

THE EFFECT OF UNBUNDLING REGULATION ON PIPELINE INVESTMENT STRATEGY IN JAPAN

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Overview

The main purpose of this study is to examine the effect of unbundling regulation on investment strategy by utilizing a case study approach. To address this, we focus on the main projects in Japan. Compared to the other countries/areas, the network of natural gas pipeline in Japan seems to be insufficient. For example, although the area of Japan is about the same as that of California, the pipeline network is not yet fully constructed in Japan. In fact, there was no pipeline connecting Tokyo and Osaka, a total distance of approximately 2450 km. Recently, the Japanese government has decided to institute vertical separation of natural gas companies, which is called unbundling regulation. Major existing natural gas companies, which are called incumbents hereafter, will be separated into transmission and distribution companies in 2022. Then, pipeline investment desired as public utilities might be discouraged because of the unbundling. To show this hypothesis, three pipeline investment cases are analysed, and the analysis leads to that the incumbents had two incentives for pipeline investment, one is to increase sales volume, the other is to improve security of supply. Therefore, the unbundling regulations affect to reduce the investment improving security of supply in Japan.

Methods

In this research, we explore a case study approach, and observe the following points: First, we show the reason why the gas-pipeline network in Japan had not been constructed sufficiently from the historical view. Second, we consider the effect of introducing unbundling regulation on investment. Under the bundling scheme, each major gas company has incentive to invest to construct network even if it could not bring a direct increase in profit in the short run. However, after the unbundling regulation, the (unbundled-) transmission company might lose incentive for such investment. Third, we also examine the effect of regulatory uncertainty on investment. We show that the degree of regulatory uncertainty could be increased after introducing unbundling regulation, and the level of investment might be decreased.

To see them, we examine the three cases of gas-pipeline investment, which are the Ibaragi–Tochigi pipeline (by Tokyo-Gas), the Himeji–Okayama pipeline project (by Osaka-Gas), and the Mie–Shiga pipeline (by Osaka-Gas and Chubu Electric Power Corporation) projects.

Results and Conclusions

We found the following results. First, on the above former two projects, Tokyo-Gas and Osaka-Gas are driven to invest the pipeline projects by the following two conditions: one is to capture existing demand from other gas companies, while the other is to boost potential demand around the newly constructed pipeline. Second, In contrast to those projects, Osaka-Gas and Chubu Electric Power Corporation did not intend to take customers from their rival companies in the area, nor could a large volume of additional demand be expected around the pipeline. The pipeline improves the security of supply for both companies. Based on Viscusi (1983), Tiesberg (1993) and Blyth et al. (2007), incentive of investment as the above third type pipeline project is distorted by the unbundling regulation.

References

- [1] Blyth, W., Bradley, R., Bunn, D., Clarke, C., Wilson, T. and Yang, M., "Investment Risks under Uncertain Climate Change Policy," *Energy Policy*, Vol.35, pp.5766-5773, 2007.
- [2] Teisberg, E. O., "Capital Investment Strategies under Uncertain Regulations," *Rand Journal of Economics*, Vol.24, No. 4, pp.591-604, 1993.
- [3] Viscusi, W. K., "Frameworks for Analyzing the Effects of Risk and Environmental Regulations on Productivity," *American Economic Review*, Vol.73, No. 4, pp.793-801, 1983.