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Press Release

Major breakthroughs achieved in China’s shale gas exploration and production

China’s First Large-scale Shale Gas Field Enters into Commercial Production
Ahead of Schedule

Sinopec to expand annual production capacity at Fuling shale gas field to 5 billion cubic meters by 2015 and 10 billion cubic meters by 2017

March 24, 2014 (Hong Kong) – China Petroleum and Chemical Corporation (“Sinopec”, or “the Company”) today announced that the Company made significant breakthroughs in the exploration and development of shale gas in China, and is planning to develop the Fuling shale gas field into China’s first shale gas field with an annual production capacity of 10 billion cubic meters by 2017. This marks an important strategic breakthrough in China’s shale gas development and signifies the country’s earlier-than-expected entry into large-scale commercial development phase. This encouraging progress will play a significant role in accelerating the structural adjustment of China’s energy industry, relieving pressure on natural gas supply from central and eastern China, and promoting energy conservation and emission reduction, as well as air pollution control.

According to existing geological information and capacity evaluation, Sinopec discovered the Fuling shale gas field in Chongqing, China’s first large-scale shale gas field. It has reserves of 2.1 trillion cubic meters and the company is planning to realize an annual production capacity of 10 billion cubic meters by 2017 (equivalent to building a large-scale oilfield with an annual production capacity of 10 million tons). In particular, Sinopec expects the annual capacity of Fuling shale gas field to reach 1.8 billion cubic meters by the end of 2014 and 5 billion cubic meters by 2015, a ten-fold increase than previously planned.

Mr. Fu Chengyu, Chairman of Sinopec, said, “The discovery and construction of Fuling shale gas field, China’s first-ever large-scale shale gas field, symbolizes a significant strategic breakthrough in shale gas development in China and a much earlier entry into large-scale commercial development, which would otherwise have taken 10 years according to the original plan. During this process, Sinopec has achieved a number of major breakthroughs in its resource evaluation system, technology system as well as R&D and manufacturing of fracturing equipment. The successful application of these developments in Fuling gave us much confidence in extending them to other projects around the nation. Given China’s abundant shale gas resources, we believe this will significantly support and accelerate the implementation of China’s shale gas strategy, increasing the supply of green energy and optimizing the energy consumption structure in China. It will also deliver benefits to energy conservation, emission reduction and air pollution control.”
Shale gas is a type of unconventional natural gas that is found trapped within shale formations in the form of either free gas or adsorbed gas. Primarily composed of methane, shale gas is highly efficient and clean in terms of energy form and chemical raw material. In recent years, the shale gas industry has experienced rapid development in the United States. In 2012, the country’s shale gas production reached 265.3 billion cubic meters, which accounted for 37% of its total natural gas production. This has significantly increased the level of energy self-sufficiency in the US, transformed its energy consumption structure, and lowered its reliance on imported energy supply. The international community widely believes that shale gas development is causing a revolution in the global energy field, which will not only increase natural gas production, but significantly impact the global natural gas market, energy supply patterns, climate change policy and even geopolitics. China aims to produce 6.5 billion cubic meters of shale gas by 2015, according to the nation’s Development Plan for Shale Gas, launched in 2013.

With its low carbon emission, shale gas is a clean energy that has strategic significance to China. In terms of environmental protection, the completion of a shale gas field with annual capacity of 10 billion cubic meters will reduce carbon dioxide emission by 12 million tons per year, equivalent to planting 110 million trees or reducing one year’s worth of emissions from 8 million economy cars. It will also lower sulfur dioxide by 300,000 tons and nitric oxide by 100,000 tons. In terms of changes to the energy structure, natural gas currently only represents 5.5% of primary energy consumption in China, far below the world average of 24%. Fuling shale gas field can further optimize China’s energy structure. In terms of energy sufficiency, 30% of China’s natural gas came from overseas in 2013. The breakthroughs Sinopec has made in its shale gas resource evaluation system, technology system and fracturing equipment development mark an imminent new era in China’s large-scale shale gas exploration.

Since 2011, when Sinopec set its mission to become the world leading energy and chemical company, the Company has focused on its resource strategy and has identified unconventional resource development as a major strategy to develop its upstream business. With great strides made in the past few years, Sinopec has realized significant breakthroughs in shale gas exploration in the following areas:

1) **We proved an abundant amount of resources.** On November 28, 2012, Sinopec discovered high yield shale gas flow with capacity of 203,000 cubic meters per day in Fuling’s Jiaoye 1HF well in Chongqing, which marked a significant breakthrough in shale gas exploration. After several years of effort, the initial evaluation showed nearly 4000 square kilometres with resources of 2.1 trillion cubic meters located in the sweet spot depth of less than 4,500 meters. The shale gas discovered was typical marine shale gas, which is characterised by its high quality, widespread distribution, thickness, high abundance and moderate burial depth, making it ideally suited to large-scale production.
2) **Fuling has high single testing-well production volume and has achieved long-term, stable production.** We have already built 600 million cubic meters of annual production capability. In September 2013, the National Energy Administration officially approved the establishment of the Fuling State Shale Gas Demonstration Area after the breakthrough achieved in Jiaoye 1HF well. Sinopec started the construction of the demonstration zone two months later and the demonstration area now has 21 experiment wells. By the end of 2013, shale gas production capacity reached 600 million cubic meters per year. As of now, the testing production volume per well reached an average of 337,000 cubic meters per day with the highest volume at 550,000 cubic meters per day. Jiaoye 1HF well has been in stable production for 480 days, based on testing production volume of 60,000 cubic meters per day. Jiaoye 6-2HF well has been in production for 170 days with daily production of 320,000 cubic meters.

3) **Sinopec has developed a series of primary shale gas exploration and production technologies.** In terms of the experimental development and engineering technology, Sinopec developed high quality fast drilling technologies, and actively explored and implemented a factory drilling operational model. Sinopec has also developed, over time, a set of technologies for horizontal well staged fracturing; its equipment and technology capability can now satisfy shale gas development needs. Currently, the longest horizontal section of testing well stretches 2,100 meters and there could be 26 stages of fracturing at most. With respect to localizing production equipment and related tools, Sinopec has successfully developed the Model 3000 fracturing vehicle in March 2013, which complies with the world’s most stringent standards. Four of these have already been deployed for on-site production. In addition, the open hole packer and bridge plug developed for downhole fracturing also met advanced international standard. Sinopec has completed commercial mass production for these facilities and has exported this equipment to North America, thereby reducing the prices of similar equipment in the international market by over 50%.

As the next step, Sinopec plans to develop 341.3 billion cubic meters of shale gas resources in two phases to push forward with its goal of building 10 billion cubic meters of production capacity per year by 2017. Based on the results of the pilot evaluations in 2013, Sinopec will build annualized production capacity of 5 billion cubic meters by 2015 to exploit the major shale gas resources in Jiaoshhiba block in Fuling. Secondly, Sinopec will increase its annualized production capacity by 5 billion to 10 billion cubic meters by the end of 2017. At the same time, Sinopec will continue to strengthen its exploration and development activities and expand its resources in the Dingshan and Nanchuan blocks in southeastern Sichuan to bolster its shale gas resource base.

Green and low emission energy is at the core of Sinopec’s development strategy. Sinopec will continue to explore resources in an ecological and environmentally friendly manner. Firstly, Sinopec will use water resources in a responsible way. As the shale gas fracturing process requires large amounts of water, Sinopec will utilize the existing water supply facility
in the local industrial park to secure water supply from Wu Jiang so as to avoid impacting local life and local industries. Sinopec will also recycle drilling and fracturing fluid to reduce water consumption. Secondly, Sinopec will strive to achieve maximum pollution reduction. Sinopec has built oil-based drilling fluid recycling stations on its drilling sites, facilitating complete collection, recycling and biologically safe disposal of the oil-based drilling fluid and effectively protects the environment. Sinopec also consolidates the collection and disposal of drill cuttings and wastewater, achieving zero emission of industrial emissions, water and residues. Finally, Sinopec will do its utmost to reduce any impact on the environment. We will complete impact evaluation on sensitive targets in a timely manner, and focus on ecological protection and restoration. We will increase pipeline depth to ensure shallow groundwater is segregated. Sinopec will also strictly identify permanent and temporary land occupation and restore the local area to its original state after temporary land occupation. Sinopec will ensure safe and environmentally safe production.

- The End -

About China Petroleum & Chemical Corporation

Sinopec is one of the largest integrated energy and chemical companies with upstream, midstream and downstream operations in China. Its principal operations include: the exploration and production, pipeline transportation and sales of petroleum and natural gas; the sales, storage and transportation of petroleum products, petrochemical products, synthetic fiber, fertilizer and other chemical products; import & export, as well as import and export agency business of oil, natural gas, petroleum products, petrochemical and chemical products, and other commodities and technologies; and research, development and application of technologies and information.

Adhering to its corporate mission of “Enterprise development, Contribution to the Country, Shareholder value creation, Social responsibility and Employee wellbeing”, Sinopec implements strategies of resources, markets, integration, internationalization, differentiation and green low-carbon development with a view to realize its vision of building a world first class energy and chemical company.

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