

Changing World of Distribution Companies Needs New Models, Regulation

Jamie Wimberly

The final report of the DISCO of the Future Forum needs to be under every regulator's Christmas tree this year.

—Chairman Angel Cartagena, Washington, D.C., Public Service Commission

THE LIGHTS BEGIN TO FLICKER

Over a year and a half ago, the Center for the Advancement of Energy Markets (CAEM) took a good look at the electric and gas markets and started to get anxious, very anxious.

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We saw the California crisis unfolding before us, and the bankruptcy and near collapse of two of the nation's venerated utilities. We saw the mess developing in Atlanta, with Atlanta Gas Light experiencing multiple problems in its execution of a retail choice program. Additionally and more generally, we saw that distribution companies not only bear some or all of the traditional costs and regulatory obligations under the old regulatory regime, but now also face a number of new risks and costs that could threaten their viability. In turn, everything from the utility's stock price to its corporate structure was being affected by changes caused by restructuring.

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And that, of course, was before Enron.

The natural gas and electric industries are currently undergoing the most fundamental transformation in nearly a century, moving from a heavily regulated monopoly structure to an industry based on competition and customer choice. These policy shifts come during a time of significant technological change in the consumption of electricity and natural gas, and in related information technologies. New challenges and opportunities have arisen, many of which were not foreseen even five years ago.

Under industry restructuring, utilities that were once vertically integrated have "unbundled." This means that the utility's functional components—exploration, production, generation, transmission, distribution, marketing, customer care, and energy services—are separated from one another and reorganized along horizontal lines. Although power generation and gas production (the commodity businesses) are increasingly competitive, it is generally assumed that the transportation functions ("pipes and wires") will remain under regulation, and that some new and/or different regulatory obligations will accompany restructuring.

CHALLENGES AND OPPORTUNITIES

It is now clear that restructuring and technology developments in the gas and electric industry create a number of challenges, to both local distribution companies and their regulators, that will affect the core of the DISCO's (distribution company's) business and ultimately the welfare of the consumers it serves. There are also many open questions regarding the role of marketers in the services of the DISCO of the future.

On the one hand, policy makers and industry stakeholders must address a number of problems that are currently eroding the share prices of DISCOs, driving up their cost of capital, and threatening the reliability and affordability of service to residential and small-business consumers. These factors include the following:

1. Increased market consolidation and market power in the generation sector (in some cases), permitting the generation sector to more easily dictate terms and price of power delivery to DISCOs or the marketers that serve their customers
2. Increased risk of insolvency, with some utilities being required to divest generation and not being allowed to hedge against price increases in the wholesale market (e.g., the experience of the California utilities)
3. Increased price volatility for both electricity and natural gas in the wholesale market, which the DISCO may or may not have the expertise and experience to hedge against
4. A lack of depth and transparency in the wholesale market
5. A continuing “obligation to serve,” or to function as the “provider of last resort,” and thus the need to contract for gas and electricity in the wholesale market at considerable cost and risk
6. Regulated prices for this “default” service that do not vary according to actual generation costs, which makes demand less flexible and requires massive investments in new capacity to preserve the quality of service
7. Costs and risks associated with standard-offer service
8. Uncertain regulatory environment
9. Deteriorating infrastructure, leading to congestion and choke points in the gas pipeline and transmission grids
10. Lack of incentives for new capital to bolster the distribution grid
11. Delays in regulatory approvals for new transmission and distribution facilities
12. Delays in approvals of new generating plants
13. Difficulty in gaining access to incremental primary energy supplies
14. Uncertainty concerning the scope, roles, and governance of ISOs (independent systems operators), RTOs (regional transmission organizations), or TRANSCOs (transportation companies)

On the other hand, distribution utilities could be in a prime position to benefit from a restructured market for electric and gas services, even while remaining regulated. DISCOs are uniquely positioned to use distributed energy resources as both a business opportunity and as a means to address some of the risk factors described above. Moreover, DISCOs, as the owners of the local grid, have a number of other potential advantages, including the following:

1. Access to consumers and long-term relationships with those consumers
2. A regulated rate of return that represents a secure revenue stream
3. The promise, if not the reality, of lower capital costs
4. The potential to extract additional value from the local grid by moving from a radial system to a true network
5. A wealth of knowledge of the local market
6. Franchise rights and eminent domain for the siting of new investments

The *future* of DISCOs is very uncertain. Whether DISCOs will face a boom or bust period will largely be determined by policy decisions made during the transition toward increased competition over the next few years. Moreover, a high-level discussion is necessary to examine the question of whether DISCOs should even remain regulated in the traditional manner or whether the evolution of a different regulatory regime is warranted.

Decisions will be made by legislators and regulators who must balance the interests of the regulated distribution utilities with the interests of other affected parties. Good public policy will emphasize the consumer welfare to be achieved through alternative courses of action.

THE DISCO OF THE FUTURE FORUM

In response to the uncertainty faced by distribution companies, CAEM created The DISCO of the Future Forum—comprised of over 50 senior executives representing a broad array of stakeholder organizations, public and private—which was focused on the challenges faced by electric and gas distribution utilities, the companies with wires and pipes to homes and businesses, under this new paradigm.

The work of the DISCO of the Future Forum has been practical and not academic. Given the recent failures in the wholesale and retail energy

markets, time is of the essence. The Forum first met in April 2001 to establish a set of priorities to guide its work and focus its discussions. The Forum determined that it would examine the future of regulated pipes and wires utilities by focusing on

- Future markets and competition,
- Public policies necessary for the portions of the industry that will remain regulated,
- Development of an analytical framework, and
- Analysis of a variety of potential business models.

The Forum conducted separate but coordinated analyses of (1) business models and related financial considerations, (2) future regulatory policies, and (3) technology advancement and integration. We examined the future of both gas and electric utilities, but focused more heavily on the electric industry because its members were preoccupied with electricity. It must be noted that electricity and natural gas compete side by side, and the competitive paradigm recommended by the Forum creates contestability for these two industries. We also adopted a set of principles to guide our discussions:

- **Principle 1.** All parties should have the opportunity to benefit from energy industry restructuring.
- **Principle 2.** There are DISCO functions that can be provided competitively, and competition in these functions should be permitted, if the long-term net benefits exceed the short-term transaction and transition costs.
- **Principle 3.** All current DISCO functions that cannot effectively be provided competitively should be subject to revised regulation designed to optimize prices and encourage capital attraction and new investment to the maximum extent possible.
- **Principle 4.** All DISCO customers should have access to information and tools that would provide them the opportunity and ability to respond to price signals, if they choose to do so, and should have access to a stable rate, if they prefer.
- **Principle 5.** Customer charges for the services associated with physical delivery of the energy commodity should reflect the

real costs of providing those services, including a reasonable return on the DISCO's rate base.

- **Principle 6.** Customer prices for the energy commodity should be determined competitively.

Through March 2002, four additional plenary sessions were conducted. The Forum rapidly achieved substantial consensus on a broad range of issues, but also identified several issues upon which no consensus could be reached.

WHAT BUSINESS ARE YOU IN?

One of the most basic questions faced by members of the Forum and executives in the industry is, What business are you in? While it is a simple question, the answer is not necessarily obvious and largely depends on your particular regulatory environment.

The Forum examined four business models for regulated natural gas and electric distribution utility service, ranging from utilities that provide no-frills pipes and wires service, to traditional, vertically integrated energy utilities (**Exhibit 1**).

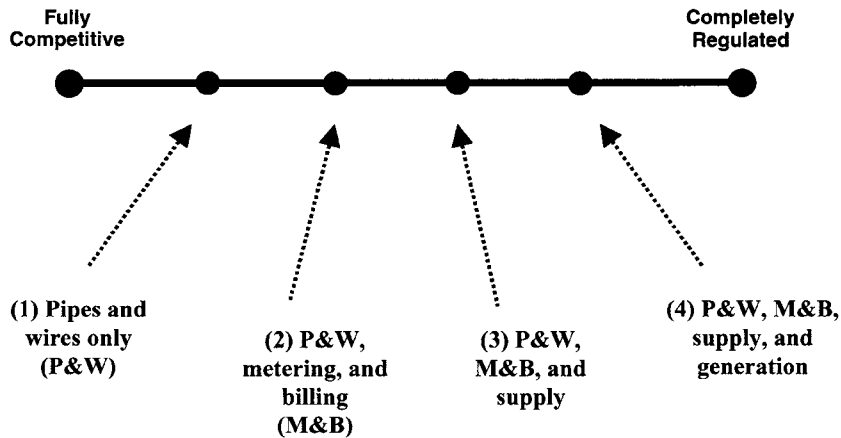
The last model refers to a "vertically integrated utility," while the first three are variations on DISCOs. Each model includes varying amounts of related energy services, including premium services, which may or may not be regulated.

The most fundamental difference among the members of the Forum arose in the selection of a preferred business model for the electric industry. Each regulatory jurisdiction or political subdivision in North America has a slightly different market structure today, and these differences will continue in the near future. The Forum identified four basic business models for the future, from a vertically integrated utility model to a simple "pipes and wires utility" model.

We did agree that all jurisdictions should fully embrace wholesale competition and support existing retail energy competition. Because the Forum could not recommend one preferred business model, it concluded that each jurisdiction should determine which business model would best fit the state's political and cultural environment. State policy makers should then periodically reassess which additional functions can be provided competitively.

Finally, the Forum concluded that DISCOs should be able to survive and thrive under any

Exhibit 1. Four Business Models Along the Regulatory Continuum



business model, including the “pipes and wires” model, if the regulatory environment permits recovery of reasonable costs plus a reasonable return on invested capital, commensurate with the risks associated with operation under the selected business model.

BONES OF CONTENTION: RESTRICTIONS AND COMPETITION

Another fundamental issue that divided the members was the ability of regulated distribution utilities to offer services in competitive markets. There are three basic sides to this argument but many facets.

Some believe not only that DISCOs should be permitted to retain the commodity metering and billing functions and customer information systems, but also that DISCOs should be able to compete to provide other services historically provided by the distribution unit of the vertically integrated utility (but now subject to competition), as well as new services of their choosing. These new services might include the provision of on-site power generation, high-power-quality or high-power-reliability services, electrical and thermal energy storage systems, energy management services, equipment maintenance services, and data services.

Others object to any regulated DISCO participation in competitive activities but do not object to the participation of unregulated utility affiliates in those competitive activities, as long as

that participation occurs in compliance with a reasonable code of conduct.

Others do not believe that unregulated affiliates of the DISCO should be permitted to operate within the DISCO’s franchised service territory, although they have no objection to DISCO affiliates competing in markets outside the DISCO’s franchise.

The Forum concluded that these issues require ongoing analysis and that each jurisdiction must select among the policy options that is most appropriate for them.

MANAGING RISK

Despite its large capital needs, the electric and gas industries have been provided relatively easy access to capital at competitive rates because of the central role of energy in our growing economy and the stable regulatory environment throughout the middle of the 20th century.

For the electricity industry, changes occurred in the late 1970s, when inflationary pressures increased the cost of capital and made completion and “rate basing” of large-scale investments in nuclear power plants seem less sure. Slowed load growth resulted in excess capacity in the 1980s, and economic pressures from industrial cogeneration led to discussions of the “death spiral.” There was concern that the utilities’ financial troubles and competitive pressures would result in rate increases, subsequent loss of price-responsive customers, further rate

increases, and similar problems that would reduce revenues and spiral the utilities to bankruptcy. These events did not occur as predicted, and subsequent discussions of restructuring resulted in full, or nearly full, recovery of past uneconomic investments (so-called stranded costs) in most jurisdictions. Financial markets have continued to be encouraged by the regulatory treatment of utility investments.

Restructuring will reduce the size of utility corporations and separate the risks, opportunities, and revenue streams associated with each utility function. Consequently, the new corporate structure, the scope of competition in the restructured industry, and the type of regulation over the remaining monopoly functions will affect the risk-to-reward ratios of the regulated utility. Future merger and acquisition activity will also affect each segment's access to capital markets. The historical ease of access to capital at competitive rates may be a good indicator of future events.

Two recommendations in particular should be of interest:

1. Each jurisdiction must make its intentions clear to reduce regulatory risk.
2. With due consideration for the development of the competitive market, each jurisdiction must ensure that the parties bearing the risks are the ones best able to manage those risks, that the prices include a risk premium, and that the risks and rewards for managing risks are equitable.

PROVIDER OF LAST RESORT

Electric distribution utilities appear to be far less interested in retaining the generation function, because of its perceived high risk and zero-reward characteristics. However, many DISCOs provide generation and will be required to function as the default provider or provider of last resort (POLR), at least during the period of transition to competition, and perhaps on a continuing basis. Potential unregulated competitors to the DISCO for the merchant function are concerned that the regulated "standard-offer service" could, depending on how it is constructed, seriously distort the development of the competitive market.

In the case of California's utilities, the exposure to risk was not mitigated with the tools to manage risk, and it is clear that the cost of capital for utilities in this situation is enormous. The

risk profile for distribution utilities in a restructured environment has increased considerably. All utilities are affected by the situation in California, as seen by the decline in their credit ratings and stock prices, with a significant decrease for the year in the Dow Jones Utilities Average. Nevertheless, even as the utilities' risk factors have increased, their revenue potential has not substantially changed.

Distribution utilities can fulfill the procurement, hedging, and sale function as long as the utility is permitted to be profitable. The supply function, understood as a default service function, exposes the distribution utility to significant risk if it is not hedged properly. One view is that distribution utilities should not necessarily benefit from a risk premium just because they provide hedging functions. Another view concerns distribution utilities that might still have a default service function to provide. Because distribution utilities have no more generation assets, they face the additional risk of increased variation in load, which puts them in the position of having to have recourse to the market to get significant additional power. This justifies the need for a risk premium associated with their fulfilling the supply function.

The important decision regulators must make is whether the distribution utility should be the entity to provide the default service function. Further, we must be very clear about what is referred to when talking about the supply function. We should not confuse the concept of default service, which concerns customers who choose not to switch or do not wish to choose, and the concept of provider of last resort, which involves the customers that nobody else wants.¹ Each of these conceptually distinct functions carries particular, very different risks.

The Forum commissioned an analysis of the POLR issue.² This analysis concluded that price caps imposed on the DISCO's services during the transition period represent the principal impediment to the development of competition in restructuring markets. Some participants are also concerned about the structure of the POLR and default service as well as the market structure, particularly during the transition period. The Forum recommends that jurisdictions with retail electric competition must closely examine the risks inherent in the procurement and hedging of power if utilities do not own all their generation but are responsible for default services or are providers of last resort.

REGULATION OF DISTRIBUTION COMPANIES

The regulation of the distribution service of energy utilities took a back seat to other concerns in the 1970s, 1980s, and 1990s. Fuel availability and price escalation, power plant cost overruns, and the implementation of wholesale competition in pipelines and transmission lines were of greatest importance in the past several decades. Regulation of distribution utilities has now emerged in its own right from this historical context.

The emerging patterns of regulation reveal a patchwork quilt of approaches, which vary as widely as customer-choice options vary across the states. The electric industry in one-half the United States remains vertically integrated, while in the other half, this industry is in the midst of the restructuring. The emphasis in restructured markets has shifted from traditional regulatory review of the dollars invested or expended to ensuring access to bottleneck facilities, developing uniform business standards, and establishing market rules. Distribution-service functions have been separated from transmission and generation functions, and a few states are taking a fresh look at the regulation of the distribution utility.

The Forum examined and made policy recommendations regarding the regulatory regime that distribution companies face in a restructured environment. Recommendations in the final report cover safety and reliability concerns, utility standards and reporting formats, pricing and rate structure, mergers, and alternatives to traditional regulation. In general, we recommend creative alternatives to current regulations, while also working to ensure that the traditional goals of regulation are achieved.

HOPE AND PROMISE

The Forum concluded that the broad range of technologies available in the market support the development of a more diverse, flexible, functional, and reliable distribution system. These technologies include a broad range of options for power generation, which can be applied both within the distribution grid and on the customer side of the meter. These generation technologies offer the potential to provide higher power reliability and quality, reduce and manage customer demand, and reduce customer energy costs. Another group of technologies offers improved flexibility in the distribution grid, including the interface between the

grid and customer, and the movement of power (between grid and customer, customer and grid, among customers, and within the grid). Other technologies offer increased demand- and consumption-metering and billing options, including demand management and control, and the facilitation of utility and customer storage of electrical and thermal energy.

The Forum concluded that these services could be provided competitively (with disagreement over whether the regulated utility could be one of the competitors) and that as technological change expands the offerings, policy makers will have to grapple with the degree to which these services are regulated. As these policy choices are made, regulators must work to eliminate barriers to entry and provide nondiscriminatory open access to service providers. As long as substantial portions of the system remain regulated, the elimination of barriers will be an ongoing task. Future research, development, demonstration, and deployment of new technology will broaden the options available to the DISCO, its customers, and third-party providers.

UNDER THE CHRISTMAS TREE

In conclusion, after over a year of deliberations, the Forum issued a final report containing 170 findings and 100 recommendations that address a wide range of issues. What is remarkable is that consensus was reached on so many issues despite the diversity of the members of the Forum. Perhaps this is a tribute to the ability of reasonable people to address and resolve public policy matters. A few significant differences remained, however, and the focus of the Forum on those issues should help future decision makers craft means of resolving them.

CAEM is pleased to offer the final report free of charge to the public. To obtain your free copy of the report, please visit our Web site at www.caem.org. ■

NOTES

1. The Forum has prepared a separate paper, "The Role of the Default Provider in Restructuring Energy Markets," by CAEM Scholar Ronald J. Sutherland, in January 2002. Several findings and recommendations relating to default service are provided in Chapter Four. The provide-of-last-resort issues relate to nondiscriminatory service for those who are refused service, whose provider's contract is canceled or whose supplier stops doing business, who need supply during a transition to a new dwelling, or who become new customers and have not yet chosen a supplier.
2. Sutherland's analysis in the previous note.