Analysis of UK gas forward prices using a Rolling Optimisation Model

Gas demand in the UK is variable. This is partly due to weather patterns and the changing nature of electricity markets. This uncertainty makes it difficult for traders in the market to analyse the market. As a result, there is a need for models of the UK natural gas market that include stochastic demand. In this work, a Rolling Optimisation Model (ROM) is used to examine the UK natural gas market. It takes as an input stochastically generated scenarios of demand. The outputs of ROM include the daily System Average Price of gas in the UK as well as monthly forward prices. The model was been shown to fit reasonably well to historic data (from the UK National Grid). As a result, ROM is used in this work to estimate forward prices of gas in the UK and to investigate how they're affected by stress-test scenarios.