

Impact of Electricity Tariff Policies on the Use of Electricity and Groundwater: Arguments and Facts

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Most of the researchers theoretically argue that the cheaper electricity tariff policy (Flat-Rate) introduced for agricultural purpose makes way for the farmers to use both the electricity and groundwater inefficiently as the marginal cost of these inputs under this system is near zero. Therefore, they advocate that pro-rata tariff system can be used to increase the efficiency in the use of these two inputs. But in real condition, influence of tariff rate on the consumption of these two inputs would be less as it constitutes a very meagre proportion in the total cost of cultivation. Moreover, consumption of these two inputs is mostly determined by many supply and demand factors other than tariff rate alone. It is in this context, this paper aims to find out the relationship between tariff rate and consumption of electricity as well as the factors which determine the consumption of these two inputs by using macro-level data. This study concludes that there seems to be no direct relationship between the tariff rate and the consumption of electricity per pumpset and in fact, it is significantly higher where tariff rate is presently higher. Since the factors like development of groundwater, pumpset intensity, availability of surface sources of irrigation, hours supply of electricity, cropping pattern etc. mostly determine efficient use of electricity and groundwater, it is difficult to achieve efficiency in the use of these two inputs by manipulating tariff rate. Therefore, the present study suggests that appropriate rationing in electricity supply, improving pumpset efficiency and differential tariff rate can be taken up simultaneously with the introduction of quality extension network to achieve efficiency in the use of electricity and groundwater.

Introduction of new water lifting technologies (WLTs) have made larger changes in the use of water in Indian agriculture. Area irrigated by wells particularly tube-wells has increased substantially during the last two decades. Tube-well irrigated area has increased from less than one per cent in 1960-61 to about 31 per cent in 1989-90 in the total irrigated area. It has not only helped to increase the productivity and cropping intensity for the farmers who own WLTs but also for the non-WLTs farmers through water market.

It is recently argued that cheaper pricing policies of electricity and shifting of tariff from pro-rata(PR) to flat-rate (FR) have reduced the marginal cost of water as well as electricity to zero. As a result, farmers use both groundwater and electricity inefficiently. Hence, many policy makers and researchers advocate to increase the existing tariff rate mainly for two reasons: firstly, to increase the efficiency of both water and electricity consumption, and secondly, to reduce the financial burden of the government. No doubt, increasing of electricity tariff or reducing of electricity subsidy will reduce the financial burden of the government. But one cannot certainly say that changes in tariff policies would make impressive change in the existing use of groundwater. Consumption of water and

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