



NEW PLAYERS EMERGE

ADVENTURES IN THE NATURAL GAS PIPELINE SECTOR

BY
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ILLUSTRATION BY GRAHAM FLEMING

The sell-off in interstate gas pipelines after 2000 propelled new names to the top of the list of pipeline operators. “When you look at our membership, we are much more diverse because of new players coming in,” said Donald F. Santa Jr., president of The Interstate Natural Gas Association of America (INGAA), a Washington-based trade association.

With new players come new strategies whose success won’t be measured only in miles of interstate pipeline or trendy diversifications, say gas industry executives and analysts.



The new ideas are

partly a reaction to the meltdown of the merchant power market and other problems that precipitated financial trouble at the biggest pipeline operators, including El Paso Corp. and Williams, which operate or have an interest in a combined total of 70,000 miles of pipeline and together lost three out of every four employees from 2000 to 2005. While El Paso held on to its pipelines, Williams and other companies had to shed precious assets "to make sure they are financially stable and alive," said William Gwozd, vice president of Ziff Energy Group, a consultant. They also couldn't build much.

That opened the field to opportunists and entrepreneurs. MidAmerican Energy Holdings Co., a firm now controlled by Warren Buffett's Berkshire Hathaway Inc., and Southern Union Co., whose major stockholder and CEO is billionaire George L. Lindemann, swept up thousands of miles of interstate gas pipelines and placed the companies among the national leaders in terms of miles. Kinder Morgan, which is building one trunk line and has proposed another, picked up smaller assets from Enron before embarking on its construction program. Other rising players, such as Canada's Enbridge and Dallas-based Energy Transfer Partners, built solid bases of operation in other energy businesses in other locations before jumping into interstate gas shipping in a big way.

Few new trunk lines are proposed and approval takes a long time, but the pace of add-on and new construction is increasing in anticipation of added liquid natural gas imports, new gas sources in northeast Texas and the Rocky Mountains, and steady, modest increases in demand. There are "an unusual number of expansion opportunities," Fred J. Fowler, president of Duke Energy Gas Transmission, told analysts in New York City recently. If all the current U.S. project proposals are completed as designed, which is unlikely, 157 projects representing 9,500 miles of new pipeline will be added by 2008, according to the Energy Information Administration (EIA). So far, 71 are permitted for or under construction and another 58 have been submitted to the Federal Energy Regulatory Commission or other agencies.

In Canada, petroleum and pipeline captains are struggling to clear the way for new trunk lines fed by untapped gas buried beneath the permafrost. Over the long haul, gas traveling from north to south may replace depleted reserves in the Gulf of Mexico, some analysts suggest.

No project on the drawing board comes close to the scale of the 3,600-mile Alaskan pipeline. Planned by three Canadian petroleum giants, the pipeline's proposed route runs from the North Slope along the Alcan Highway through the Yukon and British Columbia. The scope and complexity already are spurring visions of 56-inch-diameter

pipe and a daily capacity of 4.5 trillion cubic feet. "Those are huge numbers," said Skip Simmons, North American Gas Research Principal of Wood MacKenzie, the energy consultant. "Already teams are looking at a pipeline that would probably cost \$100 million just in the conceiving."

"Is that visionary?" asked Simmons, noting that every gas producer must monetize its assets. And the framework and makeup of the gas transportation business is constantly changing.

The federal regulatory approach in the U.S. dates to the early 1990s. With pipeline operators no longer buying and selling gas since the Federal Energy Regulatory Commission's Order 636, requiring unbundling of gas sales, transportation and storage, pipeline operations must be kept at arms length from other ventures. Order 636 also emphasized straight fixed-variable rate design so that all fixed charges are in the pipeline operator's demand charge. There are fewer fluctuations in income because of weather but it also limits the pipelines' profit opportunities by increasing throughput. Most regulated entities in the United States, gas pipelines included, can provide about 10 percent return on invested capital, which "in today's world is not bad, but not great," said Simmons, after which the goal becomes reducing operating and interest expense and limiting safety risks.

Yet modest, predictable profits have attracted investment from inside and outside the industry from savvy financiers, experienced energy executives and smaller investors interested in the master limited partnerships into which many of the most reliable pipeline assets have been packaged in the last five years.

Through its two gas pipeline companies, Des Moines-based MidAmerican delivers about 8 percent of the average daily volume of natural gas in the country. The company picked up the Northern Natural Gas system, with 16,600 miles of interstate lines that carry gas from Texas to the Midwest, from Dynegy in 2002 for \$928 million; it acquired the Williams' Kern River Pipeline system, with its 1,600 miles carrying gas from Wyoming as far as California, at a bargain price around the same time. "Prior to 2000, MidAmerican had no interstate assets. Now it has two major trunk line systems," said INGAA's Santa. And since the acquisitions, pipelines that changed hands at six to seven times their earnings a few years ago are valued at 10 or 11 times earnings.

MidAmerican is owned 88.2 percent by Berkshire Hathaway and presumably managed with Buffett's value-oriented principals. Although it has not made any more major gas pipeline acquisitions since its initial purchases, MidAmerican has made other acquisitions, such as PacificCorp., a utility with operations in five Western states.

A large crowd of penguins, mostly King penguins, is shown from a high angle. One penguin in the center-left is purple, standing out from the rest of the crowd. The background is a bright, hazy white light.

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NEW PLAYERS EMERGE

“We think we are in
one heck of a
position.”

PIPELINES ON THE MARCH

Planned natural
gas pipeline
construction
2006 to 2012:
4,540 miles

Cost: \$17 billion

Where: Texas,
Louisiana,
Alabama,
Wyoming,
Kansas, West
Virginia,
Colorado,
Nebraska,
Missouri,
Ohio, Indiana,
Mississippi,
and Florida.

Source: Wood Mackenzie

With roots as a utility holding company going back to 1929, Houston-based Southern Union Co. today is a fast-changing collection of energy businesses. The company entered its current phase when it was acquired in 1990 by Metro Mobile, a company that helped make Lindemann one of the richest men in the United States when its phone operations were sold to Bell Atlantic Corp. Since then, Southern Union first built up its local utility company portfolio and then, seizing the opportunity provided by the sell-off of pipeline operations, divested them in favor of more profitable interstate gas pipelines.

In 2003, Southern Union made its big move into interstate gas shipping by buying Panhandle Companies from CMS Energy for \$1.8 billion. With it came 10,000 miles of interstate pipeline and the nation's biggest LNG import terminal. With a partner, Southern Union bought interests in Transwestern Pipeline Co. and Florida Gas Transmission Co. More pipelines, and an entry into the commodity, price-sensitive, gathering-and-processing business, came with the acquisition of Sid Richardson Energy Services earlier this year. Although it has trimmed its interstate pipeline portfolio recently with the sale of its interest in Transwestern, the company still has direct or shared interests in about 22,000 miles of gathering or transportation pipelines and claims to be the country's third-largest pipeline company.

Calgary-based Enbridge, an oil pipeline operator since 1949, runs what it says is the world's largest, longest and most complex crude oil system. From this base, it has steadily expanded into all aspects of gas. Enbridge dates its major transformation to 1994, when it acquired the primary gas distribution company serving the Toronto area. Now it distributes gas to 1.7 million customers in Ontario, Quebec and New York state, and has several gas-gathering and midstream operations, including ownership interests in 11 natural gas transmission and gathering pipelines in the Gulf of Mexico, which it acquired from Shell Gas Transmission for \$613 million in June 2005. According to Enbridge, that accounts for half of all deepwater gas from the Gulf.

Enbridge became a player in the emerging west-to-east natural gas pipeline network through its ownership interest in the 1,100-mile Alliance and the 348-mile Vector pipelines. Both originate in Western Canada and started shipping gas at the end of 2000. Stephen J. Wuori, executive vice president, recently told analysts at a conference in New York City that Enbridge plans to increase its revenues by \$3 billion with organic growth.

Dallas-based Energy Transfer Partners joined the world of regulated interstate pipelines in September when it picked up Southern Union's interest in the 2,500-mile Transwestern Pipeline system in a deal valued at \$1.46 billion. The pipeline connects the San Juan Basin in southern Colorado and northern New Mexico, the Anadarko Basin in the mid-continent and the Permian Basin in west Texas to the Midwest, Texas, Arizona, New Mexico and California. The new owner was already well-known as the operator of the biggest intrastate natural gas network, about 11,700 miles of pipeline in Texas, with another 550 miles under construction.

The older, established pipelines, especially El Paso Corp., with its 47,000 miles of interstate gas pipeline, have a less-expansive vision. As the biggest pipeline network operator, El Paso says it provides a degree of connectivity that no competitor can attain. It also says it is systematically improving the quality and the safety of its lines so that they can be inspected for anomalies and repaired if needed in a program that will last until 2009 or 2010. At a conference at the beginning of the year, Douglas L. Foshee, the company's chief executive, essentially proclaimed that El Paso's troubles were behind it and its turnaround complete. "We think we are in one heck of a position," he said.

Around the country, pipeline operators are focused on financial performance, operating efficiencies and gas sources and demand. Building plans have picked up, and there's more competition, said James Tobin, natural gas industry analyst with the Energy Information Administration.

Adopting Open Standards for Advanced Metering Infrastructure (AMI)

About 20 years ago, few of us were surfing the Internet. Today we're looking for everything from how to treat heartburn to viewing the rings of Saturn. In a short decade without really knowing it, most of us embraced the "http" (hyper text transfer protocol) open protocol standard that allows us to reach all those Internet sites regardless of the computer brand name or software that transported us there.

To understand why utilities are keenly interested in open protocol communications, consider the process and ease of sending e-mails from your laptop or smart phone. Internet providers depend on the use of open protocols to provide e-mail service. E-mails are sent and received as long as e-mail addresses are valid, mail boxes are not full, and communication paths are functional. Most e-mail users have the option of choosing among several internet providers and several technologies, from dial-up to cellular to broadband, depending mostly on the cost, speed, and mobility. The e-mail addresses are in a common format, and the protocols call for the e-mail to be carried by communication carriers without changing the e-mail.

ANSI (American National Standards Institute) is expected to publish a new standard by the end of 2006 (C.12-22.20XX) that provides an application layer standard for network communications, designed to transport C.12.19 standard data tables in electric metering over any physical medium. Thus the open protocol laid out in the ANSI C.12.22 standard provides the same opportunity for meter communications over networks.

In the world of collecting meter data, utilities are faced with many vendor systems that have been built with their own protocol/language. This makes integration between products from different vendors a complicated and expensive task.

It took four years for the ANSI working group to hammer out the C.12.22 protocol, with concerted effort on the part of utilities and vendors. Here is how it works:

- Each endpoint will have an address and AMI systems will communicate meter data in a similar manner to sending an e-mail to the utility, which will also have an address.
- Rather than e-mails, the ANSI standard deals with data packets. The sending device on an AMI network compliant with the new network standard creates a data packet, and the AMI network delivers the data packet. Exactly how the AMI network delivers the data packet—whether by use of cellular communications or Wi-Fi or power line communications or RF—is not of concern to the receiver of the data packet, and what's in the data packet is not of concern to the AMI network.
- The ANSI C.12.22 standard allows for opening up the communication layer (physical layer) in the AMI network—while maintaining a standard network addressability and data security.

"Flexibility promises utilities freedom to pursue whatever communication method is best at the time and for the meter location, but that

is really just the beginning," said Arun Sehgal, product line manager for Itron's AMI hardware. "Since it's an open protocol, the utility could decide to use the AMI system for other non-electric metering communications as well, such as gas or water meter readings. The beauty of this is that no one needs to change hardware to make this work."

Itron, an industry leader in metering technology, has recently announced a new AMI system, OpenWay™ which conforms to this new network communication standard, and has performed well in its initial test. OpenWay uses a Zigbee interface in the OpenWay endpoint, intended to be used to communicate to other devices in and around the home.

The industry and customer drivers for AMI include demand/price response, a culture of conservation, full deregulation and operating a smarter grid. To be realized, the standard chosen protocol should be aimed predominately at the application level and allow for any communication medium to be used. It should be suitable for the data requirements and unique needs of the utility and allow for application growth not envisioned today.

The standard C12.22 is an ANSI standard that makes full provision for system interoperability and its development was meter data centric. It achieves the goal of being agnostic to the communications technology chosen, said Sehgal.

"To achieve adoption, we need clear public policy and crisp regulatory guidelines, and we need to keep the transport layer open—this is where the most innovation is expected in the next few years," said Sehgal.

As energy costs continue to rise worldwide, the utility industry is looking at Advanced Metering Infrastructure (AMI) and open standards and interoperability as a way of getting there. In addition, AMI will help to control energy expenditures and improve conservation efforts.



Elster Group Launches Worldwide Energy Saving Solution

LUXEMBOURG, 23RD OCTOBER 2006 — Elster Group, the world's leading manufacturer and supplier of metering and utilisation solutions to the gas, electricity and water industries, has today launched a smart metering solution that will help address the issues of climate change and energy costs.

A new business unit, Elster Integrated Solutions (EIS) based in Raleigh, North Carolina, USA, will drive global programmes to help utilities worldwide adopt the very latest smart metering systems. Automated Meter Reading (AMR) and Advanced Meter Infrastructure (AMI) are designed specifically for gas, electricity and water utility customers. These smart meters can help with some of the most pressing current environmental issues.

"As a world leader in metering, Elster delivers advanced metering solutions to gas, electricity and water utilities that enable meters to be read remotely over smart wireless and fixed networks," said Elster Group CEO, Thomas Ganswindt. "These meters enable providers to check on an end-user's usage more frequently, in turn facilitating more frequent tariff changes including demand-responsive tariffs which enable prices to follow demand. Smart meters can send warnings to the consumer to turn on or turn off appliances. The end result is energy and resource savings. Highly accurate and fair billing will show the real use of energy and scarce resources by consumers."

Research (*see Berg Insight M2M Research Series 2006*) shows that shortening the link between consumption and billing makes residential and industrial consumers more price-responsive and therefore more economical with their energy usage. The Berg Insight research also shows that there is a huge market for this type of technology. Some European countries are already using smart meters, especially in Italy and in some Scandinavian countries.

"Metering is a fundamental business enabler for utility companies. In Europe alone there are approximately 244 million electricity meters and 101 million gas meters," continues Ganswindt. "The liberalisation of energy markets requires that the utility meters of tomorrow be connected to data communication networks. Elster's investment in technology and people will help reduce operating costs, drive additional revenue streams for our customers and further improve the quality of energy usage for consumers. When installed, Elster smart meters will also help improve our environment."

President of Elster Integrated Solutions is industry veteran Sharon Allan. Allan joined Elster in 1997 from IBM and most recently was chief knowledge officer of Elster Electricity. In 2002, she was named one of the '50 Key Women in Energy' for her global leadership in the area of innovation and creativity within the industry.

"We deliver and integrate metering automation solutions for our customers so that they can better manage their business in the area of gas, electricity, and water usage as well as facilitate new end-customer programmes," said Allan. "Whether it is AMR or AMI, we enable business and customer management from the metering information. Core to our solution is the use of intelligent mobile and fixed network communications."

With a turnover in 2005 of over Euro 1.3 billion, the Elster Group is the largest metering company in the world. A trailblazer in terms of quality and innovation, the Group continues to invest in the latest metering and communications technology.

Mark Munday, president and CEO of Elster Electricity, has been appointed executive vice president of the combined Elster electricity and water businesses in North America. Mark has over 26 years of experience in the industry, and for the last 6 years has headed the Elster Electricity business unit in Raleigh.

"The launch of Elster Integrated Solutions will help drive our North American business forward, providing our customers with the information they need to shape strategic decisions about efficient energy use," said Munday. "Our expertise and heritage in the metering market are combined in the EIS business to accelerate the delivery of actionable intelligence to the 62,000 utilities that we work with across the region."

Thomas Ganswindt concludes, "As well as the clear opportunity that Elster Integrated Solutions delivers in North America, it is a strategic first step for our global offering"

ABOUT ELSTER GROUP

Elster Group (formerly Ruhrgas Industries), is the world's leading manufacturer and supplier of highly accurate, high quality, integrated metering and utilisation solutions to the gas, electricity and water industries. In addition, through its subsidiary Ipsen International, it is the leading global manufacturer of high level thermochemical treatment equipment.

The group has over 9,000 staff and operations in 37 countries, focused in North and South America, Europe and Asia. Elster's high quality products and systems reflect the wealth of knowledge and experience gained from over 170 years of dedication measuring precious resources and energy. The Elster Group is headquartered in Luxembourg.

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one company,
one voice.



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Elster consists of two major business units in North America: Elster Gas and Elster Electricity and Water. Elster Gas delivers gas metering solutions to a host of customers across the region and is headquartered in Madison, Ohio.

The Elster Electricity and Water business unit serves utilities in these two sectors with operations located in Raleigh, North Carolina and Ocala, Florida.

Elster Integrated Solutions, located in Raleigh, North Carolina, helps utilities improve their revenue cycle services, customer service, delivery reliability and workforce utilization as well as implement demand response and conservation programs.

For more information, visit www.elster.com.

SouthernUnionSaga

To be an investor in Southern Union Co.,

an integrated natural gas company whose prominent assets include the third-longest collection of gathering and interstate gas pipelines in the country, is to take a ride with George L. Lindemann, 70, the Wharton graduate who is the company's principal stockholder and chief executive. This has been a year of action and surprises as the company pursued a strategy of divesting local utilities and expanding in transportation and upstream services.

Last December, Southern Union announced its plan to pay \$1.6 billion for Sid Richardson Energy, an upstream gathering and processing business with strong positions in the Permian Basin and 4,600 miles of gas and liquid pipelines in Texas and New Mexico.

In June, an activist hedge fund, Sandell Asset Management, reported that it had accumulated a 9.62 percent stake in Southern Union through private transactions and open market purchases. That made Sandell Southern Union's second biggest stockholder and Sandell's CEO immediately complained in a letter to Lindemann that the company's stock price doesn't reflect Southern Union's intrinsic value.

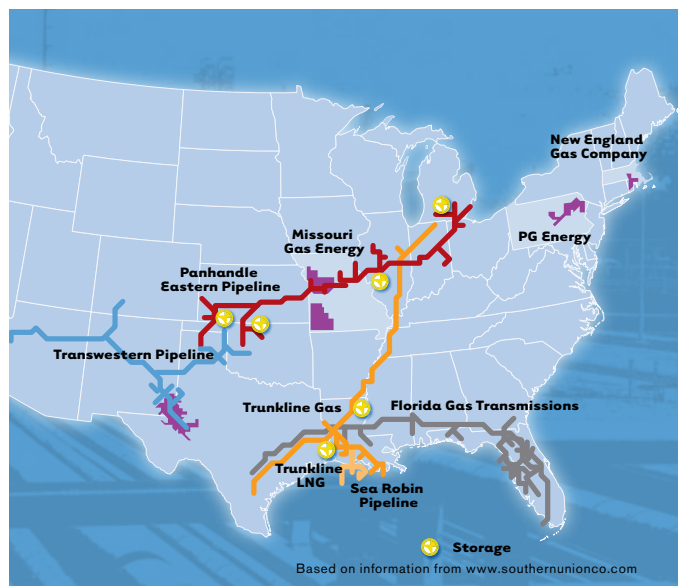
Lindemann and his managers would argue that they have assembled a valuable collection of pipeline, LNG processing terminal and utility assets, and Wall Street has been appreciative. Since Southern Union was acquired by Lindemann's Metro Mobile in 1992, the stock price has grown from under \$5 a share to a closing price of more than \$26.50 in early October. For 2005, the company reported pre-tax earnings from continuing operations of \$91.6 million on revenue of \$2.01 billion, down from 2004, but in 2006 Southern Union is on course for improved earnings. At midyear the company had \$3.9 billion worth of debt on its books, but the debt has been pared and Southern Union had in the last year switched from a stock to a cash dividend. With Southern Union, "you are buying Lindemann's direction and the stock at times traded at a premium because of Lindemann," said Michael Heim, a securities analyst and vice president of broker A.G. Edwards & Sons Inc.

"Their track record has been pretty good lately but in the longer term it has been mixed," said Heim, who currently has a hold rating on the company's shares. "Some of the distribution assets were bought at top of market but the last couple of pipelines turned into good investments."

Count on one thing. The Houston-based company's agile, opportunistic deal making keeps things interesting.

In September, Southern Union sold its 50 percent

interest in the Transwestern Pipeline running from Texas and New Mexico to California to Energy Transfer Partners, and acquired another 25 percent ownership, making it half owner, of the Florida Gas Transmission pipeline



▲ Southern Union Co.'s 22,000 miles of pipelines.

fact box

Operates:

22,000 miles of pipelines

LNG import terminal

Assets: \$7.4 billion

Debts: \$3.9 billion

Financials:

OPERATING REVENUE

2005 - \$2 billion

NET INCOME

2005 - \$21 million

5-year earnings per share growth rate: (-33.93 percent)

5-year annual revenue growth rate: 18.79 percent

Employees: 2,900

Subdivisions:

Southern Union Gas Services

Trunkline LNG Company

Missouri Gas Energy

New England Gas Company

“Their track record has been pretty good lately but in the longer term it has been mixed.”

running from Louisiana to Florida. The bigger investment in the Florida Gas pipeline upgrades Southern Union's risk profile, enhances its strategic position and preserves capital, Lindemann said in a statement.

Not so, argues Casey J. Alexander, an analyst with Guilford Securities, who claims the deal "blows up growth" in coming years.

Stay tuned as Lindemann continues to provoke reaction as he makes his imprint on America's pipeline industry. ☒

— Richard Korman