

Electricity Choices:

Understanding the Basics of Market Volatility and Product Choices in a Deregulated Market

Executive Summary

If you do business in a state that has deregulated electricity, you have the opportunity to choose an energy strategy that suits and supports your business objectives. Your selection process can be complicated by the volatility and complexity of energy markets. This white paper will review some of the market basics, which can help you navigate the selection process. It presents the variables that drive market volatility and an overview of products typically available through retail electricity suppliers. It also includes a discussion guide, which you can use to help you gather the information needed to make electricity choices with confidence.

Introduction

Deregulated electricity markets offer electricity procurement choices. These product choices are designed to help business owners and energy managers parlay the inherent volatility of the wholesale electricity market into opportunities for cost control or the support of other business objectives. To take full advantage of deregulation's opportunities, businesses should learn to look beyond simple comparisons of rates.

First, you should understand the variables that affect market pricing. The system is complex and subject to continual changes, ranging from traditional seasonal cycles to periods of extreme volatility. Your understanding of both current and anticipated market conditions can help you choose the right energy strategy for your business.

A variety of choices (aka, *electricity products*) are available through retail suppliers. Become familiar with what choices are available in your service area. Then, consider how these products mesh with your unique business objectives, taking into account factors such as risk appetite, financial objectives and other business goals.

With a greater understanding of market conditions and product choices and what they mean in light of your own business objectives, you'll be better prepared to make electricity procurement decisions.

What Moves the Market?

Like pricing on the financial market, price fluctuations on the commodity market are affected by the most basic supply and demand principles. Unlike other commodities, however, electricity cannot easily be stored. As a result, the market cannot even out price fluctuations by drawing down reserves, so these fluctuations create more frequent or more dramatic price changes. The interplay of factors affecting available supply is complex, but a basic introduction about the variables that drive market changes can help you make better energy procurement decisions.

The electricity market tends to follow two discrete cycles.

- **The seasonal cycle:** Demand for energy and resultant short-term electricity prices rise during peak heating (winter) and cooling (summer) seasons and drop during the shoulder seasons (spring and autumn).
- **The energy market cycle:** As in other openly traded markets, energy prices tend to rise and fall over the course of four- to eight-year cycles with phases of flat and low, rising, flat and high, and falling prices.

During normal market conditions, market cycle transitions are gradual. There may be pricing peaks and valleys, but prices will typically remain within an anticipated range. In addition to these cycles, the market is affected by a broad variety of factors. Changes in one or more of the following can intensify volatility and cause dramatic price changes within a compressed period of time.

- **Source Fuels:** The electricity market is swayed by supply, demand and pricing in other source fuel markets, including natural gas, crude oil and coal. The interdependency of these fuel markets is complex and can vary by region. However, because these fuels are used in electricity generation as well as in heating and cooling, dramatic movement in source fuels also impacts the electricity market.
- **Weather:** Weather is one of the most influential variables on market pricing because (1) it directly affects energy consumption and (2) it is unpredictable. Weather is predictable to some degree of course, to produce the seasonal market cycles mentioned above; however, within those seasonal expectations, weather can change unexpectedly and cause unforeseen variances in demand.
- **Extreme Weather:** Analysts also closely monitor weather forecasts for catastrophic weather events such as hurricanes, floods or blizzards. These events can create periods of extreme price volatility, particularly if the event damages natural gas production facilities that provide source fuel for electricity generation (limiting supply) or to the electricity transmission and distribution infrastructure (reducing demand and limiting the flow of electricity). When extreme weather is anticipated, market prices typically take the probability of such events into account, but prices are also subject to change in the event's aftermath, when actual damage and impact are assessed.
- **Geopolitical Events:** Political unrest, war, hostage crises or other events in regions that export natural resources can affect the energy market. Typically, these events will impact the market immediately, which can affect short-term prices. Prolonged events produce prolonged uncertainty, which can result in wholesale market price escalations over the long term. Conversely, trade agreements that open a new stream of fuel supply to the global market can open advantageous pricing opportunities.

Market analysts also dive deeply into data that can indicate the market's direction, including:

- **Plant Outages:** Power plants periodically shut down or slow production for facility maintenance. Either scheduled outages or unexpected closures (such as weather-driven outages) can impact prices.
- **Regional Weather and Environmental Conditions:** In each region of the United States, electricity is generated with a different mix of source fuels. For example, 2005 data shows that more than 40 percent of the electricity produced in the Pacific Contiguous region is generated by hydroelectric power plants on the region's rivers.¹ By monitoring indicators such as snow pack (which will eventually melt into rivers) and salmon spawning (which can limit plant output), analysts can determine the plant's ability to release electricity supply to the market at specific points in time.
- **Government Regulations:** When regulatory agencies propose or introduce changes, the wholesale market may respond with changes in pricing. In addition, regulations affecting process fuel industries may also resonate on the electricity market.

Like any openly traded commodities market, the web of factors affecting electricity pricing is complex. However, the shifting conditions are also the source of opportunity for electricity shoppers. The keys to developing a successful energy strategy lie in your knowledge of the choices available and your selection of a supplier who can offer you reliable electricity as well as good advice.

Electricity Procurement Choices

The goal is to select an electricity product based on both external factors (such as market behaviors) and your own business needs (such as long-term profitability goals, monthly budget, risk tolerance, electricity market expertise or resources available to handle energy management).

Working with a retail supplier, you can develop and implement an electricity procurement strategy that helps you navigate the volatile electricity market while also creating internal buy-in for your procurement decisions.

The next section provides an overview of "typical" product choices available in a competitive electricity market. Not all suppliers will offer the same products, and not all products with similar names will be identical to those described here. This is intended as a basic overview of the choices available in a deregulated market. Your decision should include discussion with your electricity supplier representative and careful review of the terms and conditions of your supply agreement.

¹ "Electricity 101," Edison Electric Institute, March 2007

Common Product Types

FIXED PRICE PRODUCT

What it is: A fixed price product provides a set rate per kilowatt hour (kWh) for the generation portion of your electricity bill. Your monthly bill will vary based on usage, but the rate you pay for electricity generation will remain constant no matter what happens in the market. Transmission and distribution charges will continue to be billed by the host utility (or “wires company”) and may be included in a single bill by the retail supplier or invoiced separately depending on the location of your facilities.

Options for length of the contract may vary based on your location, but fixed-price products are often available in terms as short as 6 months or as long as 60 months.

What it offers: A fixed rate is often preferred by businesses with low risk tolerance and/or very little budget flexibility. Through this approach, you gain a level of budget certainty, which can help you control operational costs. Cost control should not be confused with immediate cost savings; although, a well-timed purchase can produce cost savings over time or at moments in time.

A fixed price product is also a very low maintenance choice. Once you have locked in your fixed rate, you do not have to manage electricity procurement until your contract is nearing expiration.

Points to consider: Keep in mind that, although a fixed rate helps you avoid price spikes, it will also prevent you from taking advantage of price dips. Timing is important: You want to lock in when rates are low and flat or falling for the time horizon you are considering, and you must weigh the value of waiting to see if the price dips further against the risk of waiting too long before the prices rise. Long-term price certainty may come with a price premium (compared to the index price — see next page).

Sample Scenarios

- A primary business concern of school district administrators is to manage operational costs while directing the greatest percentage of budget possible back into educational programming. With a very low tolerance for price spikes, this type of energy user is a good candidate for a long-term fixed price product. To maximize the benefits, it's helpful to have some flexibility around when a contract needs to be signed and its duration. This type of flexibility can provide the opportunity to lock in when rates are lower, as opposed to signing a contract at a specific point in time on the school calendar when rates might not be ideal.
- In 2007, mild spring weather continued into the summer, and electricity demand for cooling homes and businesses was lower than expectations. Electricity prices dipped. A prediction of high heat in late July prompted prices to spike earlier in the month. Then, in August, as the heat wave passed and the first half of the hurricane season concluded without event, prices dipped again. Hindsight is 20-20 of course, but, for the sake of illustration, having some understanding of how prices move and having some flexibility in your business plan around when you have to sign a contract can help you recognize and take advantage of buying opportunities.

INDEX PRICED

What it is: Index priced products (also referred to as market-based products) provide supply at a rate that is linked to a transparent, published index. Depending on the market, the reference index may be based on day-ahead or real-time, hourly pricing. Index priced products are often an appropriate choice for businesses with a greater tolerance for price volatility.

What it offers: These products allow you to avoid the price premium that may be charged for fixing a long-term rate. An index priced product may also provide a greater degree of flexibility to take advantage of short-term market opportunities until the timing and market conditions are more advantageous to lock in on a long-term contract with a fixed price product.

Points to consider: If budget certainty is your top priority, an index priced product is not typically recommended as a long-term strategy because of the risk of price volatility. However, it can be a good alternative bridge position to wait out a period of high or rising market conditions. Index priced products are generally used by businesses that want to ride the market for some period of time to assess future market conditions or opportunities.

Sample Scenarios

- A property manager had selected a fixed price product to ensure rent stability for her tenant businesses. However, just as her existing fixed price electricity contract is set to expire, rates have spiked and hovered around an annual high for three months. Rather than lock in while rates are high and flat, this person might consider a short-term index priced contract until pricing becomes more favorable.
- Because of catastrophic generation and delivery infrastructure damage from Hurricanes Katrina and Rita in late summer 2005, rates skyrocketed and remained relatively high until falling steadily for nearly a year. If you were shopping at that time, an index priced product would have provided the flexibility to ride out the period of extreme volatility.

Note: An index priced product is not only used as a bridge to a fixed contract. It can also be a specific procurement strategy. While not many businesses use it as a long-term strategy, there are instances when an index price product provides the opportunity for cost savings. However, risk appetite (for price volatility) should be carefully considered in your decision.

PORTFOLIO PRODUCT

What it is: A portfolio style product is a hybrid offering of fixed and index priced purchases under a single contract. In a portfolio product, the customer has access to the wholesale electricity market through the retail supplier. This type of product provides the flexibility and option to lock in a base load block of the supply at a fixed price. The remaining load requirement is then purchased at market-based rates, subject to electricity market fluctuations. In this way, the business can manage the risk-cost strategy on an ongoing basis, according to its changing risk appetite and electricity cost opportunities, thereby taking maximum advantage of both types of products.

This type of product is available only to large electricity consumers. It is generally available if your business has an annual load of 2 MW (10,000 MWh annual) or if you are part of a group of smaller customers operating as a pool (with the appropriately large aggregated load).

What it offers: This approach provides the ultimate flexibility in energy procurement, giving a business access to wholesale market pricing while also providing the option to fix or float as much of its load as desired based on risk tolerance and business objectives.

Points to consider: These complex procurement plans should begin with a thorough assessment of your business objectives and risk appetite (in the short and long term) so the supplier can devise a custom strategy based on a clear understanding of your supply requirements and risk tolerance throughout the contract duration.

This style of procurement requires the time and attention of an energy manager with a fairly sophisticated understanding of the market working hand-in-hand with a dedicated, experienced analyst or strategist on the supplier side.

Sample Scenario

The electricity budget of a large industrial enterprise accounted for one third of total product output costs. With an annual electricity consumption exceeding 60 MW, they decided to shop for electricity with an eye on flexibility and cost control.

With guidance from an objective retail supplier, the company's energy management and finance teams determined that the flexible structure and ongoing strategic guidance of a portfolio product would enable timely response to changing market conditions. By layering purchases at different points in time, they reduced costs (compared to the alternative of locking in all power at a single point in time).

The business also used the flexibility to synchronize electricity purchases with annual plant maintenance duties, when they operate at only 20 percent of capacity. Working with their supplier strategist, they developed a short-term strategy for the maintenance period to avoid over-purchasing.

Comparing Product Offerings

Many of the products available from retail electricity suppliers may be similar in name but may vary dramatically based on contract terms, included costs, pricing structure, service level or other factors. A thorough comparison of products should include a look at the difference between each offering so that you have a clear understanding of the impact of your choice on business operational processes as well as short- and long-term financial objectives.

