

NOT THE SAME

Commodity and derivatives markets for power defy standardization. Market reformers should take heed.

By Patricia Dondanville



Patricia Dondanville is a partner in the Chicago-based national law firm Schiff Hardin LLP. She concentrates her practice in corporate and finance matters, often representing energy companies. In particular, Ms. Dondanville provides strategic counsel on corporate governance, risk management, contracting, and related credit risk, collateral and credit support matters. Her clients include energy marketing companies, generators, electric cooperatives, and utility and energy holding companies. Ms. Dondanville also provides legal analysis with respect to legislation and regulatory policy at the increasingly important intersection between the energy industry and the financial markets. Ms. Dondanville served for several years as a deputy general counsel for a major energy holding company. She also served as Co-Chair, and remains a member, of the Edison Electric Institute's Contract Drafting Committee, which drafted the EEI Master Purchase and Sale Agreement, the model for current energy trading contracts. Ms. Dondanville is a frequent speaker and panel member on programs dealing with corporate finance, derivatives risks and energy marketing.

A commodity is a commodity, unless it's electric power to be delivered in the United States. Similarly, a derivatives market is a derivatives market, unless the derivative products are linked to that electric power commodity. As the Obama administration and Congress consider changes in financial market regulation, or a whole new structure for commodity and derivatives markets, they must be sure to understand the nature of power markets.

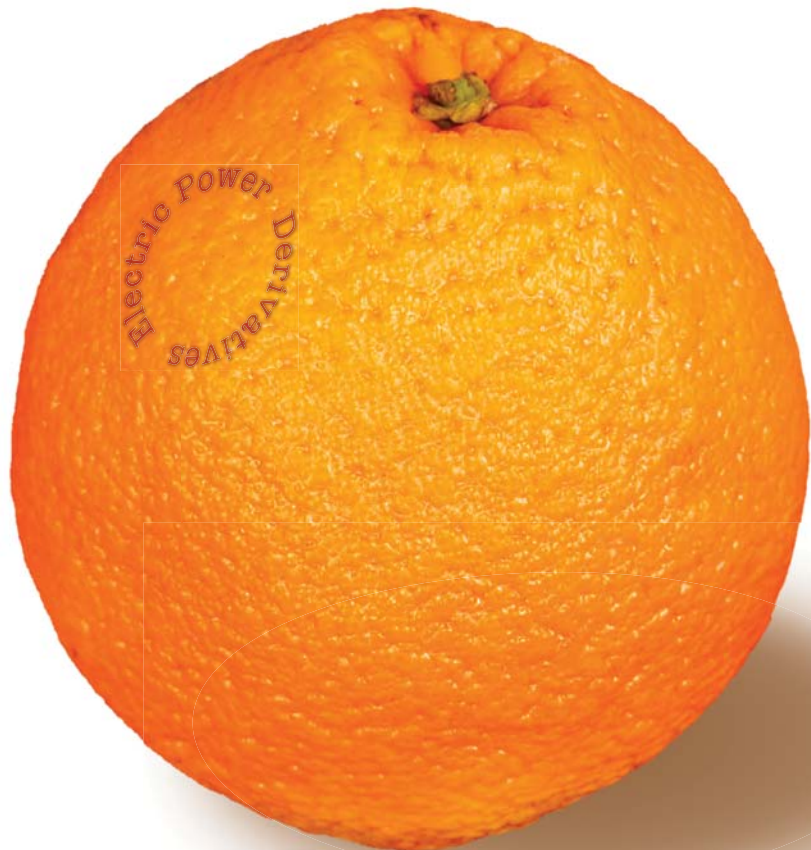
For most, the differences are not obvious or significant. In general, power markets are different because of the unique characteristics of electricity as a commodity. Americans rely on electric power around the clock, and yet it cannot be stored in commercial quantities—the laws of physics require that it be consumed at the time it is generated. The physical commodity is generated and delivered regionally, because electricity cannot be transmitted efficiently over long distances. Also, power supply and demand can change instantaneously. As a result, power market prices are volatile. And power derivatives are highly customized to meet individual energy company needs.

In addition, the electric power markets in the United States are heavily regulated at the federal and state levels. These markets did not develop with a focus on financial market structure. For regulators, the predominant goals in both wholesale and retail markets are reliability and affordability.

If policymakers regulate the markets for over-the-counter (OTC) power derivatives with the same sweeping principles as they propose to establish for other commodity or derivatives markets, they must address the unique nature of the power markets. Otherwise, there may be unexpected and unpleasant consequences for the electric power industry and America's electric consumers—regulatory confusion, increased costs adding to high power prices and extreme price volatility, an exponentially expanded group of data and reporting requirements, tied-up operating cash, and the prospect of delivery interruptions.

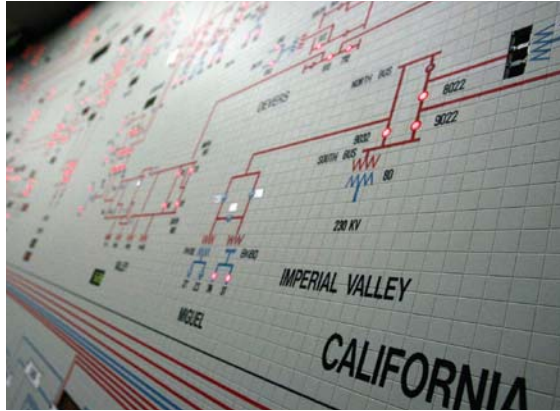
Reform vs. Construction

In August, the Obama administration published the Derivatives Markets Act, its blueprint for regulating the markets for nearly all commodities and derivatives—from options on soybeans to interest rate



swaps to the purchase and sale of electric power for future delivery. Each of the many commodity and derivatives markets today are structured and regulated differently in recognition of the differences in the types of market participants, the product characteristics, and the risks to be managed in each market. The market structures have evolved to meet the needs of market participants and the regulators' articulated goals. (See the sidebar, "Markets Compared.")

Some derivatives are bought and sold by contract between individual commercial companies—the OTC derivatives markets. Other physical or financial derivatives have evolved to be so standardized that an exchange (regulated by the Commodity Futures Trading Commission—CFTC) has defined standard product or contract terms and allows participants to trade such contracts directly, using the exchange as their counterparty. In many instances, clearing entities (also regulated by the CFTC) financially settle (that is, "clear") standardized products or contracts.



The instantaneous nature of power as a commodity means the market prices for power and power derivatives are extremely volatile.

In today's power markets, energy companies can choose to manage their business risks either by using standardized exchange-traded products or by contracting in the OTC derivatives market directly with another company, subject to credit risk management choices and credit support requirements. OTC derivatives are customized to manage (hedge) the companies' commercial risks. Then the companies can choose to clear their transactions or to manage their credit risk in another way.

The Derivatives Markets Act sets aside these multiple market structures and posits a new, one-size-fits-all market structure template. As a template, the act becomes not so much market reform or market regulation but market construction. Under the act, the regulators charged with defining these new markets are the CFTC, the Securities and Exchange Commission (SEC), and (in certain instances) the banking regulators—not an energy regulator in sight. Yet the new market structure

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would dramatically change the way an electric utility's power supply team or a merchant generator's sales team operates, eliminating risk management and hedging options and increasing costs.

All Power Derivatives Are Local

A commodity derivative is definable and measurable. It is also interchangeable for another one of the same type—soybean future for soybean future,

for example, or financial asset or index derivative, defined and accepted by an exchange. Agricultural and energy futures markets contemplate physical delivery and receipt of the product—like soybeans, Henry Hub natural gas, or electric power delivered into a regional transmission organization. Such

markets also contemplate a limited range of delivery disruptions—events that are outside the control of the contract parties.

Due to the unique physical characteristics of electric power—it's not storable in commercial quantities or easily transportable across distances or traded in a market where supply and demand are stable—there are thousands of different derivative products for "electric power delivered" at various locations throughout the United States. While there may be a modicum of standardization among power derivative contracts, their commercial terms are customized to the unique operational and risk management practices of power market participants—primarily power generators and local electric distribution utilities (LDCs).

An LDC must address instantaneous and unexpected supply and demand fluctuations immediately—and, because electricity generated must be constantly in balance with the amount consumed, this presents physical challenges. The prospect of such instability also creates market challenges. In other traded commodity markets, buyers and sellers can compensate for delivery interruptions by hedging against them—by storing the commodity somewhere close to the delivery point, like coal in the coalyard, for example. No party is in desperate straits due to a physical or market disruption.

In power markets, however, interruption on the seller's end sends a desperate buyer into the wholesale power marketplace. If that buyer is an LDC with public service obligations, it needs replace-

Markets Compared

Here are just a few of the differences in financial market structure that exist in the commodity and derivatives world today.

Standardized Because They Were Created That Way!

Many of the physical and regulatory characteristics that distinguish power markets do not exist in the markets for other financial derivatives. The interest rate and index derivatives traded on the Chicago Mercantile Exchange are standardized—they were created when the exchange wrote the product definition. These derivatives are appropriate for exchange trading because they have identical legal rights and risks. There are no physical delivery, performance, or transportation concepts that are relevant, and no one “needs” the underlying reference asset. Supply and demand are relatively stable in a deep and liquid market environment. Typically, market participants are sophisticated and financially strong. Retail investors participate in the market through clearing members of the exchange, which have their own customer credit risk requirements.

The Commodities Futures Trading Commission regulates market professionals (brokers, dealers, and exchanges), and the exchange regulates its clearing members, so that retail investors, as indirect participants, can rely on the creditworthiness and transparency of the market.



Affordable, Reliable Corn?

Agricultural commodities also lack certain distinguishing characteristics of power. Wholesale commodities like corn or wheat are measurable, fungible goods with few geographic limitations and no service-like characteristics. Neither supply nor demand can change instantaneously. Any market participant can store the physical commodity to hedge against natural disasters or market disruptions. And no state regulatory structure requires these companies to maintain resource levels or to supply retail consumers with reliable and affordable corn or wheat around the clock. Participants have a choice as to when, where, and whether to enter the agricultural derivatives market.

Natural Gas: A Simpler Energy Industry

Some view the market structure of the natural gas industry in the United States as the most comparable to the power industry. Each is regulated by the Federal Energy Regulatory Commission (FERC) and state energy regulators, after all. But, as a result of certain differences in physical infrastructure and regulatory jurisdiction, the wholesale market structure for natural gas is less complex than that for power.

First of all, natural gas can be stored at any point between production and the gas local distribution company (LDC). Second, the industry infrastructure is fairly linear—both in terms of corporate structure and geography. One type of company owns the production or import infrastructure. Another type owns the FERC-regulated interstate pipelines. Once the natural gas reaches a market area, the state-regulated LDC then distributes natural gas to end-use consumers.

These companies function independently of one another, regardless of corporate affiliation. FERC does not regulate rates in the wholesale markets for initial sales. For subsequent transactions, FERC grants sellers, by regulation, “blanket” marketing certificates and has no authority thereafter to review the reasonableness of rates. FERC’s regulatory jurisdiction does not reach to the rates charged to end-use consumers, as it does in the “just and reasonable rates” jurisdiction in the Federal Power Act.

Many electric companies participate in one, two, or all three segments of their industry (generation, transmission, and distribution)—FERC has not mandated the same level of functional unbundling in the electric business that it has in the natural gas business. Regulatory overlap is compounded for the electric industry by the fact that in some instances, a single power company may have state energy regulators from multiple states. Geographically, the power industry infrastructure is an interconnected grid rather than a linear pipeline transportation system from wellhead to burner tip.



ment power *now*—it is in the market in order to avoid power disruptions in its service territory. The instantaneous nature of power as a commodity means the market prices for power and power derivatives are extremely volatile.

Declining Reserve Margins, Increasing Price Volatility

Of course, the LDC could hedge, however imperfectly, with reserve generation. Historically, LDCs maintained generation reserve capacities of 20-plus percent of anticipated peak power needs, in order to meet regulatory requirements for resource

adequacy. If a supply or demand disruption occurred, the LDC ramped up its reserve generation unit.

Over the past 10 years, reserve margins have shrunk,

due in part to rising power demand and regulatory, environmental, and other restrictions on building new generation. Contributing to that, and as a result, LDCs have relied more and more on power derivatives (primarily forward power supply contracts and options) to meet their public service obligations and provide “paper reserves.” With no choice but to participate in these markets if they are to fulfill those obligations, LDCs rely on the power markets to hedge their power needs.

Existing Energy Regulation and the Power Markets

In addition to being an industry where the derivatives products are highly customized, supply and demand are not stable, prices are extraordinarily volatile, and hedging is difficult, energy companies and the purchase and sale of physical power and power derivatives are heavily regulated by the Federal Energy Regulatory Commission (FERC) and state public utility commissions. FERC’s regulatory charge is to provide reliable electric power to companies and consumers at just and reasonable rates—an unusual statutory/regulatory focus for a commodity market regulator. The

state energy regulator’s mission is to provide reliable electric power at affordable rates to that state’s retail energy consumers.

In other commodity and derivatives markets, the market regulator does not also regulate rates that selected market participants charge to consumers. Nor do market regulators judge the reasonableness of such rates (or market prices that may affect them) or review some market participants’ projected business plans (as state commissions do publicly). The CFTC focuses on financial market structure, participant behavior in the particular regulated market, and equal access to relevant historical pricing information.

The Spectrum of Power Markets

Electricity in the United States has many markets. (See the sidebar, “What Do Utilities Trade?”) Physical electric power is traded for future delivery in three types of OTC markets.

Tariffs. These are one-way, sales-only regulatory filings that provide the terms under which a FERC-regulated entity sells power. Wholesale power tariffs are relatively new, having been a part of FERC’s late 1990s deregulation of the electric power industry.

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Markets organized by regional transmission organizations. An RTO, comprised of stakeholders in a transmission market (generation owners, transmission owners, LDCs with assets in the region, and others), manages the power flows within and between geographic regions and among geographic market participants. These are regional markets, FERC-regulated and focused on reliability; they are neither CFTC-regulated exchanges nor clearing organizations. In general, an RTO's credit risk management rules are far less comprehensive than the daily mark-to-market margining required for cleared derivatives products.

Bilateral contract markets. These developed as utilities traded wholesale power among themselves to fill emergency needs or maintain required reserve margins before a new plant came online. No exchange rules or binding or consistent market practices govern behavior in these markets. There are certain standard product definitions and master agreement templates available. But the parties establish their unique agreement within legal contract principles, agreeing to product, delivery point, quantity, price, and any excuses for performance.

What Do Utilities Trade?

Electric utilities are primarily hedgers (to manage price risks associated with needed commodities) and risk managers (to manage other business risks). A utility's goal in trading is to insulate customers from commodity price volatility, keep energy costs affordable, and stabilize cash flow in a capital-intensive business.

Besides wholesale power and power derivatives, utilities trade in several other commodities and related derivatives: natural gas; coal; refined products (e.g., fuel oil); emissions (e.g., sulfur dioxide); and environmental products (e.g., renewable energy credits).

Three types of financial markets for power derivatives have also developed—where the underlying commodity (from which the derivatives market “derives” its value) is physical power delivered. In these markets, the counterparties have no expectation at the time of contract that physical power will be delivered or received. The markets are cash-settled.

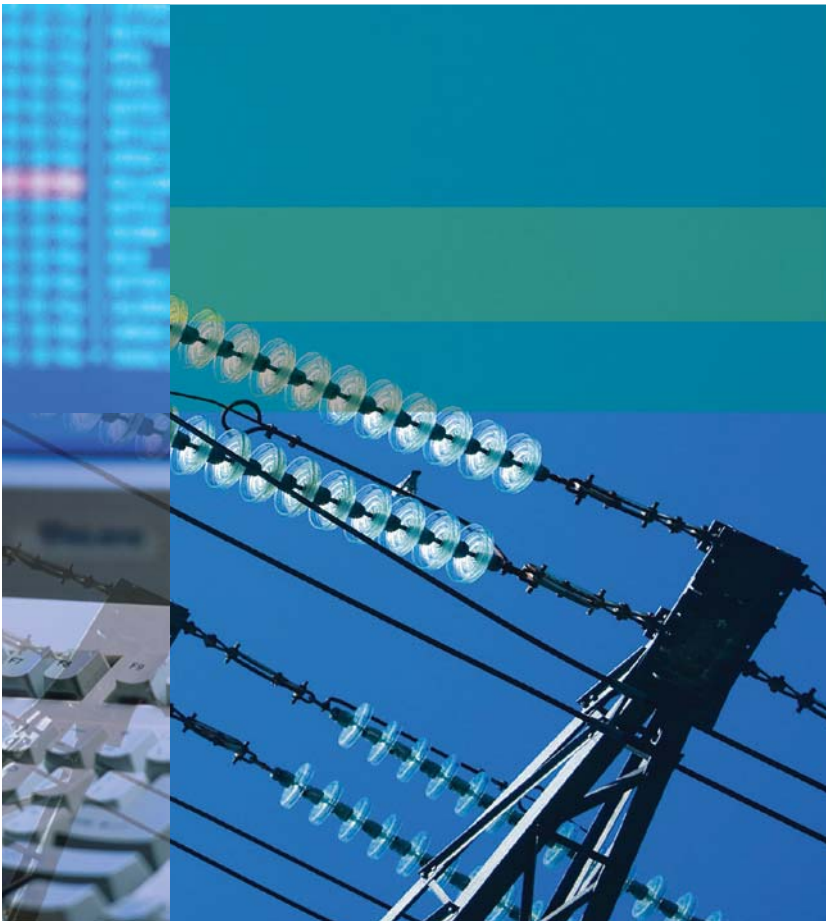
LDCs participate in financial power derivatives markets often to hedge the price or availability risk of their future physical power supply needs.

CFTC-regulated markets. The New York Mercantile Exchange and the Intercontinental Exchange permit trading in certain power

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derivatives products that the exchanges have defined in standardized, identical commercial terms. Ambiguities would create risk for the exchange, which acts as buyer for all sellers and seller to all buyers. Exchange-traded power derivatives are relatively new and have a relatively short time horizon.

RTO derivatives markets. Various RTOs have created markets for what are essentially financially settled power derivatives. For example, certain RTO markets allow the purchase and sale of “virtual” power



What the Industries Think

By Richard McMahon

It's not every day that you see agreement among all the major electric power and natural gas associations. But those members of the Coalition of Energy OTC Derivatives End Users are united about the over-the-counter (OTC) derivatives markets.

We need to improve transparency and stability and to prevent excessive speculation in derivatives markets, but it is essential that policy makers preserve the ability of electric and other energy-oriented companies to have access to critical OTC energy derivatives products and energy commodities markets.

Energy companies use those products and markets extensively to manage commodity price risk for electric power, natural gas, and other fuels in order to help insulate their customers from price volatility and keep electric rates paid by consumers stable and affordable.

From the coalition's perspective, a requirement that power derivative transactions be centrally cleared or executed on exchanges would create a barrier to using these risk management tools. Central clearing is not necessary for transparency or regulatory oversight—this can be achieved by increased reporting through existing programs, such as the Federal Energy Regulatory Commission's (FERC's) Electric Quarterly Reporting program.

Further, the high cash margin requirements of a clearinghouse or an exchange would significantly increase transaction costs and tie up needed cash at a time when the cost of capital is high, access to capital markets is uncertain, and energy industries need to invest billions in new infrastructure. By the same token, OTC derivatives provide access to more credit and lower rates, enabling energy companies to make new investments and retain and create new jobs.

Since clearinghouses and exchanges require a high level of standardization and liquidity, mandatory exchange trading would make it harder for companies

to find customized derivative products to manage risks. In the case of electricity, the prerequisites for standardized and centralized clearing are missing, since its unique physical nature precludes storage in commercial quantities and requires that it be consumed when generated in hundreds of physical markets.

That said, market reform should promote (rather than require) clearing of standardized derivatives entered into between large dealers where appropriate through regulated central counterparties as a way to reduce systemic risk and bring additional transparency through information regarding pricing, volume, and risk. The right reform also

would address excessive speculation through proven regulatory tools such as speculative position limits.

It is important, too, to harmonize and clearly delineate the regulatory authorities and functions among the Securities and Exchange Commission, the Commodity Futures Trading Commission, FERC, and other agencies to ensure that similar products are governed by similar standards. Accordingly, such harmonization should work to minimize the burden and cost of compliance with regulatory oversight.

The Coalition for Energy OTC Derivatives End Users has 15 trade association members: American Gas Association, America's Natural Gas Alliance, American Exploration & Production Council, American Public Gas Association, American Public Power Association, Edison Electric Institute, Electric Power Supply Association, Independent Petroleum Association of America, Interstate Natural Gas Association of America, Large Public Power Council, National Association of Manufacturers, Natural Gas Supply Association, National Rural Electric Cooperative Association, U.S. Chamber of Commerce, and U.S. Oil & Gas Association.

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supply or demand, so participants can manage the difference in availability and price of power in the RTO's day-ahead and real-time markets. In some RTO markets, participants can also trade financial transmission rights or congestion management rights to hedge the cost of power delivered. There is no physical delivery component to these transactions.

OTC markets for financially settled power derivatives.

The bilateral contract markets for power derivatives are vast, varied, illiquid, and opaque. Many of the products are not, by any definition, standardized. In fact, for many types of financially settled power derivatives, true trading markets are non-existent. The buyer and seller's rights, risks and responsibilities vary tremendously, from the simple (power forwards, index swaps, and options) to the complex (cross-commodity spread transactions and tolling agreements). Some transactions reference RTO locational marginal pricing nodes, weather, or products linked to the power produced by identified power facilities or systems.

Power derivatives are not routinely traded in financial markets or cleared, primarily because the vast majority have been developed and customized according to the particular needs of the market participant and the local geographic power market.

Beyond Customized

The Derivatives Markets Act proposes that all "standardized" OTC derivatives be traded on CFTC-regulated exchanges. But the vast majority of power derivatives traded in today's markets contain highly customized terms: Quantity depends on generation performance or power requirements; delivery point is not a trading hub but a particular node or busbar; the transaction term may be an hour, balance of the day, peak or offpeak, or as long as 10-20 years; contract pricing may be hourly or seasonal.

In current commodity and derivatives markets, exchanges can precisely define derivatives with identical commercial terms. Market participants



can then choose to manage business risks by using those exchange-traded products or customized OTC derivatives. The Derivatives Markets Act, however, would impose a mandatory exchange trading requirement. Policy makers would define what is standardized, and only the regulator could exempt a customized product. Under such a structure, the LDC's decision to

buy a customized product would become, for all practical purposes, a complex and risky proposition. To make sure it did not overlook a standardized product to meet its particular and acute hedging need, the utility would have to be aware of all power derivative products offered on exchanges. Since that could prove impossible, the LDC then must determine whether a market regulator would decide, in hindsight, that a transaction was either similar to an exchange-traded product or was sufficiently customized. If an LDC can't wait, it runs the risk of making an illegal off-exchange derivative transaction.

The act also proposes that all standardized OTC derivatives be cleared by a CFTC-regulated entity. Historically, as commodity and derivatives markets have developed, clearing entities have offered (for a fee) clearing services for products that the entity determines are identical to one another. Market participants can then choose to use the clearing services to reduce credit risk or not. The act takes away this choice. It would require that standardized derivatives be cleared. And for customized derivatives, the act may require LDCs to tie up large amounts of cash in capital and margining requirements. (See the sidebar, "Meeting Margin.") In essence, market participants have to pay to eliminate credit risk.

The Derivatives Markets Act divides regulatory jurisdiction over the derivatives markets among the SEC, the CFTC, and banking regulators. Policymakers must also harmonize FERC jurisdiction and FERC's established RTO market structure.

The act assumes that there will be a clearing entity available for every standardized exchange-traded derivative and that regulators can thus require LDCs to comply. But a clearing entity can also

As it stands, the Derivatives Markets Act does not provide for how the new regulatory structure will be applied to existing derivatives and markets and to commercial companies that have traded long-dated transactions.

choose not to clear a particular derivative product, or choose to require substantial fees, capital, or posted margin for its clearing services.

Clearing is not universally available and can be an expensive risk management choice.

The act also would have all major swap participants (not just dealers) register with the CFTC and be subject to capital and margin requirements, business conduct rules and disclosure standards, record-keeping and reporting standards, position limits, and other business restrictions. The definition of “major swap participant” includes any person with a “substantial net position,” but there is no guidance on what constitutes such a position and no allowance for hedging for business or financial



risk management purposes if the derivative does not fit within the hedging rules for U.S. generally accepted accounting practices (GAAP).

The fact is, energy companies often make hedging decisions that don't meet the strict GAAP rules—there are many types of non-GAAP hedges that are bona fide business decisions and not in the least speculative. Moreover, LDCs often maintain in their supply portfolios multi-year derivatives (forward contracts and options). Those derivatives would be costly hedging choices if the LDC were a major swap participant and subject to the capital and margining burdens for all non-GAAP hedges.

The Derivatives Markets Act divides regulatory jurisdiction over the derivatives markets among the SEC, the CFTC, and banking regulators. Policymakers must also harmonize FERC jurisdiction and FERC's established RTO market structure. Federal and state energy regulators focus on reliable electric service at reasonable, affordable rates; and their reporting and other regulatory requirements reflect that. Such goals may be inconsistent with the proposed derivatives market structure. LDCs should not be responsible to comply with potentially competing and overlapping regulatory structures.

Finally, energy companies need clarity for existing long-term hedges. As it stands, the Derivatives Markets Act does not provide for how the new regulatory structure will be applied to existing derivatives and markets and to commercial companies that have traded long-dated transactions. The act includes transition periods of 180 days, without grandfathering provisions for long-dated derivatives.

The LDCs did not cause the financial market crises of 2008. LDCs are not Wall Street—rather, they provide the power that lights Main Street. A new financial market structure should not prevent the LDCs from fulfilling their public service obligations or impose significant and unnecessary costs. ♦

Meeting Margin

Centralized clearing of power derivative products requires the utility to post cash or cash equivalents as margin. For specific types of products, exchanges or clearing entities set the margin amounts and determine what can be used as collateral. Initial margin requirements are typically a percentage of the transaction's nominal amount. Utilities enter into tens of billions of dollars of derivatives transactions annually, most of which are not exchange-traded but over the counter, requiring minimal margin. With mandatory centralized clearing, a typical utility would tie up hundreds of millions of dollars.

Also, to compensate for market moves, clearing entities may require twice-daily margin adjustments. Power derivatives contracts are often outstanding for weeks, months, or years, and power prices are volatile. Utilities would have to maintain huge amounts of available credit; plus, the administrative costs would be considerable. Customer rates would feel the impact in higher power prices.

