

**Transfer of
Maharashtra State Electricity Board's
Rural Electricity Distribution
&
Rural Electrification Scheme to Panchayats**



*Report of the Study Group
Constituted by the
Government of Maharashtra*

August 25, 2003

FOREWORD

“Democracy is not only the goal of development, it is the primary means of development”

- Amartya Sen

In the last few years, there has been a paradigm shift in the strategy for rural development with focus on decentralization through speedy and effective devolution of financial and administrative powers to the Panchayati Raj Institutions (PRIs). The passage of the Constitution (73rd Amendment) Act, 1992 marks a new era in the federal democratic set up of the country and provides constitutional status to the Panchayati Raj Institutions. Consequent upon the enactment of the Act, almost all the States/UTs, except J&K, NCT Delhi and Uttaranchal have enacted their legislation. The main features of the Act are: (i) a 3-tier system of Panchayati Raj for all States having a population of over 20 lakh; (ii) Panchayat elections regularly every 5 years; (iii) reservation of seats for Scheduled Castes, Scheduled Tribes and women (not less than one-third of seats); (iv) appointment of State Finance Commission to make recommendations as regards the financial powers of the Panchayats and (v) constitution of District Planning Committees to prepare development plans for the district as a whole.

As per the Constitution (73rd Amendment) Act, the three tier Panchayati Raj Institutions in Maharashtra districts namely Gram Panchayats (Village level, either for one village or a group of small inhabitations in rural area), Panchayat Samities (Block level, encompassing 10-20 Gram Panchayats) and Zilla Parishads (District level, comprising 4-10 blocks) have been endowed with such powers and authority as may be necessary to function as institutions of self-government. It contains provisions of devolution of powers and responsibilities upon Panchayats at the appropriate level with reference to (a) the preparation of plans for economic development and social justice and (b) the implementation of such schemes for economic development and social justice as may be entrusted to them. The 11th Schedule of the 73rd Amendment specifies 29 areas of responsibility covering all key aspects of village life, which States may transfer to the Panchayats, along with sufficient resources and decision-making ability. Rural electrification including electricity distribution is the 14th Subject of the aforementioned Schedule.

The Government of Maharashtra (GoM) is in the forefront of implementation of the 73rd Amendment by transferring most of the above referred subjects to Zilla Parishads. In June 2002, GoM constituted a Study Group to examine issues related to the “Transfer of MSEB's Rural Electricity Distribution and Rural Electrification to Panchayats”. The Study Group was mandated with the task of undertaking a detailed analysis of the issues related to the transfer of Rural Electrification and Electricity Distribution to Zilla Parishads, taking into account the existing electricity supply system in rural areas.

This report incorporates the collective views of the Study Group based on feedback received from the Members. It addresses two principal issues: (a) decentralised management and planning of rural distribution system by the Panchayats, and (b) how GoM could mobilise the resources for subsidising supply to agriculture. These two issues are mutually exclusive inasmuch as decentralised management of the rural network could be entrusted to rural co-operatives or users association or Panchayats or franchisees. The Study Group is of the opinion that Maharashtra's political ethos dictates that Panchayats should be entrusted with this responsibility. As it was not practical for the Study Group to seek the views of various stake-holders on this political issue, it is recommended that the report may be made public and widely disseminated in the State so that a wide ranging debate may take place. The High Power Secretary Group may process the Study Group's analysis and recommendations only after this debate.

I would like to place on record my personal appreciation for the support received from all the members of the Study Group, GoM officials, Zilla Parishads, the Maharashtra State Electricity Board and Infrastructure Leasing & Financial Services – Consultant appointed by GoM to assist the Study Group.

Dr Pramod Deo
Chairman of the Study Group

August 25, 2003

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1. EXECUTIVE SUMMARY

1.1 Background :

In the last few years, there has been a paradigm shift in the rural development strategy, with a focus on decentralization through speedy and effective devolution of financial and administrative powers to the Panchayati Raj Institutions (PRIs). The passage of the Constitution (73rd Amendment) Act, 1992 marks a new era in the federal democratic set up of the country and provides constitutional status to the PRIs. The 11th Schedule of the 73rd Amendment specifies 29 areas of responsibility covering key aspects of village life, which States may transfer to the Panchayats, along with sufficient resources and decision-making authority. The Government of Maharashtra (GoM) is way ahead of other states in implementation of the provisions of the 73rd Amendment by transferring most of the subjects like agriculture, education, water supply, public works etc., to the Panchayats.

The 14th subject of Schedule 11 of the 73rd Amendment also envisages the transfer of rural electrification including electricity distribution to the Panchayats. Accordingly, in June 2002, GoM constituted a Study Group for “Transfer of MSEB’s Rural Electricity Distribution and Rural Electrification to Panchayats”.

The Study Group was mandated to undertake a detailed analysis of issues related to the transfer of Rural Electrification Scheme and Electricity Distribution to Zilla Parishads, taking into account the existing supply conditions of electricity in rural areas. To facilitate the analysis and to assist the Study Group, GoM appointed Infrastructure Leasing and Financial Services Limited (ILFS) to conduct various techno-economic studies.

Based on preliminary discussions amongst the Members of the Study Group, three Operation and Maintenance (O&M) Distribution Circles of MSEB namely Ahmednagar, Osmanabad and Wardha were identified for sourcing the field data. In addition, to facilitate a comparison between the centralised MSEB’s rural system and an existing decentralised rural supply system, data from a local entity involved in distribution of electricity in rural area since 1971 viz. Mula Pravara Electric Co-operative Society Ltd. (MPECS), Shrirampur was also sourced.

1.2 Electricity Regulation :

Power is in the Concurrent List under the Indian Constitution with both the Centre and the States having jurisdiction to legislate. Until recently, Electricity Supply in India was governed by three Acts namely, the Indian Electricity Act, 1910, the Electricity (Supply) Act, 1948 and the Electricity Regulatory Commission Act, 1998.

With a view to consolidate the various laws and assist the State Governments in the reform process, the Government of India replaced these existing Acts with the Electricity Act, 2003 (EA 2003). The EA 2003 envisages the formulation of National Electricity Plan (NEP), tariff policy and a policy on electrification and local distribution in rural areas to ensure supply of electricity to all villages and hamlets. It is obligatory on part of the Central Government to prepare and notify the NEP, tariff policy and policy on rural electrification. Thus, the EA 2003 while striving to introduce competition and choice in development of the power system to reduce the cost of reliable electricity supply in general, also seeks alternative strategies for rural electrification to meet socio-economic objectives of rural population.

1.3 Rural Electricity Supply :

Rural electricity supply has been characterised by high transmission and distribution losses and frequent interruptions. The major issues related to electricity distribution in rural areas are listed below :

- High cost of supply due to low density and low load factors.
- High Transmission & Distribution losses.
- Low paying capacity of consumers.
- Need for subsidy for some category of consumers.
- Lack of commercial funding for expansion of network.

1.3.1 Maharashtra Experience :

The Maharashtra State Electricity Board (MSEB) has maintained a leadership position amongst the State owned utilities in India in the field of rural electrification. With financial support from the Rural Electrification Corporation (REC) and GoM, MSEB achieved 100% rural electrification

in 1989. In the rural areas, consumption of electricity is predominantly for lift irrigation by agricultural consumers. Despite these achievements, MSEB has consistently had a long list of paid pending agriculture consumers i.e. consumers (who have already paid the amount for power supply connection), whose request for an electrical connection is pending, and this list has been on the rise.

1.3.2 Indian Experience of Decentralised Rural Supply :

In India, as an initial experiment, 5 Rural Electric Supply Co-operatives (RESCs) were set up. Later, the number increased to over 40 RESCs. The Committee on RESCs under the Chairmanship of Shri N.S. Mathur, which was constituted to examine the operations of the existing RESCs, made the following observations :

- The overall physical performance of the RESCs was quite encouraging.
- A RESC was more tuned to local distribution needs and could therefore ensure quicker load growth as compared to a SEB.
- RESCs being organisations of the consumers themselves were naturally inclined to carry out their operations in synchronisation with consumer needs.
- With the emergence of RESCs specific quantities of energy purchased by them and sold to the consumers could be ascertained and the losses quantified. However, the desired watch dog function of identifying management inadequacies such as defective meters, theft of energy, etc. was not performed properly.
- Diversion of funds for purposes other than rural electrification was limited. Some of the RESCs even generated their own resources for being ploughed back for further intensification of electrification in their respective areas.

1.3.3 Mula Pravara Electric Co-operative Society Limited (MPECS) :

Maharashtra has also experimented successfully with the RESC concept. MPECS was a Pilot Rural Electric Co-operative Society started in 1971 to distribute electricity in the Ahmednagar District. The areas covered were the entire Talukas of Shrirampur, and Rahuri and the partial Talukas of Newasa, and Sangamner.

MPECS today serves 183 villages spread over an area of 1880 sq km and covers a population of approximately 7 lakhs. It is managed by 19 elected members and 6 nominated members. However, though MPECS has achieved targets in physical terms its financial position is precarious, due to the tariff payable by it to MSEB ignoring the large skew in consumer mix.

Despite the experience being mixed on the financial performance, the REC in its Annual Report for FY1997, expressed the view that the most feasible and effective option in the rural context is the promotion of more Rural Electric Co-operatives, with active participation and involvement of the local people and Panchayati Raj bodies.

This was further corroborated by the Energy Review Committee (ERC) set up by GoM in its Report (Part II July 2001). The ERC findings reveal that had MSEB been serving the MPECS distribution area, the T&D losses and the consequent revenue losses would be far greater than those achieved by MPECS. Thus, despite MPECS current shortcomings, the ERC has endorsed the development of co-operatives or any other appropriate local management model, since such a system can lead to a great deal of improvement in the performance of the rural distribution system.

1.4 The Restructuring Model :

The Distribution Policy Committee appointed by the Ministry of Power (MoP) in its report of March 2002 has recommended that there is a need to implement a customised approach for the rural segment. This would necessitate separation of the main operations from the rural operations, and adopting specific policies and plans for rural operations. One of the approaches suggested by the Committee is decentralised management in the form of rural co-operatives or users association or Panchayats or franchisees. The decentralised independent entity would undertake rural distribution on the basis of normal commercial business of paying for the electricity it buys and recovering enough money for what it sells, to cover full costs, failing which there would be no supply.

The attractiveness of a commercially managed decentralised model is that it directly addresses the problem which is bedevilling the financial health of the utilities viz. they on an average, bill around 55% of total energy available and collect only 40%. Apart from high T&D losses and pilferage, the gap between average revenue realisation and average cost of supply has been constantly rising, especially in rural areas. It was therefore felt that whether the decentralised electricity distribution entity would be able to carry its operations in commercial terms to meet at least its O&M costs should alone be the criterion for selecting a model for Maharashtra. It is almost certain that given the high capital cost of

extending the rural network, the emergence of a self-sustaining rural electricity distribution system will take a long time and State Government support for strengthening and expanding the rural system will have to continue as a socio-economic objective.

Hence, the approach to identify the reform model for rural electrification was based on the following principles :

- Rural electrification should be treated as part of the socio economic development plans of the village and the State government should support the investments.
- Rural electrification should be managed in a decentralised manner by rural co-operatives or rural entrepreneurs approved by the local communities or through franchisees or through Panchayats.
- In the case of subsidised consumers such as agriculturists, the subsidy for irrigation pump-sets can be provided directly by the State Government to the decentralised rural distribution entity.

1.5 Comparative Analysis and Panchayati Model :

The Study Group undertook a comparison of Low Tension consumer data provided by MSEB (Ahmednagar Circle) and MPECS for the year 2001-02. The data related to the number of consumers, energy billed, billed amount, revenue receipt and the HT-LT network in their jurisdiction. The key observations were :

- Billed energy per consumer is higher in MPECS than that in the Ahmednagar Circle (AC) managed by MSEB. This indicates higher billing efficiency of MPECS. The Agriculture consumption per consumer in AC is nearly 5700 kWh whereas in MPECS it is around 9100 kWh.
- Billed amount per consumer is lower in MPECS as compared to that in AC – higher industrial consumption (47 Mus) in AC as against 11 Mus in MPECS.
- Revenue receipt per consumer is higher in MPECS vis-à-vis the AC – indicating higher collection efficiency.
- Failure rate of Distribution Transformers (DTs) in MPECS area is lower than that of AC indicating superior operating efficiency for MPECS.

Thus, the State of Maharashtra has conclusive empirical evidence of the superiority in operational and financial terms of a local rural electricity distribution entity over MSEB's centralised system.

The Study Group was of the opinion that the three tier Panchayati model was of universal application in Maharashtra rather than the co-operative society model. Moreover, the latter could be adopted by a Gram Panchayat (GP) or a group of GPs for administrative purposes. As an important scheme like water supply was successfully entrusted to Zilla Parishads (ZPs), electricity distribution should also be handed over to them. In both cases, the success of the Panchayati model will depend upon local participation and resolve of the beneficiaries to manage supply on a commercial basis at GP level. It was, therefore, recommended by the Study Group that only those ZPs willing to undertake 100% metering for all its consumers and managing their business on a commercial basis should be selected for the pilot.

1.6 Proposed Role of Stakeholders :

Under the local ownership model, it is envisaged that each stakeholder would need to participate in the following manner :

1.6.1 Government of Maharashtra :

- Notify rural area under EA 2003 for electricity generation and distribution.
- Transfer RE scheme from MSEB to the selected ZPs under Section 100.
- Provide necessary financial support and government guarantee in conjunction with Rural Electrification Corporation and Power Finance Corporation for new pump set connections and strengthening of distribution network.
- RE funding will be based on pre-determined operation and financial performance parameters for ZPs. Each ZP in turn will operate its own system of incentives and disincentives for GPs.
- Interaction with Central Government for framing of National Policy.

1.6.2 MSEB :

- Transfer existing distribution assets.
- Provide guidelines for energy service needs.
- Advice and expertise as required.
- Technical standards development.

1.6.3 Zilla Parishad :

- O&M for entire local network, responsibility for further development.
- Seek MSEB support for technical issues & planning.
- Manage the system through GPs and Panchayat Samities on purely commercial lines and take effective steps to eliminate theft.

1.6.4 Maharashtra Electricity Regulatory Commission (MERC) :

- Frame a policy for multi-year tariff for rural areas as per EA 2003.
- Advise GoM on policy and implementation issues of RE.
- Preferably notify regulations on RE supply and management.

1.6.5 Central Government :

- Formulation of a National Policy on RE.

1.7 Proposed Transfer Scheme :

While various options were considered, it has been recommended that the entire network below 11 KV Feeders (including 11 KV Feeders) be transferred to the Zilla Parishad. This would require a clear demarcation of the area of contact for the Zilla Parishad and help in :

- Facilitating O&M and future expansion.
- Ease of audit by MSEB and ZP.
- Ease of implementation of network sharing arrangement.
- Effective measuring of energy sale.
- Adequate operational policy freedom to ZP.

1.7.1 Identification of Assets & Liabilities :

While formulating the scheme of transfer of assets and liabilities, a detailed evaluation of the following aspects related to the assets proposed to be transferred to ZP, may need be carried out.

- Detailed inventory of fixed assets.
- Details of liabilities related to these assets.
- Original cost of asset.
- Useful life.
- Current condition.

1.7.2 Transfer Methodology :

Apart from the valuation of assets, another critical component of the proposed initiative would relate to the methodology adopted for transferring these assets to the ZPs. In this regard, GoM may consider the following alternate approaches :

- Operational lease of assets by MSEB to ZPs on a right-to-use basis. Under this structure, the assets would remain in the books of MSEB (and after June 9, 2004 in the books of GoM), though the ZP would have the right to use these assets on payment of periodic lease rentals.
- The assets could be transferred to ZPs under a deferral credit facility wherein the transferees would remit the consideration for the assets in tranches over a period of time.

- The assets could be directly acquired by ZP through upfront arrangement of funds including debt funds from agencies like REC and PFC.

1.7.3 Operational Funding :

- MSEB to reimburse the expenses on employee cost, network R&M cost, billing, collection and other expenses to ZP as the energy sale rate (Bulk Supply Tariff) to ZP would be at the cost of supply of MSEB.
- Direct budgetary support from State Government to ZP.
- Soft borrowings from REC.
- Internal resource generation by ZP to fund a part of future expansion activities.

1.7.4 Tariffs :

Bulk Supply Tariff by MSEB to a ZP needs to be decided based on the category of consumers served by the ZP and Retail Supply Tariff (RST) for these categories in MSEB's area and certainly not on power supply voltage basis, as was done for MPECS for initial years of the transfer. This will imply :

- The consumer mix (subsidised vs. subsidising sectors) in a given area would have a critical bearing on the decision related to fixing the Bulk Supply Tariffs (BSTs) for the selected ZPs;
- Differential BSTs for different ZPs based on their respective consumer mix, keeping RSTs same for all the category of consumers for first few years of transition will ensure a fine balance between revenues and cost of power for the ZPs; and
- Maintain a certain level of parity between the RSTs for consumers under the respective jurisdiction of MSEB and the ZPs at least for the first two or three years.

1.8 Metering :

In order to facilitate energy audits and to control T&D losses, the energy received at each sub-station as well as the energy sold by MSEB to the ZPs at the 33 / 11 KV HT sub-stations must be individually metered.

- The responsibility related to collection of bills to vest with GPs.
- Monthly statement indicating categorywise consumers, energy received, energy billed, billed amount and revenue receipt need to be monitored by the ZP through Panchayat Samities (PSs).
- Subsidy provided by the ZP to the subsidised consumers to be paid in advance to ZP by the State Government.

1.9 Financial Viability :

The business plan indicates the ability to achieve financial independence in the medium term (say 6-7 years). However, since the ZPs would also need to pursue the Government's objective of supporting installation of irrigation pump sets and providing requisite financial support for the same, a preliminary estimation was carried out of such costs and the extent of support required by them from GoM. The above exercise indicates a gradual reduction in financial support from the state government over a period of time.

- The State Government would be required to continue with its present policy of funding of energy consumption by Public Water Works (50% of energy bills) and Rural Street Lighting (100% of energy bills). This is very important in the proposed scheme of things, as this forms a stable revenue component for the new entity.
- The State Government would continue to provide budgetary support towards tariff subsidy to Agriculture consumers, which would be around Rs 7000 mn and revenue collected through Electricity Duty (which would be around Rs 6000 mn) would also be utilized towards this subsidy. This would be in FY2004. The budgetary support would be withdrawn in FY2008 and Electricity Duty abolished in FY2006 respectively.
- To energise the additional irrigation pump sets, the State Government would need to provide financial support to a ZP till its financial health improves and it becomes self-sufficient to manage electricity supply and distribution in the designated area.

- Based on an estimate of energising 1,00,000 IP sets every year in the state, the generation tax needed to meet this socio-economic objective in FY2004 works out to Rs 0.37 per unit on generation of MSEB, Tata and BSES. With 7% auxiliary consumption and T&D losses, the generation tax chargeable to consumers works out to be Rs 0.61 per unit.
- The tariff subsidy provided for domestic and agricultural consumers may need to be continued for a few years till the tariff is rationalised i.e., revenue recovery closely tracks the cost of supply and distribution losses.
- If GoM continues to provide tariff subsidy to Agriculture consumers the generation tax would be Rs 0.38 per unit instead of Rs 0.37 per unit in FY2004, which would become Rs 0.25 per unit instead of Rs 0.13 per unit by FY2012.

1.10 Conclusion :

This Report identifies various issues related to improvement of energy supply in the rural area of Maharashtra and proposes a framework of Transfer Scheme of Rural Electrification and Electricity Distribution of Rural Area to Zilla Parishads. This Report also examines the financial viability of such a scheme under the present scenario and develops a self-sustaining financial model. The advocated Panchayat involvement would provide for a clear demarcation of responsibilities and facilitate energy accounting and auditing. In addition, the levy of generation tax at source on the utilities in Maharashtra would ensure :

- Viability of the ZP model.
- Energisation of at least one lakh agricultural pumps every year to meet the aspirations of the rural population in Maharashtra State.
- Improvement in collection, operations and service conditions in rural areas.
- Reduction in the present level of GoM's agriculture subsidy for energisation of pumps and differential in retail tariff.
- Encouragement of local government in managing the rural areas.

The Report thus suggests that various problems related to the supply of energy to rural areas could be tackled effectively by transferring the responsibility of rural electricity distribution to the local bodies viz. ZP, PSs and GPs with adequate financial support from the State Government.

However, in order to ensure success of the pilot project in 2 or 3 selected ZPs, it will be necessary to undertake feasibility studies in those districts to demarcate rural and urban networks, identify MSEB staff for allocation to these networks and estimate the quantum of subsidy for targeted consumers.

Lastly, as it was not practical for the Study Group to seek the views of various stake-holders on the politically sensitive issue of whether ZPs will be capable of handling the business of RE strictly on commercial terms, it is recommended that the report may be made public and widely disseminated in the State so that a wide ranging debate may ensue.

2. BACKGROUND

2.1 Introduction :

India is the world's largest democracy with a predominant rural population. In 1992, the 73rd Amendment to the Indian Constitution set in motion a process for creating a genuine democracy at the rural level. In order to build a broad-based, solid foundation for economic and social progress, it is essential to empower the populace of over 750,000 Indian villages such that they are supported and treated as equal partners in the process of development t.

In the last few years, there has been a paradigm shift in the rural development strategy, with a focus on decentralization through speedy and effective devolution of financial and administrative powers to the Panchayati Raj Institutions (PRIs). The passage of the Constitution (73rd Amendment) Act, 1992 marks a new era in the federal democratic set up of the country and provides constitutional status to the Panchayati Raj Institutions. The 11th Schedule of the 73rd Amendment specifies 29 areas of responsibility covering key aspects of village life, which States may transfer to the Panchayats, along with sufficient resources and decision-making authority. The Government of Maharashtra (GoM) is way ahead of other states in implementation of the provisions of the 73rd Amendment by transferring most of the subjects like agriculture, education, water supply, public works etc., to the Panchayats.

The 14th subject of Schedule 11 of the 73rd Amendment envisages the transfer of rural electrification including electricity distribution to the Panchayats. A brief outline of the 73rd Amendment and the Schedule 11 is provided in **Annexure I**.

2.2 Study Group :

In June 2002, GoM constituted a Study Group for "Transfer to Panchayats of MSEB's Rural Electrification and Rural Electricity Distribution" through Resolution No. ESA 1001/P.K.7929/Urja-5, dated June 03, 2002, attached as **Annexure II**.

The Study Group was mandated to undertake a detailed analysis of issues related to the transfer of Rural Electrification and Electricity Distribution to Zilla Parishads, taking into account the existing supply of electricity in Rural Areas. A brief profile of the members of the Study Group is provided below :

Table 1 : Study Group Members

Member	Credentials
Dr Pramod Deo	Chairman of Study Group; Member – MERC
Shri Jivanrao Gore	President, Osmanabad Zilla Parishad
Shri BV Kale	President, Latur Zilla Parishad
Shri Harshavardhan Sankpal	Ex-President, Buldhana Zilla Parishad
Shri Prashant Kulkarni	Chief Engineer, MSEB, Bhandup Circle
Shri RY Gangavane	Joint Secretary, Finance Department, GoM
Shrimati Ashwini Bhide	CEO, Nagpur Zilla Parishad
Shri Chandrakant Dalvi	CEO, Ahmednagar Zilla Parishad
Shrimati Jayashree Choudhary	Deputy Secretary, Rural Development, GoM
Special Invitees	
Shrimati Chandra Iyengar	Principal Secretary, Higher & Technical Education and Ex-Secretary, Rural Development Department
Shrimati Laxmi Gopalan	Joint Secretary, Energy Department
Shri N K Shukla	Managing Director, Mula Pravara Electric Co-operative Society

2.3 Meetings of the Study Group :

The first meeting of the Study Group was held on June 25, 2002. During the first meeting, it was realised that field level studies in select MSEB Operation & Maintenance (O&M) Circles were required. It was also agreed that preliminary analysis of the various aspects of the transfer scheme i.e. technical, financial, commercial, administrative and regulatory needs to be undertaken. In view of this, GoM decided to avail the services of a reputed Consultant i.e. Infrastructure Leasing and Financial Services Limited (IL&FS). The final report of the Study Group is an outcome of several meetings and discussions after incorporating the considered views of the various Members. The list of meetings held is attached as **Annexure III**.

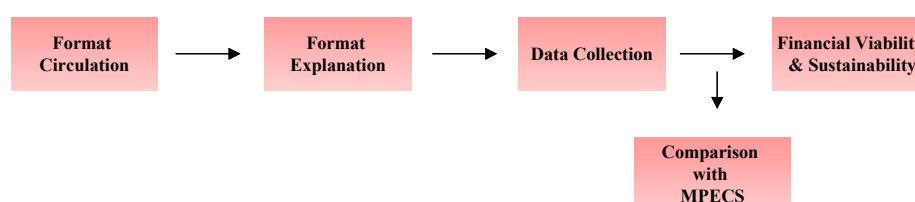
2.4 Methodology Adopted :

2.4.1 Data Source :

Based on the preliminary discussions amongst the Members of the Study Group, three O&M Distribution Circles of MSEB namely Ahmednagar, Osmanabad and Wardha were identified for sourcing the field level data. Additionally, to facilitate a stand-alone comparison, data was sourced from Mula Pravara Electric Co-operative Society Ltd. (MPECS), Shrirampur, a local entity involved in distribution of electricity in rural area since 1971.

2.4.2 Data Collection :

The data collection process involved five key stages of interaction with the O&M Circles :



2.4.2.1 Data Formats :

The Consultant circulated formats for collection of data from the three identified Circles (viz. Ahmednagar, Osmanabad and Wardha), Rural Development Department, and the respective Zilla Parishads in October 2002.

2.4.2.2 Format Explanation :

In October 2002, the Chairman of the Study Group convened a meeting of the Technical Director (Distribution), Head of the concerned O&M Circles of MSEB, Officials from concerned departments of GoM viz. Department of Energy, and Department of Rural Development, and the Consultant to explain data formats and discuss constraints in collection and availability of data / information at field level.

2.4.2.3 Data Collection :

As a follow up, the Consultant's representative visited the MSEB Circle Offices in October 2002 for discussing the issues and collecting the requisite data. The Chairman of the Study Group convened a meeting of the concerned MSEB officers of identified Circles on November 11, 2002, where the collated data was presented.

Since data from the Ahmednagar and Osmanabad Circles was not in the prescribed format, the same was requested to be resubmitted. The Consultant's representatives persisted with their interaction with the MSEB officials for sourcing the data, which was followed up with a visit to the Ahmednagar Circle Office in December 2002.

A visit was also made to the MPECS, the existing operating Electricity Distribution Licensee for two talukas in Ahmednagar District for comparison of operations having similar profile of network / consumers.

2.4.2.4 Financial Viability Analysis :

The analysis of the data along with an assessment of issues related to the proposed scheme of transfer of Rural Electrification and Distribution of Electricity in Rural Areas to Panchayats were presented by the Consultant and discussed by the Study Group on April 10, 2003.

2.4.3 Critical Observations :

The Study Group observed that the business of electricity distribution in rural areas materially differs from electricity distribution in urban areas, which typically have compact distribution systems, higher load factors, concentrated loads etc. The analysis of data revealed the following:

2.4.3.1 Unavailability of Village Wise Data :

It was observed from the field data available with the MSEB Circles that information related to the number of consumers, consumption, billing, revenue receipts etc. is maintained for every end use category i.e. domestic, agriculture, commercial, industrial etc. However, data is not segregated village wise.

2.4.3.2 Approximations :

The Study Group was specifically looking for data segregated into rural and non-rural categories. It was learnt that presently data is not maintained in such a format. Accordingly, the analysis necessitated reasonable approximation for the purpose of segregating data into rural and non-rural categories. As the data for the Wardha Circle (received during February-March 2003) was found to be systematic and reasonable, it was adopted for the modelling exercise.

This Report presents the collective views of the Study Group based on analysis and data made available by MSEB, after suitably incorporating the feedback received from the Members.

3. ELECTRICITY REGULATORY FRAMEWORK

3.1 Introduction :

Power is placed in the Concurrent List under the Indian Constitution with both the Centre and the States having jurisdiction to legislate. Until recently, electricity supply in India was governed by the following three enactments :

3.1.1 Indian Electricity Act, 1910 :

This Act created the basic framework for electricity supply in India, which was then in its infancy. The Act envisaged growth of the industry through private licensees. Accordingly, it provided for licensees who could supply electricity in a specified area. It created the legal framework for laying down of wires and other works relating to the supply of electricity.

3.1.2 Electricity (Supply) Act, 1948 :

This Act mandated the creation of the State Electricity Boards (SEBs). Each SEB was made responsible for arranging electricity supply in its designated State. It was felt that electrification which was limited to cities, needed to be extended rapidly, and the State should step in to shoulder this responsibility through the SEBs. Accordingly, the SEBs through successive Five-Year Plans undertook rapid growth and expansion in generation, transmission and distribution by utilising Plan funds. The SEBs have done yeoman service in taking electricity to the remotest corners of the country.

3.1.3 Electricity Regulatory Commission Act, 1998 :

Over time, the performance of SEBs deteriorated substantially on account of various factors. For instance, though power to fix tariffs vested with the SEBs, they were unable to take decisions on tariffs in a professional and independent manner and tariff in practice was determined by the respective State Governments. Cross subsidies also reached an unsustainable level.

The Act provided for establishment of a Central Electricity Regulatory Commission (CERC) and enabled the State Governments to establish State Electricity Regulatory Commissions (SERCs).

3.1.3.1 CERC :

The CERC was established to exercise powers conferred under this Act related to :

- Tariff regulation of generating companies owned or controlled by the Central Government and generating companies having composite scheme for generation and sale of electricity in more than one State.
- Regulating the inter-state transmission of energy including tariff of the transmission utilities.
- Promoting competition, efficiency and economy in the activities of the electricity industry.
- Aiding and advising the Central Government in formulation of tariff policy etc.

3.1.3.2 SERCs :

Some of the State Governments have established the Electricity Regulatory Commission for their respective States. The SERCs need to discharge functions relating to :

- Tariff determination.
- Regulating power purchase and procurement process of the transmission utilities and distribution utilities.
- Promoting competition, efficiency and economy in the activities of the electricity industry in the state, etc.

3.2 Electricity Bill :

The above described legal framework supported a monopolistic market regime rather than competitive forces. With a view to consolidate various laws and assist the State Governments in the reform process, the Government of India (GoI) introduced the Electricity Bill 2001 (Bill) in the Lok Sabha in August 2001. The Bill christened as the Electricity Act, 2003 (EA 2003) replaced the three older Acts on June 10, 2003. The EA 2003 envisages the formulation of National Electricity Plan (NEP), tariff policy and a policy on electrification and local

distribution in rural areas to ensure supply of electricity to all villages and hamlets. It is obligatory on part of the Central Government to prepare and notify the NEP, tariff policy and policy on rural electrification. Thus, the EA 2003 while striving to introduce competition and choice in development of the power system to reduce the cost of reliable electricity supply in general, also seeks alternative strategies for rural electrification to meet socio-economic objectives of rural population.

The salient features of EA 2003 with respect to Rural Electrification and Electricity Distribution are described below :

3.2.1 National Electricity Plan (NEP) :

The EA 2003 deals with the formulation of the NEP on electrification and local distribution in rural areas to ensure supply of electricity to all areas including villages and hamlets. It is obligatory on part of the Central Government to prepare and notify the NEP and tariff policy. The EA 2003 has also given a thrust to Rural Electrification for development of the power system based on optimal utilisation of resources. The NEP would cover the following:

- Allowing stand-alone systems (electricity generation and distribution system set-up without any connection to the Grid) for rural areas.
- Management of local distribution in rural areas through Panchayat Institutions, users' association, co-operative societies, Non Government Organisations (NGOs), franchisees, etc.

3.2.2 Distributed Generation :

The EA 2003 also encourages distributed generation in rural areas *“where a person intends to generate and distribute electricity in rural area to be notified by the State Government, such person shall not require any licence for such generation and distribution of electricity, but he shall comply with the measures which may be specified by the Authority”*. The measures related to safety, risks and specifications of electricity business would be as specified in Clause 53 of EA 2003.

3.2.3 Standing Committee Recommendations :

Prior to the passage of the Bill, it was referred to the Standing Committee of the Parliament on Energy. The recommendations of the Standing Committee were considered before its enactment in the Parliament. The Standing Committee has recommended participation of State Governments in the development of electrification of rural areas. These sentiments are expected to be incorporated while framing the NEP.

Box : 1

Parliament Standing Committee – Views / Recommendations

- Promotion of competition, protection of consumer interest and universal obligation to supply electricity to all.
- Central Government to prepare the NEP on stand-alone system exclusively for the rural areas.
- Act to ensure that entire funding for rural electrification program be made by the Central Government.
- Private sector should be under mandatory obligation to discharge its responsibilities towards rural electrification.
- Government to manage distribution of power in rural areas through Panchayats, co-operatives, NGOs and other franchisees.
- To provide necessary funds and other expertise for strengthening these institutions.

The key provisions of EA 2003 relating to generation, transmission, distribution, trading and use of power are enclosed as **Annexure IV**.

4. RURAL ELECTRICITY DISTRIBUTION

4.1 Definition :

Rural electrification is a high priority declared objective of the Government and an integral component of rural development. The Ministry of Power definition of rural electrification has evolved over time :

- Initially, a village was deemed to be electrified if electricity was used, for any purpose whatsoever, within its revenue area
- In October 1997 the definition was modified such that a village was deemed to be electrified if electricity was used, for any purpose whatsoever, in the inhabited locality, within its revenue area

However, the Ministry of Non-conventional Energy Sources regards a village as electrified if 60% of the households in the village are lighted. It is now proposed to achieve 100% electrification target as per the existing definition by the end of the Tenth Five Year Plan (2007) and ensure that atleast 40% households in these villages are electrified by 2012.

4.2 Importance :

With over 70% of India's population residing in villages, rural electrification is regarded as a principal tool for securing quality of life improvements. Today, a large section of the rural population does not have access to electricity. To bridge this gap, GoI has set a target of providing universal access to power by 2012 under its "Mission 2012 - Power For All" program.

The vast Indian hinterland combined with poor purchasing capacity of the village populace renders provision of the basic amenities costlier vis-à-vis similar services in densely populated urban centres. The financing of rural development schemes has therefore traditionally been dependent on government-led solutions. Rural power supply has been implemented primarily through loans from REC for schemes proposed by the SEBs.

4.3 Rural Electrification - Maharashtra :

4.3.1 Energy Scenario :

MSEB has maintained a leadership position amongst the State owned utilities in India. With active support from the GoM, MSEB has made substantial progress in its initiatives, as summarised below :

Table 2 : Maharashtra Energy Statistics

Particulars	1960-61	2000-01	CAGR (%) p.a.
Installed Gen. Capacity (includes Tarapur & Pench Hydro share) (MW)	760	9,957	7
Electricity Generation (Mus)	3,268	45,930	7
Electricity Sale (Mus)	2,720	36,807	7
Number of Consumers	1,07,833	1,29,72,637	13

4.3.2 MSEB Achievements :

With financial support from the Rural Electrification Corporation (REC) and GoM, in 1989, MSEB achieved 100% rural electrification. In the rural areas, consumption of electricity is predominantly for lift irrigation by agricultural consumers. A snapshot of MSEB's achievements in rural electrification is provided below :

Table 3 : MSEB Achievements

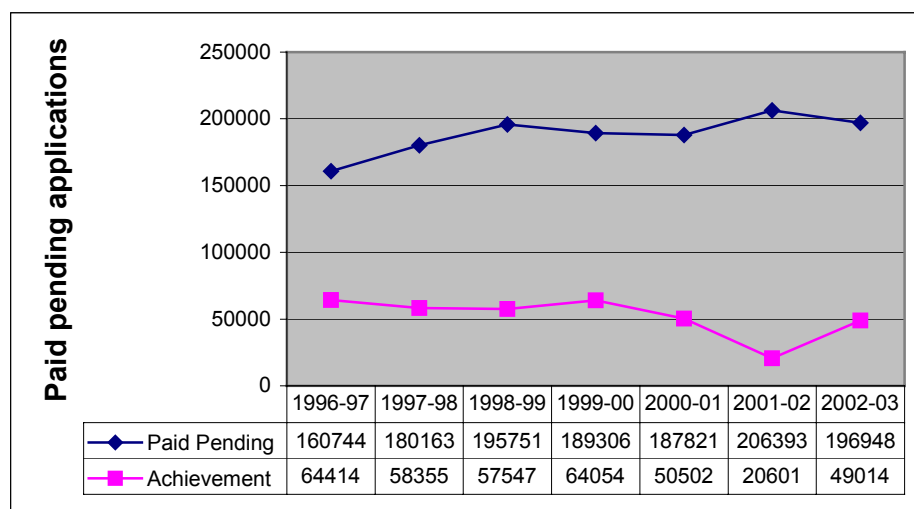
Particulars	1960-61	2000-01
Energisation of Agriculture Pumps	6,695	23,27,716
% of Total Consumers	6.21%	17.94%
Agriculture Consumption (Mus)	13	9,501
% of total Consumption	0.48%	25.81%
Ratio of Agriculture to Industrial Consumption	6.74%	61.35%
Electrified Cities, Towns and Villages	853	40,685
% of Total	2.36%	100%

Additionally, there has been a substantial increase in consumption by the subsidised rural section of the population over the past four decades. Whilst MSEB has met the challenge successfully in the past, the future scenario is likely to require an alternate strategy.

4.3.3 Pending Rural Customers :

Despite these achievements in the rural context, MSEB has consistently had a long list of paid pending agriculture consumers i.e. consumers (who have already paid the amount for power supply) whose request for an electrical connection is pending, and this list has been on the rise. A snap shot of the paid pending agriculture consumers of MSEB over the last seven years is provided below :

Chart 1 : MSEB – Paid Pending Agriculture Consumers



4.4 Issues :

Electricity generation has been a centralised activity, with a similar approach being adopted for the electricity distribution sector as well. However, distribution related issues in rural areas have not received the requisite attention, leading to increase in transmission and distribution losses and frequent interruptions in supply. Given this history, rural electrification, as a development goal requires special examination. The major issues related to distribution in rural areas are :

- High Cost of Supply due to lower load density and load factors.
- High Transmission & Distribution (T&D) Losses.
- Low Paying Capacity.
- Need for Subsidy due to lack of commercial funding.

Each of the above issues is discussed below :

4.4.1 Supply Cost :

The cost of supply in rural areas tends to be higher due to :

- The vast geographical spread in the rural areas leads to lower load density.
- Low individual electricity consumption levels that too at specific hours of the day in rural areas lead to a lower load factor.

Establishment of electricity supply and distribution network in areas, which have poor load density as well as low load factor, requires higher investment, which is not commensurate with the revenue potential. In addition, the concerned Utility has to bear the burden of a high cost administrative system and high overheads.

4.4.2 T&D Losses :

High T&D losses in the rural areas are mainly attributed to :

- Distance of power supply sources from the consumption centers.
- Un-metered supply to irrigation pumps and theft of power.
- Under sizing of conductors / voltage regulation.
- Relatively small and widely dispersed electricity loads.

4.4.3 Paying Capacity :

Fragmentation of land ownership and lack of other employment opportunities leads to low purchasing power in the rural areas. Consequently, consumers in rural areas do not possess the ability to pay for the services; therefore the "User to Pay" principle cannot be readily adopted.

4.4.4 Need for Subsidy :

The capital cost of decentralised rural electrification should ideally be met from a mixture of local equity capital (community or private) and commercial debt funding. Direct subsidies, if any, should only be used as an interim measure till a pre-planned phase out can be concluded. Notwithstanding the efficacy of the above framework, many countries still subsidise rural electrification programs given the limited availability of equity and commercial loans. Given the state of rural distribution, this aspect is even more relevant, since on a stand-alone basis, it would be difficult to attract capital. However, in order to be effective, subsidies must always be close-ended, transparent and made available to the users (not suppliers) only for meeting a part of the initial capital cost (and not the operating cost).

4.4.5 Commercial Funding :

Although there have been instances where private investors have turned around state-provisioned services by lowering costs, improving throughput and adjusting tariffs, it is investor friendly concession terms that have played a significant role in such successes. In the case of rural electricity distribution, the funding may initially comprise of local equity capital, government grant and debt funding, and guarantees by financial institutions like REC.

Participation from institutional debt providers can be encouraged for a proportion of the capital cost, if these projects are supervised by credible agencies. Similarly, credit support at the individual level could be met by micro credit agencies and recovered through tariffs over a period of time.

4.5 International Experience :

The Study Group also reviewed the privatisation experience in other countries, specifically for rural areas, and studied the manner in which rural electricity distribution was undertaken in Bangladesh and Thailand, where the electricity distribution business has been recently privatised. While, rural electrification and distribution in these countries was not a part of the main electricity distribution privatisation, other alternative approaches were adopted to ensure that the objective of efficient and economically viable rural electrification was achieved.

4.5.1 Bangladesh – Palli Bidyut Samities :

The Rural Electrification Board (REB) was established in 1978 to execute rural electrification projects in the country. The REB administers the overall programme of rural electrification. The specific distribution system within a particular area is owned and managed by the Rural Electricity Co-operative known as the Palli Bidyut Samity (PBS). Before REB, the Power Development Board (PDB) was the only power supply authority. While the PBS undertakes the generation and distribution, the role of the REB is limited to :

- Creation of a PBS.
- Advice and help on technical, financial management, human resource development and other related activities.
- Supervise, manage and extend financial support to PBSs.

As and when a PBS establishes its operation, the REB gradually reduces its participation.

Box : 2

Bangladesh Experience

- Government manages distribution of power in rural areas through Panchayats, co-operatives, NGOs and other franchisees.
- Government provides necessary funds and other expertise for strengthening these institutions.
- Number of PBSs established by 2001 : 67.
- Coverage : 32,500 villages i.e. 38% of villages.
- T&D losses : Reduced from 30% to 16%.
- Collection efficiency : 95%.
- Performance measured through system loss reduction, lower term loan exposure, growth in consumers, growth in sales, and reduction in costs.
- Systems developed to fix accountability, incentivise performance, and penalise non-performance.

4.5.2 Thailand – Provincial Electric Authority :

In 1960, the Government of Thailand constituted the Provincial Electricity Authority (PEA) for power distribution in areas other than the metropolitan area. Thus, the PEA covers rural areas for electrification and electricity distribution.

4.5.2.1 Objectives :

- To improve the process on provision and distribution services of electricity for customers.
- To achieve an acceptable level of sufficiency, efficiency and reliability.
- To meet timely need of the customers and to keep pace with the changing circumstances.

4.5.2.2 Responsibilities :

PEA is responsible for technical services, planning/system development, construction, operation, maintenance, economics and finance. The National Institute of Development and Administration of Thailand evaluates quality of services, satisfaction of customers etc. and the survey report is also submitted to the National Energy Policy Office.

4.5.2.3 Performance Assessment :

PEA functions through 1,081 sub-offices across the country, rendering services to customers as a decentralised activity. PEA has introduced a merit-rating system that links performance to personnel evaluation based on the targets set for the year. Performance evaluation is conducted twice a year. Based on set targets and actual achievement, the sub-office gets awarded by an increase in budget or gets penalised by a decrease in budget. Similarly, each employee is also given a target. On achievement of the target, the employee either gets a promotion or a raise in his salary. On the same lines, the employee gets penalised in case of non-achievement of targets.

Box : 3

Thailand Experience

- Sale of electricity per employee : 1.5 Mus (FY1997) compared to MSEB's 0.5 Mus (FY2000).
- T&D losses : 6% compared to MSEB's 40%.
- Each headquarters division and each office are required to prepare an Assets & Liabilities statement and a Profit & Loss.
- Decentralised electricity distribution system has resulted in better efficiency.

4.5.3 Indian Experience :

4.5.3.1 Initial Pilots :

In 1971, 5 Rural Electric Supply Co-operatives (RESCs) were set up by the GoI with support from USAID and NRECA, the agencies that helped in developing the PBS in Bangladesh :

- Hukkeri in Belgaum district of Karnataka.
- Sirilla Taluka in Karimnagar District in Andhra Pradesh.
- Kodinar Taluka in Amerali District in Gujarat.
- Rahuri and Shrirampur Talukas in Ahmednagar District of Maharashtra i.e. MPECS.
- A part of Lucknow District in Uttar Pradesh.

This number had later increased to over 40.

4.5.3.2 Performance :

A Committee on RESCs under the Chairmanship of Shri N.S. Mathur, was constituted to examine the workings of the existing RESCs and evaluate their performance:

- Overall Performance : The physical performance of the RESCs was quite encouraging, except in a few cases, where there were problems related to management.
- Load Growth : As a RESC is more responsive to the local needs of distribution, it can ensure quicker load growth as compared to an SEB.
- Operational Procedures : RESCs, being organisations of the consumers whom they serve, try to make the operational procedures more tuned to the convenience of their respective customers.
- T&D Losses : With the emergence of RESCs, quantum of energy purchased and sold could be ascertained and the losses quantified. Although, the problem of T&D losses got focussed more prominently, the desired watch-dog effect i.e. identifying defective meters, energy theft etc was not performed properly.

Box : 4

Mula Pravara Electric Co-operative Society Limited (MPECS)

- MPECS started functioning in 1971 to distribute electricity in Shrirampur, and Rahuri Talukas fully and Newasa, and Sangamner Talukas partially of Ahmednagar District.
- MPECS today serves 183 villages spread over 1880 sq km and covers approximate population of 7 lakhs.
- Managed by 19 elected members and 6 nominated members.
- Objectives:
 - Appropriate Utilisation of funds earmarked for rural electrification.
 - Achieving economy in development of electrical network by people's cooperation.
 - To provide prompt services to consumer.
 - As a compact unit to function with maximum efficiency and minimum expenses principle.
- Serving large subsidised (Domestic, Agriculture, Street Light consumers) section 90% as against 10% subsidising (Industrial & Commercial consumers) section.
- As such, finding difficult to operate on commercial terms without financial support.

4.6 Recommendations :

Despite the experience being mixed on the financial performance, the REC in its Annual Report for FY1997, expressed the view that the most feasible and effective option in the rural context is the promotion of more Rural Electric Co-operatives, with active participation and involvement of the local people and Panchayati Raj bodies.

This was further corroborated by the Energy Review Committee (ERC) set up by GoM in its Report (Part II July 2001). The ERC findings reveal that had MSEB been serving the MPECS distribution area, the T&D losses and the consequent revenue losses would be far greater than those achieved by MPECS. Thus, despite MPECS current shortcomings, the ERC has endorsed the development of co-operatives or any other appropriate local management model, since such a system can lead to a great deal of improvement in the performance of the rural distribution system.

5. RESTRUCTURING MODEL

5.1 Objectives :

5.1.1 Unbundling Distribution :

The Government of Maharashtra, in its White Paper on Power Sector Reform indicated that *“The distribution business of MSEB will be unbundled and reconfigured based on the broad principles of concentrated / non-concentrated zones or any other suitable model. Economic sustainability of the distribution companies would be the critical criteria for deciding the configuration of the companies”*.

5.1.2 Zones :

The system can be classified into Concentrated and Non-Concentrated Zones. Concentrated Zones are those wherein consumer ratios in the subsidising and subsidised categories are at an acceptable level, e.g. urban areas. Conversely, Non-Concentrated Zones are those wherein the consumer mix has a large skew and a low electric load is distributed over a large area i.e. rural areas. A precursor for restructuring of electricity distribution is the determination of an action plan for Non-Concentrated Zones since Concentrated Zones are likely to attract a number of private players.

Given that rural electricity distribution directly benefits a large proportion of the rural population of the state, reform in this area is vital. The ERC has also suggested a multi-pronged approach for non-urban areas through the transfer of electricity distribution to rural co-operatives and local bodies. The Study Group believes that reforms in rural electrification would need an approach, which takes into account its unique characteristics.

5.1.3 Decentralised Approach :

The Distribution Policy Committee appointed by the Ministry of Power (MoP) in its report of March 2002 has recommended that there is a need to implement a customised approach for the rural segment. This would necessitate separation of the main operations from the rural operations, and adopting specific policies and plans for rural operations. One of the approaches suggested by the Committee is decentralised management in the form of rural co-operatives or users association or Panchayats or

franchisees. The decentralised independent entity would undertake rural distribution on the basis of normal commercial business of paying for the electricity it buys and recovering enough money for what it sells, to cover full costs, failing which there would be no supply.

5.1.4 Economic Sustainability :

The approach for reforming the rural distribution business of MSEB will need to be based on the broad principles of wide acceptability, economic sustainability and long-term benefits to the rural consumers. The attractiveness of a commercially managed decentralised model is that it directly addresses the problem which is bedeviling the financial health of the utilities viz. they on an average, bill around 55% of total energy available and collect only 40%. Apart from high T&D losses and pilferage, the gap between average revenue realisation and average cost of supply has been constantly rising, especially in rural areas.

It was therefore felt that whether the decentralised electricity distribution entity would be able to carry its operations in commercial terms to meet at least its O&M costs should alone be the criterion for selecting a model for Maharashtra. It is almost certain that given the high capital cost of extending the rural network, the emergence of a self-sustaining rural electricity distribution system will take a long time and State Government support for strengthening and expanding the rural system will have to continue as a socio-economic objective.

5.1.5 Employee Concerns :

The electricity distribution reform in rural areas will also need to address the concerns of employees to maintain their present service conditions and to provide them attractive career development opportunities while making them accountable for delivering results. Only those employees of MSEB who are willing to conform to these performance norms will go on transfer to local bodies.

Box : 5

Reform Model – Key Objectives

- Improving financial viability.
- Reduction of T&D losses.
- Improving customer satisfaction.
- Improving quality of supply.
- System approach with Management Information System (MIS).
- Transparency through computerisation

5.2 Governing Principles :

The approach to identify the reform model for rural electrification should be based on the following principles :

- Rural electrification should be treated, as part of the socio-economic development plans of the village and the government should support the capital investments fully in initial years and later partially over a long period.
- Rural electrification should be managed in a decentralised manner by rural co-operatives or rural entrepreneurs approved by the local communities or through franchisees or through Panchayats.
- In the case of subsidised consumers such as agriculturists, the subsidy for irrigation pump-sets can be provided directly to the local body.

The Electricity Distribution Policy Committee Report, Ministry of Power indicates:

Treatment for rural electrification should be separate and should be managed by local agencies. It would need to be recognised that subsidy to the rural areas would continue either in the form of budgetary support from the government or by levying a social charge on power consumption / imposing 'universal service obligation' on all franchisees (surcharge mechanism at bulk supply for other segments). In other words in rural areas micro-privatisation would be an option.

5.3 Recommended Option :

The EA 2003 (Clause 5) stipulates that the Central Government formulate the NEP for rural electrification and management of local distribution in rural areas through Panchayat Institutions, user's associations, co-operative societies, NGOs or franchisees. The NEP is expected to be notified by January 2004. The Study Group is of the view that the approach towards rural electrification should be based on the following considerations :

- Local ownership framework is the most suitable option and would lead to active local population involvement.
- The State could demonstrate benefits through empirical evidence and efficiency testing of pilot projects to be run on commercial basis.
- Pilot Zilla Parishads could be chosen based on willingness and acceptance to implement 100% metering.
- MSEB's O&M Circle structure is amenable to division into rural areas and non-rural areas.

5.3.1 Local Ownership :

The local ownership framework would lead to active involvement of the local population i.e. the key stakeholders in the proposed initiative, in ensuring its success. In additions, the 14th subject (Schedule 11) of 73rd Amendment of the Constitution also mandates the management of Rural Electrification including distribution of electricity by the Panchayats.

5.3.2 Empirical Testing :

It would be important for the State to demonstrate benefits arising out of the local ownership framework through pilot projects. This approach would also enable the State to structure details of the scheme based on empirical evidence and test the efficiency of the proposed model prior to replication.

5.3.3 Selection Criteria :

The choice of pilot local government should be based on the following criteria :

- The willingness of the concerned 'local government' i.e. Zilla Parishad (ZP) to form the necessary organisation and implement the desired structural reforms.
- The acceptance to implement 100% metering in the operational area.

5.3.4 Amenability :

The existing structure of a significant number of MSEB's O&M Circles makes them amenable for segregation into rural areas controlled by the Gram Panchayats and non-rural areas controlled by Nagar Parishads and other municipal bodies. This would provide ease of assessment and smooth transfer of the rural areas to ZPs.

5.4 State Experiments :

Maharashtra State has two credible examples of local government involvement i.e. BEST and MPECS :

- BEST is a successful model of involvement of local government in electricity distribution in an urban area. The model may not be replicable in rural areas given the specific issues associated with rural distribution.
- The MPECS initiative, as explained earlier has had successful operations since 1971.

5.5 Comparative Analysis :

The Study Group undertook a comparison of Low Tension consumer data provided by MSEB (Ahmednagar Circle) and MPECS for the year 2001-02. The data related to the number of consumers, energy billed, billed amount, revenue receipt and the HT-LT network in their jurisdiction. A comparative statement of the data is attached as an Annexure V. Key observations are provided below :

- Billed energy per consumer is higher in MPECS than that in Ahmednagar Circle (AC) managed by MSEB. This indicates higher billing efficiency of MPECS. The Agriculture consumption per consumer in AC is nearly 5700 kWh whereas in MPECS it is around 9100 kWh.

- Billed amount per consumer is lower in MPECS vis-à-vis AC – higher industrial consumption (47 Mus) in AC as against 11 Mus in MPECS.
- Revenue receipt per consumer is higher in MPECS vis-à-vis AC – indicating higher collection efficiency.
- Failure rate of Distribution Transformers (DTs) in MPECS area is lower than that of AC indicating superior operating efficiency for MPECS.

Thus, the State of Maharashtra has conclusive empirical evidence of the superiority in operational and financial terms of a local rural electricity distribution entity over MSEB's centralised system.

The Study Group was of the opinion that the three tier Panchayati model was of universal application in Maharashtra rather than the co-operative society model. Moreover, the latter could be adopted by a GP or a group of GPs for administrative purposes. As an important scheme like water supply was successfully entrusted to ZPs, electricity distribution should also be handed over to them. The success of the Panchayati model will depend upon local participation and resolve of the beneficiaries to manage supply on a commercial basis at GP level. It was, therefore, recommended by the Study Group that only those ZPs willing to undertake 100% metering for all its consumers and managing their business on a commercial basis should be selected for the pilot.

5.6 Proposed Role for Stakeholders :

The proposed role of the key stakeholders in the local ownership model is briefly described below :

5.6.1 State Government – GoM :

- Notify rural area under EA 2003 for electricity generation and distribution.
- Transfer RE scheme from MSEB to the selected ZPs under Section 100.
- Provide necessary financial support and government guarantee in conjunction with Rural Electrification Corporation and Power Finance Corporation for new pump set connections and strengthening of distribution network.

- RE funding will be based on pre-determined operation and financial performance parameters for ZPs. Each ZP in turn will operate its own system of incentives and disincentives for GPs.
- Interaction with Central Government for framing of National Policy.

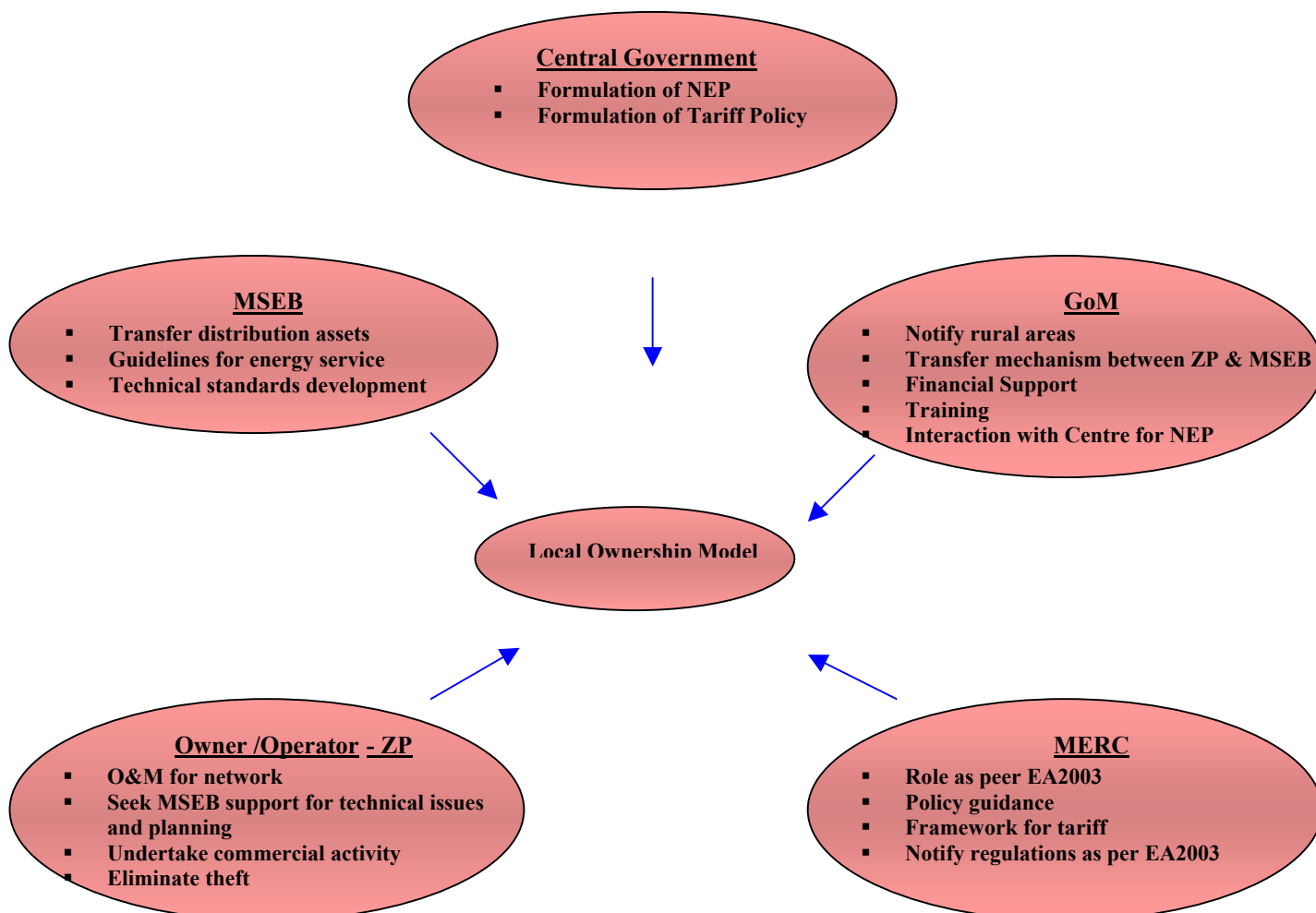
5.6.2 Existing State Power Utility – MSEB :

- Transfer existing distribution assets to local entity as per the mutually agreed scheme to be selected amongst the options discussed later in this Report.
- Provide clear guidelines for estimating energy service needs and presenting the technical options together with their respective costs, advantages and disadvantages.
- Guide local entity by way of advice and expertise, on an as needed basis.
- Develop technical standards and set standard suppliers' contracts to include technical support and warranties.

5.6.3 Owner / Operator – ZPs :

- Perform the operations and maintenance of the entire local network.
- Take up the responsibility of further development of networks within the rural area.
- Undertake local planning with support from MSEB.
- Take MSEB's technical support for efficient operation of the system.
- Undertake the entire commercial activity - metering, billing, collection and recovery in the local area through GPs and Panchayat Samities on purely commercial lines.
- Eliminate theft and malpractices.

STAKEHOLDER ROLEPLAY



5.6.4 State Electricity Regulator – MERC :

- Frame a policy for multi-year tariff for rural areas as per EA 2003.
- Advise GoM on policy and implementation issues of RE.
- Generate discussions by announcing draft tariff policies/framework.
- Make and notify regulations consistent with EA 2003.
- Driving factor for deciding Bulk Supply Tariff (BST), i.e. Power sale rate by MSEB to ZPs could be the same retail tariff for similar consumer mix in the initial few years and not the power supply voltage.

5.6.5 Central Government :

The Central Government, as per clauses 4 and 5 of EA 2003, to formulate and notify the NEP and tariff policy which permits the following :

- Stand-alone systems for rural areas.
- Bulk purchase of power and management of local distribution in rural areas through Panchayat Institutions, users' associations, co-operative societies, Non-Governmental Organisations or franchisees.

6. TRANSFER SCHEME - ISSUES INVOLVED

6.1 Technical Issues :

6.1.1 Area Under Control :

- (i) The electricity distribution areas controlled by Ahmednagar, Osmanabad and Wardha O&M Circles of MSEB was reviewed.
- (ii) In general, the administrative framework of the Operation & Maintenance (O&M) Circle of Maharashtra State Electricity Board matches that of Zilla Parishads under Study. It was also observed that these Circles comprise of a certain number of Revenue Villages.
- (iii) The Consultant is of the view that the Designated Area of the O&M Circles of MSEB could be divided into two distinct areas, one under the control of Municipal Corporation / Municipality and the other vested with Gram Panchayats.
- (iv) The area vesting with the Gram Panchayats could be transferred to the respective Zilla Parishads for electrification and distribution of electricity in the rural areas.
- (v) The following table provides the number of towns (Municipal area) and villages under Ahmednagar, Wardha and Osmanabad Circles.

Table 4 : Circle Profile

Area	Ahmednagar	Osmanabad	Wardha
Municipal Areas	5	8	6
Villages under Gram Panchayats	1373	751	951

- (vi) Comparison of category-wise consumers and electricity consumption in the Rural and Balance area of the Wardha Circle of MSEB for the FY2002 is provided below for illustrative purposes.

Table 5 : Consumers & Electricity Consumption

Category	No. of Consumers		% of Total		Billed Units (kWh)		% of Total		Billed Amount (Rs mn)		% of Total	
	Rural	Balance	Rural	Balance	Rural	Balance	Rural	Balance	Rural	Balance	Rural	Balance
LT												
Residential	124,002	51,849	70.53%	84.39%	71,298,485	36,941,515	21.48%	10.09%	177.36	63.14	38.85%	6.24%
	71%	29%			66%	34%			74%	26%		
Commercial	4,712	7,065	2.68%	11.50%	6,244,133	6,665,867	2.56%	1.82%	30.19	27.21	6.61%	2.69%
	40%	60%			48%	52%			53%	47%		
Industrial	2,203	1,268	1.25%	2.06%	11,679,828	6,560,172	3.62%	1.79%	48.43	24.07	10.61%	2.38%
	63%	37%			64%	36%			67%	33%		
Agriculture	27,363	651	15.56%	1.06%	16,602,360	14,637,640	6.20%	4.00%	93.37	11.43	20.45%	1.13%
	98%	2%			53%	47%			89%	11%		
Ag. (U/M)	15,496	368	8.81%	0.60%			0.00%	0.00%				
	98%	2%										
PWW	920	37	0.52%	0.06%	2,469,212	460,788	0.58%	0.13%	3.23	8.97	0.71%	0.89%
	96%	4%			84%	16%			26%	74%		
St. Light	1,073	106	0.61%	0.17%	6,045,658	1,264,342	1.45%	0.35%	10.29	7.31	2.25%	0.72%
	91%	9%			83%	17%			58%	42%		
Poultry Farm	10	9	0.01%	0.01%	75,906	44,094	0.02%	0.01%	0.11	0.19	0.02%	0.02%
	53%	47%			63%	37%			37%	63%		
Power Loom	0	15	0.00%	0.02%	0	220,000	0.04%	0.06%				
	0%	100%			0%	100%						
LT Total	175,779	61,368	99.98%	99.88%	114,415,582	66,794,418	35.95%	18.25%	362.99	142.31	79.50%	14.07%
	74%	26%			63%	37%			72%	28%		
HT Total	39	73	0.02%	0.12%	23,407,615	299,342,385	64.05%	81.75%	93.58	868.92	20.50%	85.93%
	35%	65%			7%	93%			10%	90%		
Total	175,818	61,441	100.00%	100.00%	137,823,197	366,136,803	100.00%	100.00%	456.57	1,011.23	100.00%	100.00%
	74%	26%			27%	73%			31%	69%		

6.1.2 Proposed Sharing of Network and Consumers :

6.1.2.1 Present MSEB Arrangements :

- Electricity generated at power generating stations is transmitted through Extra High Voltage (EHV) transmission lines near the load centres / consumption centres.
- At EHV (400 KV, 220 KV, 132 KV, 110 KV or 66 KV) sub-stations, the power supply voltage is stepped down to 33 KV or 22 KV through step down transformer/s.
- EHV and High Tension consumers are given power supply connection in line with their projected power requirement.
- 33 KV or 22 KV sub-transmission network is spread to supply power to 33 KV / 11 KV or 22 KV / 11 KV electricity distribution sub-stations (S/S).
- 33 KV / 11 KV or 22 KV / 11 KV electricity distribution sub-stations are the main source of power supply to 11 KV High Tension (HT) and all Low Tension (LT) consumers.
- 11 KV lines supply power to Distribution Transformer Centres (DTCs), which step down 11 KV supply voltage to 440 volts.
- LT (440 volts and 230 volts) consumers are supplied power from DTCs.

6.1.2.2 Network Segregation :

- Option I : Only LT Network (440 V / 220 V) to be transferred to ZP
 - Under this framework, ZP would be the sole customer of MSEB at 440 V level. ZP's retail LT distribution would thus be completely dependent on MSEB's management of upstream network.

- This would also have problems for proper energy accounting and energy billing - Multi point metering/ unattended energy meters in remote areas for receipt of electricity to the areas under Panchayat.

➤ Option II : Transfer of DTC and LT Network to ZP

- Apart from the issues of O&M of LT network and DTCs, the local controlling authority would face additional problems to maintain reliability of supply, in case of improper support from the local staff of MSEB.
- It would be a hindrance for proper energy audit – energy sold and energy received between MSEB and the local authority. Accounting of energy receipt at the unattended energy meters could create dispute between the utility and the local distribution Panchayat.

➤ Option III : Transfer of the entire distribution network beyond 11 KV Distribution Feeders to the ZP

- This framework would lead to a clear demarcation of ZP's area of control and facilitate O&M activities as well as future expansion of distribution network.
- Under this option, it would also be easier to closely monitor / account / audit the sale of energy to ZP by MSEB as well as the energy received and sold by ZP in its jurisdiction.

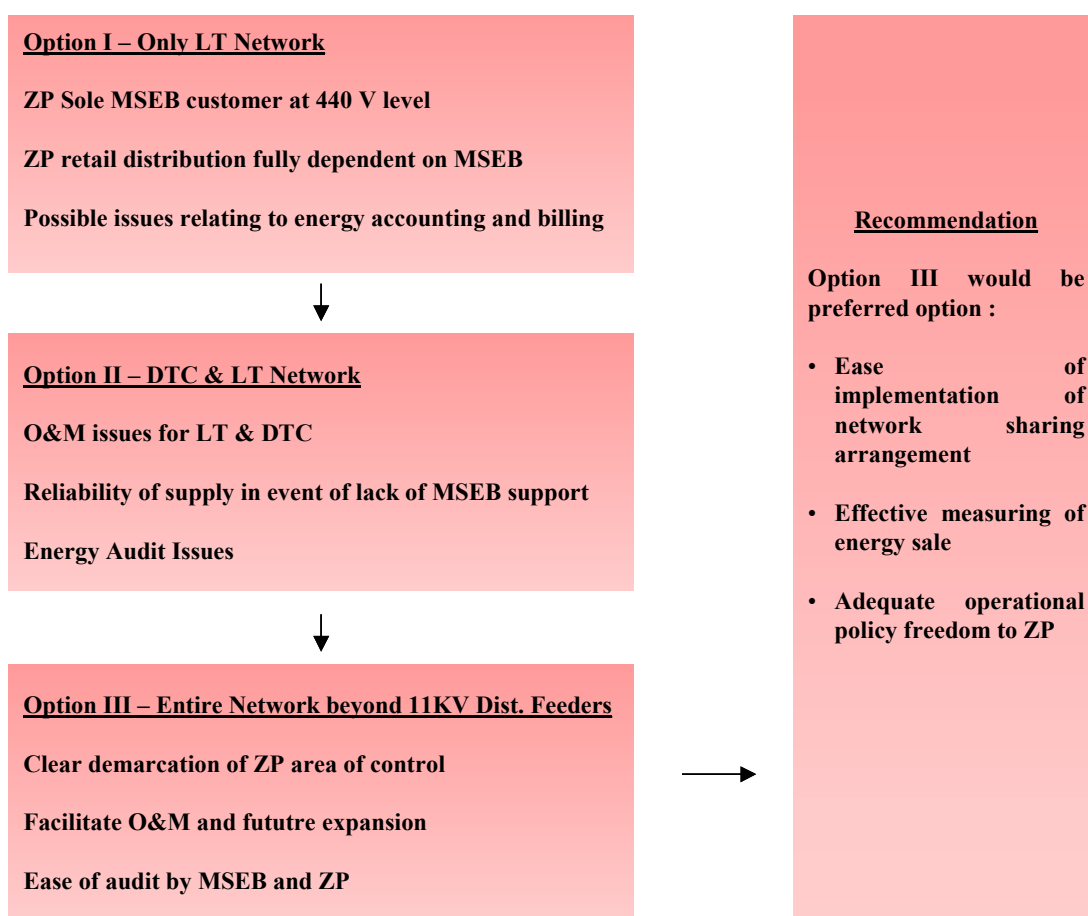
➤ Recommendation : The Consultant recommends Option III as the preferred option on account of :

- Ease of implementation of network sharing arrangement.
- The energy sold can be measured effectively by metering at manned S/S.

- ZP to have adequate freedom for formulating its own operational policies.
- For reference, a typical single line schematic diagram is attached as Annexure VI for the electricity Generation, Transmission and Distribution Network.

A synopsis of the above recommendations is provided below :

Network Segregation Options



6.1.3 MSEB's Jurisdiction :

The jurisdiction of MSEB for O&M, augmentation and new additions would be as follows :

- Network : All 33 KV / 11 KV substations including EHV substations and the transmission lines.
- Consumers : All 33 KV HT consumers and EHV consumers.

6.1.4 ZP's Jurisdiction :

- Network : From the gantry of 11 KV feeder/s onwards including 11 KV transmission line, 11 KV/440 V DTCs and LT network.
- Consumers : All 11 KV HT consumers and LT consumers.

6.1.5 Segregation of Feeders :

For better management of electricity distribution by the Gram Panchayats, 11 KV power supply feeder may need to be segregated based on the revenue villages or revenue group under the jurisdiction of the ZP.

6.1.6 Energy Audit for Rural Electricity Distribution :

An efficient energy audit system for measuring electrical energy received, consumed and billed would be critical to the success of the proposed initiative. Its components may include :

- 11 KV feeders to be segregated with respect to local distribution area and the authority.
- Energy supplied to the ZP to be metered at the gantry of every 11 KV feeder by installing energy meters at 33 KV / 11 KV sub-station for energy purchased and received.
- Every DTC to be provided with an energy meter as a check meter to determine energy consumption levels (To facilitate energy audit by the local distribution licensee).

- Energy meter readings of consumers connected to the designated DTC to be taken as per energy billing cycle along with the meter reading of check meter of the DTC.
- These energy meter readings to be utilised as a tool by the local authority to determine the energy loss and to arrest any pilferage / theft of energy in the area.
- LT distribution network is spread through 11 KV / 440 V DTCs installed on 11 KV HT feeder as local electricity distribution centre/s.

6.1.7 Management of Sub-stations :

- All sub-stations (except DTCs) to be managed by MSEB.
- 11 KV feeders up to sub-station gantry to be managed by MSEB.

6.1.8 Service Platform :

O&M of the distribution network, release of new connections and overall system improvement :

- 11 KV line from gantry of feeder to be managed by ZP.
- Day to day O&M to be carried out by Gram Panchayat through the staff designated for such services.
- Processing of new connection of electricity for any consumer to be managed by Gram Panchayat.
- System improvement scheme like upgradation of DTC, relocation of DTC close to load center, introducing LT less distribution in high-density area etc to be carried out by the respective Gram Panchayats.
- Providing capacitors on 11 KV feeders for voltage improvement and reduction in reactive power loading.

6.1.9 Pending Agriculture Connections :

MSEB to transfer all deposits against pending agricultural connections to the respective ZPs to enable them to release fresh agriculture connections.

6.1.10 Purchase of Materials :

- MSEB to provide initial support to the ZPs for material procurement.
- ZPs to be supported in implementing a Rate Card system for purchase of locally available materials.
- For critical materials like DTCs, cables and energy meters and bulk materials like electric poles, insulators and stay wires etc, ZPs would need to establish a centralised purchase system in line with the requirements of the Gram Panchayats.

6.1.11 Technical Control :

- It is envisaged distribution of electricity and RE will be transferred to selected ZP u/s. 100. All the local staff will also stand transferred to ZP subject to their willingness. However, senior level officers of MSEB may be deputed u/s. 123 of the ZP Act to the ZPs for exercising administrative control over the staff responsible for rural electrification. In order to ensure smooth functioning of rural electricity distribution these officers will report to the Chief Executive Officer (CEO) of the respective ZP.
- MSEB may also need to retain technical control of the operations in the initial phase before gradually passing it on to the ZPs.

6.1.12 Lift Irrigation Schemes (LIS) :

- LIS at 33 KV and above voltage level to remain with MSEB for O&M of transmission line, metering and release of new connections etc.
- LIS at 11 KV and below to be placed under the jurisdiction of ZPs/ Gram Panchayats of rural areas.

6.1.13 Public Water Works (PWW) Schemes :

- PWW schemes at 33 KV and above voltage levels to remain under the jurisdiction of MSEB.
- PWW schemes at 11 KV and below to be placed under the jurisdiction of ZPs/ Gram Panchayats of rural areas.

6.1.14 Demand Growth :

Since the underlying objective of the entire transfer framework is to weed out systemic inefficiencies, expand coverage and improve quality of supply, the ZPs would require a firm commitment from MSEB that the entire initiative of meeting growth in demand would be supported by MSEB. It would be the endeavour of GoM to ensure that MSEB provides active support to the ZP for :

- Augmentation / Additions of EHV and HT sub-stations.
- Additions of power supply feeders.
- Provision of capacitors at HT sub-stations.

ZPs are not envisaged to arrange / generate funds for additional load demand infrastructure such as addition in generating capacity, setting up of new sub-stations or augmentation of sub-stations as is the case for any distribution licensee in an urban area. The private distribution licensees may not find it commercially attractive to supply electricity on sustainable basis to ZPs. The new Electricity Act stipulates that the 'Appropriate Government' would endeavour to supply electricity to villages and hamlets. The respective Governments are therefore, obliged to make arrangements for augmenting/ expanding infrastructure required for increased demand in power supply for the rural areas.

6.2 Financial Framework for Proposed Transfer of Distribution Network :

6.2.1 The EA 2003 Stipulations :

The EA 2003 has following critical stipulations related to transfer schemes :

- With effect from the effective date of transfer scheme to be determined by the State Government, the property, interest in property, rights and liabilities of SEB shall vest in the State Government on predetermined terms.
- The State Government can re-vest such Assets and Liabilities of SEB with other entities in accordance with the transfer scheme.
- The value of any assets transferred shall be determined based on the revenue potential of such assets at such terms and conditions as may be agreed to between the State Government and the SEB. However, when such transfer is being made to any person or undertaking not wholly owned by the State Government, the scheme shall give effect to the transfer only for fair value to be paid by the transferee to the State Government.
- In the event a transaction of any description is effected in pursuance of a transfer scheme, it shall be binding on all persons including third parties and even if such persons or third parties have not consented to it.

6.2.2 Identification of Assets and Liabilities to be Transferred :

While formulating the scheme of transfer of assets and liabilities, a detailed evaluation of the following aspects related to the assets proposed to be transferred to ZP, may need be carried out.

- Detailed inventory of fixed assets.
- Details of liabilities related to these assets.
- Original cost of asset.
- Useful life.
- Current condition.

6.2.3 Asset Transfer Framework :

Apart from the valuation of assets, another critical component of the proposed initiative would relate to the methodology adopted for transferring these assets to the ZPs. In this regard, GoM may consider the following alternate approaches :

6.2.3.1 Operational Lease :

Operational lease of assets by MSEB to ZP on a right-to-use basis. Under this structure, the assets would remain in the books of MSEB (and after June 9, 2004 in the books of GoM) though the ZP would have the right to use these assets on payment of periodic lease rentals.

6.2.3.2 Deferred Credit :

The assets could be transferred to ZPs under a deferral credit facility wherein the transferees would remit the consideration for the assets in tranches over a period of time.

- **Acquisition** : The assets could be directly acquired by ZP through upfront arrangement of funds including debt funds from agencies like REC.

6.2.4 Operational Funding :

- MSEB to reimburse the expenses on employee cost, network R&M cost, billing, collection and other expenses to ZP as the energy sale rate (Bulk Supply Tariff) to ZP would be at the cost of supply of MSEB
- Direct budgetary support from State Government to ZP.
- Soft borrowings from REC.
- Internal resource generation by ZP to fund a part of future expansion activities.

6.3 Commercial Issues :

6.3.1 Tariffs :

For the initial years of the transfer Bulk Supply Tariff (BST) by MSEB to a ZP needs to be decided based on the category of consumers served by the ZP and Retail Supply Tariff (RST) for these categories in MSEB's area and certainly not on power supply voltage basis, as was done for MPECS. This will imply :

- The consumer mix (subsidised vs. subsidising sectors) in a given area would have a critical bearing on the decision related to fixing the BSTs for the selected ZP;
- Differential BSTs for different ZPs based on their respective consumer mix, keeping RSTs same for all the category of consumers for first few years of transition will ensure a fine balance between revenues and cost of power for the ZPs; and
- Maintain a certain level of parity between the RSTs for consumers under the respective jurisdiction of MSEB and the ZPs at least for the first two or three years.

6.3.2 Metering :

6.3.2.1 Receiving Stations :

To facilitate energy audits and to control T&D losses, the energy received at each sub-station as well as the energy sold by MSEB to the ZPs at the 33 / 11 KV or 22 / 11 KV HT sub-stations may need to be individually metered.

6.3.2.2 Outgoing Feeders :

Arrangements for metering at every 11 KV feeder for billing and energy audit purposes may also need to be made.

6.3.2.3 DTCs :

- The responsibility of metering the energy at DTCs may need to be vested with the Gram Panchayats.
- The Consultant also recommends that each DTC be turned into a profit centre by monitoring the energy sent out and energy billed.

6.3.2.4 Energy Metering at each Consumer's End :

- Metering of the entire energy sold in the rural area under ZP is key to the success of the proposed transfer framework.
- It may therefore be necessary to ensure that the ZP selected for the pilot implementation agrees to enforce 100% metering (at least at the DTCs in case of all the Agriculture consumers) in its proposed area of operations.

6.3.3 Framework for Energy Billing :

- Monthly energy billing to be introduced for the LT consumers (as against bi-monthly or quarterly billing) other than LT Agriculture consumers.
- Initially, LT Agriculture consumers to be billed bi-monthly and changed over to monthly billing within a pre-defined time-frame.
- Energy meter readings of the consumers and DTCs to be the responsibility of Gram Panchayats.
- Energy billing to be carried out at ZP level for the Gram Panchayat areas under its jurisdiction.
- Distribution of Energy Bills to be the responsibility of Gram Panchayats.
- Monitoring and reduction of T&D losses to be the responsibility of Gram Panchayats.

6.3.4 Bill Collection :

- The responsibility related to collection of bills to vest with Gram Panchayats.
- Monthly statement indicating category-wise consumers, energy received, energy billed, billed amount and revenue receipt may need to be monitored by the Head Office of the ZP through respective Panchayat Samities.

6.3.5 Payment Mechanism to MSEB :

- MSEB to raise energy bills of individual ZP based on the Joint meter reading/s.
- Energy billed amount to be based on BST fixed by Electricity Regulatory Commission.
- Payment of energy bills to MSEB to be made by ZP within 30 days of Energy Bill.

6.3.6 Payment of Subsidy :

Subsidy provided by the ZP to the subsidised consumers to be paid monthly in advance to ZP by the State Government.

- GoM would release the tariff subsidy directly to ZP. It will be up to each ZP to decide the proportion of subsidy to be passed on to the consumers and utilise the remainder for giving new connections and strengthening the distribution system.
- ZP would allocate the capital investment subsidy for new pump set connection as incentive / disincentive to Panchayats based on their operational performance.
- The remainder amount of investment subsidy could be utilised by ZP for releasing new connections and strengthening / expansion of distribution network.

6.3.7 Control of Supply to HT Industries/ Consumers :

ZP to control the power supply of HT consumers up to 11KV in order to reduce the burden of subsidy compensation on the State Government as the HT consumers are subsidising sector to the subsidised sector like domestic, agriculture consumers etc. However, this cross-subsidisation will be done away in 5-7 years by MERC.

6.4 Management and Human Resources :

Apart from the operational, commercial and financial aspects as discussed above, the proposed transfer would also need to be viewed from the perspective of its management framework and human resource related issues. The following is the recommended framework :

6.4.1 Transfer of Staff to ZP :

- Existing O&M Circle staff excluding non-rural area may need to be transferred to ZP under section 100 of ZP Act. The employees not absorbed or accepted by ZP would remain with MSEB.
- The staff employed by ZP would thereafter need to be placed directly under the supervision and control of the ZP. Senior level officers may be sent on deputation u/s. 123 to ZPs.
- The staff comprising of Line Men, Assistant Line Men and Line Helpers would be allotted (based on number of consumers) to the Gram Panchayats to assist them in routine and breakdown maintenance, release of new connection and other incidental services.
- Meter Readers as well as administrative and accounting staff to be allocated to Gram Panchayats while keeping a skeleton staff at the ZP level for monitoring purpose.
- The EA 2003 has made clear provisions for “Officers and employees”:
 - Upon such transfer, the personnel shall hold office or service under the transferee on such terms and conditions as may be determined in accordance with the transfer scheme. The terms and conditions on the transfer shall not in any way be less favourable than those, which would have been applicable to them if there had been no such transfer

scheme then the transfer, can be provisional for a stipulated period.

- The EA 2003 debars the employees from accessing courts under Industrial Disputes Act, 1947 or any other states / central law, except the provisions of the new EA 2003.

6.4.2 Remuneration and Recruitments :

- The wage structure of the initial staff on transfer from MSEB may need to be maintained at the erstwhile levels.
- The decisions related to fresh recruitments and the salary structures should to be left to the discretion of the respective ZP / Gram Panchayat. The ZPs / Gram Panchayats may also consider repatriation of MSEB's staff back to MSEB in case these employees so prefer.

6.4.3 Payment of Salary & Wages :

The ZPs and the Gram Panchayats would need to assume sole responsibility of payment of salary and wages of all the employees including personnel on transfer / deputation from MSEB.

6.5 Regulatory Aspects :

Under the transfer scheme, licences would need to be issued. EA2003 empowers MERC to issue licence. However, it also provides that if a person intends to generate and distribute electricity in a rural area notified by the State Government, such person does not need a licence, provided he meets all the safety norms and conditions stipulated by Central Electricity Authority (CEA).

7. FINANCIAL VIABILITY AND SUSTAINABILITY

7.1 Financial Analysis of a Representative Circle :

7.1.1 Base Data :

The Consultant has carried out an analysis of the units billed (Consumption), billed amount (Demand) and amount received (Collection). For carrying out this exercise, the consolidated data of a typical distribution Circle furnished by MSEB was used.

7.1.2 Key Assumptions :

The Following assumptions for arriving at the future projections are made:

7.1.2.1 Operating Parameters :

It is envisaged that required expertise and management transfers would be made to the ZPs. Accordingly, it is reasonable to assume that following improvements in operations can be achieved :

- 4% increase in billed units for rural consumption as against the 7% increase at the Circle level upto FY2007 and thereafter the increase in rural consumption increase assumed at 8% per year. This is to achieve electrification of 40% rural households during the next Five Year (FY2008 to FY2012) plan.
- Reduction in Distribution losses by 2% per annum - from an initial level of 32%¹ to a floor of 14%.
- Improvement in collection efficiency from 76% to 98% at 5% every year.
- All agriculture consumption is metered at least at DTCs.
- Reduction in cost of additional employees by way of 8% increase in energy sold per employee per annum.

¹ The T&D losses in MSEB power system are 40% in FY2003. Assuming the Transmission and sub-transmission losses at 8% the electricity distribution losses would be 32%

7.1.2.2 Revenues :

- Bringing Retail Tariff² to the consumers close to the average Cost of Supply (CoS) of MSEB and distribution losses.
- Terms and conditions of supply to Residential, Commercial, LT and HT industrial consumers would be as per prevailing MSEB norms.
- Assured Revenue from Government for PWW³ (50% of energy bills) and Rural Street Lighting⁴ (100% of energy bills) of the billed amount.
- Cost of energisation of IP sets borne by GoM .
- 2% increase every year in average CoS of MSEB.
- Energy sale rate to ZP would be at the average rate of cost of supply of MSEB in first two years.
- Employee cost escalation at 5% every year.

7.1.2.3 Investments / Capital Repayments :

- Investment in up-gradation of any transmission and distribution network to be made by MSEB / ZP based on the respective ownership.
- In the initial years, GoM to earmark funds (in the annual budgets) to support rural electrification to MSEB and also to ZPs for their capital investment.

7.1.2.4 ZP Revenues :

Zilla Parishads' revenue profile to comprise of all the revenues arising from sale of electricity to LT and HT consumers.

² The retail tariff to consumers would be increased to compensate the revenue loss from sale of electricity and distribution losses

³ GoM provides financial assistance towards 50% of energy bills for PWW to Gram Panchayats

⁴ GoM provides financial assistance towards 100% of energy bills for Rural Street Lighting to Gram Panchayats

7.1.2.5 ZP Expenses :

- Energy purchase cost (Bulk Supply Tariff to MSEB).
- Employee cost.
- Network R & M cost.
- Billing & Collection expenses.
- Other Expenses.

It is envisaged that the employee, network R&M, billing & collection expenses would be reimbursed by MSEB to ZPs. As the energy sale rate i.e. Bulk Supply Tariff to ZPs would be average cost of supply of MSEB without incurring the employee, network R&M, billing & collection expenses by MSEB in the electricity distribution area under the control of ZPs. At present these costs / expenses are borne by MSEB, which would be a saving to MSEB with the higher realisation value for every unit supplied to ZPs.

7.1.2.6 State Government Support :

- Guaranteed revenue – PWW (50% of energy bills) and Rural Street Light (100% of energy bills).
- Irrigation Pump (IP) set energisation (base year FY2002 cost per IP set Rs 45,000/-⁵) – cost escalation at 5% per annum.
- Network upgradation cost.
- Subsidy for subsidised consumers.

7.2 Analysis :

7.2.1 Profitability Projections :

The future profitability projections arrived at on the basis of the above assumptions for Wardha ZP, are as under :

⁵ IP set energisation cost as estimated by MSEB

Table 6 : Profitability Projections – For Wardha ZP

Years --->		2004	2005	2006	2007	2008	2009	2010	2011	2012
Units Purchased	Mus	213	215	218	221	232	244	258	272	286
Units billed Agricultural	Mus	18	19	19	20	22	24	25	27	30
Total LT units billed	Mus	124	129	134	139	150	162	175	189	205
Total HT units billed	Mus	25	26	27	28	31	33	36	39	42
Total Units Billed	Mus	149	155	161	168	181	196	211	228	246
Revenues of ZP from Electricity Distribution	Rs mn									
Guaranteed Revenue Total		17	23	30	38	45	52	58	64	71
Total Customer Revenue		384	469	566	665	790	907	1,026	1,133	1,248
Total Revenue		401	492	596	703	835	959	1,085	1,198	1,319
Total Expenses	Rs mn	742	765	790	816	876	941	1,011	1,087	1,170
Revenue Surplus / Shortfall wrt customer revenue	Rs mn	-358	-297	-224	-151	-86	-34	15	46	78

The units purchased from MSEB include energy sold to the consumers in the designated area of a ZP and the distribution losses. Due to operational efficiency the reduction in the distribution losses are envisaged at the rate of 2% every year. That means the distribution losses in the year 2011-12 would get reduced to 14% as against the distribution losses of 32% in the year 2002-03.

It could be observed that in the initial years 2003-04 to 2008-09 there is a revenue shortfall. This is due to difference in the energy purchase rate by ZP at the average CoS of MSEB and the revenue realised due to subsidised retail tariffs to domestic, agriculture and other subsidised consumers. As such, in the initial years of operation & maintenance of rural electricity distribution by ZPs would require higher State Government support to meet the revenue shortfall.

It could be observed that the Table 6 – Profitability projections - For Wardha ZP, indicates the ability of the proposed arrangement to be able to achieve financial independence in the medium term (within 6-7 years).

7.2.2 GoM Support For Wardha ZP :

However, since the ZPs would also need to pursue the Government's objective of supporting energisation of IP sets and providing requisite financial support for the same, Consultant has carried out a preliminary estimation of such costs and the extent of GoM's support required by Wardha typical ZP under the above assumptions. The support to a ZP would be mainly governed by the consumer mix and the BST that would be decided by the MERC. The output of this analysis is described below :

Table 7 : GoM Support – For Wardha ZP

Years ---->		2004	2005	2006	2007	2008	2009	2010	2011	2012
Cost of Energizing IP Sets										
Cost per IP Set	Rs	46,818	47,754	48,709	49,684	50,677	51,691	52,725	53,779	54,855
No of Sets energized		2,000	2,000	2,000	2,000	2,000	2,000	2,000	2,000	2,000
Total Cost IP energisation	Rs mn	94	96	97	99	101	103	105	108	110
Upgradation of Dist Network										
Consumers		190,165	197,771	205,682	213,909	231,022	249,504	269,464	291,021	314,303
Investment per Consumer	Rs	150.00	150.00	150.00	150.00	150.00	150.00	150.00	150.00	150.00
Total Investment	Rs mn	29	30	31	32	35	37	40	44	47
Support from State Govt.	Rs mn									
Assured Revenue for Power		17	23	30	38	45	52	58	64	71
IP Set Energisation Cost		94	96	97	99	101	103	105	108	110
Network Upgradation Cost		29	30	31	32	35	37	40	44	47
Revenue Surplus / Shortfall		358	297	224	151	86	34	-15	-46	-78
Total Support required		498	445	382	320	267	226	189	169	150

The State Government's revenue support envisages energisation of 2,000 IP sets, network upgradation in addition to guaranteed revenue for PWW & rural street lights and shortfall on account of serving subsidised consumers in the designated area of ZP.

7.2.3 GoM Support for Entire State :

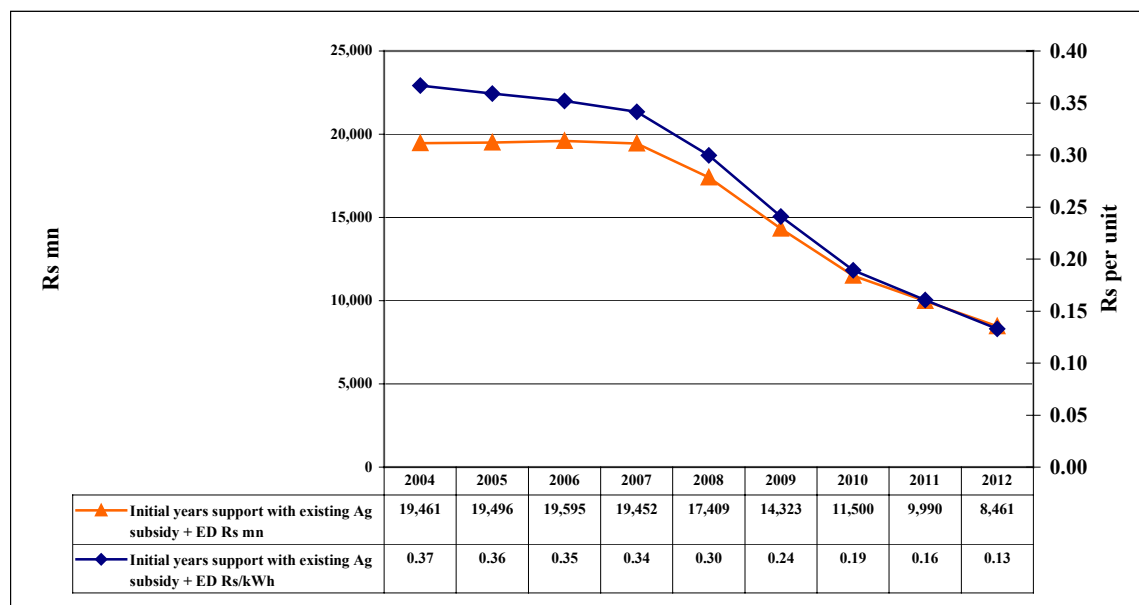
The above exercise indicates a gradual reduction in financial support from the State Government over a period of time. The rural electricity consumption for the FY2003 is estimated based on the rural population, rural households electrified and agriculture irrigation pump sets in the rural areas. It is also assumed that there would be reduction in T&D loss from 40% in FY2003 to 20% in FY2012. When extrapolated for the entire state on the basis of estimated rural consumption, it could result in the following scenario :

Table 8 : GoM Support – Entire State

Years --->		2004	2005	2006	2007	2008	2009	2010	2011	2012
Agriculture consumption of State (estimate)	Mus	9,000	9,375	9,750	10,125	10,500	10,875	11,250	11,625	12,000
Rural Consumption of State incl. Ag consumption (estimate)	Mus	14,630	15,231	15,840	16,458	17,340	18,262	19,228	20,241	21,306
Revenue Support from State for IP sets										
Support for state excl IP sets	Rs mn	27,779	24,721	20,724	16,483	12,341	9,154	6,227	4,612	2,976
Cost of 1,00,000 IP sets	Rs mn	4,682	4,775	4,871	4,968	5,068	5,169	5,272	5,378	5,485
Total per year	Rs mn	32,461	29,496	25,595	21,452	17,409	14,323	11,500	9,990	8,461
Subsidy towards Ag consumers	Rs mn	7,000	6,000	6,000	2,000					
Revenue from Electricity Duty	Rs mn	6,000	4,000	0	0					
Existing Total support	Rs mn	13,000	10,000	6,000	2,000	0				
Additional support required through Generation Tax	Rs mn	19,461	19,496	19,595	19,452	17,409	14,323	11,500	9,990	8,461
Calculation of generation tax requirement										
Total Generation of State	Mus	53,053	54,296	55,663	56,965	58,089	59,436	60,814	62,223	63,663
T&D Losses		35%	33%	30%	28%	28%	26%	24%	22%	20%
Generation Tax required	Rs/kWh	0.37	0.36	0.35	0.34	0.30	0.24	0.19	0.16	0.13
Tax on exported units	Rs/kWh	0.39	0.39	0.38	0.37	0.32	0.26	0.20	0.17	0.14
Tax on Consumer	Rs/kWh	0.61	0.58	0.54	0.51	0.45	0.35	0.27	0.22	0.18

The State Government revenue support, in addition to the existing subsidy to Agriculture (Ag) consumers and utilising the proceeds of Electricity Duty (ED) for additional subsidy, could be managed by levying Generation Tax (GT) on the electricity generation of MSEB, Tata Power and BSES. The ED could be abolished by FY2006 and the budgetary support towards Ag subsidy would become NIL by FY2008.

Chart 2 : Generation Tax – With initial years existing revenue support of Ag subsidy & ED



7.3 Critical Observations :

7.3.1 Increase in Revenue Support :

A jump in revenue support in FY2004 is due to bringing retail tariff for all the category of consumers close to the average CoS by FY2008.

7.3.2 Financial Support :

For a ZP the financial support for first year works out to Rs 498 mn in FY2004. This would reduce to Rs 150 mn at the end of FY2012 on account of operational efficiencies.

7.3.3 Funding Public Works & Street Lighting :

The State Government would be required to continue with its present policy of funding of energy consumption by Public Water Works and Rural Street Lighting. This is important in the proposed scheme of things as this forms stable revenue component for the new entity.

7.3.4 Tariff Subsidy :

The tariff subsidy provided for domestic and agricultural consumers needs to be continued till the tariff is rationalised i.e., revenue recovery closely tracks the cost of supply (this takes place in year 2008).

7.3.5 Financial Support for ZPs :

To energise the additional irrigation pump sets, the State Government would need to provide financial support to the ZP till its financial health improves and becomes self sufficient to manage electricity supply and distribution in the designated area.

7.3.6 Levying Generation Tax :

No generation tax is envisaged for Agriculture, Public Water Works, Street Lighting rural electricity consumption.

- Based on an estimate of energising 1,00,000 IP sets every year in the state, the generation tax needed to meet this socio-economic objective in FY2004 works out to Rs 0.37 per unit on generation of MSEB, Tata and BSES. With 7% auxiliary consumption and T&D losses, the generation tax chargeable to consumers works out to be Rs 0.61 per unit.
- The tariff subsidy provided for domestic and agricultural consumers may need to be continued for a few years till the tariff is rationalised i.e., revenue recovery closely tracks the cost of supply and distribution losses.
- If GoM continues to provide tariff subsidy to Agriculture consumers the generation tax would be Rs 0.38 per unit instead of Rs 0.37 per unit in FY2004, which would become Rs 0.25 per unit instead of Rs 0.13 per unit by FY2012.

The above generation tax working is derived based on the assumption that the entire State's rural electrification including rural electricity distribution is transferred to the ZPs. As this transfer will take place in phases generation tax burden will be less than projected.

8. RECOMMENDATIONS

8.1 Transfer Scheme Pre-requisites :

In order to ensure successful implementation of the proposed transfer scheme, following aspects would need to be ensured a-priori :

- Amendment of the ZP Act so as to make provision for a subject committee for electrification scheme and electricity distribution in rural area.
- Willingness of ZPs to takeover the electrification scheme and electricity distribution in the rural areas. The ZP, which would implement the scheme on pilot basis would be selected on a pre-determined criteria and thus the effectiveness will be ensured.
- Assistance of GoM and MSEB to ensure 100% energy metering at least at DTCs in case of Agriculture consumers (metered supply to all) before the pilot transfer scheme is implemented in the area under control of the ZP.

8.2 Suggested Restructuring Plan :

- Electricity distribution of MSEB's Circle should be divided in to two distinct areas – Rural area under the Panchayats and the balance (Urban) area under the Nagar Parishads.
- The area under the Panchayats would be under the jurisdiction of ZPs for electrification including electricity distribution covering the 11 KV HT consumers and all the LT consumers in rural areas.
- The area under the Nagar Parishads would remain with MSEB for electricity supply and distribution along with the consumers having supply voltage above 11 KV in rural areas.
- MSEB will supply electricity in bulk at various points of the rural district network and bill the ZP for it. Distribution of electricity so received within the district, its billing and recovery will be the responsibility of the local body. Success of the scheme will depend upon proper energy accounting at each level of supply and realisation of money from rural consumers. Gram Panchayats would be made responsible for service and payment of energy bills.

- Although MSEB will supply electricity in bulk to the "District Licensee" present level of cross subsidies to agriculturists and residential consumers will be maintained in the initial few years. Transfer to the ZP will not entail a different tariff structure for these consumers.
- The subsidy given by Government on an annual basis to various classes of consumers to keep the tariff at lower level than determined by MERC will be transferred to ZPs on pro-rata basis. It will be up to each ZP to decide the proportion of the subsidy to be passed on to the consumers and utilise the remainder for giving new connections and strengthening the distribution system. The Government may raise this subsidy money by levying tax on MSEB's generation under the existing Act, which today applies only to TEC and BSES utilities.
- The relevant field staff / workers of MSEB will be transferred to the ZPs under the Zilla Parishad Act and would work under the superintendence and control of the ZP during initial few years (transition period).
- The decisions related to fresh recruitments and the salary structures would be left to the discretion of the respective ZP / Gram Panchayat. The ZPs / Gram Panchayats would also consider repatriation of MSEB's staff back to MSEB in case these employees so prefer.
- With appropriate meshing of MSEB controlling system with the structure of ZP, desired output could be achieved.
- The performance targets for individuals and working groups need to be set and closely monitored. A system of performance related incentives / penalties needs to be developed and regularly updated on the lines of Bangladesh / Thailand for the employees working in rural areas to achieve the goals and expectations of the transfer scheme.

8.3 Implementation Roadmap :

A separate department could be set up under the ZP to oversee the entire work of distribution of electricity (as in case of water supply, education, health etc). In this case, while planning, sourcing, infrastructural development, administration, and funding are taken care of at ZP level, the responsibility of O&M, new connections, consumer education, mitigation of grievances, and energy billing and its recovery will be handled by appropriate level of local self-government i.e. Gram Panchayats and Panchayat Samities.

The Government may also direct MSEB to carry out necessary alterations to the network / organisation at the Circle level so that the electricity distribution of Circle Office MSEB is divided in to two distinct divisions - Urban and Rural. The Government may formulate a selection process for finalising the ZP where this experiment would be carried out on pilot basis.

On selection of the ZP, the Government may institute a detailed study of the area under control of the selected ZP and address issues raised in this report to ensure success of the proposed transfer scheme. The detailed study would delineate the exact transfer scheme including the timeframe and logistics thereof.

8.4 Summation :

This Report identifies various issues related to improvement of energy supply in the rural area of Maharashtra and proposes a framework of Transfer of MSEB's Rural Electrification Scheme and Electricity Distribution of Rural Area to Panchayats. This Report also examines the financial viability of such a scheme under the present scenario and develops a self-sustaining financial model. The advocated Panchayat involvement would provide for a clear demarcation of responsibilities and facilitate energy accounting and auditing. In addition, the levy of generation tax at source on the utilities in Maharashtra would ensure :

- Viability of the ZP model.
- Energisation of at least one lakh agricultural pumps every year to meet the aspirations of the rural population in Maharashtra State.
- Improvement in collection, operations and service conditions in rural areas.
- Reduction in the present level of GoM's agriculture subsidy for energisation of pumps and differential in retail tariff.
- Encouragement of local government in managing the rural areas.

The Report thus suggests that various problems related to the supply of energy to rural areas could be tackled effectively by transferring the responsibility of rural electricity distribution to the local bodies viz. ZP, PSs and GPs with adequate financial support from the State Government.

However, in order to ensure success of the pilot project in 2 or 3 selected ZPs, it will be necessary to undertake feasibility studies in those districts to demarcate rural and urban networks, identify MSEB staff for allocation to these networks and estimate the quantum of subsidy for targeted consumers.

Lastly, as it was not practical for the Study Group to seek the views of various stake-holders on the politically sensitive issue of whether ZPs will be capable of handling the business of rural electrification scheme and rural electricity distribution strictly on commercial terms, it is recommended that the report may be made public and widely disseminated in the State so that a wide ranging debate may ensue.

ANNEXURES

ANNEXURE – I

Extract Of Constitution Act, 1992

(73rd Amendment)

Statement of Objects and Reasons appended to the Constitution (Seventy-second Amendment) Bill, 1991 which was enacted as the Constitution (Seventy-third Amendment) Act, 1992.

Definitions

“Intermediate level” means a level between the village and district levels specified by the Governor of a State by public notification to be the intermediate level for the purposes of this Part.

“Panchayat” means an institution (by whatever name called) of self-government constituted under **Article 243B**, for the rural areas.

Articles

243B. Constitution of Panchayats:

- (1) There shall be constituted in every State, Panchayats at the village, intermediate and district levels in accordance with the provisions of this Part.
- (2) Notwithstanding anything in clause (1), Panchayats at the Intermediate level may not be constituted in a State having a population not exceeding twenty lakhs.

243G. Powers, authority and responsibilities of Panchayats:

Subject to the provisions of this Constitution, the Legislature of a State may, by law, endow the Panchayats with such powers and authority as may be necessary to enable them to function as institutions of self-government and such law may contain provisions for the devolution of powers and responsibilities upon Panchayats at the appropriate level, subject to such conditions as may be specified therein, with respect to:

- (a) the preparation of plans for economic development and social justice.
- (b) the implementation of schemes for economic development and social justice as may be entrusted to them including those in relation to the matters listed in the **Eleventh Schedule**.

Eleventh Schedule

1. Agriculture, including agricultural extension.
2. Land improvement, implementation of land reforms, land consolidation and soil conservation.
3. Minor irrigation, water management and watershed development.
4. Animal husbandry, dairying and poultry.
5. Fisheries.
6. Social forestry and farm forestry.
7. Minor forest produce.
8. Small scale industries, including food processing industries.
9. Khadi, village and cottage industries.
10. Rural housing.
11. Drinking water.
12. Fuel and fodder.
13. Roads, culverts, bridges, ferries, waterways and other means of communication.
14. **Rural electrification, including distribution of electricity.**
15. Non-conventional energy sources.

16. Poverty alleviation programme.
17. Education, including primary and secondary schools.
18. Technical training and vocational education.
19. Adult and non-formal education.
20. Libraries.
21. Cultural activities.
22. Markets and fairs.
23. Health and sanitation, including hospitals, primary health centres and dispensaries.
24. Family welfare.
25. Women and child development.
26. Social welfare, including welfare of the handicapped and mentally retarded.
27. Welfare of the weaker sections, and in particular, of the Scheduled Castes and the Scheduled Tribes.
28. Public distribution system.
29. Maintenance of community assets.

ANNEXURE – II

Terms Of Reference

महाराष्ट्र राज्य विद्युत मंडळाची पारंपारिक
ऊर्जा योजना ग्रामीण विद्युतीकरणासकट
पंचायत राज संस्थेकडे हस्तांतरीत
करण्याबाबत अभ्यासगटाची व उच्च
स्तरीय समितीची नियुक्ती करण्याबाबत.

महाराष्ट्र शासन

शासन निर्णय क्रमांक इएसए १००१/प्र.क्र.७९२९/ऊर्जा-५
उद्योग, ऊर्जा व कामगार विभाग,
मंत्रालय, मुंबई-४०००३२.
दिनांक: ३.६.२००२.

प्रस्तावना:-

घटनेच्या ७३ व्या दुरुस्तीनुसार (सन १९९२) सत्तेचे विकेंद्रीकरण करण्याच्या दृष्टीने ग्रामपंचायत, मध्यस्तरीय पंचायत (तालुका पंचायत) आणि जिल्हा पंचायत अशी त्रिस्तरीय पध्दत स्विकारण्यात आली असून या घटना दुरुस्तीनुसार घटनेच्या अनुसूची ११ मधील २९ विषयांचे पंचायत राज संस्थाकडे हस्तांतरण करावयाचे आहे. अनुसूची ११ मधील विषयांपैकी १४वा विषय “ विद्युत वितरणासकट ग्रामीण विद्युतीकरण” हा आहे. सदर विषय पंचायती राजसंस्थाकडे हस्तांतरीत करण्याबाबतचा प्रस्ताव विचाराधीन असून यासाठी ग्राम विकास विभागाने सुचविल्याप्रमाणे अभ्यासगटाची स्थापना करावयाची आहे. सदर अभ्यास गटाने केलेल्या शिफारशीवर, उच्चस्तरीय सचिव समितीने घेतलेल्या अंतिम निर्णयावर शासन स्तरावर निर्णय घेऊन सदर विषय पंचायती राज संस्थाकडे हस्तांतरीत करावयाचे प्रस्तावित आहे.

शासन निर्णय:-

वर विशद केलेल्या परिस्थितीचा विचार करून खालीलप्रमाणे अभ्यासगटाची व उच्चस्तरीय समितीची नियुक्ती करण्यात येत आहे.

अभ्यासगटाची संरचना खालीलप्रमाणे राहिल.

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- ५) श्री.हर्षवर्धन संकपाल,
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- ६) श्री.जीवनराव गोरे,
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सदस्य

८) श्री र.य. गंगावणे,
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सदस्य

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सदस्य सचिव तथा निमंत्रक

उच्चस्तरीय समितीची संरचना खालीलप्रमाणे राहिल.

- | | |
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| १) प्रधान सचिव (ऊर्जा) | अध्यक्ष. |
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वरील अभ्यासगट समितीने अभ्यासगटाची स्थापना झाल्याच्या दिनांकापासून दोन महिन्यांच्या कालावधीत अंतिम अहवाल उच्चस्तरीय समितीकडे सादर करावा. उच्च स्तरीय समितीने अभ्यासगटाचा अहवाल प्राप्त झाल्यावर सदरहू अहवालावर एक महिन्यात निर्णय घेऊन आपला अंतिम अहवाल शासनाकडे सादर करावा.

वरील अभ्यासगट समितीच्या बैठकांचे आयोजन सदस्य सचिव तथा निमंत्रक यानी करावे.
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- १५) श्री. जीवनराव गोरे, अध्यक्ष, जिल्हा परिषद उस्मानाबाद. - सदस्य.
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१९) निवड नस्ती

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ANNEXURE – III

Schedule Of Study Group and Technical Group Meetings

S No	Date	Meetings
1	25-Jun-02	First meeting of the Study Group
2	09-Oct-02	Meeting held with MSEB, GoM Officials and Consultant
	15-Nov-02	Meeting held with MSEB, GoM officials and Consultant
4	10-Apr-03	Meeting of Study Group on Draft Report

Meeting attended by

June 25, 2002

S No	Representative	Designation
1		Chairman, Study Group
2	Shri Jeevanrao Gore, ZP	President, Osmanabad
3	Shri P.V. Kulkarni, MSEB	Chief Engineer
4	Mrs. Laxmi Gopalan, GoM	Jt. Secretary, Energy
5	Shri Chandrakant Dalvi, ZP	CEO, Ahmednagar
6	Mrs. S.D. Waghchaure, GoM	Desk Officer
7	Shri A.K. Sardar, GoM	Section Officer, RDD
8	Mrs. Chandra Iyengar, GoM	Secretary, Higher Education
9	Shri N.K. Shukla, MPECS, Shirampur	Managing Director
10	Shri V.L. Sonavane, MSEB	S. E. (Commercial)
11	Shri P.H. Aher, MSEB	Junior Engineer
12	Shri Prakash Therade, MSEB	Accounts Officer
13	Shri R.V. Kulkarni, MPECS, Shirampur	Dy. Executive Engineer

October 9, 2002

S No	Representative	Designation
1	Dr. Pramod Deo	Chairman, Study Group
2	Shri Sanjay Kumar, MERC	Secretary
3	Mrs. Laxmi Gopalan, GoM	Jt. Sec., Energy
4	Mrs. Kunda Gosavi, GoM	Dy. Sec, RDD
5	Shri B.N. Farkade, MSEB	C. E. (Distribution)
6	Shri S.G. Thombre, MSEB, Ahmednagar	Supdt. Engineer
7	Shri B.M. Dhage, MSEB, Osmanabad	Supdt. Engineer
8	Shri H.S. Padia, MSEB, Wardha	Executive Engineer
9	Mrs. S.D. Waghchaure, GoM	S. O., IE&LD
10	Shri M.D. Kelkar, GoM	O.S.D., WSSD
11	Dr. Ashok Harane, IL&FS	Chief Executive – Power
12	Shri Subhash Mathurvaishya, IL&FS	Chief Engineer – Power

November 15, 2002

S No	Representative	Designation
1	Dr. Pramod Deo	Chairman, Study Group
2	Mrs. Laxmi Gopalan, GoM	Jt. Sec., Energy
3	Shri M.N. Bapat, MSEB	Technical Director (Dist.)
4	Shri R.B. Kshirsagar, MSEB, Wardha	Supdt. Engineer
5	Shri S.G. Thombre, MSEB, Ahmednagar	Supdt. Engineer
6	Shri B.M. Dhage, MSEB, Osmanabad	Supdt. Engineer
7	Mrs. S.D. Waghchaure, GoM	S. O., IE&LD
8	Shri A.K. Sardar, GoM	S. O., RDD
9	Dr. Ashok Harane, IL&FS	Chief Executive – Power
10	Shri Subhash Mathurvaishya, IL&FS	Chief Engineer – Power

April 10, 2003

S No	Representative	Designation
1	Dr Pramod Deo	Chairman, Study Group
2	Shri Aziz Khan, MERC	Secretary
3	Mrs. Laxmi Gopalan, GoM	Jt. Sec., Energy
4	Shri Kunal Kumar, ZP, Nagpur	CEO
5	Shri Landge Anil B., ZP, Ahmednagar	Additional CEO
6	Shri B.V. Kale, ZP, Latur	President
7	Shri G.M. Shete, ZP, Latur	Vice Chairman
8	Shri Jeevanrao Gore, ZP, Osmanabad	President
9	Mrs. S.D. Waghchaure, GoM	S. O., IE&LD
10	Shri A.K. Sardar, GoM	S.O., RDD
11	Shri H.V. Sapkal, ZP, Buldhana	Ex President
12		Chief Executive – Power
13	Shri Subhash Mathurvaishya, IL&FS	Chief Engineer – Power
14	Shri Abhay Athalye, IL&FS	Senior Manager

ANNEXURE – IV

Highlights Of Electricity Act, 2003

(1) Electricity Generation

- (a) Generation made free from licensing and to be coordinated with the transmission utility for evacuation of power.
- (b) Hydropower generation would need prior approval of State Government and clearance from Central Electricity Authority (for specific categories of hydel projects).
- (c) State Electricity Regulatory Commissions (SERCs) to determine tariff for supply of electricity by Generating company on long / medium term contracts. However, no tariff fixation by SERC if tariff is determined through competitive bidding or where consumers, on being allowed open access enter into agreement with generators / traders.
- (d) Captive generation is made fully free. Captive generation would also have open access through the grid to its own premises subject to availability of adequate transmission facilities.
- (e) Generation from non-conventional and renewable sources is to be promoted and Regulatory Commissions from time to time may prescribe a minimum percentage of power to be purchased from such sources.

(2) Transmission

- (a) A Government Company/Organisation would perform the load dispatch functions, which are critical for purpose of grid discipline and stability. The Regulatory Commissions would settle disputes and grievances relating to this function.
- (b) There would be a transmission utility at the Centre and one in each of the States, which would be Government companies with responsibility for coordinated and planned development of the transmission network.
- (c) Private sector participation would be permitted in transmission through transmission licences to be guided by the Regulatory Commissions.
- (d) Neither the Load Despatch Centre (LDC) nor the Transmission Utility / Licensee would trade in power.
- (e) The Regulatory Commissions would determine transmission tariffs.

- (f) There would be neutral and non-discriminatory open access in transmission.
- (g) In addition to the transmission tariff, there would be a surcharge to take care of the current level of cross subsidy being generated from distribution licensees who have a better consumer mix. The surcharge would be progressively reduced and eliminated along with cross subsidies.

(3) Electricity Distribution

- (a) Distribution Licensees would have the responsibility and the obligation of providing power to all consumers in their area of supply.
- (b) Consumer tariffs to be charged by the Distribution Licensee would be determined by the SERC.
- (c) State Government would have to provide subsidies upfront if it wishes the tariff for a class of consumers to be lower than that prescribed by SERC.
- (d) Regulatory Commission would prescribe standards relating to quality of supply.
- (e) Metering would be mandatory.
- (f) SERC may undertake regulation including determination of multi-year tariff principles, which rewards efficiency and is based on commercial principles.
- (g) Distribution Licensees would be free to take up generation and generators would be free to take up Distribution Licensees.
- (h) Open access may be allowed in distribution by SERC in phases to enable bulk consumers to access generators / traders directly.
- (i) Provisions regarding theft would have a focus on revenue enhancement rather than criminal proceedings with provisions for compounding and on the spot penal assessment of unauthorised use of electricity.

(4) Trading of Electricity

It is permitted as a distinct activity with licensing.

(5) Electricity Regulations

- (a) Creation of a SERC, which has till now been optional is made mandatory.
- (b) Appellate Tribunal to be headed by a Supreme Court Judge would be created to hear appeals against the order of the Central Electricity Regulatory Commission (CERC) and SERCs. Appeals against the order of the Appellate Tribunal would only be pleaded before the Supreme Court.

(6) Role of Government

- (a) The Government would remain responsible for development of power sector. Government would have the responsibility of notifying National Electricity Policy (NEP) and tariff policies, development of renewable sources of energy and extension of electricity to rural areas.
- (b) The Central Electricity Authority (CEA) would be responsible for preparation of National Plans and prescribing safety and other technical standards. CEA would be technical advisor to the Government as well as the Regulatory Authorities.

(7) Restructuring

- (a) There are provisions enabling the State Government through statutory transfer scheme(s) to create one or more company(ies) from the SEBs.
- (b) The service conditions of the employees would not be inferior as a consequence of restructuring.
- (c) If the State Government wishes, it may continue with the SEB.
- (d) The State Governments have been given adequate flexibility to undertake power sector reforms in the manner they consider appropriate.

ANNEXURE – V

Data Comparison for Ahmednagar Circle of MSEB & MPECS

Only L T Consumers (Data 2001-02)								
	Consumers	Billed Units kWh	Billed Amt Rs	Receipt Rs	33 KV	11 KV	L T	DTC Nos
					in kms			
Ahmednagar Circle	176	474,417	571,627	325,400	0.64	4	10	4
Mula-Pravara	94	330,375	287,372	187,713	0.13	1	5	2
	Ahmednagar	MPECS						
Number of Employees	2,702	1,465						
(1) Billed Energy per consumer (kWh)	2,700	3,534						
(2) Billed Amount per consumer (Rs)	3,253	3,074						
(3) Receipt per consumer (Rs)	1,852							
(4) Billed Amt vs. Revenue Receipt	56.9%	65.3%						
(5) Average Billed rate (Rs/kWh)	1.20	0.87						
(6) Average Realisation (Rs/kWh)	0.69	0.57						
(7) HT / LT transmission line ratio	0.48	0.29						
(8) DTC Failures	24%	12%						

ANNEXURE – VI

Typical Single Line Diagram Of Electricity Generation, Transmission & Distribution

