# Whither Electricity Reforms?

*Continued adherence to the so-called Orissa model of electricity reforms, which seven 'reforming' states including Orissa have adopted, is likely to promote monopolies, raise tariffs, deny consumer choice and constrain investment in the power sector. This essay proposes an alternative industry structure which will help introduce competition, improve efficiency, add capacity, rationalise tariffs and enhance consumer welfare.*

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The electricity reform strategy currently being pursued in the seven states of Orissa, Haryana, Andhra Pradesh, Uttar Pradesh, Karnataka, Rajasthan and Delhi is not in the right direction. It is neither perceived as people-friendly nor is it likely to attract the much-needed investments in the power sector. The reform process seems to be working as a sedative that suppresses symptomatic pain without addressing the disease. Worse is the situation in the remaining states where reforms are yet to be initiated. In most parts, the debate on reforms is inadequate, and without much clarity on the issues involved, leave apart their possible resolution.

The structure of the electricity industry in independent India was laid down by the Electricity (Supply) Act, 1948 that created the State Electricity Boards (SEBs). In their initial years, the SEBs performed yeomen service in carrying electric power far and wide, but over the years they have become unsustainable, thanks to their mismanagement and politicisation coupled with the economic and technological developments of the past decade. It is high time that the electricity industry is denationalised, and restructured on commercial principles.

Though the legal framework was amended in 1991 and 1998 to facilitate private investment in generation and transmission, respectively, it enabled private entities to sell or transmit power only through long-term contracts with state-owned entities. Such contract-driven privatisation through state-owned monopolies can have little chance of enduring success. Similarly, the setting up of regulatory commissions under the 1998 Act, though a welcome move, can only have a limited impact on the state-owned monopolies. It should surprise no one that these piecemeal changes in the name of reform have not been able to arrest the deterioration of this industry.

To overcome the outdated structure stipulated in the central laws, the seven 'reforming' states have enacted their own laws and adopted the so-called Orissa model for unbundling their monolithic SEBs into generating, transmission and distribution companies, to be regulated by an independent regulatory commission in each state. The argument in favour of unbundling was the pressing need for creation of viable commercial entities that would lend themselves to efficiency improvements and privatisation, as in the west.

The similarity of the Orissa model with the restructuring undertaken in other countries virtually ends with the unbundling of SEBs. Unlike the west where competition in generation and supply is the engine for efficiency gains and tariff reduction, the Orissa model relies on an interconnected chain of monopolies where competition is conspicuous by its absence. In effect, it has only tinkered with the structure without incorporating any sound economics of regulation.

## Single Buyer Model

Orissa represents a 'single buyer model' where all generating companies (Gencos) are required to sell their produce to a state-owned transmission company (Transco). This implies that even if Gencos are willing to offer spot sales, or enter into short-term contracts, there can't be a credible market in the absence of multiple buyers. Gencos cannot, therefore, bear the market risk and must rely on long-term power purchase agreements (PPAs) with the Transco. As a result, new capacity can only be contracted through the state-owned Transco that continues, like its predecessor the SEB, to negotiate PPAs on a 'cost plus' basis leading to comparatively high tariffs.

In the Orissa model, the absence of competition does not stop at generation. Since Gencos must sell their produce to the Transco, distribution companies (Discoms) can buy from the Transco alone, and the consumer must, in turn, source all his requirements from the Discom of his area. The industry structure thus continues to be in the command-and-control mode, unencumbered by competition and consumer choice. In this chain of monopolies, public as well as private, all prices are determined on a 'cost plus' basis either through negotiations or by the regulator, and this constitutes a perfect recipe for delivering high cost power to the consumer.

At the distribution end of the Orissa model, the prevailing tariff structure coupled with the high transmission and distribution (T and D) losses do not permit adequate cost recovery by Discoms who persistently default on their payment obligations to the state-owned Transco. The use of Transco as a free banker for Discoms, carrying their unpaid bills aggregating about Rs 900 crore, negates the very rationale of commercialisation and privatisation. Privatised Discoms in Orissa are virtually being allowed to accumulate unsustainable losses year after year without any clear road map as to when, if at all, these losses will be wiped out, and by whom.

The losses/receivables of Discoms in Orissa are currently being accumulated on the balance sheet of the Transco whose outstanding payments to the state-owned Gencos continue to rise. With a negative net worth, the Transco may be able to contract new generation capacity, if at all, only on the strength of state guarantees and escrow arrangements that are widely regarded as unsustainable. In practice, therefore, Orissa as well as the other 'reforming' states may fail to attract much capacity addition and the prevailing power shortages would continue to persist.

The Transco in Orissa has already accumulated overdue payables of more than Rs 1,500 crore that continue to mount

steadily, besides a debt burden of about Rs 3,000 crore. It seems to be caught in a debt trap that can only be addressed through steep tariff increases, which are unlikely to materialise. The state government may, therefore, have to rescue the Transco – a doubtful proposition in view of the precarious condition of state finances – or else this rising burden may stunt the performance and growth of the industry. Evidently, the Orissa model in its present form is not sustainable. This model was perhaps adopted as a first step towards restructuring, but the need to move forward is now imminent.

It appears that just as a reform package had to be evolved for dealing with the financial chaos that was the SEB, another package may be necessary for bailing out the Discoms and the Transco from their impending bankruptcy. The added complication, however, would be the legal and moral hazards posed by any state assistance to private Discoms for cleaning up their losses. Similar problems may arise if Discoms are allowed to charge higher tariffs from future consumers for offsetting their past losses that were disallowed by the regulator.

## Bane of Long-Term PPAs

As a matter of principle, creation of monopolies must be regarded as an unacceptable form of interference by the government in the operation of free markets. It is pertinent to note that in several developed countries, induction of competition in telecom and power has resulted in significant tariff reductions during the past decade, but these lessons seem to have been completely missed in India insofar as power sector reforms are concerned. While competition in telecom is beginning to show dramatic results, there is yet no move towards introducing any worthwhile competition in the electricity industry.

It is important to recognise that in the emerging structure of the electricity industry across the world, long-term PPAs are no longer regarded as conducive to consumer interests. In India too, there are a number of PPA-based projects where the capital costs and operating norms, as approved by the Central Electricity Authority (CEA) and the respective state governments, leave much room for improvement. These PPAs have typically allowed select private entities to procure power plants based on indicative capital costs approved by CEA even though similar approvals for public sector entities like the SEBs and the National Thermal Power Corporation mandate open competitive bidding. In a 'cost plus' regime where capital costs directly translate into tariffs, this issue deserves a more credible treatment. Compelling the consumer to buy power for 20 years or more from a source that has been determined through a sub-optimal process *sans* competition can hardly be regarded as a practice worthy of emulation.

In the UK, for instance, Gencos do not have the comfort of long-term PPAs to assure them of guaranteed sales and profits. Until recently, they were required to sell their produce through a 'pool' where half-hourly bidding determined the price and off-take. With a view to eliminating the possible manipulation of pool prices through the use of market power by some Gencos, UK has recently amended its laws to facilitate licensees/consumers to buy directly from competing Gencos. In some of the other developed countries, existing PPAs have been terminated, with compensation, to allow for competitive sale of power in the market. Thus the typical PPA seems to be facing extinction in the developed markets, and India can hardly hope to usher successful reforms by using the PPA as a vehicle for capacity addition.

In the reform strategy, the central objective should be the creation of a sound structure that promotes growth with efficiency. Towards this end, generation and supply should be separated from transmission with a view to subjecting the former to competition. The proposed separation between the carriage and content businesses is somewhat similar to telecom where several long-distance or cellular operators compete even where a single wire connects the consumer's telephone. Since generation typically constitutes over 75 per cent of the consumer tariff, competition among Gencos selling to multiple buyers would bring about significant price and efficiency gains, whereas overlooking this fundamental economic principle would be tantamount to ignoring consumer welfare in the reform design.

In the restructured industry, the Transco must not buy or sell power; it should only transmit on payment of regulated wheeling charges with a view to providing open access to its transmission network. At the distribution end, Discoms must provide similar open access to their wires for enabling bulk consumers to buy directly from Gencos. With these fundamental elements of restructuring in place, market forces can be relied upon to bring in rapid efficiency gains as well as new investments that have so far been elusive. It is important to recognise that an efficient and competitive industry is a prerequisite for achieving the goal of universal access.

The industry structure proposed here is predicated on the provision of non-discriminatory open access to the 'transmission highways'. A Transco that buys and sells electricity would face a conflict of interest in transmitting the electricity owned by its competitors, and it is for this reason that companies operating transmission networks in the restructured markets abroad are prohibited from buying and selling power. This is critical for creating a free market where Gencos and suppliers can use a common network for selling directly to bulk consumers and Discoms. Besides providing a competitive environment, this arrangement would enable Gencos to assess market demand, enter into contracts with bulk consumers, and set up 'merchant power plants' without relying on government guarantees. The creation of such capacity will free some of the existing supplies of bulk consumers that would become available for the benefit of other consumers.

## Reform of Distribution Critical

There is increasing recognition that reforms at the distribution end are critical for restoring the viability of this industry. This would require distribution to be depoliticised and privatised with a view to containing the large-scale collusive thefts and for upgrading the network. Though difficult to achieve, sustainable privatisation of distribution presupposes a well designed and comprehensive regulatory framework that is transparent and predictable, unlike the present 'cost plus' year-to-year approach that does not sufficiently incentivise efficiency improvements, and on the contrary fosters regulatory uncertainty.

Complete separation between the wire and content businesses at the distribution level may not be feasible without a substantial systems upgradation that is unlikely to be cost-effective at this stage. Yet, open access to the wires of a Discom must soon be introduced in respect of bulk consumers. Since these consumers possess the requisite bargaining strength and consume large quantities, they can buy directly from competing producers and bring about the desired competition in the entire industry. The introduction of third party access to the distribution networks would thus usher the much-needed com-

petition in generation and supply, besides providing a credible mechanism for adding generating capacity.

For ceding their bulk consumers to Gencos, the Discoms can be suitably compensated through the levy of a wheeling surcharge or electricity duty that would help in sustaining the subsidised farm tariffs. Cross-subsidies are here to stay, and competition cannot be postponed indefinitely until their elimination. The problem can, however, be tackled by simply isolating the cross-subsidies and collecting an equivalent surcharge or duty from bulk consumers. As long as they pay such a surcharge or duty, bulk consumers should have the freedom to buy from competing producers.

In the structure proposed here, continued regulation of tariffs payable by retail consumers, not being bulk consumers, would be necessary for guarding against volatility and speculative pricing. Adequate supplies would also have to be ensured by earmarking the existing sources of cheaper generation for their consumption. In effect, this would imply that the existing sources, exceeding 1,00,000 MW of generating capacity, would not enter the competitive market, and would continue their supplies as per extant agreements. Only new capacity would be subjected to competitive markets, to begin with; and competition would thus be introduced at the margins. States would be free to subject the older power stations to a similar regime as the markets mature. Such an approach would ensure a smooth transition for the markets as well as the consumers.

It is nobody's case that subsidies should be eliminated; though there is an urgent need to target them towards well-defined recipients. Affirmative action by the government would continue to be necessary for providing universal access at affordable prices, particularly in rural areas and for the economically weaker sections. But decades of experience shows that governments alone, howsoever resourceful and well meaning, cannot accomplish the task without the market. In fact, the poor would be better served by market-driven policies, topped with targeted subsidies.

While addressing the problems arising out of near-free supplies to the farm sector, it is important to recognise that cross-subsidies have pushed up industrial tariffs to almost double the household tariffs in India whereas it is the other way round in several developed countries. If Indian industry has to face global competition, the quality and price of electricity would matter, and a sustainable approach to subsidies would be necessary. The surcharge proposed here would not only help in funding the subsidies, it would also ensure transparency in determining the extent of such subsidies as well as the government subventions necessary for this purpose.

## Pilferage, the Real Problem

Commercial accounting in the 'reforming' states is beginning to reveal the cesspool that the electricity industry seems to have become – how else does one describe a bizarre situation where more than 40 per cent of the produce does not get accounted or paid for? Pre-reform, the T and D losses were usually stated in the region of about 20 per cent, with poor systems maintenance and outlying rural areas being held as the main culprits. Pilferage by small and large consumers alike, apparently in collusion with the SEB employees, now seems to be emerging as the real problem. This is a shocking state of affairs as no civil society can afford to overlook such widespread prevalence of theft for which honest citizens are penalised, or worse, the burden is shifted to future generations by renaming these losses as 'regulatory assets' that would qualify for tariff increases in subsequent years. This failure of governance needs to be rectified through stringent and effective measures lest the judicial courts intervene, as in the Delhi pollution case, and take charge owing to government's abdication of its legitimate role.

In the debate on reform, there has been a sharp focus on the low tariffs that do not allow for cost recovery. This argument is being used for strengthening the case for tariff increases. There is, however, inadequate focus on pilferage and technical losses that account for over 40 per cent of the electricity generated. For example, Orissa continues to report T and D losses of about 43 per cent while in Delhi they reportedly exceed 50 per cent. The prevailing approach that relies on a 'cost plus' determination of tariffs on a year-to-year basis is not conducive to the reduction of these losses at a pace sufficient to restore the viability of the industry. A regulatory framework that incentivises loss reduction in a transparent and predictable manner is, therefore, essential. In addition, if competition were introduced in generation and supply of electricity, it is bound to push the tariffs downwards. As such, while some increases in tariff may be justified for ensuring cost recovery, these should be largely offset by reduction in T and D losses on the one hand and introduction of competition on the other.

Whether India is able to realise the full potential of reforms depends crucially on the government and the regulators whose role is vitally important. As California's example has shown, governments can make a big difference by getting it wrong, often under pressure from the industry's incumbents. In fact, that has been the sad story of India's power sector during the past decade. As for the regulators, they should be willing to trust market forces; they must make the rules of the game clear and refrain from arbitrary interference during the transition; they must detect and curb market abuses effectively; and should ultimately yield most of their powers to the market.

## Electricity Bill

In sum, the industry structure being advocated here would help introduce competition, improve efficiency, add capacity, rationalise tariffs and enhance consumer welfare. It would unleash latent energies, enterprise and innovation that should galvanise the industry towards rapid growth and enable consumers to enjoy lower prices with improved services. On the contrary, continued adherence to the Orissa model in its present form would promote monopolies, raise tariffs, deny consumer choice and constrain investments in the 'reforming' states. Reforms would not be perceived as people-friendly if tariffs rise without a perceptible improvement in the quality of supply. As for the remaining states, failure to initiate reforms expeditiously would lead to a virtual collapse of their power sector as well as the state finances.

During the past decade of economic liberalisation in India, electricity has perhaps been the only major industry that has failed to improve even though it is so vital to economic growth and human development. It has remained comparatively static in the midst of significant changes that are taking place elsewhere in the world. Several principles and practices that have universal relevance are yet to be applied to the power sector in India. If a GDP growth of 8-9 per cent is to be achieved, there is no way it can be done without a holistic restructuring of the power sector, and the proposed Electricity Bill should form the vehicle for this inevitable change. EPW