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ECONOMICS OF PIPELINES: THE UNITED KINGDOM CONTINENTAL SHELF (UKCS) AND THE CASE FOR GOVERNMENT INTERVENTION

Abstract:

In the UK Continental Shelf (UKCS), private negotiations determine the terms of third party access to infrastructure and often hinder high complexity. Given the fact that the market is vertically integrated, where the infrastructure owners are also developers in their own producing fields, a misalignment of commercial and technical interests is observed. Considering the high capital cost of replicating existing infrastructure, the infrastructure owners, who are natural monopolies within their geographical market, find themselves gaining the bargaining advantage in the negotiations charging in several cases disproportionately high fees.

In general, natural monopoly in capital intensive industries is linked with the concept of economies of scale- a situation where one firm can produce the market's desirable output at a lower average cost comparing to two companies operating in a smaller scale. Therefore, economic literature views competition in the industry as socially undesirable as the existence of a large number of firms would result in needless duplication of capital equipment. Many authors emphasise also the fact that the extensive need for capital is probably the most important exogenous structural barrier. However, although production efficiency arguments suggest that network infrastructure should be provided by a single firm, economic inefficiencies, such as pricing to access, may arise due to unregulated market outcomes creating a case for government intervention in order to ensure that high levels of output grown are achieved.

This research work is concerned with the economics of the UKCS oil and gas infrastructure, the ownership of transportation structures and the market inefficiencies under the existing regulatory environment. The issue of third party access is analysed by applying the economics of regulation of natural monopoly to the case of the pipeline transportation infrastructure in the North Sea. The economic and structural challenges the ultra-mature UK basin faces can have a potential negative effect on exploration outcomes not allowing, the full utilisation of the remaining reserves.

The issue of access to UKCS infrastructure seems to adversely affect new entrants for undertaking exploration activities. The possibility for government intervention is linked with the maturity of the basin which changes the efficiency of natural monopoly that might require additional supervision. The market of oil and gas infrastructure networks could be efficient for the current participants but unable to attract new entrants. This research aims to analyse the effect of access in oil and gas infrastructure on exploration under the presence of incomplete contracts.

Keywords:

oil and gas industry, pipeline economics, natural monopoly, government intervention