

# ***ENERGY-SAVING AND EMISSION-ABATEMENT POTENTIAL OF CHINESE COAL-FIRED POWER ENTERPRISE: A NON-PARAMETRIC ANALYSIS***

WEI Chu,xiaochu1979@hotmail.com,Renmin University

Löschel Andreas ,,ZEW, Germany

Liu Bing,,Tsinghua University

In the context of soaring demand for electricity, mitigating and controlling the greenhouse gas emission is a great challenge facing China's power sector. Increasing attention has been placed on the evaluation of energy efficiency and CO<sub>2</sub> abatement potential in power sector. However, the studies at micro-level are relatively rare due to the data's unavailability.

This study uses the 2004 Census data of the Zhejiang province for constructing a non-parametric frontier to assess the abatement space of energy and associated CO<sub>2</sub> emission in China's coal-fired power enterprises. Data envelopment analysis (DEA) combined with the directional distance function is applied to construct energy-saving potential index and CO<sub>2</sub> emission-abatement potential index. Both indicators depict the inefficient level in terms of energy utilization and CO<sub>2</sub> emissions. Our results show a substantial variety of energy-saving potential and CO<sub>2</sub> abatement potential among enterprises. We also find that large power enterprises are associated with smaller potential to reduce its energy input and CO<sub>2</sub> emission. There is no significant evidence shows that the energy efficiency and CO<sub>2</sub> abatement potential in state-owned enterprise are differ from their non-stated-owned counterparts.