

## Electricity Market Liberalisation and the Need of Improved Risk Management



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After years of regulated monopolistic markets, electricity providers in many countries are confronted with rising domestic and international competition, a variety of new market uncertainties, and rapidly increasing financial risks. Electricity prices, no longer calculated on a "cost-plus" basis, but determined by the forces of the market, have started to slide downwards especially for large customers, which puts a lot of pressure both on profit margins and executives. Appropriate risk management will largely determine which utilities will survive, and maybe even prosper, in a deregulated environment. Certainly, the changed situation bears many chances for new business, too, but nonetheless it can be expected that – speaking in the language of Charles Darwin – "only the fittest will survive".

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Derivative instruments (forwards, futures, options, swaps) – i. e. contracts whose value depends on the development of one or more underlying variables – enable the trading of risks and, therefore, constitute effective tools for modern risk management that become increasingly important for energy market participants. Basically, derivatives can be traded "over-the-counter" (OTC) or at exchanges. While OTC contracts constitute bilateral agreements that can be individually tailored, exchange-traded instruments are highly standardized, which facilitates their trading, price discovery, and risk management. More recently, both channels for derivatives trading are being considered as mutually beneficial rather than in competition with each other.

Compared to the well-established financial markets, however, the rapidly developing energy markets are fundamentally different and generally much harder to deal with. An example are the price drivers, which are more numerous and complex because issues of storage, transportation, weather, and technology play a major role. Electricity takes a special position insofar as it cannot be stored in any large quantities (apart from hydro pump storage facilities), which can lead to much higher spot-price volatilities than experienced in money markets. In June 1998, for example, due to a heat wave

in the mid-US electricity prices rose from an average of US\$ 30 to US\$ 7,500 on one single day, leading to sudden bankruptcy of several power traders.

The US has taken the lead in establishing futures and options exchanges for electricity, the two most important being the New York Mercantile Exchange/ NYMEX and the Chicago Board of Trade/CBoT. These are only about to emerge in Europe, often in co-operation with Dow Jones and other experts in the field. Both in Scandinavia and the UK, electricity spot markets have been in operation for several years – NordPool and the Pool, respectively – and in the UK derivative instruments in the form of forward contracts have been in use since the beginning of spot market trading of electricity in the early 90s. In Germany, the long-awaited decision by an expert commission about where to base the first German power exchange has recently been taken in favour of Frankfurt/Main (the other candidate cities were Düsseldorf, Hannover, and Leipzig). The concept of the new German Energy Exchange (GEX) is based on a pure futures and options exchange (i.e. without physical spot market trading) and a partnership with the NYMEX and EUREX (EUREX, a joint venture of the Deutsche Terminbörse and the Schweizer Terminbörse, is considered to be the largest futures and options exchange in the world). Due to the lack of a spot market at the GEX, it is unlikely that price discovery will be fostered significantly by the new exchange.

Energy risk management is one of the new fields of research at the IHS undertaken at its recently established regional branch *IHS Carinthia* ([www.carinthia.ihs.ac.at](http://www.carinthia.ihs.ac.at)) located in Klagenfurt (pop. 100,000), capital city of Austria's most southern province Carinthia. □

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