Is There a Future for IPPs?

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Answer: No, not in its present form.

HISTORY LESSON: PAVED WITH GOOD INTENTIONS

Technology made the old system. Technology will kill the old system. For eight decades, electric utilities ran unchallenged natural monopolies, because they possessed economies of scale. No organizations could produce electricity at lower cost than those monopolies. Operating economies increased steadily. The utility, not only more efficient than erstwhile competitors, grew more efficient over time.(1)

Circa 1960, conventional power stations reached the efficiency limits imposed by the Rankine Cycle(2), a necessary but not sufficient reason to declare the natural monopoly dead. Utilities, after all, still provided the lowest cost service. Nobody else could undercut them.

About the same time, electrical equipment manufacturers began to sell gas turbines as stationary power sources. Most utilities did not take seriously the new technology. Of course the Big Three did not take the first Toyotas seriously either, probably for the same reasons: tinny stuff with a limited market.

After much R&D work, manufacturers developed clean, low-cost, reliable gas turbines. The same manufacturers that produced generation after generation of increasingly efficient conventional steam generators proceeded to do the same with gas turbines, except on a more accelerated schedule. Eventually, those small, modular, clean, factory-made gas turbines could produce electricity at a lower cost than that of the larger units of many utilities.

At that moment, the utility's rationale for a monopoly of generation fell apart. Somebody else could do the job for less. Government regulation no longer protected consumers from market imperfections or exploitation by the monopolist. Instead, it protected the incumbent from competition. Remember that the CAB went out of business after economists discovered that regulated air fares cost more that unregulated.(3) Oh that FERC would be as selfless or discerning!

During the environmental era of the sixties and seventies, utilities demonstrated antipathy to environmentalism as well as ineptness in reconciling themselves to the new world. They managed to convince a lot of people that they opposed clean water, clean air, and energy efficiency. Congress took note of this seemingly troglodytic behavior when it passed the Public Utilities Regulatory Policies Act of 1978 (PURPA), a law designed to encourage energy conservation and the development of efficient technologies that electric utilities had shunned in favor of nuclear power and big coal-fired stations.

The law created a new type of generating entity, the independent power producer (IPP), which utilities could not control. The IPPs specialized in cogeneration and renewable resources. The utility had to buy the output of these new entities at a price approximating the utility's avoided cost, a number determined by the state regulator, an administered—*not a free market price*—set in a command and control environment in which the government—*not the market*—determined the preferred technologies.

Despite the mantle of competitiveness in which they wrapped themselves, most IPPs were not free market advocates but rather skilled seekers of entitlements, operating in an administered market place. The new entrants, though, did prove that non-utilities could generate electricity reliably. They demonstrate how cost-effective and competitive the new turbines were. They showed that electricity customers could have economic alternatives to the local utility.

Many IPPs adhered to the letter—but only the letter—of the law, as they looked for or concocted minimal cogeneration projects. They forced unneeded and expensive power purchase contracts on unwitting or unwilling utilities. Within a decade, though, IPPs had garnered about 10% of the generation market and about half of all new generation.

In 1992, Congress passed the Energy Policy Act, opening the transmission network to all users, and creating a new class of non-

utility generators unfettered by PURPA and the Public Utility Holding Company Act of 1935. If the drive to reduce Federal interference in the energy markets succeeds—and I cannot imagine a more likely Congress to dismantle Federal controls—doing so would reduce artificial differences between generators.

You may remember the government's inane distinctions between old and new and deep and shallow gas. Same molecule but different price. The electricity market now has like characteristics: same electron but different price. Not even Philip Morris could keep up that act indefinitely.

EXISTING STRUCTURE: SHAKY FOUNDATION

Right now—for the most part—electric utilities generate electricity or buy the output from others, transmit the electricity to the market, and then distribute it locally. IPPs—by and large—sell their outputs to the utilities under long-term contracts. They borrow heavily, based on the security of those long-term contracts, in order to finance the construction of those facilities.

Those contracts are commercial absurdities. Only a utility would sign them. The IPP rents the utility's credit rating at no cost. The utility cannot earn a retailer's markup on the purchased power because regulators do not normally allow markups, just returns on investment, and the utility makes no investment.

The utilities, moreover, commit themselves to long-term purchase contracts, but the utilities' customers do not sign concomitant contracts with the utilities that would commit the customers to buy enough electricity at given prices to assure that the utility could meet the obligations of the power purchase contract. This business arrangement is asymmetrical. The utility takes on the equivalent of debt, takes a risk for no return. What other business makes that kind of deal?

Unfortunately, the deal took on another negative aspect. The prices set, often predicated on erroneous projections of avoided cost, have saddled the utilities with obligations to pay prices far above market rates for long periods of time.

Those contracts, and the other high cost of doing business that the utilities had taken on, had no untoward consequences for the

utilities as long as the utilities were the only game in town. They could pass on high purchased power costs and high nuclear costs and high fuel costs and high social policy costs to customers under the cost plus regulatory system. Unfortunately for the high cost utilities and their protected suppliers, the industry did not operate in a vacuum.

In the USA, customers were gaining freedom from formerly monopolistic telephone and natural gas suppliers. In the UK, their affiliates there could arrange their own electric supplies. Now, customers here could self-generate economically thanks to the new technology, burn more gas, or threaten to leave, in order to extract price concessions from the local utility.

Wholesale purchasers, with greater freedom to transport the electricity and more potential suppliers to deal with, began to shop around for lower cost power. Even worse, the upcoming generation of gas turbines promises astoundingly high levels of efficiency, which further boosts the competitive position of the new producer versus the utility.

For the moment, the utility constitutes the key to the survival of the IPP industry as we know it. After all, the utilities buy the output and provide the credit rating. But those same utilities are caught in a tightening vise, squeezed between demanding customers seeking lower prices and high fixed costs. Free market ideologues, on the ascendant, want customers to choose their own suppliers, confident that competition will force suppliers to reduce costs in order to keep the customers. Evidence certainly points to dramatically lower prices after deregulation.(4)

For many utilities, purchased power constitutes a major cost. That brings up the topic of stranded costs, or stranded assets, or better yet, stranded revenues. The real issue is the unsustainable revenue stream of the utility derived from prices above market prices. Students of the topic often focus on specific assets or costs, and they have come up with an estimated stranding of several hundred billion dollars.

Focusing on specific costs may make IPPs happy, because it allows them to point a finger elsewhere and say: "My contract is not the highest cost source. That honor belongs to the utility's own nuke. Ha ha." The real issue, as I said, is the difference between the utility's price and the free market price, and the revenue that will be lost if the utility has to reduce prices to market levels, which it will do to keep business, as long as the new price is above variable costs and the utility has nothing better to do with the output.

That lost revenue, "stranded" in the peculiar parlance of the discussion, is unrecoverable in a free market. The present value of that lost revenue is the hit the utility takes, unless the utility can offset the potential loss with cost savings or other revenues.

Remember, too, that the utility has entered the world in which cash counts. Therefore, the utility will compare the real cash outflow required to purchase power, which constitutes the entire price of the purchased power resource, to the utility's cost of output, some of which is non-cash, and the utility will make its decision on a cash-to-cash basis.

I calculated stranded revenues at about $64 billion.(5) Something like 40% of utilities have the problem. It is widespread. Many of those utilities had made major purchase power commitments.

Historically, industries undergoing deregulation have taken hits for stranded costs.(6) Despite pious commitments in favor of recovery from politically correct commissioners who know all the right words, utilities will take hits. They will attempt to share the pain. They will share it with IPPs. The IPPs will wave the banner of sanctity of contract. Their panicky bankers will assert that nobody will ever again build a power plant if anything happens to those contracts. They will sound like utilities.

THE FUTURE: TOO LATE TO MAN THE BARRICADES

It is too late for the utilities and the regulators to man the barricades. The barbarians have poured over the rubble. The defenders of the old civilization have turned on each other, now, in an attempt to hold on to what they can, in a world controlled by Vandals and Visigoths and Huns fighting under the battle flag of competition and free markets.

If form follows function, then, for the utility, functional unbundling, now underway, will lead to corporate unbundling. The utilities will first unbundle generation, because it is competitive by nature. Customers will want to—or will have to—pick their own generating supply. They may want to choose their own means of transmission or distribution, too, in the future. Utilities will have to unbundle the whole package in order not to run afoul of antitrust laws, which will prevail over conventional regulation, eventually.

I do not know or care whether customers buy power from a pool or from a designated producer or from the local utility or from an aggregator, or whether they hedge their bets, sign contracts for differences or long term contracts or play the commodities markets. The important point is that they will take responsibility for their own power supply. They will choose.

The IPP of the future, the generating company, will have to market its output, find customers, produce at prices that get it into the pool's list of regular suppliers, take real business risks. Those IPPs that sign contracts with customers will have to bank on the credit ratings of the ultimate customers or of the aggregator or possibly on their own credit ratings. The new IPPs may not secure the same sort of favorably priced long term contracts that made debt financing so easy to obtain in the past. Where all producers sell into a wholesale pool, they take the risks of price and demand for a variable, commodity business: not an environment for leverage or shallow pockets.

Of the existing IPPs, those with low operating costs and low prices should survive without difficulty, except in areas with power gluts. IPPs with low operating costs and high prices, if highly leveraged, could run into problems as utilities try to renegotiate or to break contracts. IPPs with high costs and high-priced outputs should brush up on bankruptcy law.

As for producers using renewable resources, I am afraid they will have to fight for a piece of a small set-aside, or produce at a competitive price, or learn to market to consumers that want to buy renewables. For sure, somebody will make money fixing up broken down IPPs: refinancing, renegotiating fuel and power contracts, finding new markets for the output, and introducing new operating techniques.

This challenging picture, domestically, has encouraged IPPs to look abroad for opportunities. They attempt to replicate overseas the business plans that they have not yet proved out here, in the sense that they do not know how long contracts will prevail or whether future prices will rise enough to make existing projects more valuable after contracts expire.

Perhaps they and their ever-optimistic bankers think that what happens here is irrelevant to what will happen there. In other words, the IPPs believe that they have immunized themselves to the laws of economics, the confusion of politics and the rush of technology.(7) They do sound like utilities, don't they?

RING OUT THE OLD: WITH THE LEAST PAIN

Seven is a significant number: seven deadly sins, seven lean and seven fat years, seven days of the week, seven years to a balanced budget, and United American Energy Corporation's seven Principles of Doing Business.(8) Principle 2 reads, in part:

> We want our customers to do well because that is best for all of us... We understand and stress the commonality of interests in a relationship...We understand there are no one-sided victories...

And Principle 5 reads, in part:

> We respect risk. We endeavor to identify and manage risk systematically...Risk control is a cornerstone of our management strategy.

Admittedly, I never thought of IPPs in terms of caring about their customers, especially their utility customers, with whom many maintain a prickly—if not adversarial—relationship. But connect Principle 5 to Principle 2 and you might see the connection.

IPPs that do not figure out what will satisfy their customers, and their customers' customers, are not properly managing their own risks. They will go out in the greatest pain, screaming about injustice while paying large sums to lawyers. Oh what a dramatically glorious exit! Unfortunately Sophocles is no longer around to chronicle it. We might have to settle for Harold Pinter instead.

I expect the states to lurch, at diverse speeds, toward open generating markets, with the slowest those states with the lowest electricity prices, the least industrial presence, and, probably the least amount of IPP generation. What will determine the speed of transition, the recovery of stranded revenues, and the shape of the market at the beginning of the opening to competition?

I believe that a bargaining process between the affected parties ("stakeholders" in current parlance) will produce a package that will go to regulators for ratification. Parties that hope to emerge from the process solvent will have to enter it with constructive proposals and a willingness to share the pain. IPPs and utilities that seriously believe that regulators can or will make them whole are beyond hope.

The old IPP industry will expire slowly, as existing contracts run out and as transition plans raze the old structure of the industry and as Congress dismantles obsolete rules. In the new generating industry, ownership will not matter. The surviving players will have deep pockets, operating expertise, and financial sophistication, as opposed to regulatory and contracting skills.

The electric industry, despite the current spate of mergers, will split up along functional lines, in order to reduce regulatory restrictions on it, to produce more focused management and corporate strategy, and to maximize shareholder value.(9)

As the day of competition dawns, all those zombies out there, marching listlessly with outstretched arms, oblivious to customers, acting as if the laws of supply and demand did not apply to them, protected from the elements by the shrouds of regulation, will reenter their tombs, but this time forever, put to rest by that magical mantra: **"the customer is always right."**

Notes

1. Richard F. Hirsh, *Technology and Transformation in the American Electric Utility Industry* (Cambridge: Cambridge U. Press, 1989).
2. Leonard S. Hyman, *America's Electric Utilities: Past, Present and Future* (Arlington, VA: Public Utilities Reports, 1994), p. 158.
3. Elizabeth E. Bailey, "Deregulation: Causes and Consequences," *Science,* vol. 234, 5 Dec 1986, p. 211.
4. Electric Power Research Institute, *Structural Changes in Industry and Futures for the Electricity Industry,* Final Report, June 1995, p. 5.
5. Leonard S. Hyman, "Stranded Costs: Who Should Pay and Why?," presentation to ELCON's Annual Seminar on Electricity Issues, Washington, DC, 20 Oct 95.
6. Electric Power Research Institute, *op cit.,* p. 5.
7. Leonard S. Hyman, ed., *The Privatization of Public Utilities* (Vienna, VA: Public Utilities Reports, 1995), p. 390.
8. United American Energy, "Principles of Doing Business," no date.
9. Leonard S. Hyman, "The Changing Investor Profile: From Individual to Institutional Investors and How This Will Alter Your Investor Relations Strategy," presentation to Energy Daily's 21st Annual Conference, Coronado, CA, 13 Dec 95.

ABOUT THE AUTHOR

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From 1978 to 1994, as head of the Utility Research Group and first vice president at Merrill Lynch, he supervised and maintained equity research on foreign and domestic energy and telecommunication utilities. He was a member of privatization teams for offerings of British, Spanish, Mexican, Argentine and Brazilian utilities and consultant for other restructuring studies. Prior to joining Merrill Lynch, he was a partner at a New York Stock Exchange member firm and an officer at Chase Manhattan Bank.

Mr. Hyman has written and spoken on utility finance and deregulation, presenting papers on three continents. He has testified before Congress, served on four advisory panels for the U.S. Congress Office of Technology Assessment, and on one for the National Science Foundation. He was a member of task forces on electric utility efficiency for Pennsylvania and on fusion and other energy sources for NASA. He is on advisory boards for the Electric Power Research Institute and EXNET, and on the editorial board of *Forum for Applied Research and Public Policy*.

Author of *America's Electric Utilities: Past, Present and Future*, co-author of *The New Telecommunications Industry Evolution and Organization* and editor of *The Privatization of Public Utilities*, he has contributed to other books and to professional journals.

For more than a decade, Mr. Hyman was cited by *Institutional Investor* as one of the leading research analysts in his field. He is a Chartered Financial Analyst (CFA). He holds a BA from New York University, where he was elected to Phi Beta Kappa, and an MA in economics from Cornell University, where he majored in industrial organization and minored in Latin American studies. He speaks Spanish and Portuguese.