Uncommon Commentaries

Does Technology Matter?

"Wall Streeters following the utility business tend to act as if technology hardly matters. Kurt Yeager, president of the Electric Power Research Institute (EPRI) asserts otherwise. Consider the following:

- 65% of coal and nuke plants can meet the 2.0¢ per kWh "production cost target" set by new natural gas units, which means that the remainder had better apply technology in order to improve operations, or they will not be able to compete.

- Distributed generation will fill a number of roles in the new system, such as standby and control of peak prices. Distributed generation could account for 20% of new capacity in the coming decade.

- Money is flowing into fuel cell developments, with commercialization likely within 3-5 years.

- New devices can transform the grid, eliminate loop flows and increase capacity of lines and "change the value of generating assets by having a major influence on market access."

- Power quality becomes more important as consumers rely more on sensitive microprocessors. Solid state and superconductive devices will change the distribution system in order to improve power quality.

- Retail competition requires smart meters. Ordinary meters cost $25-30. A mass-produced sophisticated meter might cost $150 (and the country would need 110 million of them). EPRI has proposed a

modular approach, a basic unit that costs the same as a conventional meter, to which one can add modules for new services, as required.

- Environmental issues will affect the value of assets in a competitive market. How the government chooses to deal with issues will affect costs. A tax on CO_2 could increase electricity prices sharply, depending on region and fuel type, with 25-55% increases possible in the East and Midwest, and 15-25% in the West. A least cost carbon reduction policy, such as one that uses trading, would reduce cost of compliance by 50%, and one that took into account the time needed to replace plant with more technologically effective equipment, could reduce cost of compliance by 80%.

In the old days, when utilities passed on costs or benefits, utility investors and managers could look upon technology as a side issue that rarely affected profits. No longer. Not keeping up or adopting the wrong technology punishes shareholders, and getting it right pays off. But keep in mind that the average electric company still lays out only 0.3% of revenue on R&D, so, perhaps, they still don't get it."

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MICROCOGENERATION AND DISTRIBUTED RESOURCES

"Since all microturbines are not likely to fail simultaneously, backup for the full capacity of the distributed resources is not required. This is true for generating capacity, transmission capacity, and may be true for part of the distribution capacity as well. The amount of capacity required will depend upon the reliability of the distributed technology and any correlation between the individual's need for the backup service, and other customer's needs.

With generation deregulated, competitive markets can set prices. Finding the correct price for the transmission and distribution components becomes an interesting question. But it is achievable, and both the utility and the distributed resource can be better off. This should not be an adversarial relationship. It probably will be for awhile, but it should not be."

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