Dealing with price risk

FAME Information Services outlines the main issues currently affecting power prices and looks at how companies should be covering themselves against the risks posed by the continuing process of deregulation

The deregulation of the power market has caused a surge of start-up marketers, power plant developers and service agencies. As a result, many established players have started to restructure their organisations, focusing on generating assets or distribution businesses.

Companies have spun off deregulated affiliates that they are associated with but for whom they are not legally or financially responsible. Government agencies have also become major market participants.

However, while these different players contribute to the evolution and liquidity of the power market, they also incur a certain amount of risk.

Since the collapse of Enron, many companies are taking a second look at those they are hedging with. Some energy firms have cut back on their expansion plans due to both the demise of Enron and a drop in wholesale power prices. For instance, in January 2002 California-based Calpine Corp said it would cut plans to build new plants and cut capital spending.

Near-term electricity prices are low (see figure 1) and, therefore, cannot justify new power plant development. Consequently, there is a fear that other companies may follow Calpine's decision by cutting back on or cancelling plans to build new power plants.

What's more, many lending institutions are not confident in funding new power plant projects, largely due to Enron's fall. The resulting slowdown in new plant construction could cause problems in some regions of the US when the economy recovers and electricity demands rise.

And it is still unknown how the Enron collapse will affect customers in California and elsewhere that had contracts with the Houston firm for their power. In addition, the difficulties with opening California to competition have market players questioning the feasibility of deregulation.

There is no consensus on the rules of how power should be defined, traded or transmitted in the deregulated market, and California and Enron might be held up as examples of such a lack of guidelines.

And yet, immediately post-Enron, the natural gas and power markets did not experience a significant change. They remained stable, and trading continued among the many other strong competitors.

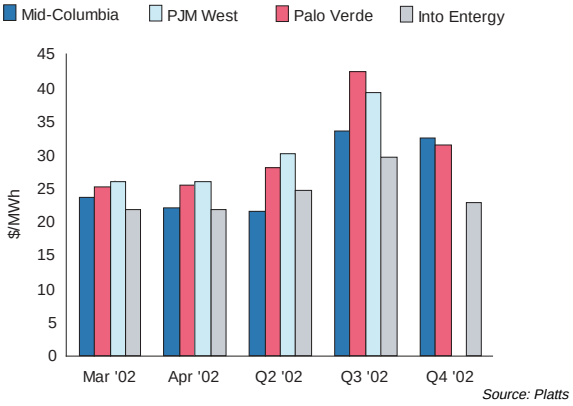
Deregulation benefits

In deregulated markets, the electricity user can choose between providers. On the one hand, independent power producers are building power plants to serve the wholesale and retail markets across the US, and on the other, power marketing firms sell electricity they do not generate. Moreover, utility companies may now compete in other territories to serve more and new customers.

Deregulation also means a shift from regulatory-based prices to market-based prices, which means the onus of price changes will fall on the customer. New freedom in buying energy in a deregulated market brings greater complexities. Nevertheless, being aware of changes in the market can make a significant difference to the price paid for energy, as can other factors.

One key factor in driving electricity price trends will be the level of power plant capacity, and the date it comes online. The price and availability of natural gas, currently the most widely used fuel for generating power, will also be a key element in the decisions to build new power plants.

Figure 1: US long-term forward electricity prices



Electricity prices across the US have been low in the first half of 2002, which contributes to fears that existing power plant projects that need to begin this year may not have the necessary funding available. This situation will affect prices in the longer term

Figure 2: Nymex Henry Hub gas front-month contract

Natural gas prices have been fairly volatile over 2000 and 2001 – ranging from 2 million British thermal units (mmBtu) to 10 mmBtu. This volatility contributes to the already volatile electricity market, making it more difficult to assess future prices

But to meet the electricity demand for natural gas, alternative fuel sources may have to be used, and production will need to pick up and get online. Indeed, the US Senate is considering imposing a requirement on the US to gradually increase the amount of electricity produced by renewable resources, such as solar and wind power, so that the country is less dependent on foreign markets, which tend to be volatile.

Industry analysts expect a large amount of generating capacity to come online between 2002 and 2005. This boom in power plant construction may cause prices to fall due to a surplus of power in an economic recession and due to these new, more efficient plants becoming the price setters.

Moreover, natural gas prices in 2000 and 2001 were fairly volatile, ranging from 2 million British thermal units (mmBtu) up to 10 mmBtu (see figure 2). These price changes have only contributed to the already volatile power price.

Price risk management

In view of this price volatility, companies will need to manage their price risk. Price risk management procedures involve using internal information such as existing contract terms and projected energy usage, and external information such as forward curves and assessments of relevant market issues.

Some power providers offer power management services, tying power prices to natural gas prices rather than a fixed-price power supply contract. This approach, called a spark spread, aims to provide price stability, rather than a minimal price.

The spark spread is an equilibrium model of cross-commodity price relationships in electricity. It shows the difference between the cost of fuels used to generate electricity and the current price of electricity. A positive spark spread indicates that it is economical to buy a fuel to generate power. A negative spark spread indicates that power generators should purchase power rather than the input fuel. Figure 3 shows an example of spark spread values.

So, having a firm understanding of the factors that drive natural gas prices – such as weather and storage – is important if a company is to maximise profits in the power sector (see figures 4 and 5).

Reserve margins have dropped, causing the power grid to be hyper-sensitive to plant outages, unexpected weather conditions and fuel price changes. And it is unknown what new regulations may come out of current congressional investigations into Enron's business practices that could affect the gas and power markets. EPRM

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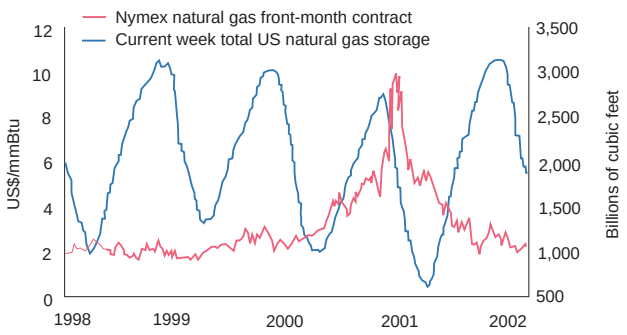
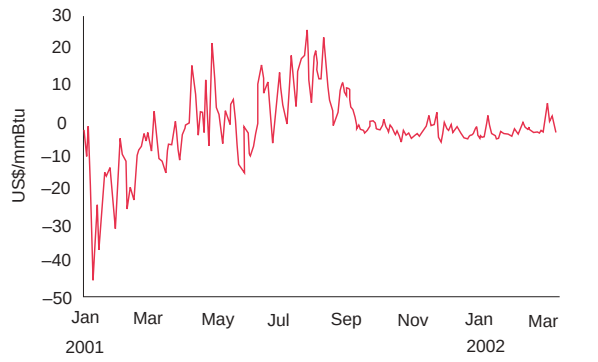
Figure 4: Natural gas prices v. storage, 1998–2002



Source: Nymex; American Gas Association

Natural gas storage is cyclical – stores are high in autumn and winter and lower in the spring and summer months. Where stores were lowest in 2000 and 2001, natural gas prices rose sharply – a movement that could also be related to weather changes

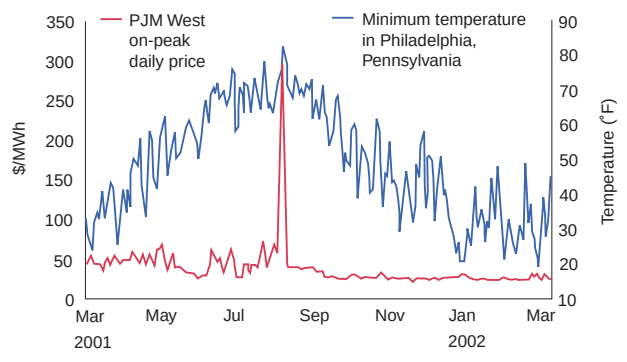
Figure 3: Entergy/Henry Hub spark spread



Source: Platts

According to the chart, it is economical to buy power from January 2001 to April 2001, and after this date the spread remains above zero or hovers near it, indicating that buying natural gas as a fuel is a good option

Figure 5: Temperature v. electricity prices



Source: Platts; EarthSat

As the temperature in Pennsylvania rose in summer 2001 to its highest level in August, the price of electricity at PJM West rose sharply. A generating plant going down for unexpected repair or scheduled maintenance can contribute to such an increase