

Incentive Regulation and Performance Measurement of Taiwan' s Incineration
Plants: An Application of the Four-stage DEA Method

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Abstract

The aim of this paper is to provide preliminary efficiency assessment of Taiwan' s incineration plants as the basis of incentive regulation schemes. We adopt the four - stage semi-parametric method with both OLS and Tobit regression techniques, and revise Simar and Wilson' s (2007) double bootstrapping approach as well, to estimate the efficiencies filtering out the impacts of environmental variables. Empirical results show that capacity, ownership, location and length of operation in years are factors which affect the performance of plants and suggest the importance of controlling the variation of the operating environment in the practical application. The adjusted mean efficiency scores are about 0.85, indicating that there is around 15% of inefficiency needing improvement. The results from the three parametric/semi-parametric techniques are found to be quite similar.

Keyword : Incinerator; Data Envelopment Analysis; Environmental variables;
Bootstrap