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Gas Golden Age Darkens in Europe on U.S. Coal: Energy Markets

By Matthew Brown - Oct 30, 2012

Europe is missing out on the [natural gas boom](#) that is transforming energy use in the U.S. and Asia, instead burning cheaper, dirtier coal imported from America.

Global gas consumption may rise 19 percent by 2017 from 2010 levels as demand surges in Asia and the U.S. while Europe's usage drops 1.6 percent, according to the [International Energy Agency](#). Increasing coal-fired generation in Europe has cut gas demand by 3 billion cubic feet a day, according to Sanford C. Bernstein & Co., about 7 percent of consumption. The IEA last year predicted a golden age for the fuel with new exports from America to [Australia](#).

European utilities' preference for burning coal to generate electricity is pushing up [carbon emissions](#) even after the region invested twice as much in renewable energy as the U.S. since 2004. In Europe, gas costs three times as much as in the U.S., cutting competitiveness at industrial users such as Germany's [BASF SE \(BAS\)](#), the world's largest chemical maker.

"We are in the dark ages of gas in Europe and have some kind of golden age of coal," Anne-Sophie Corbeau, an analyst at the IEA, said in an Oct. 9 interview in [London](#). "We are looking at relatively rapid growth of gas demand in the world, but Europe doesn't want to go in that direction."

Gas for delivery next month on the Netherlands' Title Transfer Facility, the mainland European benchmark, traded at 27.50 euros (\$35.65) a megawatt-hour yesterday, more than double the price four years ago, according to broker data compiled by Bloomberg. That's equivalent to \$10.43 per million British thermal units and compares with \$3.69 per million Btu for front-month fuel in the U.S., which fell 43 percent over the period.

Loss-Making

German power stations make a loss of 11.25 euros a megawatt-hour from burning gas, according to Bloomberg calculations of the so-called clean-spark spread, which takes into account electricity, fuel and carbon prices for next month.

The equivalent measure when burning European coal for delivery to Amsterdam, Rotterdam and Antwerp shows a profit of 14.22 euros a megawatt-hour. U.S. Central Appalachian Coal

Futures for the next month traded at \$59.43 a short ton on Oct. 29, excluding shipping, versus \$84.85 a metric ton (\$93.53 a short ton) for European coal.

“Gas is too expensive a fuel for Europe,” Thierry Bros, an analyst at [Societe Generale SA](#) in Paris, said in an Oct. 3 webcast. “With gas demand further down, it looks like the major producers will be compelled to agree to alternative pricing.”

More than half of Europe’s supply of the fuel is bought through long-term contracts linked to the price of oil, and that will remain the case until 2014, according to Societe Generale. [Brent crude](#) has climbed 72 percent over the past four years.

Contract Renegotiations

Even after a wave of renegotiations, most prices for gas from Russia’s [OAO Gazprom \(OGZD\)](#), which meets about a third of the EU’s needs through contracts tied to oil, were revised down no more than 10 percent, Bros said. Disputes remain with [RWE AG \(RWE\)](#), Germany’s second-largest utility, and Polskie Gornictwo Naftowe i Gazownictwo SA, the Polish gas company known as PGNiG.

While European buyers battled with Gazprom, U.S. prices plummeted, reaching a decade-low \$1.902 per million Btu on April 19, as new technologies made it possible to extract gas from previously inaccessible shale formations.

Hydraulic fracturing, the process known as fracking, where water, chemicals and sand are pumped into wells to create fissures in rocks to release fuel, helped make the U.S. the world’s largest gas producer last year, creating a glut that displaced record amounts of coal in electricity generation.

U.S. gas demand from power plants jumped 18 percent in September from a year earlier, according to the Energy Department in Washington. European imports of U.S. coal jumped 32 percent to 34.2 million short tons in the first six months of the year, data from the department’s Energy Information Administration show.

U.S. Coal

Burning coal has contributed to a 10 percent increase in EU carbon-dioxide output this year through September, according to Bloomberg New Energy Finance. First-quarter emissions from power generation in the U.S. dropped to the lowest since 1992 because of increased gas usage and a milder-than-normal winter, the EIA said in an Aug. 1 report.

EU emissions are rising even after the region received more than double the investment in clean energy sources that the U.S. got this year, at \$61.7 billion versus \$27.8 billion, BNEF data show. Since 2004, the difference is \$511 billion versus \$250.9 billion.

“If you burn gas in a power plant you burn money; if you burn coal, you make money,” Walter Boltz, vice chairman at the Agency for Cooperation of Energy Regulators, said in an Oct. 9 interview in London. “Given our climate goals, that’s the stupidest thing we can do, but commercial realities force companies to do that.”

Different Regions

The variation in pricing, availability and industrial base in Europe, the U.S. and [China](#) may delay the triumph of gas.

“A golden age for gas may not prevail soon or everywhere,” [John Mitchell](#), a researcher at international affairs think tank [Chatham House](#) in London, said in an Oct. 8 report. “For this to happen each major region needs prices which are low enough to increase demand but high enough to increase supply. Relying on imports to build new gas demand will seem risky to some countries.”

DuPont Co. and [Dow Chemical Co. \(DOW\)](#), the third- and fourth- largest chemical makers by market value, enjoy an 8 percent profit advantage over Ludwigshafen-based BASF because they pay less for the fuel, according to Jeremy Redenius, an analyst at Sanford C. Bernstein in London.

BASF is taking a “deeper dive” into investigating opportunities to harness shale gas in the U.S., Chief Executive Officer Kurt Bock said in an interview with Linzie Janis on Bloomberg Television’s “Countdown” on Oct. 25. Passing on raw material costs has become more difficult, he said.

Oil Pricing

[EON AG \(EOAN\)](#), Germany’s biggest utility, lost 79 million euros in its mid-stream business last year from buying gas linked to [oil prices](#) and selling it at the prevailing spot price. RWE Supply & Trading, the corresponding unit at RWE, lost 336 million euros in the first half.

European utilities including EON and RWE will open six times more coal-burning plants than gas-fed units by 2015, UBS AG said in a Sept. 5 research note.

Power generators have closed, mothballed or delayed at least 3.8 gigawatts of gas-fired generation in the U.K. and Germany in the past two years, enough to power about 7.6 million European homes, with a further 1 gigawatt planned over the coming 12 months, according to data compiled by Bloomberg.

Advanced Power AG, an independent power-plant developer in Zug, Switzerland, has postponed plans to build a 420-megawatt gas-fired station in Germany until 2013, two years

later than planned. In the U.K., [GDF Suez SA \(GSZ\)](#) cut generation at its 1,875- megawatt Teesside plant to 45 megawatts.

U.S. Power

U.S. gas use in power generation rose 14 percent from 2008 to 2011 to 20.8 billion cubic feet a day and will grow a further 9 percent to 22.7 billion cubic feet a day by 2013, according to the EIA's latest short-term energy outlook.

While gas costs are hurting industry in Europe, Asian users are overcoming higher prices to expand their use of the fuel.

Competition within Asia helped push the average [price](#) for Japanese imports of LNG, gas chilled to a liquid for transportation by sea, to a record \$18.07 per million Btu in July, according to finance ministry data.

Japan needs to replace the world's third-largest nuclear fleet, which produced 841 terawatt-hours of electricity in 2010, according to the BP Statistical Review, after promising to scrap its atomic-power program by 2040 following the Fukushima Dai- Ichi disaster last year.

Japan and [South Korea](#), both of which rely on LNG for all their natural gas, are facing increased competition from China, which is predicted by the IEA to quadruple its use of the fuel in power generation to 914 terawatt-hours by 2020, and to 1,994 terawatt-hours by 2035.

LNG Prices

LNG prices must fall if it is to be affordable for buyers in India and China, Shigeru Muraki, executive vice president of Tokyo Gas Co., said at a conference in London on Oct. 8. A price of \$9 to \$11 per million Btu is needed if the fastest-growing consumers are to be able to stop subsidizing the fuel, he said.

The trajectory of Asian prices will depend on China's ability to exploit its indigenous shale reserves, according to the IEA's Corbeau.

"The question for China is: where is the supply coming from?" she said. "Will shale gas be a reality in China? The jury's out. It's a huge question mark."

Shale development in China, home to the world's biggest so- called unconventional gas resources, has been slower than predicted by the government. China may produce 6.5 billion cubic meters of shale gas by 2015 and set a target of 60 billion to 100 billion cubic meters by 2020, according to the National Development and Reform Commission.

Chinese Shale

A higher population density than the U.S. and about a fifth the amount of water availability are major hurdles to China fulfilling its shale ambitions, according to Fan Gao, a research fellow at the Oxford Institute for Energy Studies.

As China's population becomes increasingly aware of health and safety issues, environmental concerns could be a "show- stopper," she said.

Fracking has also met opposition in Europe. It is awaiting government approval in the U.K., after two tremors near sites last year, and banned in France and Bulgaria. In Poland, where it is allowed, techniques used in the U.S. failed.

[Exxon Mobil Corp. \(XOM\)](#) will return two of its six Polish shale gas exploration licenses to the government after it decided to leave the country in June, the world's biggest energy company said last month.

"Europe: the 'golden age' finished in 2008 when demand peaked," said [Jonathan Stern](#), chairman and founder of the Oxford Institute for Energy Studies. "Since then we have been in a downward spiral. Can we stop the decline? Only if the commercial environment changes completely. Otherwise it's renewables all the way."

To contact the reporter on this story: [Matthew Brown](#) in London at mbrown42@bloomberg.net

To contact the editor responsible for this story: Lars Paulsson at lpaulsson@bloomberg.net

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