

Shri B.P. Pandey,
Principal Secretary (Energy),
Industries, Energy & Labour Department,
Government of Maharashtra,
Mantralaya, Mumbai 400 032.

Subject: **Commission's advice on restructuring of MSEB.**

Sir,

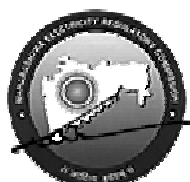
Government of Maharashtra (GoM) under letter dated April 8, 2004, had referred certain issues relating to restructuring of the Maharashtra State Electricity Board (MSEB) for advice of the Commission under Section 86 (2) (ii) of the Electricity Act, 2003. The Commission communicated its initial views to the State Government on May 14, 2004, and addressed the specific issues on which GoM had sought its opinion. The Commission also highlighted certain other issues relating to implementation of the changes in the sector structure that GoM and MSEB would need to consider, including issues relating to allocation of costs (including power purchase costs), intra-State ABT implementation, settlement systems, asset valuation, treatment of contingent liabilities, scheduling and despatch, metering, etc.

2. In view of the impending deadline of June 9, 2004 existing at that stage for restructuring MSEB, the Commission provided its overall recommendations to the GoM well before that date. However, the Commission's review revealed several complexities in the restructuring process that required further evaluation. The deadline for restructuring having been extended by the Government of India, the Commission has now evaluated in greater detail certain issues relating to formation of the distribution companies and protection of consumer interests. The findings and further advice of the Commission, including certain clarifications of its earlier advice, are enclosed herewith.

3. The Commission has been of the opinion that the present unwieldy structure of MSEB is responsible for much of the inefficiency and poor service quality, and that smaller distribution companies are essential. In this regard, the Commission has reviewed the typical size of distribution companies in India and abroad. Based on this review and its assessment of the operations of MSEB, the Commission is of the opinion that formation of five or six distribution companies out of the present distribution operations of MSEB would be optimal.

4. Among the restructuring options proposed earlier, Option III proposed by GoM for restructuring of MSEB aims to create six distribution companies. It appeared to the Commission that the GoM was in favour of this option. However, the Commission is not convinced about the supporting data and justification provided by GoM/MSEB for formation of *two urban and four rural* distribution companies. The Commission's analysis has revealed wide divergence in performance between the urban and rural areas. The Commission believes that the urban-rural structure could cause imbalances and inflexibility in future, unless necessary measures are adopted to avoid this through a more deliberate approach on solving rural supply and subsidisation issues.

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5. The Commission is of the opinion that rural supply issues must be tackled directly at the time of sector restructuring, and that the conventional Utility supply approach to rural supply requires to be looked at afresh. Utilities are generally reluctant to extend supply in rural areas where recoveries from tariff are significantly lower than costs. Utilities also have little appreciation of local problems, leading to service denial and poor service levels. Review of international examples reveals that local and private participation in rural supply can yield encouraging results if the schemes are appropriately structured. The enclosed document includes certain instances in this regard.

6. The Commission is of the view that franchising arrangements should be encouraged as vehicles of service delivery in rural areas. The primary responsibility of maintaining performance standards would continue to be the obligation of the distribution licensee in the area. The distribution licensee can in turn put in place incentive/penalty mechanisms to ensure that the performance of the franchisee meets the desired standards and targets. Adequate metering and related infrastructure would need to be established on a priority basis to ensure commercial accounting, adherence to quality of service standards and governance requirements.

7. The Commission believes that continuation of certain subsidies for rural and economically backward sections of consumers will be necessary in the foreseeable future. In general, the experience across the world has been that rural electrification and supply programmes can rarely be self-supporting. The Commission has also observed that such subsidies are not unique to India, and even developed countries such as the USA provide subsidies for certain sections of consumers. However subsidies must be targeted and administered better. The Commission is of the opinion that a separate Power Development and Subsidisation Fund (PDSF) should be set up to administer subsidies and facilitate development of the sector, particularly in the rural areas. Subsidies that are intended for objectives for which the Fund has been established should be routed through the Fund. The Fund can be financed through a combination of State support and production/ consumption taxes declared upfront. Such arrangements would help in targeting subsidies better and make cross-subsidies from the subsidising categories, if any, transparent.

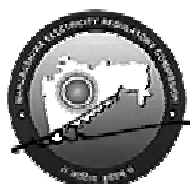
8. The State Government should develop a comprehensive reform implementation plan while undertaking the restructuring exercise taking into consideration the measures suggested by the Commission. The Commission recommends that the State Government, through a qualified expert body/consultants, should undertake further studies and analysis on the issues and suggestions provided in the enclosed document and in the earlier advice of the Commission on restructuring of MSEB. Based on such studies and analysis, the framework for restructuring of MSEB and development of the electricity sector in the State should be put forth for public views and comments. The final framework of sector structure should be decided only after considering them.

With regards,

Yours faithfully,

Sd/-
(A.M. Khan)
Secretary, MERC

Encl: as above.



Recommendations of the MERC to the State Government on the restructuring of MSEB

**(Accompaniment to Commission's letter No. MERC/Legal/120/MSEB
Restructuring/1732 dated 17th September, 2004)**



A. Background

1. The power sector in Maharashtra is being restructured as per the requirements of the Electricity Act, 2003 ("the Act"). The Government of Maharashtra ("GoM" or "the State Government"), through its letter dated April 8, 2004, referred certain issues relating to restructuring of the Maharashtra State Electricity Board (MSEB), for statutory advice of the Commission as per the provisions of Section 86 (2) (ii) of the Act. M/S SBI Capital Markets, advisors to the State Government, also made a presentation to the Commission on the various restructuring options being considered. The Commission also received copies of a separate presentation prepared by MSEB that, while containing further details, presented the same issues and conclusions.
2. The Commission conducted a review of the proposed arrangements, and communicated its initial views to the State Government on May 14, 2004. Specific issues on which the State Government sought the opinion of the Commission were addressed in the response of the Commission. The Commission also highlighted certain additional issues relating to implementation of the changes in sector structure that the State Government and MSEB would need to consider. These included issues relating to allocation of costs (including power purchase costs), intra-State ABT implementation, settlement systems, asset valuation, treatment of contingent liabilities, scheduling and despatch, metering, etc. The summary response of the Commission is attached as Annexure I to this document for ready reference.
3. The Commission's review revealed several complexities in the restructuring of the sector and formation of distribution companies. In view of the impending deadline of June 9, 2004 existing at that stage for restructuring MSEB, the Commission advised on certain essential restructuring measures being undertaken first. The Commission recommended that beyond the initial changes follow-up restructuring measures could be undertaken to usher a more permanent sector structure. The Commission noted that Section 131 (4) of the Electricity Act, 2003 permitted further restructuring of the successor entities by the State Government.
4. The deadline for restructuring of State Electricity Boards has subsequently been extended by the Government of India (GoI) till December 9, 2004. This provides a window of opportunity to evaluate the issues and imperatives identified by the Commission in its statutory advice in further detail. Accordingly, the Commission has evaluated in greater detail certain issues relating to formation of the distribution companies and protection of consumer interests. The findings and recommendations of the Commission are contained herein.



B. Review of Restructuring Options

5. The State Government's letter and the presentation to the Commission outlined three basic options for restructuring of MSEB.

- **Option I:** Extension of the existing MSEB structure with only distribution company being formed consequent to restructuring;
- **Option II:** A traditional (balanced) distribution company structure featuring *three* distribution companies;
- **Option III:** An urban-rural structure featuring *two* urban and *four* rural distribution companies.

6. The objectives stated by the GoM /MSEB for restructuring are summarised below:

- (i) To improve consumer service;
- (ii) To enhance competitive response of functionally unbundled entities and enhance business value;
- (iii) To create entities which would focus on commercial efficiency and financial viability;
- (iv) To provide level playing field for successor companies;
- (v) To protect the interests of employees.

7. From the State Government's letter and the presentation made on April 7, 2004 it appeared that the State Government is inclined in favour of Option III. The State Government/MSEB concluded that the Urban-Rural structure is considerably superior to the traditional structure on account of the following reasons,

- Business value retention to the tune of Rs. 587 crores occurs in the combined entities on account of the Urban-Rural structure;
- Subsidy administration to the rural distribution companies is transparent in the Urban-Rural structure;
- Urban-Rural structure is suitable when cross-subsidy elimination is mandated;
- The Urban-Rural structure promotes higher competitive readiness;
- Attention to rural areas is higher on account of greater operational and investment focus as the urban companies are left to manage their own affairs.



8. At this stage it is essential to recount the points of advice of the Commission to the State Government through its communication dated May 14, 2004. The objective of the advice was to ensure that the finalised option is robust, and caters to the healthy development of the sector in Maharashtra in future, addressing the requirements and concerns of *all* sections of consumers and citizens of the State in an equitable manner. The Commission had expressed its concern that sector structure and distribution company configuration should not result in imbalances among the distribution companies that create more long term problems than they solve in the short term. The key recommendations of the Commission are summarised as Annexure I to this document. The important points of advice, insofar as they relate to the formation and operations of the distribution companies are as follows:

- (i) **Optimal size of companies** – The structure proposed should not result in some or all of the distribution companies becoming unwieldy in size, thus negating any advantage that more focussed operations may bring about. The Commission observed that optimal sizing and the resultant focus has helped improve the performance of distribution companies in several states in the country consequent to restructuring.
- (ii) **Maintaining service levels in all distribution companies:** The companies with significant rural composition should not suffer from neglect, and new and efficient means of extending service in these areas must be implemented;
- (iii) **Equitable loading of costs:** The financial restructuring process adopted should not create any disproportionate loading of liabilities and costs to certain distribution companies in a manner that creates future inflexibility;
- (iv) **Accurate computation and timely payment of subsidies:** Payment of subsidy should be adequate for meeting the subsidisation requirements and should be made on a timely basis. A scientific mechanism for computation of cost of service should be evolved to identify the true subsidisation requirements of various consumer classes (or distribution companies);
- (v) **Furthering competition and choice:** The proposed structure should encourage competition and choice for the consumers of the State in accordance with the provisions of the Act;
- (vi) **Compatibility with future changes:** The proposed arrangements should be adequately robust to ensure that the rationalisation of tariffs and improvements in operating efficiency of the various distribution companies do not necessitate fresh restructuring. In other words the restructuring model adopted should not adopt a static view of operations based on present performance levels.



9. The Commission would like to reiterate that the Option II and Option III presented to it are not directly comparable on account of the wide variations in sizes of the distribution companies. For a reasonable comparison, the number of distribution companies in the two variants should have been similar if not the same. The *traditional* structure, as presented to the Commission, fails to meet the Commission's criteria on optimal size. A more detailed discussion and comparison on size of distribution companies (national and international) is provided subsequently in this paper.

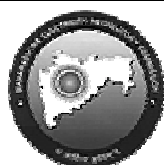
10. The Commission appreciates that having focussed urban distribution companies that are capable of reacting faster to competitive threats holds intuitive appeal. However while evaluating the advantages of the Urban-Rural model, the Commission has also found that the benefits are not well substantiated. As far as the value retention (or reduction in subsidy requirement) under a Urban-Rural structure goes, the Commission notes that this is based on two basic assumptions made by GoM/MSEB;

- Higher reduction of losses - 4% in urban areas and 2% in the rural areas in the Urban-Rural model as against an average 1% in the *traditional* model.
- Greater ability to prevent migration of consumers - 25% migration assumed in the *traditional* model as against 5% in the urban rural model – due to superior competitive response.

The Commission is constrained to observe that the above assumptions leading to the conclusions on increased value retention (or reduction of subsidies) are not based on any concrete evidence or reason. Reductions in system losses should be possible under a more focussed management set-up in either structure. In particular, if the number of distributional companies is optimal, and profit centre concepts backed by superior Management Information Systems and accountability mechanisms are introduced, such improvements should be possible in either of the structures. Similarly, the ability to prevent migration is not a function of the structure per-se, but of the ability of the management of the companies to provide superior customer service and bring down technical and commercial losses. In the Commission's opinion this is more dependent on the size of the distribution companies and the management structures and systems introduced, rather than on the consumer mix.

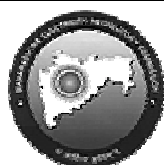
11. On the other hand, based on the data and analysis provided by GoM/MSEB, the Commission observes certain risks in the Urban-Rural structure that need to be mitigated, without which certain key objectives of sector reforms and restructuring may be vitiated.

- a. The Urban-Rural structure results in four rural distribution companies with large financial losses and subsidy requirements. The Commission is apprehensive that the poor cash flows in these distribution companies could result in lack of investment in network upgradation, loss reduction and improvement in service standards. Since these companies may not be under direct competitive threats,



their ability and inclination to improve performance standards would be correspondingly lower.

- b. The conclusion that the Urban-Rural structure would lead to more transparent subsidy administration needs further substantiation. It could be argued that the urban distribution companies with cash surplus would be reluctant to let go of such surpluses, and hence there could be occasion to gold plate costs. On the other hand such surpluses can result in legal obligations to reduce tariffs in these distribution companies, even as the rural distribution companies continue to make huge financial losses. Hence, unless alternative mechanisms envisaging measures such as consumption taxes or a charge akin to universal service obligation (USO) charges are proposed, the objective of transparent subsidy administration may not be met.
- c. The proposed Urban-Rural structure could render the rural distribution companies over-reliant on State support for even basic operational issues. While the Electricity Act, 2003 does provide considerable safeguards, by requiring advance payment of subsidies, it may be inadvisable to make the companies reliant on State support to such an extent. Hence, if predominantly rural Discoms are created, alternate funding mechanisms to supplement tariff revenues (like a USO charge) would be necessary to prevent over-reliance on State payouts.
- d. The Urban-Rural model proposed suggests that a part or all of the consumer mix differences can be neutralised through differential allocation of costs (power purchase costs or cost of servicing capital liabilities). Unfortunately this takes a static view of cost allocation. Even if *optimal* allocation were to be possible at the time of formation of the distribution companies, as the tariffs are progressively rationalised, the profitable urban distribution companies may become unprofitable. Thus the measures adopted to create financially (but not necessarily operationally) stronger urban distribution companies could quickly become counter-productive. This could also hinder the Commission's intent to progressively rationalise retail tariffs.
- e. The Commission is also keen that the new sector structure furthers competition. It is the mandate of the Commission to promote competition in the State and ensure that the new sector structure promotes a level playing field for all players. Thus the ability of the successor entities of MSEB to withstand competition should not be contingent upon a superior consumer mix "granted" at the time of formation, but on the ability of the companies to improve efficiency and provide superior service. A mix that is presently favourable under an Urban-Rural structure may create a false sense of security and ability to withstand



competition, when in reality it could result in prevention of fair competition and slower improvements in operating efficiency and customer service. This would thus affect the consumer interests. The arrangements proposed should ensure that such an eventuality is avoided, even if an Urban-Rural structure is implemented.

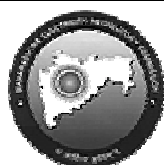
12. It is instructive to review the variations between the Urban and Rural distribution companies, as demonstrated in the following table¹.

	Parameter	Urban	Rural	Total
	Operations and Financial Indicators			
A	Sales (MU)	14906	24566	39473
B	Sales (% of total)	37.8%	62.2%	100%
C	Power Purchases (MU) at Discom	20409	36714	57123
D	Power Purchase (% of total)	35.73%	64.27%	100%
E	Distribution Loss (MU) (C-A)	5502	12148	17650
F	Distribution Loss (%) (E/C)	26.96%	33.09%	30.90%
G	Collection efficiency (%)	98.77%	77.10%	88.73%
H	Units Collected (MU) (A*G) ²	14724	18940	35264
I	Distribution ATC loss (%)	27.85%	48.41%	38.74%

13. As shown in the table, more than 62% of MSEB's sales are to rural areas. Distribution losses in the rural distribution companies are considerably higher than those in the urban distribution companies. If the collection efficiencies are considered, the disparity between the urban and rural areas becomes even more stark. Applying the ATC losses, the MU lost in the rural distribution companies amounts to 12148 MU, as compared to 5502 MU in the urban companies. The overall ATC loss in the rural areas works out to 48.41% as compared to 27.86% in the urban distribution companies. If transmission losses are added to the distribution losses, it is apparent that well over 50% of the energy procured for the rural distribution companies is not collected. As per data

¹ Data for FY 2002-03. The data has been furnished by MSEB and has not been verified by the Commission, and has been adopted as matter of convenience.

² Units collected assumed for the present purposes as a product of sales and collection efficiency. If the differences in the tariff rates of various categories are considered, the number of units collected could be lower due o lower collection efficiency in the subsidised categories.



furnished by MSEB, certain rural circles have AT&C losses as high as 80%. The data clearly indicates that the thrust of the efforts of the GoM/MSEB must be directed at the rural areas, and merely isolating the relatively smaller urban pockets from the rural areas would be insufficient to address the problems of the electricity sector in Maharashtra.



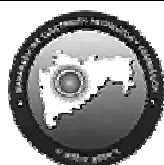
C. Restructuring Objectives and Priorities

14. Unless the fundamental issues are addressed, it is likely that the organisational and financial restructuring process would need to be revisited within a few years. Restructuring of the sector merely to meet statutory requirements, or continuation of status quo by creating regional monopolies solely through favourable consumer mix would be detrimental for the sector and its consumers in the long term.

15. The Commission would like the GoM to consider the following additional objectives and priorities while undertaking the restructuring of MSEB.

- i. Each of the successor entities of MSEB should be manageable in size
- ii. Supply to rural areas should not be treated as a “problem”, but as a socio-economic objective
- iii. Community involvement should be an integral part of the supply model, particularly where socio-economic objectives are also sought to be addressed in addition to commercial objectives
- iv. Certain degree of subsidization of rural supply is inevitable. The mechanisms proposed for subsidization should be transparent and effective.
- v. Adequate technical and commercial arrangements required to support such sector structure should be put in place

16. The Commission recognises that the issues involved are difficult to address. New and innovative approaches that address the core issues that afflict the sector must be formulated to ensure that the restructuring process results in net benefits for the sector and its consumers. The Commission has reviewed international experiences and practices on some of these issues. Based on its analysis and review the Commission has formulated certain specific recommendations on restructuring initiatives. The GoM should consider the same while finalising the sector restructuring model.



D. Specific recommendations on sector restructuring

(i) Size of distribution companies

17. At the heart of the MSEB's problems is the poor efficiency in operations. In this regard there is little alternative to metering, billing and collection improvement through sustained efforts. However, MSEB's unwieldy size and lack of accountability poses the greatest problem for loss reduction. The Commission has reviewed national and international data on the **size of distribution companies**, and compared the same with the options proposed in Maharashtra.

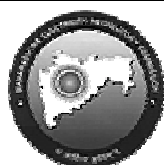
Table: International comparison on size of distribution companies³

Country	No. of Discoms reviewed	Average Discom size	
		MU sold	No. of consumers (Million)
Argentina	18	1,573	0.36
Brazil	17	11,123	1.58
Peru	9	812	0.23
Hungary	6	4,673	0.83
Australia	5	4,945	0.40
El Salvador	3	940	0.29
Colombia	3	5,039	0.96
Bolivia	2	625	0.20
Dominican Rep.	2	4,494	0.41
Guatemala	2	1,825	0.56
Panama	2	1,699	0.23
Georgia	1	1,484	0.37

Table: Comparison of distribution company size in India

State	No. of Discoms	Average Discom size	
		MU sold	No. of consumers (Million)
Delhi	3	2,752	0.84
Andhra Pradesh	4	8,559	3.53
Karnataka	4	4,673	2.92
Haryana	2		1.76

³ Source: An Analysis of Electricity Distribution Privatization in Developing Countries , Mangesh Hoskote, Adil Marghub, Steven Ostrover, 1999. Data for privatized distribution companies only



State	No. of Discoms	Average Discom size	
		4,375	
Orissa	4	1,596	0.33
Rajasthan	3	4,635	1.69
Maharashtra (Traditional)	3	13,157	4.33
Maharashtra (Urban-Rural)	6	6,579	2.17

18. It is apparent from the above tables that a three Discom configuration would make the distribution companies in Maharashtra larger than any of the national and international examples cited above. A five or six Discom configuration (irrespective of the Urban-Rural or traditional structure adopted) would strike a reasonable balance between the size of the companies on the average and the number of companies to be formed.

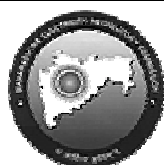
19. It needs to be recalled that till recently the MSEB was structured in six zones for ease of administration. The zones were carved out based on their geographical and electrical characteristics to ensure holistic development of the sector across the State. A five or six Discom configuration would be line with the approach adopted in creation of the zones.

(ii) Framework for supply in rural distribution companies/areas

20. The Commission is of the opinion that rural supply issues must be tackled directly at the time of sector restructuring and the conventional approach to rural supply requires to be looked at afresh. The cost of extending the grid for rural supply, in terms of both capital and operating cost, typically tends to be understated. Utilities are reluctant to extend supply in rural areas where recoveries from tariff are far lower than costs. Utilities also have little appreciation of local problems, leading to service denial and poor service levels.

Evaluating alternatives to Grid Supply: Avoiding average cost of supply as a measure of cost to serve

The average cost of service benchmark often adopted for evaluating the cost of supply to electricity consumers does not consider the higher network erection and maintenance costs, higher T&D losses, and the costs of reaching commercial service to such areas. This leads to obfuscation of the true costs involved, thus impeding innovative alternatives and technologies, which appear to be more expensive than grid supply when they are (in reality) cost effective for rural services. It also prevents alternative models of rural supply from taking root, and perpetuates direct utility supply. On the other hand this also results in



the utilities taking little interest in extending quality supply since the utilities are well aware that the costs of rural supply are far higher than the average costs. The table below provides an indication of the relative costs involved in the various means of supply.

Table: Indicative costs of extending rural supply to micro levels (Rs./kwh)⁴

Generation Technology	Minimum	Maximum
Grid Extension to village	11 (5 km)	51 (50 km)
Central Village Diesel	12	15
Village Biomass	9	11
Micro Hydro (Village)	8	8
Solar Station (Village)	40	56
Small Diesel	14	17
Solar Home System	34	40
Solar Lanterns	39	45

↑
improving service levels

As evident from the table above, there are several alternatives that are far superior to grid supply. In fact (as demonstrated in the table below), certain options like small hydro and biomass can be far more attractive for this purpose. Even if the numbers indicated above were subject to alteration on account of changes in costs (particularly the cost of fuel) due to external factors, supply from such sources would still be far more economical than extending grid supply for far flung rural areas with low load density.

21. There is a need to look at alternatives for rural supply apart from the conventional Utility Supply model. The Commission is embarking on a detailed exercise on evaluating various rural supply options. As a part of the study, field data from various rural circles of Maharashtra will be analysed to evaluate the appropriate model for rural supply in the State. Detailed review of international practices and precedents will also be undertaken as a part of the study. For the present the Commission has reviewed certain international experiences (particularly Latin America, which shares several socio-economic characteristics with India) that provide certain important pointers on rural supply policy. These are summarised in the box below. The international good practices can be adapted to the conditions prevailing in Maharashtra. A more detailed account of specific country experiences is provided in Annexure II.

Rural Supply: Key lessons from best practices in Latin America

- **Rural electricity supply needs to be made an attractive proposition for suppliers:** The aim of policy should make rural electrification projects an attractive business opportunity for electric utilities and other interested suppliers. The first

⁴ Source: The World Bank. These figures have not been authenticated by the Commission independently and have been assumed only for illustrative purposes for the present exercise.



choice typically should be grid supply if the costs permit. However, wherever the costs exceed the costs of alternatives, suitable alternatives are considered.

- **Private participation should be encouraged:** Dominance of the State in rural supply has often led to denial of supply. In India, newer models like franchising and composite generation and distribution schemes are now encouraged by policy and the statute. These facilities should be utilised to the fullest.

- **Local participation is vital for successful rural services:** Experience demonstrates that the main power utilities have institutional difficulty in meeting the special demands of rural distribution. Local community level problems often are not addressed by utilities (e.g., right of way, theft, payment default, optimal resource utilisation, etc).
- **Competition for rural projects is feasible and beneficial:** It is possible to introduce competition for rural supply projects in a manner that ensures low cost and speedy implementation. decentralised and the rules for selection of projects are transparent and stable, this generally leads to controlling of costs through choice of appropriate technology and prompt implementation.

22. In this context it is important to recount the findings of the Study Group constituted by GoM on *Transfer of Maharashtra State Electricity Board's Rural Electricity Distribution & Rural Electrification Schemes to Panchayats*. The Study Group analysed the performance of the Mula Pravara Electric Co-operative Society (MPECS) and observed the following:

- MPECS case study supports the fact that involvement of local entities could help in creating administratively efficient structures
- Proposed reforms and restructuring in India should take note of learning from these earlier models and analyze the grass-root level reasons for their better performance
- Good performance by MPECS (even with low willingness to pay) goes to suggest that smaller, manageable but sizeable clusters could better the sector performance
- With a clear policy framework and with involvement of such entities, well run franchisee/local body models can therefore lead to a significant improvement in sector performance
- Customer satisfaction is the key to achieve better performance on receivables and collection efficiency.

23. The Study Group concluded that efforts to develop and support franchisee/ cooperative/ local body models should continue. The study made a specific observation that the three-tier Panchayati model was well suited for universal application for electricity distribution across Maharashtra. Review by the study group revealed that several rural supply models are operating



successfully across the world and have fostered efficiency and quality in rural utility services. The present sector restructuring initiatives should be combined with such initiatives to ensure efficiency and sustainable development of the sector as a whole.

24. The Commission's own findings on the reference made by the GoM to the Commission on MPECS are similar to that of the Study Group⁵. The Commission is of the opinion that wherever possible franchising of services and/or involvement of local bodies must be pursued, particularly in the rural areas. The Commission is of the view that with better management such franchisees and co-operatives/local bodies can provide better service at lower costs, benefiting the licensees, the consumers and the franchisees. Subsidisation requirements can be met through the USO funding arrangements (discussed subsequently). Suitable institutional arrangements can be put in place to make such franchising arrangements a win-win proposition for the licensee, the franchisee/local body and the State Government⁶.

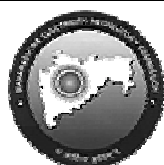
25. It is relevant to note that while strategies on franchising and innovative arrangements for rural supply and subsidy administration may or may not have significant bearing on the territorial definition of the distribution companies, they can potentially affect aspects like staff allocation, capital structuring, etc. Hence such approaches need to be adequately factored into the restructuring initiatives.

26. Establishment of such franchising arrangements would require establishment of systems for monitoring service standards and other performance measures of the franchisees. As per the provisions of the Electricity Act, 2003, primary responsibility of maintaining performance standards would continue to be the obligation of the distribution licensee in the area. The distribution company on its part can put in place suitable incentive/penalty mechanisms to ensure that the performance of the franchisee meets the desired standards and targets. Adequate metering and related infrastructure would need to be established on priority basis to ensure commercial accounting, adherence to quality of service standards and governance requirements. A comprehensive framework for evaluation of commercial performance of licensees and franchising on release of connections, billing, fault rectification, etc would also need to be implemented.

⁵ Based on directions of the High Court, Nagpur Bench the GoM requested MERC under Section 22(2)(p) of the Electricity Regulatory Commissions (ERC) Act, 1998 to examine as to whether and under what conditions MPECS should be allowed to continue its operation, and to make recommendations to GoM in the matter.

⁶ The simple example below exemplifies how such arrangements can be beneficial for all parties. Assume cost of grid supply/extension = Rs. 1000,000 met through Rs. 500,000 in tariffs and Rs. 500,000 in subsidies.

For alternate supply cost of supply = Rs. 900,000. The alternate supplier would now receive Rs. 400,000 in subsidies. The remaining Rs. 100,000 could be shared between the licensee and the State Government. This would encourage the licensee to seriously evaluate alternatives to grid supply, while potentially resulting in savings in subsidy for the State Government.



27. As the Commission has mentioned in its earlier recommendations, the State Government should develop a comprehensive reform implementation plan while undertaking the restructuring exercise. The measures suggested by the Commission should be considered while developing the plan.

(iii) Subsidy financing and administration

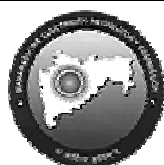
28. The subsidy financing and administration in the new sector structure featuring multiple sources and recipients would need to be managed differently. The large gap between revenues and costs in certain distribution companies cannot be addressed by differential allocation of power purchase costs or capital liabilities alone. The Commission has pointed out in its earlier advice to GoM that there are several limitations in following such an approach, which can be a part solution at best. In general the experience across the world has been that rural electrification programmes can rarely be self-supporting (including in developed countries). Hence, a transparent mechanism for servicing the subsidisation requirements is preferable to alternative measures that introduce new risks and rigidities in the sector. The need for continued subsidisation, and certain options on transparent subsidy administration arrangements has also been highlighted in the report of the Study Group on *Transfer of Maharashtra State Electricity Board's Rural Electricity Distribution & Rural Electrification Schemes to Panchayats*.

29. The Commission is of the opinion that a separate Power Development and Subsidisation Fund (PDSF) should be set up to administer subsidies and facilitate development of the sector – particularly in the rural areas. Several countries across the world have shifted to such funding arrangements for providing 'smart subsidies' to companies that wish to serve the universal access market, or directly to customers. 'Smart subsidies' are operational in several Latin American countries and some Asian and African countries. Such subsidies could replace the concept of enforced cross-subsidisation, currently prevalent in the country.

30. Several important issues would need to be addressed in this regard to ensure that the operation of the PDSF is transparent:

- a. What purposes should the fund be utilised for?
- b. How should the fund be financed?
- c. If a tax or charge (akin to a USO charge) is introduced for certain categories of consumers/licensees, what should be the value of the charges?
- d. Who should collect and distribute the charges for the fund?
- e. Who should administer the fund? What should be the governance structure?

31. Annexure III to this report provides some examples on such methods of funding of USO arrangements across sectors in various countries. It provides a relevant extract that provides an overview of legislative efforts and practices in the USA for a comprehensive energy assistance



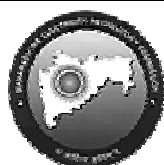
programme implemented there. In Maharashtra (and in India in general), where the need for subsidisation is much higher, the need for such funding arrangements cannot be overstated.

32. The Commission is of the opinion that all subsidies that are intended for objectives for which the fund has been established should be routed through the fund. This will encourage proper targeting of such subsidies and aid transparent administration. The impact of the subsidies can also be better evaluated. It is desirable that the production or consumption taxes for the funding of the PDSF and the committed subsidies to be made available are declared upfront. This will prevent uncertainty among the consumers/utilities who are contributing to or accessing the fund, and will also provide the necessary clarity for budgeting by the Government(s) for this purpose. With reasonable assumptions on tariffs, the funding requirements (through taxes and subsidies/grants) can be computed. While changes from the baseline performance parameters and tariff assumptions - and hence the funding requirements - are inevitable, the approach would provide reasonable certainty to all concerned, and would facilitate healthy development of the sector in the State. The State Government would be free to provide higher subsidies and subventions if required to meet subsidisation requirements for particular licensees, consumers or classes of consumers in line with the provisions of the Electricity Act, 2003. Also, while the Commission would not be bound by the tariff assumptions made, they would certainly guide the Commission in the tariff setting process and would thus provide the necessary regulatory certainty to the consumers and licensees.

E. SOME CLARIFICATIONS ON ADVICE DATED 14.05.2004

33. The Commission also takes this opportunity to briefly clarify and elaborate some matters contained in its earlier advice to GoM (summarized at Annexure I) to bring out its intention, as follows:

- (a) The Commission had suggested that a representative body from the industry be established to oversee the operations of the SLDC. The intention was not to dilute the independence of the SLDC, but to bring together relevant stakeholders to advise the SLDC on operation related issues.
- (b) With regard to the need expressed by the Commission to introduce an intra-State ABT mechanism, the Commission is of the view that the frequency band of 1.5 Hz (presently adopted in the regional system) would require to be reduced under such a mechanism in order to achieve better power quality.
- (c) The Commission also believes that a mechanism needs to be set up to ensure that load addition is matched by capacity augmentation.



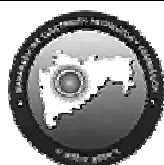
F. Conclusions

34. Based on its analysis and review of national and international practices, the Commission, is of the opinion that it would be appropriate to form five or six distribution companies out of the present distribution operations of MSEB. The distribution companies should be appropriately structured to ensure that they are not unwieldy. The configuration of the distribution companies should consider the possible and likely changes in the short and medium term in the efficiency levels of the distribution companies, and the rationalisation of tariffs as per the requirements of the Electricity Act, 2003. Disproportionate allocation of capital liabilities and power purchase costs is inadvisable, since this can lead to inflexibility in sector operations in future.

35. The Commission, after having reviewed the options forwarded by the State Government, is of the opinion that necessary safeguards need to be implemented to ensure protection of consumer interests in the restructuring exercise. In particular, if the Urban-Rural Discom model is adopted, appropriate safeguards will be necessary to ensure adequate funds for rural electricity services. A separate power development and subsidisation fund should be established for capital and revenue subsidies. The fund can be financed through a tax or cess on certain categories of consumers or on utilities. Central and State Government grants and subsidies should be routed through the fund, if they are intended for purposes for which the fund has been established. The administration of the fund should be transparent based on clearly established objectives and principles. Suitable governance structures should be incorporated.

36. Newer and innovative methods for rural electrification need to be evaluated and over-reliance on the conventional model of extending utility supply needs to be reduced. The distribution companies should evaluate local body participation and franchising options to reduce operating costs and improve efficiency in operations. Community involvement, private participation and competition should be ensured to the extent possible to reduce costs and meet specific requirements of communities. The Electricity Act, 2003 provides the enabling structure on such issues and the same should be utilised to the fullest extent.

37. The Commission recommends that the State Government, through a qualified expert body/consultants, should undertake further studies and analysis on the issues and suggestions provided in this document and in the earlier advice of the Commission on restructuring of MSEB. Based on such studies and analysis, the framework for restructuring of MSEB and development of the electricity sector in the State should be put forth for public views and comments. The final framework on sector structure should be decided duly considering the comments and opinions elicited.

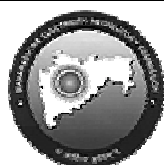


Annexure

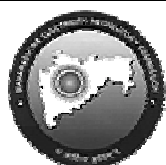


**Annexure I: Summary of the recommendations of the Commission to the State
Government dated May 14, 2004**

Viability of all distribution companies	The State Government should ensure that the dissimilarities in consumer mix and operating parameters do not result in a situation that makes the operations of any particular company unviable.
Minimisation of risks in PPA allocation	While an optimal power purchase cost allocation based on “capacity to pay” may be necessary, certain risk factors would need consideration (e.g. reliance on specific stations, hydrology risks, risks arising out of consumer mix changes, etc). The term of any PPA implemented for the stations of MSEB and allocated to the successor companies should be restricted to 3-5 years to preserve flexibility for future reallocation.
Meeting GoM objectives (if any) of tariff stability and uniformity	The State Government should formulate specific mechanisms as a part of the restructuring process to ensure that objectives of end use tariff uniformity across the A trading company vested with management of peaking power (including hydro), and also for undertaking trading on behalf of the distribution companies could be considered as an interim measure.
Redistribution of liabilities of MSEB	Redistribution of liabilities between the successor entities in order to bridge differences in financials and performance may be acceptable, but only to a reasonable extent. In general the debt allocated should not be disproportionate to the assets of the distribution company.
Innovative arrangements for rural supply	The Commission outlined the need for innovative arrangements on rural distribution management through franchising arrangements to reduce the high level of losses in the rural areas. The Commission noted with concern that certain rural circles have Aggregate Technical and Commercial Losses (AT&C) losses in excess of 80%.
Operation of the SLDC	The Commission concurred that the State Transmission Utility (STU) should operate the State Load Despatch Centre (SLDC) for the present. However, the State Government may consider establishing a representative



	body from the industry to oversee the operations of the SLDC
License area of second licensee	The Commission opined that the intent of the Act is to promote competition and the Commission is averse to recommending any structural measures that could be perceived to be negation of the intent of the Act in any manner. The Commission would have to be guided by the contents of the Electricity Act, 2003, and the policies formulated under it.
Principles of cross-subsidy computation	The philosophy of the Commission on reduction of cross-subsidies is well articulated in all the tariff orders of the Commission. In principle, the Commission remains committed to the implementation of cost based tariffs and progressive reduction and elimination of cross-subsidies.
Payment of subsidies by the GoM	Timely payment of subsidy will be critical to the financial health of the successor entities. Upfront commitment on subsidies would provide the distribution companies the necessary comfort on operations and investments.
Investment requirements in distribution	The State Government should adequately consider the investment requirements that may be necessary in the distribution companies to reduce losses, improve quality of supply and implement open access as directed by the Commission.
Valuation of assets	Section 131 (2) of the Electricity Act, 2003 permits valuation of assets based on revenue potential. The approach to determining the revenue potential should be scientific and should not result in ad-hoc asset valuation. Care should be taken to ensure that there is no tariff shock on this account. Discrepancies between the financial values of assets and physical assets transferred should be prevented.
Provisioning of receivables	Suitable provisioning of overdue receivables should be made to ensure that the distribution companies are not unduly burdened with legacy of the past. The State Government must also ensure that dues of MSEB from the State Government are suitably adjusted in the restructuring process.



Extension of Availability
Based Tariffs (ABT)

The Commission was of the view that the Availability Based Tariffs (ABT) arrangements would need to be extended to the in-State generators and loads for handling imbalances vis-à-vis schedules and settlement thereof. The ABT mechanism would also serve as a trading platform and would thus promote efficiency and market development. Suitable settlement infrastructure should also be implemented

Development of
capabilities in successor
entities

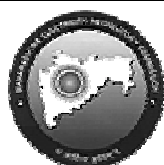
The Commission was of the opinion that significant capacity development will be necessary in the successor entities of MSEB. The State Government, in the opinion of the Commission, should formulate an overall reform implementation plan to ensure that the benefits of reform and restructuring reach the end consumer.



Annexure II: Review of national and international practices and recommendations on rural supply and subsidisation

The Commission has reviewed certain international experiences (particularly Latin America, which shares several socio-economic characteristics with India) that provide certain important pointers:

- **Rural electricity supply needs to be made an attractive proposition for suppliers:** In Chile, the rural electrification program aims to create market incentives for suppliers. Under the scheme the State does not own or operate any facility built under the rural electrification program—that is the role of private investors. The aim is to make rural electrification projects an attractive business opportunity for electric utilities. Companies are required to invest their own resources to increase their commitment to the success of projects. State subsidies are provided only to projects with a positive social return. The first choice is grid supply if the costs permit. However, wherever the costs (evaluated as per an approach based on nationally and internationally practiced methods) exceed the costs of alternatives, suitable alternatives are considered. The model has been very successful in extending rural electricity services in Chile.
- **Private participation should be encouraged:** In Argentina, a scheme of off-grid rural supply rural supply concessions has been introduced to serve remote locations where grid supply is difficult to reach. Concessions are eligible to re-bid for their business every 15 years up to a total of 45 years, competitively against other eligible firms. Tariffs are renegotiated every 2 years. The financial rate of return to be obtained by the concessionaires has been estimated to be close to 14%. The programme has witnessed considerable success in extending electricity services in remote areas.
- **Local participation is vital for successful rural services:** Much of the successful rural electrification efforts in Latin America have depended heavily on local participation. International experience demonstrates that the main power utilities have institutional difficulty in meeting the special demands of rural distribution. Local community level problems often are not addressed by utilities (e.g., right of way, theft, payment default, optimal resource utilisation, etc.). Joint financing by local bodies or users also increases ownership and responsibility for assets.
- **Competition for rural projects is feasible and beneficial:** Chile has successfully introduced competition at several levels. The various communities compete with each other for financing of their projects. Distribution companies compete on implementation of the projects, since these projects earn them a commercial return, once commissioned. Regions compete for funds from the central government. The availability of such funds is linked to implementation, and hence there are inherent incentives for prompt



commissioning. Since decision making is decentralised and the rules for selection of projects are transparent and stable, this generally leads to controlling of costs through choice of appropriate technology and prompt implementation.

The Commission, in the case of Mula Pravara Electric Co-operative Society (MPECS), has arrived at similar conclusions on some of the issues involved in rural distribution. MPECS was provided with a license to distribute electricity in 183 villages spread over 5 Talukas in Ahmednagar District by Government of Maharashtra (GoM) on January 28, 1971. As on March 31, 2002, MPECS had a supply base of 1.37 lakh consumers. Based on directions of the High Court, Nagpur Bench the GoM requested MERC under Section 22(2)(p) of the Electricity Regulatory Commissions (ERC) Act, 1998 to examine as to whether and under what conditions MPECS should be allowed to continue its operation, and to make recommendations to GoM in the matter. The views of the Commission were sought on three basic issues:

- i. To assess if MPECS' operations are at least as efficient as comparable distribution areas of MSEB in terms of T&D losses, Collection efficiency, administrative & other costs, level of service in terms of parameters such as transformer failure, response time in fuse calls, time taken to grant new connections, etc.
- ii. Preparation of a time bound programme listing out specific milestones to be reached and made conditional for the continuation of its distribution license as well as for support from GoM and MSEB.
- iii. The parameters and formula for a viable bulk rate for purchase of electricity by the MPECS from MSEB, whether such a bulk rate is desirable and justifiable and if not, the subsidy which would be required to sustain MPECS.

Based on a review of operations of MPECS the Commission recommended in its advice to the GoM that MPECS should continue in its license area as an operator, preferably as a franchisee of MSEB. The key findings of the Commission are as follows:

- MPECS' performance is better than MSEB in the adjoining rural area as well as comparable areas of MSEB in terms of financial and commercial parameters, and also with regard to customer service.
- In order to enable MPECS to turn around its operations during the transition period, a separate mechanism to discharge the past power purchase dues and accumulated losses of MPECS should be evolved, so that the future operations of MPECS are not overshadowed by the burden of past dues.
- Rural supply requires some form of continuous assistance in the present context of the economy, and the sector strategy in this regard should take cognisance of the same. In addition to the above, GoM may consider providing capital subsidy for installation of decentralised energy supply systems based on local resources such as bagasse based



co-generation, biomass based power plants, etc. by MPECS to meet its demand. This would enable self-sufficiency and long-term sustainability of MPECS' operations and reduce MPECS' dependence on GoM for revenue subsidies during the transition period.

The Commission advised that the GoM could consider the findings of the Study Group constituted by GoM on decentralisation of Rural Electrification to Panchayats and alternative structures for supply of electricity in rural areas before taking a final decision on the sustenance of MPECS. The key findings of the study were as follows:

- MPECS case study supports the fact that involvement of local entities could help in creating administratively efficient structures
- Proposed reforms and restructuring in India should take note of learnings from these earlier models and analyze the grass-root level reasons for their better performance
- Good performance by MPECS (even with low willingness to pay) goes to suggest that smaller, manageable but sizeable clusters could better the sector performance
- With a clear policy framework and with involvement of such entities, well run franchisee/local body models can therefore lead to a significant improvement in sector performance
- Customer satisfaction is the key to achieve better performance on receivables and collection efficiency.

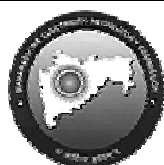
The study concluded that efforts to develop and support franchisee/ cooperative/ local body models should continue. The study made a specific observation that the three tier Panchayati model was well suited for universal application for electricity distribution across Maharashtra. Review by the study group revealed that several rural supply models are operating successfully across the world and have fostered efficiency and quality in rural utility services. It is apparent that the present sector restructuring initiatives should be combined with such initiatives to ensure efficiency and sustainable development of the sector as a whole.



Annexure III: International examples of service obligations for serving socio-economic objectives

Table: International examples of USO arrangements across sectors

Country/State	Sector	USO arrangements		
		Funding	Disbursal	Governance
Wisconsin, USA	Electricity/Gas	1. Federal assistance for low income and weatherisation 2. Utility contribution 3. Non-taxable customer charge	1. Income assistance 2. Weatherisation assistance	State Benefit fund/Rural co-operative fund collects monies. Administered by administrator as per set criteria
Oregon, USA	Electricity	1. Federal funds 2. Per connection charge	1. Income assistance 2. Weatherisation assistance	Public purpose fund administered by State
Uganda	Telecommunications	Fixed charge on revenues of all telecommunications service providers	1. For rural telephony obligations	Rural Communications Development fund (RCDF) creates a subsidy pool. Lowest bidder for subsidies is the selected service provider
Canada	Telecommunications	Toll on all long distance traffic carried by local carriers	To all service providers based on number of residential connections and the tariffs charged	Not available
Argentina	Electricity	From National and Provincial Governments	National Electricity fund established. 60% for tariff subsidies. 40% for rural electrification	Subsidies provided only for states that adhere to reform objectives/tariff principles
Argentina	Gas	1. National and Provincial Governments 2. Other agencies like Pension Office (for supply to aged)	Compensation based on differences between costs and charges	Not available



Case Study: Legislation on low-income energy assistance programs in the United States of America

Extract from Workbook: “INTEGRATING GOVERNMENT-FUNDED AND RATEPAYER-FUNDED LOW-INCOME ENERGY ASSISTANCE PROGRAMS”

LIHEAP Committee on Managing for Results

U.S. DEPARTMENT OF HEALTH AND HUMAN SERVICES

Restructuring activity at the state level has been limited in 2000 and 2001. Michigan is the latest state to pass comprehensive utility restructuring legislation, and it was the only state to pass such legislation in 2000.

During 2001, no state passed restructuring legislation; however a number of them, such as Arkansas, Nevada and West Virginia passed legislation to substantially curtail restructuring's implementation or to put it on hold.

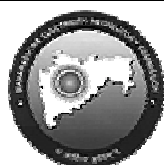
As of October 2001, according to the Energy Information Administration (EIA), 23 states and the District of Columbia have enacted comprehensive restructuring legislation. One state, New York, has allowed restructuring to proceed through regulatory commission order. Georgia has natural gas restructuring, but has had little activity on the electric side.

The states with comprehensive electric (and in some cases gas) restructuring legislation are now:

Arizona, Arkansas, California, Connecticut, Delaware, District of Columbia, Georgia, Illinois, Maine, Maryland, Massachusetts, Michigan, Montana, Nevada, New Hampshire, New Jersey, New Mexico, Ohio, Oklahoma, Oregon, Pennsylvania, Rhode Island, Texas, Virginia, and West Virginia

Three states, Vermont, Wisconsin, and Minnesota, opted not to pass restructuring legislation, but did establish mechanisms for funding of low-income energy programs in the event that restructuring eventually could occur.

Among the remaining states, most have active legislative and/or regulatory processes underway to study restructuring and propose implementing legislation. According to the EIA, Alabama, Georgia, Hawaii, Idaho, Kansas, Nebraska, South Dakota, and Tennessee have undertaken little electric restructuring activity to date.



The LIHEAP Clearinghouse continues to focus on how programs that help low-income customers afford their electric bills will fare as a result of the restructuring process. The trend is toward funding them through universal systems benefits charges, also known as public benefits charges, to be assessed by local power distribution entities, which will remain regulated.

Some states that approved restructuring legislation have called for the continuation and expansion of existing low-income rate assistance and conservation programs, e.g., California, Massachusetts, Ohio and Montana. Others, such as Illinois, New Hampshire and Texas, funded low-income energy programs for the first time as part of the restructuring process.

How the low-income programs will be administered has been decided in some states, and remains to be seen in others, as discussed below. The National Center for Appropriate Technology's LIHEAP Clearinghouse makes available a state-by-state narrative of low-income system benefits charge programs. The information presented in this summary is compiled from previous issues of the LIHEAP Networker and additional research by the Clearinghouse. The NCAT summary also provides state-specific World Wide Web links to each state program funded through a system benefits charge. State-specific information about each low-income program can be obtained through these links.

