

# Stakes are big in Russia-China gas supply talks

Buried across the vast Siberian steppe and taiga of Russia's Far East lie spectacular reservoirs of natural gas, largely untapped because there is little local demand — the land there is thinly populated and lightly industrialized.

But over Russia's southeast border, the Chinese economic colossus is thirsting for natural gas to help quench its growing consumption of fossil fuels.

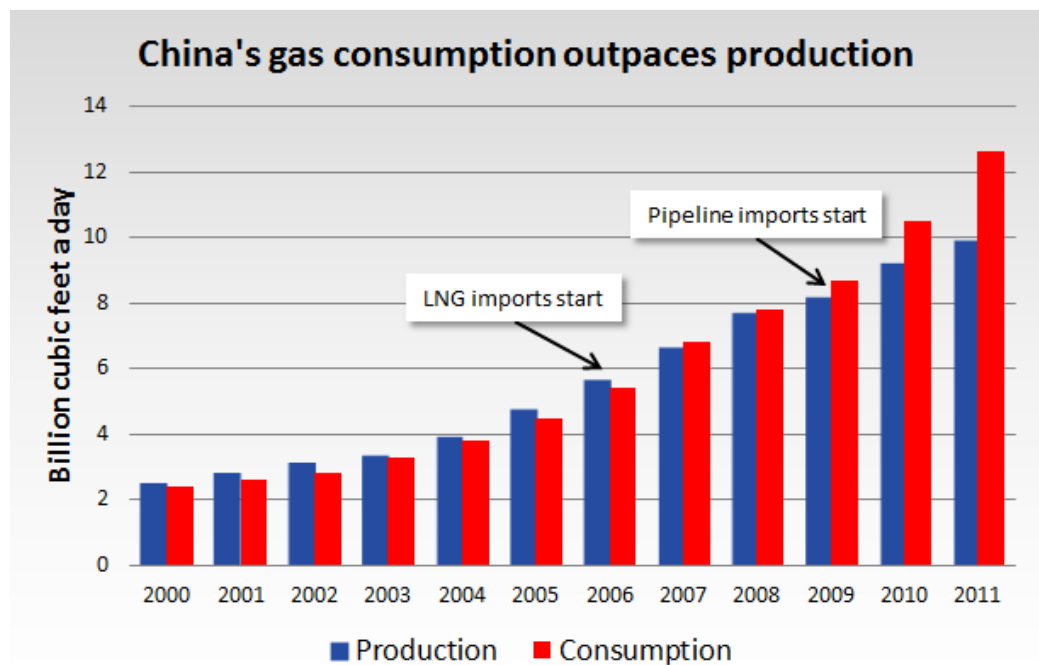
Even as China is dotting its coast with new liquefied natural gas receiving ports and getting pipeline gas from far-flung Central Asia outposts, no gas pipelines cross the Russia-China border.

This is one of the great ironies of the world's gas trade, that what would appear to be a natural fit — a stranded supply finding a ready market in a nearby booming economy — has not occurred, even as other, more distant suppliers have rushed into the market.

Gas flows into China from Asia and the Middle East, Australia, Africa and South America. In 2011, China even received a shipment of U.S. gas, from the nation's only operating LNG-export plant, in Nikiski, Alaska.

Supplying China could be the great prize for future natural gas exporters, including a possible multibillion-dollar LNG project that would liquefy and export Alaska's North Slope gas. (The Nikiski plant in Southcentral Alaska processed gas from the neighboring Cook Inlet fields, not from the huge North Slope fields in the Arctic, before being idled in late 2012 for lack of gas supply.)

Gas slakes only a small portion of China's energy demand. But the nation's consumption of gas has been soaring and is expected to continue doing so — possibly quadrupling in the next 20 years. China has been importing gas since the mid-2000s, after its gas consumption outstripped domestic production.



Source: U.S. Energy Information Administration

Every year it imports more gas, even as the country tries to develop more fields internally to try to limit the need for costly imports.

Over the past 20 years, Russian and Chinese officials have shaken hands, signed agreements in principle and made many announcements about how they're working together to bring Russian gas to Chinese power plants and other consumers.

Yet the smiles, words and pieces of paper have not yet led to any border-crossing pipelines. The two nations have been deadlocked. The reasons are varied, from historical baggage, to differences of opinion about pipeline routes and ownership, to each nation's geopolitical considerations within East Asia.

But the Great Wall that separates the two is an old bugbear that has scuttled many a business deal over the eons: The two sides have been unable to agree on a fair price.

## THE STALEMATE

Few Russia-China watchers are taking bets that the two nations never will come to terms on gas.

The stakes are too huge.

This winter's choking air pollution in many Chinese cities is accenting the call for reforms to steer the

country away from vehicles burning dirty diesel and power plants belching coal ash. China consumes almost as much coal as the rest of the world combined.

China is quickly embracing natural gas. The country's leaders hope gas will account for 12 percent of the national energy mix by 2030, up from about 5 percent now.

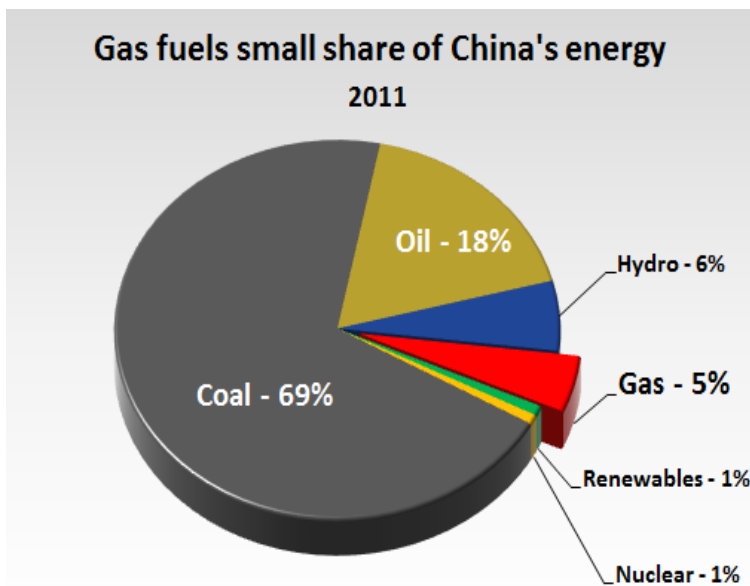
A recent paper on the impasse with Russia says China needs to secure long-term supplies in the next few years to achieve that goal. Its ambitious embracing of natural gas likely will account for about one-third of global gas-demand growth through 2030, said author Keun-Wook Paik, senior research fellow at The Oxford Institute for Energy Studies in the United Kingdom.

And for Russia, Paik wrote, "A pipeline to China would open the door for its extension to both South Korea and Japan, providing all three with both pipeline gas and LNG import options. Cooperation among these top three gas importers could lay the foundations for the establishment of an Asian Gas Consumers Union."

The delay in Russian gas deliveries has frustrated both sides.

As a Chinese energy planner said in 2007, "The Sino-Russia pipeline question is one step forward, two steps back. Today is cloudy with a chance for sun, while tomorrow is sunny with a chance for clouds. One moment Russia is saying they have made a decision, the next saying that no decision has been made."

Still the stalemate continues. A Platts editor recently put it this way: "Continuing failure to agree would be a loss for both sides and other countries as well. It would deprive both countries economies of an obvious win, by finding a home for stranded gas reserves, as well as increase future global rivalry in the LNG market, with a knock-on effect on world prices."



*Source: BP Statistical Review of World Energy*

## LOTS OF TALK, LITTLE ACTION

The first steps on the tortured trail of supplying Russia gas to China occurred 20 years ago.

In the period leading to the early 1990s, Russia had discovered big oil and gas fields in its Far East, out beyond its vast internal and export pipeline networks. The resource was stranded in Siberia, unless a market could develop. BP and Statoil studied the potential, but backed away from a joint venture for lack of obvious buyers.

China was not perceived as a potential customer then. China and Russia were Cold War enemies. Their joint histories ran even deeper than that. The Chinese and Russians had fought many territorial wars and skirmishes in the centuries since the first Cossack loggers ventured to colonize the east.

In 1860, six months before the U.S. Civil War erupted, a weakened China ceded to Russia control of Outer Manchuria — a swath of China larger than Washington, Oregon, Idaho and Nevada combined that now comprises the southeastern-most portion of Russia. The loss still smarts with some Chinese. (Russia wasn't the only imperialist picking at China. The United Kingdom expanded its Hong Kong territory a month earlier.)

But in the early 1990s upheaval came.

The Soviet Union fell apart. Communist China was beginning a dance with market economics. Relations thawed.

In 1993, China National Petroleum Corp. started negotiations to explore Siberian oil and gas prospects.

In the next six years, three memoranda of understanding got signed. The two countries agreed to work together to define the size of resources and study how to pipe the gas from the Irkutsk region to northeast and northwest China in two separate mega-pipelines.

For Russia, this was a chance to provide gas to locals, develop a petrochemical industry, and possibly even export gas-fired electricity as well as the methane itself to a new market. With further build-out of its pipeline network, Russia could position itself to route its ample gas reserves to Europe in the west or Asia in the east, giving it leverage to play one market against the other.

For China, leaders saw a crisis looming. Energy demand was skyrocketing but domestic oil production was stagnating, even falling in the industrial northeast. Meanwhile, the day approached

when gas consumption would outpace domestic production. Facing a threat to their nation's expanding economy, Chinese leaders in the early 2000s got busy lining up new supplies.

Russian oil and gas weren't the only resources in play. The Chinese opened negotiations with Turkmenistan, Kazakhstan, Uzbekistan and Myanmar, all of which had huge reserves looking for a market. Unlike Russia, they quickly came to terms, and new gas pipelines from those four countries now are operating, expanding or under construction.

A key difference is that Turkmenistan and Kazakhstan in



Source: Gazprom

**A well pad at the Chayandinskoye field in Russia's Far East, one of the big fields Russia is targeting for early development.**



**In late 2012, Gazprom announced plans to build a major gas trunkline from its Far East interior to the Vladivostok port. The project**

particular welcomed Chinese investment along the value chain, from the wells and field development to pipelines.

Negotiations had a different tone with the Russians. Russia blocked Chinese equity stakes. Russia also wanted the shortest pipeline routes possible. Such as through Mongolia. But the Chinese wanted the pipe routed around that nation to keep the supply secure.

The talks dragged on.

In 2006, Russian gas company Gazprom and China

National Petroleum Corp. signed a memorandum of understanding on two gas pipelines. They would be big — each as big as the possible Alaska North Slope gas pipeline or even bigger. One would carry up to 2.9 billion cubic feet a day to northwest China, linking to a Chinese pipeline hub there. The other line's capacity would be up to 3.7 bcf a day, delivering the gas to the northeast China industrial hub.

If those projects had been built and the pipelines were running full, they could supply China with





Source: Gazprom

### name is "Power of Siberia."

about half of the natural gas the country consumes today. But they haven't been built. The companies couldn't agree on a price for the gas.

Price also is a barrier to consummation of Gazprom's 2010 announcement of a binding accord with CNPC to export up to 2.9 bcf a day to northwest China.

And price could blunt Gazprom's plan announced in October 2012 to build a gas trunkline from Irkutsk to the Far East port of Vladivostok, north of China, a project that likely needs a spur to northeast China to take some of the gas. (Japan and South Korea could

be export customers, too, keeping Russia from depending on a single customer.) Like much about Russia and China, this project would be almost unimaginably massive. The pipeline would span 2,500 miles — roughly the distance between San Francisco and New York — through swamps, mountains and earthquake zones. It would carry up to 5.9 bcf a day of gas.

Last fall Gazprom held a contest to name the project. "Power of Siberia" took the prize. The winner gets a trip for two to Siberia.

## THE PRICE IS WRONG

One pipeline actually has been built between Russia's Far East and China. It carries oil, not natural gas. It started up in 2011. The oil goes to northeast China.

The oil line negotiations featured a vastly different dynamic than the deadlocked talks on a gas project. Chinese loans helped fund the Russian development. A Chinese oil company built the pipeline's China section. Russia got an oil price it wanted.

Paik, the Oxford researcher who has watched the Russia-China gas tug-of-war since the 1990s, said in a November presentation at a London conference that Sino-Russian gas cooperation has been stymied by Russia's effort to replicate its experience with oil exports ... and China's unwillingness to go along.

Various reports say Russia wants about \$10 per million Btu of gas (about 1,000 cubic feet) while China has offered to pay about \$7.

Russia's price is roughly equivalent to what its European customers pay. Gazprom is under pressure to shave its European price, which is based on the cost of oil products there. If Gazprom goes soft on gas prices in Asia, that could weaken its hand in Europe.

In January 2013, Gazprom published a white paper, aimed at critics, explaining the sensibility and fairness of how the company prices export gas. It even quoted a Beatles' song: "Living is easy with eyes

closed, misunderstanding all you see."

Chinese leaders have their own gas-price pressures. The government regulates prices at relatively low levels to gas users, such as power plants. Importers of expensive foreign gas are losing money on each transaction. The government is slowly moving to raise prices but worries that moving too fast could anger citizens and cool the economy. Further, as China relies more and more on imported gas, officials worry about the signal they would send to other foreign gas sellers if they agree to a high price for Russian gas.

(China got a world-class steal with its first LNG-import contracts signed about 10 years ago. It was an LNG buyer's market back then. China's first contracts linked LNG prices to oil prices, as is common, but set a ceiling on how high oil prices could rise before the LNG price flattened out. For Australia's North West Shelf project, the oil price ceiling was \$25 a barrel. For Indonesia's Tangguh project, the ceiling was \$38, according to the International Gas Union. As a result, these LNG shipments were initially priced at \$3 to \$3.70 per million Btu, levels that would hardly shock the economy. A spot shipment today from elsewhere could be priced as high as \$19. Indonesia has been pressing China to pay more for its Tangguh LNG.)

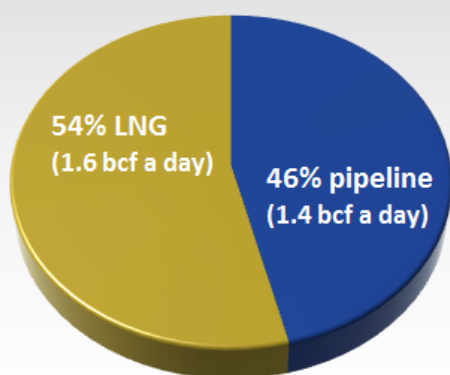
## CHINA'S BIG VISION

To understand how far China has come as a consumer of natural gas, it can be helpful to look at where the country stood in 2000.

That year China consumed an average of 2.4 bcf a day, covering it with about 2.6 bcf a day of production, according to the BP Statistical Review of World Energy. Natural gas provided less than 3 percent of China's energy needs. Coal provided 61 percent.

Flash forward to 2011, after more than a decade of boom. China produced about 9.9 bcf a day on average and consumed 12.6 bcf a day. Imports covered the difference between the two figures. Natural gas provided almost 5 percent of China's energy. Coal's share was 69 percent.

**China imports both LNG and pipeline gas**  
2011



Source: BP Statistical Review of World Energy

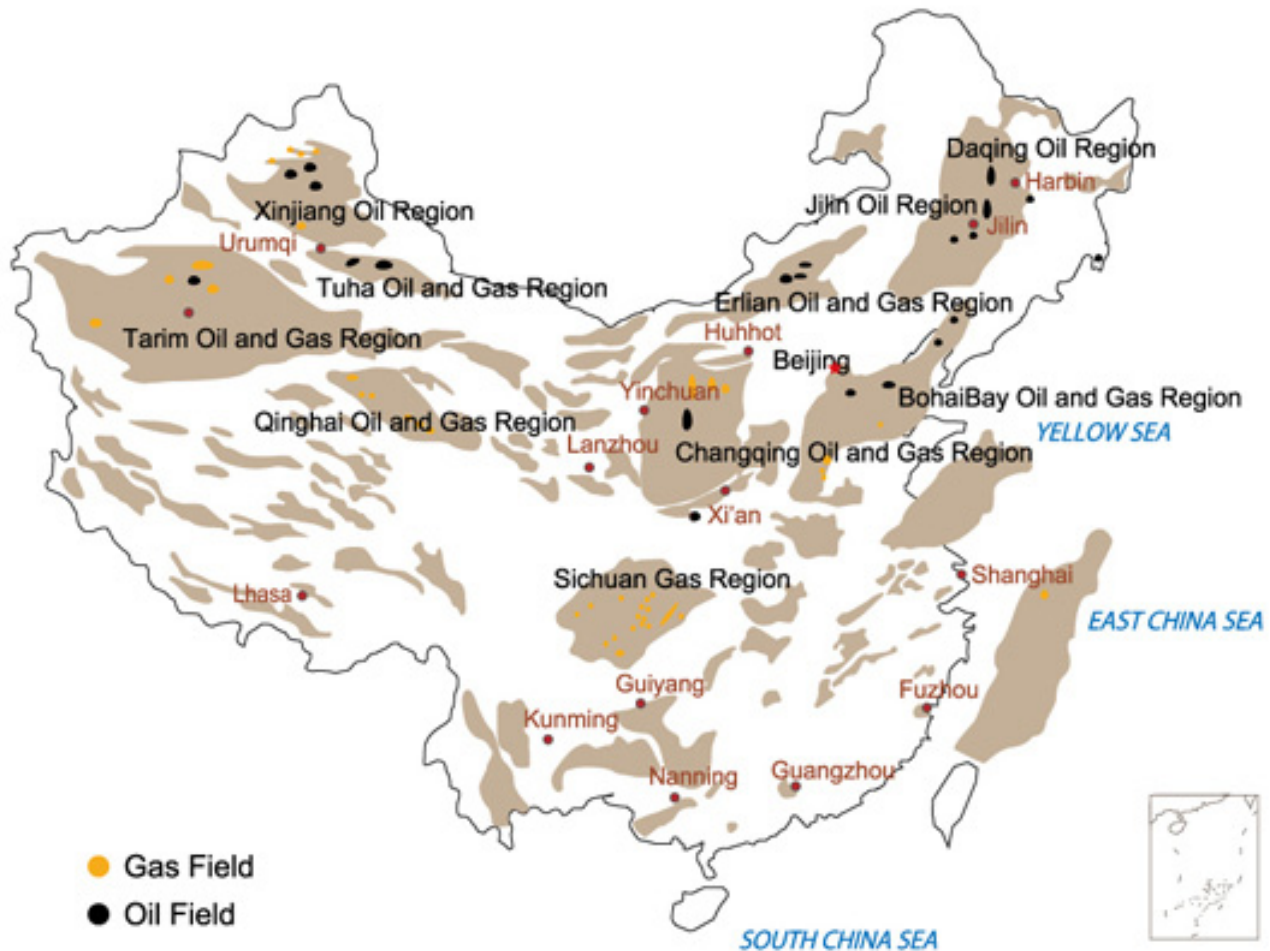


Photo courtesy of PetroChina

**China has many oil and gas basins. This map shows PetroChina's interests across the country.**

(By comparison, the United States was the world's top producer in 2011 at 63 bcf a day and top consumer at 67 bcf a day. Imports, mostly from Canada, covered the difference. Gas supplied 28 percent of U.S. energy, coal 22 percent.)

Now flash forward again into a future conceived by Chinese energy planners.

For 2030, they forecasted in November 2012, China will produce 44 bcf a day and consume 53 bcf a day. Natural gas will supply 12 percent of the nation's energy.

Many China watchers, including Paik, greeted the forecasted 2030 production with great skepticism. Some said 29 bcf a day seemed more realistic.

China does have big plans for production. It envisions

a natural gas trifecta of new onshore and offshore fields plus output from abundant — but largely undeveloped today — shale and coal-bed methane plays.

But if the country's appetite for gas grows even faster than production — something just about everyone expects — China could become the world's leading natural gas importer.

In a June 2012 forecast, energy consultancy Wood Mackenzie predicted China's 2030 gas imports could reach at least 12.6 bcf a day. (Japan likely will import about that much this year.)

That gas will need to come from somewhere, Australia, Qatar, East Africa, Canada, the Lower 48 states, Alaska, and/or possibly Russia.

## **RUSSIA'S BOUNTY**

As ambitious as China's plans are, when it comes to natural gas, Russia remains the big man on campus.

Russia has the world's largest proved reserves: About 1,680 trillion cubic feet — enough to supply the entire world all by itself for 15 years.

Russia is the world's No. 2 producer, behind the U.S.: About 60 bcf a day. Russia could produce more if it could find the demand.

Russia is the world's top exporter: Over 20 bcf a day — mostly to Europe.

But Russia is a bit player in the Asian gas trade. It exports a little LNG — an average of 1.4 bcf a day in 2011 — mostly to Japan but also to China, South Korea and other Asia destinations. The LNG comes from Russia's Sakhalin Island development off its Pacific coast. Russia also has plans to pipe Sakhalin gas from the island for possible export to China, Korea, Japan and elsewhere.

Paik estimates Russia's Far East reserves at 132 tcf in four major plays, plus another 167 tcf at Sakhalin.

"For Russia to achieve large-scale gas export to Asia, it needs to start developing the super-giant onshore gas fields in East Siberia without delay. But to do this requires securing a market of sufficient size to justify the infrastructure costs," he wrote in his December 2012 paper.

Enter China.

In a sense, Russia would like to enjoy the gas role Canada plays with the United States. For decades Canada has shipped excess production from its wide-open, lightly populated western provinces to the United States, which doesn't produce enough gas to meet its domestic needs.

China isn't the only big Asian gas consumer Russia is eying. Leaders also discuss exports to Japan, South Korea and Taiwan. But China, arguably more than the others, needs to secure abundant new supplies, exactly what Russia has to offer.

China is the prize.



**For more information, please visit our website: [www.arcticgas.gov](http://www.arcticgas.gov)**

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