

Challenge of Setting the electricity Tariff structure in Saudi Arabia

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Abstract:

determining the required revenue (RR) for a regulated electricity firm is a pivotal component of tariff setting. It reflects also the tariff level that end-customer pays. There are several factors that should be established to determine the RR for regulated entities. An essential factor is the allowed rate of return. Electricity Cogeneration Regulatory Authority (ECRA) has selected the most commonly used approach which reflects the appropriate weights for the firm's cost of equity and debt. This approach is adopted in what is known as the Weighted Average Cost of Capital (WAAC). A WACC was calculated for each of the electricity industry major activities i.e. generation, transmission, and distribution, for the Kingdom of Saudi Arabia.

The second step is to allocate the required revenue for each segment of the industry to each customer category in order to attain sufficient revenue for these segments and to assure fair distribution of cost between the various consumer categories in relation to their contribution to the cost. The revenue from these different categories are recovered through the volumetric charge, capacity charge, and connection charge components. Together these charges provide the appropriate economic signal to the customers of the causes of cost and give them the incentive to use their share of the network.

The fact that the electricity can not be stored causes the cost of providing electricity to vary from time to time. In addition, the load patterns vary across the different customer class significantly. These lead to different contribution to the network cost. This variation in electricity price/cost needs to be passed across different customer categories through a regulated tariff. Otherwise customers who do not pay his actual cost will over-consume electricity during peak hours, necessitating the installation of expensive peaking capacity.

In this paper, the process of calculating the required revenue, redesign the current tariff structure, and allocating this required Revenue across the customer categories to achieve a sufficient revenue is presented. Finally, Incentives for both utility and customers are designed to achieve an appropriate balance of cost and revenue. The paper outline some of these incentive.