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# China Energy Monthly Report

January-February 2014

- China announces new renewable power generation plan
- Think-tank of Chinese Government outlines new energy strategy
- China issues a plan to open up pipeline business
- Russia and China to build the world's largest thermal power plant
- CNPC finds 440 bcm of natural gas
- Sinopec planning to privatize 30% of it's oil product retailing
- Sinopec makes deep shale gas discovery
- China and Russia kick off 2014 by accelerating energy cooperation
- 27.6 GW more wind energy installed capacity to be added in 2014
- China to operate more nuclear power plants
- China's State Grid to spend US$50 billion on Australian energy assets

## NUMBERS

**3.89 BILLION:** In 2013 China's total energy consumption increased by 3.9% and energy intensity dropped by 3.7%, according to a national energy working meeting held in Beijing on 14 January. In 2014, China will cap its total energy consumption within 3.89 billion tonnes of coal equivalent (tce) (rise by 3.46% year on year), and cut its energy intensity by 3.9% further. To meet its energy target set by 12th FYP (total energy consumption at 4 billion tce and energy intensity to drop by 16% by the end of 2015), the country's energy consumption should increase no more than 120 million tce and its energy intensity should drop by 3.91% each year in 2014 and 2015.

**3.7 BILLION:** In 2013 China's coal production rose by 1.9% year on year to 3.7 billion tonnes, the lowest growth seen in recent years, while coal consumption accounted for 65.7 % share of the country's total energy use. China's National Energy Administration (NEA) has set a target of lowering coal's share of energy use to below 65 % in 2014. However, the data from the Chinese Coal Industry Association shows that China is to raise coal production capacity by 220 million tonnes in 2014, although small mines with 70 million tonnes of capacity are to be closed down.

**282 MILLION:** According to the data from China's General Administration of Customs, China imported 281.95 million tons of crude oil in 2013, 4.0% more than in 2012, although this was the weakest annual growth in five years. China National Petroleum Corporation (CNPC) forecast that China's oil demand will rise by 4% to 10.36 million barrels per day (bpd) in 2014.

**700 MCM:** The shale gas production capacity of Chongqing in Southwestern China has exceeded 700 million cubic metres (mcm) in 2013. Six companies, led by Sinopec Corp. are exploring shale gas in the region. Sinopec, China's top refiner, pumped 150,000 cubic metres of shale gas per day per well and sold 73 mcm of its output in 2013. It is estimated that Chongqing has 12.8 trillion cubic metres of geological shale gas reserves, 2 trillion of which are technically recoverable. (Chongqing Daily)

In 2014, shale gas output from the Sichuan Basin is likely to reach 800 mcm, according to a statement by an official from the Sichuan Government at the Sichuan Energy Work Conference. (Xinhua)

**1245 GW:** The National Energy Administration (NEA) announced that by the end of 2013, China had a total power generation capacity of 1244.9 GW, with an increased power generation capacity of 94 GW alone in 2013. The installed capacity of renewable energy accounted for 31% of the country's total generation. Of the new capacity, 29.93 GW was hydropower, 36.5 GW was thermal power, 2.21 GW was nuclear power, on-grid wind power accounted for 14.06 GW and on-grid solar power was 11.30 GW.

By the end of 2013, China's hydropower capacity reached 280 GW (22.49%), up 12.3%, while thermal power capacity reached 860 GW (69.08%), up 5.7%. Nuclear capacity, meanwhile, rose by 16.2% to 14.61 GW (1.17%), and solar power capacity increased significantly by 340% year on year to 14.8 GW (1.19%). As for wind power, China's on-grid wind power remained at 75.48 GW (6.06%) by the end of 2013, up by 24% with 14.06 GW newly added capacity. The figures show around 28% of China's installed capacity is still off-grid. (Wind Power Monthly)

**7.6%:** In 2013, China 's electricity production grew 7.6% to 5.2 trillion kWh compared to 4.7% in 2012, while electricity usage grew 7.5% to 5.3 trillion kWh, faster than a pace of 5.5% in 2012.The rapid increase is a result of a rise in energy intensive industries such as steel production boosting power demand. (China's National Bureau of Statistics)

**26%:** On 18 February, a report concluded that China's energy dependency on foreign countries will increase from the existing 9% to 11% in 2015. It will reach almost 26% in 2020 and stabilize by 2030. By 2035, the number will fall to 15%. The report was drafted by the Institute of World Economics and Politics, and the Chinese Academy of Social Sciences.

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# IN BRIEF

## Key Policies

### China announces new renewable power generation plan

Power Engineering reported on 15 January that the NEA had announced a plan to increase renewable power generation in 2014. The plan includes the installation of 14 GW of solar capacity, 18 GW of wind power as well as approval for 20 GW of hydroelectric plants. The government wants renewables to reduce power plant emissions and pollution. (Power Engineering/CCTV)

Non-fossil fuels generated energy accounts for 9.8 % of China's energy in 2013, an increase of 9.1 % from the previous year, while coal's share in the energy mix fell slightly to 67.1%. China's goal is to expand the non-fossil fuel portion of its energy mix to 11.4% by 2015 and 15% by 2020. (Reuters).

### Think-tank of Chinese Government outlines new energy strategy

Xinhua News reported on 13 February that Li Wei, head of the Development Research Centre of China's State Council, has urged China must transform itself into a country of "security, greenery and efficiency" by 2030 or be faced with lack of secure energy supply and significant environmental challenges. Li advised that China should peak and cap total energy use below 3 billion metric tons, and limit oil consumption below 550 million metric tons by 2020 and cap it at 650 million metric tons by 2030.

The article was a result of a 2-year- research project led by the centre and supported by more than 70 experts from Royal Dutch Shell Plc, Harvard University in the US and Tsinghua University in China, among others. It stated that by 2030 as much as 75% of China's oil might be imported. The dependency on overseas natural gas will also rise rapidly, bringing with it energy security concerns.

### China issues a plan to open up pipeline business

On 24 February, the NEA announced a plan to open up China's largely monopolized oil and gas pipelines to third parties, aiming to increase the facilities' efficiency. The move is also seen as part of an effort to open China's state-dominated energy sector to wider private participation. In the plan, the NEA encourages both onshore and offshore pipeline operators to provide services at a price agreed upon by the two sides. Such services include transport, storage, gasification, liquefaction and the compression of crude oil, product oil and natural gas. State-owned companies are to negotiate third-party access agreements, and the NEA will act as mediator between parties if necessary.

China's pipelines are monopolized by state-owned companies. Sinopec, for example, operates more than 10,000km of oil product pipelines and CNPC owns over 75% of gas pipelines. In recent years, there have been increased calls for the opening up of China's energy infrastructure. (Xinhua)

## 27.6 GW more wind energy installed capacity to be added in 2014

On 24 February, China Energy News reported that the NEA had approved the fourth set of wind power projects with a total capacity standing at 27.6 GW in 2014. Insiders initially only expected a 20 GW new installed capacity for the year. The NEA's new move sends a clear signal to the wind power industry that the Chinese Government will further develop wind energy.

The NEA started to approve wind power projects in 2011. The total installed capacity of previous batches of wind power projects stands at 26.8 GW, 25.3 GW, and 28.0 GW, respectively. By now, the total approved capacity of wind power in China has exceeded 105 GW---broadly equivalent to one third of the world's total.

## Beijing moves further to consolidate solar industry

PV Tech reported on 2 January that the Chinese government has excluded almost 80% of operating solar component manufacturers, including Shunfeng and LDK Solar, from benefitting from domestic support measures. Among 500 applications received, the ministry of industry and information technology (MIIT) only approved 109 to be listed as most favoured PV companies.

The criteria included a number of factors including minimum conversion for solar cells, minimum manufacturing capacity for polysilicon, ingot, wafer and rod producers and pollution control measures. The MIIT stated that the new policy is to "Promote the healthy development of the photovoltaic industry", and "Companies not on the list will not be able to benefit from domestic policy support, take part in domestic tenders or benefit from export tax rebates". The new policy is widely interpreted as a measure of curbing oversupply and increasing the quality of China's solar manufacturing sector.

The shrinking overseas market for PV products has prompted the Chinese government to take significant steps to buoy the over-supplied PV industry. Restructuring and consolidation is one of the key measures the Chinese government is taking. Industry insiders expect only three to four of China's largest PV companies to survive.

# Fossil fuels

## CNPC finds 440 bcm of natural gas

On 10 February, China's state owned National Petroleum Corp (CNPC), the country's biggest oil and gas producer, announced that it had discovered new natural gas reserves of 440 bcm in Sichuan, Western China. It estimates that 308 bcm are technically recoverable. It is the single largest gas reservoir ever discovered in China.

CNPC also announced that a testing well at the site is already producing 1.1 mcm per day, and that production facilities under construction will help raise annual output from the block to as much as 10 bcm. This is broadly equivalent to natural gas imports from Myanmar via a direct pipeline into China's Southwestern Yunnan Province which opened in October 2013.

The initial announcement has been received with some skepticism and questions about the geological and socioeconomic assumptions behind the claim. Shares in PetroChina, the arm of CNPC with rights to the block, did not react significantly to the announcement. CNPC made similar discoveries in Sichuan before but follow-up developments seemed stalled.

## Russia and China to build the world's largest thermal power plant

RIA Novosti reported on 12 February that China and Russia will build the world's biggest thermal power plant (TPP) with an 8 GW capacity in Russia's Amur Region. Another media source, Kommersant, quoted Otkrytie Financial as saying that the cost of the TPP project could range from between US$ 12 and 24 billion, including the development of a coal mine and a new power transmission line. According to Mikhail Shashmurin, General Director of Eastern Energy Company, the plant will supply 30-50 billion KW of electricity per year upon completion in 2018, about 5 percent of the Russian Federation's total current production.

Upon approval by both the Russian and Chinese Government, a joint adventure will be established between Eastern Energy Company, a subsidiary of Inter RAO, the Russian state-run power utility, and the State Grid Corporation of China (SGCC), China's largest state-owned grid operator. Xinhua News reported that Eastern Energy and SGCC had signed a tentative agreement to expand the annual power delivery target to China to 60 billion kWh per year by 2020.

Separately, China's biggest state-owned coalminer, Shenhua, is also investing in Russia. In December 2013, it signed a joint venture agreement with the Moscow energy conglomerate En+ to develop a major coalfield in the Russian Transbaikal region. (ref December 2013 Energy monthly).

## Sinopec planning to privatize 30% of its oil product retailing

Reuters reported on 20 February that Sinopec Corp plans to sell up to 30% of its retail oil business to private investors. According to the plan, Sinopec will remain as the major stockholder while private investors can take up to 30% in the partnership.

Insiders comment that Sinopec's move is a direct result from Beijing's overall reform policy, released in November 2013. The policy covered all important economy areas for deepened reform, including the oil and gas sector, an extremely powerful sector in China's economy and politics. Further measures could follow to open up this State Owned Enterpirse. It is not currently clear what this new policy means for foreign companies such as BP or Shell, but it is likely national oil companies (NOCs) will continue to dominate the market in the near future while the oil and gas sector undergoes an unprecedented reform and opening-up.

Sinopec has 30,532 petrol stations (compared with a total of 8,600 in the UK) and more than 10,000km of oil product pipelines in China. Sinopec's oil retail business, posted a 26.74 billion yuan USD$ 4.4 billion) operating profit in the first nine months of 2013, accounting for 34% of the company’s total. Profit from exploration and production was USD$ 7.6 billion, or 60%.

## China and Russia kick off 2014 by accelerating energy cooperation

On 14 January, Russia's largest private natural gas producer Novatek had secured the sale of a 20% stake in the US$20 billion Yamal LNG project to a subsidiary of China National Petroleum Corp. (CNPC)

The following day, top Russian oil producer Rosneft disclosed that it had received the first prepayment tranches from CNPC for new oil supply deals agreed in 2013. An industry source revealed that Rosneft received the first installment of up to $12 billion. Rosneft has also agreed to supply China's Sinopec with up to 10 million tonnes of oil per year over the next 10 years. By signing a raft of deals with China in 2013, Rosneft intents to boost its supplies to the booming Chinese economy and diversify away from Europe. Such moves of Rosneft’s will help ease China’s hunger for enegy but have worried some traders and European governments. (Reuters)

## China energy giants to build more LNG terminals

Reuters reported on 7 January that CNOOC, leader of the country's liquefied natural gas import business, plans to build another receiving terminal in the southeastern province of Fujian. According to a company's environmental assessment report the project, estimated to cost US$ 1.1 billion, will have an annual capacity of 3 million tonnes in its first phase,. The project includes a port to dock 260,000 cubic-metre tankers and three storage facilities of 160,000 cubic metres each, and is expected to start operation in 2017. CNOOC already operates six receiving terminals along the east coast including the most recent, a floating terminal, off the northern city of Tianjin.

On 6 November 2013, China Huadian announced plans to build a new LNG terminal (and gas-fired power plant) in Chengmai, Hainan Province. The terminal will have an initial receiving capacity of 3 million tonnes per year and will eventually be expanded to 12 million tonnes per year.

Furthermore, China's state-owned Sinopec is set to commission its first LNG receiving terminal in October 2014. The terminal, located in Qingdao City, Shandong Province, was 85% complete at the end of 2013. (Reuters and Chinaoil week)

# Nuclear

## China to operate more nuclear power plants

On 31 December, the first phase of a 6,000-MW nuclear power plant (NPP) began trial operations in China’s southern Guangdong Province. Yangjiang Nuclear Power Plant, a 73.2 billion yuan (US$12.1 billion) plant, will start commercial operations in a few months. Its six units, after going into full operations around 2019, will generate 48 billion kWh of electricity a year. Compared with a coal-fired plant with an equivalent capacity, Yangjiang can reduce consumption by 15.6 million tones of standard coal per year and help cut carbon dioxide emission by 38.3 million tonnes and that of sulfur dioxide by 370,000 tonnes per year.

Furthermore, Reuters reported on 15 January that State-owned China General Nuclear Power Corporation (CGN) will put another five more reactors into operation in 2014, increasing its total electricity generation capacity by over two-thirds from a year ago to 14 gigawatts.

By February 2013, China had put 9 nuclear power plants under operation with an installed capacity of 12.57M kW. (Chinadaily)

# Unconventionals

## Sinopec makes deep shale gas discovery

On 12 February, China's Ministry of Land and Resources (MLR) revealed that Sinopec Corp, had discovered a deep shale gas well with a maximum daily output of 105,000 cubic metres of gas in Xishui county of Guizhou province, Southwestern China. The gas well is located at an depth of 4417 metres, the deepest to be drilled in China thus far, marking a technological breakthrough in the country's deep shale gas drilling.

The project is expected to be another important shale gas exploration block in Southwestern China. Another shale gas block in the region, located in Fuling district of Southwestern China's Chongqing municipality, produced 150,000 cubic metres per day in 2013.

China is seeking shale gas development to ensure energy security and optimize energy structure. According to a shale gas plan for 2011-2015, China aims to produce 6.5 bcm of shale gas annually by 2015. (Xinhua)

## China's coal producer Shenhua invests in U.S. shale gas

In December 2013, Shenhua announced its plan to spend US$90 millions on a 50/50 joint venture with Denver-based Energy Corporation of America (ECA) to develop 25 natural gas wells in southwestern Pennsylvania’s Marcellus Shale over the next year and half. An estimated US$146 million in total will be invested in the cooperative development. The joint venture is expected to produce 3.8 billion cubic meters of gas over the next three decades. In addition, ECA will transfer 50% of undivided interest in its lease of 25 natural gas wells to China Shenhua's overseas subsidiary.

Shenhua is the largest coal supplier and vendor in China. It has 62 coal mines, producing 460 million tons of raw coal in 2012. The new move was seemed as to help the company grow and meet the requirements of its development strategy of integrated operations and industry chain extension. According to ECA COO Kyle Mork, it’s not about exports for China’s Shenhua, but “They’re looking at this as an investment in the US more than moving gas back to China.” (People's Daily Online)

# Renewables

## Shunfeng to invest $4.1 billion in solar projects

Bloomberg reported on 16 January that Shunfeng PV International (Shunfeng) will invest CNY25 billion (US$4.1 billion) to develop a three GW installation in 2014 in China's northwestern regions, including Xinjiang, Qinghai, Gansu and Inner Mongolia. Shunfeng Chairman Zhang Yi said that this is part of a plan to build a total of 10 GW of projects through 2016. Shunfeng took over insolvent Chinese solar company Wuxi Suntech for $493 million in November 2013, and currently has some 890 MW of PV plants in operation.

The Chinese government has set a goal of 35 GW of solar capacity by 2015 and has planned to add 14 GW of solar power in 2014 compared to 2013's 10 GW goal.

# Grids

## China's State Grid to spend US$50 billion on Australian energy assets

Bloomberg reported on 7 January that in December 2013 State Grid Corp. of China's (SGCC) won regulatory approval to spend US$ 50 billion on Australian assets, including almost 20% of electricity and gas company SP AusNet. SGCC, China's largest power distributor, is turning overseas to seek higher return on investments. It says that returns from overseas investments can be five times higher than those in China as the domestic electricity price is tightly controlled by the Chinese Government. The report stated that Duet Group and Spark Infrastructure Group may be SGCC's next targets.

On 13 December, SGCC became a board member of the Desertec Industrial Initiative (Dii) via its subsidiary, China Electric Power Research Institute (please see Monthly Energy Report for December 2013), another example of its overseas strategy.


Map of China (source: www.mybeijingchina.com)