

POWER ECOSYSTEMS

Right Price Or Prelude To Pop Goes The Wiesel? A Few Natural Gas Points to Consider:

Country	Consumption		Production (Dry Gas)		Reserves (Tcf)	Reserve Life
	Per year (Tcf)	Per day (Bcf)	Per year (Tcf)	Per day (Bcf)		
US	22.3	61	19.5	56	183	
Canada	6.6	18	2.9	14.5	59.1 - 144	
Combined	28.3	79	22.4	70.5	242.1 - 327	8.6 - 11.6 years

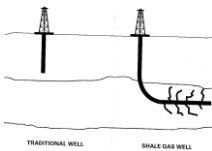
Most recent EIA report:

- "Total natural gas consumption is estimated to have increased by .7% in 2008, primarily driven by a 5.8% increase in heating degree days year-over-year"
- Slight consumption growth is projected to be more than offset by consumption declines in the commercial and electric power sectors.
- Total U.S. marketed natural gas production is estimated to have increased by 5.9 percent in 2008 led by the development of unconventional reserves in the Lower-48 States. Total marketed production is expected to increase by 0.7 percent in 2009, and then decline by 0.9 percent in 2010. Producers have already begun to react to lower prices and the outlook for lower consumption as evidenced by the recent pullback in drilling activity. The number of rigs drilling for natural gas in the Lower-48 onshore region has fallen from about 1,540 in August 2008 to under 1,200 at the beginning of January 2009.
- On January 2, 2009, working natural gas in storage was 2,830 Bcf ([U.S. Working Natural Gas in Storage](#)). Historical data suggests that the practical limit of working storage is 3600 billion cubic feet. This is slightly over two months production and less than two months consumption.

Conventional VS Shale Gas

- High pressure pumping is expected to be required for 30% of gas wells in 2009 – a 15-fold increase from drilling in to naturally flowing formations.
- Tristone Capital expects 800 shale gas wells to be drilled in Western Canada. Measured by contractor business generated that is the equivalent to 5000 conventional targets.
- To make gas flow requires 18,000 to 23,000 horsepower pump arrays or more than 10 times the force used for conventional wells.

Source: www.albertaoilmagazine.com; Feb 2009



Power Ecosystems Inc. attracts big power generator

Commercial buildings reap rewards of green utilities at 35% less cost

Cummins Western Canada has agreed to terms to financially back new Power Ecosystems Inc projects and to a major stake in the company.

"Power Ecosystems, with their distributorship in North America of Ener.G's world market share leading combined heat and power solutions is analogous and complementary to the long term successful relationship we have enjoyed with Cummins (NYSE). Green, energy efficient, economic solutions are in high demand for commercial buildings. Ener.G has a long track record proving these systems immediately save money while conserving energy and the environment. Cummins Western Canada is in an excellent position to help Power Ecosystems market these solutions, supply the engines and generators as well as provide long term maintenance servicing" states Guff Muench, President, Cummins Western Canada

"Combined heat and power is Thomas Edisons dream revived and has been around that long. Many Canadian universities and hospitals and commercial facilities have been using CHP to great advantage for decades and Ener.G has productized making these same advantages available for buildings 40,000 square feet and larger" stated Dan Cloutier, President, Power Ecosystems Inc., "Demonstrated success with Concrete Equities SNC Lavallin building in downtown Calgary is the latest example of the savings that tenants enjoy while the building owner materially increases their buildings value and our product development initiatives are gaining traction with a biodiesel/natural gas flex fuel system in the pilot stages."

Cummins Western Canada (CWC) is the distributor for Cummins Inc. in Western Canada and has been selected as one of Canada's 50 Best Managed companies for 5 years running. Cummins Western Canada is a business partnership owned by its employees and Cummins Inc. manufactures the world's best and most complete line of engines from the 31hp A to the 3500hp QSK78 as well as offering generator sets and service and support the world over. CWC has 14 locations in western Canada including: Calgary, Edmonton, Fort McMurray, Grande Prairie, Hinton, Kamloops, Kenora, Lethbridge, Lloydminster, Regina, Saskatoon, Sparwood, Vancouver and Winnipeg.

ENER-G Combined Power specialises in the provision of Cogeneration / Combined Heat and Power (CHP) systems in the 33kW to 10MW range. Operating worldwide from its UK based production facility, Ener.G has been manufacturing cogeneration systems since 1980 and was instrumental in the development of small-scale remotely managed cogeneration systems. ENER-G PLC today is established as the clear market leader in its sector - with over 30 million hours of cogeneration operating experience.

Power Ecosystems (PEC) was incorporated in August, 2006 and is in the business of selling, installing and servicing combined heat and power systems including long term, multi year contracts whereby we sell the electricity and heat output of the system. PEC leverages its strategic relationship with ENER-G and Cummins Western Canada.

A \$2 trillion bet on powering America

The stimulus plan might jump-start investments, which could drastically change how we use electricity.

By Steve Hargreaves, CNNMoney.com staff writer
January 8, 2009: 6:04 AM ET

NEW YORK (CNNMoney.com) -- For years we've been hearing about the nation's crumbling and outdated electricity grid.

The 2003 blackout that plunged 50 million people into darkness was a wake-up call. Then this summer T. Boone Pickens, who's planning on investing billions in building wind farms, called for massive investments to revamp our nation's aging grid, so that it can handle wind power distribution.

More recently, Vice President-elect Joe Biden called for a similar investment, perhaps billions, to begin work on a new "smart" electric grid to replace the nation's old, fragmented and inefficient system, and it will likely be part of the stimulus bill expected from lawmakers in the next couple weeks.

Quenching our ever-growing thirst for 'juice'

In 1950, 20% of the nation's economic output was directly dependent on electricity. Now that number is 60% and rising fast, said Jesse Berst, editor of smartgridnews.com, an industry Web site. In an era of energy scarcity and global warming concerns, he said building a better grid is essential for economic growth. "What you're going to get is the foundation of our future prosperity. It's what will make all the other things we want possible - renewable energy, lower rates, cleaner power."

Berst, a former tech analyst, says the investments made in smart grid technology over the next couple of decades will dwarf those that fueled the tech boom. Berst is enthusiastic about the importance the grid will play, while many others who study the energy industry are also thinking big.

The Brattle Group, a think tank, estimates the nation will need to spend up to \$1.5 trillion on its electricity system over the next 20 years - and that's just enough to keep the lights on.

An investment in cleaner energy could put the figure at \$2 trillion, and would include building new power plants, transmission lines, and focus on conservation. On the grid alone - the lines, towers, meters and substations - Brattle estimates the first steps towards a smart grid could cost about \$900 billion over the next two decades. That includes money for computers, meters and software to digitize the grid.

To make the grid fully smart, money would be needed to change out every utility's entire computer system, allow renewable energy sources to plug into it from various points, and incorporate electric car recharging stations that also use car batteries to double as electric storage devices. The price tag for this isn't known, but it would likely cost hundreds of billions more and wouldn't be ready until sometime after 2030, according to Brattle Group principal Peter Fox-Penner. The nation has already started down this road, with pilot programs using smart electric meters running in several communities. The coming stimulus package will most likely accelerate things further.

What makes it smart

Digitizing the grid is what makes it smart. Berst compared it to our telecommunications system - decades ago a human operator connected calls manually via a series of tubes. Now it's all done electronically, which helps increase telephone traffic capacity.

Digitizing the electric grid would require new smart home meters and appliances with the ability to talk to one another, and software and hardware to send all this information back to the utility.

It would also require various policy changes that encourage transparent pricing, give utilities incentives to conserve, better connect the nation's fragmented power grid and eliminate the need to build some new power plants.

Currently most electricity is sold at a fixed price, no matter when it's used. That means a utility must build enough power plants and lines to meet maximum demand at the peak time - an expensive proposition that leads to lots of overbuilding.

With a smart grid, power could be better managed as consumers would be encouraged, through electricity prices that varied throughout the day, to use power at different times.

For example, a person could load their dishwasher at 7 p.m., when electricity costs, say, 15 cents a kilowatt hour and program the dishwasher to begin washing when electricity dropped to 5 cents, maybe a couple of hours later in the evening.

Signs of shift away from WTI

By Javier Blas in London

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Oil traders are quietly pricing some of their deals away from the West Texas Intermediate contract, traditionally the world's most important oil benchmark, as it is being distorted by record inventories at its landlocked delivery point.

The move is a setback for the benchmark that since the launch of Nymex WTI futures in the early 1980s has dominated physical and financial oil markets.

The surge in oil inventories in Cushing, Oklahoma, where WTI is delivered into America's pipeline system, has depressed its value against other global benchmarks, such as Brent, and domestic US crudes as well.

Julius Walker, an oil market analyst at the International Energy Agency in Paris, said there was "anecdotal evidence" of traders moving away from WTI and "doing deals based on other US oil benchmarks".

The IEA's monthly report said Brent was now "arguably more reflective of global oil market sentiment".

However, Bob Levin, managing director of market research at Nymex, said the WTI contract was performing "transparently", reflecting a "loss in oil demand and sharply rising inventories".

"WTI is better reflecting global oil fundamentals than Brent," Mr Levin said. "The oil industry has not abandoned the WTI contract, and it has confidence in it."

Nevertheless, traders in London, New York and Houston confirmed a small number of transactions away from WTI after its price plunged last week to record discounts against other global and domestic benchmarks.

The traders cautioned that the move could be reversed if the WTI situation normalised. Lawrence Eagles, at JPMorgan, said any move away from WTI would face "strong resistance as none of the other US benchmarks have the price transparency of an exchange market".

Highlighting the price disconnection with the global market, WTI, which usually trades at a premium of \$1-\$2 a barrel to Brent, last week plunged to an all-time high discount of \$11.73. The detachment hit the US market too, where Light Louisiana Sweet jumped to a \$9.50 premium, the highest in 18 years.

Brent ended last week at \$46.18 a barrel, well above WTI at \$36. Walter Lukken, outgoing chairman of the Commodities Futures Trading Commission, told the Financial Times the regulator was following the WTI disconnection "very closely".

This is not the first time WTI has diverged from other benchmarks, but the discrepancy is now far more severe.

Utilities could also use it to manage power in people's homes, if consumers agreed to it. The utility would have the ability to turn on or off certain non-essential functions, like a pool filter or air conditioner, maybe in exchange for giving the consumer a lower rate.

This would let the utility distribute electricity usage more evenly, eliminating the need to build expensive new power plants.

A smart grid would also reduce overall electricity consumption by reminding households of their energy consumption. Smart meters, which can look similar to a computer screen, are mounted inside the house where they constantly monitor energy use. Today's meters are located outside, out of plain sight.

"If you have information on how much you're using, you might turn off that TV you're not using," said Melissa McHenry, a spokeswoman for American Electric Power, one of the country's largest utilities.

The utility industry estimates smart meters can cut electricity consumption by 20-30% during peak hours.

Job creation

The smart meters - meters that can communicate with appliances and the larger grid - would be a prerequisite to any larger, smarter grid.

McHenry says this is one area where lawmakers may spend some stimulus money. The money could be doled out as grants either to utilities or state agencies, and it would put people to work both building and installing meters.

The utility industry estimates it would cost about \$50 billion to equip every home in the country with a smart meter, with each costing about \$200, or roughly twice the cost of a normal meter.

A coalition of environmental groups and the utility industry is urging lawmakers to set aside roughly \$1 billion to begin this program as part of the stimulus package.

More power lines could help too

McHenry, along with people like Pickens and Biden, say the country needs to build more high-voltage transmission lines that would move renewable energy from isolated areas - like wind in the Midwest or solar in the Southwest - to cities. McHenry says an investment of \$60 billion would enable the country to transport enough energy to offset 20% of its current total electricity use with renewable power.

She said high-voltage lines are also 10% more efficient than their smaller cousins. Environmentalists cautiously support building more transmission lines, but stress they should be used to transport clean, renewable energy, not power from dirty, old coal plants.

"We have to make sure these individual decisions reflect our long-term priorities," said Dave Hamilton, director for global warming and energy projects at the Sierra Club. "We can't do it wrong, we aren't going to be able to go back and do it again." ■

	Alberta Natural Gas Prices (GJ)
Jan 1975	\$1.15
Nov 1985	\$1.767
Jan 1995	\$2.143
May 2004	\$5.381
Feb 2005	\$6.64
Feb 2006	\$7.36
Feb 2007	\$7.93
June 2008	\$13.517
Oct 2008	\$5.889
Overseas LNG	\$16.00