



VaR - Value at Risk

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Powerisk has been interested to see that many more clients are using VaR (Value at Risk). VaR has its place in the Energy Manager's tool box though it is worth mentioning that risk managers within Banks and Hedge Funds are starting to move away from this measure as it assumes a probability of a price move based on a **historical** volatility. Instead they are looking at measures that use 'Monte Carlo Simulations' sometimes with "jumps", to try and derive a better understanding of what a portfolio's risks actually are. That said, VaR still has its worth and can provide some useful insights into the market and inform your hedging strategy.

It is important to understand the mechanics of this calculation to appreciate where both its limitations and use may lie.

What is VaR?

VaR is a risk measure. It is an algorithm which values the exposure of a portfolio to a potential price move. Most clients know what a £1 price move will cost them, for example a £1 wholesale price move is the equivalent of a £40,000 on the end of my bill. What VaR does is to assume that you can calculate volatility (normally historical) and it assumes that you can analyse how prices have moved in the past (the distribution of price change). Therefore using standard deviation you can statistically assess what the probable 'value at risk' on a portfolio is. This is often expressed with a confidence of 99% or 95% (this is just statistically where the distribution will lie). 99% is the equivalent of saying that 1 in 100 trading days there will be an extreme result. We don't always know how big that result is, and remember that this is statistics, so just because we have 99 days of non-extreme events does not mean that tomorrow the market is about to spike!

How do you use VaR?

Quantitative Analysts could spend hours telling you whether to use 100 days rolling volatility or 5 days, whether to skew your distribution or to add stochastic jumps and so on! But in the end what traders and finance directors are really looking for is an insight into the change in VaR. If you keep your measure consistent the change in VaR is what becomes interesting. If we assess that your VaR is £3m but in one month's time it is £4m you could start to deduce that the market is more volatile and more prone to moving a greater distance. While your £1 move still equates to £40,000, the **probability** of the market moving £1 has increased significantly. This may mean that you start to reduce your risk by hedging.

VaR Trading Models.

It should be noted that many companies have looked at creating "black box trading models" some of these will use VaR risk models to force a trading decision. In truth there are many different types of model which drive the decision to hedge or un-hedge a position, VaR is just one of the possible risk measure that can be used in these types of model.

What is very apparent is that with so much uncertainty associated with market changes and EMR, measuring and monitoring risks remains key.