

EXECUTIVE SUMMARY AND POLICY MESSAGES

India's electricity-supply industry is mainly owned and operated by the public sector. It is currently running a growing risk of bankruptcy. This has created a serious impediment to investments in the sector at a time when India desperately needs them. This is reflected in the sharp decrease of the ratio of electricity consumption growth to GDP growth in the 1990s. In other words, in the past decade, electricity consumption growth did not follow economic growth. For 1991-1999, the elasticity of electricity consumption with regard to GDP was 0.97 when it was 2.1 for Korea and 0.99 for the OECD on an average.¹ Neither the high structural needs of the Indian economy, nor improvements in energy efficiency can explain this low figure. It is a reflection of an increasing gap between supply and demand, the continuously deteriorating quality of power², and a low level of access to electricity. It is also the result of large investments made by the manufacturing sector in stand-by and stand-alone facilities to compensate these deficiencies. Unless strong measures are taken immediately to correct this trend, India's overall economic development will be slowed.

The central issue now is how to enable power utilities to earn a return on investment. Price levels are too low for the system to be financially viable. In the Indian states, vested political interests impede utilities from collecting revenue. They maintain a price structure with large and unjustifiable subsidies. Politicians often interfere in the management of power utilities, hindering their efforts to curb power theft. As a result, transmission and distribution losses in India have increased, further eroding the financial situation of the state electricity utilities. These are not new trends, but the situation has reached a critical stage, where the government can no longer cover the losses of the state power utilities. For decades, the costs incurred for the development and operation of the electrical system increased faster than general economic growth, outstripping public finances' ability to make up for uncollected rates. The central government has for a long time given priority to developing access to electricity. At the state level this meant low prices for domestic and agriculture consumers and relatively higher prices for electricity supplied to the industry and commercial sectors. Even this system did not compensate for the subsidy burden. The government was obliged to compensate the difference. Growth of the electricity sector has outstripped the growth of the public money available to bear the cost of the increasing subsidies; the mechanism is not sustainable. Nonetheless, consumers who are used to low prices, and populist politicians resist change.

1. For 1971-1990, the figures were respectively of 1.7, 1.6 and 1.1 (Source: IEA).
2. With high voltage fluctuations and recurring black-outs.

To face increasing investment needs, the central government began in 1991 to focus on attracting private investment. The aim was to sustain power-sector development while keeping public expenditure under control. Competition was gradually introduced in bidding for generation projects. Since the mid-1990s, in response to the growing financial difficulties of state electricity boards (SEBs), the World Bank recommended introducing private capital into the power distribution sector and a new regulatory framework, which would allow independent tariff-setting to correct large price distortions. The central government established the legal framework for this new arrangement in 1998. More recently, it has focussed on distribution, trying to increase revenue collection and additional capital.

Unfortunately, the results of this decade of reform have fallen well below expectations and the central government now seems short of solutions. It is probably too early to judge the final outcome of the change, from a command-and-control public-dominated model to a more market-determined sector. However, the present indicators point to the need for urgent action. In 1995-1996, nine of the 19 SEBs incurred losses. In 2000-2001, all of them were in the red. SEBs are increasingly unable to pay for the electricity they purchase from the central public-sector power companies¹, or from independent power producers (IPPs). The official – and probably underestimated – figure for transmission and distribution (T&D) losses is higher than ever, reaching 25% in 1997-98. In such conditions, the much-expected private investment has been well below expectations, and even public investments were relatively lower in recent years than before. The difficulties experienced by several private investors² have discouraged potential additional investors. Unless radical measures are taken in the very short term, there is a real risk of stagnation in investment in the whole system. The demand-supply gap will continue to grow. With negligible new private investment in generation or distribution, and the central and state governments' shrinking ability to develop and maintain the power system, an increasing number of consumers will be driven to invest in stand-by or stand-alone generation sets at the expense of the public interest, challenging the very roots of social and regional equity.

Under the Constitution, electricity is on the “concurrent list”, which means that the states, rather than the central government, are primarily responsible for setting electricity tariffs. The states have the largest share of generation and transmission assets and almost all distribution in their control. The states have a key role to play in effecting institutional and result-oriented changes. However, the IEA believes the role of the central government is vital in guiding the developments to come and especially in providing the necessary legal and financial incentives for the states to implement reforms. The following policy recommendations are addressed to the central government. The IEA believes the past reform policies overlooked the political and technical obstacles to overhauling the existing system, and the time needed to do so. The case of Orissa clearly demonstrates that privatisation cannot in itself sustain the sector's development. Competition and private investment alone cannot be expected to resolve management issues, market distortions and the interference of vested political interest in the system.

1. Together, they owed the central public-sector electricity companies more than seven billion dollars as of March 2001 (GOI, 2001a).

2. Such as AES or BSES in distribution in Orissa, and Enron in generation in Maharashtra.

The existing public electricity-supply industry needs to be put in order first to allow the private sector to operate. To ensure an optimal allocation of capital and energy resources, the size of electricity markets at the state level is still too small. Efforts must be made to improve the development and the management of the power sector at the Union level. The central government has underestimated the specific regulatory needs for competition to expand and for the grid to develop in a sustainable manner.

In priority order, the central government should concentrate on each of the following tasks for the next five years:

- **Adopt a comprehensive reform plan for the electricity supply industry** introducing competition to the electricity sector and improving its overall performance, taking into account the goals of electricity access, energy security, environmental protection and economic growth.
- **Make the states accountable for the performance of their public electricity system**, by providing additional financial incentives to better-performing states on the basis of a transparent set of criteria. Absolute priority should be given to achieving full cost recovery within a defined time frame. This is necessary because so-called non-technical losses – actually unpaid or stolen electricity – are largely the result of political interference or of negligence by the state governments. State governments should be provided incentives to enforce the law and to clamp down on non-paying consumers – and that they be punished if they do not. States could be obliged to account for the cost of transmission and distribution (T&D) losses in their budgets and to establish tariffs based on a low level of T&D losses (including theft). This would reinforce the responsibilities of regulators to monitor T&D losses and differentiate between technical and non-technical losses. A legal framework should be established to sanction the loose handling of tariffs and power theft, and providing targets and incentives for the states. No progress can be achieved without improved revenue collection from final consumers.
- **Set and adhere to a firm timetable for introducing market mechanisms.** An implementation timetable should provide for establishing the regulatory framework, reforming subsidies, curbing power theft and developing innovative solutions for private-sector distribution. The focus should be on development of a power market at the central (Union) level and should clearly identify the steps to be taken at the state-level. A number of such mechanisms have nominally been implemented, but future implementation will need clearly-designed monitoring criteria.
- **Concentrate political accountability in a single energy ministry.** Integration of political accountability into a single energy ministry is essential. Only an integrated authority can exploit economies of scale through co-operation and integration at the Union level.
- **Facilitate the mobilisation of investment-capital by the centralised public utilities.** The strategy of increasing generation capacity through large-scale IPPs has not proved successful. The gap has been partially covered by the development of self-generation and by central public-sector investments. It would be beneficial to have a mix of large

and small public-utility capacity, at least temporarily, to reduce the supply-demand gap.

- **Facilitate and encourage grid access for surplus electricity from auto-producers (captive producers), while encouraging private investment in generation.** Use of existing auto-production capacity should be maximised. This new capacity could make a significant contribution from the private sector to the growing electricity market.
- **Create the framework for a power market at the Union level.** This recommendation complements the above call for more integration. India is still far from the point where a competitive market can govern the supply-demand balance. However, India's eventual target should be an electricity market. Only at the aggregated Union level are there sufficient demand and supply. The first steps toward such a national market would be increased investment in the Union-level electricity grid, and giving more freedom for market players to exchange and trade across state borders.
- **Implement measures to improve business practices of the electricity supply industry in the public sector.** More attention should be paid to developing human skills and personal accountability at all levels of the state and central government.

Map 1 States of India



Source: IEA.