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A SURVIVAL STRATEGY FOR GAS PIPELINES IN THE POST-OPEC ERA

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By Arlon R. Tussing and Connie C Barlow

In the four years since President Carter and Congress crafted the Natural Gas Policy Act, conditions in the gas industry have changed so radically that it is hard to tell up from down. The gas-market scenarios that motivated the NGPA are now screening by us nearly in reverse. A critical gas shortage has given way to swelling surpluses. Pipelines that were caught in a downstream contractual squeeze during the curtailments of the Seventies are now caught in a take-or-pay crunch with upstream sellers. The tables have turned on the inter/intra state schism too, with the interstates bidding gas away from Texas and Louisiana pipelines.

In blatant violation of the spirit behind NGPA's companion legislation, the Fuels Use Act, gas distributors and transmission companies are now scrambling to keep their "low-priority" industrial customers happily burning gas. They are going so far as to reinvent value-of-service tariffs that parody the incremental pricing provisions of the NGPA almost exactly as a Black Mass parodies the Holy Sacrament. And state commissions that have barely emerged from the battle to impose "lifeline" rates on reluctant utilities are finding they have little choice but to go along with rate strategies that load the utilities' rising supply costs mainly on homeowners. Finally, even the American Gas Association has begun to admit that gas is really not a "premium" fuel, as markets everywhere clear at or below the price of residual fuel oil.

The conventional wisdom of the recent past proved so wrong so suddenly that there is no conventional wisdom today. Like the producers and distributors, the embattled gas-transmission industry lacks a common vision of the future, much less an agreed-upon agenda for action. Caught between producer-prices gone wild over exempt categories of gas and industrial consumers fleeing to alternate fuels, the interstate pipelines are getting hammered from both ends.

One good thing can be said for the dismal state of affairs today. Because everything has gone full circle since the early Seventies, the industry has had a taste of virtually the entire universe of possible grief. It survived a seller's market. In some form it will undoubtedly survive the current buyer's market. And transmission-company executives who have learned anything from the trip should be able to maneuver into a comparatively blissful phase of market equilibrium.

How to get there is the big question. And how does an individual firm ensure that it doesn't become one of the unfortunate casualties of the transition?

The companies that are going to survive these difficult years of market ordering are those that keep sight of a few simple principles.

> <u>Markets have already cleared and the old gas "cushion" has been squashed out of sight by deep gas, imports, and other costly supplies.</u>

If this were not the case, cheap Texas and California gas would not be shut in, Canadian imports would not be oozing across the border at only 65 percent of authorized levels, and FERC would not be under siege by an angry mob of distributors, industrial consumers, and state commissions demanding re-regulation of deep gas or relief from the take-or-pay obligations in their supply contracts.

What's more, our mature pipeline network will not long tolerate any regional inconsistency within this national trend. If there is still any system out there that might be short of gas, physical displacement and off-system sales opportunities will soon conjure up a willing seller.

Not only is the cushion gone, but the industry ought not hold its breath waiting for it to reappear.

In particular, don't count on oil prices to resume their upward march. If anything, constant-dollar oil prices will keep going down and formula contracts now tied to oil prices, presumably in the interest of the sellers, will prove instead to protect buyers.

We realize this assertion flies in the face of what the Department of Energy, most industry spokesmen, and the big-name forecasting institutions still seem to believe. (INGAA's own current forecasts, by the way, envision further rises in constant-dollar oil prices.) A Tussing-Barlow "OPEC Obituary" will soon be published where you can't miss it. We needn't go into its details here, because **even if oil prices did go up again,** the shift of "low-priority" consumers back toward gas would soon be overwhelmed by the new momentum higher oil prices would give to conservation of energy in all its forms. In the buyers' market that exists today, however ---

Gas is doomed to defeat in any price-war with residual oil over the industrial market; refiners will drop the price of residual oil as far as they have to in order to dispose of the stuff.

In the Pacific Northwest and in Eastern Canada resid has been underpricing gas so consistently for so long that this contention no longer inspires debate. **A price battle between gas and resid will bottom out only when the prices of both have fallen so far that they**

both begin to back coal out from under electric-utility and industrial boilers. Three years ago, this scenario would have been jeered out of the hall, but now it has become just about plausible. There is a pretty good chance that the coal industry will be the hardest hit of all the major energy sectors. Our hunch is that the key is Canada's passion over acid rain, which could unlock the border to a torrent of gas priced low enough to make a real dent in sulfur-oxide emissions throughout the Midwestern and Eastern states.

There is a limit to the additional revenue that any rate design intended to preserve industrial loads can squeeze out of commercial and residential customers.

Distributors faced with a loss of industrial customers may attempt last-ditch efforts to cut their industrial rates by milking other user classes. But they are likely to find that an approach like Peoples' "alternate fuel adjustment" in Chicago yields only modest returns, and even those may be only temporary. Residential and small commercial consumers of gas may not have the ready capacity to switch to another fuel, and granted, that other fuel will cost a good deal more than residual oil, but these classes still have plenty of room to conserve. A distributor probably won't lose hook-ups by raising residential rates up to, say, the retail price of home-heating oil. But premium gas demand **will** fall off significantly. Earlier price rises --- to levels still far below heating-oil prices --- shaved 14 percent from the average homeowner's gas consumption between 1978 and 1981. Further price increases will further depress demand, and as loads shrink, so will the additional revenues the rate hikes were designed to bring in.

Value-of-service rates are clearly one option for systems that can't sell all the gas they have bought, but they are no panacea.

Companies should proceed with caution, remembering that much of the current distress in **all** of the major energy industries stems in large part from their disregard for, or enormous underestimation of, the price-elasticity of demand. Too much value-of-service medicine can kill the patient. Overzealous tariff hikes designed to squeeze out the last penny of revenue can trigger a downward revenue spiral that has no bottom.

So the "cushion" is gone, and it is not likely to return. The competing fuel is resid at best, and perhaps coal. Companies that mistakenly buy too much gas at too high a price cannot expect to cover their losses by extracting a whole lot of additional revenue from those customers who have the fewest options. Moreover, while all utilities must worry about losing customers to other fuels, pipelines have the additional threat they will lose customers to other pipelines.

In the face of all this, where is the interstate transmission industry likely to find itself in the next few years?

> **So long as pipelines can't sell everything they have already bought, the only new purchases that make sense are those whose terms reduce the company's average supply cost.**

Perhaps even before the end of this year, producers and foreign governments will find that nobody is interested in entering into new supply contracts with price terms that come even close to what they were able to get in early 1982. Those deep-gas producers who were able to extract windfalls are going to find that the good times are over. Those who actually went out looking for gas that would cost \$6 or \$7 to produce are already in real trouble, along with the financial institutions who went out on a limb to back them.

The same goes for pricey sellers like Canada and Mexico. Ironically, just when those countries are beginning to suspect that it is in their interest to increase exports, US pipelines will no longer be in a position to buy any additional gas at prices even approaching what those countries now insist is their bottom line. Specifically, transmission companies are going to stop buying new gas in the field or at the border if they have to pay a price higher than the wholesale price of resid.

Pipelines are also going to look for any way possible to get out of their most embarrassing existing commitments.

Where contracts contain express "market-out" language, those provisions will be exercised. In the absence of explicit escape clauses, transmission-company lawyers will subject each contract to microscopic scrutiny for obscure technical flaws. In the last resort they will argue that gas purchasers have some kind of "implicit", "common-law", or "uniform-commercial-code" right to get out of any contract that is economically unreasonable, regardless of its specific language.

A few pipelines already beginning to approach price renegotiations with the strength and demeanor that a continuing buyer's market affords. They may soon find the nerve just to walk away from commitments they cannot legally dismember. As this new assertiveness spreads through the industry, producers faced with a buyer's challenge that "I can't take and I won't pay. So sue me!" are likely to conclude that the bargaining table holds more promise than the courts.

Perhaps by 1984, gas transmission companies will have fully shed the last remnants of Seventies mentality. Gone will be the days when a company felt compelled to line up ten or even twenty years worth of supply.

Flexibility will replace security as the central principle of transmission-company gas-supply strategy.

And those companies that remain obsessed with supply security are likely to reap a terrible retribution.

In order to survive through 1985 in particular, flexibility will be indispensable. Long-term contracts may still be part of each transmission company's "balanced portfolio" of gas-supply commitments, but they will occupy a smaller place than they do now and they will include market-out or price renegotiation clauses. More likely than a price fly-up in 1985, companies that have opted for supply flexibility rather than security will be rewarded with a chance to reduce their average system-wide costs.

Just outside the bounds of "proved reserves" a whole lot of gas probably lies in wait for full decontrol. Too costly to produce at the still-regulated prices for conventional gas, it is nonetheless cheaper to produce than much of the deep gas now under contract and cheaper than the prices now demanded by foreign governments for their gas or LNG. Just across our Northern and Southern borders, moreover, are whole oceans of gas waiting for the magic combination of economic necessity and political ingenuity to start rolling into the US.

Transmission companies won't be the only parties talking to producers in 1985.

Distributors and on-line industrials that feel they can do a better job than their carriers in finding cheap gas supplies will be on the prowl --- a new twist on the emergency "self-help" programs of the Seventies. Interstate pipelines will find they have to carry gas for other parties on contract, however reluctantly, and even in competition with themselves. For other pipelines will be standing by, eager to serve the would-be shipper, by displacement and paper exchanges, if not directly.

In addition to private and contract carriers, there may be room for common-carrier pipelines, though Congress would probably be overreacting to hypothetical and possibly unrepresentative abuses if it passed a law that forced all interstate gas pipelines to function in the same way as oil pipelines. Instead, it might be wiser for Congress to review whether the antitrust laws and state common-purchaser laws could take care of whatever individual problems might conceivably arise.

Actually, a voluntary shift to contract- or common-carrier status might not be as distasteful as it appears on first blush. Pipelines are not now supposed to wring a profit from buying and selling gas; their return is earned strictly on transmission plant investment. Whether the gas is theirs or somebody else's, therefore, regulated profits should remain the same.

Distributors, industrial gas consumers, and state commissions are are beginning to blame their present distress, at least in part, on their lack of influence over pipeline gas-purchase decisions. Some transmission companies may be tempted to to give their customers what they seem to want --- full accountability and full exposure to market risks. We would not be shocked if a major interstate pipeline company soon announced that it intended to stop buying gas, and would soon file with FERC a **transportation tariff** applicable to its uncommitted capacity. To the extent that the distributors and industrials actually began to make their own bargains with gas producers, they --- and the state commissions --- would assume more responsibility for their own fate, together with much of the risk that has heretofore been the special burden of the gas-transmission sector.

As long as the nation maintains its commitment to deregulating natural-gas field prices, there will never be another gas shortage of any substantial duration.

Prices will henceforth move to balance supply and demand. Moreover, as long as the nation as a whole has adequate gas supplies, no pipeline needs to worry about individually running short. Some producer will be delighted to sell shut-in gas on a spot basis, or some pipeline will be eager to get rid of some of its take-or-pay surplus through an off-system sale. If by chance, times are so tough that shut-in gas or surplus pipeline gas is not available, there will always be an industrial customer able to burn something other than gas who is willing to give up a standing commitment if the price is right. Companies may just find in a passing shortfall the opportunity to make money by cranking up their old peak-shaving SNG plants.

Because the existing pipeline network reaches into nearly every major producing or consuming area in North America, gas can be "moved" anywhere by physical displacement and paper exchanges if not directly, and a needy pipeline or distributor will be able to buy gas from virtually any producing field or from virtually any pipeline on the continent that has gas to sell.

The maturity of the pipeline network now argues against either buyers or sellers tying themselves down with long-term supply contracts.

Back in the 1950's when big gas-pipeline construction projects were at their peak, transmission companies got accustomed to negotiating long-term purchase agreements. Lenders demanded that supplies be sufficient to maintain loads over the life of the twenty-year construction bonds. The Federal Power Commission, likewise, viewed long-term commitments as a vital factor in determining whether to certify a particular application for new plant construction. Today, with new gas contracts simply replacing defunct contracts, neither bondholders nor regulators ought to have the same concern about the duration of new wellhead transactions.

Given the ingrained habit of seeking long-term commitments, followed by a decade in which the soundness of a pipeline company's reserve-life index seemed almost more important than its balance sheet, it will likely take a while before gas buyers and lending institutions begin to feel as comfortable as crude-oil purchasers and their financial backers are in dealing with short-term or daily spot-market transactions, or even with long-term arrangements whose duration is unstated and whose terms are subject to renegotiation on the initiative of either party at any time.

One might argue that long-term contracts will still be important where major new construction is involved. This is perhaps so, but major new construction is likely to be minimal, and to the extent that it is needed, transmission companies in their present configurations are not in the best position to take on the risks of project sponsorship.

After all, no transmission company or consortium of transmission companies was able to arrange conventional financing for the big construction projects they promoted during the Seventies. They cooked up all sorts of schemes to shift risks downstream in order to obtain highly leveraged and usually non-recourse financing. Most of those attempts fell by the wayside, and the few that did make it are now causing all sorts of grief. El Paso had to write off its LNG tankers, while distributors and state utility commissions are now challenging Trunkline's LNG-induced tariff hike. American Natural and its cosponsors of the Great Plains coal-gasification plant are surely getting a bit anxious about what will happen when plant construction is complete. And at least some of the Alaska gas-pipeline sponsors and prospective North Slope gas-purchasers are openly relieved that construction is not on schedule.

But if regulated pipeline companies are not able to come up with conventional dollars for big new capital projects, and if non-recourse financing and consumer guarantees are dead, who will take care of needed construction? We have only to look back to our nation's first gas-pipeline building boom to find the answer.

During the late 1920's, technological breakthroughs in pipe manufacturing and in design ushered in the first big wave of gas-pipeline construction. Between 1925 and the onset of the Great Depression, sixteen gas trunklines ranging from 200 to 1100 miles in length were built, mostly from Louisiana's Monroe field and points north and east and from the huge Panhandle field to the Midwestern states. None of these systems was a regulated utility; the Natural Gas Act did not take effect until 1938. No government told the pipelines where they could build, what prices they might pay or charge for gas, or what return they would be allowed on their investment.

In this early unregulated environment most of the big new pipelines were built by producers eager to market their gas, sometimes with financial assistance from urban gas distributors looking to augment dwindling Appalachian or Midwestern supplies or to replace more noxious and less efficient coal gas. Standard of New Jersey was one of the biggest participants in this first generation of US gas pipelines.

The challenges and risks that faced the fledgling transmission industry in the 1920's were just as formidable --- in relation to the size of the nation's economy then --- as the problems the gas-transmission industry now confronts. If large-scale new construction projects are in order anywhere today, either for "supplemental" projects or for more conventional pipelines like Trailblazer, perhaps we ought to make those projects attractive to the producing sector, which is better configured to handle big risks. Perhaps we ought to deregulate gas transmission once again.

> **In a fully deregulated environment, if frontier gas, LNG, or high-BTU coal gas is really economic, producers and big industrial gas consumers will find it in their interest to invest in its development.**

If gas from Wyoming's Overthrust belt clearly made sense in today's market, the producers surely would have found a way to get a pipeline built, and probably could have done so without the exceptional risks relative to their net worth that the sponsors of Trailblazer have had to assume. President Carter and Congress got their economics precisely backwards when they prohibited Arco, Exxon, and Sohio from holding an equity position in the Alaska gas-pipeline project. Together with the State of Alaska, the producers were the only parties (other than the federal government) who had anything approaching the financial capacity needed to carry the project. In either case, the producers more than anyone else would have been motivated to choose the least costly route and design on their own. The risk of overbuilding, duplication, or plain old bad judgment would have been borne by the investors, while any benefits of increased competition in the transmission business would be shared by producers and consumers.

The ultimate economic-feasibility test for any new gas-transmission project or natural-gas "supplement" will be its ability to deliver to "low-priority" industrial consumers at a competitive price. Once price deregulation has ended the need for curtailments (except in genuinely unforseen emergencies), any project that has a reasonable chance of success should be able to elicit participation from big energy-users looking for a captive, long-term supply of fuel or feedstock, as well as gas producers --- companies like General Motors, US Steel, or Dow Chemical.

> Decontrol of interstate transmission is the logical next step after the end of wellhead-price controls and government interference in energy-user decisions,

Perhaps once a new consensus has formed on how gas markets really operate, and the NGPA and the Fuels Use Act are finally swept away, everyone will see that the 1938 Natural Gas Act is an anachronism. Because gas markets have already cleared, nobody has to worry that ownership of gas pipelines by producers or big industrial gas-consumers would result in someone getting ripped off. Even if a good bit of incest developed between pipelines and producers, there are only minor pockets of economic rent left for middlemen to extract. Monopoly rents are hardly possible either, because many distributors are served by more than one pipeline and are, at worst, only a stone's throw from a second, and because there are numerous gas users who can switch fuels in an instant. It thus appears to us that there is a compelling case for pipeline deregulation.

The same forces that prompted governments to reach further and further into gas industry decisions during the last hundred years will prove equally powerful in reverse. The equity rationale behind economic regulation of this particular industry has vanished, and the tissue of federal laws and regulatory institutions will continue to unravel. Useless laws can sometimes be ignored rather than repealed, but a deliberate dismantling of utility-type regulation affecting interstate gas transmission offers substantial advances in social efficiency. Repeal of the Natural Gas Act would eliminate the perverse incentives that utility economists have long regarded as inherent and evil side-effects of such regulation.

For example, the threat of a vanishing rate base would no longer be a driving factor in company decisions to build new plant. Rather, deregulated transmission firms would find it beneficial to continue or expand service with **as little** new plant investment as possible. There would no longer be any need for public servants to scrutinize company plans and accounts to root out redundancies, padded demand estimates, or gold-plating.

And once the vanishing rate base has been conquered, why should any transmission executive fret over the fact that there is precious little opportunity for new plant expansion? For the first time since 1938, gas pipelines would operate from the same efficiency-fostering motives as other businesses: the **less** they spend on upgrading their facilities, the **more** profitable operations will become through time. Finding a place to invest pipeline earnings outside of the transmission business would pose no special problem because no matter how much longer the Public Utility Holding Company Act (another anachronism, by the way) may survive, a deregulated gas pipeline would be as free as anybody else to invest its earnings wherever they appear to be the most productive.

Perhaps the most important outcome of pipeline deregulation would be a tendency for the various segments of this now highly-fragmented industry to see themselves as intimately connected and mutually dependent upon the continued health of upstream and down-stream participants. Gone would be the days when producers and pipelines felt that take-or-pay commitments or consumer guarantees were more important than the economic sense of the project itself. And there would no longer be any reason to maintain the separateness and redundancies of two sets of national pipelines; gas could begin to flow freely between the inter- and intrastate systems.

Less than a year ago in Houston, when we raised the issue of deregulating the pipelines, much of our audience received the notion with the incredulity due some libertarian pipedream. We are gratified that this concept has become credible enough that a Business Week cover story on gas pipelines (August 2, 1982) could declare that the deregulation "proposal is gathering steam." The resurrection of free enterprise in the gas business will not come overnight, but it is coming faster than even we anticipated, propelled by an economic logic that demands **and teaches** the benefits of diversity and flexibility in pricing, contract terms, and industrial organization.

Meanwhile, pipeline executives have to deal with the real world and its clutter of anachronistic laws, rules, habits, and prejudices. If we had to select a single survival principle out of all the propositions I have touched on today, it would be this:

Whatever commitments a pipeline company has to make, it should build in as many escape hatches as it can reasonably find.

Whether dealing with a producer or commenting on a proposed FERC rule-making, flexibility rather than surety is the secret of survival. No one really knows what oil prices will do, whether and when the Canadian government will release the sea of gas now dammed up behind the 49th parallel, or whether the distributors and state commissions can implement any rate strategy that avoids the deadly spiral of ever-higher prices and ever-shrinking loads. **If a transmission company preserves enough options, however, it does not have to fret about the future; it only needs to be clear about what works today.**

Background Reading

Dr Tussing and Ms Barlow introduced the historical background and economic principles that govern current gas-market developments in "The Rise and Fall of Regulation in the Gas Industry," presented at the North American meeting of the International Association of Energy Economists (IAEE) in Houston on November 13, 1981. The essence of the earlier paper appears in the March 4, 1982 Public Utilities Fortnightly and the October 1982 Energy Journal.