology Committee of Liaoning Provincial Development and Reform Commission</a> )
<b>Fujian</b>	Fujian Province announced plans to reduce overcapacity in the steel industry in August. This included plans to dismantle all relevant equipment and complete the annual task by the end of November, while also completing the tasks for the "13th Five-Year Plan" period in 2016. All overcapacity required to be reduced is idle. Fujian successfully completed overcapacity reduction in November. ( <a href="#">Source: Fujian Provincial People's Government</a> )
<b>Jilin</b>	In October, the Jilin Provincial Development and Reform Commission, the Development and Reform Commission of Tonghua City Government and other relevant departments attended the demolition ceremony of an electric furnace belonging to Tonghua Iron and Steel Group – a important part of Jilin's their efforts to reduce overcapacity in the steel industry. On 10 August, Jilin Changlong Iron and Steel Co. began to dismantle all relevant equipment. The province discontinued and later dismantled all relevant equipment involved in the overcapacity reduction of iron and steel in November, marking the successful completion of overcapacity reduction work. ( <a href="#">Source: Jilin Provincial Development and Reform Commission</a> )
<b>Hubei</b>	Hubei Province originally planned to reduce overcapacity of crude steel by 2.28 million tons in 2016. In September, after an application from relevant enterprises and the local government, the province increased this amount by 1.1 million tons (originally planned to be completed over a three-year period) and all relevant equipment was discontinued. In early November, Hubei Province began inspections into overcapacity reduction work across the country, starting with Chibi Minfa Building Materials Co. ( <a href="#">Source: Hubei Provincial Economic and Information Commission</a> )
<b>Hunan</b>	Hunan Province reduced crude production capacity by 500,000 tons in 2016. MCC (Xiangtan) Heavy Industrial Equipment Co., an affiliate of Hualing Iron and Steel Co., shut down and sealed its electric furnaces of 50 tons, marking the completion of Hunan Province's overcapacity reduction work for 2016 ahead of schedule in August. ( <a href="#">Source: Hunan Provincial Development and Reform Commission</a> )
<b>Guangdong</b>	In order to tackle overcapacity, Guangdong Province established a time schedule for tackling equipment and working issues. The province reduced crude steel production by 400,000 tons from January to July, by 300,000 tons in August, 620,000 tons in September and 1.08 million tons in October. The overall task of defusing overcapacity by 2.4 million tons was completed in October. ( <a href="#">Source: Guangdong Provincial Development and Reform Commission</a> )
<b>Xinjiang</b>	Steel industry overcapacity is a critical issue in the Xinjiang Uygur Autonomous Region. In 2016, the focus was on shutting down and dismantling all intermediate frequency furnace equipment in 2016. In September, Hutubi County took the lead to dismantle the relevant equipment, and 900,000 tons of crude steel production was suspended. In the future, the task of overcapacity reduction will become an even more difficult task for Xinjiang. ( <a href="#">Source: Xinjiang Economic and Information Commission</a> )
<b>Qinghai</b>	Qinghai Province carried out work to reduce overcapacity at Xining Special Steel Co., cutting off the power supply and sealing off all relevant equipment in June. The province completed its objective of reducing overcapacity by 500,000 tons ahead of schedule. ( <a href="#">Source: Qinghai Provincial Economic and Information Commission</a> )
<b>Shaanxi</b>	In August, Shaanxi Province signed a document on resolving excess capacity, outlining plans to reduce iron production by 1.6 million tons and steel production by 700,000 tons. The relevant iron and steel enterprises have since ceased production, sealed all relevant equipment, and pledged not to resume production while gradually dismantling all relevant equipment. ( <a href="#">Source: Shaanxi Provincial Development and Reform Commission</a> )
<b>Gansu</b>	In May 2016, Gansu Province determined its annual target for overcapacity reduction. As of 31 August, the province's steel industry had completed the annual task for overcapacity reduction three months ahead of schedule by successfully sealing or dismantling all relevant equipment. ( <a href="#">Source: Gansu Provincial Development and Reform Commission</a> )
<b>Guizhou</b>	The Guizhou Provincial Development and Reform Commission carried out inspections on all relevant enterprises in early

	August in order to accelerate overcapacity reduction in the province's steel industry. Qiandongnan Wanshun Iron and Steel Co. dismantled its 700,000 tons of steel smelting equipment, and Shougang Shuicheng Iron and Steel (Group) Co. cut water and power supplies and sealed 1.5 million tons of steel smelting equipment. In August, Guizhou Province had fundamentally completed their annual overcapacity reduction task. ( <a href="#">Source: Guizhou Provincial Development and Reform Commission</a> )
<b>Heilongjiang</b>	Heilongjiang Province outlined plans to complete overcapacity reduction work by the end of November, reducing crude steel production capacity by 6.1 million tons by tackling long-term idle capacity. Work was completed on time in November. ( <a href="#">Source: Heilongjiang Provincial Development and Reform Commission</a> )
<b>Tianjin</b>	Tianjin Municipality's steel overcapacity reduction principally involved Tianjin Metallurgical Group, Tianjin Iron and Steel Group and Tianjin Tiantie Metallurgical Group, all of which cut water and power supplies and sealed relevant equipment in August. Tianjin had suffered from certain equipment being left idle, but in August successfully sealed this equipment as part of its work to reduce overcapacity. ( <a href="#">Source: Tianjin Commission of Industry and Information Technology</a> )
<b>Jiangsu</b>	Jiangsu Province made the most significant progress in overcapacity reduction, cutting 2.8 million tons of iron and steel production by the end of August. When Suzhou had reduced iron and steel production by 1.1 million tons at the end of October, Jiangsu Province successfully completed their overcapacity reduction task of 3.9 million tons as scheduled. At the end of October, Jiangsu Province arranged for two additional enterprises to cut the production of a total of 3 million tons of crude steel and dismantle all relevant equipment. By the end of the year, two million tons had been successfully cut, with the remaining one million tons to be reduced by June 2017. ( <a href="#">Source: Jiangsu Provincial Development and Reform Commission</a> )
<b>Guangxi</b>	In August, Guangxi Province carried out inspections of iron and steel enterprises involved overcapacity reduction work to stop the production of idle capacity. The province carried out the relevant actions in September and October, and completed the annual task successfully. ( <a href="#">Source: Government of Guangxi Zhuang Autonomous Region</a> )
<b>Shanxi</b>	Shanxi Province was required to reduce iron production capacity by 820,000 tons in 2016. Taigang Linfen Iron & Steel Co. and Linfen Iron & Steel Co. were directed to dismantle furnace equipment before October, when the Shanxi Provincial Leading Group for Defusing Overcapacity carried out on-site inspections, which determined the province had successfully completed their annual task for 2016. ( <a href="#">Source: Shanxi Provincial People's Government</a> )
<b>Chongqing</b>	In September, Chongqing Municipality focused its effort on resolving excess capacity in the steel industry by sealing or dismantling the equipment of 24 steel enterprises. Chongqing successfully completed its task of overcapacity reduction before November. ( <a href="#">Source: Chongqing People's Government</a> )
<b>Central state-owned enterprises</b>	China Baowu Steel Group adjusted its task of reducing 9.2 million tons of steel overcapacity in the period of 2016 to 2018, to reducing 11 million tons of steel overcapacity before the end of 2017. The process of shutting down all relevant equipment began in 2016, and must be completed in 2017. Wuhan Iron and Steel Group had planned to reduce pig iron production by 3.19 million tons and reduce crude steel production by 4.42 million tons in the period of 2016 to 2017, but completed this task ahead of schedule in 2016. All relevant equipment was shut down and dismantled. (Source: <a href="#">Baowu Steel Group Corp</a> , <a href="#">Wuhan Iron and Steel Group Corp</a> )

Source: Official government documents; compiled by Custeel

In 2016, as most of the enterprises and equipment involved in the overcapacity reduction of many regions were idle businesses and equipment, and some areas had a lot of idle capacity, so some provinces made relatively rapid progress in defusing overcapacity. Seen from the progress made by 26 provinces, resolving the ongoing capacity is the key points and difficulty of the overcapacity reduction work and slow progress was made in it. As of November 2016, China

completed the task of overcapacity reduction in the steel industry. In December, we entered the stage of overall inspection and acceptance.

### **3.2. Analysis of the methods adopted by selected provinces to reduce overcapacity**

From the tasks set for reducing iron and steel overcapacity in provinces, it is clear that after the State Council proposed to carry out supply-side reform, the steel industry made unprecedented efforts to reduce overcapacity and thoroughly implemented the relevant policy. According to the national policy for overcapacity reduction, the expansion of iron and steel production capacity in any form is prohibited, and we must strictly implement regulations on eliminating backward production capacity in energy consumption, water consumption and environmental protection.

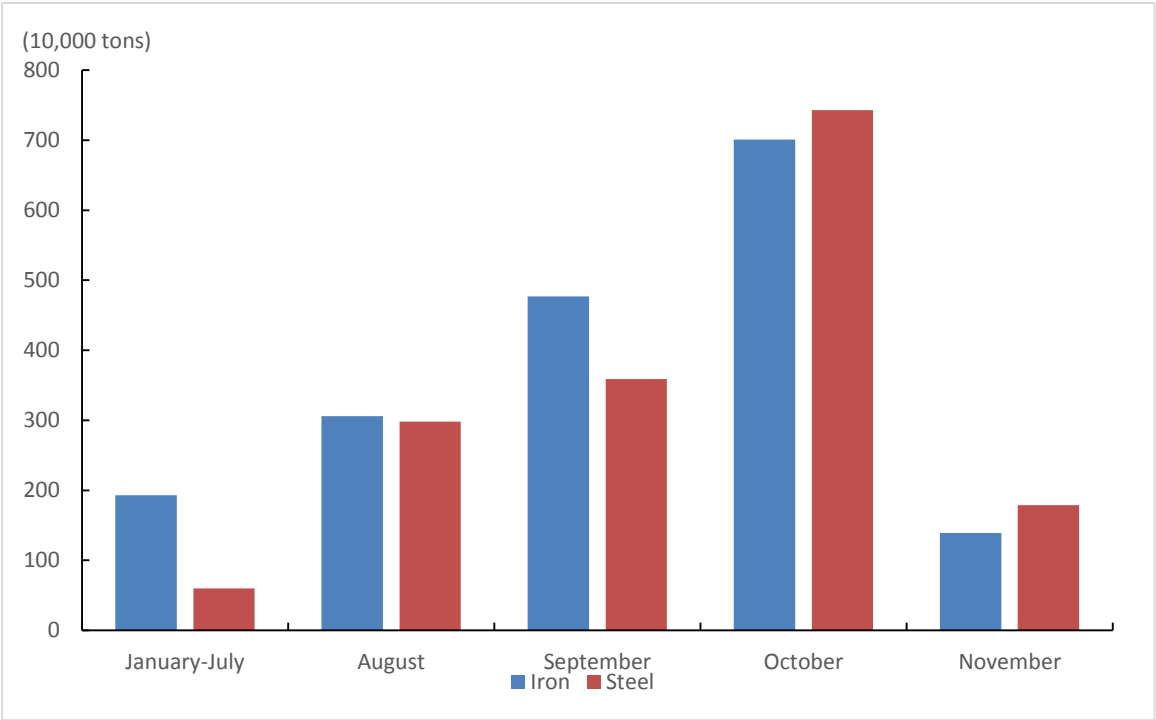
In the process of overcapacity reduction, Hebei, Jiangsu and Shandong – the three major steel producing provinces – have taken on a heavy burden, mainly involving the reduction of operating capacity. In terms of the overall national situation, however, overcapacity reduction involves much idle capacity. This is especially true of steel smelting, where idle capacity accounted for 72.48% of the total steel production capacity reduced, while idle iron smelting capacity accounted for 61.26% of the total. Among enterprises, privately-own enterprises accounted for as much as 85.2%.

Hebei is China's largest steel manufacturing province, and the saying goes that one should: 'Study Hebei to understand China's steel industry'. Therefore, Hebei's efforts to reduce iron and steel overcapacity have attracted much attention. According to Hebei's plan submitted to the State Council on reducing steel overcapacity, the province set targets to reduce iron overcapacity by 17.26 million tons and steel overcapacity by 14.22 million tons in 2016. By the end of November, however, the province had already reduced 18.16 million tons of iron overcapacity and 16.39 million tons of steel overcapacity. Hebei reduced 1.93 million tons of iron production capacity and 1.25 million tons of steel production capacity from January to July 2016, and had plans to reduce a further 520,000 tons of iron production capacity in August. For September and October, the target was to reduce 6.57 million tons of iron production capacity and 5.33 million tons of steel production capacity, including 5.35 million tons of operating iron production capacity, accounting for 81.4% of the total.

Compared with other provinces and municipalities, Hebei has taken on a heavier task in terms of reducing steel overcapacity, and is faced with heavier pressure. It should be noted that the province did not incorporate several idle furnaces, converters and discontinued steel mills, which affected targets for overcapacity reduction in 2016. This is because the task of overcapacity reduction was assigned to districts and cities, leading to severe competition, and

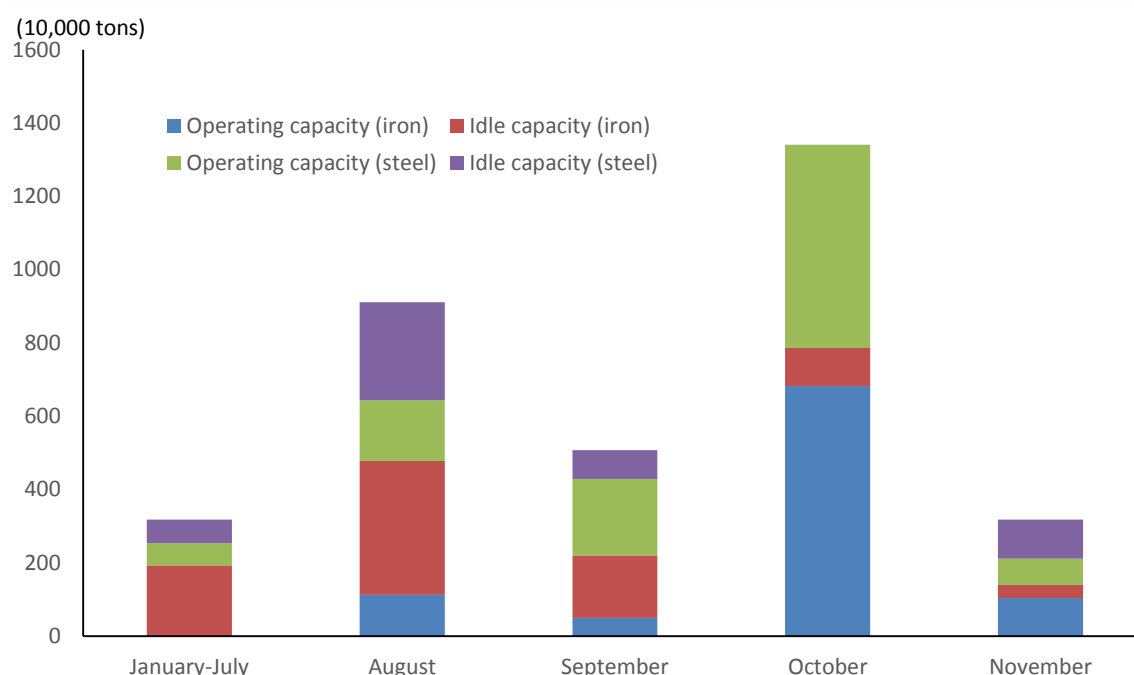
enterprises suffering serious losses are confronted with serious problem of debt.

Figure 7 Monthly iron and steel overcapacity reduction in Hebei province in 2016



Source: Official government documents, custeel.com

Figure 8 Monthly overview of operating / idle production capacity in Hebei province in 2016



Source: Official government documents, custeel.com

In addition, Hebei issued a subsidy of RMB 55 per ton<sup>14</sup> for steel overcapacity reduction in 2015, and later increased that figure to reduce the difficulty of reducing overcapacity in 2016. The province formulated guiding opinions on raising funds for resolving overcapacity in the steel industry, established a compensation mechanism with funds raised from the central and local governments as well as relevant enterprises, and increased the iron and steel production capacity of enterprises with core competitiveness.

Handan City in Hebei established an iron and steel production capacity trading platform in the Wu'an region, assigning overcapacity reduction tasks to various enterprises, demanding replacement transaction costs of RMB 1 million per 10,000 tons<sup>15</sup>. Operational enterprises are required to pay a transaction fee, and inefficient enterprises need to dismantle furnaces to receive subsidies. The Qian'an Region of Tangshan City in Hebei established a comprehensive evaluation system for equipment reduction in steel enterprises that makes an evaluation of indicators of corporate environmental protection, energy conservation, safe production, tax contribution, wages and social insurance, and

<sup>14</sup> Hebei Province subsidised iron and steel production capacity by approximately RMB 55 / ton, [http://news.xinhuanet.com/2016-11/22/c\\_1119964780.htm](http://news.xinhuanet.com/2016-11/22/c_1119964780.htm)

<sup>15</sup> Wu'an region established the country's first county-level steel production capacity trading platform, [http://www.he.xinhuanet.com/zfwq/wuan/wuan/2017-01/06/c\\_1120259498.htm](http://www.he.xinhuanet.com/zfwq/wuan/wuan/2017-01/06/c_1120259498.htm)

arranges overcapacity reduction in accordance with the ranking order.

It is worth noting, however, that some steel enterprises were forced to dismantle equipment as part of the task of reducing overcapacity. This led to other supporting equipment being left idle, and a number of workers facing unemployment, within a clear system in place for how much compensation should be awarded. Some steel enterprises in Tangshan complained that overcapacity reduction standards were unclear and unfair.

Enterprises that are covered by the “Norms and Conditions for Steel Industry” issued by the Ministry of Industry and Information Technology are required to reduce overcapacity, while those not covered are not required to reduce overcapacity. As for subsidies, Tangshan issued RMB 300 million of bonuses and subsidies to enterprises and their laid-off workers in 2016<sup>16</sup>. Some enterprises’ equipment has been mortgaged to banks due to debt problems. According to the regulations on the issuance of bonuses and subsidies, however, no bonuses or subsidies will be issued unless all relevant equipment is dismantled.

Magang Iron and Steel Co., an affiliate of Magang Group Holdings. in Anhui Province, was required to reduce iron production capacity by 1.6 million tons and crude steel production capacity by 2.04 million tons in 2014. The work was delayed due to the placement of workers, and the Ministry of Industry and Information Technology extended the deadline to the end of 2016. In fact, Magang Iron and Steel ceased production in 2015, but the backward capacity was not eliminated in time, indicating problems in the implementation of the resettlement policy.

As a major producer of iron and steel, Jiangsu province planned to reduce crude steel production capacity by 3.9 million tons in 2016. At the end of October, it assigned the task to two additional steel enterprises and increased the target of crude steel production capacity reduction by 3 million tons<sup>17, 18, 19, 20, 21, 22</sup>. Jiangsu plans to reduce crude steel production capacity by 17.5 million tons during the “13<sup>th</sup> Five-Year Plan” period. Idle capacity accounted for 86.21% of the crude steel production capacity reduced in 2016, and 33.14% of the “13<sup>th</sup> Five-Year Plan” period target. Jiangsu still faces an arduous task in reducing overcapacity in the future.

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<sup>16</sup> Difficulties obtaining compensation funds. It is not always clear which enterprises are required to reduce overcapacity, and steel enterprises are often reluctant to implement the policy of defusing overcapacity, [http://dz.jjckb.cn/www/pages/webpage2009/html/2016-11/22/content\\_25717.htm](http://dz.jjckb.cn/www/pages/webpage2009/html/2016-11/22/content_25717.htm)

<sup>17</sup> Jiangsu’s annual steel production capacity reduction was 3.9 million tons, <http://jsnews.jschina.com.cn/system/2016/10/15/029813313.shtml>

<sup>18</sup> Jiangsu’s Shagang Group withdrew 1 million tons of capacity, [http://www.jsdpc.gov.cn/zixun/tzgg\\_1/201608/t20160823\\_422626.html](http://www.jsdpc.gov.cn/zixun/tzgg_1/201608/t20160823_422626.html)

<sup>19</sup> Valin Steel Co. withdrew 1 million tons of capacity, [http://www.jsdpc.gov.cn/zixun/tzgg\\_1/201608/t20160825\\_422706.html](http://www.jsdpc.gov.cn/zixun/tzgg_1/201608/t20160825_422706.html)

<sup>20</sup> Nantong East Co. withdrew 1 million tons of capacity, [http://www.jsdpc.gov.cn/zixun/tzgg\\_1/201608/t20160826\\_422757.html](http://www.jsdpc.gov.cn/zixun/tzgg_1/201608/t20160826_422757.html)

<sup>21</sup> Changzhou Xinyu withdrew 800,000 tons of capacity, [http://www.jsdpc.gov.cn/zixun/tzgg\\_1/201610/t20161031\\_424639.html](http://www.jsdpc.gov.cn/zixun/tzgg_1/201610/t20161031_424639.html)

<sup>22</sup> Jiangsu Xicheng withdrew 2 million tons of capacity, [http://www.jsdpc.gov.cn/zixun/tzgg\\_1/201610/t20161031\\_424642.html](http://www.jsdpc.gov.cn/zixun/tzgg_1/201610/t20161031_424642.html)



Hubei province also increased its targets for overcapacity reduction in 2016. It had originally planned to reduce crude steel production capacity by 2.28 million tons in 2016-2018, but after applications from relevant enterprises and local governments, decided to complete an additional 1.1 million tons in 2016<sup>23</sup>. However, it is worth noting that despite this increase, it is relatively easy for these provinces to achieve their targets, as the increased work mainly involved idle capacity. At the end of November, the State Council launched an investigation into intermediate frequency furnaces used to produce steel rods in Jiangsu, Shandong and Sichuan, and eliminated enterprises producing low-quality steel rods.

Xinjiang province planned to reduce steel production capacity by 7 million tons during the “13<sup>th</sup> Five-Year Plan” period, adopting a capacity utilisation rate of 60%, and strictly prohibiting new capacity<sup>24</sup>. From January to September 2016, Xinjiang’s iron and steel production capacity utilisation rate was only 34.01%, far below the national average. At present, Xinjiang does not have the right conditions for full production. It is also worth noting that most of the steel enterprises in Xinjiang produce building materials with a high repeatability rate (easily replicated) and low added value, making them unsuitable for export. As the steel production capacity cannot be fully utilised locally, it is quite normal for steel enterprises to cease production in winter. Xinjiang has achieved the target of steel overcapacity reduction for 2016, but it remains to be seen whether the overcapacity problem will be addressed even after the reduction of 7 million tons of production capacity. Supply-side reform must continue for a long period of time, and more efforts need to be placed on overcapacity reduction to rejuvenate the steel industry in Xinjiang.

### 3.2.1. Proportion of operating / idle capacity reduction of steel overcapacity

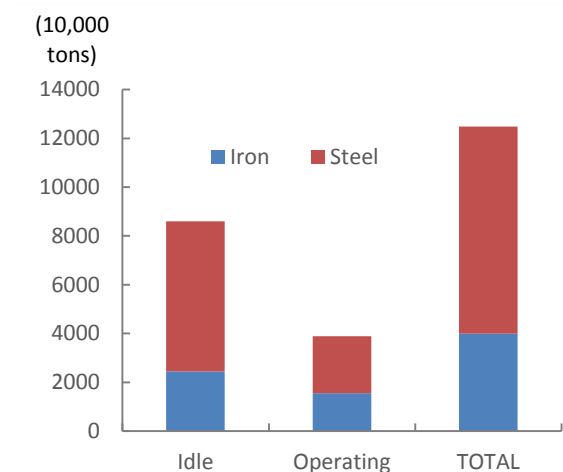
In terms of the implementation of overcapacity reduction by enterprises across the country, idle capacity accounts for a high proportion of the total capacity reduced, especially in the reduction of steel production capacity. In 2016, 26 provinces reduced iron production capacity by 39.85 million tons, of which 61.26% was idle capacity; and reduced steel production capacity by 84.9175 million tons, of which 72.4% was idle capacity. In Hebei, Shandong, Henan and Chongqing, the proportion of idle capacity was below 50%.

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<sup>23</sup> Hubei province announcement on reducing steel overcapacity in 2016, [http://www.hbfgw.gov.cn/ywcs2016/gyc/tztggyc/wjgyc/201608/t20160822\\_106659.shtml](http://www.hbfgw.gov.cn/ywcs2016/gyc/tztggyc/wjgyc/201608/t20160822_106659.shtml); Hubei province reduces overcapacity targets ahead of schedule, [http://www.hbfgw.gov.cn/ywcs2016/gyc/tztggyc/wjgyc/201609/t20160920\\_107062.shtml](http://www.hbfgw.gov.cn/ywcs2016/gyc/tztggyc/wjgyc/201609/t20160920_107062.shtml)

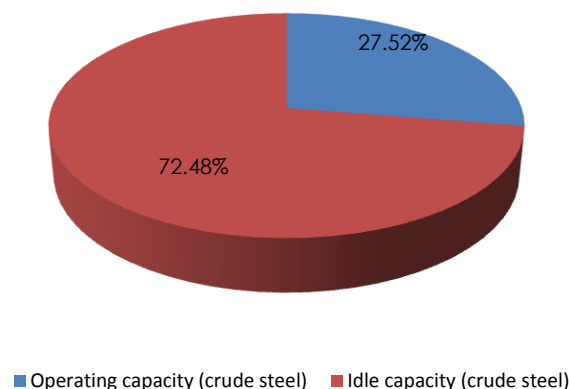
<sup>24</sup> Analysis: Xinjiang – a serious surplus of steel, <http://www.custeel.com/shouye/common/viewArticle.jsp?articleID=4525741&group=1001>

**Figure 9 Iron and steel production capacity reduction nationwide in 2016**



Source: Official government documents, custeel.com

**Figure 10 Proportion of operating / idle production capacity reduced nationwide in 2016**



Source: Official government documents, custeel.com

**Table 13 Proportion of idle iron capacity reduction in Chinese provinces in 2016**

Province	Hebei	Shandong	Inner Mongolia	Anhui	Heilongjiang	Sichuan	Shaanxi	Gansu	Tianjin
<b>Iron reduction</b> (10,000 tons)	1816	270	224.25	62	219	217	160	160	159
<b>Idle iron reduction</b> (10,000 tons)	692	0	224.25	62	219	167	160	160	159
<b>Proportion of idle iron reduction</b>	38.11%	0.00%	100.00%	100.00%	100.00%	76.96%	100.00%	100.00%	100.00%

Province	Guizhou	Yunnan	Zhejiang	Henan	Shanxi	Jiangxi	Qinghai	Guangxi	Chongqing
<b>Iron reduction</b> (10,000 tons)	150	125	110	100	82	50	50	20	10.8
<b>Idle iron reduction</b> (10,000 tons)	150	125	110	0	82	50	50	20	10.8
<b>Proportion of idle iron reduction</b>	100.00%	100.00%	100.00%	0.00%	100.00%	100.00%	100.00%	100.00%	100.00%

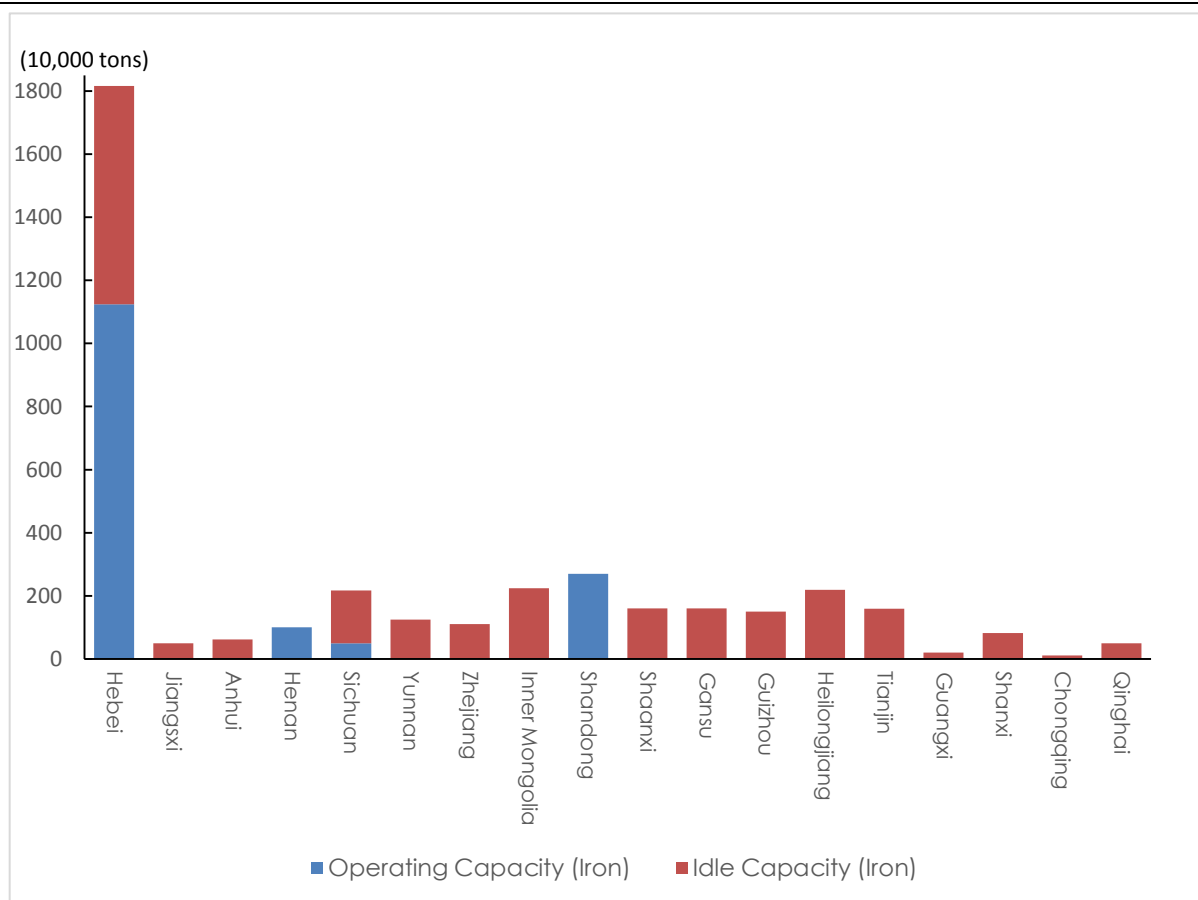
Source: Official government documents; custeel.com

Table 14 Proportion of idle steel capacity reduction in Chinese provinces in 2016

Province	Hebei	Jiangsu	Heilongjiang	Liaoning	Chongqing	Fujian	Jiangxi	Sichuan	Yunnan	Tianjin	Zhejiang	Hubei
Steel reduction (10,000 tons)	1639	580	610	602	516.75	445	433	420	376	370	368	338
Idle steel reduction (10,000 tons)	619	500	610	520	229.5	445	433	280	246	370	298	338
Proportion of idle steel reduction	37.77%	86.21%	100%	86.38%	44.41%	100%	100%	66.67%	65.43%	100%	80.98%	100%
Province	Anhui	Shandong	Henan	Guangdong	Guizhou	Guangxi	Gansu	Jilin	Xinjiang	Shaanxi	Inner Mongolia	Hunan
Steel reduction (10,000 tons)	314	270	240	240	220	185	144	108	90	70	67	50
Idle steel reduction (10,000 tons)	314	30	0	240	220	185	144	60	90	70	67	50
Proportion of idle steel reduction	100%	11.11%	0%	100%	100%	100%	100%	55.56%	100%	100%	100%	100%

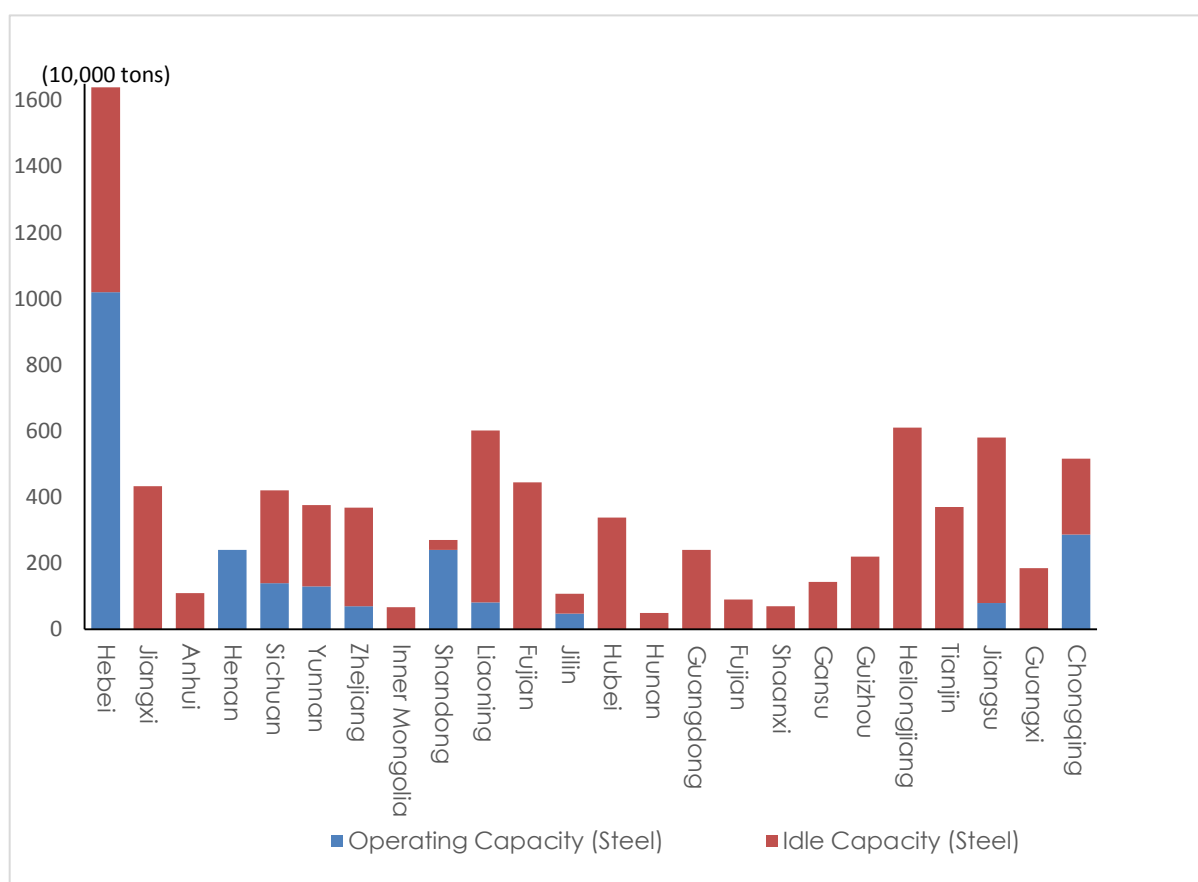
Source: Official government documents; custeel.com

Figure 11 Operating / idle iron capacity reduction in selected provinces and municipalities in 2016



Source: Official government documents, custeel.com

Figure 12 Operating / idle steel capacity reduction in selected provinces and municipalities in 2016



Source: Official government documents, custeel.com

### 3.2.2. Proportion of privately-owned / local state-owned enterprises involved in reducing steel overcapacity

The majority of domestic iron and steel overcapacity reduction in 2016 was undertaken by private enterprises. Of the 26 provinces involved in capacity reduction, private enterprises also accounted for a relatively high proportion of operating capacity reduction. In 2015, China's crude steel production reached 804 million tons, of which 450 million tons were produced by private enterprises, accounting for 56.24%. Private enterprises' crude steel production capacity was larger than that of local state-owned enterprises. The main reasons why private enterprises undertook the majority of the overcapacity reduction task in 2016 are as follows:

1. Overcapacity reduction in 2016 mainly involved enterprises with a relatively low level of equipment and low standards of products and energy consumption. It is clear that the most commonly shutdown/dismantled equipment was iron smelting blast furnaces of 400-1000 cubic metres and steel smelting equipment with a small capacity. Private

enterprises are smaller, have a lower level of equipment and low standards of energy consumption and environmental protection facilities compared to state-owned enterprises. They were therefore burdened with a difficult task in reducing excess capacity.

2. In terms of product makeup, private enterprises mainly manufacture rebar, wire rod, strip steel and light section steel with weak competitiveness and low added value. In terms of adjustments being made to the domestic steel industry, the task of resolving excess capacity is mainly being undertaken by private enterprises which mainly manufacture low-end products.

3. Regional differences. After reform and opening up, eastern China developed much faster than western China, especially those coastal cities that witnessed rapid growth. Of the large number of steel enterprises concentrated in coastal areas such as Shandong, Jiangsu and northern China, most are privately-owned enterprises. That is another reason why private enterprises undertake a heavier task than state-owned enterprises in the reduction of crude steel overcapacity.

4. Local state-owned enterprises are larger in scale and assume more social responsibilities, taking on more employees and more debt. Because they are faced with this extra pressure, local governments tend to support state-owned enterprises over private enterprises. Local state-owned enterprises are faced with more obstructions when it comes to overcapacity reduction, and the burden falls mostly on private enterprises when it comes to reducing crude steel production.

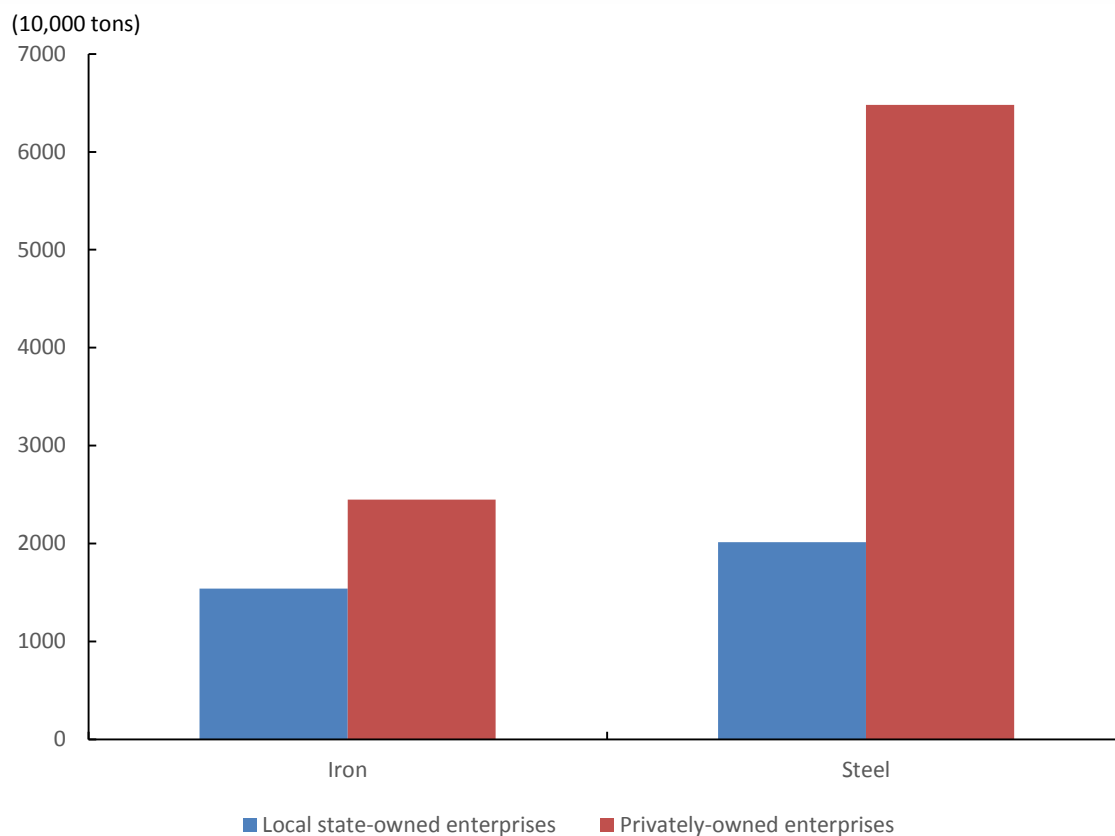
In 2016, a total of 181 steel enterprises were involved in the process of overcapacity reduction. Of these, 25 were local state-owned enterprises, accounting for 13.8% of the total, and 156 were private enterprises, accounting for 86.2%. The local state-owned enterprises reduced iron and steel production capacity by 15.38 million tons and 20.13 million tons respectively, accounting for 38.60% and 23.71% of the total. Private enterprises reduced iron and steel production capacity by 24.4705 million tons and 64.7875 million tons respectively, accounting for 61.40% and 76.29%.

The iron and steel production capacities reduced by local state-owned in this time were mainly idle capacities, including idle iron production capacity of 13.36 million tons and idle steel production capacity of 171.71 million, accounting for 86.87% and 85.30% of their respective totals.

On the contrary, operating capacities accounted for a high proportion of iron and steel production capacities reduced by private enterprises in this time. 11.055 million tons of idle iron production capacity and 44.375 million tons of steel production capacity was reduced, accounting for 45.18% and 68.49% respectively, while operating iron and steel

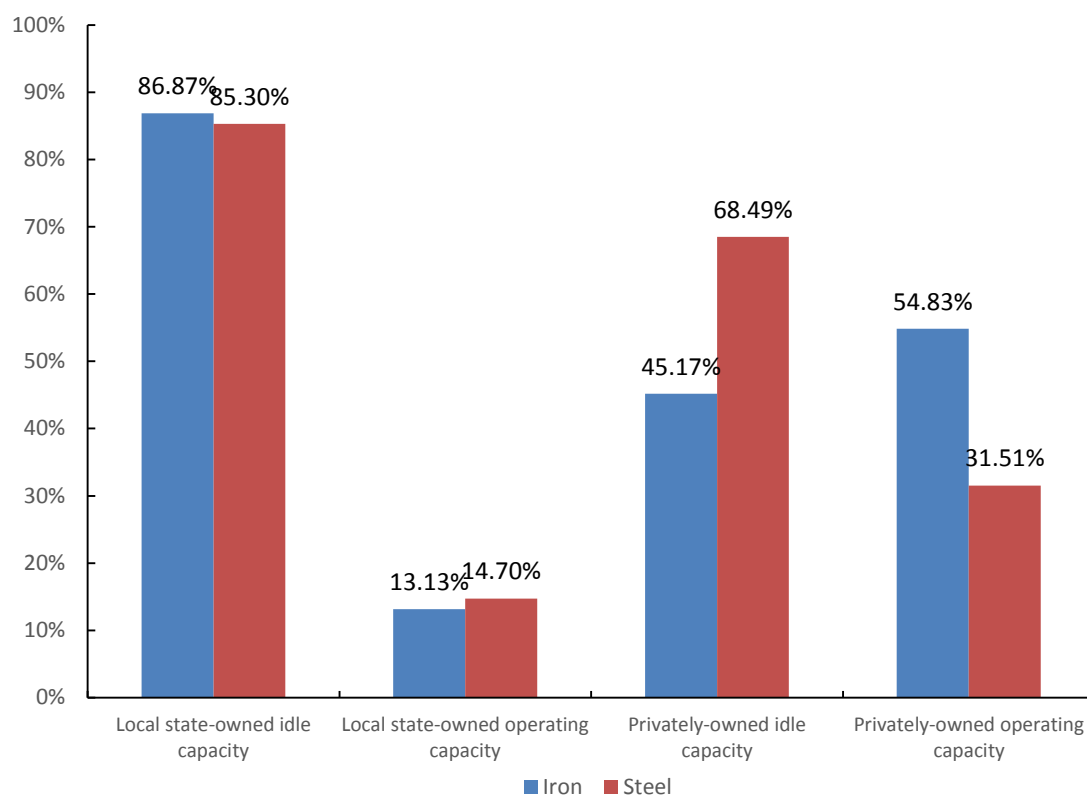
production capacity of 13.42 million tons and 20.4125 million tons accounted for 54.8% and 31.5%.

**Figure 13 Comparison of overcapacity reduced by local state-owned enterprises and privately-owned enterprises in 2016**



Source: Official government documents, custeel.com

**Figure 14 Proportion of operating / idle capacity reduced by local state-owned enterprises and privately-owned enterprises in 2016**



Source: Official government documents, custeel.com

### 3.2.3. Overcapacity reduction equipment disposal in Chinese provinces and municipalities

As part of industry regulations, capacity that has been reduced cannot be resumed later on. Provinces must remove or seal all relevant equipment after the water and power supplies have been cut off. At present, some enterprises have completed the demolition of relevant equipment, while others have sealed the equipment. Sealed equipment must be strictly supervised and dismantled as soon as possible to prevent the hidden risk of production recovery.

Hebei province reduced the largest amount of production capacity, involving the largest number of enterprises. In 2016, Hebei assigned the task of overcapacity reduction to 43 steel enterprises, involving a total of 32 blast furnaces of 15531 cubic metres and 22 steel converters. Nine blast furnaces have been completely dismantled while other equipment has been sealed and will be dismantled in stages.

Inner Mongolia dismantled one 1800 cubic metre blast furnace of Baotou Iron and Steel Group. Jilin Province dismantled the relevant equipment of Changlong Iron and Steel Co. in August and dismantled the electric furnaces of



Jilin Tonghua Iron and Steel Co. in October. Xinjiang began to dismantle the relevant equipment of all enterprises involved in overcapacity reduction in September. Guizhou completed the demolition of the steel smelting equipment of Wanshun Iron and Steel Co. in August. Shanxi Province completed the demolition of the blast furnace of Linfen Iron and Steel Co. in October. Jiangxi dismantled the blast furnaces of Pingxiang Anyuan Iron and Steel Co. at the end of August and completed the sealing of other relevant equipment across the province.

In addition to the dismantled equipment, provinces have moved to shut down and seal off other equipment involved in overcapacity reduction. Taking into account the enterprises' debt and equipment situation, demolition work will be carried out step by step in the future. As for the equipment disposal, most of the iron smelting blast furnaces have been sealed and most of the steel converters, intermediate frequency furnaces and electric furnaces have been dismantled. In 2016, a total of 12.4105 million tons of iron production capacity was removed, accounting for 31.14% of the total. Other iron production equipment will be sealed off after water and power supplies have been cut off. A total of 46.9475 million tons of steel production capacity was removed, accounting for 55.29% of the total, and other equipment has been sealed off.

**Table 15 The current disposal status of equipment that has been used in the overcapacity reduction in selected provinces and municipalities in 2016**

Province	Iron equipment		Steel equipment	
	Removed capacity (10,000 tons)	Sealed capacity (10,000 tons)	Removed capacity (10,000 tons)	Sealed capacity (10,000 tons)
Hebei	247	1569	250	1389
Jiangxi	50	-	433	-
Anhui	-	62	33	77
Henan	100	-	240	-
Sichuan	217	-	420	-
Yunnan	-	125	376	-
Zhejiang	-	110	116	252
Inner Mongolia	224.25	-	67	-
Shandong	-	270	100	170
Liaoning	-	-	442	160

<b>Fujian</b>	-	-	445	-
<b>Jilin</b>	-	-	108	-
<b>Hubei</b>	-	-	338	-
<b>Hunan</b>	-	-	50	-
<b>Guangdong</b>	-	-	180	60
<b>Xinjiang</b>	-	-	90	-
<b>Qinghai</b>	-	50	-	-
<b>Shaanxi</b>	160	-	70	-
<b>Gansu</b>	-	160	-	144
<b>Guizhou</b>	150	-	220	-
<b>Heilongjiang</b>	-	219	-	610
<b>Tianjin</b>	-	159	-	370
<b>Jiangsu</b>	-	-	200	380
<b>Guangxi</b>	-	20	-	185
<b>Shanxi</b>	82	-	-	-
<b>Chongqing</b>	10.8	-	516.75	-
<b>Total</b>	<b>1241.05</b>	<b>2744</b>	<b>4694.75</b>	<b>3797</b>

Source: Official government documents, custeel.com

## IV. The rise and fall of steel production in the context of overcapacity reduction

### 4.1. Steel production capacity expansion during the period 2014-2016

Although overcapacity in China's steel industry is a prominent problem that the Chinese government has confronted over the years through policies on eliminating backward capacity, new iron and steel projects are put into production every year throughout the country. Objectively speaking, these new projects been richer in variety, with improved levels of technical equipment and improved structure. China eliminated 28.229 million tons of backward iron production capacity and 31.125 million tons of steel production capacity in 2014, and 13.776 million tons of backward iron production capacity and 170.59 million tons of steel production capacity in 2015.

From 2014 to 2015, however, 43.75 million tons of new iron production capacity was created compared with 42

million tons of backward iron production capacity eliminated. Due to the continued increase in production capacity, the elimination of backward iron and steel production capacity did not have a significant impact on reducing iron and steel overcapacity. In 2016, 11.6 million tons of iron production capacity was successively put into operation. It is worth noting that most of the eliminated capacity was long-term idle capacity, while the increased capacity was operating capacity and has more practical significance.

Table 16 The elimination of backward production steel capacity across China in 2014

Province	Tianjin	Hebei	Shanxi	Inner Mongolia	Liaoning	Jilin	Jiangsu	Zhejiang	Shandong	Anhui
<b>Removed iron capacity (10,000 tons)</b>	50	1378.5	105	26.4	300	250	50	-	110	44
<b>Removed steel capacity (10,000 tons)</b>	-	1077	320	-	-	135	327	38	60	20
Province	Jiangxi	Hubei	Guangdong	Sichuan	Guangxi	Guizhou	Yunnan	Shaanxi	Xinjiang	Total
<b>Removed iron capacity (10,000 tons)</b>	-	-	-	135	-	60	132	82	100	2822.9
<b>Removed steel capacity (10,000 tons)</b>	70.5	462	250	160	58	-	65	50	20	3112.5

Source: Official government documents

Table 17 The elimination of backward production capacity across China in 2015

Province	Hebei	Inner Mongolia	Jiangsu	Zhejiang	Shandong	Jiangxi	Hubei	Hunan	Sichuan	Guizhou	Yunnan	Xinjiang	Total
<b>Removed iron smelting</b>	609	110	110	-	119.4	-	64.2	10	180	8	117	50	1377.6

capacity

(10,000

tons)

Removed

steel

smelting

capacity

(10,000

tons)

751 110 150 36.9 365 50 - - 170 18 25 30 1705.9

Source: Official government documents

Table 18 New iron and steel production capacity in 2014 and 2015

Enterprise	New iron smelting capacity (10,000 tons)		New equipment	
Tangshan Donghua	137		Blast furnace	
Tangshan Wenfeng	104		Blast furnace	
Wuyang Steel Mill	104		Blast furnace	
Reafon Steel	104		Blast furnace	
Shandong Shougang Baolong	100		Electric furnace: 90t	
Xigang Steel Plant	110		Electric furnace: 110t	
Nanjing Iron and Steel Group	170		Blast furnace	
Xichang Steel and Vanadium Co. of Pangang Group	140		Blast furnace	
Guangxi Shenglong	140		Blast furnace	
Xinjiang Ba Yi Iron and Steel Co.	150		corex-3000	
Sichuan Fubon	140		Blast furnace	
Dingxin Nickel	100		Reduction furnace	
Baotou Iron and Steel Group	350		Blast furnace	
Bohai Iron and Steel Group	215		Blast furnace	
Tonghua Iron and Steel Co.	230		Blast furnace	
Xinxing Ductile Iron Pipes Co.	105		Blast furnace	
Tangshan Ganglu Steel Co.	110		Blast furnace	
Ba Yi Iron and Steel (South Xinjiang)	300		Blast furnace	
Jiangyin Xicheng	208		Blast furnace	
Shandong Chuanyang	118		Blast furnace	
Phase II of Bao Steel Wanteng	110		Blast furnace	
Shanguan Iron and Steel Group	100		Blast furnace	
Qingdao Iron and Steel Group	155		Blast furnace	
Bao Steel Zhanjiang	400		Blast furnace	
Hubei Jinshenglan	125		Blast furnace	

Baowu Steel Group	350	Blast furnace
Total	4375	-

Source: custeel.com

#### 4.2. Steel production capacity expansion in 2016 and during the “13th Five-Year Plan” period

In 2016, iron production capacity increased by 11.6 million tons, involving capacity replacement projects from enterprises such as Baogang Zhanjiang and Magang, and the relocation of projects involving Qingdao Iron and Steel Group. In 2016, China reduced operating iron smelting capacity by 15.44 million tons but not in reality reduce iron production. In that year, most of the furnaces that were put into production were advanced, environmentally friendly, large-capacity furnaces with low pollution, which is an improvement in terms of industrial equipment and technology.

Table 19 Details of new production capacity in 2016

Enterprise	New iron production capacity (10,000 tons)	Details	New equipment	New operating iron production capacity increased (10,000 tons)
Baogang Zhanjiang Iron and Steel	400	Plan to replace a previous 2.13 million tons/year project that had been discontinued.	Blast furnace	187
Yanshan Iron and Steel	105	Newly built	Blast furnace	105
Jiujiang Wire Co.	105	Newly built	Blast furnace	105
Ma Steel	270	Replacement project	Blast furnace	0
Qingdao Iron and Steel	155	Relocated project	Blast furnace	0
Hubei Jinshenglan	125	Newly built	Blast furnace	125
<b>Total</b>	<b>1160</b>	New operating iron smelting capacity: 5.22 million tons (Estimation of new operating crude steel production capacity: 5.8 million tons <sup>25</sup> )		

Source: Official government documents

Plans have been set to relocate or replace 46.85 million tons of crude steel production capacity in the period 2017 to

<sup>25</sup> Estimated according to the average ratio of between iron production capacity and the corresponding crude steel production capacity (0.9:1)

2020. Future projects will be carried out according to the steel industry's new and improved layout, ensuring that they will be more environmentally friendly, be of higher quality, consume less energy, and conducive to improving the competitiveness of both the industry as a whole and the enterprise itself. However, it is worth noting that the relocation and replacement of equipment and enterprises that have been left idle for a long time is in fact another issue relating to overcapacity. As a result, production capacity and output will actually increase after relocation and replacement.

In order to further optimise industry structure, improve the layout and make efficient use of relevant resources, Hebei province promoted the reorganisation of a number of steel enterprises and their transfer to regions with superior resources. During the "13<sup>th</sup> Five-Year Plan" period, the National Development and Reform Commission stressed that "environmentally sensitive areas such as Beijing, Tianjin, Hebei, the Yangtze River Delta and the Pearl River Delta should strictly implement capacity reduction and replacement with a ratio of no less than 1:1.25". When Hebei Province submitted relocation and replacement projects of its steel enterprises, however, the National Development and Reform Commission did not implement the aforementioned target of a ratio of no less than 1:1.25. Therefore, Hebei's crude steel capacity reduction replacement ratio is not up to 1:1.25, and the province made plans to readjust the relocation replacement projects.

On 30 December 2016, the "Notice of Hebei Province on the Suspension and Rectification of Smelting Projects" was issued and the national reduction replacement policy was then implemented in the province. Hebei's relocated and upgraded projects involved 16.33 million tons of iron production capacity and 17.36 million tons of steel production capacity; and 15.31 million tons of replacement iron production capacity and 16.75 million tons of replacement steel production capacity; equally an iron smelting capacity reduction of 1.02 million tons and a steel smelting capacity reduction of 610,000 tons. After the reduction replacement in strict accordance with the requirement for a ratio of 1:1.25, the province now needs to resolve an additional iron smelting capacity of 2.8075 million tons and an additional steel smelting capacity of 3.5775 million tons. Therefore, Hebei will reduce just over 3.5 million tons of crude steel production capacity as part of its relocation projects. According to research into the steel enterprises involved in the relocation, the project was discontinued and submitted its materials for approval again in strict accordance with the requirement of a ratio of 1:1.25, after receiving notice from the National Development and Reform Commission. It is now waiting for the approval for project construction. According to relevant documents of the Hebei Provincial Development and Reform Commission, the completed projects without complete approval documents mustn't be put into production, and the projects that have been launched must be discontinued immediately. If not, they will be deemed

as illegal capacities, and all relevant parties will be punished according to law.

Table 20 Details of plans to relocate and replace capacity during the "13th Five-Year Plan" period

Enterprise	New crude steel production capacity (10,000 tons)	New equipment	Increase/decrease in crude steel production capacity	Status of replaced capacity	New operating capacity (10,000 tons)
<b>Baogang Zhanjiang Iron and Steel</b>	1200	Plans to build 3 new blast furnaces (Nos. 3-5), as part of plans to reduce, replace and regulate production capacity after merger between Wuhan Iron and Steel Co. and Baowu Steel Group.	Reduction replacement	Discontinued	1200
<b>Coastal Base of HBIS</b>	1000	In order to further reduce iron and steel overcapacity and optimise the layout of the steel industry in Hebei Province, some production capacity of Tangshan Iron and Steel and CD Steel were reorganised for reduction relocation to the Tangshan Economic Development Zone.	Reduction removal	In production	In production ahead of replacement
<b>Shandong Steel steel base in Rizhao</b>	810	Optimising the industrial layout; adjusting the production capacity of Jinan Iron and Steel; restructuring the development of Shandong Steel; relocating Jinan Iron and Steel's main business; replacing capacity.	Capacity replacement	In production	In production ahead of replacement
<b>Shijiazhuang Iron and Steel of HBIS</b>	220	Relocating Shijiazhuang Iron and Steel; eliminating 2.07 million tons of iron production capacity and 1.74 million tons on steel production capacity, as well as 460,000 tons of overcapacity from the Tangshan branch of HBIS. To be completed in 2017	Capacity replacement; Replacement ratio: 1:1	In production	In production ahead of replacement
<b>Shougang Jingtang, Phase II</b>	530	A total of 4.6 million tons of iron production capacity and 5.3 million tons of steel capacity was eliminated by: Tangshan Xingye Industry and Trade Group Co., Luannan Pengcheng, Qian'an Zhaiyi Steel, Tangshan Songjiang, Qian'an Liangang, Tangshan Guofeng, Tangshan Qingquan, Tangshan Jianbang and Tangshan Huajun Steel Co.	Capacity replacement; Replacement ratio: 1:1	Discontinued	530
<b>Tangshan Bohai Iron and Steel</b>	360	A total of 3.4 million tons of iron production capacity and 3.8 million tons of steel production capacity was eliminated by: Tangshan Guofeng, Tangshan Ruifeng, Tangshan Beishiti and Tangshan Shunxing.	Reduction replacement: 200,000 tons; Replacement ratio: 1:1.06	Partly discontinued	360

			Reduction	In	In
<b>Jinan Steel Group</b>	205	Hebei Wenfeng Iron and Steel eliminated 2.81 million tons of iron production capacity of and 2.25 million tons of steel production capacity.	replacement: 200,000 tons; Replacement ratio: 1:1.10	production	production ahead of replacement
<b>Hebei Yongyang Steel Group</b>	120	A total of 1.1 million tons of iron production capacity and 1.35 million tons of steel production capacity was eliminated by: Yongyang Steel, Jianfa Standard Materials Co. and Yunfeng Metallurgical Co.	Reduction replacement: 150,000 tons; Replacement ratio: 1:1.13	In production	In production ahead of replacement
<b>Hebei Taihang Iron and Steel</b>	240	Wu'an Mingfang Iron and Steel Co. eliminated 2.35 million tons of iron production capacity and 2.46 million tons of steel production capacity.	Reduction replacement: 60,000 tons; Replacement ratio: 1:1.03	In production	In production ahead of replacement
<b>Total</b>	<b>4685</b>	Replacement reduction to original production capacity projects: 1.02 million tons of iron and 610,000 tons of steel	Total reduction in crude steel production capacity: 610,000 tons	New operating crude steel production capacity: 20.9 million tons	

Source: Official government documents, custeel.com

### 4.3. Plant closures due to industrial or capital disorder since 2014

In recent years, the rapid development of production capacity in China, coupled with the high product repeatability rate and low added value, has resulted in serious excess capacity and severe market competition. After the the investment RMB 4 trillion in 2009, however, the market demand fell and the market price of steel continued to fall to its lowest level by the end of 2015, declining by more than 50%. Due to the sharp decline in steel prices, steel mills suffered continuous losses, large-scale domestic steel enterprises with capacity of more than five million tons such as Shanxi Haixin suffered bankruptcy, while Tangshan Songting Iron & Steel discontinued production. The whole steel industry suffered serious losses. As a result, many steel mills reduced or suspended production at the end of 2015. In 2016, with the support of the government, market demand increased. The suspension of production in 2015 resulted in the short-term mismatch of supply and demand, the prices of steel products continued to rise and steel enterprises' profits were restored to some extent in 2016. Some steel mills resumed production, but there are others that have so far failed to do so.

According to incomplete statistics, from 2014 to 2015, China discontinued the production by 120 blast furnaces. Of these, 62 have resumed production, while 50 blast furnaces with an iron production capacity of 41.81 million tons remain



idle, with their corresponding crude steel production capacity of 46 million tons (the average ratio between iron production capacity and the corresponding crude steel production capacity is about 0.9:1). Therefore, reducing excess capacity remains an arduous task, and there is still a need to eliminate idle enterprises and equipment with backward, high energy-consuming production capacity, in order for the market to rejuvenate.

**Table 21 The suspension of iron production in 2014 and its status in 2016**

Province	Suspended iron smelting capacity (10,000 tons)	Restored production capacity (10,000 tons)	Currently suspended production capacity (10,000 tons)	Notes
Anhui	220	0	220	Reducing capacity for replacement
Gansu	52	0	52	-
Hebei (excluding Tangshan)	655	410	245	-
Henan	225	225	0	-
Jilin	285	180	105	-
Jiangsu	293	103	190	-
Liaoning	205	205	0	-
Inner Mongolia	457	118	339	Some capacity for replacement
Shanxi	2583	1471	1112	-
Sichuan	207	55	152	-
Tangshan	2346	1607	739	-
Tianjin	666	165	501	-
Xinjiang	809	335	474	Resuming production in the second and third quarters; some steel mills halt production in winter
Yunnan	52	0	52	-
Total	9055	4874	4181	-
<i>Estimated corresponding steel smelting capacity</i>	<i>10061</i>	<i>5415</i>	<i>4646</i>	<i>(average ratio between iron production capacity and the corresponding crude steel production capacity is approximately 0.9:1)</i>

Source: custeel.com

## V. Subsidies and bonuses for overcapacity reduction in 2016

### 5.1. Allocation of government subsidies and bonuses for overcapacity reduction in 2016

The guiding document for steel overcapacity reduction – "Opinions on Resolving Excess Capacity to Achieve Development in the Steel Industry" (No. 6 [2016] of the State Council) was issued by the State Council in early February

2016. Supporting policy documents on topics such as compensation funding, fiscal and taxation support, financial support, the resettlement of workers, and environmental protection were issued by the relevant ministries' over the following months. In mid-May, "Measures for the Management of Special Bonuses and Subsidies for the Structural Adjustment of Industrial Enterprises" (No. 253 [2016] of the Ministry of Finance – hereafter referred to as “Measures”) was issued, focused on the allocation of RMB 100 billion of bonuses and subsidies.

Among the bonuses and subsidies outlined in the “Measures”, 80% of funds shall be issued based on capacity reduction, the number of resettled workers, and the degree of difficulty; the remaining 20% will be awarded to the provinces and central state-owned enterprises that overfulfilled overcapacity reduction targets. Special bonuses and subsidies funds are also available for the resettlement of workers who meet the required conditions and shall be allocated by local governments and central state-owned enterprises. According to the provision set out in the "Measures", "more awards and subsidies shall be issued to the enterprises that take the lead in eliminating backward capacities". In this way, the government has made efforts to stimulate enthusiasm for the task of reducing steel overcapacity.

According to the estimation of the Ministry of Finance, based on overcapacity reduction data and the number of resettled workers, RMB 38.4 billion of special bonuses and subsidies were awarded in 2016. In mid-May, the Ministry of Finance allocated RMB 27.643 billion of basic bonuses and subsidies to local governments, with the remaining allocation of funds to be issued according to progress made in achieving the overcapacity reduction targets.

## **5.2. Subsidies for overcapacity reduction in selected provinces in 2016**

The national task of reducing overcapacity in the steel industry in 2016 has been completed. According to national regulations on overcapacity reduction in the steel industry, local governments have been awarded bonuses and subsidies. In accordance with special funds announced by various provinces, some regions released the number of resettled workers, including 11061 in Hebei and 11768 in Tianjin, and some regions clarified the distribution ratio between bonuses and subsidies. In Yunnan, 50% of bonuses and subsidies were awarded by the central government, 25% by the provincial government and 25% from local governments. In Zhejiang, bonuses and subsidies were issued according to the levels of reduced capacity, encouraging the relevant enterprises to actively resolve excess capacity. In addition to the allocation of funds, the government also solved the problem of employee resettlement by supporting re-employment and holding skills-training for workers. It is worth noting that according to the "Plan for the Adjustment and Upgrading of the Steel Industry (2016-2020)", “production capacity covered by the overall task of overcapacity reduction and backward

capacity that is awarded bonuses, subsidies or policy support mustn't be used for capacity replacement", meaning that it must be completely withdrawn.

Table 22 Bonuses and subsidies for overcapacity reduction allocated to provinces in 2016

Province	Funds awarded (RMB 10,000)	Notes
Hebei	46766	The steel industry received RMB 467.66 million of bonuses and subsidies. 11061 workers were resettled.
Jiangxi	163392	The steel and coal industries received RMB 1.63 billion of bonuses and subsidies, of which RMB 1.23 billion was awarded by the central government and RMB 405.6 million was awarded by the provincial government.
Anhui	218523	Received RMB 2.19 billion of bonuses and subsidies from the steel and coal industries.
Henan	218359	The steel and coal industries received RMB 2.18 billion of bonuses and subsidies, of which RMB 23.78 million was awarded to Nanyang Iron and Steel Co. and RMB 57.07 million was awarded to Zhumadian Iron and Steel Co.
Sichuan	33321	The steel industry received RMB 333.21 million of bonuses and subsidies from the central government, including RMB 65.27 million awarded to Deyang City, RMB 103.05 million awarded to Neijiang City and RMB 164.89 million awarded to Dazhou City.
Yunnan	71456	The steel industry received RMB 714.56 million of bonuses and subsidies, of which 50% was awarded by the central government, 25% from the provincial government and 25% from local governments.
Zhejiang	32638	The province was assigned RMB 326.38 million of bonuses and subsidies for reducing overcapacity in the steel industry, divided up according to actual reductions made from 2016 to 2020 by 110%, 100%, 90%, 80% of 70% respectively.
Shandong	192302	The steel and coal industries received RMB 2.18 billion of bonuses and subsidies from the central government for reducing overcapacity.
Fujian	33868	The steel and coal industries received RMB 338.68 million of special bonuses and subsidies from the central government for reducing overcapacity.
Xinjiang	18835	Steel overcapacity reduction in Xinjiang involved the resettlement of 931 workers, supported by RMB 188.35 million of bonuses and subsidies from the central government.
Gansu	45772	50% of the bonuses and subsidies for Gansu were awarded for overcapacity reduction and 50% for the resettlement of 4231 workers.
Tianjin	34878	Awarded RMB 348.78 million of bonuses and subsidies. 11768 workers were resettled.
Jiangsu	6772	Jiangsu Valin-Xigang Special Steel Co.: RMB 19.48 million; Jiangsu Sunan Special Steel and Technology Co.: RMB 28.8 million; Shagang Xinrui Special Steel Co.: RMB 12.8 million; Nantong Dongri Iron and Steel Co.: RMB 6.64 million.
Guangxi	33989	Awarded RMB 339.89 million of bonuses and subsidies for reducing overcapacity.

<b>Chongqing</b>	141330	Chongqing's first batch of special bonuses and subsidies for reducing overcapacity in the steel and coal industries amounted to RMB 1.41 billion, shared between 24 steel enterprises.
<b>g</b>		
<b>Total</b>	1292201	

Source: Official government documents, data finishing by Custeel

### 5.3. Loans given to 'Zombie enterprises'<sup>26</sup>

According to financial trends, the gross industrial production of China's key steel enterprises<sup>27</sup> has been falling since 2011. It fell sharply after 2014, and declined by 21.27% in 2015, marking a downward trend for five consecutive years, falling by 29.51% compared to its height in 2011. Short-term bank loans to these key steel enterprises continued to rise between 2010 to 2014, with an increase of 82.79%, but fell by 1.98% in 2015. Affected by the sustained downturn of the industry, steel enterprises' enthusiasm for production greatly declined. Their long-term loans fell year by year from 2010 to 2014, and increased by 4.09% in 2015 compared to the previous year.

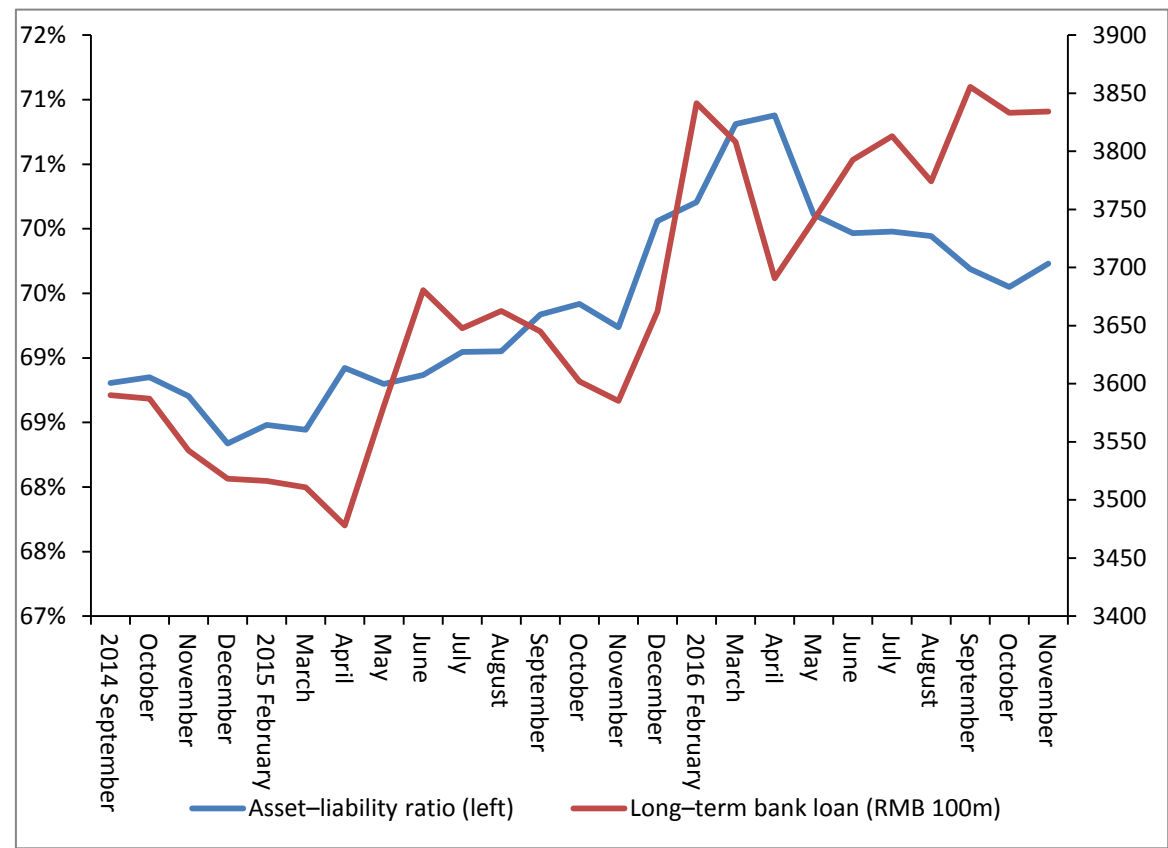
Key steel enterprises' long-term loans have increased year by year since 2014, rising by 7.39% in 2016, and their asset-liability ratio rose by 0.88%-69.69%<sup>28</sup>. Affected by serious overcapacity, steel enterprises' profitability became weaker and weaker and their asset-liability ratio and long-term bank loans gradually increased. If profitability is not improved, and losses are sustained, a high asset-liability ratio will bring the risk of bankruptcy to these enterprises. At the same time, the Chinese government clearly stated the need to eliminate "zombie enterprises", and to stop issuing loans and subsidies to enterprises that have been suffering losses for a long time.

<sup>26</sup> The "zombie enterprise" is an economic concept proposed by Edward J. Kane, referring to an indebted enterprise revived from bankruptcy through government support. According to a July 2016 study by the National Development and Strategy Research Institute of the Chinese People's University, the steel industry has the highest concentration of zombie enterprises of any industry, with 51.43%.

<sup>27</sup> Key members of the China Iron and Steel Industry Association, <http://www.chinaisa.org.cn/>

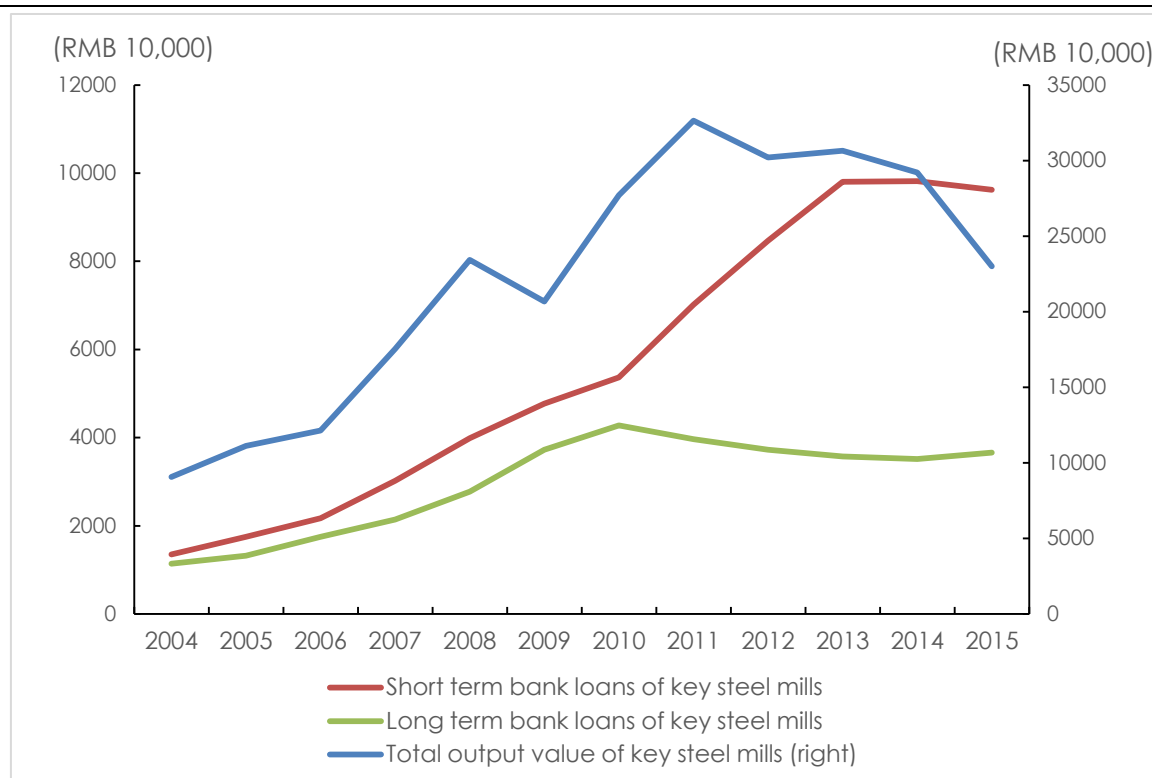
<sup>28</sup> China Iron and Steel Industry Association figures

Figure 15 Assets and liabilities of domestic key steel enterprises



Source: custeel.com

Figure 16 Financial changes to major domestic steel enterprises



Source: custeel.com

## VI. Challenges facing the steel industry in its efforts to reduce overcapacity

In 2016, positive results were achieved in reducing overcapacity in the steel industry, but some problems still remain. The central government established clear targets for crude steel production capacity reduction, but was not strict enough in controlling iron and steel production. Government subsidies were not always allocated effectively. Furthermore, regions vary in how they determine standards for dealing with corporate debt and equipment disposal.

### 1. The central government focused on eliminating crude steel production overcapacity, while iron production capacity has been ignored.

When the central government announced its targets for reducing overcapacity in 2016, it did not have a clear idea of the exact type of overcapacity it wanted to reduce in this time. The announced plan to reduce 45 million tons<sup>29</sup> of overcapacity in the steel industry in 2016 but did not make clear what capacity was to be reduced – iron production capacity, steel production capacity, or the total. This affected the execution of the plan. At present, overcapacity

<sup>29</sup> Xu Shaoshi: 280 million tons of coal production and 45 million tons of steel production to be cut in 2016, [http://news.xinhuanet.com/fortune/2016-06/27/c\\_129092084.htm](http://news.xinhuanet.com/fortune/2016-06/27/c_129092084.htm)

reduction tasks assigned by the relevant provinces and municipalities to steel enterprises are mainly focused on steel smelting capacity, involving little iron production capacity.

On 1 February 2016, the State Council issued the "Opinions on Resolving Excess Capacity to Achieve Development in the Steel Industry" and stated that "from the beginning of 2016, based on the elimination of backward steel production capacity in recent years, we must reduce crude steel production capacity by 100-150 million tons in five years". Iron production capacity is not mentioned by the "Opinions". From the perspective of the industry, however, iron production reduction will have a more significant effect. Therefore, we suggest the central government and relevant departments should take into account further refining the concept of overcapacity reduction in the steel industry.

**2. Select provinces and municipalities have made positive progress, but relied on government subsidies through eliminating idle capacity.**

When the central government advocated the reduction of overcapacity, select provinces and municipalities made rapid progress in reducing excess capacity starting in July 2016, and tasks assigned to specific enterprises (not including central state-owned enterprises) far exceeded the planned figures. One main reason for this is that many provinces and municipalities were awarded government subsidies by eliminating idle capacity. For example, most of the production capacity reduced by Liaoning, Fujian and Guangdong was from the capacities of intermediate frequency furnaces, the use of which was clearly prohibited. Zhejiang Hangzhou Iron and Steel Co. halted production in 2015, but was regarded as part of the overcapacity reduction task in 2016. We should resolutely eliminate backward production capacity that should have been eliminated according to relevant regulation long ago, and adjust the subsidy standards accordingly.

**3. In the process of reducing overcapacity, there was a phenomenon of "supporting the inferior and eliminating the superior".**

In the process of reducing overcapacity in 2016, there was a phenomenon of "supporting the inferior and eliminating the superior", assigning overcapacity reduction tasks on an unreliable basis. In the evaluation of the local steel mills, for example, Fengrun District Government of Tangshan City in Hebei awarded a lower score to Jinxi and Zhengda than Tianzhu and Baotai Iron and Steel, but incorporated Jinxi and Zhengda into the list of overcapacity reduction tasks. Although relevant documents clearly pointed out that those enterprises had illegal new capacity, Fengrun District Government does not follow the provisions of the document. Some enterprises feel the process is unfair, are not

satisfied with the results, and are reluctant to implement the policy.<sup>30</sup>

Another phenomenon to occur is that after reducing overcapacity, some of the steel mills' equipment will be left unused, increasing the overall cost and operation pressure, especially for small iron and steel enterprises with a production capacity of 1 million to 3 million tons.

**4. It is worth discussing the equal distribution of capacity reduction among select provinces and municipalities.**

Steel overcapacity reduction tasks for 2016 and the 13<sup>th</sup> Five-Year Plan period were equally assigned to various provinces based on production capacity: the larger the capacity, the heavier the task, in addition to other factors such as local supply and demand, logistics and efficiency. Hebei, for example, as the largest steel producing province in China, was greatly affected by the regulatory policies of the steel industry, and this time is no exception. Its overcapacity reduction involves the largest operating capacity, and even some steel enterprises with good efficiency. From an industrial perspective, Hebei's steel industry has the best efficiency and is equipped with complete environmental protection facilities. In contrast, it has always been difficult to improve the efficiency of steel enterprises in certain provinces and municipalities.

The situation is similar in some provinces and municipalities. In Tangshan City in Hebei, for example, the overcapacity reduction task was assigned based on region, not taking into account the enterprises' efficiency and local environmental protection situation. Qian'xi was required to reduce excess capacity of 700,000 tons but there was only one iron and steel group here, namely Jinxi Iron and Steel Group. Although all this company's production equipment is legal and not covered by the task of eliminating backward equipment and capacity, Tangshan City Government still required Jinxi Iron and Steel Group to discontinue a 50-ton converter and reduce 700,000 tons of steel capacity.<sup>31</sup>

The essence of capacity reduction should be reducing backward capacity not up to environmental protection standards, rather than equal distribution. Otherwise, some competitive capacity will be reduced while other capacity with weak competitiveness will not be affected.

Therefore, it is recommended that in the allocation of capacity reduction tasks, we should take into account not only production capacity, but also other factors such as environmental protection and efficiency improvement.

**5. Some overcapacity equipment has been sealed rather than dismantled.**

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<sup>30</sup> Tangshan Fengrun Iron and Steel Co., <http://finance.sina.com.cn/manage/mroll/2016-09-05/doc-ifxvqctu6236863.shtml>

<sup>31</sup> Jinxi Iron and Steel Co. and Zhengda Iron and Steel Co., <http://finance.sina.com.cn/roll/2016-11-01/doc-ifxxfysn8359052.shtml>



Custeel.com summarised the capacity disposal methods mentioned in the notice on overcapacity reduction, and found that most regions mainly sealed overcapacity equipment and cut off its water and power supplies, including Jiuquan Iron and Steel Co. and several steel enterprises in Liaoning and Shaanxi. Although they've signed the overcapacity reduction responsibility document, promising never to resume production, there is some hidden risk of production recovery in the long run. In the strictest sense, after receiving government subsidies and promising not to resume production, the enterprises should dismantle all relevant equipment.

It is recommended that the relevant department should increase supporting measures for overcapacity reduction, organise long-term supervision over the work by the policy inspection group, and severely punish violation.

#### **6. Backward capacity and illegal new capacity still exist.**

Despite the elimination of backward production capacity over the years, some backward equipment is still used in production. The eliminated steel production equipment of Gansu Lanxin Iron and Steel Co., for example, is still being used for production. According to relevant regulations, Lanxin is not permitted to manufacture steel, but it has built up a new factory with an investment of more than RMB 1 billion. In order not to waste the liquid iron produced by the factory, the company continued steel production. In addition, Lanxin is the largest tax payer in Gaolan County. In order to promote the development of the enterprise and the employment of several thousand local people, the local government did nothing to stop its production and the old factory's old equipment has been operating since.

In addition, although new iron and steel production capacity is banned in China, some enterprises are still building new production equipment. In November 2016, Premier Li Keqiang chaired a State Council executive meeting and decided to send the State Council research team to investigate illegal acts of individual enterprises, and found that Hebei Anfeng Iron and Steel Co. proceeded illegal construction without approval and increased crude steel production capacity by 3 million tons. The illegal production capacity has now been discontinued, but there are more examples in Anfeng. Since 2016, a number of central government environmental inspection groups found similar illegal production in Hebei, Jiangsu and Henan, whereby enterprises did not dismantle overcapacity equipment as required. In the future, the state will carry out strict investigation into illegal production with backward equipment, and regulate the steel market.

## **VII. Predicted contribution of steel overcapacity reduction to reducing air pollution**

According to the "China Environmental Statistical Yearbook 2015", in 2014, the steel industry discharged exhaust

gas of 18 trillion cubic metres, accounting for 26% of the total discharged industrial waste gas, 2.15 million tons of sulphur dioxide, 1.01 million tons of nitrogen oxides, and 4.27 million tons of smoke and dust, accounting for 13.6%, 7.7% and 33.7% of the total respectively. This is second only to the electricity, heat production and supply industry in terms of pollution emission.

Hebei is China's biggest iron and steel producing province and its crude output accounts for nearly 1/4 of China's total<sup>32</sup>. It is because of this large-scale iron and steel production in Hebei that the sulphur dioxide, nitrogen oxides as well as smoke and dust discharged by the steel industry that Beijing, Tianjin and Hebei reached 457,000 tons, 169,000 tons and 218,000 tons in 2012 respectively, accounting for 22.9%, 31.1% and 36.3% of China's total<sup>33</sup>. The relevant study estimated that the PM2.5, sulphur dioxide and nitrogen oxide discharged by iron and steel enterprises in Beijing, Tianjin and Hebei contributed 14.0%, 28.7% and 43.2% respectively to the region's total pollution of PM2.5, sulphur dioxide and nitrogen oxide in winter, and 13.1%, 28.7% and 53.4% in summer<sup>34</sup>. The study also pointed out that if the overcapacity problem is effectively solved, the sulphur dioxide, nitrogen oxides, smoke and dust and PM2.5 discharged by the steel industry in this region will decrease by 10.75%, 10.65%, 9.75% and 9.75% respectively compared to 2012, reducing the number of pollution sources by 11.74%.

According to statistics from China's Iron and Steel Industry Association in 2015, the crude steel output of Association member manufacturing enterprises was 630 million tons in 2015, accounting for 78.4% of China's total. Members' manufacturing enterprises' exhaust emissions reached 12.12 trillion cubic metres, up 8.53% from 2014, of which 471,700 tons was sulphur dioxide and 450,800 tons was smoke and dust, down 24.3% and 3.98% respectively. Sulphur dioxide and smoke and dust emissions in 2015 were 0.86 kg / ton and 0.81 kg / ton, down 21.59% and 1.43% respectively. The operating crude steel production was reduced by 24.47 million tons in 2016, making due contribution to emission reduction. During the "13<sup>th</sup> Five-Year Plan" period, the crude steel production capacity will be reduced by 100-150 million tons, the proportion of operating capacity will be gradually increased, and future overcapacity reduction will focus on defusing operating capacity, which is expected to have an obvious impact on emissions reduction and make a contribution to the improvement of air quality.

## **VIII. Conclusion**

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<sup>32</sup> Crude steel production (2011-2015), [www.sxcoal.com](http://www.sxcoal.com)

<sup>33</sup> China Environmental Statistics Annual Report 2012, Ministry of Environmental Protection

<sup>34</sup> Chinese Steel Plant Emission Inventory, Ministry of Environmental Protection, 1<sup>st</sup> Workshop for China Air Emission Inventory, 2016

This report analyses the development of the steel industry in China, the issue of overcapacity, and the policies aimed at finding a resolution to the problem. It also focuses on how China reduced steel overcapacity in 2016, as well as the increase in steel production and the closure of steel plants. The main findings are as follows:

- 1) Over 60% of the iron production capacity and over 70% of the steel production capacity reduced was actually “idle”, i.e. not operational. According to statistics for 2016, 26 Chinese provinces (not including central state-owned enterprises) reduced iron production capacity by 39.85 million tons in total, of which 24.41 million tons was idle capacity, accounting for 61.26%; and reduced steel production capacity by 84.9175 million tons, of which 61.545 million tons was idle capacity, accounting for 72.48%. It is worth noting that the iron overcapacity reduction of 14 provinces and the steel overcapacity reduction of 14 provinces were idle. Overcapacity reduction in Shaanxi, Gansu and Guizhou provinces, for example, was idle and involved outdated equipment. Iron and steel overcapacity reduction in 2016 was largely the reduction of idle capacity, and the work will be promoted considerably in 2017, when the proportion of “operating capacity” will increase and the “overcapacity reduction” will become “production reduction”.
- 2) Market prices rebounded and over 50% of the iron production capacity that had stopped operation was resumed. In 2016, demand improved thanks to government stimulus. The previous discontinuation of production had led to a rise in the price of steel and a short-term mismatch in supply and demand. Profits were restored and idle steel plants and equipment resumed production through upgrades or being acquired by other companies. According to incomplete statistics, from 2014 to 2015, China discontinued iron production in 120 blast furnaces, reducing iron production capacity by 90.55 million tons, but has now resumed the production of 62 blast furnaces capable of producing 48.74 million tons or 54% of the total reduced capacity. Accordingly, 54.15 million tons of steel production capacity was restored.
- 3) In terms of overcapacity reduction, the operating capacity of the steel industry increased rather than declined. Whereas over 70% of the crude steel production capacity reduced in 2016 was idle, only 23.37 million tons of operating capacity was reduced. Operating capacity increased by 5.8 million tons, and 54.166 million tons of production capacity was recovered in 2016, and there was a net increase of 36.59 million tons in the operating capacity. This explains why iron and steel production increased rather than declined after the task of reducing iron and steel production capacity had already been overfulfilled. From 2017 to 2020, provinces and central state-owned enterprises still need to reduce crude steel production

capacity by 74.45 million tons and 14.18 million tons respectively, but they still have to increase operating capacity by 20.9 million tons after the reduction. If most of the reduced capacity is idle, very limited operating capacity will be reduced.

- 4) Most of the equipment allocated for iron and steel overcapacity reduction in 2016 is still sealed up rather than demolished. In 2016, the iron production capacity was reduced by 12.41 million tons, accounting for 31.14% of the target figure, after which the remaining iron smelting equipment was sealed up and water and electricity supplies were cut off. The steel production capacity was reduced by 46.95 million tons, accounting for 55.29% of the target figure, and all remaining equipment was sealed up and could not be used for production. The storage of idle equipment requires strict supervision or complete demolition, to eliminate the hidden risk of production restart.
- 5) Due to steel production overcapacity, steel enterprises' profitability continued to decline and corporate banks' long-term borrowing and asset-liability ratio has increased year by year. Steel enterprises' long-term borrowing from banks has gradually increased since 2014. In 2016, key steel enterprises' long-term borrowing from banks increased by 7.39% from 2014 and asset-liability ratio increased by 0.88% - 69.69%. If profitability is not improved and losses continue, a high asset-liability ratio will bring the risk of bankruptcy to these enterprises.

## **IX. Policy Recommendations**

The central economic work conference was held in Beijing on 14-16 December 2016. The meeting pointed out: "in terms of overcapacity reduction, we must continue to promote the overcapacity reduction in the steel industry and the coal industry. Starting from the removal of zombie enterprises, we must strictly implement the laws, regulations and standards on environmental protection, energy consumption, quality control and safety, create conditions for promoting the merging and reorganisation of enterprises, properly handle corporate debt and do a good job of workers' resettlement. We must prevent the recovery of reduced capacity and promote the reduction of other capacities through the market and the rule of law."<sup>35</sup>

In 2016, China launched large-scale overcapacity reduction in the steel industry, made extensive administrative

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<sup>35</sup> The central economic work conference held in Beijing, [http://tgs.ndrc.gov.cn/zywj/201612/t20161226\\_832723.html](http://tgs.ndrc.gov.cn/zywj/201612/t20161226_832723.html)

interventions and applied the appropriate incentive and compensation measures. Local governments actively supported the work, overcapacity reduction achieved high efficiency, and the annual task of reducing 45 million tons of iron and steel production capacity was achieved by ahead of schedule. However, many problems remain in the process of reducing excess capacity. For example, the government ignored the reduction of iron production capacity, local governments were awarded government subsidies for reducing capacity that was already out of operation, and some regional governments even "supported the inferior and eliminated the superior" enterprises and equipment. All these indicate that overcapacity reduction in the steel industry was implemented unevenly, damaging some enterprises and even the whole industry to some extent.

For the supply-side reform launched by the government, steel overcapacity reduction is of course a means rather than an end product. The reduction of overcapacity and the elimination of backward capacity are designed to effectively protect state-owned enterprises in order to eliminate overcapacity, concentrate the industry and achieve a good industrial structure.

This report presents the following policy recommendations:

First, the government should adjust overcapacity policies to ensure reduction in operating steel capacity to a reasonable level during the current five-year plan period from 2016-2020. During this period, China's domestic steel demand is projected to fall to 650-700 million tons, as steel production and consumption peak. Capacity elimination targets should be re-evaluated, considering the effect of production restarts and new capacity coming online, to ensure a genuine reduction in operating capacity.

Second, speed up the process of eliminating backward production capacity and promote mergers and acquisitions among steel enterprises. Speed up the process of eliminating high energy consuming and non-compliant backward production capacity, and strengthen the implementation of differential pricing. At the same time, strengthen the supervision of backward production capacity that has already been eliminated in order to prevent its resurgence. In coastal areas and high steel-producing provinces, make use of transportation, resources, technology and other advantages. Promote mergers and acquisitions in order to reduce overcapacity, avoid product replication, improve enterprise structure, and enhance the competitiveness of enterprises.

Third, ensure the timely removal of facilities and equipment already utilised for reducing steel production capacity. Dismantle steel smelting equipment used for excess capacity accordingly, and ensure that equipment that cannot be removed is monitored by the appropriate government department so that there is no possibility of the resumption of

production. At the same time, the government should revoke all production-related permits in such cases.

Fourth, due to major debt problems, make good use of the bankruptcy mechanism to speed up the reduction of overproduction capacity. Taking the bankruptcy mechanism (including bankruptcy liquidation and bankruptcy reorganisation) as the starting point, make full use of the market and the rule of law, and combine them with any necessary administrative intervention to accelerate the pace of “overcapacity reduction”. There is sufficient legal support and a strong legal basis for promoting overcapacity reduction with the bankruptcy mechanism as the starting point. This enables the central government to use more initiative in promoting overcapacity reduction and reduces the central government’s supervision costs and policy costs in the implementation of “overcapacity reduction”. Specific measures include:

1. Under the leadership of the People's Bank of China and China’s Banking Regulatory Commission, carry out a comprehensive investigation into the industries with serious excess capacity, their credit and financial status, and the risk exposure of all enterprises in these industries.

2. Based on this comprehensive investigation, carry out a comprehensive evaluation and rating of the credit and risks of the enterprises in the industries with excess capacity.

3. Classify and give ratings to these enterprises based on their business scale, equipment, production capacity, financial status, assets and operational status, as well as their corporate environmental status provided by environmental regulatory departments.

4. Carry out bankruptcy liquidation on all zombie enterprises according to the law, or start the bankruptcy liquidation procedure so that relatively backward capacity will be forced to withdraw from the market. For seriously insolvent enterprises, start the bankruptcy liquidation procedure according to the law in order to withdraw them from the market. For insolvent enterprises with a low level of equipment and technology that cannot repay debts on time and have great difficulty in business operation, start the bankruptcy liquidation procedure according to the law and eliminate their backward capacity. For enterprises with assets in rapid deterioration that have nearly halted business operation and cannot pay the debt on time but have not declared insolvency, start the bankruptcy liquidation procedure according to the law, eliminate their backward capacity, and restructure and revitalise their capacity. For enterprises with temporary financial difficulties, normal operation status and a high level of equipment and technology that cannot repay debts on time but have not declared insolvency, provide appropriate credit support, make further observations and then decide whether or not to start bankruptcy reorganisation procedures according to their updated circumstance.

5. Carry out thorough investigations into local governments' providing local zombie enterprises with subsidies, damaging fair competition or coordinating the issuance of loans to support such enterprises. Carry out thorough investigations into local governments' intervention in the judicial procedure of bankruptcy to force these zombie enterprises to shut down for liquidation as soon as possible, so as to eliminate backward capacities from the market.

Fifth, the essence of capacity reduction should be reducing the backward iron and steel overcapacity with low added value and an unreasonable regional structure that is not up to environmental protection standards. The phenomenon of "supporting the inferior and eliminating the superior" should not be allowed. Therefore, we suggest that in the allocation of the overcapacity reduction task, we should not only take into account the production capacity, but also other factors such as environmental protection, efficiency, finances, and safety. An open and fair system of appraisal should be established.

The objective of reducing China's steel production capacity is to help the country's steel industry rejuvenate, and improve the competitiveness of Chinese steel. In the "13<sup>th</sup> Five-year Plan" period, we should deepen supply-side reform, accelerate the structural adjustment of China's steel industry, resolutely reduce overcapacity and prevent the production recovery of discontinued equipment and enterprises, in order to enhance the overall level of China's steel industry and accelerate the pace of revitalising the Chinese nation through the development of its steel industry.