

# CHINA December 25, 2007, No.50

# PETROLEUM REPORT

A weekly report on China's petroleum and petrochemical industries

PUBLISHER: SinoSynergy Consultants Co., Ltd



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# Content

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## News

China's oil and gas production slowed in November

04

Ningbo to build large LNG gasification station in Zhoushan

05

China exports more oil production equipment

05

## Policy

Reform of the energy pricing system crucial

06-07

## Exploration & Production

China's NG output to reach 58.5 billion cbm in 2007

08

Cumulative gas output from Yunlin Gas Field exceeds 10 billion cbm

08

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### Annual subscription rates:

US\$595/RMB4,900 via airmail US\$580/RMB4,800 via E-mail (PDF)

Hydrocarbon output at Changqing Oilfield reaches 20mt of oil equivalent  
----- 09

Annual gas output at Tarim Oilfield exceeds 15 billion cbm  
----- 10

## **Storage & Transportation**

Donghai branch of West East Pipeline starts operation  
----- 11

Taiwan to put second LNG terminal into operation in August 2008  
----- 11

Cainan-Urumqi gas pipeline starts operation  
----- 12

Construction of Wuhan section of second West East gas pipeline  
to start in January 2008  
----- 12

## **Refining & Petrochemical**

Sinopec builds large ethylene project in central China  
----- 13

Sinopec to complete refinery by January  
----- 14

## **Imports & Exports**

Guangxi's imports of energy products grew rapidly in first 11 months  
----- 15

## China's oil and gas production slowed in November

China's production of crude oil and natural gas slowed significantly in November of this year, while output of oil products grew steadily, statistics from the China Petroleum and Chemical Industry Association show.

In November, China's crude oil output increased by 1% year-on-year to 15.314mt, down 3.1% from the previous month.

This rate of growth was 0.7 percentage point lower than the average rate of growth in crude production in the first half of this year.

Natural gas output grew by 16.4% year-on-year to 5.95 billion cubic meters.

This rate of growth was 0.8 percentage point lower than the average rate of growth in natural gas production in the first half of this year.

In November, China produced 16.54mt of oil products, up 6.7% year-on-year. Output of gasoline and diesel oil reached 5.048mt and 10.568mt respectively, up 4.7% and 6.1% year-on-year.

Starting in the fourth quarter, China's diesel production gained speed considerably.

In November, China processed 27.672mt of crude oil, up 3.8% year-on-year.

In the first 11 months of this year, China produced 171.049mt of crude oil, up 1.6% year-on-year, and 62.04 billion cubic meters of natural gas, up 19.7%.

In the same period, China processed 297.712mt of crude oil, up 6.4% year-on-year, and produced 177.653mt of oil products, up 6.9%.



## **Ningbo to build large LNG gasification station in Zhoushan**

The eastern city of Ningbo will start to build a large liquefied natural gas gasification station in Zhoushan in 2008 in an effort to alleviate the gas shortage and improve the energy mix and environment of the city, a source familiar with the situation disclosed.

Liquefied natural gas is a high-quality energy source cheaper, safer and cleaner than liquefied petroleum gas. Ningbo now has about 86,000 homes using piped fuel gas and the city's piped gas output is expected to reach 10 million cubic meters this year.

Generated by rapid economic growth, Ningbo's needs for fuel gas supply facilities are on the increase and the city's current gas supply capacity will be unable to satisfy demand a few years later. Promoting the use of LNG will enhance the safety and reliability of fuel gas supplies in the city and meanwhile increase the cleanness of energy consumption.

The planned LNG gasification facility will have an LNG storage capacity of 1,500 cubic meters and be capable of supplying 44.89 million cubic meters of natural gas annually. The facility will be located near an existing LPG storage tank station. It is expected to go into operation in early 2009.

## **China exports more oil production equipment**

China sold abroad US\$3.25 billion worth of oil production equipment and related products, including drilling machines and spare parts and steel oil pipe, in the first three quarters of this year, an increase of 67.4% on the same period of last year. The United States was the biggest target market of China's exports, while China's foreign sales to Russia, Algeria and India surged by big margins.

From Jan to Sep, China sold US\$1.04 billion worth of oil production equipment and related products, or 31.9% of the total, to the United States, up 29.9%. China's exports to Russia and Algeria, which are major oil producers, amounted to US\$190 million and US\$130 million worth, respectively, up 10.2 folds and 420%. Sales to India soared 59.8% to US\$270 million worth. Of the total oil equipment exports, State-owned enterprises accounted for 53.5%, or US\$1.74 billion worth, up 60.3%, foreign-funded and private companies made up US\$770 million and US\$610 million worth, up 79.1% and 71.6% respectively.

The robust export was buoyed by strong demand worldwide. Price hikes prevailed the world's oil markets this year, and the ensuing big profits prompted major oil producers to expand business and increase investment. Moreover, major oil producers in the Middle East, America and Russia are entering a period of equipment upgrading. Meanwhile, China has made progress in oil equipment manufacturing over recent years, with oil exploiting and drilling equipment up to the world's advanced standards. Besides, these products boast advantage in prices on international markets.

## Reform of the energy pricing system crucial

Rapid economic growth has led to an increasing demand for energy. And as energy prices keep increasing more pressure is being put on supply and demand. The reform of the energy industry, especially its pricing mechanism, has drawn much attention.

The National Development and Reform Commission said recently it was necessary to reform the pricing mechanism of resource products to further improve efficiency. But the reform should be implemented at the right time with due consideration for all concerned.

Energy prices in China are mainly decided and controlled by the government and do not reflect the scarcity of resources and the impact of energy use on the environment. The prices are relatively low and the pricing mechanism is not in line with that of the international market. This has caused serious problems in energy utilization, economic development and environmental protection.

The pricing mechanism is not in line with production and consumption. This has led to the over-exploitation of resources. China's rapid economic growth is mainly built on an economic structure of high-energy consumption and low-efficiency. The waste in exploitation contrasts hugely with the shortage of resources.

At the same time, low energy prices have increased the competitiveness of China's high-energy-consuming, high-polluting and resource-based products, enlarged trade surpluses and exaggerated the pressure on the yuan's appreciation.

The government is now paying great attention to energy conservation and emission reduction. Without reform of the pricing mechanism, the efforts will only achieve half the results. Reform is a matter of urgency.

Reform will mean further price hikes, and as it takes hold, it will affect the producer price and consumer price indices. The pressure of increasing costs on producers will gradually be transferred to consumers. The process, however, will take time.

Though the rise of energy prices will increase pressure on middle and downstream products, its impact on inflation in the short term will depend on the supply and demand of consumer goods. Over-capacity will lessen pressure for price increases, judging by China's current industrial and energy consumption structure.

In the long run, a price lever is still the most effective way to conserve energy and reduce emissions. As long as energy prices are low, enterprises will lack the drive to improve efficiency and cut emissions. The only way to stop high-energy consuming enterprises from expanding is to increase energy costs.

It is therefore necessary to reform the pricing mechanism, marketize energy products and let prices guide investment and economic restructuring.

The reform faces a series of tough issues.

First, the supporting measures of the reform are not completed. There is a lack of overall planning and design in the pricing structure of different energy products. For example, coal prices are market-led now but not electricity. China's crude oil prices are in line with the international market but reform of refined oil prices has not caught up.

Today discussions on reform of the energy pricing mechanism are mainly about bringing China's energy prices in line with the international market. But merely stressing this while ignoring the characteristics of the country's energy resources is not a good idea.

If the scarcity of resources and environmental costs are properly considered, China's energy prices may be even higher than the international level, which could attract more imports of energy resources.

Social fairness is also an issue that should be considered. The price hikes that will come with reform will produce different impacts on consumers of different income levels and social groups.

Even prices that are in line with the international market will harm the interests of some consumers.

Transparent subsidies for certain consumers will help solve the problem. This is also an important part of the reform.

The current way subsidies are granted to producers have led to unfair distribution and consumption, which does not improve efficiency or promote social fairness.

Compared with other reforms, reform of the energy pricing mechanism will take time because of its importance, complexity and sensitivity. Marketization offers a way.

Any further delay in reform will make us lose important opportunities and increase the cost of sustainable development.

Without feasible alternatives, the inefficient use of energy resources driven by the low prices today will mean higher energy prices and a bigger cost to the environment tomorrow.

It is reported that mounting inflationary pressure could slow down our reform of the energy pricing mechanism, if we do not do it now, we will have to bear the costs later.

## **China's NG output to reach 58.5 billion cbm in 2007**

China's natural gas production will reach 58.55 billion cubic meters this year, up 14.4% from 2006, according to the China Petroleum and Chemical Industry Association (CPCIA).

CPCIA predicted that China's natural gas output will continue two-digit growth and is expected to reach 76 billion cubic meters in 2008.

The association also predicted that China's crude oil output will exceed 186mt this year, up 1.5% from 2006.

The country's crude oil output is expected to reach 189mt in 2008 and as domestic crude oil demand continues to grow the country's reliance on imported crude oil is expected to reach 47% next year, CPCIA predicted.

CPCIA projected the international oil prices will reach US\$80-90/bbl in 2008. Two factors will push up crude oil prices: firstly, various funds intervening in the crude oil futures market will reap profits from the premium in crude oil prices and secondly, the rapid growth of the world economy will result in a continuous rise in global crude oil demand.

## **Cumulative gas output from Yunlin Gas Field exceeds 10 billion cbm**

The Yulin Gas Field, a component of the Changqing Oilfield in the Ordos Basin, has supplied more than 10 billion cubic meters of natural gas to Beijing, Xian and Yinchuan since it went into operation in 2001.

The rapid growth in output at the Yulin Gas Field will contribute greatly to the achievement of Changqing Oilfield Company's objective to raise its annual oil and gas output to 20mt of oil equivalent.

The Yulin Gas Field is a subtle Upper Palaeozoic gas reservoir in the Ordos Basin. Since 2001, Changqing Oilfield Company has put 155 gas wells, 12 gas-gathering stations and a gas processing plant into operation. The annual gas output from the Yulin field rapidly rose to two billion cubic meters from the original 360 million cubic meters. In 2006, Changqing Oilfield Company teamed up with Shell to put Block Changbei in the Yulin Gas Field into commercial production. The block's gas output has risen to one billion cubic meters from the 300 million cubic meters at the beginning of trial production. Early this month, the annual gas production capacity of the Yulin Gas Field exceeded three billion cubic meters.

## **Hydrocarbon output at Changqing Oilfield reaches 20mt of oil equivalent**

The Changqing Oilfield's oil and gas output reached 20.0773mt of oil equivalent on December 20.

This is the first time that the field's hydrocarbon output has exceeded 20mt, making the field the third largest oilfield in China after the Daqing and Shengli oilfields.

In the past seven years, the Changqing Oilfield has produced a total of 57.0182mt of crude oil, 1.35 times the field's combined oil output in the previous 30 years, and 42.754 billion cubic meters of natural gas, 17 times the field's combined gas output in the previous 30 years.

Over the past seven years, the oil and gas output of the Changqing Oilfield has been growing by 2mt per year on average, the fastest among all oilfields in China.

The Ordos Basin extends over five provinces (Shaanxi, Gansu, Ningxia, Inner Mongolia and Shanxi), covering 370,000 square kilometers.

It is one of the largest oil and gas-bearing basins in China, whose reservoirs are characterized by low permeability, low pressure and low abundance.

Two major oilfields - Ansai and Xifeng - and two major gas fields - Yulin and Sulige - have been found in the Changqing field with a combined proven oil reserve of 1.5 billion tons and a combined proven gas reserve of 1.5 trillion cubic meters.

Changqing Oilfield Company used 33 years to boost its oil and gas output to 10mt of oil equivalent but used only four years to raise its output to 20mt of oil equivalent, setting a record for developing an ultra-low permeability oilfield.

During the Tenth Five Year Plan period, Changqing Oilfield Company established five uncompartimentalized oilfields with annual oil output exceeding 1mt and 3 gas fields with annual gas output exceeding 3 billion cubic meters.

## **Annual gas output at Tarim Oilfield exceeds 15 billion cbm**

Natural gas output of the Tarim Oilfield has exceeded 15 billion cubic meters so far this year, making the field the largest natural gas production area in China.

The field's total natural gas output in 2007 is expected to reach 15.56 billion cubic meters. Tarim Oilfield Company stated recently that its gas supplies to the West East Pipeline will reach 13.7 billion cubic meters in 2007.

More than 80 cities in 12 provinces, including Beijing and Shanghai, have benefited from the West East Pipeline. The pipeline is supplying feedstock to many industrial enterprises and household fuel to more than 200 million residents.

The Tarim Oilfield is rich not only in oil but also in gas. It holds 8.93 trillion cubic meters of natural gas resources, accounting for 22% of the country's total.

The West East Pipeline starts in the Tarim Oilfield. China is also planning to lay a second West East gas pipeline to pump natural gas imported from Central Asia to its eastern part. The proposed pipeline would have a gas supply capacity of 30 billion cubic meters per year.

The trunk line of the West East Pipeline is about 4,000 kilometers in length with

an annual gas supply capacity of 12 billion cubic meters. On November 19, the Tarim Oilfield's gas supply to the West East Pipeline in 2007 exceeded 12 billion cubic meters. The field achieved the gas supply objective set by PetroChina for 2007 one month ahead of schedule.

Tarim Oilfield Company has located a host of high-quality uncompartmentalized oil and gas fields in recent years, including the Kela 2, Hade, Tazhong and Dina fields. In 2000, the Tarim Oilfield's natural gas output was only 800 million cubic meters, while in 2007 the field's gas output will exceed 15 billion cubic meters. In the past two years, the field's gas output increased by 10 billion cubic meters combined.

The rapid growth in oil and gas output has reinforced Xinjiang's position as a strategic energy base. The region's oil and gas output is expected to reach 26.1mt and 21 billion cubic meters in 2007 respectively, up 5.5% and 27.9% year-on-year and the third largest and largest output nationwide respectively.

All cities south of the Tianshan Mountain in the neighboring areas of the Tarim Basin have begun to use natural gas from the Tarim Oilfield. The use of natural gas has contributed to the environmental protection and economic growth in these areas.

## **Donghai branch of West East Pipeline starts operation**

The branch line of the West East Pipeline, designed to supply natural gas to Donghai county in Lianyungang city in Jiangsu province, has gone into operation recently, a source from the gas supply authorities in Lianyungang disclosed on December 18.

The Donghai line was funded by CNPC Pipeline Gas Investment Company, a subsidiary of China National Petroleum Corporation. Investment in the project totaled 200 million yuan.

Construction of the pipeline started in August 2005. In addition to the trunk pipeline, a city gate has also been established.

More than 90% of new residential areas in Donghai county has completed installation of household gas supply facilities.

Currently, two large commercial users and more than 1,100 households in 29 residential areas in downtown Donghai have begun to use gas supplied by the pipeline and daily gas supply has reached 3,200 cubic meters.

Within five years, the Donghai pipeline will be able to provide access to natural gas to all residents in Donghai county, including enterprises in the downtown area, and the pipeline's annual gas supply volume will reach 25 million cubic meters.

## **Taiwan to put second LNG terminal into operation in August 2008**

China's Taiwan province will put a second LNG terminal into service in August 2008. The terminal will be built and operated by CPC Corp., Taiwan's only natural gas importer.

The new terminal will supply natural gas to the 4,000MW Tatan Power Plant. CPC has signed an agreement with the operator of Qatar's RasGas project to import 3mt of LNG annually for 25 years.

CPC also signed an LNG supply contract with Australia's Woodside Petroleum Ltd in November 2007. Under that contract, Woodside will supply 2mt-3mt of LNG annually to CPC for 15-20 years from its Browse LNG project in western Australia. In 2006, Taiwan imported 7.8mt of LNG, most of which was from Indonesia and Malaysia.

## **Cainan-Urumqi gas pipeline starts operation**

Xinjiang Oilfield Company put a new natural gas pipeline into operation on December 13 in the Xinjiang Autonomous Region.

The pipeline starts at the Cainan Gas Supply Station in the Cainan Oilfield and terminates at the gas distribution station in Urumqi Petrochemical Company, stretching 143 kilometers. The diameter of the pipeline is 610mm and the designed gas supply capacity and pressure of the pipeline are 30.108 cubic meters and 6.3Mpa respectively. The pipeline is a key project built by Xinjiang Oilfield Company and is designed to supply natural gas produced in the Cainan

Oilfield, Junggar Basin, the Ludong area and the Zhundong area to Urumqi.

This pipeline will change the natural gas supply pattern and supply-demand picture in the Junggar Basin and the area north of the Tianshan Mountain. With the operation of this pipeline, a loop natural gas pipeline network has been established in the Junggar Basin. This network would not only enable Xinjiang Oilfield Company to freely distribute natural gas across the Junggar Basin but would also pave the way for the company's planned natural gas exploration and production in the Cainan Oilfield and the Ludong and Zhundong areas.

## **Construction of Wuhan section of second West East gas pipeline to start in January 2008**

PetroChina will start building the Wuhan section of a second West East gas pipeline in January 2008, a source from the Development and Reform Commission of Wuhan City disclosed recently. This line, slated to become operational in 2010, will supply gas to Wuhan and 11 other cities in Hubei province.

The second West East gas pipeline, to be solely funded by PetroChina, will mainly supply natural gas imported from Central Asian countries such as Turkmenistan and Kazakhstan to central and eastern China with gas produced in the Tarim Basin, Junggar Basin and Ordos Basin as standby gas sources.

The second West East gas pipeline will have a designed gas supply capacity of 30 billion cubic meters per year and the actual gas supply volume will be 26 billion cubic meters per year. The pipeline will start in Horgas in Xinjiang and terminate in Shanghai city. The pipeline will pass through 13 provinces, autonomous regions and municipality including Xinjiang, Gansu, Ningxia, Shaanxi, Henan, Anhui, Hubei, Hunan, Jiangxi, Guangxi, Guangdong, Zhejiang and Shanghai. The trunk line will be 4,000 kilometers in length.

## **Sinopec builds large ethylene project in central China**

Sinopec started constructing an 800kt/a ethylene project in Wuhan, capital of central China's Hubei province, on December 18.

Ethylene is the basic material used in the production of synthetic fiber, synthetic rubber, synthetic plastics and organic chemical products. China's ethylene demand is expected to continue to grow rapidly throughout the Eleventh Five Year Plan period (2006-2010). According to the country's long and medium-term development plan for the ethylene industry, by 2010 the country will establish three major ethylene production areas in the Yangtze River Delta Region, the Bohai Sea Rim Region and the Pearl River Delta Region. The combined ethylene production capacity of these three areas will account for over 60% of the country's total.

In addition, the country will establish a host of large ethylene production bases in its central and western regions including Xinjiang, Gansu, Sichuan and Hubei.

The Wuhan ethylene project will be based on Wuhan Petrochemical Company's 8mt/a refining project, including a 800kt/a ethylene cracking unit, a 500kt/a pyrolysis gasoline hydrogenation unit, a 120kt/a butadiene extraction unit, a 400kt/a arene extraction unit, a 300kt/a high-density polyethylene unit, a 300kt/a linear low density polyethylene, a 600kt/a ethylene oxide and 300kt/a glycol unit and a 400kt/a polypropylene unit. Investment in the project will exceed 14 billion yuan.

The project is expected to become operational in 2011.

## **Sinopec to complete refinery by January**

Sinopec Group will complete the construction of a 12.5 billion yuan (\$1.71 billion) refinery in Qingdao in East China's Shandong Province by the end of January, a move to further tap rising demand.

The project is designed to process 10 million tons of crude annually. It will produce 7.6 million tons of refined oil per year.

Annual sales revenue of the plant is expected to cross 30 billion yuan, said the source, who declined to be named.

Sinopec started construction of the plant in June 2005. It has an 85 percent stake in the plant.

Preparation work for the plant started in the 1990s. The project was approved by the central government in 2004.

At a company meeting last week, Sinopec President Wang Tianpu said work on the plant was going smoothly. It also helped to train a lot of experts for the company, Sinopec said on its website. But it did not say when the project will come on-stream. The source with the company told China Daily it would be January next year.

The project will boost the company's refinery business as well as increase its market share. Analysts said the project will boost domestic refined oil supply. China, the world's fastest growing economy, wants to increase oil processing capacity by 25 percent by 2010 to meet rising demand for fuels and petrochemicals.

PetroChina, the nation's biggest oil producer, is poised to increase oil-refining volume by nearly 12 percent this year, according to its senior officials. The company is expected to process some 120 million tons of oil this year, Liu Hongbin with PetroChina told China Daily earlier.

In October and November, facing shortages, top Chinese oil producers Sinopec and PetroChina were running at full capacity and trying to draw on stockpiles as much as possible.

Earlier this month, the government gave the go-ahead to Sinopec to start with Kuwait Petroleum Corp the groundwork on an oil refinery and chemical project in South China's Guangdong Province.

The proposed ethylene plant in Nansha in Guangdong will produce one million tons of the chemical a year. The approval allows the partners to start feasibility studies on the project.

The Nansha complex, with a planned investment of \$5 billion, would be the largest joint venture in China, exceeding the nearby Nanhai petrochemical facilities built by Royal Dutch Shell Plc and China National Offshore Oil Corp.

Sinopec this month signed a contract with the Iranian oil ministry on the development of the Yadavaran oilfield in southwestern Iran.

The initial estimate of the project's cost is about \$2 billion. It will be carried out in two phases.

## **Guangxi's imports of energy products grew rapidly in first 11 months**

The Guangxi Autonomous Region in southwest China imported a total of 12.642mt of coal in the first 11 months of this year, up 45.4% from the same period last year.

In the same period, the region imported 112kt of oil products, up 31.8%, and 121kt of liquefied petroleum gas, a 3.2-fold increase over the same period last year.

The combined value of imports of the above three types of products in the first 11 months was US\$570 million, accounting for 9.2% of the total value of commodity imports by the region in the period.

