

NOTE

BENEFITS OF ELECTRICITY —ARE THEY UNLIMITED?

Bharat Jhunjhunwala writes :

One of the topmost institutions in the country in the field of energy is 'The Energy Research Institute', more commonly known as TERI. It is headed by Nobel Laureate Dr R K Pachauri. TERI has made a survey of industrialists and farmers in Karnataka and Haryana. It was found that industrialists were willing to pay Rs 5.20 per unit for reliable electricity while farmers were willing to pay only Rs 3 per unit. This study was done in 1999. On the average this will be equal to Rs 7 per unit today. The cost of electricity is about Rs 4 per unit. The benefit drawn by the consumers will, therefore, be Rs 3 per unit.

Another method to determine benefits from electricity is to compare the cost of production with other sources. This is called 'replacement value' method. One can calculate how much it will cost to replace the electricity from the next best available source. Say, the cost of producing hydropower is Rs 3 per unit. If hydropower is not generated then the same electricity will be produced from thermal plants. The cost of thermal power is, say, Rs 4 per unit. Thus, the benefit from generation of hydropower is Re 1 per unit. The customer will have to pay an additional Re 1 per unit because hydropower was not produced. The benefit from prevention of this additional burden on the consumer will be Re 1 per unit.

The average benefit from the two methods works out to about Rs 2 per unit. The amount paid for purchase of electricity is about Rs 4 per unit. Therefore, more electricity should be produced if the cost of production is less than Rs 6, and less electricity should be produced if the cost of production is more than Rs 6 per unit.

The cost of production of electricity has two components. Some costs are incurred by the producer. These include cost of plant and machinery, labour, coal, etc. This is about Rs 3 per unit. Other costs are incurred by the society. These include global warming, increase in disease, loss of biodiversity, etc. These environmental, social and political costs are huge. The environmental cost from one hydropower project, namely, Kotlibhel in Uttarakhand is around Rs 8 per unit. The total cost of electricity is, therefore, Rs 11 per unit. This high price is not visible though because the environmental and social costs are borne by the poor people living along the rivers and thermal plants while the benefits from generation of electricity are reaped by those living in Kolkata and New Delhi.

So here is the problem. The benefits from consumption of electricity are Rs 6 per unit today while the costs are Rs 11 per unit. Hence, the government should reduce the production of electricity. At lower level of production, the benefits will be more and costs will be less. At some point the benefits will be equal to the costs. That is the amount of electricity the country must produce.

But a powerful lobby of contractors is at work. They have created hype that benefits from consumption of electricity are astronomical. Therefore, they say, the power agencies must produce as much electricity as possible. It does not matter if the nation's sovereignty is put to risk by dependence on imported uranium; or the culture of worshipping free-flowing rivers comes to an end; or global warming takes place; because the benefits are so huge so as to dwarf these costs. These contractors have purchased the intellectuals and

journalists of the country and got them to give astronomically high estimates of benefits from electricity.

The National Hydro Power Corporation gave a contract to TERI to evaluate the costs and benefits of two hydropower projects. TERI concluded that the benefits of electricity were Rs 74 per unit in 2005. At present this may be Rs 100 per unit. This is strange. TERI itself has evaluated the benefits to be about Rs 7 per unit by 'willingness to pay" method. Now it has raised that figure to Rs 100 per unit. It is on this basis that the Ministry of Power is trying to increase production of power at any cost.

Unfortunately, in its anxiety to please NHPC, which has given contract, TERI set aside its intellectual honesty and concluded that benefits from electricity were Rs 100 per unit.□