

WEAK INVESTMENT INCENTIVES IN NEW GAS STORAGE IN THE UNITED KINGDOM?

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1. Overview

During the winter 2005/06, the lack of sufficient storage capacity was emphasized when the UK gas market experienced gas supply shortages. This gas crisis was due to the conjunction of several factors: an exceptional winter with four cold snaps, a tighter demand/supply balance than expected, a decreasing swing capacity of UKCS gas fields, a failure of the largest storage facility (Rough) and an under-utilisation of import capacity. Even if several measures of demand side response were put in place to cope with exceptional winter peak demand, this crisis has highlighted the fragility of the UK gas system in the face of unpredicted events.

Even before this gas crisis, many debates about security of supply have pointed out the lack of storage capacity. For instance, at the end of October 2005, Digby Jones, head of the Community of British Industry (CBI), complained that the lack of gas storage capacity could lead the UK to a return to a “three day week”. In a report commissioned by the UK Offshore Operators Association (UKOOA), Ilex argues that the markets have not delivered the right price signals for investors in seasonal storage (lack of visibility and liquidity). Therefore, a second seasonal storage would have reduced gas prices to final customers and increased security of supply (Ilex [2005]). Investments in storage capacity still remain an issue for the UK.

2. Methods

This paper focuses on seasonal storage. Seasonal storage performs different functions: adjustment of supply and demand to cope with seasonal demand, security of supply, optimization of transmission networks (high load factor throughout the year) and optimization of the production system. Investments in seasonal storage (depleted gas fields with large volume) are required to compensate the decline of the UK swing fields that were used to cope with the seasonal gas demand fluctuation. However, seasonal storage facilities imply huge sunk costs and a long lead time to build. Investors face different uncertainties over costs recovery, demand and regulatory. Because investors seek protection to reduce their risks and recover all their total investments costs, these uncertainties undermine their investments decision to convert offshore depleted gas fields (large volume) into seasonal storage facility. Without enough ex ante safeguards, they will not invest in this type of assets because the risk of ex post opportunism remains too high.

This paper analyses the lack of investment incentives in seasonal storage in the UK, such as depleted gas fields. We will explain why there are so few investment decisions in seasonal storage capacity in a liberalised gas market and we will propose possible regulatory remedies to increase investments incentives in the UK.

3. Results

The need for a new seasonal storage is underlined by several structural factors of the UK gas market. The UK is becoming more reliant on gas imports and its swing capacity is continuing to decline. There were essentially two sources of swing capacity in the UK: swing in UKCS (United Kingdom Continental Shelf) production and use of storage facilities. Even if there are new planned storage facilities, there will only remain one seasonal storage facility (Rough). New flexibility tools in order to cover the seasonal variation of demand will be required. Storage is an important source of swing capacity in importing countries, because seasonal storage facilities are complementary to import pipelines and they increase security of supply in the case of an unpredicted disruption of one of the major source of supply.

Investors face weak incentives to invest in a new seasonal storage. Investments in seasonal storage facilities would have occurred or will occur only if investors would have expected or will expect they will recover totally their investment costs. Investors will be exposed to greater ex post opportunism when they invest in converting a depleted gas field to a storage facility than when they invest in salt cavern storage units. This is due to the amount of sunk costs involved and the lead times to develop the new storage. Furthermore, there are at

least three main uncertainties that investors have to bear when they invest in large gas storage infrastructures: uncertainty over costs recovery, uncertainty over demand, and uncertainty over regulatory regime.

Even if there is a social need for a second Rough-sized storage, uncertainty over cost recovery and future demand has limited the incentives of investors. During the period 2000–2005, there was the risk of under-utilisation because of the increase of other storage facilities despite the increase of gas imports. The uncertainty over sunk cost recovery should remain because of the lack of liquidity and visibility on the forward markets that did not deliver the long term price signal. At a lesser degree, there was also an uncertainty over the implementation of the TPA exemption for a seasonal storage

Regulation could act on the investors' incentives and mitigate their uncertainties. Regulation can guarantee prices (price regulation) or storage demand (storage obligations) or both (long-term contracts). Price regulation remains then a powerful regulatory means to secure cost recovery. However, implementing a rate-of-return regulation or a price-cap regulation will imply a deep change in the nature of the storage regulatory regime and the move toward a regulated TPA regime.

Another regulatory remedy would be to secure storage demand with suppliers' storage obligation. In the UK, this kind of regulation has already been implemented for renewable energy (Renewable Obligations). This regulatory mechanism could be complemented by a market of storage certificates on which suppliers may trade their certificates in order to avoid the regulatory penalty. This market mechanism of exchange of property rights should reallocate efficiently storage obligations under certain assumptions.

Regulatory instruments can also promote open seasons and long-term contracting. Long-term contracts give guarantees about demand but also cost recovery to investors in a new seasonal storage facility. Long-term storage contracts are compatible with storage obligations as they will mitigate the uncertainties over demand and cost recovery.

4. Conclusions

Our conclusion is that the lack of investments in new gas storage facilities results from the fact that investors have weak incentives deriving from the uncertainties over costs recovery, demand and regulation. A modification of the existing gas storage regulation may strengthen investments incentives in new storage.

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