

DrumBeat: February 5, 2009

Posted by Gail the Actuary on February 5, 2009 - 10:21am

Topic: Miscellaneous

Leanan is on vacation for a week. Some of the rest of us will try to fill in. Be sure to post articles you find of interest also.

Man, 93, Who Froze In Home Left \$600,000

BAY CITY, Mich. -- A 93-year-old man who froze to death while owing about \$1,000 to the utility that restricted his electricity usage left an estimated \$600,000 to a Bay City hospital.

Marvin Schur's attorney, Cathy Reder, tells the Detroit Free Press the World War II veteran bequeathed his entire fortune to Bay Medical Center.

Schur's frozen body was found Jan. 17, four days after Bay City Electric Light & Power installed a device on his electric meter that cuts power after a predetermined level is reached.

Platt's Special Report Oil: Diesel Dominance and Demand Destruction

But what made diesel surge in the first place? A series of trends, some of them years in the making, seemed to impact the market all at once. Europe's tax policies have long favored the purchase of diesel cars, increasing its consumption relative to gasoline. The continuing evolution of tighter sulfur rules in Europe and the US had the effect of marginally tightening refinery output. Nigerian crude output was increasingly limited by rebel activity in the Niger Delta, and its crude is particularly diesel-rich. (That's not geopolitics; that's supply and demand.)

But then why did it relax? The supply side got considerably better. In the US, where refining data is considered the most transparent, gasoline as a percentage of total output plunged from 47% in January to 41.9% by end-June; total distillate yield rose from 26.5% to 28.1%. Changing output slates at refineries is not like changing a menu; it's far more complex. But refining engineers and managers can react to the signals sent by the market, and certainly, these figures support that.

Is America on the Brink of a Food Crisis?

Jackson doesn't minimize the threat of the current financial problems but argues that the new administration should consider a "50-year farm bill," which he and the writer/farmer Wendell Berry proposed in a New York Times op-ed earlier this month.

Central to such a bill would be soil. A plan for sustainable agriculture capable of producing healthful food has to come to solve the twin problems of soil erosion and contamination, said Jackson, who co-founded the research center in 1976 after leaving his job as a environmental studies professor at California State University, Sacramento.

Jackson believes that a key part of the solution is in approaches to growing food that mimic nature instead of trying to subdue it.

Energy and Economic Impacts of a Proposed Windfall Profits Tax on Producers of Oil and Refined Products in the United States

Specific impacts of the legislation on domestic energy markets include the following:

- A windfall profits tax on the oil and natural gas industry could result in an estimated average decline in domestic crude oil production of approximately 21-26% from baseline levels or between 1.5 to 1.9 million barrels of oil equivalent per day (MMBOE/day)1 over the 2010–2030 period. The loss in domestic crude oil production would result in imports of crude oil increasing by 13-18% over baseline levels or approximately by 1.2 to 1.5 MMBOE/day.
- Because many domestic crude oil producers also produce natural gas, a windfall profits tax could also result in a decline in domestic natural gas production of between 1.6-2.4 Tcf (9-13% from baseline levels) by the period 2020-2030. This loss in domestic production would in part be offset by greater reliance on foreign imports with imports increasing between 0.5-1.2 Tcf (14-55% over baseline levels) during the period 2020-2030.
- A windfall profits tax could reduce investment in domestic refineries and is estimated to result in a reduction in production of petroleum products of 410-660 thousand barrels of oil equivalent per day (MBOE/day), or 2-4% below baseline levels, during the 2010-2030 period. The loss in domestic refinery production could in part be offset by increasing foreign imports of petroleum products by 230-430 MBOE/day (15-21% over baseline levels) during the 2010-2030 period.

Central Asian Gas Not a Panacea for Europe

Sourcing more natural gas from the 'Stans' looks like a way for Europe to lessen its reliance on Russia, but there are plenty of roadblocks

For several reasons, not the least of which is strident competition from Russia, a meaningful EU-Central Asia energy partnership is unlikely.

Today, nearly all the gas that leaves the Stans goes through Russia. The EU's best nearterm hope for securing direct Central Asian imports in the coming decades is the Nabucco pipeline. Unfortunately, though, it looks more like a pipe dream than a reality.

There's concern that "there's not enough gas available in Central Asia to support Nabucco," the EU official said. "Central Asian countries have already sold much of their gas to Gazprom, so it's unclear how much they could contribute."

Azerbaijan could supply only one-third of Nabucco's planned 31 billion-cubic-meter annual capacity. Gas giant Iran and even Russia have been mentioned as alternative suppliers, but these are politically unpalatable and ironic choices, respectively.

China declares an emergency amid worst drought in 50 years

The worst drought in half a century has parched fields across eight provinces in northern China and left nearly four million people without proper drinking water.

Not a drop of rain has fallen on Beijing for more than 100 days, the longest dry spell for 38 years in a city known for its arid climate. The Office of State Flood Control and Drought Relief Headquarters described the drought as a phenomenon "rarely seen in history" as the Government declared a state of emergency.

President Hu Jintao said that all efforts must be made to save the summer grain harvest.

The drought could hardly have come at a worse time for the leadership, which is already gearing for possible social instability with some 20 million rural migrants now out of work after losing their jobs in coastal factories and in cities. Many have returned to work their farms while they wait for the economic climate to improve but may now find they are unable to grow a harvest with no water for irrigation.

Oil Stored at Sea Washes Out Rallies

NEW YORK -- Every time the oil market attempts to ignite a rally, an upsurge from the sea of crude stored on waterborne tankers snuffs it out.

The accumulation of oil held in "floating storage" gained speed in December, as available space in traditional onshore storage hubs dwindled due to excess supplies. This floating storage is now among the biggest impediments to oil prices recovering any of the ground lost over the past six months. Companies are quick to sell cargoes at the hint of a turnaround, unleashing a flood of oil onto the market.

Why Shovel-Ready Infrastructure is Wrong (Right Now)

There are no specific parameters or requirements that define shovel readiness. But according to civil engineers, the idea behind this new buzzword could help scuttle the stimulus bill's highly publicized, though secondary, goal of infrastructure reform. At issue is that 90-day restriction stipulated by Congress, an even narrower window than the bill's original 180-day limit. "They're well intentioned, and they know their infrastructure sucks, so they're trying to do immediate reactive management to what is a very deep, endemic problem," says Robert Bea, a professor of civil and environmental engineering at the University of California, Berkeley. "If you want to patch some potholes in the road, this is a good program. But if you're hoping for anything long-term with this approach, throw away all hope. It can't happen."

The programs that would meet the bill's 90-day restriction are, for the most part, an unappealing mix of projects that were either shelved after being fully designed and engineered, and have since become outmoded or irrelevant, or projects with limited scope and ambition. No one's building a smart electric grid or revamping a water system on 90 days notice. The best example of a shovel-ready project, and what engineers believe could become the biggest recipient of the transportation-related portion of the bill's funding, is road resurfacing—important maintenance work, but not a meaningful way to rein in a national infrastructure crisis.

Sweden Wants to Lift Reactor Ban

BRUSSELS — The Swedish government on Thursday proposed refreshing its nuclear power industry, joining a growing list of European nations to consider putting the technology in the forefront of future energy plans.

Swedes voted nearly three decades ago to phase out nuclear power by 2010. But 10 of the country's 12 reactors still are operating, and public opinion has become more favorable toward the technology.

Obama wants appliances to use less energy: official

WASHINGTON (Reuters) - President Barack Obama will sign a memorandum on Thursday asking the Department of Energy to set new energy efficiency standards for a broad range of appliances, from dishwashers to air conditioners, a White House official said.

The Peak Oil Crisis: Leadership (Tom Whipple)

In the past year there have been great strides in the public's understanding of global warming and the need to take action even it if proves to so expensive that it hurts economic growth. The collapse of last summer's gasoline spike, while widely believed to be the work of speculators provided the first hint of what unaffordable energy prices will be like some day.

Somewhere in all this, there is a place for true political leadership. Politicians do not need to expound gloom and doom, but rather the urgent need to respond to rapidly changing times. Talk of return to rapid economic growth is no longer appropriate - as it is unlikely to happen in the foreseeable future. Neither is talk of reviving the American dream of material riches, SUV's and suburbia.

For the immediate future, energy conservation and energy efficiency should be watch words of sensible policy. The Obama administration's proposals are on the right track, but they do not go nearly far enough to prepare for an energy short-future. Every structure in the country that currently consumes energy of any kind needs to be rebuilt to consume much less. Every means of transport of people and goods has got to be replaced or rebuilt to consume much less energy.

Govt moves to avert fuel shortage

In a bid to avert a biting fuel shortage across the country, the Kenya Pipeline Company (KPC) Wednesday night pumped 1,956,000 litres of super petrol and 3,223,000 litres of diesel to depots of seven major oil marketing companies in Nairobi.

Fuel shortage has hit the country yet again with the ministry of energy this time attributing the shortage to machine failure at the Kenya Petroleum Refineries Limited.

Kazakhs may be top uranium producer in 2009

ALMATY, Kazakhstan - Kazakhstan's state-owned nuclear energy company could become the world's largest uranium producer by this year, the company said in a statement Wednesday.

Kazatomprom Chairman Mukhtar Dzhakishev announced that the country's uranium output is expected to reach 11,935 tons in 2009, a more than 40 percent increase over the 8,521 tons produced last year, the statement said.

BG Delays LNG Terminal Project in Italy to at Least 2010

BG Group Plc, the U.K.'s third-largest gas producer, expects to delay construction of its 500 million-euro (\$641 million) liquefied natural gas receiving terminal in Italy to at least the end of 2010...

BG plans to start operations at Dragon LNG, a U.K. liquefied natural gas import terminal, in the second quarter. The plant was delayed from the first quarter on "technical" issues, Chapman said.

Natural gas industry sees strategy for better days

Natural gas prices are in peril of dropping further, and companies will have to combine the best technology with the best acreage to fare well going forward. So says Michael Bahorich, executive vice president of exploration and production for Apache Corp.

Bahorich was among a handful of industry executives who discussed ways to secure future energy supplies Wednesday at the NAPE International Forum.

Bahorich estimates there are 31 million acres of natural gas shale prospects leased in the U.S. today, but 90 percent will languish over the next decade because demand will not justify drilling.

NYMEX-Crude dips with Wall St on bleak jobless data

NEW YORK, Feb 5 (Reuters) - U.S. crude oil futures declined early Thursday after government data showed first-time claims for jobless benefits rose last week.

Analysts said traders where weighing the potential impact of the latest numbers on oil demand, even as they further considered weekly industry and government data showing a huge increase in crude oil inventories last week.

"The number of jobless people keeps mounting and this will weigh again on the energy complex," said Phil Flynn, analyst at Alaron Trading.

"The market is torn between the weak economy and efforts by OPEC to cut production and defend prices at \$40 a barrel. If the jobless ranks continue to rise, it will be difficult for OPEC to do much to keep oil prices from further falling," he added.

Renewable Energy and Climate Change Front and Center in D.C.

Renewable Portfolio Standard Bill on the Table

First, a 25-percent-by-2025 renewable electricity standard bill was introduced this week by Rep. Edward Markey (D-MA) and Rep. Todd Platts (R-PA). The bill would boost renewable energy generation 135 percent above and beyond current policies between now and 2025, according to the Union of Concerned Scientists' preliminary analysis of the legislation.

"This electrifying standard would provide a smart, proven, cost-effective strategy to ramp up our clean energy use, create tens of thousands of jobs, and lower consumer utility bills," said Alan Nogee, UCS Clean Energy Program director. "The clean energy tax incentives that Congress is finalizing will get us moving in the right direction in the near term, and the renewable energy standard makes sure we stay on that path for the foreseeable future."

Beginning in 2012, the legislation would require large electric utilities to gradually increase their reliance on renewable energy sources for the following 13 years until they amounted to 25 percent. UCS found that the 25-percent-by-2025 standard would add 135 percent more clean, renewable power in the United States above and beyond current state and federal policies. Twenty-eight states and the District of Columbia currently have state standards. UCS calculates that the federal standard would create enough clean electricity to power roughly 150 million typical homes by 2025.

UPDATE 1-EOG sees lower U.S. natural gas output in 2009

NEW YORK, Feb 5 (Reuters) - EOG Resources Inc (EOG.N) Chief Executive Mark Papa said he expects U.S. natural gas production will begin to drop by mid-2009 and will end the year down 2.5 billion cubic feet per day, or about 4.3 percent, from 2008.

Weak demand from industrial users will more than offset the supply decline, he told an investor conference call on Thursday, but prices will eventually rebound. . .

Papa said EOG would use, on average, about 45 rigs to drill for new supplies this year, down from 73 in 2008.

DOE says natural gas supplies fell last week

Natural gas storage levels in the U.S. dropped last week, but remain just above the year-ago average, a government report said Thursday.

The Energy Department's Energy Information Administration said in its weekly report that natural gas inventories held in underground storage in the lower 48 states fell by 195 billion cubic feet to about 2.18 trillion cubic feet for the week ended Jan. 30.

Analysts had expected a drop of between 193 billion and 198 billion cubic feet, according to a survey by Platts, the energy information arm of McGraw-Hill Cos.

Two Senators Seek to Strip \$200 Billion From Stimulus

WASHINGTON — Anxious over the ballooning size of the proposed economic stimulus package, now at more than \$900 billion, lawmakers in both parties are working on a last-minute plan to strip \$200 billion from the bill.

Among the initiatives that could be cut are \$50 million for the National Endowment for the Arts, \$14 million for cyber security research by the Homeland Security Department, \$1 billion for the National Science Foundation, \$400 million for research and prevention of sexually transmitted diseases, \$850 million for Amtrak and \$400 million for climate change research. But so far, none of the suggestions come close to being enough to shrink the package on the scale proposed.

The final Senate vote on the stimulus package, expected late on Thursday, looms as a major test of President Obama's ability to build bipartisan consensus, especially given his extraordinary personal lobbying effort.

alarming situation: Country to confront 0.507bcfd gas shortfall in 2010

ISLAMABAD: The energy experts forecast that gas shortfall would increase to 0.507 billion cubic feet per day (bcfd) in 2010 from the current year shortage of 0.192 bcfd with the shortfall further aggravating with the passage of time...

Sources further said that keeping in view gas shortage, finalisation of Iran-Pakistan-India (IPI) gas pipeline is of crucial importance. The IPI pipeline might be optimally used for power generation as it can produce 15 percent cheaper power than power generation through furnace oil. The use of IPI gas for domestic use would be costly, the sources added.

Brazil's energy giant to boost exploration, production with huge investment

RIO DE JANEIRO, Feb. 4 (Xinhua) -- Brazil's state-owned oil and gas giant Petrobras plans to invest 92 billion U.S. dollars in the domestic market from 2009 to 2013, according to the company's newly-released business plan.

With the investment, which represents a 41-percent increase from that in the five-year plan commencing 2008, Petrobras expects to boost domestic oil production to 2.68 million oil barrels per day by 2013.

Devon Energy Swings to Loss

Devon Energy Corp., one of the largest independent U.S. oil companies, reported a fourth-quarter loss of \$6.8 billion as tumbling energy prices drove down revenue and eroded the value of the company's oil reserves.

The massive loss, the largest in the Oklahoma City company's 38-year history, reflected a \$7.1 billion non-cash charge due to accounting rules that force companies to value their future production of oil and gas based on year-end prices. Oil ended 2008 at under \$45 a barrel, less than half its price a year earlier...

Despite its reduced drilling, Devon expects to outspend its cash flow by \$1 billion in 2009. Mr. Nichols said it makes sense to continue its long-range projects so that Devon can be well-positioned when prices rebound.

<u>UPDATE 1-Russia Surgut sees '09 oil production edging down</u>

MOSCOW, Feb 5 (Reuters) - Russia's fourth largest oil firm Surgut (SNGS.MM) expects its oil production to fall slightly to 61 million tonnes (1.2 million barrels per day) this year from 61.7 million tonnes in 2008, the firm said on Thursday.

"We're not really viewing this as a fall, however, this is not negative news for the company at all," Anatoly Nuryayev, Surgut's first deputy general director, told reporters on the sidelines of a conference in Moscow...

East Siberia, largely considered Russia's last great frontier for greenfield oil and gas projects, will come into focus this year as maturing fields in western Siberia dry out.

The government predicts Russian oil production in 2009 will keep declining. Last year's fall was the first in a decade, making East Siberia a major priority for Russian energy firms.

Petrobras to Begin First Phase of Tupi

Petrobras is executing two phases of development for Tupi. Expected to be launched in March 2009, the first phase of development will conduct long-duration tests of the area. The Cidade de Sao Vicente FPSO, contracted from BW Offshore, will collect information about the field to be used in creating long-term production solutions for Tupi and other Pre-Salt developments.

The second phase of development calls for a pilot FPSO to produce from the field. Petrobras contracted MODEC to convert the oil tanker M/V Sunrise IV into the FPSO Cidade de Angra dos Reis for operation on the field by December 2010.

Because field development is still in its infancy, Tupi's peak production is still a question. Some reports predict that the field will reach peak production of 200,000 boepd in 10 to 15 years. Other reports anticipate the field reaching peak within seven years, while others expect a peak by 2022.

Anadarko Scores Again in Deepwater GOM with Shenandoah

Anadarko Petroleum Corporation announced its second deepwater Gulf of Mexico discovery this week. The Shenandoah discovery well, located in Walker Ridge Block 52, encountered net oil pay approaching 300 feet in the Wilcox formation.

Shenandoah is located in approximately 5,750 feet of water and was drilled by the Noble Paul Romano semisub to a total depth of about 30,000 feet. Anadarko and the co-owners of the discovery are evaluating the well results and the next steps toward future appraisal activity. Anadarko operates Shenandoah with a 30% working interest. Co-owners of the discovery include ConocoPhillips (40%), Cobalt International Energy L.P. (20%) and Marathon (10%).

China plans to start constructing 8 more strategic oil reserve bases this year, after the first batch of four have gone into operation in 2008, authoritative sources disclosed.

China started to construct its first batch of strategic oil reserve bases from 2003, altogether four in Zhenhai, Zhoushan, Huangdao and Dalian, respectively. Zhenhai and Zhoushan two strategic oil reserve bases have been in operation for nearly two years; while Huangdao and Dalian bases have gone into operation at the end of 2008.

Opportunity knocks when it comes to a local food economy

Community-based agriculture has the potential for creating jobs, developing small business entrepreneurship and keeping precious dollars in the community.

"As manufacturing jobs decrease, food jobs are increasing," said Dr. Kami Pothukuchi, associate professor of urban planning at Wayne State University in Detroit.

This is especially good news for a state like Michigan whose economic engine has been dependent on the declining automobile industry.

More families move in together during housing crisis

The housing market is drawing some families together, but challenges include lifestyle differences, generational differences, depression, money squabbles and other issues when relatives huddle together for economic relief, says Nicholas Aretakis, a career coach and author of No More Ramen: The 20-Something's Real World Survival Guide.

Moving in with relatives can be "demoralizing, humbling, dehumanizing — but a lot of people don't have a lot of choice," Aretakis says.

A deindustrial reading list by John Michael Greer

Over the last few months a number of people have asked me what books I think they ought to read to help them prepare for the slow unraveling of industrial civilization now getting started around us. This is frankly the kind of question I try my best to dodge. Premature consensus is arguably one of the most severe risks we face just now, and any image of the future – very much including the one I've sketched out here – is at best a scattershot sampling of the divergent possibilities facing us as the industrial age comes to its end.

Fuel emergency part 2: IEA plan

The IEA response to a supply emergency consists of four strategies: production surges and stockdraw from industry and public reserves to increase supply, as well as fuel switching and demand restraint to reduce demand. The IEA itself indicates that two of its four cornerstone measures are unlikely to be very effective since "decreasing capacity to switch fuels in power generation or transportation and limited surge production capability now make these response measures less viable" (IEA Response, p. 6). That effectively leaves only two responses, stockdraw and demand restraint.

Energy sparks government reshuffle

Energy-rich Turkmenistan's president Gurbanguly Berdymukhamedov has fired almost one-third of his Cabinet and the head of the state oil company in a large-scale reshuffle reminiscent of his eccentric predecessor Sap ar murat Niyazov's frequent purges, Turkmeni stan.ru reported. In a highly charged government meeting televised two weeks back, Berdymukhamedov charged officials with committing "unforgivable mistakes and miscalculations." The most prominent casualties included several key figures in the oil and gas sector including Minister for Energy and Industry Gurbannur Annaveliev, Garyagdy Tashliev, the head of state oil company Turkmenneft, and Sapargeldy Jumaev, chairman of the state exploration company Turkmengeology which explores the country's vast hydrocarbon resources.

Salazar orders BLM to reject bids on 77 Utah leases

WASHINGTON, DC, Feb. 5 -- US Secretary of the Interior Ken Salazar directed the Bureau of Land Management on Feb. 4 not to accept \$6 million in successful bids on 77 tracts offered in BLM's Dec. 18 oil and gas lease sale in Utah.

"The 77 parcels that the Bush administration offered on the doorsteps of some of our national icons raised several troubling questions. I have directed the BLM not to accept the bids. We will take time to review the processes behind their inclusion in the lease sale," he told reporters in a teleconference.

Salazar indicated that he does not expect his decision to be legally challenged. "The government contract is not formally completed until the BLM accepts the bids, which has not happened in this case," he said. Payments for the winning bids on the 77 parcels will be returned and leasing will proceed on the 39 remaining tracts from the sale, he added.

Huge profits at BP – but a crisis is on the way

The future is delayed, not cancelled, said BP this week. "Nice line", said the Guardian's Nils Pratley, but the key question is how long will it be before an oil barrel costs \$50-

\$60? That's where it needs to be if BP is to keep up its pace of capital expenditure and dividend payouts. The oil giant unveiled another set of record profits – up 39% to \$25.6bn in 2008, with sterling dividends increased by 40% – but the sting was in the fourth quarter, which saw a 24% profit decline. Throw in a \$700bn tax charge at TNK, BP's troubled Russian unit, and the result was the first quarterly loss in more than seven years.

This "has compounded a mounting sense of crisis in the oil industry", said The Times' Robin Pagnamenta. In response to plunging oil prices it has scrapped projects and shed thousands of employees. Historically, such action has "improved returns on invested capital", said the FT's Lex, "but has stored up problems; if you don't spend the money, about six years later you start to see the consequences".

Official: Gunmen kill oil boat captain off Nigeria

LAGOS, Nigeria: A private security official says unidentified gunmen have attacked an oil-industry vessel off the coast of Nigeria and killed its captain.

The official said the captain of the security boat died of gunshot wounds sustained in the attack early Thursday in Nigeria's deepwater offshore oil fields.

British refinery workers end foreign labour strike

IMMINGHAM, England (AFP) - Workers at an oil refinery in recession-hit Britain voted Thursday to end their walkout over foreign labour, a dispute which sparked wildcat strikes across the country.

But even as staff at the Lindsey plant in eastern England agreed unanimously to return to work, unions warned of more disputes to come over foreign contract workers, at a time of rising unemployment amid the global slowdown.

Small Firms Resort to Freebies and Special Deals

Over the past few months, the pace of calls from potential customers slowed at Vaillant Solar Systems Inc., a San Diego-based provider of solar hot-water heating systems for area residences. "People don't want to spend thousands on something they don't really need right now," says Burkhard von Spreckelsen, the firm's chief executive officer.

Vaillant executives thought about reducing prices but didn't want to set a precedent or cheapen the company's image. So the company, a subsidiary of German solar-energy provider Vaillant Group, launched a program where it installs the system, which can cost as much as \$7,000, for no upfront cost.

Plunging Cash Reserves and New Credit Downgrade Push Kremlin to Acknowledge 'Very Difficult' Circumstances

Citing the rapid loss of reserves and surging capital outflows, Fitch Ratings on Wednesday cut Russia's credit rating by one notch to BBB -- two rankings above junk. In December, Standard & Poor's cut its rating, the first such reduction for Russia in a decade...

"Our business is not prepared to get involved in bankruptcies and working out companies but this is the path we will have to go down," he said. "Some of the measures announced by the authorities...gave rise to expectations that we intended to save all companies. We aren't going to save everyone."

The Kremlin's priorities for aid, he said, would be the military industry, energy giants like OAO Gazprom, and railroad, electricity and other infrastructure companies.

BG boosted by weak sterling and high gas prices

BG Group, the UK oil and gas company, exceeded analysts' consensus forecast with a 72 per cent rise in underlying profits, excluding one-off items, to £3.07bn (\$4.4bn) for 2008, helped by high gas prices and the fall in the pound against the US dollar.

It also set out plans for a strong increase in capital spending this year, as it develops its huge oil discoveries in Brazil and its new gas business in Australia.

Unlike most other large oil companies, which suffered a fall in fourth quarter profits as the price of crude plunged, BG reported a 25 per cent increase in net profit, excluding non-operating items, to £695m. This was due to another strong performance from its operations transporting and selling liquefied natural gas.

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