MERC

Maharashtra Electricity Regulatory Commission

Three Years of MERC - A Report

1999-00, 2000-01, 2001-02

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From the Chairman

The Maharashtra Electricity Regulatory Commission (MERC) has great pleasure in presenting a Review and Report of its work over the past three years, from the time it was set up in August 1999 to March 31, 2002.

These three Annual Reports, combined into one, attempt to present a comprehensive account of the Commission's efforts to build an independent, transparent, consumer-oriented, consultative institution in line with the Objects and Reasons set out in the Electricity Regulatory Commissions (ERC) Act, 1998.

Since the liberalisation of the economy in the early 1990s, attempts are being made to evolve a consensus that state-owned power utilities have to be restructured urgently on sound commercial principles if they are to function efficiently, and provide reliable power at an affordable price to different categories of consumers. Progress on this has, however, been slow.

P Subrahmanyam

The Government of India has now proposed radical reforms through the Electricity Bill 2001. Independent, transparent and professionally-competent State Electricity Regulatory Commissions will have an important role to play in the power sector scenario envisaged under the Bill.

But the concept of a 'Regulatory Commission' is new. There is little awareness and understanding about its role, procedures and powers. For historical reasons, the idea of a regulatory authority independent of the Government is difficult to understand and will take time to gain acceptance. Credibility has to be established first before one can think of acceptance.

Building Credibility

Our first challenge has been to build MERC's credibility. To do this, the Commission has laid great emphasis on a completely visible transparent process through public hearings conducted in a professional manner. This was uncharted territory.

Rather than ask people to come to Mumbai or Pune, we decided to take this new institution to where the people were, holding public hearings at all six revenue division headquarters. Our goal was to create awareness about this new consumer-oriented body seeking to bring about transparency in the power sector, and build credibility for the Commission.

Public participation in these hearings was overwhelming. Every group -- farmers, sugar co-operatives, powerloom operators, big industry, chambers of commerce and trade unions - invested considerable time and effort in making presentations before the Commission. Rural and urban consumers, industry associations, municipal and local self-governing bodies, professional associations and public sector institutions like Indian Railways submitted presentations on key areas like tariffs, subsidies, working of public utilities, public accountability and reduction of losses.

The Commission on its part ensured an atmosphere of openness and total transparency. It meticulously followed due process of law, giving all stakeholders -- including the State Government, MSEB, other licensees and consumers - a chance to be heard before it made its decision. The hearings were audiotaped and selectively videotaped. The orders issued give details of the objections raised along with the responses and the Commission's decision. The orders spell out the rationale behind every decision of the Commission. We also directed MSEB to post its affidavits and the Commission's orders on its website, so that they are accessible to all.

Power of Public Involvement

In the process, the Commission has discovered the power of public involvement and the positive and constructive response it generates. During the first phase of public hearings, agricultural consumers opposed metering on various grounds. In the second phase, they agreed to the need for metering but requested time to

get adjusted to it. When the Commission ordered metering in the tariff order, few voices were raised in opposition. In the review petitions, there was no opposition to the metering, but a request to delay billing as per the meter, till meters were installed for all consumers in the village.

This is a significant experience because the general misperception is that agricultural consumers are obstructing reform. In fact, the MERC's experience was that agricultural consumers were agreeable to load shedding during peak hours in order to get the benefit of lower tariffs.

Chandrapur 2,340 MW Super Thermal Power Station

Through this process of self-imposed answerability and accountability, we improved the quality of data brought into the public domain and helped create a database and feedback system that policy makers, consumer bodies and potential investors can rely on. MSEB has also benefited - it is setting up a real-time Management Information System that will help it become more efficient and credible.

Ethos of Maharashtra

The Commission owes a large measure of its success to the Maharashtrian ethos which has encouraged the growth of a large number of NGOs and consumer organisations that have done pioneering work in protecting the public interest. These groups strengthened the Commission's efforts by disseminating information about MERC to their constituents and bringing the problems of consumers to MERC's attention. Accustomed as they were to a democratic system of working within their own organisations, they ensured that the Commission's proceedings were conducted with great decorum and in a time-bound manner.

In all its work, the Commission has followed two principles - transparency and gradualism. Be it rationalisation of tariffs, or reduction in subsidies and Transmission and Distribution losses, the Commission's principle has been no "tariff shock" to any category of consumers and every tariff movement must be in the direction of the average cost of supply.

The Commission believes that consumers have a right to a detailed break-up of what they are being charged and that cross subsidies have to be removed over five years. Meanwhile, subsidies will be separated from other charges and made transparent, and MSEB reimbursed by the subsidising authority at regular intervals, rather than through lump sum payments.

Commission's Vision

The Commission has been guided in its work by the vision of restructuring a monolithic utility, encouraging more players and bringing about change by giving people a stake in the evolving system. The Commission's role is not just to fix tariffs but to facilitate the creation of capable, responsible, accountable, transparent agencies that can provide reliable energy supply to all categories of users in an efficient and economical manner, using a mix of incentives and disincentives. The Commission has a developmental role to play, restructuring the power sector to serve the people better, at a cost that they can afford.

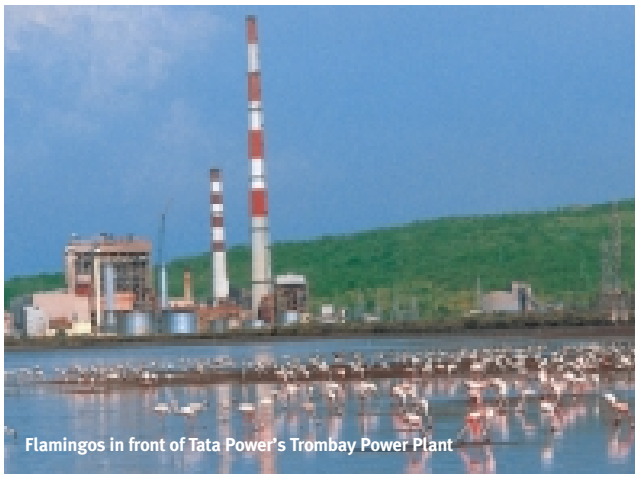
This report, under Section 36 of the Electricity Regulatory Commission Act, seeks to place before State Legislators, consumers and other stakeholders in the power sector, and the people of Maharashtra in general, the efforts of the Commission in working towards these goals. A great deal more is required to be done, but MERC feels that a good beginning has been made.

P Subrahmanyam
1st August, 2002

Three Years of MERC - A Report (1999-00, 2000-01, 2001-02)

The Maharashtra Electricity Regulatory Commission (MERC) was established on August 5, 1999, under the Electricity Regulatory Commissions (ERC) Act, 1998, a Central Act. This Act established the Central Electricity Regulatory Commission (CERC) and expected State Governments to set up similar commissions in their respective states.

The Act was passed by Parliament as part of the reforms in the power sector following the liberalisation of the Indian economy in the early 1990s. The CERC was mandated to promote competition, efficiency and economy in the power sector, and to regulate tariffs of the Central Government's power plants, inter-state sale of power and inter-state transmission. It was also authorised to issue licences to private investors in inter-state transmission. The State Electricity Regulatory Commissions (SERCs) were mandated to do the same within their respective States in power generation, transmission and distribution and to protect the interests of consumers and other stakeholders.


Flamingos in front of Tata Power's Trombay Power Plant

Parliament, by passing the ERC Act, intended that rationalisation of the tariff structure through independent Electricity Regulatory Commissions and restructuring of SEBs by unbundling, or separating generation from transmission and distribution, would bring about efficiency in each area.

The main functions of the SERCs as stipulated in the Act under Section 22 (1) are to:

(a) *determine the tariff for electricity, wholesale, bulk, grid or retail*
(b) *determine the tariff payable for use of transmission facilities*
(c) *regulate power purchase and procurement process of transmission and distribution utilities, including the price at which the power will be purchased*
(d) *promote competition, efficiency and economy in the activities of the electricity industry to achieve the objects and purposes of the Act*

Other regulatory functions under Section 22 (2) would be assigned to the SERCs as and when notified by the State Government (details of powers conferred and yet to be conferred in Annexures XVI & XVII on Pages 30, 31).

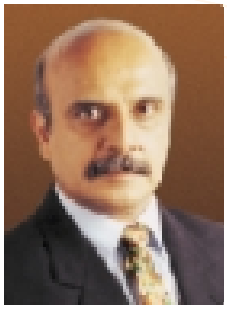
As of March 31, 2002, SERCs have been established in 16 states, notifications for setting up SERCs have been issued in four more States, while proposals are under consideration in the rest.

MERC comes into existence

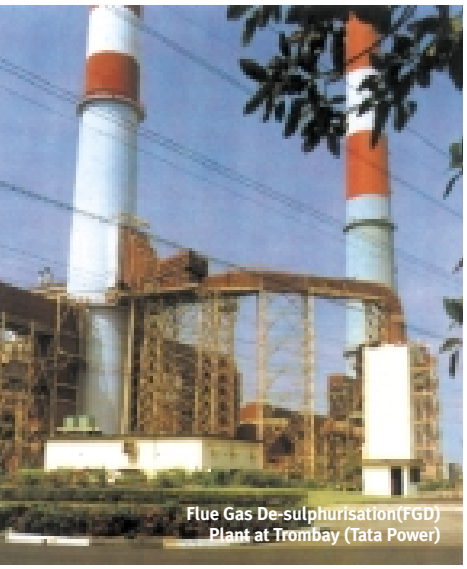
Although the MERC is the creation of an Act of Parliament of July 1998, and the State Government issued a notification in August 1998 setting up a Selection Committee for appointing the Members of the Commission, the Commission came into existence only in August 1999 as a result of a February 1999 order of the Bombay High Court.

Mr Venkat Chary
Former Member

Mr Jayant Deo
Member


Dr Pramod Deo
Member

This followed a revision of electricity tariffs by the State Government from October 1, 1998, resulting in higher tariffs for the industrial sector while keeping tariffs in the agriculture sector unchanged. The Thane-Belapur Industries Association and the Mahad Industries Association felt aggrieved and moved the High Court, challenging the State Government's right to fix tariffs when legislation had been passed for the setting up of an Electricity Regulatory Commission. The two Associations also challenged the tendency to routinely increase industrial tariffs while reducing agriculture tariffs.


Flue Gas De-sulphurisation(FGD) Plant at Trombay (Tata Power)

The High Court, by its order of February 26, 1999, gave the State Government six months to set up the MERC. It ordered that any further revision of tariffs could be done only by the MERC. It kept the petition filed by the two Associations pending, and directed the Commission to be set up, to examine the October 1998 tariff increase and report back to it. Thus came into being the MERC on August 5, 1999.

Mr P Subrahmanyam, former Chief Secretary of Maharashtra, was sworn in as the first Chairman on September 21, 1999.

The two Members of the Commission during the years under review were Mr Venkat Chary, former Additional Chief Secretary (Home), Government of Maharashtra, and Mr Jayant Deo, an independent practising industrial engineer. Mr Chary demitted office on expiry of his term on April 13, 2002, and Dr Pramod Deo, former Principal Secretary, Government of Maharashtra, who has had long years of experience in the energy sector, was appointed in his place as of April 29, 2002.

The Commission's Secretaries during the years under review were:
Mr Sunil Porwal, IAS (August 1999 to November 1999)
Mr Amitabh Rajan, IAS (December 1999 to July 2001)
Mr Sanjay Kumar, IAS (July 2001 onwards)

Mr Manas Kumar Kundu is the Technical Director (May 2000 onwards)

In exercise of the powers vested in it under Section 24 of the ERC Act, the MERC has constituted in October 2000 for a period of three years, a State Advisory Committee to advise on policy matters concerning electricity. The Committee includes the Chairman of MERC, the two Members, the Secretary and representatives from the agriculture sector, electric utilities, consumers, chambers of commerce and industry, industry associations and professional bodies. (Full List in Annexure XVIII on Page 31).

Lean and Efficient Infrastructure

The Commission Members were clear from the beginning that they wanted to set up a functional office that would be different from traditional set-ups. In order to be lean and efficient, the Commission also decided to outsource as much of its work as possible.

Since much of the Commission's work would require access to data, and much of that data in turn would have to be publicly accessible, the emphasis from the start was on a good library and a computerised Local Area Network for easy access and timely information management/dissemination.

The Commission began its work first from rented premises in Atlanta at Nariman Point in south Mumbai, before it moved to its present rented premises at the World Trade Centre No. 1, Cuffe Parade. Efforts to find suitable space were guided by the need for an in-house conference room with appropriate facilities for public hearings, and to be within easy reach of most of the electric utilities and legal firms.

The Commission's sanctioned staff strength as of March 31, 2002, stands at 27, of which 24 posts have been filled. This includes the Chairman, two Members, the Commission's Secretary and the Technical Director.

Objects and Reasons: ERC Act

"India's power sector is beset by problems that impede its capacity to respond to the rapidly growing demand for energy brought about by economic liberalisation. Despite the stated desire for reform and the initial measures that have been implemented, serious problems persist.

"As the problems of the power sector deepen, reform becomes increasingly difficult, underscoring the need to act decisively and without delay. It is essential that the Government implement significant reforms by focusing on the fundamental issues facing the power sector, namely the lack of rational retail tariffs, the high level of cross-subsidies, poor planning and operation, inadequate capacity, the neglect of the consumer, the limited involvement of private sector skills and resources and the absence of an independent Regulatory Authority."

This is how the "Objects and Reasons" for the ERC Act begins. It goes on to say that two conferences of Chief Ministers of the States adopted the Common Minimum National Action Plan for Power. They identified the need for viable State Electricity Boards (SEBs) and improvement of their operational performance. They also identified the creation of a Central Electricity Regulatory Commission and State Electricity Regulatory Commissions as a step in this direction.

The Administrative Staff College of India (ASCI), Hyderabad, was assigned the task of studying the restructuring needs of the system. It strongly recommended the creation of independent Electricity Regulatory Commissions, both at the Centre and the States. It was thus that the ERC Act entered the Statute Book.

Principles Adhered to by MERC

- Transparency
- Public Process
- Consumer Education
- Involvement of Stakeholders
- Institutional Development
- Promote Competition, Efficiency and Economy
- Adopt pragmatic, low-cost regulation
- Ensure financial viability to keep investment flowing in the sector

Due Process Involving All Stakeholders

Over the last three years of its existence, the MERC has made every effort, within the constraints it faces, to carry out the mandate given to it in an independent, consultative and transparent manner, as stipulated under Section 37 of the ERC Act.

The Commission has made every effort to follow due process of law, giving all stakeholders -- including the State Government, MSEB, other licensees and consumers -- a chance to be heard before it made its decisions, through public hearings in line with the aims and objectives spelt out in the Act. These public hearings have opened up the MSEB to public scrutiny and accountability as never before.

The Commission's approach was not just problem solving or resolution of disputes, but to address core issues keeping in mind the goal of developing a strong and healthy power sector in Maharashtra, capable of meeting the present and future needs of this highly industrialised State.

In the three years of its existence, MERC has interacted with four Chairmen of the MSEB and five Energy Secretaries in the State Government. Much of what the MERC has been able to achieve would not have been possible without their co-operation and that of the State Government, other agencies and the legal fraternity, all of which respected the Commission's autonomy and authority and enabled it to develop and grow.

Mention must especially be made of the six Revenue Divisional Commissioners in the State at Amravati, Aurangabad, Pune, Nashik, Nagpur and Mumbai. They facilitated public hearings at their respective headquarters, giving wide advance publicity and providing the necessary infrastructure.

An enlightened public

Maharashtra is also extremely fortunate in its large number of NGOs, including consumer organisations, research bodies, chambers of commerce and other professional institutions that are fully aware of their responsibilities, and participated constructively in the Commission's proceedings. Among those who participated in the MERC's proceedings:

- Consumer bodies - Prayas, Mumbai Grahak Panchayat, Pune Grahak Panchayat, Akhil Bharatiya Grahak Panchayat, Electricity Consumers' Association, social workers and individuals
- Professional institutions and companies - I.I.T. (Powai), Institution of Engineers (Energy Forum), Tata Engineering, Indian Railways, Pune Chapter of Cost Accountants, and a large number of experts and techno-economic consultants

- Industry associations - the Confederation of Indian Industry (CII), Thane-Belapur Industries Association, Thane Small Scale Industries Association, Vidarbha Chamber of Commerce, Vidarbha Industries Association, Nashik Industrial Manufacturers' Association, Millowners' Association, All India Association of Industries, Akola Industries Association, Mahad Manufacturers Association, Promoters and Builders Association of Solapur, Nashik Electrical Contractors Association, Seed and Cake Millers Association and Indian Hotel and Restaurant Association
- Government of Maharashtra (Energy & Irrigation Departments), Maharashtra Energy Development Authority (MEDA), Ministry of Non-Conventional Energy Sources (MNES) of the Government of India, municipal and other local self-governing bodies
- Trade unions like the Centre of Indian Trade Unions (CITU)
- Co-operative sugar factories like Vasantdada SSK Ltd., Padmashri Vithalrao Vikhe-Patil SSK Ltd., Jawahar SSK Ltd., Ajinkyatara SSK Ltd. on co-generation and
- Several farmers' associations and Lift Irrigation Societies like the Maharashtra Rajya Veej Grahak Sabha.

Regulations on MSEB's Systems and Operating Procedures:

- Ensure Proper Metering
- Conduct Energy Audit, division-wise
- Carry Out Cost Audit
- Ban on Recruitment of Class III & IV staff
- Provide Information on Website
- Working Capital - only 75 days

The Commission is deeply grateful to all of them for contributing to its knowledge base and strengthening its efforts through their active participation. It is due to their involvement and participation that MERC was able to carry out its mandate as smoothly as possible and without any external pressure or the kind of public protests witnessed elsewhere. The reforms that the Commission has attempted in the state power sector could not have been realised without their support.

Main Initiatives

The Commission has been guided in its work by the intention of Parliament to regulate the electricity sector in the State, bring about transparency, promote competition, efficiency and economy in the industry, safeguard the interests of consumers and ensure that the entire business of electricity generation, transmission, distribution and supply is conducted on commercial principles.

It has, therefore, attempted to put in place a methodology that would be a guide for the future, rather than look for quick fixes on issues like tariffs, disputes between utilities, consumer protection and formulation of basic principles to regulate the generation, transmission and distribution of power in the State.

There has been a high degree of unanimity among the Commission's members in the decisions taken - only one of the 43 orders issued till March 31, 2002, has had a dissenting note.

Of the 43 orders, only four have been challenged in the High Court. But no interim relief or stay has been granted on them. These relate to the Tata Power-BSES dispute on Standby Charges, MSEB's service line and other charges and tariffs, and the question of MERC's jurisdiction in the MSEB-Dabhol Power Company dispute, on alleged violation of operating characteristics under the Power Purchase Agreement between the two parties. The last was argued before MERC, then the High Court, the Supreme Court and back again to the High Court which ruled in MERC's favour, before the current appeal was filed.

Among the major initiatives of MERC in the last three years are the following:

1. **Generation of reliable field data in a transparent manner**

   MERC's main thrust has been towards transparency in the pricing of power, rationalisation of tariffs and determination of actual T&D losses by instituting public processes. This has brought for the first time into the public domain what was considered a back office activity, and made available more substantial and dependable information on energy generation, transmission, what reaches consumers, what is billed and what is collected.

   This creation of a reliable database has helped move away from unexplained, ad hoc and arbitrary decision-making to clearly defined, accountable, responsive systems that becomes the basis of rational decision-making. It has compelled MSEB to go in for energy accounting and auditing to get circle/zone-wise estimates of losses. It has also led MSEB to assign segregated value of fixed and variable costs of generation for its power plants.

   For instance, the Commission's hearings brought out the fact that

   - MSEB's losses, stated by the MSEB in October 1999 to be 16-17%, were in reality as high as 39.49% in 2001

(MSEB figure). This, despite the target of 26.87% for 2001 set by the Commission. The conversion of a mere 5% of the 31% T&D losses prevailing in 2000 into sales would have enabled MSEB to earn Rs 600 crores (Rs 6 bn).

- Agricultural pumpsets were being charged on a flat rate basis, according to the horsepower of the pump rather than units consumed, for 25 years. This worked out to a mere 42 paise per unit when Indian Railways were being charged Rs 4.75 per unit in 1999 - a glaring anomaly in the then prevailing tariff.
- High T&D losses existed in extra high voltage system and even in express feeder lines like those in MIDC areas.

2. Public hearings

All the Commission's hearings have been conducted with great decorum and respect for time, as befits a quasi-judicial body. Depositions were made under oath and in the presence of consumer representatives, as required under Section 26 of the ERC Act. Some of these hearings saw Legislators and others forcefully making the case for their constituents using modern presentation techniques. All hearings were audio-taped and selectively videotaped, so that a permanent record is available. The participation of consumers and various industry associations at these hearings was overwhelming. Many invested a lot of time and money to make presentations to the Commission on different aspects of the industry, like cost structure, captive power policy, subsidies and cross subsidies and necessity of capital expenditure.

3. Meritorious Decisions

The Commission passed two Tariff Orders for MSEB, with important implications for its functioning and performance, on May 5, 2000, and January 10, 2002. These orders, aimed at generating revenue through efficiency improvements rather than pursuing only a 'cost plus' approach, and introducing accountability to the public at large, have evoked interest from other States both for the methodology and the tariff worked out. These Tariff Orders include the views and opinions of the State Advisory Committee. They represent the collective wisdom of consumers and various industry associations. The highlights of the orders were:

- Tariff movement towards an average cost of supply, at an improving level of efficiency to encourage economic use of resources, good performance, optimum investment and safeguard the interests of consumers as stipulated in Section 29 (2) (c), (d) and (e) of the ERC Act.
- The system of energy audits and accounting would be strengthened to identify and quantify T&D losses as a first step towards reduction of losses. Metering all consumption should be a priority area for all units.
- A system of incentives/disincentives be implemented to send correct price signals to consumers and utilities.
- Cross subsidies would be eliminated gradually over a period of five years for all categories, as tariffs for all categories were increased or decreased gradually to reflect the average cost of supply.
- Industrial tariffs would be structured to further the aim of Demand Side Management.
- Collection efficiency would be improved to reduce the cost of capital.

MERC in session (from right):
Mr Jayant Deo (Member), **Mr P Subrahmanyam** (Chairman), **Dr Pramod Deo** (Member) **and Mr Sanjay Kumar** (Secretary)

As a result of these Tariff Orders

- Metering is compulsory for all new consumers and new connections have now to be released within a stipulated time frame. All other consumers are to be metered within 3 years. The Commission is of the opinion that if MSEB's efficiency is to improve, the consumption of all categories of consumers must be metered and a system of energy audit for all billing units be instituted.
- Metering is required not only for determining the amount to be paid by the consumer, but also for measuring energy consumption, which is vital for any system to maintain the energy balance of the utility and develop a successful strategy for the future.
- A two-part tariff was introduced with the aim of gradually recovering the fixed costs through a fixed charge, and the variable cost through a variable charge.
- Time of Day (ToD) or Time of Use meters were installed on all HT category consumers by May 31, 2002 (against the target date of December 31, 2001), to ensure better demand management.
- The Power Factor of the system has improved and has been steady since February 2002 (Annexure XI on Page 27) indicating that industries are making a determined effort to conserve energy by improving the efficiency of their power consumption.

- MSEB has been asked to publish names of 10 biggest defaulters in each category in each billing unit.
- MSEB's billing process is being computerised and seamless integration efforts are on.

4. Fuel & Other Costs Adjustment

The Commission has introduced clear guidelines on charges for Fuel & Other Costs Adjustment (FOCA) for the first time in India. This enables a utility to pass on the rise in the approved variable costs, which are beyond its control, to consumers as and when they are incurred, thereby minimising the frequency of tariff changes and giving consumers the right information about such costs almost on a real time basis.

5. Merit Order Dispatch

Merit Order Dispatch (MOD), for optimising the cost of generation and purchase, should be mandatory for all utilities to ensure efficient and low cost generation of power. MERC was the first Regulatory Commission to mandate this. Merit Order Dispatch (MOD) involves sourcing from the cheapest source first, and then from the next lowest cost source till all the power requirements are met, subject to grid constraints.

MOD forms an integral part of the regulatory due diligence and assists in controlling the single largest portion of the costs associated with the power industry, as generation and power purchase constitute more than 60% of costs in the industry. The MOD schedule will be determined on the basis of the variable cost of generation/purchase. MSEB's purchase of power from Dabhol Power Company was accordingly modified in line with this order.

MERC's Regulations on Consumer Service:

- Staff to Wear Name Badges
- Provide Connection in 45 Days
- Bills to be Rounded off to Rs 10
- Security Deposit Rationalised
- Publish Defaulters' List quarterly and disconnect supply if in second defaulters' list

6. Purchase of power from non-fossil fuels

The Commission has developed norms for purchase of power by the MSEB from bagasse-based co-generation projects in order to encourage the generation of power from non-fossil fuels (bagasse, biomass, biogas, and agricultural wastes like rice husk, groundnut shells) and open up this part of the power sector to greater investment and competition.

The Ministry of Non-Conventional Energy Sources (MNES) of the Government of India had laid down guidelines for co-generation projects. The Commission decided to undertake a comprehensive review through a public process, in order to determine the tariff as well as formulate the principles of the Energy Purchase Agreement (EPA) for non-fossil fuels-based co-generation plants, including bagasse.

The public process was essential to gather the overall perspective of various participants and stakeholders regarding promotion of co-generation projects, and to evaluate the benefits/implications of the energy generated from such co-generation projects to MSEB, its consumers and project developers in the long term.

Those generating power using such fuel can now sell power to the MSEB (which has to give permission in 90 days as per Section 44 of the Electricity (Supply) Act), on the basis of a pricing worked out on the coal equivalent price of these fuels. The Commission has permitted Third Party Sale by such projects from the beginning itself, as a first step towards introducing competition in the sector. The tariff has been determined at Rs 3.05 per kWh, with an annual escalation of 2% for 13 years (tenure of EPA) on a compounded basis.

The Commission expects that the tariff so fixed will be able to attract sufficient investment in this sector as this rate is quite attractive, and will ensure remunerative but reasonable returns to investors, while at the same time ensuring that the viability of the MSEB is not adversely affected. The MERC proposes to review the tariff after March 31, 2007, or after addition of 300 MW of additional installed capacity based on such fuels in the State, whichever is earlier.

The Commission believes that the viability of the projects will be further enhanced by its decision that evacuation facilities will have to be built at the cost of the MSEB. The EPA tenure has been kept at 13 years, to ensure that the developers are able to service their debt obligations and a reasonable return accrues from the project. The MERC has allowed a higher Return on Equity of 20% for such projects, as compared to the conventional RoE of 16% allowed for power projects. The Commission has also provided for additional payment of security in the form of an irrevocable revolving Letter of Credit in favour of the developer.

7. Captive Power Plants (CPPs)

The Commission is in favour of promoting competition by removing barriers against captive power plants in the system. It is estimated that about 20% excess capacity exists in captive power generation and this energy should be brought into the grid which suffers from a shortfall. If CPPs are allowed to sell this energy at variable (fuel) costs, the system would benefit and this would also improve the utilisation of capital assets.

In its May 5, 2000, Tariff Order, the Commission pointed out the contradiction of the MSEB resorting to load shedding while simultaneously refusing to allow captive power units. It, therefore, directed MSEB to follow Section 44 of the Electricity (Supply) Act, 1948, in its true spirit, accept the generation of private power at economic rates and clear all pending applications by June 30, 2000.

The MSEB has since confirmed during the hearing of the bagasse-based Co-Generation Project petition that all applications for Section 44 have been dealt with and disposed of accordingly.

The Commission will look into the matter of sale of surplus power by captive power plants to the MSEB or other utilities at a later stage under Section 22(1)(c) of the ERC Act 1998. But it has, in principle, no objection to encouraging captive power units, especially those producing power through co-generation. This order is also in line with the stand of Central and State Governments on the issue.

8. Resolution of long-standing disputes

The Commission has sought to resolve a long-standing dispute on Standby Charges between Tata Power and BSES amicably and logically, on the basis of a rational framework. The matter is now pending in the Bombay High Court by way of an appeal.

9. Ensuring Greater Accountability on the part of Utility Employees

The Commission has sought to ensure greater accountability on the part of MSEB employees by directing them to wear name badges and also directing that each billing unit be treated as a profit centre. It has pulled up MSEB officials for "irresponsible behaviour", dereliction of duty and not settling disputes with customers by wrongly interpreting policy guidelines. A superintending engineer was issued notice to show cause why a token fine of Rs 100 should not be imposed on him for breach of Regulation 83 of the MERC (Conduct of Business) Regulations 1999, read with Section 45 (1) of the ERC Act.

Koyna Dam - Koyna Hydel Project

MSEB has been directed to stop collecting and/or taking any undertakings from consumers towards collection of increased service line charges, increased meter rent or charges on metering accessories and to refund monies so collected. MSEB cannot force Maximum Demand tariff on the Low Tension-General Motive Power (LTPG) consumers but has to treat this as optional, as per the Commission's Tariff Order of May 5, 2000.

The Maharashtra Power Sector

In some aspects, Maharashtra is unlike any other State in the power sector in India.

Maharashtra has the largest installed capacity of 15,580 MW in the country (Annexure XIII on Page 28) and the largest vertically-integrated power utility in the Maharashtra State Electricity Board (MSEB). Unlike other States, it has two well-established private utilities -- Tata Power in existence for over 91 years and BSES since 1929.

It has a successful municipal undertaking (Brihan Mumbai Electric Supply & Transport--BEST) distributing electricity since 1905 in the island city of Mumbai, the only city with uninterrupted power supply and with the lowest T&D loss in India of 11%.

Maharashtra also has a rural co-operative electricity distribution society in the Mula Pravara Electric Co-op Society Ltd., a licensee sponsored by the Rural Electrification Corporation and engaged in the business of distributing electricity in Shrirampur and Rahuri talukas and some villages of Sangamner and Newasa talukas of Ahmednagar district since 1969.

The BEST Undertaking gets power for distribution from Tata Power and the Mula Pravara Electric Co-op Society from MSEB. Maharashtra has planned for the first large-scale Independent Power Producer in the Dabhol Power Project and also gets its share of power from the National Thermal Power Corporation and Nuclear Power Corporation through the Western Region Electricity Board grid.

There are nearly 94 lakh domestic consumers of MSEB in Maharashtra, of which 27 lakhs use less than 30 units per month (with just a bulb and a fan for 6 hours daily), 65 lakhs use 31-300 units per month and 2 lakhs use more than 300 units per month.

Nine out of 10 consumers in the MSEB area get power at subsidised rates and industry accounts for almost 40% of the total power consumption.

Maharashtra has the largest number of agricultural pumpsets numbering over 21.7 lakhs, mostly operating on unmetered power supply and charged on a flat rate based on the horsepower of the pumpset. They account for 26.13% of the energy sold by MSEB in the state. The direct agriculture and power loom subsidy, as approved by the Commission, is Rs 745.82 crores for the year 2000-01. Rural water supply schemes are also largely unmetered.

MSEB's 1st Tariff Petition for 1999-2000

The Commission, in exercise of the powers vested in it under Section 29 of the Electricity Regulatory Commissions Act 1998 determines the tariff for supply of electricity by the MSEB for retail and/or bulk distribution.

Maharashtra's Power Demand and Consumption Statistics

As on March 31, 2002

Utilities	No. of Consumers	Maximum Demand MVA	Consumption in MU
MSEB	12,497,575	9,452 MW*	37,241
Tata Power	9,112	1,738 MW*	8,673
BSES	2,133,398	1,202	5,676
BEST	883,341	700	3,216
Mula Pravara Electric CSL	137,046	165	513
Total	**15,660,472**	**11,262 MW****	**55,319**

Source: Annual Reports

** Peak Demand, **Peak Demand, for the whole State*

Power Consumption in Maharashtra (Population: 96.8 m) as compared to India (Population: 1027 m)

	Maharashtra	India
Number of consumers	1.51 crores	15.91 crores
Peak Load at station busbar (MW)	12,472 MW	89,919 MW
Consumption	79,593 million units of which 14,349 is in Mumbai alone	5,29,013 million units

Source: CEA & 16th EPS

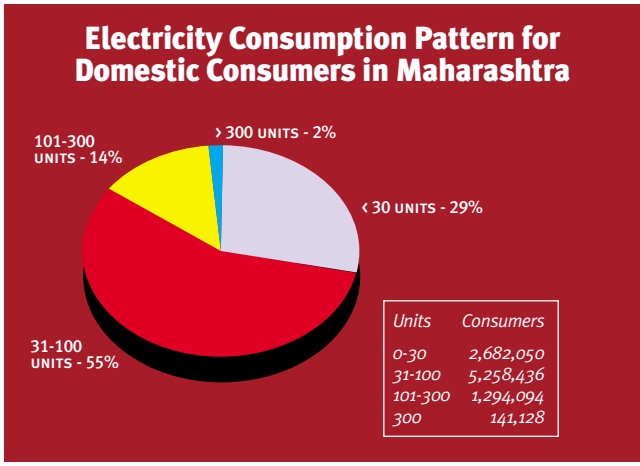
No sooner was the MERC fully constituted on September 21, 1999, than it was presented on October 25, 1999, with its first test case in the form of the MSEB's 36-page tariff petition, for the financial year 1999-2000. The petition had been pending before the state government since May 4, 1999, and the MSEB wanted an early decision.

The Commission decided that it would not make a hasty response. Instead, it decided to carry out a proper "Determination of Tariff for MSEB" based on a trend-setting procedure that it would follow in future.

MERC then took the following steps:

It issued a notice for Public Hearings at 6 divisional headquarters, called for objections in the form of affidavits within 40 days and held a press conference in order to ensure the widest possible publicity. It also appointed two consumer organisations, Prayas and Mumbai Grahak Panchayat as representatives of consumers under Section 26 of the ERC Act.

Meanwhile, it set about framing Foundation Regulations for its own working -- on fees and charges, appointment of consultants, appointment of employees and "Conduct of Business Regulations" which it adopted on December 27, 1999.



Source: Tariff Order of January 10, 2002

Electrifying Public Response

The response to the public notice from a little-known organisation like the MERC, was electrifying. The Commission received a total of 344 objections - 144 with affidavits and 200 without affidavits. Being the first hearing of its kind, and in order to build public confidence and meet the ends of justice, the MERC decided to take cognisance of all objections, irrespective of the requirement of an affidavit, under its inherent powers.

Among the interest groups that filed their objections were consumers, individuals, industries, professional bodies, farmers associations, sugar co-operatives, lift irrigation societies, municipalities and local self-governing bodies, political parties, railways and trade unions. Anyone who wanted to be heard was given an opportunity before the Commission, MSEB was asked to respond to all the objections at the end of each day, and those objecting were given ten days to file rejoinders to the MSEB's responses.

Phase I - Public Hearings

Public hearings were then conducted at the headquarters of the six revenue divisions over a period of one month (January 2000) with consumer interest groups and other concerned parties being allowed to participate. The MSEB was asked to answer objections at each of the venues of the public hearing. It is worth noting that at the first hearing, the MSEB was represented by an executive engineer who was given 45 minutes to make a point-by-point reply to the objections raised.

But as the hearings progressed, and the rigour of the Commission's method became apparent, the MSEB upgraded its representation to Superintending Engineer, Chief Engineer, then Technical and Accounts Members and finally to the level of the Chairman himself.

Phase II - Technical Validation

MERC's Decision-Making Process

PHASE I

Pre-Public Hearings

Technical Validation Session
Assess Utility Proposal
Call for Clarifications
Prepare for Public Hearings
Consultants' Input
Experts' Verification

PHASE II

Public Hearings

Issue Public Notice
Invite Objections
Conduct Public Hearings
Tabulate Objections
Call for Clarifications from Utility
Call for Response from Utility to Objections
Call for Rejoinders on Utility's Response

PHASE III

Tariff Order

Reconcile Viewpoints
Develop Models
Prepare Speaking Order
Issue Detailed Order

A limited public process in the form of a technical validation session then followed. The MSEB was asked to validate the data elements of its tariff proposal in the course of technical sessions held by the Commission in the presence of representatives of organisations like Prayas, Mumbai Grahak Panchayat and Thane Small Scale Industries Association.

In the course of the hearings, on going through the data submitted from time to time, the Commission noticed several changes in the figures submitted by MSEB.

Alternating Current Filter Equipment at MSEB's Padghe 400 KV Sub-station, Bhiwandi, Thane District

The new figures indicated an increased deficit of nearly Rs 2,000 crores, as against the earlier figure of Rs 1,119 crores mentioned in the application of October 1999. But even then the tariff proposed was clearly inadequate to enable the MSEB to recover all expenses and earn a 3% surplus on Net Fixed Assets (NFA), a statutory requirement. This has since been raised by the State Government in 2001 to 4.5% of the NFA, through a government notification (RCR-2000/CR-1228/NRG-3 dated October 5, 2001).

The deficit of Rs 2,000 crores raised a legal issue -- the Commission's competence to entertain a proposal that does not fulfil, prima facie, the conditions laid down in Section 59 of the Electricity (Supply) Act. The Commission accordingly passed an interim order on February 23, 2000, directing the MSEB to answer the legal points raised.

Phase III - Revised Proposal

Since by this time the financial year for which the tariff hike was proposed was almost over, the Commission felt a revised proposal incorporating the estimates for 2000-01 would be relevant and decided to treat it as a continuation of the earlier proposal for 2000-01. The MSEB was directed to publish the revised proposal comprising 525 pages dated March 6, 2000, on its website (against the 36-page proposal it had submitted six months earlier), insert an advertisement in newspapers about the revised proposal, and arrange to send it at its own cost to all those who had sent in their objections.

Objections were again invited (184 were received), public hearings held in Mumbai, MSEB given a chance to file its reply (5 weeks) and those who wanted to submit rejoinders to the MSEB's reply were again given 10 days - in short,

Strategies in 1st Tariff Order

- Transparency
- Public Process & Developing a Consensus
- Consumer Education on Pay for Use and Tariff Reflecting Average Cost of Supply
- Compliance with procedures
- Accuracy of Data critical for Tariff Process
- Validating the Demand & Sales Forecast
- Industry Tariff Structure to aim at Demand Side Management
- Merit Order Dispatch & Least Cost Plan of Generation and its Impact on Costs
- Clear guidelines to be set out by regulator, with objectives and projected time frame for achieving each objective, outlining regulator's views on topics such as
  - Metering
  - Energy Audits
  - T&D loss
  - Billing & Collection efficiency
  - Cross-subsidy and suggested means of reduction
- Discussion papers to be published by the Commission on relevant issues to elicit public opinion, as well as initiate discussion

the due process contemplated under the law was followed meticulously at every stage and an adequate opportunity given to all concerned to submit their case.

The Commission finally issued an Order on April 28, followed by a detailed Speaking Order of 197 pages on May 5, 2000. The Tariff took effect from May 1, 2000. Never in the history of the MSEB had a tariff proposal been subjected to so much public debate and scrutiny.

Subsequently, 56 review applications were received on the same Tariff Order and the Commission after observing due process delivered its Review Order on December 13, 2000.

The Rationale for the Tariff Order

In the opinion of the Commission, "tariff" is not meant to generate revenue for the MSEB or any utility merely on a 'cost plus' basis but to reflect the cost of supply of electricity at an adequate and improving level of efficiency. The Commission was guided in its order by factors of efficiency, economy and optimum use of resources, good performance and optimum investments. The Commission was also intent on safeguarding the interests of consumers, ensuring that they paid for the electricity they used in a reasonable manner based on the average cost of supply.

A major challenge is to reduce Transmission & Distribution (T&D) losses which are in excess of 39%. These losses must be reduced to a level of 15-16% over a period of 3-4 years and the energy thus saved put to productive use.
The Commission has set a target of 5% reduction per year. This itself would amount to additional annual billing of about 2,200 million units for MSEB.

The expression "tariff" would, therefore, cover not just the rates at which electricity supply can be charged, but also include charges relating to Service Line Charges, meter rent, fixed service connection, etc. Another major factor that has weighed heavily with the Commission on tariffs is the need for Indian industry to be more competitive. Following the liberalisation of the economy, which has opened up domestic markets to international competition, Indian industry often finds itself unable to compete because it is supplied inputs like power at administered prices that are higher than international rates.

Traditionally, Indian industry has paid higher power rates that have subsidised other sections of society. But in the emerging global business environment, Indian industry runs the risk of becoming uncompetitive. Instead of subsidising other sections of society, it may well end up becoming 'sick' itself, resulting in unemployment and other adverse economic and socio-political consequences.

Hence, the Commission felt it was imperative to gradually rationalise tariffs by moving them uniformly in the direction of the average cost of supply. This will mean that those consumer segments which are currently paying much less than the average cost of supply will move towards the median line, while those who are now being charged more will slowly move downwards (Annexures IX & X on Page 26). The second part of the rationalisation process will remove multiplicity of slabs and categories for better administration and management.

Salient features of 1st Tariff Order

Based on all these considerations, the Commission's Tariff Order of February/May 2000 covered the following pioneering directives:

- Tariff to Reflect Average Cost of Supply over 5 years
- Cross subsidy to be eliminated gradually over 5 years
- All consumers to be subjected to a two-part tariff over 3 to 5 years - a 'fixed costs' charge that would gradually increase to cover the actual fixed costs incurred by the MSEB, and a 'variable costs' charge that would reflect the variable cost
- Rationalisation by merging categories and slabs (8 LT & 13 HT categories)
- FOCA to be charged to all consumers, whether metered or unmetered
- Power Factor (⇢0.95) and bulk discount (⇢1 MU) incentive introduction
- A Time of Day or Time of Use tariff was introduced for effective demand side management. This reduces the need for expensive power and tends to minimise the incremental investment in the system.

- MSEB was awarded a tariff hike of Rs 809 crores, against its proposal of Rs 2,018 crores.
- MSEB was allowed a surplus of Rs 391 crores, although 3% of Net Fixed Assets amounts to Rs 282 crores. The Commission allowed this cushion to enable MSEB to absorb the impact of incentives/disincentives offered to consumers as their impact could not be quantified.
- MSEB was directed to reduce T&D loss by 5%, to a maximum permissible 26.87%, to enable it to earn Rs 600 crores.
- Minimum charges were withdrawn.
- Meter rent was abolished.
- MSEB was directed to submit a Master Metering Plan taking into account the following directives:
  - Meters to be installed for all consumers within 3 years.
  - Metering to be compulsory for all new consumers.
  - Time of Day meters to be installed on all HT category consumers by December 2000.
- MSEB to publish names of 10 biggest defaulters in each category in each billing unit.
- MSEB to install a system of energy audit for all billing units.
- All employees dealing with the public to wear name badges.
- All new connections to be released within a stipulated time frame.

MSEB's Alternating Current Yard at Padghe, Bhiwandi, Thane District

MSEB's 2nd Tariff Petition for 2001-2002

The Commission followed a similar procedure when the MSEB again sought on March 15, 2001, a tariff hike of about 37% from April 1, 2001. The Commission could not take up the revision immediately because Prayas, the Pune-based consumers' representative body recognised by the MERC, had filed an application dated April 3, 2001, seeking that no tariff revision be undertaken till its application dated October 7, 2000 seeking documents pertaining to MSEB's agreements with Independent Power Producers, including Dabhol Power Company (DPC), was decided.

Meanwhile, a dispute arose between MSEB and DPC, resulting in a complete change of scenario on power procurement and its relevant cost to be recovered. As a result, on August 31, 2001, MSEB filed a revised tariff revision proposal of over 1,000 pages in 3 volumes, as the dispute that developed between it and Dabhol Power Company was expected to change the assumptions and the arithmetic on which its earlier tariff proposal had been based. Technical validation of the proposal was conducted on September 11, 2001, while simultaneously informing the Government of Maharashtra to actively participate in the process.

The proposal was put through the Public Hearing process. This time the Commission received a total of 533 objections, 381 on affidavit and 152 without affidavits following a Public Notice, Web presence and a news conference called by the MSEB on the Commission's directive. The Commission held hearings at the six revenue division headquarters between October 3 and 16, 2001. The State Government told the Commission on September 29 that it did not feel the need to participate in the public hearings because, except in matters relating to subsidy for agricultural and powerloom consumers, it had no intention of providing subsidy to any other category.

But on the last day of the public hearing in Mumbai, the Energy Department of the Government of Maharashtra (GoM) made a submission to permit it to make an affidavit. The Commission accepted the request and agreed to allow the GoM to make its presentation on October 25. At the Government's request this date was extended to October 31 and then to November 5, when the GoM submitted its affidavit for further extension. Finally, on December 3, 2001, the GoM submitted its affidavit.

State Government's Position

In this affidavit the GoM stated that it had the power to issue policy directives to the Commission in the public interest under Section 39 of the ERC Act. The GoM stated that it had received representations from public representatives that the tariffs proposed for certain categories of consumers like domestic, agricultural, powerloom, streetlights and Public Water Works were on the higher side.

"GoM has taken note of the apprehensions expressed by Public Representatives and has come to the conclusion that the proposed tariff is indeed on the higher side and there may be strong resentment against it by public at large which may also lead to some law and order situations. This issue is required to be examined in depth as it involves the interests of the public at large."

Innovative Concepts in 2nd Tariff Order

- T&D Loss Charge to incentivise reduction of such losses by 5% per year
- Reliability Charge - to incentivise MSEB to ensure uninterrupted power supply, the extra revenue so generated to be used for strengthening infrastructure
- Energy Conservation Fund to incentivise the use of energy-efficient devices for irrigation, Public Water Works and streetlighting
- Time of Day tariff option to incentivise commercial users and Low Tension industries to shift demand to low peak periods
- Reinforcing the Power Factor incentive to improve the System Power Factor further, to reduce demand and save energy
- Directing GoM to make budgetary provision for electrical consumption in local bodies.

The State Government submitted that the tariff for domestic, agriculture, powerloom, streetlights and Public Water Works should be set within certain limits specified by it, with the loss in revenue on this account to be made up partly by increasing the cross subsidy. The balance of Rs 550 crores would be paid by it.

The Commission considered the affidavit and again acceded to the State Government's request for time to file a further affidavit on December 4. It also decided to place the affidavit through the public hearing process because of a reference to a possible law and order problem arising out of the Tariff Increase proposal. This was to prevent any ambiguity in the minds of the public. The Commission noted with concern that owing to the Government's delay, the MSEB was incurring heavy losses which would have an impact on the Government's finances also. MSEB said the delay in issuing the Tariff Order meant it would not be able to recover Rs 190 crores per month based on the proposed tariffs.

The public hearing was held on December 24, 2001, at the Commission's office at the World Trade Centre. The Commission received 240 objections on affidavit on the Government's affidavits of November 5 and December 4. The Commission was not satisfied with the GoM's explanation for the delay in submitting its petition, when the Commission had made every effort to involve it from the first day of the technical validation session. It therefore told the Government's representative that in future its submissions would not be considered if there was an "unconscionable delay".

Subsidy Determination

The Commission, after studying the relevant provisions and the judicial pronouncements of the Supreme Court on this matter is of the firm view that though the GoM can issue policy directives to the Commission, the power to determine tariffs rests solely with the Commission. The Advocate General of Maharashtra, Mr Goolam Vahanvati, also was of the opinion that the Government of Maharashtra can only guide the Commission in matters of policy, and the authority of tariff determination is vested with the Commission under Section 29 of the ERC Act, read with

Section 22. The Commission therefore ignored the category-wise tariffs proposed by the GoM and only considered the policy that it desires to subsidise the domestic, powerloom, agriculture, Public Water Works and street lighting categories. It asked the Government to submit a detailed petition under Section 29 of the ERC Act, stating the subsidy to be given to the subsidised categories, in relation to the tariffs determined by the Commission and the total amount of subsidy being paid by the Government.

MSEB's Nashik Power Station

Once the GoM submitted the petition, the Commission would take a view on the tariffs to be charged to the subsidised categories after incorporation of the Government subsidy. The MSEB's bill pro forma should indicate the tariff determined by the Commission, the Government subsidy and the rate and period thereof, and the net amount payable by the subsidised categories of consumers. Till then, the MSEB would have to charge all consumers as per the revised tariffs determined by the Commission.

In its order of May 30, 2002, the Commission approved a direct subsidy for agricultural and powerloom consumers of Rs 493.37 crores for 2001-02. The Commission also reiterated that the Government subsidy had to be paid to the MSEB in cash every month. If, for any reason, the full amount of the subsidy was not paid to the MSEB by the due date, the MSEB should issue fresh bills to the subsidised consumers at the original rate determined by the Commission's Tariff Order of May 5, 2000, and recover the dues under the relevant provisions of the electricity laws without delay.

The Commission then issued its second Tariff Order dated January 10, 2002.

Salient features of 2nd Tariff Order for 2001-2002

- The Commission approved a tariff hike of Rs 452 crores, allowing MSEB a surplus of Rs 493.18 crores (4.5% of Net Fixed Assets).
- A T&D Loss Charge was introduced for the first time to highlight the critical issue and MSEB was asked to direct attention exclusively to T&D losses. The MSEB had submitted during the hearing that its T&D losses were 39.49%, against the target of 26.87% set by the Commission in its Tariff Order of May 2000. This meant that the gap of 12.62%, equivalent to 7,772 million units of energy costing Rs 1,271.8 crores, was a "commercial loss". This is the cost of additional power purchase required to meet the demand. The Commission alarmed by the trend of MSEB disclosing higher T&D loss levels, instead of achieving the reduced targeted level of 26.87%, asked MSEB to share 50% of this loss, equivalent to Rs 635.9 crores, while its consumers would have to pay the remaining 50% on a zone-wise basis through a special charge called the T&D Loss Charge.
- Extensive energy accounting and auditing for every circle and zone was ordered, with a directive to periodically submit an "action taken" report and fix accountability of the concerned executive, including recovery and disciplinary action. MSEB was asked to publish data of energy accounting and auditing in each circle/zone and also keep the local public representative informed. MSEB was directed to modify terms and conditions of supply to make it more customer friendly and executable by field staff.
- Tariff rationalization for public utilities and HT consumers. Tariffs to be moved towards average cost of supply to ensure removal of inter-class cross subsidy within five years.
- MSEB was directed to vigorously pursue the Master Metering Plan with a "Time of Day" meter option offered to commercial and LT industrial consumers.
- MSEB was asked to disconnect all consumers whose names appear in the "Defaulters' List" for the second time. MSEB was also asked to reduce receivables to an equivalent of five months of the sales revenue in FY 2001-02, from the existing level of six months.
- State Government was asked to make a separate budgetary provision for payment of electricity bills while drawing up the budgets of local bodies, instead of clubbing them with miscellaneous expenses.
- The Commission further refined norms for unmetered consumption to agricultural pumpsets at 1,250 hours per HP per annum.
- Directive issued to make Tariff Order copy available to all concerned executive staff of MSEB.

Time-Bound Implementation

In the course of the public hearings, the Commission found that MSEB had disregarded its directives on 7 counts - viz., metering of flat rate consumers, Time of Day meter installation for HT industrial consumers, provision of name badges for employees, domestic supply rates to railway residential colonies, disconnection of supply for those in arrears over 75 days, issue of commercial circulars without the prior approval of the Commission, and providing data on public institutions as well as marginal consumers who fall under the 'Kutir Jyoti' scheme. The last applies to weaker sections of society who use a single light point of up to 40 watts, or whose consumption is less than 15 units per month.

For these lapses, and to show that it means business, the Commission disallowed revenue to the MSEB at the rate of Rs 1 crore for each of these 7 acts of non-compliance and directed the MSEB to comply with the directives by March 31, 2002. The money is to be deposited in a special account together with the energy conservation fund.

T&D Loss Charge

This charge has aroused a great deal of controversy (some sections of the media have described it as a "tax" imposed by the Commission) and needs to be explained and placed in the proper perspective, in order to realise the larger goal of cutting the MSEB's losses and to end the practice of penalising honest consumers through hidden costs in the tariff. The idea that ignorance is bliss and what you do not know does not hurt you is unacceptable in the Information Age, when the Right to Know is considered a basic right, enforceable through legislation and the courts.

The MSEB submitted during the public hearings in 2001 that its T&D losses worked out to 39.49% against the target of 26.87% set by the Commission in the May 2000 order. In fact, during the public hearings the then MSEB chairman, Mr Vinay Bansal, told the Commission on oath that this loss could go up to 55-60% with better sampling information on consumption in the agriculture sector.

The implication of this is that the gap of 12.62%, between the acceptable target fixed by the Commission and the higher loss now revealed by the MSEB, meant that the utility had to purchase 7,772 million more units of energy to meet the demand, at an extra cost of Rs 1,271.8 crores. This, in the opinion of the Commission, is an "excessive commercial loss" to the MSEB and its consumers. In the past, this entire cost has been passed on to consumers routinely under the guise of agriculture consumption as part of the tariff, through various charges like Energy Charge, Demand Charge, etc. In other words, **MSEB's paying consumers have been paying for the included T&D losses, through disguised charges.**

When this came to public attention at the hearings, the Commission had two options:

1) accept the loss and allow tariff increases to cover these losses, resulting in a continuing unfair hidden burden on honest, tariff paying consumers or 2) refuse to accept the loss and cover the gap, forcing MSEB further into the red. This again would have hurt honest, tariff-paying consumers as well as the State of Maharashtra. MERC therefore tried to find a via media through the T&D Loss Charge.

By levying the T&D Loss Charge more directly and bringing it out into the open, the Commission hoped to impress on honest consumers the full extent of the charge that is presently being unjustly levied on paying consumers. But for this loss, the effective tariffs would have been much lower. The Commission's purpose in separating out this charge that they have long been paying for, and specifying it as a T&D Loss Charge, is to rouse them to action against pilferage and exert public pressure on the MSEB to crack down hard on thieving consumers who are thriving through flagrant malpractices.

The purpose is not punishment, but to rouse the silent majority of honest consumers to exert pressure on the MSEB for corrective action.

That is why the Commission has decided to apportion the cost of this excess loss of Rs 1,271.8 crore equally between the MSEB and its consumers circle/zone-wise, and ordered the MSEB and its employees to bear 50% of this cost. For its share of the charge of Rs 635.9 crore, the MSEB will hold the concerned employees responsible and recover it from them after following due disciplinary procedures.

This charge will not be levied on public utilities like railways, Public Water Works, street lighting and the Mula Pravara Electric Co-op Society as they do not have any incentive to pilfer energy.

The Commission's goal is to push hard to bring T&D losses down, from the current MSEB estimation of 39.49% to the Central Electricity Authority's norm of 15-16%, in two to three years. The MSEB says it has initiated the process of energy

audits. Yet, T&D losses in MSEB's fully metered areas range between 22-34% -- in fact, T&D losses in a city like Pune are over 39%, more than thrice that of Mumbai's 11%. The T&D Loss Charge should not be viewed in isolation. MSEB has been directed to carry out intensive energy accounting for all circles/zones and submit monthly reports along with 'Action Taken Report' after fixing accountability.

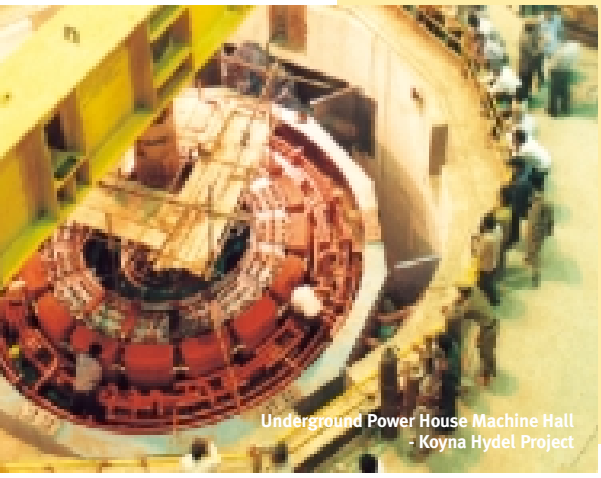
Across the country, there is a growing awareness that the time has come to confront the question of theft and pilferage of electrical energy and introduce a "pay for use" culture. This will happen when utility staff and consumers realise that a reduction in T&D losses translates into increased sales and revenue for the utility and reduced investment on creating new generation capacity, thereby leading to lower tariffs in the long run.

So far, these costs were passed on to consumers but the public hearings have indicated that in a cost-conscious world of competitive pricing, where consumers increasingly have choice in several areas of their lives, attitudes are changing and consumers are no longer willing to bear any burden or pay any price for the electricity they cannot do without.

Tariff rationalisation is one of the key challenges for a public utility service like electricity

A public utility does not function in a vacuum. It is as much subject to market forces, on which it often has little or no control, as any other enterprise. The utility has control over its internal processes only. To succeed in a competitive environment and provide its consumers the services they are paying for, the utility has to maintain a judicious balance between these two dynamics through a continuous process of resource management.

Tariff setting is a vital process of resource management that holds the key to the sector's survival and growth. Until recently, the attitude was largely rigid and inflexible, with information flows restricted and transparency almost non-existent. Traditionally, electricity boards, given their increasing input costs made fresh tariff proposals and submitted them to the state government's energy departments. The energy departments made their observations, circulated the proposals among the finance, planning, industries and agriculture departments and then prepared a Cabinet note.


Underground Power House Machine Hall - Koyna Hydel Project

At this stage the process acquired a political dimension. The Cabinet deliberated on whether or not to allow the tariff hike. Often, given political compulsions, governments dithered on increasing tariffs which, at most times, were inevitable.

But the time taken in the process ensured that the beleaguered state utility suffered due to the higher input costs. Ultimately, a middle path would be found, where the government would agree to increase tariffs by a substantially lower percentage than was asked for by the utility, thus further impairing its weak finances.

This led to irrational retail tariffs, unjustified cross subsidisation, poor operations planning and poor service to the consumer. The utility's capability to render services also got considerably affected. This is what the Commission seeks to change.

Landmark Orders of the last 3 years

MERC has taken several steps to balance the interests of different Stakeholders:

- Consumer Interests - Protect Supply, Safety and Quality on a Pay-for-Use basis
- Utility Interests - Protect Supply and Profitability through justified revenue and commercial principles of operation
- Licensee Interests - Utilisation of Capacity and Commercial Viability
- Industry Interests - Supply, Quality, Tariffs

The various orders issued by the commission since its inception are listed in Annexure XIX on Page 32

1. Two Tariff Orders of 2000 and 2002 - establishing principles for future increases
2. Fuel and Other Costs Adjustment (FOCA) - first time in India and one of the initiatives of the Commission
3. Terms and conditions of Supply - to establish that customers have a say. This matter is currently before the High Court.

4. Two Government Subsidy Orders - fixing of tariffs is MERC's mandate under the ERC Act; while the government can issue policy directives and grant direct subsidy for any category of consumers, it cannot declare subsidy unilaterally and take cover under Ways and Means position subsequently, thereby impacting the financial position of the utility.
5. Order on Prayas petition for access to PPAs of Dabhol Power Company and other Independent Power Projects - transparency
6. Tata Power-BSES long-standing dispute on Standby Charges - avoid ad hocism in decision-making
7. Dabhol vs MSEB Interim Order - nothing can circumvent the law of the land
8. Power generation using bagasse - interim and final orders. MERC has tried to blend the interests of sugarcane producers using non-fossil fuels like bagasse to develop power and the purchaser of such power, in this case MSEB as well as its consumers
9. Maharashtra Seamless Ltd. - field officials of MSEB pulled up for misleading consumers and MERC and for dereliction of duty
10. Reliance IPP at Patalganga - Power Purchase Agreement with MSEB
11. Merit Order Dispatch Principle - purchase the cheapest available power first and progressively move to more expensive sources
12. Captive Power Plant, including CHP plant, guidelines (Details: Annexure XIX, Page 33)

The Road Ahead

The power sector in the country will see major changes in the next couple of years when the Electricity Bill, 2001 becomes law. This Bill, now before Parliament, has been finalised after extensive discussions and consultation with the States and other stakeholders and experts. It proposes to harmonise and rationalise the provisions in the Indian Electricity Act 1910, the Electricity (Supply) Act, 1948 and the Electricity Regulatory Commissions Act, 1998 in a comprehensive new legislation that will replace all the three Acts presently in force.

Mini Hydel Plant at Shahapur in Thane

The new legislation will delicense generation and encourage captive generation. It has provisions for new concepts like power trading, and also for private transmission and open access in transmission. It obviates the requirement for each State Government to pass its own Reforms Act and makes the SERCs a mandatory requirement. An Appellate Tribunal will be created for speedy disposal of appeals against decisions of the CERC and SERCs.

This means new responsibilities for the MERC, as new and more efficient systems are put in place to ensure the people of Maharashtra get a fair deal in terms of affordability, availability and reliability of power. To play its role, the Commission will need to be strengthened by attracting and retaining well-qualified staff with the requisite multi-disciplinary skills and experience, in order to make the MERC a powerhouse of knowledge and regulatory capability.

Given the challenging tasks ahead, it is critical that the quality of the Commission's professional staff should not be compromised. But it is also going to be very difficult to recruit and retain competent and experienced professionals skilled in energy pricing, management and conservation on government terms and conditions of service. Innovative methods of outsourcing and contracting energy experts from the private sector for fixed terms will have to be tried.

A major challenge facing the Commission is having to take decisions on the basis of unreliable and suspect data. The data submitted to the Commission over the past three years has been in many a case incomplete, inconsistent and at times even conflicting. The Commission, therefore, needs to build its own institutional memory and generate its own data, rather than depend on utilities, in order to fulfil its regulatory role. This will help the Commission to frame appropriate regulatory measures and build a fundamentally strong database for a progressive rating policy.

Annexure I

MERC Milestones

July 2, 1998	GOI Notification on Electricity Regulatory Commissions Act, 1998, passed by Parliament
August 31, 1998	Selection Committee constituted for selecting Members of ERC
August 5, 1999	Maharashtra Electricity Regulatory Commission (MERC) established, with powers under Section 22 (1) (a), (b), (c), (d) and (e) of ERC Act for determining tariffs, power purchase and to promote competition, efficiency and economy in the activities of electricity industry
August 12, 1999	Two members, Mr Venkat Chary and Mr Jayant Deo, take the oath of office
September 21, 1999	Mr P Subrahmanyam, Chairman, takes the oath of office, Commission fully constituted
October 15, 1999	First Tariff Petition received from MSEB
December 27, 1999	Conduct of Business Regulations notified
January 4, 2000	First appointment of consumer representatives under Section 26 of ERC Act
May 5, 2000	First Tariff Order for MSEB passed
October 20, 2000	Formation of State Advisory Committee
October 27, 2000	Conferment of powers under Section 22 (2) (n) for adjudication of disputes between licensees and utilities and to refer the matter for arbitration
July 30, 2001	Order on fuel and other costs adjustment charges for MSEB
December 1, 2001	Conferment of powers under 6 Sub-sections of Section 22 (2) to aid and advise State Government in formulation of Maharashtra's power policy, regulate the working of licensees, collect and publish data on demand for use of electricity in the State
January 10, 2002	Second Tariff Order for MSEB passed
April 24, 2002	MERC vested with powers for enforcement and execution of orders and decrees under Sections 20 & 21 of Civil Procedure Code
July 15, 2002	Order on purchase of power from bagasse-based Co-Generation projects

Annexure II

From the Electricity Regulatory Commissions Act, 1998

The Statement of Objects and Reasons of the ERC Act passed by Parliament in 1998 is as follows:

"India's power sector is beset by problems that impede its capacity to respond to the rapidly growing demand for energy brought about by economic liberalisation. Despite the stated desire for reform and the initial measures that have been implemented, serious problems persist. As the problems of the Power Sector deepen, reform becomes increasingly difficult, underscoring the need to act decisively and without delay.

"It is essential that the Government implement significant reforms by focusing on the fundamental issues that face the power sector, namely the lack of rational retail tariffs, the high level of cross-subsidies, poor planning and operation, inadequate capacity, the neglect of the consumer, the limited involvement of private sector skills and resources and the absence of an independent regulatory authority."

Hence, the Act makes it mandatory for State Commissions to fix the tariff in such a way that it *"progressively reflects the cost of supply of electricity at an adequate and improving level of efficiency"* keeping in mind factors that would *"encourage efficiency, economical use of resources, good performance, optimum investments and other matters which the Commission considers appropriate"*.

If the State Government wants the tariff to be lowered for any specific category, it should compensate the SEB for the difference from the State Budget, by making provisions in the State Budget. Thus, State Governments have to compensate the SEB for any losses incurred because of a subsidy to agriculture and other sectors. The Government has no role to play in the supply and distribution of electricity, except for issue of policy directives. The Regulatory Commission can permit cross subsidy in the overall interest of economy, but the grant of direct subsidy for any category of consumers is within the domain of the State Government.

The Act also makes it mandatory for the Commission, under Section 37, to ensure transparency while exercising its powers and discharging its functions.

Annexure III

Benefits of the Public Hearing Process

No government can afford to provide services, free of cost, universally. Reasonable user charges must be levied wherever possible. "Power doesn't come free and one must be prepared to pay a price for it" - this is the current thinking among consumer groups and State Electricity Boards. This is a paradigm shift from an era where electricity subsidy was a given.

But this requires a change in the mindset, in the fixed inherited notions about subsidised public services. The experience in many parts of the world has been that subsidy does not cure the root problem. It is at best a symptomatic treatment of the disease. Subsidised service should be restricted to only those who cannot afford to pay, and the government must provide it in a transparent and equitable manner to fulfil the commitment of social justice targeted at a specific group.

The Commission's experience is that the process of involving stakeholders through public hearings is very important and has the power to develop a consensus on difficult issues involving a change of mindset. Consumers have to be educated about the need for a tariff which reflects the cost of supply. The very process of sitting together with other stakeholders helps consumers understand the problems and needs of other groups and has a sobering effect on the demands of each group.

This process had the desired effect. It brought out conflicting interests of the various sections of society and helped to achieve consensus on contentious issues. During the first phase of the public hearing, agriculture consumers opposed metering on various grounds. In the second public hearing, the agriculture consumers agreed to the need for metering but requested time to get adjusted to the metering.

When the Commission ordered metering in the tariff order, few voices were raised. In the review petitions, there was no opposition to metering, but a request to delay billing as per the meter till meters are installed for all consumers in the village. This experience is important as agriculture consumers are often accused of obstructing change. Agriculture consumers have also agreed to load shedding during peak hours in order to get a lower tariff.

Consumers also have to be educated about the need to pay for the electricity they use and that there is no really free meal ticket for anyone. Industrial users subsidising other users only raises industry costs, makes industry less competitive and puts Indian industry at a disadvantage vis a vis the rest of the world. Consumer interest groups and associations can play a pivotal role in this education and acceptance process.

Annexure IV

Actual Peak Demand vs Supply (April 2001-March 2002)

Region/State	Requirement	Availability	Shortage	Percentage
Total (western region)	27,626	23,510	4,116	14.9
Maharashtra	12,265	10,726	1,539	12.5
All India	85,857	75,299	10,558	12.3

Source: CEA (in MW)

Estimated Energy Requirement

State	1998-99	1999-2000	2000-01	2001-02
Maharashtra	63,575	69,839	74,575	79,593
All India	429,117	466,066	496,266	529,013

Source: 16th EPS (in MUs)

Peak Load at Station Busbars

State	1998-99	1999-2000	2000-01	2001-02
Maharashtra	9,982	10,959	11,694	12,472
All India	71,060	79,229	84,340	89,919

Source: 16th EPS (in MW)

Annexure V

Electricity Tariffs in Maharashtra: Need For Change

A Background Note

The Maharashtra Electricity Regulatory Commission has to balance the concerns and interests of consumers as well as licensees, in developing a working tariff regulatory framework that will foster an efficient electricity market in Maharashtra. A comprehensive set of steps and measures is necessary to deal with the major drawbacks in this sector -- high power losses, supply interruptions, voltage and frequency fluctuations, mounting losses and arrears.

So long as the utility was one integrated and government-controlled entity, these areas remained fuzzy. With the proposed restructuring of the Maharashtra State Electricity Board (MSEB), and its unbundling into separate generation, transmission & bulk supply and distribution & retail supply companies, these new utilities will be judged from the perspective of well established principles of accountability, efficiency and adequacy of return. Electric utilities will, therefore, have to be transparent before their stakeholders.

MERC's Regulations on Tariffs

- Automatic formula for fuel & other cost adjustments worked out
- Norms and limits set for various factors impacting tariffs
- Time of Day(ToD) Meters option offered to commercial & industrial consumers
- MSEB to publish data of energy accounting & auditing in each circle and keep local public representative informed
- MSEB to disconnect consumers whose names appear in defaulters list for 2nd time

The MSEB, a state-owned vertically-integrated utility, has not been determining revenue requirements and fixing tariffs on the basis of realistic and economic costs, both in regard to raising sufficient resources to recover costs and setting efficient prices of electricity for consumers.

The data that has emerged from the hearings shows that the MSEB was not in a position to sustain its operations with its own internal resource generation. The absence of commercial and financial principles, and the prevalence of operational inadequacies and inefficiencies, resulted in substantial financial and material losses.

In addition, tariffs got distorted by grant of subsidies and cross-subsidies, at the expense of efficiency and cost recovery. This was compounded by poor collection efficiency, metering and billing, so that poor performance of the MSEB adversely affected all electricity consumers in the State in the form of poor quality of service. This situation is not sustainable any more. Power producers and distributors are required by the Act to use their resources in an economical and efficient manner.

Similarly, it remains to be seen how objective oriented is the process of tariff setting by private utilities.

Direction of Change

The Commission is set to tackle the problems of power sector licensees in Maharashtra through measures promoting the objectives of the Act. Adoption of an appropriate policy for setting tariffs plays an important role in this process.

In this paper, the Commission provides a set of tariff policy conceptual issues, along with options for dealing with them, as the first step in evolving balanced and satisfactory solutions to efficient tariff setting in Maharashtra.

1. Licensees to reduce technical and non-technical losses and improve metering.
2. Measure of asset value is to be included in the rate base component used in the determination (capital investment and prudency of capital investment).
3. Commission to direct licensee to reduce and eliminate subsidies and cross subsidies in existing tariffs.
4. Licensees to institute a system of accounts using recognised accounting standards.

Licensees to reduce technical and non-technical losses and improve metering

The most pressing need for reforms in the electricity industry in Maharashtra comes in the areas of reduction of technical and non-technical losses and metering of customer consumption. The electricity industry in Maharashtra will remain inefficient unless these areas are taken care of.

The existing situation with power losses in Maharashtra is quite disheartening. The level of power losses in the Maharashtra transmission and distribution system (relating to MSEB and Mula Pravara area) was estimated at around 32% in 1998-99 and almost 40% in 2001. A considerable part of this loss is of a non-technical character, due mainly to power theft, improper estimation of non-metered consumption, tampered meters, besides billing and collection problems.

The remainder of the losses is technical, caused by poor technical conditions, inadequate investment as well as sporadic and inadequate maintenance of transmission and distribution facilities. A comparison with other power sector licensees in India, Latin America, UK and the US reveals that power losses in Maharashtra are very high.

Comparison of T&D losses

Name of the company	Year	T&D loss
MSEB	1998-99	31.87%
GRIDCO (Orissa)	1997-98	46.6%
CESC (West Bengal)	1996-97	19%
BSES	1997-98	11.7%*
Surat Electricity Company	1997-98	17%
Argentina	1998	17%-18%
Brazil	1997	15%-18%
Colombia	1998	22%
UK	1997	7.6%
USA	1999 (forecast)	7.1%

Source: MERC note on tariff philosophy

Reduction of power losses is a function of proper management and adequate investment. Non-technical losses can be reduced with the application of proper systems to control power theft, discourage meter tampering and improve estimation, billing and collection procedures. This can be implemented with relatively few resources and in a short period of time, based on the experience of many countries, by introducing new strategies to discipline employees and customers and reduce non-technical losses.

Measure of asset value is to be included in the rate base component used in the determination

Under traditional Rate of Return regulation, asset value directly affects the revenue requirement, and therefore, consumer tariffs, of a licensee. The allowed return, which is a multiple of the rate base and the appropriate rate of return, is one of the components of the overall revenue requirement of a licensee. This can result in gold plating of investments done by the licensee.

The rate base represents the value of assets used in provision of electricity service to customers. Performance Based Regulation uses the same approach to calculate the allowed return. While the overall revenue requirement may be adjusted for performance targets under the Performance Based Regulation scheme, the allowed return still represents a significant portion of the revenue requirement. As a result, the issue of assets valuation is an important part of the regulatory tariff-making process.

Commission to direct licensee to reduce and eliminate subsidies and cross subsidies in existing tariffs

The current level of electricity tariffs in Maharashtra contain a large degree of cross subsidy, with some categories of consumers paying well above the economic cost of supply, cross subsidising other categories such as low voltage domestic, agricultural or powerloom users. Low and subsidised tariffs lead to inefficient and high demand for power, which puts pressure on the system capacity and the quality of service. It has also been observed that high industrial tariffs induce large industrial users to look for alternative sources of power. Some of them find it economic to build captive generation and leave the system. The exit of large users from the system reduces the number of paying, low-cost consumers.

While the efficiency criterion calls for cost based tariffs, the social criteria sometimes call for tariff relief to certain consumers. For example, provision of subsidized tariffs to low-income users is a reasonable concern that policy makers should address. It is important, however, that the relief to one consumer's tariff does not create an unnecessary burden on another consumer. The cost of tariff relief should be recovered in a manner that does not create further inefficiency in the sector.

It is important to bear in mind that any tariff relief should not introduce a further increase in cross-subsidies. If a subsidised tariff is sought, the subsidy should be provided in a transparent manner from external sources, such as the general government budget. Otherwise, the cost of subsidised tariffs will have to be borne by other consumers, which will lead to cross subsidies. Subsidised tariffs should be ideally financed from the general government budget, because raising funds through a general tax system imposes lower costs on society than creating a sector specific tax system.

Water conduit system for Bhira Hydro Plant of Tata Power

Licensees to institute a system of accounts using recognised accounting standards

Licensees have to adopt a proper system of accounts and accounting procedures that will allow detailed and accurate financial, cost and consumption data on their operations to be developed. The role of a proper and structured Management Information System (MIS) cannot be underestimated in a competitive environment. With rapid advancements in Information Technology, MIS is advantageous for all. The dovetailing of regulatory requirements with MIS is essential to avoid duplication of work and to save valuable resources.

In addition, licensees must adopt a scientific methodology and develop proper techniques to measure and assess energy losses, and ensure supply without interruptions, voltage and frequency variations, and other parameters of power supply. Ready availability of this data is crucial to the Commission's ability to regulate effectively the tariffs of all Maharashtra licensees.

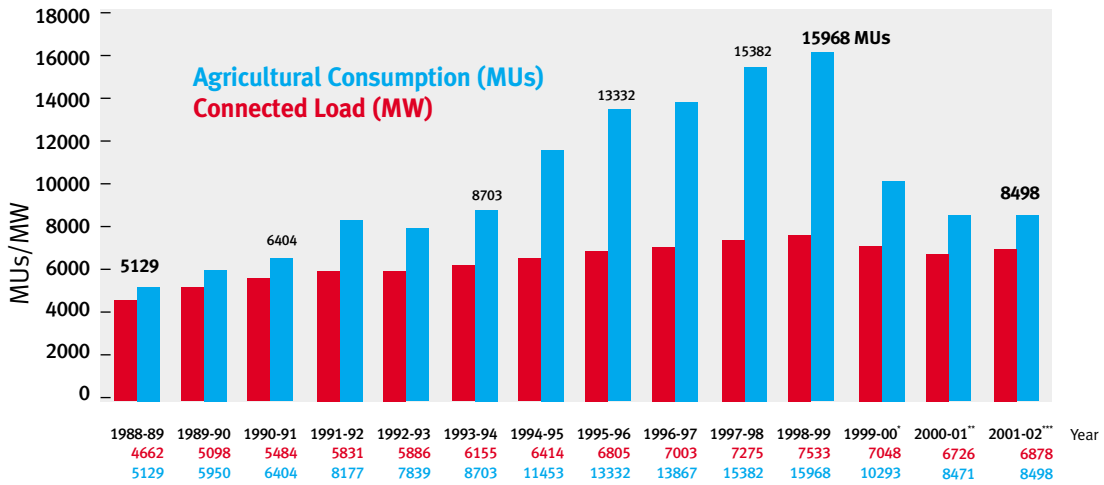
In addition to the importance of effective regulation of tariffs, this data is important to the privatisation process in another way. All potential purchasers of the existing system must be able to understand the regulatory method under which they will have to operate and to assess the financial viability of the entity involved in order to establish a bid for the entity. In the absence of this knowledge, their bids may be lower than they would otherwise be, leading to a lower overall recovery by the government from the system.

The Commission is in the process of getting studies done through consultants on 'Benchmarking Performance Factors in Electricity Generation and Distribution', 'Share of Electricity Costs in the Total Cost of Production and Consumption in the Agriculture Sector' and 'Cost of Subsidies in the Power Sector' in Maharashtra. These will be vetted by peers and by the Commission and thrown open for public discussion. They will help the Commission to decide regulatory measures and build a database for policy planning.

The Commission believes that appropriate data from licensees is important to enable it to fulfil its responsibilities. With the successful transition towards reforms, it will be worthwhile to look into the possibilities of adopting GAAP (Generally Accepted Accounting Practices) to reflect a truly global identity and ensure good corporate governance.

Annexure VI

Pattern of Agricultural Load in Maharashtra (MSEB Area)



These graphs, based on figures provided by MSEB, reveal how the bulk of so-called "T&D losses" were actually commercial losses disguised as agricultural consumption over the years. The shorter blue bars show the connected load in the agriculture sector, while the longer red bars show the consumption over last 14 years.

Figures submitted by MSEB at the Commission's hearing showed that while the load has increased by 61%, the consumption had galloped by more than 211%, from 5,129 MU in 1988-89 to 15,968 MU in 1998-99, implying that irrigation pumps were being operated for more hours. However, under the intense scrutiny of consumers and questioning by the Commission, data on agricultural consumption started showing a reverse trend from 1999-2000. This effectively means that agricultural pump operating hours that had been projected till then, were far from true and provided enormous scope for scientific sampling.

The fall-out of this is that the annual operating hours of 2,100 shown in the MSEB's first Tariff Proposal of 1999, dropped to 1600 hours in 2001 and further dropped to 1,250 hours in 2002, exploding the myth of "T&D Loss". The public hearings brought out the fact that MSEB's T&D losses, which it had said on oath were 16-17% in 1999, were in reality as high as 31% since agricultural consumption is not metered but estimated. In the absence of metering, the MSEB Chairman admitted on oath in 2001 that even the present estimated consumption of 1250 hours is also inflated and therefore with proper and increased sampling, the T&D Loss may be higher than 50%. The MSEB had, therefore, evidently booked its T&D losses against agricultural consumption.

Only full metering of all consumers and Energy Accounting and Auditing will show the true agriculture consumption. MERC has now directed MSEB to do this.

Annexure VII

Pattern of the Agricultural Load (MW &MU) & Pump Running Hours in the State of Maharashtra (MSEB Area)

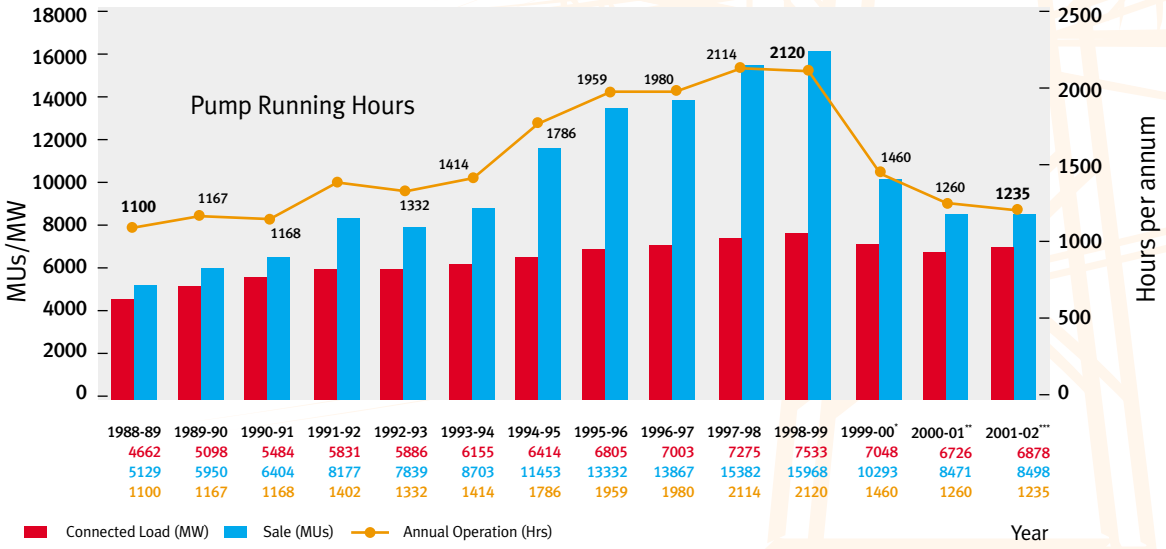
Year	No. of Consumers	Connected Load (MW)	Sales declared by MSEB(MUs)	Annual Pump Operation (Hrs)
1988-89	1,358,602	4,662	5,129	1,100
1989-90	1,474,537	5,098	5,950	1,167
1990-91	1,575,138	5,484	6,404	1,168
1991-92	1,661,794	5,831	8,177	1,402
1992-93	1,718,167	5,886	7,839	1,332
1993-94	1,782,043	6,155	8,703	1,414
1994-95	1,876,067	6,414	11,453	1,786
1995-96	1,979,044	6,805	13,332	1,959
1996-97	2,043,458	7,003	13,867	1,980
1997-98	2,101,813	7,275	15,382	2,114
1998-99	2,159,360	7,533	15,968	2,120
1999-00*	2,145,558	7,048	10,293	1,460
2000-01**	2,139,098	6,726	8,471	1,260
2001-02***	2,189,103	6,878	8,498	1,235

Source: MSEB Annual Reports

**Actual (Admin. Report)*
***Actuals/Estimates for 2000-01*
****Estimate for 2001-02*

Annexure VIII

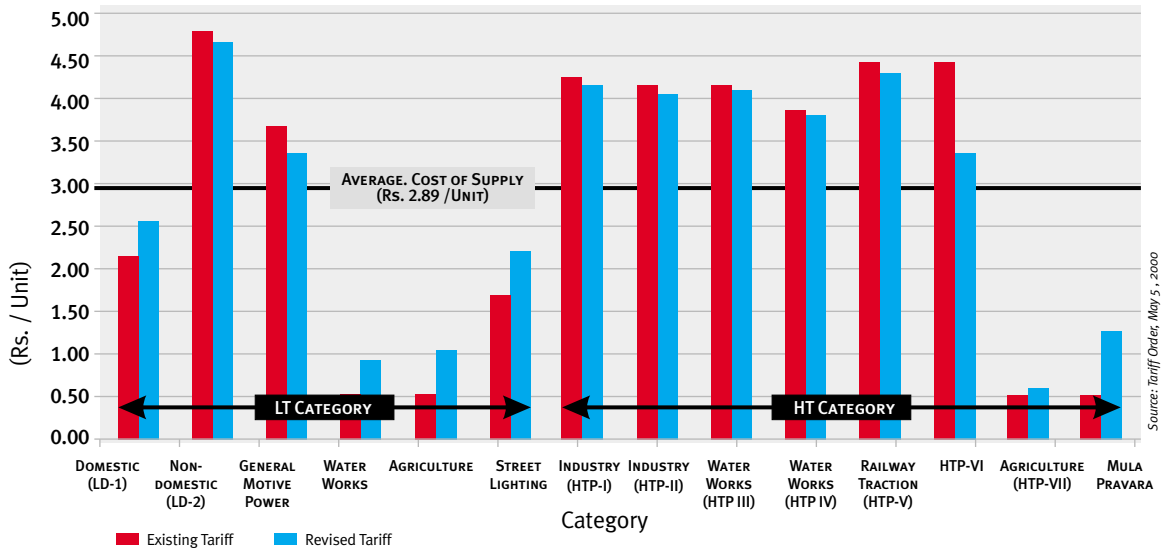
Pattern of Agriculture Pump Running Hours in Maharashtra (MSEB Area)



This graph shows how pump running hours, considered by MSEB for estimating agriculture consumption, increased from 1,100 hours in 1988-89 to 2,120 in 1998-99, and then reduced sharply to 1,235 hours when MERC instituted public hearings in 1999-2000 on MSEB's first Tariff Petition. These hearings revealed that MSEB's T&D losses, which it said were then 16-17%, were in reality as high as 31%. Evidently, MSEB had booked a part of its T&D losses against agriculture consumption which, not being metered, could only be estimated. The increased number of pump hours attributed to the agriculture sector, was in reality the bulk of commercial loss. MERC has now directed MSEB to ensure all consumers are metered by 2003 and to introduce Energy Accounting for each circle/zone, holding employees answerable for T&D losses.

Annexure IX

Movement of Average Realisation towards Average Cost of Supply During 2000-01



HTP-I - High Tension industries/consumers in Mumbai, Pune metro regions + those in Thane, Pune, Raigad Districts & Nashik, Aurangabad urban agglomerations with a Contract Demand above 500 kVA

HTP-II - High Tension industries/consumers other than those covered under HTP-I

HTP-III - High Tension Public Water Supply Schemes in Mumbai, Pune metro regions + water supply schemes in Thane, Pune, Raigad Districts & Nashik, Aurangabad urban agglomerations with a Contract Demand above 500 kVA

HTP-IV - High Tension Public Water Supply Schemes other than those covered in HTP-III

HTP-V - Railway Traction

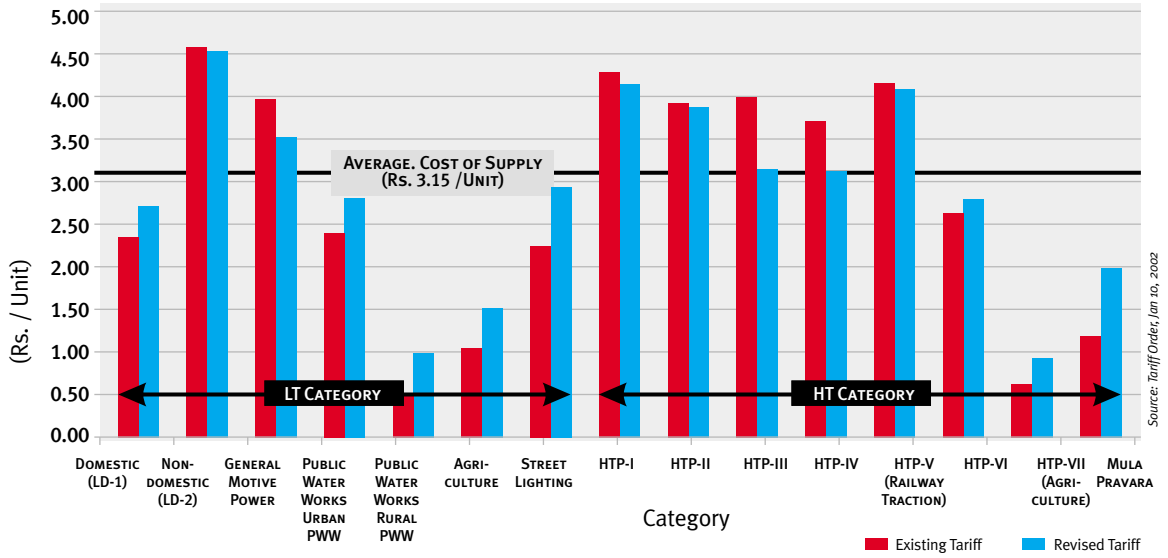
HTP-VI - Residential/Commercial complexes of HT consumers separately metered

HTP-VII - Agriculture

Mula Pravara - Rural Co-op Distributor of electricity

Annexure X

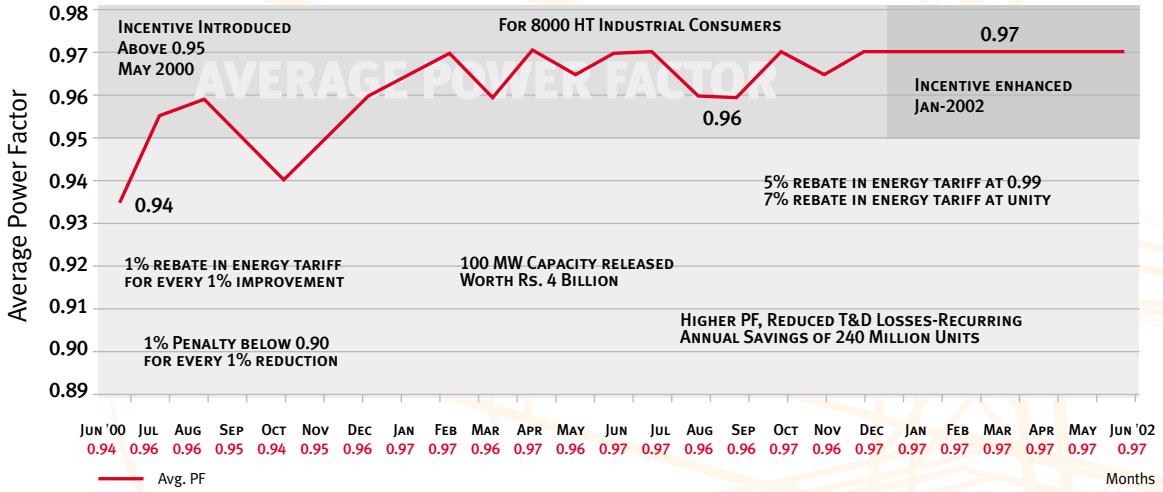
Movement of Average Realisation towards Average Cost of Supply During 2001-02



Source: MERC Tariff Orders

Annexure XI

Power Factor Graph for MSEB's HT Consumers



This graph shows how a correct tariff signal in the form of a Power Factor (PF) incentive can be a key driver for Energy Conservation. . The graph shows the average monthly Power Factor (PF) of 8,000 HT MSEB industrial consumers for the period June 2000 to June 2002. The Commission introduced a PF incentive in May 2000 by way of a 1% rebate in energy tariff for every 1% improvement in PF above 0.95. In the January 2002 tariff order, the incentive was further enhanced for industrial users achieving a PF level of 0.99 and unity. The PF then improved dramatically from 0.94 to 0.97 and has remained steady at that level ever since, indicating industries are making a determined effort to conserve energy by improving the efficiency of their power usage. This has resulted in a release of around 100 MW of generating capacity, and recurring savings of over 200 million units in Transmission & Distribution losses alone.

Annexure XII

Installed capacity, maximum demand, units generated from 1990-91 to 2000-01 in Maharashtra

Year	Installed Capacity	Maximum Demand in MW	Units generated in MU
1990-91	9,888	6,468	37,279
1991-92	10,360	6,828	39,961
1992-93	10,683	6,796	39,453
1993-94	10,772	7,555	42,235
1994-95	11,582	7,906	47,237
1995-96	11,582	8,578	51,321
1996-97	11,582	9,018	54,021
1997-98	12,238	9,473	55,370
1998-99	12,248	10,326	57,961
1999-2000	13,832	11,556	63,299
2000-01	15,145*	12,283	62,307

Source: MSEB annual statements

**Note 1: Includes capacity from Central sector*

Note 2: the maximum demand recorded during the various years represents the restricted demand met after resorting to load restrictions and shedding on account of capacity shortage to meet the unrestricted system demand.

Annexure XIII

Installed Generating Capacity in Maharashtra (2001-02)

Type of Power	Board/Licensee	Capacity in MW		
		Installed	Derated	Total installed (source-wise)
Hydro	MSEB	2,430	2,430	2,874
	Tata Electric	444	444	
Thermal	MSEB	6,425	6,396	8,075
	Tata Electric	1,150	1,150	
	BSES	500	500	
Gas	MSEB	672	672	1,580
	Tata Electric	180	180	
	DPC	728	728	
Waste heat recovery	MSEB Uran	240	240	240
Atomic	NPC-Tarapur	190	160	190
Central Sector Share		2,185	2,185	2,185
Non-conventional sources	Bagasse	32	32	32
	Wind Energy	395	395	395
	Biogas	9	9	9
Total		**15,580**	**15,521**	**15,580**

Source: MSEB Administrative Reports and Affidavit

Annexure XIV

Plant Performance Details of MSEB

Sr	Details	2000-01	1999-00	1998-99
1	Installed Capacity of the State (MW)	15,580	12,289	10,705
	Installed Capacity of the Board (MW)	9,767	9,097	8,241
	a Thermal	6,425	6,005	6,005
	b Hydel	2,430	2,180	1,324
	c Gas	672	672	672
	d Waste Heat Recovery	240	-	-
2	Generation (MU)	45,930	45582	44,379
	a Thermal	38,719	37676	35,322
	b Hydel	3,738	3971	3,948
	c Gas	3,473	3936	5,109
3	Availability Factor (Thermal Generation Capacity - %)	86.06	84.58	81.93
4	Plant Load Factor (Thermal - %)	72.78	71.77	67.47
5	Performance Factor of Power Station (kWh/kW)	6,375	6,305	5911
6	Oil Consumption rate (Ml/kWh)	2.54	2	2.86
7	Coal Consumption rate (kg/kWh)	0.704	0.728	0.763
8	Auxiliary Consumption for Thermal Station - %	8.73	8.75	8.94%

Source: Annual Reports

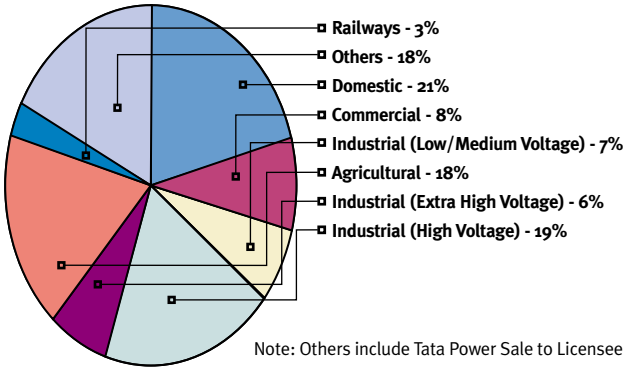
Annexure XV

No. of Consumers and Consumption as on March 31, 2002

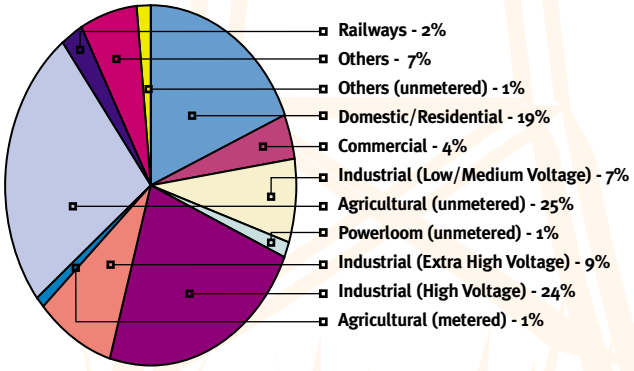
	Category	No. of Consumers	Energy Sold (MUs)
MSEB	Domestic/Residential	9,040,608	6,925
	Commercial	885,201	1,493
	Industrial - Low/Medium voltage	277,784	2,697
	LTPG - powerloom unmetered	-	481
	Industrial - High Voltage	8,137	8,767
	Industrial Extra High Voltage	76	3,303
	Agricultural - metered	2,170,008	402
	Agricultural - unmetered	-	9,329
	Railways	48	863
	Others	115,713	2,467
	Others (unmetered)	-	514
	TOTAL	**12,497,575**	**37,241**
Tata Power	Domestic/Residential	7545	16
	Commercial	1,226	120
	Industrial - Low/Medium voltage	227	17
	Industrial - High Voltage	105	1020
	Industrial - Extra High Voltage	3	185
	Railways	3	712
	Others (Licensees)	3	6,604
	TOTAL	**9,112**	**8,674**
BSES	Domestic/Residential	1,820,000	3,132
	Commercial	270,000	1,344
	Industrial - Low/Medium Voltage	43,000	551
	Industrial - High Voltage	383	593
	Agricultural	15	1
	Streetlighting	-	55
	TOTAL	**2,133,398**	**5, 676**
BEST	Domestic/Residential	673,370	1,433
	Commercial	195,233	1,414
	Industrial - Low/Medium Voltage	14,185	173
	Industrial High Voltage	36	143
	Others	517	53
	TOTAL	**883,341**	**3,216**
Mula Pravara	Domestic/Residential	77,071	41
	Commercial	10,743	9
	Industrial - Low/Medium Voltage	2,360	11
	Industrial - High Voltage	47	30
	Agricultural (HT&LT Metered & Unmetered)	46,114	420
	Others	711	3
	TOTAL	**137,046**	**514**

Source: Submissions from Utilities

Category-wise breakup of Energy Sales (% of total) in the State (left) & in MSEB Area (right)



Note: Others include Tata Power Sale to Licensee



Annexure XVI

Powers of the MERC

No.	Govt. of Maharashtra Notification Number	Section of the ERC Act 1998	Description of the Powers
POWERS DERIVED FROM THE ACT			
1.	ERC-1099/CR-3258/NRG-2 dated 5th August 1999	22 (1) (a)	To determine the tariff for electricity, wholesale, bulk, grid or retail, as the case may be, in the manner provided in section 29
2.	--do--	22 (1) (b)	To determine the tariff payable for the use of transmission facilities in the manner provided in section 29
3.	--do--	22 (1) (c)	To regulate power purchase and procurement process of transmission and distribution utilities, including the price at which the power shall be procured from the generating companies, generating stations or from other sources for transmission, sale, distribution and supply in the State
4.	--do--	22 (1) (d)	To promote competition, efficiency and economy in the activities of the electricity industry, to achieve the objects and purposes of this Act.
5.	--do--	22 (3)	The State Commission shall exercise its functions in conformity with the national power plan.
POWERS CONFERRED BY THE STATE GOVERNMENT			
6.	ERC-2000/CR-1249/NRG-3 dated 27th October 2000	22 (2) (n)	To adjudicate upon disputes and differences between the licensees and utilities and to refer the matter for arbitration.
7.	ERC-2001/CR-1548/NRG-3 dated 1st December 2001	22 (2) (b)	To aid and advise the State Government in matters concerning electricity generation, transmission, distribution and supply in the State.
8.	--do--	22 (2) (e)	To regulate the working of licensees and other persons authorised or permitted to engage in the electricity industry in the State and to promote their working in an efficient, economical and equitable manner.
9.	--do--	22 (2) (j)	To aid and advise the State Government in the formulation of State power policy.
10.	--do--	22 (2) (k)	To collect and record information concerning generation, transmission, distribution and utilisation of electricity.
11	--do--	22 (2) (l)	To collect and publish data and forecasts on the demand for and use of electricity in the State, and to require the licensees to collect and publish such data.
12	--do--	22 (2) (p)	To aid and advise the State Government on any other matter referred to the State Commission by the Government.
13	ERC-2002/CR.1718/ Urja-3 dated 24th April 2002	Sec 20 & 21 of Civil Court (Procedure) Act 1908	MERC has been empowered u/s 20 & 21 of Civil Court Procedures [Divani Prakriya Sanhita] 1998 for implementation of its Orders.

Annexure XVII

Powers Yet to be Conferred on the MERC

No.	Section of the ERC Act 1998	Description of the Powers
1.	22 (2) (a)	To regulate the Investment approval for generation, transmission, distribution and supply of electricity to entities operating within the State.
2.	22 (2) (c)	To regulate the operation of the power system within the state.
3.	22 (2) (d)	To issue licenses for the transmission, bulk supply, distribution or supply of electricity and determine the conditions to be included in the licences.
4.	22 (2) (f)	To require licensees to formulate perspective plans and schemes in co-ordination with others for the promotion of generation, transmission, distribution, supply and utilisation of electricity, quality of service and to devise proper power purchase and procurement process.
5.	22 (2) (g)	To set standards for the electricity industry in the State, including standards relating to quality, continuity and reliability of service.
6.	22 (2) (h)	To promote competitiveness and make avenues for participation of the private sector in the electricity industry in the State, and also to ensure a fair deal to customers.
7.	22 (2) (i)	To lay down and enforce safety standards.
8.	22 (2) (m)	To regulate the assets, properties and interest in properties concerning or related to the electricity industry in the state, including the conditions governing entry into, and exit from, the electricity sector in such a manner as to safeguard the public interest.
9.	22 (2) (o)	To co-ordinate with environmental regulatory agencies and to evolve policies and procedures for appropriate environmental regulations of the electricity sector and utilities in the State.

Annexure XVIII

State Advisory Committee Constituted by MERC

1.	Chairman, MERC	Ex-officio Chairperson
2.	Member, MERC (I)	Ex-officio Member
3.	Member, MERC (II)	Ex-officio Member
4.	Secretary, MERC	Member-Secretary
5.	Chairman, MSEB	Member
6.	Chairman & Managing Director, BSES Ltd.	Member
7.	General Manager, BEST Undertaking	Member
8.	Managing Director, Tata Electric Co. Ltd.	Member
9.	Managing Director, Mula Pravara Electric Co-op Society	Member
10.	General Manager, Central Railway	Member
11.	Prayas, Pune	Member
12.	Mumbai Grahak Panchayat	Member
13.	Director, I.I.T.	Member
14.	President, Maharashtra Rajya Veej Grahak Shetkari Sabha	Member
15.	Chairman, Institution of Engineers (India)	Member
16.	President, Institution of Cost & Works Accountants of India	Member
17.	Indian Merchants Chamber	Member
18.	Chairman, CII	Member
19.	Thane- Belapur Industries Association	Member
20.	Marathwada Industries Association, Aurangabad	Member
21.	Mahratta Chamber of Commerce, Industries & Agriculture, Pune	Member
22.	Vidarbha Industries Association, Nagpur	Member
23.	Director, Nimbkar Agricultural Research Institute, Satara	Member

Annexure XIX

List of Orders Passed by the Commission

No.	Case No.	Date of Petition	Date of Hearing	Date of Order/ Interim Order	Description
01	01 of 1999	15.10.1999	06.01.2000 (Total 12 hearings)	23.02.2000	Tariff application to various categories of consumers of MSEB with effect from 1.11.99 (Interim Order)
02	01 of 1999	15.10.1999	..do..	28.02.2000	Revision of tariff application to various categories of consumers of MSEB (Interim Order)
03	01 of 1999	15.10.1999	..do..	28.04.2000 05.05.2000	Revision of Tariff applicable to various categories of consumers of the MSEB with effect from 1.11.99 (Summary of Tariff Order)
04	01 of 1999	23.05.2000	01.06.2000	16.06.2000	Addition/Clarification with respect to tariff order dated 5.5.00 in respect of tariff application to various categories of consumers of the MSEB
05	01 of 1999	09.08.2000	17.08.2000 18.08.2000	06.09.2000	Review Application of Case 1/99-Directing MSEB to send copies of its Review Application to all objectors. Review Application of Case 1/99-Directing 57
06	01 of 1999	June-Aug. 2000	17.08.2000 18.08.2000	06.09.2000	Review Applicants to appear before the Commission & also directing them to send copies of their Review Applications to all objectors.
07	01 of 1999	09.08.2000	17.08.2000 18.08.2000 29.08.2000 11.10.2000 12.10.2000	13.12.2000	Review Application filed in Case No. 01 of 1999-Determination of tariff application to various categories of consumers of the MSEB
08	01 of 1999	03.10.2000	23.10.2000	23.10.2000	Additions/Clarifications with respect to tariff order dated 5.5.00 regarding application of tariff to various categories of consumers of the MSEB
09	01 of 1999	07.03.2001	12.03.2001	28.03.2001	State Govt. Subsidy determination under section 29(5) of the ERC Act 1998
10	02 of 1999	15.10.1999	04.01.2000 13.01.2000	13.01.2000	To direct MSEB to re-submit its Tariff Proposal for the year 1999-2000
11	04 of 1999	14.11.2000	05.02.2001 20.02.2001	23.03.2001	Ispat Industries Ltd. (NTPC Power) - Supply from Central Sector unallocated quota of electricity by wheeling through the MSEB network.
12	01 of 2000	03.02.2000	29.02.2000	29.02.2000	Case No. 01 of 1999 - **(Interim Order)**
13	01 of 2000	03.02.2000	29.02.2000 04.04.2000	04.04.2000	Concessions to Bhiwandi Powerloom Owners
14	MERC/2000/377	03.02.2000	22.02.2000	22.02.2000	Granting waivers of Arrears to Bhiwandi Powerloom Consumers by the State Government.
15	MERC-112/ 2000	11.02.2000	27.03.2000	27.03.2000	MIDC Marol Industrial Association & Bombay Industrial Association in the matter of revision of electricity tariff by BSES from March 01, 1997
16	01 of 2000	19.06.2000	06.11.2000	20.11.2000	Disputed Tariff -Lloyds Steel Industries Ltd, Dist. Wardha
17	2,3 & 5 of 2000	05.10.2000 16.10.2000 08.11.2000	06.11.2000 14.11.2000	29.11.2000	Supply of NTPC Power to (i) Universal Ferro & Allied Chemicals Ltd. (ii) Balaji Electrosmelters Ltd. and (iii) Maharashtra Elektrosmelt Ltd. in accordance with terms and conditions of agreements between MSEB and the applicants
18	02 of 2000	21.12.2000	15.01.2001	22.01.2001	Universal Ferro & Allied Chemicals Ltd. - Review Application against Order dated 29.11.2000.
19	06 of 2000	01.11.2000	24.11.2000 11.12.2000 29.12.2000 01.02.2001 08.05.2001 16.08.2002	01.01.2001	Mr S.R. Paranjape, Kalyan, admitting the Petition in the matter of violation of directions of MERC on Merit Order Despatch by the MSEB & unwanted purchase of most expensive energy from DPC ignoring cheaper alternatives during the year 2000-01 **(Interim Order)**
20	06 of 2000	01.11.2000	24.11.2000 11.12.2000 29.12.2000 01.02.2001 08.05.2001 16.08.2002	01.02.2001	Mr S.R. Paranjape, Kalyan admitting Mr P. Kaul as petitioner and directing the applicants to file statistical data and explanatory note.

21	07 of 2000	04.12.2000	05.12.2000 06.12.2000	18.12.2000	BSES Petition - The Dispute between BSES Ltd. & TEC groups of companies regarding payment of standby charges to the MSEB.
22	07 of 2000	04.12.2000	05.12.2000 06.12.2000 23.04.2001 (day to day hearings)	07.12.2001	The Dispute between BSES Ltd. & TEC groups of companies regarding payment of standby charges to the MSEB. (Speaking Order)
23	07 of 2000	07.12.2001	07.01.2002	08.01.2002	BSES Petition - Extension of time limit for filing of Review Application by BSES Ltd. against Order dated 07.12.2001
24	08 of 2000	07.10.2000	12.01.2001	12.01.2001	Prayas, Pune [MERC making copies of PPA, Contracts, Commitments, Clearances, etc. entered into by the MSEB.]
25	08 of 2000	03.04.2001	24.05.2001 02.07.2001 18.07.2001	31.07.2001	Prayas, Pune [Non-compliance by MSEB with MERC Order dated 12.01.2001]
26	05 & 09 of 2000	23.11.2000 23.01.2001	30.01.2001	05.02.2001	(i) Maharashtra Elecktrosmelt Ltd. and (ii) Sunflag Iron & Steel Co. Ltd. [Allowing bulk discount by the MSEB]
27	10 & 11 of 2000	09.01.2001	06.02.2001	14.02.2001	(i) Maharashtra Chamber of Commerce & Industries, and (ii) Akhil Bhartiya Grahak Panchayat, Pune [Validity of the Commercial Circulars and the Clauses of Conditions and Miscellaneous Charges for Supply of Electrical energy issued by the MSEB without prior approval of the MERC]
28	12 of 2000	18.01.2001	05.02.2001 08.03.2001 25.01.2002 07.02.2002	23.03.2001	Ispat Industries Ltd. (Review Petition) [Review of the Clarificatory Order dated October 23, 2000 in the matter of availing bulk discount contained in Point No.1-Bulk Discount]
29	12 of 2000	08.11.2001	07.02.2002	04.03.2002	Ispat Industries Ltd.-Review Application [Review of the Order dated 23.03.2001 in the matter of availing bulk discount contained in Point No.1 - Bulk Discount].
30	14 of 2000	24.01.2001	22.02.2001	23.02.2001	Finolex Industries Ltd, Ratnagiri [Disputed tariff for the month of May & June 2000]
31	15 of 2000	12.02.2001	12.03.2001 13.03.2001 20.04.2001 21.04.2001	31.07.2001	MSEB Application -Fuel & Other Cost Adjustment Charges (FOCA) [Determination of FOCA 2000-01 and approval of formula for computation of FOCA from time to time]
32	16 & 17 of 2000	13.03.2001 20.11.2000	16.05.2001	17.05.2001	Prayas-Amendment to Reliance PPA & Mr Pratap G. Hogade [Cancellation of Reliance PPA (amended)]
33	01 of 2001	31.08.2001	11.09.2001 (Total Public Hearing-8)	28.12.2001 10.01.2002	Determination of Tariff (2001-02) applicable to various categories of consumers of MSEB
34	02 of 2001	24.05.2001	27.07.2001	30.07.2001	Maharashtra Seamless Limited - [Determining the billing demand, to drop the Demand Penalty Charges to allow admissible bulk discount incentive to the Petitioner]
35	03 of 2001	25.05.2001	29.05.2001	29.05.2001	Dabhol Power Company (DPC) - [Disputes between MSEB & DPC regarding alleged violation of operating characteristics & dynamic parameters by DPC under the PPA between the two parties, etc.]
36	07 of 2001	06.07.2001	27.07.2001 10.08.2001	04.09.2001	Lloyds Steel Industries Ltd. [Allowing bulk discount incentives to Lloyds Steel]
37	08 of 2001	02.07.2001	19.07.2001 (Technical Validation)	19.07.2001	Jawahar Shetkari S. Sakhar Karkhana Ltd. [Regarding renewal of PPA between MSEB and the Jawahar SSK Ltd.] - (**Interim Order)**
38	09 of 2001	02.07.2001	19.07.2001 (Technical Validation)	19.07.2001	Datta Shetkari S.Sakhar Karkhana Ltd. [Regarding renewal of PPA between MSEB and Datta SSK Ltd.] - **(Interim Order)**
39	10 of 2001	10.07.2001	19.07.2001 31.08.2001 17.10.2001 02.11.2001	19.07.2001	Kay Pulp & Paper Mills Ltd.[Regarding renewal of PPA between MSEB and Kay Pulp & Paper Mills Ltd.] - **(Interim Order)**
40	10 of 2001	10.07.2001	19.07.2001	31.08.2001	Kay Pulp & Paper Mills Ltd. - **(Interim Order)**
41	10 of 2001	20.09.2001	02.11.2001	02.11.2001	Jawahar Shetkari S. Sakhar Karkhana Ltd. - **(Interim Order)**
42	12 of 2001	16.08.2001	30.08.2001	18.09.2001	National Thermal Power Corporation Limited - [Approval of Escrow Agreement between MSEB & Independent Power Producers (IPP) / other generating utilities]
43	14 of 2001	17.07.2001	07.09.2001	14.09.2001	Sunflag Iron & Steel Industries Ltd. - [Making payment for sale of power to MSEB]

Annexure XX

BALANCE SHEET AS ON 31ST MARCH 2000 (UNAUDITED)

CAPITAL	Amount Rs.	Amount Rs.
Capital Account		
Current Liability		
Profession Tax	1,050.00	
General Provident Fund	1,680.00	
General Insurance Scheme	120.00	
C.P.F. Employee	1,000.00	
House Building Advance	1,100.00	
Sub-Total		*4,950.00*
Surplus income		**19,573,893.87**
Total		**19,578,843.87**

ASSETS	Amount Rs.	Amount Rs.
Fixed Assets		
Computer Purchases	323,177.00	
Vehicle Purchases	2,189,919.00	
Office Equipment	387,803.70	
Furniture & Fixture	4,151,222.00	
Air Conditioner	594,753.00	
Electrical Installation	120,000.00	
Sub-Total		*7,766,874.70*
Current Assets		
Bank Balance	11,756,053.03	
Cash in hand	2,583.14	
TDS Contract	3,508.00	
Telephone Deposits	30,000.00	
Advance	9,300.00	
Deposit to Suppliers	10,525.00	
Sub-Total		*11,811,969.17*
Total		**19,578,843.87**

Annexure XX

INCOME AND EXPENDITURE ACCOUNT AS ON 31.3.2000

EXPENDITURE	Amount Rs.	Amount Rs.
Establishment Expenses		
Salary	830,440.00	
Peon Allowance	30,220.00	
Leave Encashment A/c	50,416.00	
C.P.F. Employers A/c.	2,986.00	
Medical Reimbursement	29,261.00	
Staff Salary	230,415.00	
LTC expenses A/c	35,972.00	
Sub-Total		*1,209,710.00*
Office Maintenance		
Telephone Expenses	270,774.51	
Vehicle Insurance	83,031.00	
Office Rent	6,561,438.00	
Car Parking Expenses	32,015.00	
Vehicle Hiring Expenses	131,887.00	
Computer Expenses	32,783.00	
Bank Commission	1,074.00	
Repairs & Maintenance-Vehicle	11,685.00	
Printing & Stationery	48,592.00	
Petrol expenses	67,607.89	
Postage & Couriers	6,502.40	
Electricity Expenses	159,464.38	
Conveyance Expenses	4,747.50	
Canteen Expenses	11,157.25	
Miscellaneous Expenses	3,562.00	
Books & Periodicals	38,285.50	
Repairs & Maintenance-Equipment	11,161.00	
Car Hiring for Public Hearing	26,861.00	
House Keeping	14,753.50	
Office expenses	3,015.00	
Sub-Total		*7,520,396.93*
Expenses on Object		
Consultancy Charges	927,073.50	
Tours & Travels	278,709.70	
Membership & Subscription	100,000.00	
Public Hearing Expenses	38,926.00	
Advertisement & Publicity	270,338.00	
Entertainment Expenses	1,452.00	
Website Expenses	3,500.00	
Sub-Total		*1,619,999.20*
Total Expenditure		**10,350,106.13**
Surplus		
Income over expenditure		19,573,893.87
Total		**29,924,000.00**

INCOME	Amount Rs.	Amount Rs.
Grants-in-Aid		
Government of Maharashtra	29,919,000.00	
Sub-Total		*29,919,000.00*
Other Receipts		
Tender Fee Receipt	5,000.00	
Sub-Total		*5,000.00*
Total Income		**29,924,000.00**
Deficit		
Expenditure over income		-
Total		**29,924,000.00**

Annexure XXI

BALANCE SHEET AS ON 31ST MARCH 2001 (UNAUDITED)

CAPITAL	Amount Rs.	Amount Rs.
Capital Account		
Current Liability		
Earnest Money Deposit	72,000.00	
Security Deposit	5,000.00	
MSEB Dispute A/c	-	
	-	
-		
Sub-Total		*77,000.00*
Surplus Income		
Previous Surplus	19,573,893.87	
Current Year Deficit	(2,590,929.69)	
Sub-Total		*16,982,964.18*
Total		**17,059,964.18**

ASSETS	Amount Rs.	Amount Rs.
Fixed Assets		
Computer Purchases	3,229,841.50	
Vehicle Purchases	2,189,919.00	
Office Equipment	525,132.70	
Furniture & Fixture	5,754,048.00	
Air Conditioner	767,590.00	
Electrical Installation	716,579.00	
Sub-Total		*13,183,110.20*
Current Assets		
Bank Balance	1,114,421.15	
Bank Balance	1,141,629.54	
Cash in hand	9,146.00	
Telephone Deposits	37,500.00	
Advance to Staff	40,300.00	
Deposit to Suppliers	10,525.00	
Housing Deposit	1,500,000.00	
TDS Contract	1,557.00	
Mengle-Cash in hand	12,750.29	
P.T.	25.00	
Advance to suppliers	9,000.00	
Sub-Total		*3,876,853.98*
Total		**17,059,964.18**

Annexure XXI

INCOME AND EXPENDITURE ACCOUNT AS ON 31.3.2001

EXPENDITURE	Amount Rs.	Amount Rs.
Establishment Expenses		
Salary	1,631,004.00	
Peon Allowance	57,626.00	
Leave Encashment A/c	-	
C.P.F. Employers A/c.	20,100.75	
Medical Reimbursement	61,448.00	
Staff Salary	906,902.00	
LTC expenses A/c	19,300.00	
Sub-Total		*2,696,380.75*
Office Maintenance		
Telephone Expenses A/c.	580,103.47	
Vehicle Insurance A/c	61,502.00	
Office Rent	11,914,560.00	
Residence Rent	108,000.00	
Computer Expenses	74,130.00	
Bank Commission	1,269.00	
Repairs & Maintenance-Vehicle	68,752.30	
Printing & Stationery	226,548.25	
Petrol expenses	218,701.62	
Postage & Couriers	40,258.35	
Electricity Expenses	557,177.00	
Conveyance Expenses	30,641.80	
Canteen Expenses	31,084.50	
Miscellaneous Expenses	1,819.00	
Books & Periodicals	72,174.70	
Repairs & Maintenance	82,434.80	
House Keeping	117,726.00	
Office expenses	13,319.50	
Suspense A/c.(Diff.in Trial Balance)	50.00	
Sub-Total		*14,200,252.29*
Expenses on Object		
Consultancy Charges	2,615,620.00	
Tours & Travels	481,494.89	
Membership & Subscription	111,215.00	
Public Hearing Expenses	479,398.80	
Advertisement & Publicity	154,248.00	
Entertainment Expenses	3,142.50	
Website Expenses	68,965.00	
Meeting Expenses	9,492.00	
Seminar/Workshop	17,050.00	
Sub-Total		*3,940,626.19*
Total Expenditure		**20,837,259.23**
Surplus		
Income over expenditure		
Total		**20,837,259.23**

INCOME	Amount Rs.	Amount Rs.
Grants-in-Aid		
Government of Maharashtra	17,050,000.00	
Sub-Total		*17,050,000.00*
Other Receipts		
Mis. Receipts	54,700.00	
Sub-Total		*54,700.00*
Fees & Cost		
Fees & Cost Recovered A/c	1,141,629.54	
Sub-Total		*1,141,629.54*
Total Income		**18,246,329.54**
Deficit		
Expenditure over income		2,590,929.69
Total		**20,837,259.23**

Annexure XXII

BALANCE SHEET AS ON 31ST MARCH 2002 (UNAUDITED)

CAPITAL	Amount Rs.	Amount Rs.	ASSETS	Amount Rs.	Amount Rs.
Capital Account			**Fixed Assets**		
			Computer Purchases	3,545,036.00	
			Vehicle Purchases	2,189,919.00	
			Office Equipment	619,723.70	
			Furniture & Fixture	6,032,340.00	
			Air Conditioner	767,590.00	
			Electrical Installation	754,294.00	
			Sub-Total		**13,908,902.70**
Current Liability			**Current Assets**		
Earnest Money Deposit	66,000.00		Bank Balance	12,306,713.79	
Security Deposit	258,773.00		Cash in hand	5,367.79	
MSEB Dispute A/c	(500.00)		Telephone Deposits	37,500.00	
	-		Advance to Staff	300.00	
	-		Deposit to Suppliers	15,525.00	
			Housing Deposit	1,500,000.00	
Sub-Total		*324,273.00*	***Sub-Total***		*13,865,406.58*
Surplus Income					
Previous Surplus	16,982,964.18				
Current Year Surplus	10,467,072.10				
Sub-Total		*27,450,036.28*			
Total		**27,774,309.28**	**Total**		**27,774,309.28**

Annexure XXII

INCOME AND EXPENDITURE ACCOUNT AS ON 31.3.2002

EXPENDITURE	Amount Rs.	Amount Rs.
Establishment Expenses		
Salary	1,722,299.00	
Peon Allowance	70,400.00	
Leave Encashment A/c	(22,401.00)	
C.P.F. Employers A/c.	20,364.00	
Medical Reimbursement	408,929.00	
Staff Salary	2,312,728.00	
LTC expenses A/c	41,580.00	
Sub-Total		*4,553,899.00*
Office Maintenance		
Telephone Expenses A/c.	571,365.05	
Vehicle Insurance A/c	57,851.00	
Office Rent	10,921,680.00	
Residence Rent	200,603.00	
Computer Expenses	55,657.00	
Bank Commission	3,250.00	
Repairs & Maintenance-Vehicle	110,579.00	
Printing & Stationery	223,510.05	
Petrol expenses	244,908.96	
Postage & Couriers	37,168.00	
Electricity Expenses	401,134.00	
Conveyance Expenses	5,813.50	
Canteen Expenses	26,955.95	
Office equipment exp A/c	4,370.00	
Books & Periodicals	88,996.00	
Repairs & Maintenance	377,177.00	
House Keeping	94,545.00	
Office expenses	101,704.50	
Car Parking Expenses	192,000.00	
Sub-Total		*13,719,268.01*
Expenses on Object		
Consultancy Charges	4,031,481.00	
Tours & Travels	351,513.50	
Membership & Subscription	100,000.00	
Public Hearing Expenses	169,605.50	
Advertisement & Publicity	326,032.00	
Entertainment Expenses	1,861.00	
Website Expenses	191,640.00	
Meeting Expenses	5,087.50	
Seminar/Workshop	4,000.00	
Sub-Total		*5,181,220.50*
Total Expenditure		**23,454,387.51**
Surplus		10,467,072.10
Income over expenditure		
Total		**33,921,459.61**

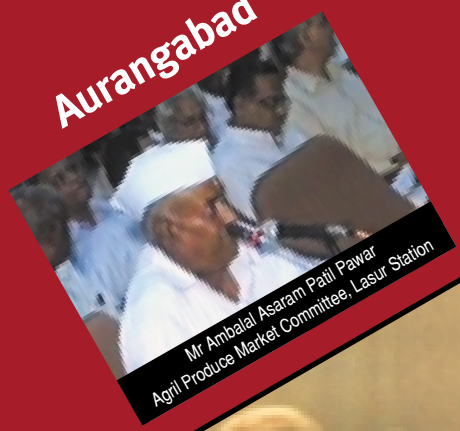
INCOME	Amount Rs.	Amount Rs.
Grants-in-Aid		
Government of Maharashtra	26,262,000.00	
Sub-Total		*26,262,000.00*
Other Receipts		
Mis. Receipts	1,089.00	
Sub-Total		*1,089.00*
Fees & Cost		
Fees & Cost Recovered A/c	7,658,370.61	
Sub-Total		*7,658,370.61*
Total Income		**33,921,459.61**
Deficit		
Expenditure over income		-
Total		**33,921,459.61**

Annexure XXIII

Abbreviations

BSES	Bombay Suburban Electric Supply
CEA	Central Electricity Authority
CII	Confederation Of Indian Industry
CPP	Captive Power Policy
DPC	Dabhol Power Company
EHV	Extra High Voltage
EoU	Export Oriented Unit
ERC	Electricity Regulatory Commissions
ESA	Electricity (Supply) Act
FCA	Fuel Cost Adjustment
HT	High Tension
HTP	High Tension Power
HTP-BP	High Tension Power - Bulk Power
HVDC	High Voltage Direct Current
IPP	Independent Power Producers
Kwh	Kilo Watt Hour
LIS	Lift Irrigation System
LT	Low Tension
LTP-G	Low Tension Power - General Motive Power
MERC	Maharashtra Electricity Regulatory Commission
Mkcal	Million Kilo Calories
MSEB	Maharashtra State Electricity Board
MU	Million Units
MVA	Mega Volt Ampere
NFA	Net Fixed Assets
NPC	Nuclear Power Corporation
NTPC	National Thermal Power Corporation
PFC	Power Finance Corporation
PLF	Plant Load Factor
PPA	Power Purchase Agreement
PWW	Public Water Works
ROR	Rate Of Return
T&D	Transmission And Distribution
TEC/TPC	Tata Electric Companies/Tata Power Company
ToD	Time Of Day
1 Lakh	100,000
10 Lakhs	1 Million
1 Crore	10 Million
100 Crores	1 Billion

Stakeholders presenting their case during MERC's Public Hearings at six Revenue Division Headquarters in October 2001



Aurangabad

Mr Ambalal Asaram Patil Pawar
Agril Produce Market Committee, Lasur Station

Nashik

Mr Champalal I. Zand
President, Bharatiya Kisan Sangh

Mumbai

Mr Vinay Bansal
MSEB Chairman

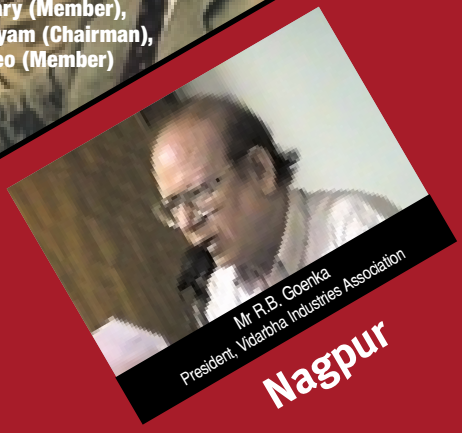
MERC in session (from left to right):
Mr Venkat Chary (Member),
Mr P Subrahmanyam (Chairman),
Mr Jayant Deo (Member)

Pune

Dr N.D. Patil
Gen. Sec., Peasants & Workers Party

Mr M.P. Darda
Vidarbha Chamber of Small-Scale Industries

Amravati



Mr R.B. Goenka
President, Vidarbha Industries Association

Nagpur

MERC

Maharashtra Electricity Regulatory Commission

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