FORUM OF REGULATORS

MULTI-YEAR TARIFF FRAMEWORK

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FORUM OF REGULATORS
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EXECUTIVE SUMMARY

The Electricity Act, 2003 (EA 2003) in section 61 provides the guiding principles which the Appropriate Commission is required to follow while specifying the terms and conditions of tariff. One of the guiding principles includes multi-year tariff (MYT) principles. The Tariff Policy framed under the provisions of the EA 2003 provide a broad framework for MYT for generation, transmission and distribution.

At the central level, the Central Electricity Regulatory Commission (CERC) has all along followed MYT principles for generation and transmission. It specified tariff regulations based on MYT principles for the period 2001-04 and subsequently for the period 2004-09 and recently for 2009-14. At the State level, however, not all State Commissions have specified tariff regulations based on the MYT framework.

The Forum of Regulators (FOR) has discussed the issues involved in implementing the MYT framework at the distribution level. As required under the Tariff Policy, the Forum also considered the scope of applicability of distribution margin (DM) concept for distribution. The Forum had constituted a Group earlier to examine the feasibility of adopting the Distribution Margin (DM) approach. The Group felt that the DM approach, which owed its genesis to Karnataka, was primarily envisaged as a model for privatisation of distribution and that the DM concept could not be applied as several of its features contravened the provisions of EA 2003. The Group went on to recommend a broad framework for MYT principles.

The Forum deliberated on the report of the Group and felt that the issues be examined once again for implementation of MYT principles as well as the DM concept as a basis for allowing returns in distribution business, and decided to constitute a Working Group for the purpose. The Working Group deliberated on the issues around these two concepts and submitted its report which was considered by the Forum in its meeting in Chennai on January 30, 2009.

The report, as adopted by the Forum, examines the following with recommendations as applicable: (i) distinctive features of the MYT framework adopted by some State Commissions; (ii) details of controllable and uncontrollable factors; (iii) a proposed model

MYT framework; (iv) a template highlighting, inter alia, the controllable and uncontrollable factors which the State Commissions may adopt and implement the MYT framework; (v) expenses on account of uncontrollable factors should be allowed as a pass through in tariff; (vi) for controllable parameters, the norms and trajectory for improvement over the base level be fixed and efficiency gains on account of improved performance shared with the consumers; and (vii) linking of recovery of fixed cost to the supply and network availability of the distribution licensee.

As regards the distribution margin, the report recommends that a separate study be commissioned by the FOR.

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1 Introduction

1.1 Constitution of the working group (WG)

1.1.1 The FOR was constituted by Notification of February 16, 2005 in pursuance of the provision under section 166(2) of EA 2003. The FOR consists of the Chairperson of the CERC and the Chairpersons of State Electricity Regulatory Commissions (SERCs). The Chairperson of the CERC is the Chairperson of FOR.

1.1.2 For smooth and coordinated development of the power system in the country and to evaluate and address issues in operationalising MYT and DM, the FOR decided to constitute a WG on "MYT Framework and Distribution Margin" at its meeting on June 13, 2008.

1.1.3 The Scope of Work of the WG was to, *inter-alia* consider the relevant provisions of the National Electricity Policy, the Tariff Policy, various models of MYT being adopted by SERCs and to give its recommendations on the following:

- Details of the MYT model suggested for distribution licensees
- Sharing of benefits of efficiency gains with consumers
- Need and feasibility of implementing DM as a basis for allowing returns in distribution business; and
- Any other relevant issue.

1.1.4 The Chairperson of the FOR was authorised to nominate SERCs on the WG. Accordingly, the WG on "MYT Framework and Distribution Margin" was constituted as follows:

i)	Chairperson, CERC	...	Chairperson
ii)	Chairperson, AERC	…	Member
iii)	Chairperson, JSERC	…	Member
iv)	Chairperson, MPERC	…	Member
v)	Chairperson, MERC	…	Member
vi)	Chairperson, RERC	…	Member
vii)	Secretary, CERC	…	Member
viii)	Deputy Chief (**RA**), CERC	…	Coordinator.

1.1.5 The Secretariat of the FOR acted as the Secretariat of the WG. Since the MERC

offered to support the FOR Secretariat for the WG, the representative Regulatory Experts from MERC assisted the FOR Secretariat for this WG.

1.2 Deliberations of the working group

1.2.1 The first meeting of the WG was convened at Lonavala on July 21, 2008 when the following members attended:

1. Dr. Pramod Deo, CERC
2. Shri J.L. Barkakati, AERC
3. Dr. J.L.Bose, MPERC
4. Shri A. Velayutham, MERC
5. Shri K.L. Vyas , RERC
6. Shri Rajupandi , TNERC
7. Shri Alok Kumar, CERC
8. Shri S. K. Chatterjee, CERC

1.2.2 To facilitate the discussion on MYT Framework and DM, the Regulatory Experts of MERC, which was acting as the Secretariat to this WG, were requested to make a presentation on the issues. The discussions of the WG focussed on the issues highlighted in the presentation.

1.2.3 A Draft Report summarising the deliberations of the WG and issues finalised during this meeting was circulated for further consideration, with the Discussion Summary classified under the following three categories.

- Issues and action plan finalised during the meeting
- Issues to be finalised in the next meeting
- Issues to be considered after detailed study

1.2.4 The second meeting of the WG, to finalise the recommendations and deliberate further on the few outstanding issues, was convened at Bhubhaneshwar on November 14, 2008 with the following participants:

1. Dr. Pramod Deo, CERC
2. Shri Mukhtiar Singh, JSERC
3. Dr. P.K. Mishra, GERC
4. Dr. J.L. Bose, MPERC
5. Shri A. Velayutham, MERC
6. Shri K.L. Vyas , RERC

7. Shri B.K. Das, OERC

8. Shri J.P. Saikia , AERC

9. Shri Alok Kumar, CERC

10. Shri S. K. Chatterjee, CERC

1.2.5 The WG has now finalised its recommendations on each issue identified under the Terms of Reference, and these are organised under the following chapters:

a. Chapter-2: MYT Model for Distribution Licensee

b. Chapter-3: Sharing of Benefits of Efficiency Gains with Consumers

c. Chapter-4: Feasibility of Adopting Distribution Margin Concept

d. Chapter-5: Fixed Cost Linked to Availability for Distribution Licensee

e. Chapter-6 :Summary of Recommendations

f. Chapter-6 : Suggested MYT Framework

2 MYT model for distribution licensee

2.1 Statutory framework

2.1.1 Section 61 of EA 2003 requires the Appropriate Commission to be guided by MYT Principles while specifying the Terms and Conditions for determination of tariff.

2.1.2 Clause 5.3 (h) of the Tariff Policy stipulates that:

1. *"The MYT framework is to be adopted for any tariffs to be determined from April 1, 2006. The framework should feature a five-year control period. The initial control period may however be of 3-year duration for transmission and distribution if deemed necessary by the Regulatory Commission on account of data uncertainties and other practical considerations. In cases of lack of reliable data, the Appropriate Commission may state assumptions in MYT for first control period and a fresh control period may be started as and when more reliable data becomes available*
2. *In cases where operations have been much below the norms for many previous years the initial starting point in determining the revenue requirement and the improvement trajectories should be recognized at "relaxed" levels and not the "desired" levels. Suitable benchmarking studies may be conducted to establish the "desired" performance standards. Separate studies may be required for each utility to assess the capital expenditure necessary to meet the minimum service standards.*
3. *Once the revenue requirements are established at the beginning of the control period, the Regulatory Commission should focus on regulation of outputs and not the input cost elements. At the end of the control period, a comprehensive review of performance may be undertaken.*
4. *Uncontrollable costs should be recovered speedily to ensure that future consumers are not burdened with past costs. Uncontrollable costs would include (but not limited to) fuel costs, costs on account of inflation, taxes and cess, variations in power purchase unit costs including on account of hydro-thermal mix in case of adverse natural events."*

2.2 Experiences in the country

2.2.1 Several SERCs have notified MYT Regulations, and many have also issued

MYT Orders. The summary status in this regard is given in Appendix 1.

2.2.2 The MYT framework adopted in some selected States, namely Maharashtra, Delhi, Andhra Pradesh, and West Bengal, has been presented in Appendix 2.

2.3 Key issues addressed

2.3.1 In view of this, the following issues were raised during the deliberations of the WG:

Issue 1: Contours of MYT

- The present MYT framework is actually a multi-year trajectory for performance parameters, and determination of ARR and tariff is undertaken on an annual basis
- Ought SERCs look forward to genuine MYT during the second control period? If so, what should be the criteria? These include:
    - Should the RPI-X model (price cap or revenue cap) or tariff determination be undertaken annually?
    - Data availability and quality
    - Linkage of expenses to economic indices
    - Separation of network and supply business
    - Accounting separation between network and supply business vs. allocation and need for uniform basis as the guideline

Issue 2: Controllable parameters for distribution business

- Distribution loss level (except in cases where improved data availability requires loss trajectory to be reset).
- Capital expenditure and capitalisation
- Normative working capital and need for reassessment of normative levels
- Operation and Maintenance (O&M) expenses

Issue 3: Uncontrollable parameters for distribution business

- Sales forecast
- Sales mix
- Mix of power purchase sources
- Uncontrollable fuel costs
- Transmission charges

Issue 4: Operational parameters for distribution business

- Aggregate Technical and Commercial (AT&C) loss vs. distribution loss
- Should total distribution loss or separate trajectory be reckoned for technical and commercial loss? Is it possible to segregate technical and commercial losses?

- Collection efficiency
- O&M expenses

Issue 5: Base level performance

- Should norms be linked to actual performance levels or desired levels?
- If actuals are to be considered, for how long will poor performance be accepted?
- Will actuals also be considered for the next control period, if the actual performance is still poorer than the desired levels?

Issue 6: Treatment of power purchase

- Should power purchase quantum be determined by grossing up actual or desired loss levels?
- Should reduction in distribution losses be considered towards reduction in power purchase quantum or increase in energy billed?
- Will the demand-supply gap in the State have any bearing on this issue, apart from whether technical or commercial losses are being reduced?

Issue 7: Restatement of norms

- Operational norms need to be restated for each control period, based on the actual performance achieved during the previous control period, under the heads:
    - Treatment in case of actual performance is better than norms
    - Treatment in case of actual performance is poorer than norms

Issue 8: Uniform retail tariffs across the State

- Should Retail Supply Tariff (RST) be uniform across different distribution licensees in the State in the following scenarios:
- In States where discoms have been created by unbundling SEBs
- In States where private discoms have existed for a long time
- In case uniform RST is desired, should it be achieved by:
    - State government subsidy adjustment?; or
    - Any other methods?

Issue 9: Tariff determination

- Should tariffs be determined on the basis of:
    - Average cost of supply
    - Voltage-wise cost of supply
    - Category-wise cost to serve

Issue 10: Cross-subsidy reduction

- Is it possible to achieve cross-subsidy levels of ± 20% of average cost of supply by 2011-12, as stipulated in the Tariff Policy?

Issue 11: Linkage of capex and performance trajectory

- Is it possible to derive a direct linkage between capex approved and performance norms, considering the following?
    - Identification of aspects where direct linkage is possible, coupled with the need for scheme-wise accounting of capex
    - Identification of aspects where direct linkage is not possible
- Action to be taken in case performance norms are not achieved, even after incurring the approved capex
- Should the capex related expense heads, namely depreciation, interest and **ROE (CHECK**, be disallowed or reduced once the control period is over?
    - If so, should this be done with or without carrying cost?

2.4 Summary of deliberations

2.4.1 Internationally, MYTs are determined for the control period under the (RPI-X) formula, where the tariff in the subsequent year is lower in real terms, after considering the effect of inflation (Retail Price Index – RPI), on account of the efficiency factor 'X'. However, in the Indian context, the regulatory commissions have been determining tariff on an annual basis, due to data constraints and uncertainty in sales projections and power purchase, on account of load shedding, etc. Here

2.4.2 As regards annual tariff determination vs. long-term tariff determination over the control period, it was felt that generally the practice of annual tariff determination is followed because of the following two critical factors: (a) with significant un-metered consumption levels as are prevalent and until alternate options of group metering and feeder metering emerges, the ascertaining of loss level is crucial; and (b) with significant shortages in energy and peak power, estimation of long-term power purchase cost and estimation of cost and availability of expensive power sources with certainty at the beginning of the control period is difficult. However, it was argued that annual revision of norms might not be desirable. During the first control period, which should not be more than three years, the tariff norms may be specified as close as possible to the actual level of performance and a trajectory of improvement of norms to the desired level be provided, with adequate incentive and disincentive mechanism, for sharing efficiency gains with consumers.

2.4.3 Under the MYT regime, it is essential that supply and networks costs be

segregated to begin with and scheme-wise capital expenditure during the control period tracked for segregated costs.

2.4.4 Though sales forecasts are to be treated among the controllable factors in accordance with the Tariff Policy, it may be difficult for the licensee to control these in a period of shortages.

2.4.5 Distribution loss levels (unless reset), bad debts, capital expenditure, O&M expenses and normative working capital should be treated as controllable factors. However, there might be difficulties in arriving at norms for working capital on account of the following:

a. Security deposit obtained from the consumer spent for other purposes.

b. Large outstanding dues of street lighting and water works and other similar essential establishments or departments of the State government.

c. Tendency of the State government to adjust the subsidy against outstanding loans, which in turn causes cash flow problems.

2.4.6 It was felt that regulations of SERCs should explicitly dis-allow adjustment of subsidy against outstanding loans. The State governments must also ensure timely payment of outstanding dues of consumers such as street lighting and water works, if necessary, by making deductions from the grant payable to local bodies.

2.4.7 Regulations of the SERC should explicitly provide for issue of bills on the basis of tariff determined by the SERC if the State government does not pay the due subsidy in time and in cash. This is in accordance with the provisions of section 65 of EA 2003. Para 8.2.1(3) of the Tariff Policy also requires the SERCs to determine the tariff initially without considering the subsidy commitment by the State government, separate from subsidised tariffs, after considering the subsidy for consumer categories. The Andhra Pradesh Electricity Regulatory Commission (APERC) has already implemented this.

2.4.8 Capital expenditure plans of the licensees are required to be scrutinised through prudence check to establish the link between cost and benefits, either in terms of loss reduction or reliability enhancement. Such analysis also helps in prioritising capital expenditure. It was decided that a consultancy study be assigned for evolving the norms for capital expenditure by distribution licensees. The WG emphasised the need for development of Regulatory Information Management Systems (RIMS) and databases across States for effective benchmark costs, to become the basis for prudence check for capex proposals. Besides, scheme-wise tracking for approved capex schemes and monitoring capitalisation or expected

benefits is critical. For realistic capex assessment, standard guidelines need to be developed with rules for prioritisation of schemes. For instance, schemes addressing congestion or over-loading of transformers or networks should be accorded high priority.

2.4.9 SERCs should come up with capital cost benchmarks for prudence checks and these should be in the public domain. Justification should be sought by SERCs if any project cost exceeds the benchmark costs. Also, prioritisation of schemes should be undertaken, since all the schemes cannot be undertaken at the same time. Schemes related to easing of network congestion or overload should be taken up on priority.

2.4.10 Utilities tend to overstate their ability to spend on capital expenditure, and often Regulators approve the entire projected capital expenditure, resulting in increased tariff due to depreciation, interest and return on equity on the additional capital expenditure. However, in reality, this level of capital expenditure is rarely achieved. Hence, there is a need for realistic assessment of capital expenditure and capitalisation that can be undertaken by the utilities.

2.4.11 Capital expenditure by distribution licensees usually has two objectives, namely (i) to meet the obligations under Standards of Performance (SOP) on account of the anticipated load growth; and (ii) distribution loss reduction by augmenting and strengthening the distribution network. After capitalisation of the expenditure, it is essential to evaluate whether the intended benefits of capital expenditure projected by the utility have been achieved, by mapping the scheme-wise objectives with accrued benefit. If at least 85% of the projected benefit is achieved, this can be allowed. Otherwise a disallowance in capital expenditure should be considered, related to revenue expenditure heads, namely depreciation, interest and return on equity on the additional capital expenditure.

2.4.12 The normative working capital for distribution businesses needs to be modified and a different approach may have to be considered.

2.4.13 After discussing the merits and demerits of measuring losses in terms of AT&C loss or Transmission and Distribution (T&D) loss, it was agreed that it is only the distribution loss which could be measured, and transmission losses should be dealt with separately. For purposeful measurement of distribution loss, Automated Meter Reading (AMR) based feeder metering and transformer metering is essential. The Rajasthan Electricity Regulatory Commission (RERC) and the Gujarat Electricity Regulatory Commission (GERC) stated that AMR based feeder level metering has been implemented successfully in their States.

2.4.14 The WG agreed that data on distribution loss levels should be verified through a

third party as envisaged in the Tariff Policy. However, the SERCs faced difficulties in finding competent third parties. It was suggested by the Tamil Nadu Electricity Regulatory Commission (TNERC) that the services of accredited energy auditors could be utilised for these assignments. In addition, academic institutions such as IITs and other engineering colleges could also be considered.

2.4.15 O&M expenditure should be allowed on normative basis by prescribing this in the regulations. However, the impact of revision in salaries due to Pay Commission recommendations etc, would have to be allowed as an uncontrollable factor.

2.4.16 To improve the performance level of employees, an incentive or disincentive scheme, linked to achievement of specified performance targets, should be adopted as a part of the performance appraisal process.

2.4.17 The WG also highlighted the need to investigate reasons for excessively high cost of recent short-term power purchase. The States should also not be allowed to earn money through UI, while undertaking load shedding at the same time.

2.4.18 The loss levels may be considered at actual level at the start of the first control period and an achievable trajectory given under the MYT framework. However, the loss level at the start of subsequent control periods should not be at actuals but fixed according to: (i) the targets set in the previous control period; (ii) actual performance; and (iii) efforts made. The norms should be revised after every MYT period with prospective effect.

2.4.19 To accelerate loss reduction, hours of load shedding (if unavoidable) may be linked to the loss level in the area (preferably at the sub-division level). MERC had earlier issued a tariff order linking the tariff to the loss in a particular area (areas with high loss levels were required to pay higher tariff) and this was legally upheld. In addition, an incentive and disincentive mechanism for field staff of the utility at the circle and sub-division level should also be put in place. For example, the Maharashtra State Electricity Distribution Company Ltd. (MSEDCL) has structured a disincentive scheme wherein the staff of the utility in a high loss area is transferred to non-executive appointments.

2.4.20 The proposition of maintaining the same tariffs for the areas of different licensees in a State is not in accordance with the EA 2003 and the Tariff Policy. The tariff levels should reflect the efficiencies achieved by a particular licensee. However, the State government has the discretion to give differential subsidy in areas of different licensees and also allocating the PPAs or Capacity of State

Generating Stations in different proportions to different licensees.

2.4.21 Tariff design for various consumer categories should be on the basis of average cost of supply as this is the most common method and has also been envisaged in the Tariff Policy in the context of reduction of cross-subsidy.

2.4.22 In the context of reduction in cross-subsidy, it was suggested that as in some States, feeder separation for supply to agriculture should be undertaken and a pre-announced supply of a minimum of eight hours daily be ensured for this category.

2.4.23 After discussing cross-subsidy reduction and linking the agriculture sector tariff with hours of supply, it was decided that a study be undertaken on the methodology for determining the cost of supply to agricultural consumers and alternatives to reduce cross-subsidy for this category of consumers.

2.5 Future course of action

2.5.1 After considering the above comments and suggestions, the WG concluded as follows:

Recommendations

2.5.2 Annual revision of performance norms and tariff may not be desirable. During the first control period, which should not be more than three years, the opening levels of performance parameters should be specified as close as possible to the actual level of performance and a trajectory of improvement of norms to the desired level be provided with a incentive and disincentive mechanism to share efficiency gains with consumers. Hence, any loss on account of underachievement of the target (trajectory) should be borne by the licensee (subject to the discretion of the SERC to share losses in extraordinary circumstances); and any gain on account of over-achievement could be shared between the licensee and the consumer, say, in the ratio of 2:3 or 1:3. Thus, at the end of every year, truing up vis-à-vis norms could be undertaken on these principles, without changing the norms set at the beginning of the control period.

2.5.3 The first control period shall be specified as three years and subsequent control periods as five years. The tariff for each year of the control period shall be determined at its beginning. Variation in fuel costs should regularly be passed through the Fuel Cost Adjustment Mechanism, with periodicity determined by the SERC, and there should be an adjustment mechanism for uncontrollable factors and sharing of efficiency gains based on annual truing up. The mechanism for recovery of fuel cost at periodic intervals shall be approved by

the SERCs.

2.5.4 Distribution licensees should submit the business plan and power purchase plan, for approval of the Commission, at least six months prior to submission of MYT petitions, comprising the following aspects:

- Category-wise sales projections
- Load growth details
- Power Procurement Plan from short-term and long-term sources
- Details of load shedding
- Capital expenditure and capitalisation plans, financing pattern and impact on related expenses
- Employee rationalisation

2.5.5 The Commission should issue its order on the business plan and power procurement plan within four months of submission, so that the licensee submits the MYT petition based on the approved plan.

2.5.6 Under the MYT regime, it is essential that supply and networks costs be segregated and capital expenditure during the control period tracked for segregated costs. Capital expenditure plans for network strengthening should be formulated by electricity division-wise with cost-benefit analysis and targeted reduction in technical losses.

2.5.7 Sales forecast should be treated as an uncontrollable factor, given the prevailing supply shortages and uncertainty in supply. The other uncontrollable factors for distribution licensee shall include

- Increase in power purchase expenses due to variation in sales and fuel costs
- Interest rates on long-term loans (if RoE approach is adopted) and working capital
- Increase in expenses due to force majeure
- Past unfunded pension liabilities and contribution towards terminal benefits to the trust or for provisioning

2.5.8 Controllable factors should include: (i) distribution loss or **AT&C** loss levels (unless reset due to better quality information, energy audit data etc.); (ii) capital expenditure; (iii) O&M expenses; (iv) normative working capital; (iv) collection efficiency; and (v) provisioning of bad and doubtful debts (in case of distribution loss approach). The Regulations of SERCs should disallow adjustment of due subsidy against outstanding loans. Such regulations in Karnataka have proved effective. However, adjustment of subsidy against electricity duty actually collected by distribution licensees may be allowed. State governments must also ensure timely payment of outstanding dues of

consumers such as street lighting and water works, if necessary, by making deductions from grants payable to local bodies.

2.5.9 The Regulations of the SERC should provide for issue of bills on the basis of tariff determined by the SERC where the State government does not pay due amount of subsidy in time and in cash.

2.5.10 Only distribution loss should be measured, for which AMR-based feeder metering and DT metering is essential. Transmission losses should be dealt with separately.

2.5.11 Data on distribution loss levels should be verified through a third party as envisaged in the Tariff Policy. The services of accredited energy auditors and academic institutions such as IITs and other engineering colleges could be utilised.

2.5.12 The loss levels may be considered at actual level at the start of the first control period and an achievable trajectory given under the MYT framework. However, the loss level at the start of subsequent control periods may be based on targets set in the previous control period, the actual performance and achievement efforts. The norms should be revised after every MYT period with prospective effect. If the distribution licensee does not reduce the losses as per specified trajectory, despite undertaking capital expenditure towards reducing the losses, this would amount to violation of directions and, in such cases, action under section 142 may be considered by the SERCs.

2.5.13 To accelerate loss reduction, an incentive and dis-incentive mechanism for the field staff of the utility at circle and sub-division level should also be put in place.

2.5.14 O&M expenditure should be allowed on a normative basis by prescribing this in the regulations.

2.5.15 The proposition of keeping tariffs at the same level in the areas of different licensees in a State is not in accordance with EA 2003 and the Tariff Policy. Karnataka has approved differential retail supply tariff for different distribution licensees in the State and this has been upheld by the Appellate Tribunal for Electricity. Hence, differential tariff structure in the area of different licensees in a State should be considered and the tariffs should reflect the efficiencies achieved by a particular licensee. However, the State government has the discretion to give differential subsidy in areas of different licensees and also allocate the PPAs and Capacity of State Generating Stations in different proportions to different licensees.

2.5.16 Tariff design for various consumer categories should be based on average cost of supply as this is the most common method and is envisaged in the Tariff Policy in the context of reduction of cross-subsidy.

2.5.17 A consultancy study be undertaken to evolve the norms for capital expenditure by distribution licensees. The WG emphasised the need to develop Regulatory Information Management Systems (RIMS) and databases across States for effective benchmark costs, which can enable prudence checks for capex proposals. For realistic assessment of capex requirements, standard guidelines should be developed and rules set for prioritisation of schemes.

2.5.18 A study be undertaken of the methodology for determination of cost of supply to the agricultural consumers and alternatives for reduction of cross-subsidy for this category.

2.5.19 A study be undertaken regarding incentive and disincentive systems relevant for government owned utilities.

2.6 MYT framework

2.6.1 The suggested MYT framework is in Chapter 7, with details of controllable and uncontrollable parameters, control period, periodicity of tariff determination, sharing of gains and losses etc, which can serve as a template for SERCs to move quickly towards the MYT regime, as envisaged under EA 2003 and the Tariff Policy.

3 Sharing of benefits of efficiency gains with consumers

3.1 Statutory framework

3.1.1 Clause 8.1 (2) of the Tariff Policy stipulates:

"The State Commissions should introduce mechanisms for sharing of excess profits and losses with the consumers as part of the overall MYT framework. In the first control period the incentives for the utilities may be asymmetric with the percentage of the excess profits being retained by the utility set at higher levels than the percentage of losses to be borne by the utility. This is necessary to accelerate performance improvement and reduction in losses and will be in the long-term interest of consumers by way of lower tariffs."

3.2 Key issues to be addressed

3.2.1 In view of this, the following issues were raised during the deliberations of the WG:

Issue 1: Sharing of gains and losses

- Sharing of impact only on account of controllable factors
- Should both gains and losses be shared between the licensee and the consumers?
    - Should the entire gain and losses be passed on to the consumer and utility in the same year, or should some reserve be created from gains, to offset losses in future years?
    - Should the mechanism of sharing be different for generating companies and distribution and transmission licensees?

Issue 2: Ratio of sharing of gains and losses

- Should gains and losses be shared in the same or different ratios?
- Should the sharing of gains and losses be asymmetric in the first control period, given the uncertainties involved?
- What should be the ratio of sharing, namely 50:50, 75:25 or any other?

3.3 Summary of deliberations

3.3.1 It was suggested that the losses on account of controllable factors should not be shared as the norm is to be fixed close to actuals, and any loss on account of under achievement of the target (trajectory) should be borne by the licensee, and only efficiency gains shared with consumers.

3.4 Future course of action

3.4.1 After considering these comments and suggestions, the WG concluded as follows:

Recommendations

3.4.2 The losses on account of under achievement in controllable parameters shall not be shared with consumers as norms are being fixed close to actual levels, except in extraordinary circumstances where decided by the SERC.

3.4.3 The efficiency gains with respect to controllable parameters shall be shared with consumers between licensee and consumer in the ratio of 2/3rd and 1/3rd). The efficiency gains shall be shared at the end of every year during the truing up exercise.

3.4.4 The entire gains and losses on account of uncontrollable factors shall be passed on to consumers during the “truing up” process.

4 Feasibility of adopting DM concept

4.1 Statutory framework

4.1.1 Clause 5 (a) of the Tariff Policy stipulates:

"The Central Commission may adopt either Return on Equity approach or Return on Capital approach whichever is considered better in the interest of the consumers.

The State Commission may consider 'distribution margin' as basis for allowing returns in distribution business at an appropriate time. The Forum of Regulators should evolve a comprehensive approach on "distribution margin" within one year. The considerations while preparing such an approach would, inter-alia, include issues such as reduction in Aggregate Technical and Commercial losses, improving the standards of performance and reduction in cost of supply."

4.2 Background

4.2.1 The FOR in its meeting in April 2006 had constituted a Group on DM as provided in the Tariff Policy. The Group analysed the distribution margin model as originally proposed in Karnataka during 2001-02 and concluded that this model could not be adopted because of the following reasons:

- The scheme will violate many provisions of EA 2003. It will require continuation of the single buyer model, and the concept of open access (OA) and consumer choice would remain on paper only.
- No State government will commit provision of unlimited "transitional support", as required in the scheme.
- The scheme was designed in the context of privatisation, and its effectiveness and relevance for government owned utilities is questionable.
- The Group, however, felt that an MYT framework could be evolved by incorporating some essential features of the DM concept as follows:
    - MYT framework should consider "supply business" and "network business" of distribution licensee separately. Thus, retail tariff of a distribution licensee should be equal to supply tariff plus network tariff (or distribution margin).
    - Distribution margin (or network tariff) to recover cost of network (excluding cost allocable for supply tariff).
    - Distribution margin to reflect capital servicing costs (depreciation and ROE), O&M costs (employee costs, **R&M (Author spell out)** costs and **A&G (Author spell out)** costs) and related network businesses (true-ups, incentives, penalties).

4.3 Key issues to be addressed

4.3.1 In view of this, the following issues were raised during the deliberations of the WG:

Issue 1: Returns to investor

- Existing approaches for returns to investor:
  - RoE: merits and demerits
  - **ROCE (Author spell out):** merits and demerits
- Is there a need for implementing any other approach for returns to investors?

Issue 2: DM concept and feasibility

- Concept:
  - Method of providing return
  - Is it the same as recovery of network costs?
- Merits and demerits
- Applicability for existing licensees vs. competitive bidding situation
- Akin to franchisee model or bidding model
- International experiences where DM concept has been used to give returns and learning from such experiences
- Feasibility

Issue 3: DM: formulation

- How should minimum revenue collection be determined?
- How should incentive charges be specified for revenue collection above minimum revenue collection?
- Percentage of additional revenue collection
- Paise per unit
- Should any ceiling be specified on incentive charge to distribution licensee?
- How should revenue collection for changes in consumption mix be normalised?

4.4 Summary of deliberations

4.4.1 A detailed study of international experience in DMs and its relevance in the Indian context must be carried out before moving ahead.

4.5 Future course of action

4.5.1 After considering these above comments and suggestions, the WG concluded as follows:

Recommendations:

4.5.2 The concept of DM has been provided in the Tariff Policy as a possible basis for allowing returns in distribution businesses. This is entirely different from the DM concept considered in Karnataka in the context of privatisation. A study should hence be undertaken on the DM model as envisaged in the Tariff Policy.

5 Fixed cost linked to availability for distribution licensees

5.1 Background

In several States, due to the demand-supply gap, distribution licensees are undertaking load shedding on a regular basis. In States like Maharashtra, the licensee frequently requests MERC approval for increase in ceiling hours of load shedding. Further, there are several complaints that the actual load shedding hours are even higher than the approved ceiling. Effectively, the availability of the distribution licensees is lower than 100%. However, despite lower availability, distribution licensees are allowed to recover their entire fixed costs through tariff, unlike generating companies and transmission licensees, whose fixed cost recovery is linked to normative availability levels specified under the tariff regulations, and the fixed cost is allowed on a pro-rata basis in case of lower than normative availability. The performance of distribution licensees affects the consumers directly, and hence, a need has been felt to introduce some mechanism to ensure that the distribution licensee makes the necessary effort to minimise and eliminate load shedding by: (i) contracting for the necessary power; (ii) improving operational efficiencies; and (iii) desisting from earnings through the UI route, while at the same time undertaking load shedding for consumers.

5.2 Key issues to be addressed

5.2.1 In view of this, the following issues were raised during the deliberations of the WG:

Issue 1: Need to link availability to fixed cost recovery

- Need and feasibility of linking full fixed cost recovery to a minimum availability percentage, similar to that applicable for generation companies (80%) and transmission licensees (98%)
- The availability of the distribution network and the supply function should be considered separately

Issue 2: Availability of supply function

- What should be the measure of availability for distribution licensees? What is the formula for computation of availability?
- Should reliability indices be based on **SAIFI**, **SAIDI**, and **CAIDI**?
- Hours of assured supply on an average basis
- What should be the availability percentage for distribution licensees for the supply function?
    - 100%, 95%?
    - Consistency with standards of performance

- Consideration of assured supply hours for agriculture
- Treatment in case the distribution licensees are known to be facing significant demand-supply gap for some time in the past as well as expected in future?

Issue 3: Limit for proportional recovery of fixed costs

- Should there be a limit to proportionate reduction in fixed cost recovery?
- In the alternative, is there feasibility of linking availability to recovery of ROE?

5.3 Summary of deliberations

5.3.1 Distribution licensees are not under sufficient pressure to contract for the power required to meet their demand; instead some trade power in the open market.

5.3.2 Under the regulatory regime, continuous power supply of assured quality should be given to consumers on 24x7 basis, and distribution licensees should plan for their power procurement at 50 Hz frequency for this demand.

5.3.3 The Appropriate Commission has to ensure that the distribution licensee contracts for the required quantum of long-term power at reasonable rates to meet its current and expected demand.

5.3.4 Distribution licensees should project the demand, and the sources from where this demand would be serviced, and should be asked to bear the penalty, in case they are unable to service the demand and engage in load shedding. The penalty could be imposed by linking the recovery of full fixed costs to achieving a certain normative level of supply availability.

5.3.5 The Central Electricity Authority (CEA) has been specifying certain Consumer Reliability Indices (CRI) and Feeder Reliability Indices (FRI), whereas the regulators have been asking the distribution licensees to provide data on **SAIDI**, **CAIDI**, **SAIFI** etc. There needs to be clarity on which CRIs should be followed in case of distribution licensees, against which their performance can be measured and compared. In this context, it was agreed that since the CEA has also shifted to **SAIDI, CAIDI, SAIFI**, these could be adopted.

5.4 Future course of action

5.4.1 After considering these comments and suggestions, the WG concluded as follows:

Recommendations

5.4.2 A Composite Index of Supply Availability and Network Availability should be specified. The SERCs should give appropriate weightage to these two factors. Supply availability should be measured on the basis of power contracted by

distribution licensees on a long-term basis for the power procurement plan submitted by the utility. Network availability should be measured on the basis of reliability indices such as SAIDI, CAIDI and SAIFI. Feeder Reliability Indices at 11 KV voltage level as specified by CEA would be appropriate till 100% consumer indexing is achieved in the licensee's area as the exact number of effected consumers by any interruption will be known only thereafter. The target achievement for Composite Index of Supply Availability and Network Availability may be specified as 95% for urban areas and 85% for rural areas. However, the SERC may initially fix a lower norm for network availability for rural areas keeping in view the present levels of service with trajectory for time bound improvement. For every 1% under-achievement in composite availability for urban or rural areas, ROE shall be reduced by 0.1% of equity. The SERC shall specify the mechanism of computing Composite Index of Supply Availability and Network Availability.

6 Summary of Recommendations

This section summarises the recommendations of the WG:

6.1 MYT framework for distribution licensees

6.1.1 Annual revision of performance norms and tariff might not be desirable. During the first control period, which should not be more than three years, the opening levels of performance parameters should be specified as close to the actual level of performance as possible and a trajectory of improvement of norms to desired level be provided with an incentive and disincentive mechanism to share efficiency gains with consumers.

6.1.2 The first control period shall be specified as three years and subsequent control periods as five years. The tariff for each year of the control period shall be determined at its beginning. Variations in fuel costs should be passed through the Fuel Cost Adjustment Mechanism on a regular basis with periodicity determined by the SERC, and there should be an adjustment mechanism for uncontrollable factors and sharing of efficiency gains based on annual truing up. The mechanism for recovery of fuel cost at periodic intervals shall be approved by the SERCs.

6.1.3 The distribution licensee should submit the business plan and power purchase plan for approval of the Commission, at least six months prior to submission of the MYT petition.

6.1.4 The Commission should issue the order on the business plan and the power procurement plan within four months of submission, so that the licensee is able to submit the MYT petition on the basis of the approved plan.

6.1.5 Under the MYT regime, it is essential that supply and network costs are segregated and capital expenditure during the control period is tracked for segregated costs. Capital expenditure plans for network strengthening should be formulated electricity division-wise with cost-benefit analysis and targeted reduction in technical losses.

6.1.6 The sales forecast should be treated as an uncontrollable factor, given the prevailing supply shortages and uncertainty in supply. The other uncontrollable factors for the distribution licensee shall include: (i) increase in power purchase expenses due to sales variations and variation in fuel costs and interest rates; (ii) Interest rates on long-term loans (if RoE approach is adopted) and working capital; (iii) increase in expenses due to force majeure; (iv) past unfunded

pension liabilities; and (v) contribution towards terminal benefits to the trust and provisioning.

6.1.7 Controllable factors should include: (i) distribution loss / AT&C loss; (ii) capital expenditure; (iii) O&M expenses; (iv) normative working capital; and (v) collection efficiency or provisioning of bad and doubtful debts (in case of a distribution loss approach).

6.1.8 The regulations of SERCs should disallow adjustment of due subsidy against outstanding loans. However, the adjustment of subsidy against electricity duty actually collected by the distribution licensee may be allowed. In addition, the State governments must ensure timely payment of outstanding dues of consumers, such as street lighting and water works, if necessary, by making deductions from the grant payable to local bodies.

6.1.9 The regulations of SERCs should provide for issue of bills on the basis of tariff determined by the SERC in case the State government does not pay the due amount of subsidy in time and in cash.

6.1.10 Only the distribution loss should be measured, essentially by AMR- based feeder metering and DT metering. Transmission losses should be dealt with separately.

6.1.11 Data on distribution loss levels should be verified through a third party as envisaged in the Tariff Policy. The services of accredited energy auditors and academic institutions such as IITs and other engineering colleges could be utilised for this.

6.1.12 The loss levels may be considered at actual level at the start of the first control period and an achievable trajectory may be given under the MYT framework. However, the loss level at the start of the subsequent control periods may be fixed keeping in view the targets set in the previous control period, actual performance and efforts at achievement. The norms should be revised after every MYT period with prospective effect.

6.1.13 If the distribution licensee does not reduce the losses in accordance with the specified trajectory, despite undertaking capital expenditure towards reducing the losses, this would amount to violation of the direction and in such cases action under section 142 may be considered by the SERC.

6.1.14 To accelerate loss reduction, an incentive and dis-incentive mechanism for field staff of the utility at the circle and sub-division level should also be put in place.

6.1.15 O&M expenditure should be allowed on normative basis by prescribing this in the regulations.

6.1.16 The proposition of keeping tariffs at the same level in the areas of different licensees in a State is not in accordance with EA 2003 and the Tariff Policy. Differential tariff structure in the area of different licensees in a State should be considered and the tariffs should reflect the efficiencies achieved by a particular licensee. However, the State government has the discretion to give differential subsidy in areas of different licensees and also allocate the PPAs and Capacity of State Generating Stations in different proportions to different licensees.

6.1.17 Tariff design for various consumer categories should be based on average cost of supply as this is the most common method and has also been envisaged in the Tariff Policy in the context of reduction of cross-subsidy.

6.1.18 A consultancy study should be undertaken for evolving the norms for capital expenditure by distribution licensees. Databases developed through RIMS can form the basis for prudence check for capex proposals. For realistic assessment of capex requirements, standard guidelines should be developed and rules set for prioritisation of schemes.

6.1.19 A consultancy study should be undertaken for the methodology to determine the cost of supply to agricultural consumers and alternatives for reduction of cross-subsidy for this category.

6.1.20 A study may also be undertaken for incentive and disincentive systems relevant for government owned utilities.

6.2 Sharing of benefits of efficiency gains with consumers

6.2.1 The losses on account of under achievement in controllable parameters shall not be shared with consumers as norms are being fixed at close to actual levels, except in extraordinary circumstances if decided by the SERC.

6.2.2 Efficiency gains with respect to controllable parameters shall be shared between the licensee and the consumer in the ratio of two-third and one-third at the end of every year during the truing up exercise.

6.2.3 The entire gains and losses on account of uncontrollable factors shall be passed on to consumers during the truing up process.

6.3 Feasibility of adopting DM concept

6.3.1 The DM concept has been provided in the Tariff Policy as a possible basis for allowing returns in the distribution business. This is entirely different from the DM concept considered in Karnataka in the context of privatisation. A study should be undertaken on the DM model as envisaged in the Tariff Policy.

6.4 Fixed cost linked to availability for distribution licensee

6.4.1 A Composite Index of Supply Availability and Network Availability should be specified. The SERCs should give appropriate weightage to these two factors.

6.4.2 Supply availability should be measured on the basis of power contracted by the distribution licensee on a long-term basis in accordance with the power procurement plan submitted by the utility. Network availability should be measured on the basis of reliability indices such as SAIDI, CAIDI and SAIFI. Feeder Reliability Indices at 11 KV voltage level as specified by CEA would be appropriate till 100% consumer indexing is achieved in the licensee's area as the exact number of effected consumers by any interruption will be known only thereafter.

6.4.3 The target achievement for Composite Index of Supply Availability and Network Availability may be specified as 95% for urban areas and 85% for rural areas. However, the SERC may initially fix a lower norm for network availability for rural areas keeping in view the present levels of service, with a trajectory for time bound improvement.

6.4.4 For every 1% under achievement in composite availability for urban or rural areas, ROE shall be reduced by 0.1% of equity. The SERC shall specify the mechanism of computing Composite Index of Supply Availability and Network Availability.

7 MYT framework for distribution licensees: suggested template

Sl.	Parameter	Particulars	
1	**First control period duration**	3 years	
2	**Duration of subsequent control periods**	5 years	
3	**Periodicity of tariff determination**		
a)	First control period	3 years	
b)	Subsequent control periods	5 years	
4	**Controllable and uncontrollable parameters**	**Controllable**	**Uncontrollable**
a)		Distribution losses and AT&C losses* – technical and commercial losses	Power purchase expenses due to increase in fuel costs and change in sales quantum
b)		Collection efficiency or provisioning for bad and doubtful debts (in case of distribution losses)	Sales quantum
c)		O&M expenses	Sales mix
d)		Capital expenditure	Interest expenses on long-term loan (under RoE approach)[$]
e)		Normative working capital	Interest rate on working capital
f)			Increase in expenses due to force majeure
5	**Controllable parameters for which trajectory may be specified**	1. Distribution losses and AT&C losses ** 2. O&M expenses 3. Provision for bad and doubtful debts or collection efficiency	

Sl.	Parameter	Particulars
6	**Opening levels for performance trajectory**	Should be specified at existing levels, subject to prudence check, rather than desired levels*
7	**Treatment of wires and retail supply business**	Expenses and revenue, including capital expense recovery such as interest on loan, depreciation and ROE, should be segregated for wires (wheeling) business and the retail supply business
8	**Linkage of performance trajectory to capital expenditure**	Performance parameters like distribution loss reduction are dependent on capital expenditure undertaken, especially for loss reduction component[$$]
10	**Mechanism for pass through of variation in uncontrollable parameters**	a) Provisional truing up based on six months actuals in case impact is high; and final truing up based on actual performance supported by audited accounts b) Fuel cost adjustment: monthly or quarterly pass through
11	**Mechanism of sharing efficiency gains due to performance better than trajectory**	Mechanism to be applied during final truing up, based on actual performance supported by audited accounts: one-third passed on to consumers through reduction in tariff; two-thirds to be retained by distribution licensee
12	**Treatment losses due to performance poorer than trajectory**	1. Entire losses to be borne by the distribution licensee
13	**Revision of performance trajectory**	Revised performance trajectory should be specified for every control period; process of trajectory revision should commence at the beginning of the last year of the control period, so that the trajectory revision is achieved by the end of the control period
14	**Submission of business plan and power procurement plan**	1. Should be submitted at least six months prior to submission of the MYT petition, along with details of category-wise sales projections, load growth details, power procurement plan indicating long-term and short-term sources, load shedding particulars, capital expenditure and capitalisation plans and financing pattern

Sl.	Parameter	Particulars
		and impact on related expenses, employee rationalisation etc. 2. ERC order on the business plan, including power procurement plan, should be issued within four months after its receipt, so that the licensee is able to submit its MYT petition after incorporating the approved business plan

Notes:

* - Opening levels of performance parameters should be accepted at existing levels in accordance with the Tariff Policy, even though the ERC may have specified better levels in the past, only for the first control period. For subsequent control periods, the opening levels should be considered at closing levels specified by the ERC for the preceding control period.

$ - In case the ROCE approach is followed, interest expenses should also be considered as controllable parameter, and should not be a pass through expense.

** - In case the distribution loss approach is being followed, AT&C loss trajectory need not be specified; if the AT&C loss approach is being followed, then AT&C loss trajectory should be specified, there being no need to specify a trajectory for distribution loss and collection efficiency separately.

Appendix 1: Summary Status of MYT Implementation for Distribution Licensees

State	MYT Regulations Notified – Yes/No	MYT Order issued – Yes/No	Year of Effectiveness of MYT Framework	Length of First Control Period	Periodicity of Tariff Determination
Maharashtra	Yes	Yes	2007-08	3 years	Annual
Madhya Pradesh	Yes	No			
New Delhi	Yes	Yes	2007-08	4 years	Annual
Andhra Pradesh	Yes	Yes	2006-07	3 years	Annual
Kerala	Yes	Yes	2007-08	3 years	Annual
Gujarat	Yes	Yes	2006-07	3 years	Annual
Karnataka	Yes	Yes	2007-08	3 years	Annual
West Bengal	Yes	Yes	2008-09	3 year	Annual
Chhattisgarh	Yes	No			
Rajasthan	Draft Stage – under Public process	No			
Tamilnadu	No	No			
Orissa	No	No			
Assam	No	No			
Haryana	No	No			

Appendix 2: MYT Framework adopted for distribution licensees in selected States in the country

Sl.	Parameter	Maharashtra	Delhi	Andhra Pradesh	West Bengal
1	**Controllable Parameters**				
a)		Distribution Losses	AT&C Losses	Distribution losses	Distribution losses
b)		Provision for bad and doubtful debts	Distribution Losses	Operation & Maintenance expenses	Repair and Maintenance expenses
c)		O&M Expenses	Collection Efficiency	Return on Capital Employed	Administration & General expenses
d)		Capital expenditure	O&M Expenses	Depreciation	Return on Equity
e)		Normative working capital	Depreciation	Non-tariff income	Depreciation
f)			Quality of Supply		Non-Tariff income
2	**Uncontrollable Parameters**				
a)		Power Purchase expenses due to increase in fuel costs and change in sales quantum	Power Purchase Expenses	Taxes on Income	Power Purchase Cost
b)		Sales quantum	Sales Mix	Cost of power purchase	Energy Sales Volume
c)		Sales mix			Employee Cost
d)		Interest expenses (RoE approach)			Interest Rate and Finance Charges Rate
e)		Income tax rate			Expenses on account of inflation

Sl.	Parameter	Maharashtra	Delhi	Andhra Pradesh	West Bengal
f)					Taxes on Incomes, duties, levies etc.
g)					Foreign Exchange Rate variation
h)					Income from other business
i)					Rate of Interest on Working capital
3	**Whether trajectory specified for controllable parameters? – Yes/No**	Yes – Distribution Losses and O&M expenses	Yes – AT&C losses, Distribution losses, Quality parameters and O&M expenses.	Yes- Distribution losses	Yes- Distribution losses
4	**Mechanism for pass through of variation in uncontrollable parameters**	a) Provisional truing up based on six months actuals in case impact is high and Final Truing up based on actual performance supported by audited accounts. b) Fuel Cost Adjustment – monthly pass	a) Variation in revenue / expenditure on account of uncontrollable sales and power purchase shall be trued up every year	Eligible to claim variations in uncontrollable items in the ARR for the year succeeding the relevant year of the Control Period depending on the availability of data as per actuals with respect to effect of uncontrollable items	Variation arising out of all uncontrollable factors using the normative parameters, wherever applicable, for determination of allowable normative expenditure on that factor, shall be passed through the tariff in an appropriate manner

Sl.	Parameter	Maharashtra	Delhi	Andhra Pradesh	West Bengal
		through			
5	**Sharing of efficiency gains due to performance better than trajectory**				
a)	Yes/No	Yes	Yes	Yes	Not mentioned
b)	Mechanism of sharing	1/3rd passed on to consumers through reduction in tariff; 1/3rd included under special reserve; 1/3rd to be retained by distribution licensee	a) Profits arising from achieving loss level better than specified in the loss reduction trajectory shall be equally shared between the Licensee and Contingency Reserve.	Gains from Retail Supply Business of the Distribution Licensee will be shared with the consumers on yearly basis.	
6	**Sharing of losses due to performance lower than trajectory**				
a)	Yes/No	Yes	Yes	Yes	Not mentioned
b)	Mechanism of sharing	1/3rd passed on to consumers by adding to ARR; 2/3rd to be borne by distribution licensee	Any financial loss on account of under performance with respect to AT&C targets shall be to the Licensee's account	Losses from Retail Supply Business of the Distribution Licensee will be shared with the consumers on yearly basis.	