

Reducing Electricity Deficit through Energy Efficiency in India: An Evaluation of Macroeconomic Benefits

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Abstract

The demand for electricity has consistently exceeded available supply in India. While the deficit of electricity varies across states, nationally it is estimated to be of the order of 12% on peak and 9% for energy. The limited availability of finance, capital and other legal and administrative barriers have constrained the construction of new power plant capacity, and during the 9th Plan (1997/98 - 2001/02), less than half the planned power plant capacity was constructed. Energy efficiency improvements cost only a fraction of those for supply, and offer a way to eliminate the electricity deficit without increasing direct investment in capacity addition. If the electricity deficit is primarily in the productive sector, energy efficiency offers a way to alleviate the deficit while increasing India's economic output by over US \$ 12 billion, and employment opportunities by over 44 million person years. These impacts vary by the exact nature of the deficit, and the rate of energy efficiency technology penetration. In addition to output and employment, removing the deficit will also reduce the fiscal deficit by reducing subsidies, and government capital outlay. The analysis is based **Efficiency-Employment Integrated Model (EEIM)** developed by combining a spreadsheet model with Input output tables of India.

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