

Enron and Other Similar Deals vs New Energy Paradigm

Amulya K N Reddy
Antonette D'Sa

In searching for alternative solutions, it is important to realise that genuine solutions are those that simultaneously resolve all the crises of the electricity system – the crisis of capital, performance, equity/access and environment. Solutions that focus on only one of those, for instance the capital crisis in the case of Enron-type deals, are sub-optimal and defective solutions that aggravate other crises.

In particular, special attention must be paid to the performance crisis of SEBs – any solution, such as Enron-type deals, that does not result in improving the technical and financial performance of the associated SEB is a wrong solution and must be rejected.

Similarly, any solution that undermines, rather than strengthens, the capacity and human resources of the indigenous electrical equipment industry is an unacceptable solution.

From a long-term point of view, the genuine solution to the crises of the electricity system is a shift to the new electricity paradigm, with the emphasis changing from energy consumption to energy services as an index of development.

I

Introduction

ALTHOUGH the Enron deal has attracted a great deal of attention in the media,¹ there have been very few attempts to go to the root of the problem.² This paper aims, therefore, at examining the origins of the Enron deal (and others of its type such as the Cogentrix deal in Karnataka). It concludes with the view that such deals are only the unpleasant symptoms of an underlying malaise. And the malaise is, in general, the basic paradigm for energy guiding Indian decision-makers, and in particular, the basic strategy for the power sector in India.

II

1990 Crisis of Electrical Capacity Expansion

The relevant history should perhaps begin with the demand of the power sector for allocations in the Eighth Plan proposal. Starting with a grandiose wish for an expansion of 48,000 MW in 1989, the proposal settled in 1990 to 38,369 MW at a cost of Rs 1,28,000 crore. But the scarcity of funds resulted in further downward adjustment of funds for installed capacity and the associated targets. The Eighth Plan Working Group, using CEA estimates, proposed a capacity addition of 36,646 MW during 1992-97 (the revised Eighth Plan), but this target was reduced to 30,537 MW. In response, the Planning Commission allocated only Rs 79,589 crore to the power sector (public) of which Rs 49,424 crore was for generation. The expected achievement thus came down to 19,537 MW.³ However,

it soon became clear that even this drastically down-scaled request could not be met out of the public exchequer.

Clearly, the electricity system of India was trapped in a capital crisis, if by the word crisis is meant a situation that does not permit continuation of old patterns of behaviour. And the old pattern of behaviour consisted of the funds for the power sector coming wholly from the government, and the actual allocation being the result of a bargaining process involving the power and finance ministries and the Planning Commission.

In fact, the electricity system was trapped in other crises – the performance crisis characterised by the serious deterioration in the technical and financial performance of the State Electricity Boards (SEBs), the equity or access crisis because the system was (and is) expanded in the name of the people but a significant fraction of the population (as much as half in the case of Karnataka) does not benefit directly from electricity, and the environmental crisis because almost every conventional electricity generation project is under public attack on environmental grounds. But, these other crises were not priorities for the power ministry. Instead, it came up with what may be called the *member's approach* that is best clarified with a quantitative analysis of the capital crisis.

III

Quantitative Statement of 1990 Crisis

The essence of the capital crisis of the Indian electricity system is that its financial

requirements are far more than what can be provided by its traditional supplier of capital, namely, the central government.

In quantitative terms, the investment I_t required in any particular year t for expansion of installed capacity, can be estimated with the following formula:⁴

$$I_t = (I_{t-1}) \times \alpha \times g(\text{GDP}) \times (I\text{COP} - I_{t-1}) \times g(\text{CAP}) \times I\text{COP}$$

where I_{t-1} is the installed capacity (in MW) in the previous year, $g(\text{GDP})$, the growth rate of the GDP, $g(\text{CAP})$, the growth rate of installed electrical capacity, α , the ratio of the growth rates of installed electrical capacity and GDP, and $I\text{COP}$, the unit cost of installed capacity in Rs crore/MW.

The government of India's Eighth Five-Year Plan proposal, for electrical capacity expansion estimating Rs 1,28,000 crore (1989-90 prices) for an expansion of 38,369 MW from an existing base of 64,000 MW in 1990,⁵ corresponds to an average annual growth rate of installed capacity of 9.8494 per cent and a unit cost of installed capacity of $I\text{COP} = \text{Rs } 3,336$ crore per MW⁶ (including transmission and distribution).

IV

Options for Resolving Crisis

The above expression for the annual investment, I_t required for expansion of installed capacity is a useful basis for discussing the capital crisis facing the power sector and the options for dealing with it. In fact, these options arise from whether the various terms in the above expression are