Can the Marketplace Assure Customers' Electricity Needs in 2005?

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ABSTRACT

Can we count on the energy market? Well we can count on the market if we have a market to count on. That is true, almost by definition. But that is not what you really want to know, which is:

Can we count on the currently constituted electricity supply industry to furnish us with ample, low cost and reliable power whenever and wherever we want it?

And the answer to that question is no. Maybe we can frame the question better. But, before beginning, let's not get into the battle of the projections, the NERC projections that show gaps in supply, the RDI projections that show oversupply, the EIA projections that always end up in the middle of the road. Those projections do not show the reactions of enterprising people to both challenges and opportunities, especially when expressed in terms of price. Can they react by 2005?

They can if you let them.

DIVIDE UP THE PIE

People tend to divide up the industry in part, then act as if each part functions separately. Thus, they project demand and supply, and draw conclusions about generator gluts or shortages, without consider-

ing that the customer buys a delivered product, and a bottleneck in the delivery pipe can affect the customer as badly as a broken generator.

They look at regional shortages, forgetting that a less congested transmission system could solve some shortages. They lament the difficulty of fixing the grid, when a change in generation procedures or an insertion of distributed resources could solve the problem, but neither fits within the purview of the transmission sector, or the transmission regulator. They declare that the customer will not trim demand in reaction to price, but they also deny grid access to devices that would allow the customer to react and even take advantage of high prices.

And now, regulators rigidly enforce distinctions between distribution, generation and retail sales that hamper the utility, as system coordinator, in seeking low cost system solutions. That assumes, of course, that they have given the utility a reason to take the risks involved in finding a low cost solution, which they have not.

And, of course, they break each problem into subdivisions known as "states." **You won't come up with market solutions when you have to deal with 51 markets in the United States, alone, and another 13 in Canada, plus Mexico**.

Having said that, I too will divide up the pie, starting with fuel, which belongs in still another industry. In the old days, the government watched the fuel choices, and utilities sought fuel balance, as a matter of prudence. The industry, with the aid of the government, picked coal and uranium. Nuclear power cost more than anyone expected, and coal could become more expensive than anyone expected if we get serious about carbon emissions. But, at least the existing power plant base does have fuel diversity.

The new breed of generators, however, has picked natural gas as the fuel of choice. No balance at all. Go for the best. Individual generators without monopoly power cannot afford to balance their fuel portfolios because of the off-chance that gas well do not produce as expected, and they cannot collude either in an attempt to assure market share for non-natural gas facilities put up as insurance policies. **Do not be lulled into a state of complacency**. If the government enforces proposed SO_2 and NO_x reduction rules, natural gas would have to fuel 60% of electricity production by 2020.[1] For those of you not worried about 2020, the dramatic pickup in natural gas demand for electricity generation would begin around 2005.[2]

Looking at a multi-decade time horizon, I would not bet that any commodity could maintain high prices. But on a shorter-term basis. I could see how the stars would align themselves unfavorably for consumers. **In other words, price could shoot up if we preclude alternatives**.

Next comes the actual production of electricity. Some people argue that the manufacturers cannot meet the demand for generators, while others argue that the manufacturers can meet demand, but that smart generating companies tied up the output, so the johnny-come-latelies cannot get to it. Of course, I'm talking about conventional generators.

A new industry, distributed generation could fill the gap, if there is one, and the DG people can raise the money to do it. That, though, brings up the question: who will own the unit? Most of you would argue that buying generators is not the way your board of directors wishes to spend its money. That was the job of the local utility, and is the job of the electricity generator. By that you mean:

- We do not have the skills needed to run a generator.
- We prefer to concentrate on activities in which we have a competitive advantage.
  -OR-
- We'd rather let some sucker invest in generation, because it does not provide a return commensurate with risk.

Well, the state could coerce the old utility into making the investment, whether return was or was not commensurate with risk. It cannot coerce independent producers to do so. Therefore, they earn the return, or you earn the return if you put in the unit, but neither you nor they will make the investment unless it promises the right return.

So, absent a fuel shortage, I think that unconventional suppliers will arise to fill the breach left by the conventional suppliers, if such a gap will arise. The problem is that you will either have to pay for what they offer or do it yourself.

Before leaving the supply issue, let's consider demand. I am not sure why we continue to act as if electricity supply and demand is unlike any other supply and demand. Customers, for instance, can take action to reduce use of expensive demand at peak. Whether they want to or not is another question.

In the old days they did not have to, but now they have to make decisions, and one decision might involve closing down an industrial

facility because the value of the peak power to the industrialist is lower than it is to some other customer.[3] The industrial firm, if a profit maximizer, might also try to rearrange production or add facilities in a way that allows it to profit from the peculiarities of the new electric market.

Selling power or going off line to rescue the network is not your line of business? I would suggest that making a profit is your line of business, and defined that way, any investment that produces more than cost of capital deserves attention.

The discussions of supply and demand do not take into account the possibilities of communication or remote controls or maintenance of service during interruptions inherent in new energy technologies. Wall Street values those types of firms more highly than ordinary electricity suppliers. They can raise money to develop and produce the products that will alter the customer's ability to react to price signals.

I would bet on them.

This, then, brings up reliability. I define reliability as the ability to deliver a product to the user on a predictable basis under most conditions. I am not convinced that the existing transmission network, or the network planned by FERC, will provide reliability. It will, however, maintain the integrity of the network, which puts the needs of the network above the needs of the customer. The distribution system, too, has to provide reliable service.

Now we come to the question of what level of reliability does the customer require? The latest in electronic controls, not to mention telecommunications equipment, requires higher levels of quality than the electricity network provides. Some of you old economy types who think of wooden rulers as state of the art measurement devices, might not think that this is a big deal, but power quality and reliability defects might cost the US economy $30 billion per year.[4]

Will the old-line utility provide the power quality required in the new economy? Some customers believe that it should while others believe that it won't. For some of the most dynamic enterprises in the economy, minute variations in power quality can cause as much damage as a major power outage to the rest of us.

I do not think that the electricity supply industry, as currently constituted, can deal with this problem. Regulators will get hung up on the allocation of costs between consumers that do and do not want higher quality service. Mr. and Mrs. Jones, who have no computer and live on a pension, will not want to pay for an upgrade of the entire sys-

tem in order to bring it up to the standards required by the local Internet service provider.[5] And Mr. and Mrs. Jones vote.

Regulators will conclude that customers, as a whole, will pay less if the network retains its old economy quality standards, while individual customers needing something better provide for their own quality requirements on their premises. Thus, until an upgraded network costs less than an existing network, or until almost everyone needs higher quality, don't expect much help from the friendly local utility.

Fortunately, a plethora of new products can help the customer reach the needed level of power quality, and entrepreneurs out there will put together the necessary package for those who do not have the needed skills. **Again, Wall Street will back those problem solvers.**

DEREGULATION, CAPITALISM AND SOCIALISM

I believe that we have to begin with the premise that "deregulation" or whatever we should call it, will not lead to higher prices, over time, because if it does, politicians will reregulate. Stuffing the toothpaste back in the tube, though, might reduce prices down to mandated levels, but that will not bring about adequate supply.

Electric generating companies now operate in a global market. Capital comes and goes, following the trail of the best risk adjusted profit. Remember that the US may account for roughly 25% of the world's electricity output, but possibly only 10% of new capacity additions. There is a big market in the rest of the world, and if the rest of the world treats the investor better, that is where the investor will go, something that the State of California might discover.

That leads me to conclude that botched deregulation will lead not to a reinstitution of the old regulatory process, in which investors place their money in the hands of benevolent regulators, but rather, toward one of two endings:

- Consumers will have to act on their own to furnish needed supplies.
  -OR-
- We will socialize the electricity supply business, because only the government will take on the role of providing capital that will earn less than its cost.

Now, a socialized industry might not bring the efficiencies that we hoped to see from opening the market to competition, but think how big industrial firms, skilled in manipulating the political process, could work the system in order to get what they want, effectively dumping their costs on the general ratepayer, and socializing all the risks.

Subsidized energy for big business? That's not a bad outcome for energy managers. As for the rest of us, do you think that government agencies are less responsive to consumers than HMOs or art gallery salespeople?

DENOUEMENT

So, back to the original question. Can we count on the marketplace? Wrong question. If we ever get to the marketplace, it will provide you with opportunities, but unlike the old days, it will not permit you to maintain the passive role of receiver of inexpensive energy plopped down in your laps.

You don't expect the market to deliver, without any effort on your part, the most economical supplies of bauxite, steel, wood, or even capital. You hope that suppliers, competing against each other, will present you with choices but you still have to take action to assure supplies. You might even have to develop your own sources, when the market does not function to your satisfaction.

Now, you have to do the same for electricity. Once regulators (or trustbusters) finally remove restrictions on entry, you will have to make more choices, and employ capital, when required, in order to assure that you can meet your energy needs. Not the market, but you.

Jewish folklore is filled with stories about inquisitors, kings and other assorted villains who try to trick the local rabbi. Always unsuccessfully, I might add. Anyway, a king wanted to put the rabbi to the test. So he took one live chick in each hand, put his hands behind his back, and said to the rabbi, "In one hand I have a live chick and in the other a dead one. Answer this question: in which hand do I have the live chick?"

I need not tell you that the king intended to crush the chick in the hand the rabbi chose, and then demonstrate to the world that the rabbi wasn't so smart. The rabbi thought for a minute, and then answered, "The answer, your majesty, is in your hands."

And that is the answer to the question: **"Can we count on the marketplace to assure your electricity needs in 2005?"**

References

1. Gordon Hester, "E-EPIC Analyzing Emissions Policies," *EPRI Journal*, Summer 2000, p. 28.
2. Hester, *op, cit*., p. 3 1.
3. In the old days, industrialists did not have to face that uncomfortable decision. They could cry about the damage done to the state's competitive position, the loss of production to someplace else or the loss of wages during downtime. They could make individual consumers pay more to assure that industrialists could obtain below-market power, or they could require that the utility take a lower profit. Now, industrialists have to bid against everyone else. Even worse, though, they bid against buyers who demand the electricity first, without knowing the price, and then complain afterwards when they paid more than the electricity was worth to them. That is why industrialists should promote real time pricing for everyone—it would reduce overall demand at peaks, and lower prices for all.
4. Electric Power Research Institute, Electricity Technology Roadmap: Powering Progress, 1999 Summary and Synthesis (Palo Alto: EPRI, July 1999), p. 4.
5. The same fight took place in the telephone industry. See Leonard S. Hyman, Edward DiNapoli and Richard A. Toole, The New Telecommunications Industry: Meeting the Competition (Vienna, VA: Public Utilities Reports, 1997).

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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

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Author of *America's Electric Utilities: Past, Present and Future*, 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.

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