

Welfare Loss from Cross Subsidy in Electricity Sector in India: A Preliminary Study

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Electricity is a basic input for all sectors of the economy. Since the economic reforms in the early 1990s, economic growth in India has been rapid and it is expected that the Indian economy will register impressive growth in the next two decades and more. However, this is subject to adequate energy and electricity supply. Electricity supply has long been a bottleneck. It is estimated that peak demand deficit is more than 10 per cent despite sustained efforts to add to capacity.

The supply of electricity has strong forward linkages. The linkage is strong in the agricultural sector because its availability ensures adequate water, a vital input. In India where farmers have to rely on monsoon rains for water which are often erratic, groundwater is a major alternate source. Land under irrigation is less than 45 per cent of total cultivated land. Hence, continued and reliable power supply is vital. However, high cost of power will deter farmers from using pumpsets which could result in lower food production, lower income for farmers, and low demand for other goods and services. While it is imperative that power is supplied to farmers at reasonable prices, this results in losses which is sought to be made up by higher prices for

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electricity in other use sectors. However, too high a price in other sectors would result in lower demand for electricity and hence lower production and/or welfare. So, partly, losses arising from subsidized rate are made up by subsidy from the government and higher taxes on non-users. The resultant loss in welfare is partly or fully compensated by welfare gain from higher production, higher income, and lower disparity in incomes.

Sector-wise annual electricity consumption (in GBH) in India in 2009 was as follows:

Agriculture	20 %
Domestic	24%
Commercial	10 %
Industrial	37%
Traction	2.2%
Others	6.8%

Average annual cost of electricity supply from SEBs was Rs. 3.48/unit and average realization in 2006 was Rs. 22.72/ unit.

This paper is a preliminary investigation of the subsidy and cross subsidy in the electricity sector in India and first cut estimate of the welfare losses/gains from subsidized electricity rates. The authors have made an attempt to estimate the extent of cross subsidy, determined Ramsay second best electricity prices, and estimated welfare impact of the subsidy.