ASSAM ELECTRICITY REGULATORY COMMISSION

TARIFF ORDER
2004-2005

(Revised with Amended up to date)

6th August, 2004

ON

PETITIONS NO.

4/2003 AND 1/2004

OF THE

ASSAM STATE ELECTRICITY BOARD

July 21, 2004

D.R. Brijmohan & Sons Building, 2nd Floor,

Opp. Rajiv Bhavan, G.S.Road, Bhangagarh,

GUWAHATI – 781 005.

Website: www.aerc.nic.in Email: aerc_ghy@hotmail.com

ASSAM ELECTRICITY REGULATORY COMMISSION

TARIFF ORDER 2004-05

SECTION 1: INTRODUCTION

Constitution of the Commission

1.1 The Assam Electricity Regulatory Commission (hereinafter referred to as the AERC or the Commission) was established under the Electricity Regulatory Commissions Act (hereinafter referred to as the ERC Act), 1998 on February 28, 2001. The AERC came into existence in August 2001 as a one-man Commission and it was mandated to exercise the powers and functions conferred to it under section 22(I) of the ERC Act.

1.2 The Commission is now mandated to be the State Electricity Regulatory Commission under the Electricity Act 2003 (36 of 2003) (hereinafter referred to as the Act) and to exercise the functions conferred to it under Section 86 of the Act. The Act was applicable from 10th June 2003. However Section 61 of the Act provides for the determination of tariffs as per Electricity Supply Act, 1948 (54 of 1948) and the Regulatory Commissions Act, 1998 (14 of 1998) for a period of one year beyond the appointed date.

1.3 The ASEB has filed ARR and tariff revision petitions for FY 2003-04 and FY 2004-05 in accordance with the provisions of ERC Act and guidelines as issued by AERC for the filing of ARR/Tariff proposals. This tariff order pertains to the FY 2003-04 and FY 2004-05, a period prior to the applicability of the Act. For reasons mentioned before, the Commission in this tariff order has determined tariffs as per the Electricity Supply Act 1948.

Tariff Related functions of the Commission

1.4 As per the ERC Act the Commission has the following functions:

(a) To determine the tariff for electricity, wholesale bulk grid or retail, as the case may be;

(b) To regulate power purchase and procurement process of the transmission utilities and distribution utilities including the price at which the power shall be procured from the generating companies, generating stations or from other sources for transmission, sale, distribution and supply in the State;

(c) To promote competition, efficiency and economy in the activities of the electricity industry to achieve the objects and purposes of this act.

1.5 As per the ERC Act the State commission in determining the tariff shall be guided by the following:

(a) The principles and their applications provided in sections 46, 57 and 57A of the Electricity (Supply) Act, 1948 (54 of 1948);

(b) In the case of the board or its successor entities the principles under section 59 of the Electricity (Supply) Act, 1948 (54 of 1948);

(c) That the tariff progressively reflects the cost of supply of electricity at an adequate and improving level of efficiency;

(d) The factors which would encourage efficiency, economical use of the resources, good performance, optimum investments, and other matters which the State commission considers appropriate for the purpose of this act;

(e) The interests of the consumers are safeguarded and at the same time, the consumers pay for the use of electricity in a reasonable manner based on the average cost of supply of energy;

(f) The electricity generation, transmission, distribution and supply are conducted on commercial principles;

(g) National power plans formulated by the central government;

(h) The State commission, while determining the tariff under this act, shall not show undue preference to any consumer of electricity, but may differentiate according to the consumers' load factor, power factor, total consumption of energy during any specified period or the time at which the supply is required or the geographical position of any area, the nature of supply and the purpose for which the supply is required.

(i) If the State government requires the grant of any subsidy to any consumer of class of consumers in the tariff determined by the State commission under this section, the State government shall pay the amount to compensate the person affected by the grant of subsidy in the manner the State commission may direct as a condition for the licence or any other person concerned to implement the subsidy provided for by the State government.

Background of the present filings:

1.6 ASEB filed the petition for determination of 'Annual Revenue Requirement for 2002-03 and Rationalisation of Tariff for 2002-03' on 19th October 2002. The Commission scrutinized the petition filed by the Board in the light of requirements of its guidelines and the petition was processed as per the Conduct of Business Regulation of the Commission. Tariff Order on the petition was issued on 26.03.2003 making the revised retail electricity tariff of the Board effective from 01.04.2003.

1.7 The Board submitted its petition for 'Annual Revenue Requirement for 2003-04 to the Commission on 31.12.03. This was done after taking due permission from the Commission for extension of submission date from 15th to 31st December 2003. ASEB was directed by the Commission vide its reference AERC. 41/2002/75 dated 30.06.2003 to resubmit the petition for 'Annual Revenue Requirement for 2003-04 and Tariff Proposal for 2003-04' by 15.05.2003 incorporating the changes stipulated in the tariff order dated 26.03.2003. ASEB vide its reference ACE(Com)/AERC/Tariff-2002/14 dated 19.05.03 requested for extension of time of 3 (three) months from 15.06.2003 to make the resubmission of the said petition. However, the Commission vide its order dated 09.06.03 disallowed extension of time as prayed for and directed the Board to make the submission by 30th June' 03. Consequent to above, the Board made its resubmission of 'Annual Revenue Requirement for the year 2003-04 (Revised) and Revised Tariff Proposal for 2003-04' on 1st July 2003 (As Office of the Commission was closed on 30th June' 03 due to floods).

1.8 As per Conduct of Business Regulations, 2002 of the AERC, electricity utility is required to make filing of petition for 'Annual Revenue Requirement' by 15th December each year for the tariff of the following year. In view of reform and restructuring taken up by the Assam State Electricity Board, Board vide its reference nil dated 13.12.03 requested for extension of time of 60 days from the date of 15.12.03 for submission of 'Annual Revenue Requirement for 2004-05 and Rationalization of Tariff for 2004-05'. The Commission vide its reference AERC.41/2002/113 dated 22.12.03 allowed extension of time for submission of petition for 2004-05 as requested. On request from the Board, the time limit for submission of the petition for 2004-05 was further extended till 25.02.04 vide reference AERC. 41/2002/203 dated 18th Feb' 04. Accordingly the Board filed petition for 'Annual Revenue Requirement for 2004-05 and Determination for Tariff for 2004-05' on 25.02.2004.

1.9 The Commission sought additional clarifications and additional information from ASEB in January, 2004 vide No. AERC.41/2002/14 dated 12.01.04 and No. AERC. 41/2002/125 dated 28.01.04. The ASEB responded to these communications in April 2004 and this information has been taken into account in the Commission's review of the petition.

FY 2002-03 in Retrospect

1.10 The Commission in its tariff order dated 26.03.2003 had approved the tariff for FY 2002-03 and made it effective from 01.04.2003. A comparison of the Figures approved by the Commission for FY 02-03 and expenditure actually incurred during 02-03 are as follows:

Items **All in Rs Crores**	**Figure approved by the Commission FY 02-03**	**Actual as per Annual Accounts of 02-03**	**Excess / (Deficit)**
Power Purchase	479.60	512.42	32.82
Own Generation	71.93	54.94	(16.99)
Employees Cost	263.60	250.24	(13.36)
Repair & Maintenance	15.97	19.84	3.87
A & G Expenses	7.96	12.41	4.45
Depreciation	00	112.85	112.85
Interest & Finance charges	53.69	268.69	215.00
Other debits	0.30	-.92	0.08
Grand Total	893.04	1230.47	338.57

1.11 A comparison of energy sale figures approved by the Commission FY 02-03 and sale actually done are as follows:

Items All in MU	As approved by the Commission FY 02-03	As per Actual for 02-03	Variance
Power Purchase (excluding transmission losses in CTU)	2575	2511.861	– 63
Own Generation	768	706.514	– 61
Net injection	3343	3218.375	– 125
Energy Sale	2006	1960.812	– 45.188
T & D loss	40%	39%	- 1%

Power Purchase:

1.12 The Commission approved the power purchase cost of Rs. 479.60 Cr for purchase of 2668 MU (including transmission losses at CTU) from CS generator and an IPP at an average cost of Rs. 1.798 per KWh. However, the Board incurred Rs. 512.42 [1]Cr for purchase of 2511.861 MU from these sources which gives an average purchase cost of Rs. 2.04 per KWH. This difference in per unit cost of purchase is mostly due to differences in the source-mix that was considered in the Commission's approval and actual cost incurred by the Board during the year 2002-03 on the basis of sources actually available during the year. The detail analysis of this cost difference is as follows;

<table>
<tr><th rowspan="2">Sl No</th><th rowspan="2">Source</th><th colspan="2">As approved in the Tariff Order for FY 2002-03</th><th rowspan="2">Energy purchased in MU</th><th rowspan="2">Actual expenditure in Rs Crs</th></tr>
<tr><th>Energy (in MU)</th><th>Cost (Rs. in Cr.)</th></tr>
<tr><td>1</td><td>NEEPCO Total</td><td>1286</td><td>156.73</td><td>1297.539</td><td>174.94</td></tr>
<tr><td>2</td><td>NHPC</td><td>146</td><td>8.322</td><td>145.436</td><td>14.00</td></tr>
<tr><td>3</td><td>NTPC</td><td>1068</td><td>202.92</td><td>1019.146</td><td>186.346</td></tr>
<tr><td>4</td><td>DLF</td><td>150</td><td>43.20</td><td>113.614</td><td>34.32</td></tr>
<tr><td>5</td><td>MeSEB, 132KV</td><td>10</td><td>1.72</td><td rowspan="2">17.362</td><td rowspan="2">13.51</td></tr>
<tr><td>6</td><td>MeSEB, 33KV</td><td>8</td><td>1.86</td></tr>
<tr><td>7</td><td>PGCIL (NER)</td><td>1432</td><td>50.12</td><td rowspan="2"></td><td rowspan="2">68.53</td></tr>
<tr><td>8</td><td>PGCIL (ER)</td><td>1068</td><td>14.952</td></tr>
<tr><td></td><td>TOTAL</td><td></td><td>479.60</td><td></td><td>491.646</td></tr>
</table>

[1] This includes payment made to WBSEB (Rs 9.19 Crores) and Orissa (Rs 11.550 Crores) for power purchase as shown in the annual accounts.

Own Generation of the Board:

1.13 The Commission approved Rs. 71.93 Cr towards cost of fuel for own generation of 768 MU (net) in the year 2002-03. As per Annual Accounts of the Board for 2002-03, the Board incurred Rs. 54.94 Cr for generation of 706 MU (net) at a PLF of 14.88%. Against the approved per unit generation cost of Rs. 0.94 per KWH, the Board incurred per unit cost of Rs. 0.778 per KWH giving a saving of Rs. 0.16 for each units of its generation.

1.14 The tariff order dated 26.03.03 approved net injection of 3343 MU at a T & D loss of 40% for sell of 2006 MU for the year 2002-03 against which the Board injected 3218 MU at a T & D loss of 39% to sale 1960 MU during the same year. At a T & D loss of 39% the Board were required to inject 3238 MU to make a sale 2006 MU during the year which means there was a short fall in injection of 70 MU only. If the addition 70 MU was made available from the sources as follows,

Own Generation	—	62 MU
Board Purchase	—	8 MU

The addition cost the Board would have required as below:

Own Generation	—	62 MU x Rs. 0.778	= Rs. 4.82 Cr
Board Purchase	—	8 MU x Rs. 2.04	= Rs. 1.63 Cr
			Rs. 6.45 Cr

Sale of Electricity:

1.15 The tariff order dated 26.03.03 for the year 2002-03 had allowed earning to the extent of Rs. 827.74 Cr against its sale quantum of 2006 MU. The tariff order approved the non-tariff income of Rs. 65.72 Cr for the year 2002-03 which made total earning in the year 2002-03 at Rs. 893.46 Cr.

1.16 Against the sale of 2006 MU approved in the tariff order dated 26.03.03, the sale in MU given in the petition for 'Annual Revenue Requirement for 2003-04' and in the Annual Accounts for 2002-03 are as follows:

Consumer Categories In MU	Tariff order FY 2002-03	Estimate of sale during FY 2002-03 provided in FY 2003-04 filing	Actual sales for FY 2002-03 as per Annual Accounts of the Board
Domestic (including un-metered)	759	730	661.247
Commercial (including un-metered)	194	195	195.42
General Purpose	58	55	40.464
Industry	381	372	311.421
Tea, Coffee & Rubber	338	300	258.712
Public Lighting	5	5	4.559
Irrigation	9	10	10.838
Public Water Works	31	32	32.322
Bulk	231	228	268.829
Miscellaneous (Un-metered)-Substations, Board's establishment and quarters, temporary connections, etc.)			177.000
TOTAL	2006	1927	1960.812

The above shows the discrepancies in the figures submitted by the Board in the petition for ARR for 2003-04 and Annual Accounts for 2002-03. However for the purpose of analysis the figures given in the Annual Accounts for 2002-03 of the Board has been considered here.

As per Annual Account of the Board for year 2002-03, the revenue earned by it during the year as follows :

Revenue from sale of power to consumers	—	Rs. 668.95 Crs
Revenue from penalty for theft of power / malpractice	—	Rs. 0.027 Crs
		Rs. 668.97 Crs

This figure of Rs. 668.97 Cr from sale of power to consumers of 1960.812 MU gives an average realization of Rs. 3.41 per KWH against the then prevailing average tariff of Rs. 3.63 per KWH.

Against sale of 177 MU of energy to the rural un-metered consumer of the Board, it realized only Rs. 8.22 Cr, giving a per unit realization of only Rs. 0.46 per KWH. The Board's assessment of supply of energy to the un-metered consumers appears to be totally erratic, needs detail examination. Either the supply to the rural un-metered consumer is highly inflated or realization of Rs. 8.22 Cr during the year from the un-metered category consumers is very low. The Board appears to have overplayed the consumption of electricity by the un-metered category in order to under play the T&D losses. It is important that the Board makes a pilot study immediately to correct assessment of consumption by rural un-metered consumers on point basis.

Non-tariff Income (All in Rs. Crores):

Other income as per schedule 5 of Annual Accounts of the Board for 02-03	47.61
Meter Rent and Service Rental	8.61
Misc. charge of consumers	29.55
Grand Total	85.79

Against non-tariff income of Rs. 65.72 Cr approved in the tariff order dated 26.03.03, the Board had realized Rs. 85.79 Cr under this head as shown above. This gives an increase in non-tariff income of Rs. 20.07 Cr. This non-tariff income of the Board during the year 2002-03, comprises 11% of the total income of the Board during the year 2002-03.

Cash Operating Losses of the Board:

The Annual Accounts of the Board for 2002-03 shows Rs. 1228.83 Cr as the expenses incurred against an earning of Rs. 834.82 Cr through sale of power, revenue subsidies and grants and other income giving a net loss Rs. 394.00 Cr. Considering depreciation of Rs. 112.85 Cr (net) during the year, the cash operating losses of the Board shows at Rs. 281.16 Cr.

Since the tariff order dated 26.03.03 for the year 2002-03 was made effective only 01.04.2003, the impact of the tariff order on the revenue realization for the year 2002-03 is non-existent.

Public Notice Inviting Objections

1.17 The Commission issued a public notice on 7th May, 2004 inviting objections on the two tariff petitions filed by the ASEB. The last date for the submission of objections was given as 31st May, 2004. This notice was issued in the following news papers:

(a) Sentinel

(b) Assam Tribune

(c) Dainik Pratidin

(d) Dainik Janmabhumi

(e) Sonar Cachar

1.18 The objections received by the Commission are addressed in Section 3 of this Order.

Structure of the Tariff Order

1.19 The remaining part of the Order is organised as set out below:

Section 2: Summary of Petitions

Section 3: Objections

Section 4 Analysis of Revenue Requirement

Section 5: Tariff Structure

Section 6: Directions and Conclusions

SECTION 2: SUMMARY OF PETITIONS

Petitions filed before the Commission

2.1 The ASEB has filed petitions for revision of tariffs for the year 2003-04 and 2004-05. The revised petition for the FY 2003-04 was filed on 1st July 2003. The petition for FY 2004-05 was filed on 28th February 2004. The delay in disposing the petition for the FY 2003-04 is due to the following reasons:-

(a) Shortage of staff at the Commission Office;

(b) At the direction of the Commission, the original tariff proposal for FY 2003-04 was revised and resubmitted by ASEB;

(c) The financial restructuring of the Board was finalised in October 2003 causing substantial reduction of interest liability of the Board. The final picture became clear only when 2004-05 tariff petitions was filed;

(d) The revised tariff petition for FY 2003-04 necessitated good amount of clarification from the Board; and

(e) Delays in replying to the queries of the Commission by the Board with due permission from the Commission to extend the last date for submission of information from 31st December 2003 to 28th February 2004.

Tenets of Tariff determination

2.2 The Board has stated in its petitions that the determination of tariff of the Petitioner is guided by projected Annual Revenue Requirement (ARR) in accordance with the provision of ESA, 1948 and as per accounting rate stipulated in Electricity (Supply) Annual Accounts Rule, 1985. The ARR needs to cover all expenditures prudently incurred on generation, transmission and distribution of electricity, which are as follows:

(a) All costs relating to purchase of electricity, generation of electricity including cost of losses till the point of delivery;

(b) Repair and maintenance cost of the Petitioner;

(c) Employees cost and Administration & General Expenses;

(d) Depreciation on the assets at the beginning of the year less accumulated depreciation;

(e) Interest liability on all borrowings necessary for business needs of the Petitioner;

(f) Any other cost/duties/charges levied by supplier of electricity and other statutory authority as pass through;

(g) Provision for bad Debt towards recovery of certain amount of uncollected bills, some of which is never paid off by consumers. This has not been in consideration in the ARR for FY 2003-04;

(h) Compensation towards financial loss to the petitioner due to increase in requirement of working capital due to shortfall in billing efficiency & collection procedure; and

(i) Reasonable return in accordance with Section 59 of ESA.

2.3 According to the petitions of the Board, it has adopted the following basic principles in the determination of tariff:-

(a) Recovery of full average cost of supply without taking into account any subsidy / subvention from the State Government;

(b) Gradual reduction/phasing out of cross subsidies;

(c) Create a separate category of rural single point domestic supply;

(d) Increase the tariff for recovery of cost of supply;

(e) Introduce TOD Tariff for HT-I Industrial Consumer for better peak demand management;

(f) Setting up a formula for determining Multi-year Tariff so that tariff for future years can be set automatically in the petitioner's system on the basis of tariff approved for FY 2004-05; and

(g) Increase in fixed charge to bring it nearer to the level of actual fixed component of the average cost of supply.

Annual Revenue Requirements of the Board

2.4 The determination of tariff is guided by the prudent Annual Revenue Requirements as per the statutes. The expected ARR in each year needs to recover the expenditure incurred in the purchase of power, generation, transmission, and distribution costs. The Board has proposed the following ARR for FY 2003-04 and FY 2004-05:

Component	FY 2002-03 Actual	ARR 2003-04[2]	ARR 2004-05
Sales Volume MU	1960	2115	2190
T&D Losses	39%	37.5%	36.5%
	Crores	Crores	Crores
Generation cost	55.00	68	71
Power purchase costs	512.00	545	531
Employee cost	249.00	285	330
Repairs and maintenance	20.00	22	23
Admin and general expenses	12.30	10	16
Depreciation	113.00	33.77[3]	113
Interest and Finance Charges	269.00	88.94	73.94
Prior period expenses	0.00	0	0
Other debits	1.00	0.5	1
Total expenditure	1230.30	1053.64	1158.94
Miscell receipts	85.82	36.9	32
Net expenditure	1144.48	1016.69	1126.94
Statutory return (3%)	0.00	0	21

[2] The totals given in this table do not match the Board's submission for FY 2003-04 because there are addition errors in their submission.

[3] Against depreciation of Rs.107.44 Crores the Board has claimed depreciation of Rs.33.77 Crores limiting depreciation to the extent of projection for principal loan repayment liability during the year 2003-04.

Gross revenue required	1144.48	1016.69	1147.94
Bad debts provision	0.00	0	23
Interest on Working Capital	0.00	8.93	8.183
Past Liability	0.00	23.13	0
ARR	1144.48	1048.75	1179.123
Revenue from existing tariff	668.95	871	868
Revenue Gap	475.53	251.2	311.123
Average cost of supply	5.84	4.96	5.38
Average Realisation	3.41	4.12	3.96
% tariff adjustment		20.4%	36%

2.5 The ARR is based on the following forecasts for generation by ASEB and transmission and distribution losses:

Component	**2003-04 ARR filing**	**2004-05 ARR filing**
Sales (MU)	2,115	2,190
T&D Loss %	37.50	36.50
T&D Loss MU	1269	1259
Energy Requirement (MUs)	3,384	3,449
Energy Available from own generation (Sent Out MUs)	769	806
Requirement from outside Source (MUs)	2,615	2,643
Order approved external Loss	3.01	3.30
Power purchase requirement	2,696	2,733

(MUs)		
Trading Analysis		
Energy Available from own generation (Sent Out MUs)	769	806
Capacity Entitlements CGS/others (net of losses)	2,615	2,934
Total Energy Available	3,384	3,740

2.6 The Board is seeking an average tariff increase of 20% in FY 2003-04 and 36% in FY 2004-05 over the average tariff of Rs.4.12 per Kwh allowed in the tariff order dated 26.03.03.. The key points from the Board's petitions are:

(a) Sales projected in FY 2003-04 is 2115 MU (note: the actual for 2003-04 is estimated 1907 MU);

(b) Sales in FY 2004-05 are projected to increase substantially to 2190 MU due to an increase in generation availability – total capacity entitlements for energy are forecast to increase to 2934 MU which compares to 2615 MU in FY 2003-04 arising out of implementation of ABT w.e.f. 1.11.03;

(c) Transmission and distribution losses have been set based on the approved figures of the Commission at 37.5% and 36.5% for 2003-04 and 2004-05 respectively rather than actual losses;

(d) Power purchase costs for FY 2003-04 are Rs. 545 Crores which includes past liabilities of Rs 39.0 Crores leaving real purchases for the year of Rs. 506 Crores;

(e) Power purchase costs for FY 2004-05 are submitted as Rs. 531 Crores.

(f) Employee costs are forecast to increase from Rs. 249 Crores in FY 2002-03 to Rs. 330 Crores in FY 2004-05 due to increase in DA rate payable to employees and in terminal benefit extended to employees. Terminal benefit proposed for FY 2004-05 has shown an increase from Rs. 29.0 Crores in FY 2002-03 to a projection of Rs. 81.0 Crores in FY

2004-05;[4]

(g) Repair and maintenance expenditure has increased to a projected Rs. 23 Crores in FY 2004-05 given the critical need to address years of neglect in distribution system maintenance due to inadequate funding prior to the establishment of the AERC[5];

(h) Administration and general expenses are proposed to increase from Rs. 12 Crores in FY 2002-03 to Rs. 16 Crores in FY 2004-05;

(i) Depreciation has been limited to the principal repayment of loan liability during the year 2003-04 and full claim of Rs. 113 Crores has been made for FY 2004-05;

(j) Interest and financing charges claim has been reduced to Rs. 74.00 Crores for 2004-05 from the claim of Rs. 269 Crores for FY 2002-03. This reduction has been the result of financial restructuring of the Board as part of the Government's power sector reform plan;

(k) The Board is seeking a claim of Rs. 23 Crores in FY 2003-04 for past liabilities. The argument for the claim in the petition is as follows:

"The Hon'ble Commission in its tariff order dated 26.3.03 for tariff of the petitioner for year 2002-03 had' true cost of supply' as Rs. 5.37 per Kwh having break-up as follows:

Rs. In Crores

Gross Revenue Required	893.00
Depreciation	86.94
50% of Int. due to the Govt.	74.15

[4] The Board does not provide adequate reserves for its pension liabilities. Instead it operates (like other government enterprises) on a pay as you go basis.

[5] The Board has only been permitted to adjust tariffs three times since 1994. Once in 1994 again in 1998 making them effective from 8.9.94 and 1.9.98 respectively with a T&D loss of 21% only. On both these occasions, GOA had offered subvention towards reduction of tariff of certain category of consumers to a extent of Rs.42.5 Cr/Yr in 1994 and Rs. 14.6 Cr/Yr in 1998 payment of which has never been made. The third adjustment took place on 26 March 2003. Any power system will eventually deteriorate without funding for adequate maintenance, spare parts, and asset replacement.

Statutory Return	23.59
Total	1077.72

The amount accepted by the Hon'ble Commission but did not make it pass through in the tariff for the year 2002-03 is Rs. 184.72 Crores. Since the petitioner itself decided to take up with the State Govt. for restructuring of the interest portion of the Board in the petition placed before the Commission for the year 2002-03 the responsibility of 74.15 Crores lies with the petitioner. Balance amount towards depreciation of Rs. 86.94 Crores and statutory return of 23.59 Crores left not included in the tariff for the year 2002-03. As we could find no direction in the tariff order dated 26.3.03 as to how this amount can be recovered we would plea before the Hon'ble Commission that 25% of the amount not made pass on the tariff i.e. Rs. 23.13 Crores should be allowed to recover in the tariff for the year 2003-04."

(l) The Board is seeking a statutory return on net fixed assets of Rs. 21 Crores for FY 2004-05 and no claim has been made for 2003-04.

(m) The revenue short fall for FY 2004-05 is Rs. 313 Crores.

(n) The average cost of service has fallen from Rs. 5.84 per kWh in FY 2002-03 to a projected Rs. 5.38 (as per the petition of ASEB) in FY 2004-05. This represents a estimated real decline in the average cost of service of 20% since FY 2002-03.

(o) The average projected realisation for revenue in FY 2004-05 is ◈ Rs. 3.96 per unit which can be attributed increase in sale volumes for the Domestic sector whose realised revenue is substantially below the average cost of sale and the decline in sale to Industries sector whose realised revenue is above the average cost of sale.

2.7 The Board has also proposed a Multi-year Tariff Setting Formula so that tariff for the future years can be set automatically in the Petitioner's system on the basis of tariff determined for 2003-04. The proposed formula is as follows:

Tariff in year 'Y'= Tariff in year 2003-04 + Required revision in tariff for year 'Y'

Where:

◈ Amended vide order dated 6th August, 2004

Required revision in tariff in year ‘Y’= [Sum total of change in (fuel cost + power purchase cost + Employees cost + R&M cost + A&G cost + Depreciation + Intt. on loan and financing charge + Statutory return + Intt. On Working Capital + Bad Debt + Revenue gap left uncovered in previous year] / Estimated units sold in year ‘Y’ at the T&D losses for the year ‘Y’

Y= any year from 2004-05, 2005-06, 2006-07 and 2007-08

SECTION 3: OBJECTIONS

3.1 The Commission issued a notice in various newspapers on 7th May 2004 inviting consumers of electricity to submit their objections to the Annual Revenue Requirement for the year 2003-04 and 2004-05 and petition for rationalisation for 2003-04 and 2004-05 submitted by the ASEB to the AERC. The last date for submission of petitions was close of business 31 May 2004. The Commission received a total of six petitions by 31 May, 2004. The list of petitions is given in Appendix A. Each of these petitions has been carefully considered before issuing this tariff order. The major issues raised by different consumers and consumer groups are discussed below with the response of the ASEB and the views of the Commission.

List of Organizations and Individuals
who have raised objections on the ARR and Tariff filing by the ASEB

Sl No	**Name and address of Objectors**
1.	North East Chambers of Commerce & Industry, 10 Jannat, 6th Bye Lane, Zoo Narengi Road Guwahati – 781 024 (Assam)
2.	Indian Tea Association (ITA), Tea Association of India (TAI), Goodricke Group Limited (Goodricke), Gillanders Arbuthnot and Company Limited (Gillanders)
3.	The All India Manufacturers' Organization, Assam State Board, Lions Seva Kendra Complex, Makum Road, Tinsukia – 786125, Assam

Sl No	Name and address of Objectors
4.	National Chamber of Commerce, BL Khemka Road, Tinsukia – 786125 (Assam)
5.	Assam Tea Planters Association, Tarajan, Jorhat – 785001
6.	Bhartiya Cha Parishad Jalan Nagar, Dibrugarh – 786005
7.	RC Barua, IRAS (Retd) Chairman, APOL, 7, Namgarh Path, Rukmini Nagar, Guwahati – 781006
8.	Federation of Industries & Commerce of Northeastern Region (FINER), Swahid Dilip Chakraborty Path, RG Baruah Road. Guwahati – 781005

1. Legal issues

Objections

Some consumers have stated that according to the Conduct of Business Regulations the ARR for the year 2003-04 was due for submission latest by 15th December 2002 while the Board submitted the same on 1st of July 2003. Therefore the consumers claim that the petition is not legally maintainable and should be rejected. It has also been stated that the petitioner submitted the ARR for the year 2003-04 and, therefore, the Electricity Act prevailing at that time must be applicable for the purpose of determination of tariff and not the ERC Act as referred to in the petition.

Reply of ASEB

ASEB has stated that it submitted the tariff Petition for 2003-04 on 31st Dec 2002 with due permission from Honourable Commission for extension of date from 15th to 31st Dec 2002. Thereafter the Secretary AERC in his letter dated April 30, 2003 had directed ASEB to resubmit its petition in accordance with the revised guidelines issued by the Commission. The date for submission of the petition was fixed on 15th May 2003. However, on the request of ASEB the date was extended to June 30th 2003. Thus ASEB has stated that the ARR has been submitted as per the Directive of the Commission and as per the provisions of the ERC Act.

Views of the Commission

During the Public hearing held on July 5th 2004 the objector stated that since the Commission has accepted the petition in its own wisdom, they have no objection to the same. Details on this matter are provided in clause 1.3 of this tariff order.

The Commission has determined this tariff in accordance with the ERC Act 1998 and Electricity Supply Act 1948 as per first proviso of section 61 of the Electricity Act 2003 (36 of 2003).

2. Sales /Demand estimation

Objections

Consumers have stated that there are inconsistencies and mistakes in projecting figures in the petition submitted for the year 2004-05. The methodology which has been applied to project the category-wise sales has not been stated. The consumers have argued that unless the methodology is understood the ARR figures should to be rejected.

Reply of ASEB

ASEB in its reply has stated that the methodology has been stated in the petition and subsequent clarifications have been provided to the Commission.

Views of the Commission

The Commission has reviewed the sales projections and has accepted the sales/ demand estimation provided by the utility. Detail explanation is available at Section 4 of this tariff order.

3. Transmission and distribution losses

Objections

One of the consumers has questioned whether metering and proper accounting is done for electricity consumed in Board’s own offices, Guest Houses, Workshops, Stores, Sub-Stations, Control Rooms, etc. Consumers have also stated that since the loss due to pilferage directly affects the consumers the Commission should take suitable action.

It has been stated that T&D losses are solely due to incompetence, inefficiency and corruption in ASEB. One of the consumers has suggested that the audited figures should form the basis of ascertaining the T&D loss and the year wise desirable/achievable reduction. Accordingly, T&D loss for the year 2003-04 may kindly be considered as 34% (considering a loss reduction of 5%). Based on loss of 34% for year 2003-04 and considering a reduction of 5% T&D loss in one year, the T&D loss for FY 2004-05 should be fixed at 29%. Another consumer has suggested that the Board should not be permitted to claim more than 18% as the T&D loss including commercial loss which is the same as permitted by the Honourable Supreme Court in case of CESC Ltd for the year 2001-02.

Reply of ASEB

ASEB has argued that high T&D loss is a national problem and ASEB is proposing various steps to reduce this loss. The utility has stated concerted efforts are being made to reduce T&D losses by way of elaborate metering which includes Board’s establishments also.

Views of the Commission

The Commission agrees with the point made by the objector that the Board’s own offices and establishments should have metered electricity supply. The Commission hereby directs the Board to submit a report on the status of meters installed at such locations within two months of the publication of this order.

It is true that loss due to pilferage directly affects the consumers. It is also emphasised that all the stakeholders in the electricity industry have a role to play in reducing the pilferage. The Electricity Act 2003 contains some provisions that will assist the sector in curbing pilferage. It includes setting up of special courts by the State Government (section 153). The Commission in its various regulations intends to make the commercial processes more transparent. The Commission will also monitor the performance of the utility, including transmission & distribution loss, collection efficiency etc on a regular basis and shall provide necessary directions whenever it is required. The consumers should also cooperate with ASEB wherever the utility seeks help in curbing electricity theft. However, the primary responsibility for reduction of losses lie with the utility and it should take all possible measures for adequate reduction of pilferage.

The Commission has accepted the Transmission & Distribution loss projection of 36.5% made by the Board for the year 2004-05. The details are provided in Section 4: of this tariff order.

4. Employee cost

Objections

Consumers have stated that no efficiency in performance has been reflected in the employees cost. It has been pointed out that although, the number of employees is said to have decreased, the employees' costs proposed by the utility have increased. Consumers have also stated that employee cost attributable for projects under construction should not be charged to revenue heads and should be excluded while computing ARR. One of the consumer has suggested that employee cost may be reduced to Rs 259 Crores in place of Rs 284 Crores for FY 2003-04. For FY 2004-05 the employee cost should be reduced from 330.45 Crores to Rs 255 Crores.

Reply of ASEB

ASEB has stated that the claim is made with reference to the amount approved by the Honourable Commission with necessary hike between the respective years.

Views of the Commission

The Commission has reviewed the projected expenses on account of employees provided by the Board and the Commission allows expense of Rs. 298 Crores instead of Rs. 330 Crores proposed by ASEB for the year FY 2004-05. The details are provided in chapter 4 of this tariff order.

The Commission recognises that ASEB has one of the highest employee cost per unit of sale. The Commission recognises that any initiative on downsizing and / or redeployment and retraining of workforce cannot be effected immediately without adequate study being made on actual requirement as per need. Moreover the ASEB has submitted that it has engaged M/S CMC of Kolkata for conducting a comprehensive study of improving the productivity and deployment of the workforce. The Commission is supportive of the initiatives taken by the ASEB on this front and is of the view such efforts will bear fruit in the long term.

The Commission is aware of the fact that the adequacy of workmen may not be uniform across functions/levels of hierarchy and there might be shortages at some levels and surpluses in others.. The ultimate objective of any exercise must be to make the workforce more productive both in terms of number of employees per consumer and employee cost per unit of sale. In order to achieve this the utility may have to redeploy its workforce in more productive areas, retrain the employees, if required, and increase its efficiency with specific focus on increasing the number of units generated and conversion of commercial losses into energy sale.

5. Administrative and General Expenses

Objections

One of the consumer has proposed that the honourable Commission may consider A & G expenses to the extent of Rs 7.6 Crores for the year 2003-04 and 2004-05 unless further reduction is considered by the Commission.

Reply of ASEB

No comments

Views of the Commission

The Commission has reviewed the projected A & G expenses provided by the utility. The components of this cost head are vulnerable to the inflationary pressures of the macro economy and hence are not constant. For FY 2003-04 and FY 2004-05 the Commission has considered the actual expenditure in FY 2002-03 as the base figure which has been escalated at the annual inflation rate. The details are provided in Section 4: of this tariff order.

6. Depreciation

Objections

Number of objectors have questioned about the expenses on account of depreciation claimed by the utility. It has been pointed out that depreciation has increased significantly in the consecutive years but there is no significant increase in power generation. It has also been questioned how the depreciation amount will contribute towards repayment of principal portion of loans and bonds. Consumers have suggested that the expenses on account of depreciation may be examined in proper perspective considering the limit of Rs 33.7 Crores as proposed by the Board for the year 2003-04. It has also been suggested that for the year 2004-05 depreciation should be fixed at the previous year's amount or little lesser than that. It is also stated that Board has shown depreciation against land and rights amounting to Rs 219 Crores. One of the consumer has stated that depreciation amount should not be considered while computing its energy charges for the year 2003-04 and 2004-05.

Reply of ASEB

ASEB has submitted that it has shown Rate of Depreciation for land and land rights as 0%. The utility has stated that the claim of depreciation is made under the accounting procedure adopted by it as per GOI notification SO 266 (E) dt March 29 1994. Though the Commission has not allowed depreciation in its previous tariff order, it has not rejected the procedure adopted by the Board.

Views of the Commission

Depreciation is a non-cash expense for the utility and represents a major source for funds generation. This source of fund is in general used to repay the principal portion of loans and for replacement of assets. The Commission recognises ASEB's claim to this expense. However the Commission recognise that in order to avoid a rate shock the inclusion of depreciation in the ARR for the respective year has to be limited to the extent of the repayment of the principal portion of the loan which otherwise the Board shall be left with no cash generation to meet this liability of repayment. Hence only expenses up to the extent of the loan repayment amount to Financial Institutions has been allowed for the year 2003-04 and 2004-05 to be recovered through tariffs. ASEB has correctly pointed out that the depreciation rate of land is 0% and thus no depreciation is calculated for land.

7. Interest and finance charges

Objections

Consumers have pointed out that the interest and finance charges provided in the ARR are quite objectionable, as most of the assets are lying idle. Further the Board does not pay Interest and Finance Charges. The Board has also failed to furnish details of actual interest payments with matching of the loans. Under these circumstances, the consumers have argued that, the Commission should not include the expenses in ARR. One of the consumers has also suggested that the Commission may follow the principle adopted in the previous tariff order and allow only 50% of the interest cost.

Reply of ASEB

ASEB has argued that the interest and finance charges are claimed as actual payable to different financing agencies and recovery of such expenses from tariff is imperative. Thus ASEB does not find any merit in the logic of opposing pass through of interest and finance charges.

Views of the Commission

The Commission agrees with the view expressed by ASEB that acceptance of payment of interest in the ARR is a must without which the utility shall be left with no cash generation to pay interest on the loan it has taken for the purpose business it is operating.

The Commission has also noted that the Government of Assam has, as part of the restructuring exercise, has cross adjusted the outstanding liability of the Board. . Due to this there has been significant reduction in the interest and financing liability of the Board for FY 2003-04 and FY 2004-05. This is a direct benefit of the power sector restructuring currently underway in the State of Assam and the same has been passed on to the consumers.

The interest cost thus approved is Rs 34.17 Crores against Rs 88.94 Crores applied for FY 2003-04. Similarly interest cost approved for FY2004-05 is Rs 51.78 Crores against Rs 73.94 Crores applied by the Board. The details are provided in section 4.

However the Commission notes that in spite of the treatment meted out for this expense in the previous tariff order the ASEB has only marginally improved the extent of information relating to interest attributable to the projects under construction. The Commission directs that in future ASEB should identify the assets that are under construction and provide a more detailed and accurate estimation of such costs.

8. Repair and Maintenance expenses

Objections

It has been pointed out that the difference between the proposed amount and the audited actual for repairs and maintenance is Rs 2.08 Crores. The consumer has suggested that the amounts for the year 2003-04 and 2004-05 may be examined in view of the above differences. One of the consumers has stated that no increase in expenditure is acceptable unless corresponding improvements are clearly stated by the board in its submission.

Reply of ASEB

ASEB has stated that it has explained the issue in the petition.

Views of the Commission

The actual R & M cost for FY 2002-03 was Rs 19.85 Crores. The actual expenses for the first six months and forecast for the rest six months for FY 2003-04 as stated in the petition of ASEB is Rs 23.27 Crores. The R & M amount filed for FY 2004-05 is projected to be Rs 22.99 Crores. The Commission has dealt with this matter in detail in section 4.

The Commission recognises that if the fund provided on R&M head is low, the quality of supply may suffer further. Besides this inadequate maintenance also affects the life of the assets. The Commission has therefore accepted the figure proposed by ASEB to provide utility the enough cash for adequate repair & maintenance of the system to have improvement in quality of supply.

The Commission is of the view that expense for this component must be benchmarked to a base number and escalated annually. One of the options would be to approve R&M expenses as a proportion of assets in use. **The Commission directs the ASEB that in the next tariff petition the utility should forecast expenses on this account based on a widely accepted industry practise and explain the benefits likely to accrue to the consumers due to such works**.

9. Bad debt

Objections

Consumers have stated that the utility should try to recover the entire amount billed instead of trying to pass a portion as bad debt in the tariff. They feel that it will not be fair to pass on the inefficiencies of the Board to the consumers and therefore the amount proposed should be disallowed.

Reply of ASEB

ASEB has stated that the method of calculation and reason of claim of bad debt has been explained in the tariff petition.

Views of the Commission

ASEB has claimed bad debts of 2% of gross revenue or Rs 22.95 Crores. The Commission recognise the utility may have certain uncollected bills even after best effort some of which may never be recovered from the consumer. This matter should be studied in greater details. The revenue collection of every category against bills issued during the year needs to be analysed. **On the issue of 'Bad Debt' the Commission would encourage ASEB to include only such amounts that it is proposing to write off from its books. Such an exercise conducted on a regular basis will ensure that the books of ASEB depict the true financial health of the organisation**.

It is also noted that the Board has not written off any bad debts corresponding in the previous year. In this context the Commission is disallowing pass through of bad debt in this tariff order. However the Commission shall analyse the issue further for consideration of Bad Debt in future tariff.

10. Revenues

Objections

Consumers have pointed out that the Board, itself, has admitted that the expected benefit from the implementation of new tariff from 1.4.03 to 30.6.03 is not clear. On these grounds they have urged the Commission to consider the failure on the part of the Board to utilise the benefit due to the revision of tariff and reject the proposal to enhance the tariff for FY 2003-04.

Consumers have also cautioned that further increase in tariff may result in shifting of industrial load to captive generation.

It is also pointed out that the ASEB in its proposal for FY 2004-05 has not given credit to the extent of Rs 97.4 Crores available from sale of surplus power.

Reply of ASEB

On the matter of benefit from the implementation of new tariff, ASEB has stated that the objector has failed to get the meaning of the statement made by the Board. The utility has clarified that the time between the tariff implemented and the time of submission was too short to get substantial change in the quality of supply.

On the point of tariff payable by industrial consumers ASEB stated that economical running of the industries is good for the system and the Board is not against this.

Views of the Commission

The Board is stating that whatever benefit is being expected to yield out of the tariff implemented from 1.04.03 is yet to give its due return given the short term between the previous tariff adjustment and the FY 2003-04 petition. It is not the case that the Board has failed to utilize the benefit but only that the time has been too short to realize it. This is not sufficient reason to reject their petition.

Industrial consumers may shift to captive generation on account of the following two major reasons:

⇒ Cost of power purchased is higher than the cost of generation from captive source

⇒ The quality of service rendered by the utility is poor.

The Commission believes that tariff should progressively reflect the prudent cost of supply. The Commission has thus followed the overall principle of minimum increase in tariff for those categories where the current average tariff is higher than the cost of sale. The Commission would like to emphasize that reduction in cross subsidies is a gradual process and must be approached from both sides i.e. reduction in cost and improvement in revenue.

The Board on its part should formulate a strategy to provide quality service at a reasonable cost to retain the subsidising (where the average tariff is higher than the cost of supply) set of consumers.

11. Reasonable return

Objections

Consumers have stated that the provision of statutory returns should not be made in the ARR till the ASEB attains its viable position and starts giving some profits.

Reply of ASEB

No Comments

Views of the Commission

The tariff of ASEB is being set on a cost plus basis and the statute allows a minimum 3% return on the net capital base at the beginning of the year. Accordingly the claim of the Board for the reasonable return is in line with the provision. However the matter of tariff increase under the present operating level and the possible increase in internal cash generation by improvement in performance level has to be taken into consideration.

Considering the above aspects, the Commission allows Rs. 3.41 Cr. for the year 2003-04 and Rs. 20.93 Cr. for FY 2004-05 towards statutory return.

12. Increase generation by state generators

Objections

Numbers of consumers have complained against low generation by ASEB. It is pointed out that the Board in its own admission has stated its inability to generate even half of their installed capacity. Had ASEB properly utilized its own generation capacity the revenue requirement would have been much less. The consumers have suggested that ASEB should generate more power rather than relying primarily on power purchases. One of the consumer has also stated that the main reason for poor load growth in Assam compared to load growth projected in sixteenth EPS is due to very low generation from the Board's own generating stations.

It is also pointed out that in the FY 2003-04 petition, ASEB has forecasted that the PLF of Lakwa TPS (120 MW) would improve to 70% to 80% with an improved fuel supply. However this is not stated in the FY 2004-05 petition.

One of the objector has also stated that the cost of the RLA study of BTPS of Rs. 5.00 Crores is high. The consumer is of the view that the cost can be reduced to Rs. 1.00 Crores by engaging experienced persons, for example, retired employees.

Reply of ASEB

ASEB has stated that Lakwa Thermal Station is not being able to go for its full utilization due to short supply of gas. Against allotment of 0.6 MMSCMD of gas it is getting around 0.4 MMSCMD gas. Additional allotment of 0.5 MMSCMD gas has been obtained from the Ministry of Power, Government of India and with availability of this additional quantity the plant utilization shall go upto 70% PLF.

ASEB has also stated that own generation is not always cheaper compared to power purchase. The utility is mainly having thermal power stations whose cost of generation is much higher than the hydel power available in the region. Also ASEB is entitled to certain amount of share in the central sector generation stations and buying of power from these stations does not increase the average cost of power as stated.

ASEB has also clarified that the total cost involvement for the RLA study is envisaged as Rs 5.0 Crores including the cost of consultancy service of NTPC and support service to be provided by ASEB. The utility has also commented that the party's opinion on undertaking the RLA study at a cost of less than one crore is without any supporting document or calculations. In the opinion of the utility, since the proposal is placed before PFCL and the Planning Commission and it should be left to them to decide whether the amount is high or low.

Views of the Commission

ASEB in its petition for FY 2004-05 has stated that additional allotment of 0.5 MMSCMD gas has been obtained from MoP, GOI and with availability of this additional quantity the plant utilization shall go upto 70% PLF. However ASEB has not stated when this gas will be available and the steps being taken by ASEB to hasten the process. In Annex 2 (i) of the tariff application ASEB has projected a PLF of 38.05% for FY 2004-05 only for LTPS, which is even lower than the estimated PLF of 41.76% for the period Dec 03 to Mar 04. The Commission would like to draw the attention of ASEB to the aspect of gas availability. This issue has been pending for long and the Commission directs the ASEB to take it up at highest levels and resolve the long standing problem of gas availability.

ASEB must take all necessary steps to improve generation from its generating plant. This will reduce the per unit average cost of generation. In case, due to higher generation from the state units, the energy requirement from the Central Generating Stations is reduced, ASEB may surrender high cost power or may gain revenue by trading the surplus power. The Commission directs ASEB to submit a time-bound plan, within three months of notification of this tariff order, about revival / alternate plan on the closed generation units and improvement of PLF of the LTPS and NTPS.

In the matter of RLA study for BTPS the Commission agrees with the point of view expressed by ASEB.

13. Poor quality of supply and service

Objections

Numbers of consumer have commented on the quality of supply and it is stated that the quality is not acceptable. One of the consumer has stated that ASEB does not give any prior notice / advance information to consumers for non-supply of power. It is also pointed out that the Board has failed to utilise the grant under the APDRP Scheme. One of the consumers feels that the revision of tariff is totally unwarranted and uncalled for given the poor, erratic and non-transparent quality of supply and service rendered by ASEB.

It has also been stated that the ASEB field staff deliberately twist and misinterpret the Tariff and Supply provisions harassing the bonafide consumers with the sole view of earning more revenue for the Board and also for other reasons. Reporting of such matters to higher authorities of ASEB have not been found to be fruitful.

Reply of ASEB

ASEB has replied that it tries its best to improve supply and quality of power to its valued consumers. The utility feels that with the implementation of all the schemes under reform and restructuring of ASEB the position will certainly improve in future. On the matter of advance notice it has stated that non-supply of power may be due to scheduled shut down or unscheduled outage. In case of the former the Board generally gives notice to the consumers of non-supply of power.

On the allegation of twisting tariff provisions the utility has denied any such practice as the consumer has not provided any concrete document. ASEB has also stated that as per the directive of the Honourable Commission and with the formation of Consumer Grievance Cell the quality of service to the consumers will be improved.

Views of the Commission

The Commission agrees that the present quality of supply to many consumers is not acceptable. It is also a fact that the poor performance of the distribution system is a consequence of years of neglect of the power system in Assam.

The APDRP is meant to assist in addressing improvement and augmentation. Repairs and maintenance will have to be financed from internal resources i.e. through adequate provision in tariff.

The Commission directs that the utility should make a fair and equitable load shedding plan for the period ASEB faces power shortages and adequately advertise the plan before implementing the same. Further, the Commission directs that the utility should provide at least 24-hour notice to the consumers (expected to be affected) before carrying out its planned maintenance activities.

The Commission is concerned about the perception of services expressed by the consumer regarding misinterpretation of the tariff provisions. AERC has issued 'Guidelines for Redressal of Consumer Grievances' and the ASEB has already constituted a 'Grievance Redressal Forum' as per the Commission's guidelines. Consumers may follow the procedure stated in the Guidelines and thus provide a fair chance to the utility to solve the problems within the prescribed timeframe.

14. Tariff Structure – Issues from Tea Industry Cost to Serve

Objections

The tea industry in general has stated that due to the following reasons its net pay-off to the utility is high:

1. High tariff compared to low cost of supply at HT

2. Poor availability of power

3. Methodology of determination of Contract Demand and

4. Due to change in weather conditions the industry sometimes requires to produce higher amount of tea even in non-peak season resulting in payment of penal charges

The consumers have stated that the proposal to increase tariff of the tea category is against the basic principles of cost reflective tariff and the high tariff has been restricting their ability to compete in the domestic as well as global market. Consumers have also objected to high tariff compared to that of lower costs of power purchased. It has also been stated that average cost of supply should not be used for determination of tariff, as it is unfavourable for EHT and HT consumers. The objector has suggested that the Honourable Supreme Court's interpretation regarding Cross-Subsidy should be honoured. Referring to the availability Based Tariff applicable on ASEB one objector has requested for allowing the tea industry to place their monthly demand so that the industry can plan its off-take on the basis of prevailing weather conditions. It has also been submitted that consumers may be allowed a choice of lesser period of say 2 months within the off-season duration (December to March) to overcome the situation.

One of the objectors has commented that TOD tariff should not be made applicable to the tea industry, as it is not capable of shifting the load. At least a percentage of supply during 1700 to 2200 Hrs should be charged at regular rates. One of the objector has stated that the demand of electricity is very high during peak hours and very low during non-peak hours particularly at night. To encourage consumers to shift consumption from day to night, incentives should be provided in the form of 60% of normal tariff during 10pm to 6am. Similarly higher tariff of 140% of normal rate may be applicable between 5pm to 10pm.

It has been pointed out that the FY 2003-04 petition by the Board reference to the Tariff of Delhi Vidyut Board that the average cost of power is Rs. 5.06 per kWh is not correct.

Reply of ASEB

ASEB has stated that it has taken due care in proposing its tariff to different categories of consumers which includes tea category also. As regards cost to serve the utility feels that due to lack of data and socio-economic conditions cost reflective tariff will have to be done progressively. In its reply ASEB has referred to the tariff order dated 26.03.03, and stated that in clause 5.4 the Commission had observed that the change of the principle has to be done gradually so that the consumers have time to adjust. The lack of reliable data is also another reason for adoption of this principle. With the completion of various scheme under reform process this can well be adopted in future. ASEB supported the observation of the Honourable Commission "due to socio-economic policy objectives, it may be necessary to provide subsidized tariff to certain categories like domestic and rural consumers". Regarding selection of period for off-peak supply ASEB has stated that it is not acceptable as ASEB has to pay for the fixed charges for the capacity booked by it from the Central Generating Stations. On the matter of TOD tariff ASEB has stated that the daily average of TOD tariff is kept at the same level as flat type tariff.

Regarding the DVB average cost of supply ASEB has stated that the average cost of supply and individual tariff for a certain category may not be the same.

Views of the Commission

With the data available at present, it is not possible to calculate the cost to serve on voltage or category basis. In this tariff order the cost to serve is determined on average basis and it may be noted that inter-category cross subsidy has not increased from the levels that was approved in the last tariff order.

ASEB as purchaser of electricity from the generating companies is required to pay a fixed/capacity charge on the basis of shares alloted, which cannot be varied from month to month or even from season to season. However in consideration of seasonal nature of tea industry there is already a provision for reduction of contract demand for the off-season. It is not possible to allow a change in contract demand from month to month. Therefore ASEB is opposing the move to provide the benefit expected by the consumers. On the other hand different weather conditions may result in different off-season periods in different parts of Assam. The Commission therefore allows a 'Tea, Coffee and Rubber' category of consumer to select any four continuous months, between Septembers to March of a financial year, that would be treated as off-season period for that consumer. The consumers will have to declare the months selected by it as off-season period before the month of July. In case a consumer does not declare any period, the normal off-season period will be applicable to it. The details are provided in the chapter on tariff structure.

The Commission has studied a typical load curve of ASEB and found that the utility has a single peak during evening and otherwise there is no difference between night and day load. The purpose of introducing TOD tariff is to flatten the load curve. It is therefore important to have a TOD tariff and the Commission prefers to continue with the current structure. ◈

◈ Amended vide order dated 6th August, 2004

15. Tariff structure – Multi-Year Tariff

Objections

Consumers have commented that the Multi Year tariff setting formula is totally unjustified and it will rob the consumers of their right.

Reply of ASEB

ASEB has stated that without any supporting reason this claim may be rejected.

Views of the Commission

The Multi-Year Tariff or Long-Term Tariff Principle determination process requires extensive study and consultation. Considering the requirement the Commission is of the view that this issue should be dealt with separately. Thus, in this tariff order the Commission is not approving the Multi-Year Tariff setting formula proposed by ASEB.

Power Factor

Objections

It has been stated that the penalty against low power factor should be waived as the unit consumed is high. Consumers have also suggested that incentives of 1% and 2% for maintaining power factor be revised and higher incentives be allowed in a scale of 1% at 85% going up to 5% at 99%.

One of the consumer has commented that power factor above 85% makes the consumer eligible for power factor incentive. ASEB however rounds off calculated power factor to 85% even if the calculated power factor is 85.1% or 85.9% making the case non-eligible for power factor penalty. The consumer has requested to clarify the matter.

Reply of ASEB

No comments

Views of the Commission

Low Power Factor causes not only higher losses and poor voltage regulation in the system but also involves higher payment by the Board to the generating companies as reactive energy charges. Moreover the tariff in Assam is based on kWh, not on kVAh. Therefore power factor penalty should continue in the tariff structure.

The Commission agrees with the point of view expressed by the objector that any value above 85% should make it eligible for power factor incentive. ASEB should bill the consumers accordingly.

16. Tariff structure – Other issues

Objections

Consumers have pointed out that since Board has enforced a different tariff for off-season therefore imposing penalty for exceeding minimum contract demand of 30% of connected load is not justified.

It has also been requested that a provision be made to refund the fixed charge for the period of power failure for more than 8 hours a day.

Consumers have also suggested introducing incentive for consumers having Load Factor above 75%.

It has also been pointed out that in the last tariff order a rebate of 3% has been given to most tariff categories drawing power at 33kV. The same should be allowed to the HT II category when power is drawn at 33/ 66/ 132 kV.

One of the consumers has also requested that if there is any provision in the Electricity Act 2003 (36 of 2003) to shift the loss burden of the Board to the Government the Commission may take necessary action.

Reply of ASEB

The Board has stated that it has taken due care in proposing tariff for different categories of consumers.

Regarding proposal on incentive for achieving high load factor, ASEB has stated that it is placed before the Honourable Commission to see whether it is justified or not.

Views of the Commission

The tariff structure provides an option to the consumers to seek lower demand ◈*down to 30% of the seasonal contract demand* during the off-season period. The consumers should make a prudent assessment of their demand for the off-season period.

◈ Amended vide order dated 6th August, 2004

This will help the utility to manage their system properly and avoid penal charges on the consumer.

The concern expressed by the objector is valid. The Commission is introducing incentive / penalty mechanism in the current tariff itself. The Commission is also in the process of finalising the regulations on Performance Standards and Electricity Supply Code. Suitable provisions will be provided in such regulations on compensation against unsatisfactory services.

At present the quality of Supply by ASEB is poor as demonstrated by the petition submitted by the consumers. ASEB is yet to respond to the same. Consumers can achieve higher Load Factor only when adequate supply is provided by the utility. **The Commission directs the utility to improve its supply. The Commission is also introducing a fixed charge tariff based on availability of power to certain categories of consumers where it is possible to measure availability. A performance standard under section 57 of the Electricity Act 2003 (36 of 2003) is also under preparation. These should encourage ASEB to enhance power availability to consumers. The Commission would consider implementation of Load Factor incentive after the Power Supply/ Availability to consumers improves. However, the present two-part tariff provides some inherent incentive for better load factor, as, with increase of load factor i.e. with increase in energy consumption the average per unit cost of power decreases.**

The Commission (in principle) agrees with the point of view of the objector that a rebate should be provided in the tariff payable by consumers availing power at higher voltages and is introducing suitable modifications in this tariff order (see section 5 of this tariff order.)

There is no provision in the Electricity Act 2003 (36 of 2003) for the Commission to shift the burden of the Board to the State Government. The decision to take over the burden of expenses or losses of the utility by the State Government rests entirely on the State Government itself. In this context it may be noted that substantial benefit has been passed on to the consumers by way of reduction of interest liability of the Board during the year FY 2003-04 and 2004-05 out of cross liability adjustment of the GoA and ASEB under reform and restructuring plan..

17. Fixed charges / minimum charges

Objections

Consumers have stated that if fixed cost is to be realised at all, it should be on the basis of the meter reading and not on contract demand. Consumers in general have strongly objected to reintroduction of minimum charges or minimum guarantee charges as the Board failed to maintain regular supply. It has been stated that recovery of fixed charges through demand charges is more scientific as compared to minimum charge mechanism as has been held by some of the regulatory Commissions in India and thus both types of charges ought not to be allowed. One of the consumer has also pointed out that as ASEB is not able to supply regular continuous power to industry, the Fixed Charge should be abolished and only actual consumption charges should be payable.

Reply of ASEB

ASEB has replied that Billing demand is based on meter reading only with certain conditions. On the question on levy of minimum charges the utility has stated that minimum charge has no link with regular supply. ASEB has also quoted a case from 'Law of Electricity in India by Sarkar and Bhatnagar' (case reference – DCM Limited vs Assistant Engineer, AIR, 1988 Raj 64 at 72, 73). On the issue of having a fixed cost component in the tariff structure ASEB has stated that the two-part tariff is an established procedure and is adopted for all categories of consumer including the industrial consumers.

Views of the Commission

Costs like employee expenses, repairs and maintenance, interest payment, capacity charges for power procurement etc. constitutes fixed cost of the Board. Ideally these are to be recovered from consumers irrespective of the amount of electricity consumed by them. Therefore, the Commission had approved fixed charges in the previous tariff order. The Commission also recognises that it is not practicable to introduce a very steep increase in fixed charges without linking the same with availability. In this tariff order the tariff structure has been further rationalised and the percentage of fixed cost recovery from fixed charges is being marginally enhanced.

The Commission has not considered Minimum Charge or Minimum Guarantee Charge in this tariff order for FY 2004-05.

18. Applicability of tariff

Objections

One of the objectors has stated that any revision granted by the Commission should allow consumers a notice period of sixty days from the date of tariff order of the Commission for giving effect of the revised rate of tariff.

Reply of ASEB

No comments

Views of the Commission

It has been a general practice across various states of India to provide seven days notice period towards applicability of a new tariff order. The previous tariff order for financial year 2002-03 issued by the Commission on 26th March 2003 was made applicable from April 1 2003. The Commission approves this tariff order and directs that the tariff order shall be applicable from August 1 2004.

19. Insurance

Objections

Consumers have suggested to implementation of Insurance Schemes.

Reply of ASEB

No comments

Views of the Commission

The Commission notes the point and directs the Board to analyse the economics of taking required insurance cover and submit a report on this matter within three months of issue of this tariff order.

20. Terms and conditions of supply

Objections

Many consumers have raised issues regarding determination and subsequent change of contract demand. It has also been pointed out that under the Electricity Act 2003 (36 of 2003) the Commission has to approve the Supply Code and the regulations thereof.

Reply of ASEB

ASEB has stated that frequent change of contract demand causes much difficulty in system management as well as financial management of the Board. It has also submitted that the utility is bound to follow any regulations enacted by the Commission.

Views of the Commission

The Commission is in the process of drafting the Electricity Supply Code and Connected Matters Regulations. The Commission is of the view that this subject matter should be dealt in the stated regulations. Thus till the regulation is finalized, the current procedure will continue.

21. Meter rent and Transformer maintenance Charges

Objections

Consumers have pointed out that ASEB charges high meter rent against low purchase price of meter. The utility also charges high transformer maintenance charges but does not carry out any maintenance of the transformers.

Reply of ASEB

ASEB has claimed that these charges are under the established procedure of the Act under which ASEB is functioning.

Views of the Commission

The miscellaneous charges like meter rent and transformer maintenance charges charged by the utility should be the approved by the Commission. **The Commission therefore directs the utility to file for the approval of the schedule of miscellaneous charges within two months of the issue of this tariff order**.

SECTION 4: ANALYSIS OF REVENUE REQUIREMENTS

Introduction

4.1 The Commission has assessed the ARR for ASEB for FY2003-04 and FY 2004-05, based on the petition submitted, additional information received from the Board including actual for FY 2003-04, and discussions held with the Board's staff on 10 May and 26 May, 2004. At the outset the Commission would like to draw attention to the objections of many consumers to the high costs of the Board. The objectors have said that it would be unfair to pass through the costs to the consumers arising out of the inefficiencies plaguing the Board's system. Broadly, these high costs are said to be on account of the following major causes :

(a) T&D losses are still very high despite small improvements since FY 2002-03;

(b) The Board's generating plants are still operating at very low PLF for the generating plants which are still in-service;

(c) The Board's employee cost is still among the highest in India despite recent reductions in staff; and

(d) The poor quality of supply and service particularly during FY 2003-04.

4.2 The Commission has kept in mind the consumers' views, while approving the revenue requirement. The Objections, the Board's views and the Commission's own views have already been set out briefly in the preceding section. The following paragraphs discuss the Commission's detailed analysis along with the ruling on each element of the revenue requirement. The Commission will like to mention that in the subsequent paragraphs and in the next section, figures have been rounded off for ease of presentation. Therefore, minor variations in the calculations may be ignored.

4.3 This order disposes ARR and Tariff petitions submitted by ASEB for the FY 2003-04 and FY 2004-05. It may be noted that the FY 2003-04 is already over and the Commission is not in favour of revising any tariffs from retrospective date. In line with this principle, the Commission has taken on record the actual expenditure (for major items like power purchase and fuel cost for generation and revised estimates for other heads) and actual revenue for FY 2003-04 to compute the revenue gap. The revenue gap for FY 2003-04 (after including the impact of GoA support for FY 2003-04) has been included in the ARR for FY 2004-05. The revenue gap for FY 2004-05 (which includes the cumulative impact of FY 2003-04 and FY 2004-05) has been met through tariff hike and

GoA support. For FY 2004-05 the Commission has estimated expenditure and revenue items based on projections for the entire year 2004-05.

Since the prudent power purchase and generation cost actually incurred by the Board during the year FY 2003-04 has been taken into consideration in determination of tariff for FY 2004-05, the petitions made by the Board for PPFCA adjustment for the first three quarter of the year 2003-04 automatically gets disposed off vide this order.

4.4 The Commission would like to highlight the major projects being undertaken as part of the power sector reform programme being undertaken by the Board with the assistance of Government of India and the State Government. It is expected that the completion of these projects will improve the quality of supply, reduce system losses and hence reduce the cost of supply. These important initiatives are set out in the table below as described by the Board in the FY 2004-05 petitions. It is these initiatives along with Government's commitment to improve the quality of management of Board that will be critical to the success of the reform program.

Different reform programmes	**Consumer Benefit**
APDRP : Accelerated Power Development and Reform Program (Government of India) 12 out of 14 circles of the Board will receive the following investments: ▪ Construction of new 33/11 KV sub-station. ▪ Renovation and modernization of sub-stations. ▪ Installation of new transformers and augmentation of existing transformers in distribution sub-stations. ▪ Construction of new 11 KV & LT lines change of conductor and augmentation of existing feeder. ▪ Provision of common facilities oil filtration plant, augmentation of MTI laboratories etc.	Rs. 408.54 Crores has been approved. The first phase of improvements has already been implemented in three of the distribution circles. A further Rs. 5.05 Crores under the APDRP has also been approved for system metering to improve energy auditing at the circle as well as Board level. The rollout of the computer billing system is expected to be completed by end 2006. The major consumer benefits are expected to be: ▪ Improvement in the quality of supply in the distribution system ▪ Better accounting for energy losses through 100% metering to reduce theft and the cost of electricity to honest consumers ▪ Improved efficiency in customer billing and collections

Different reform programmes	Consumer Benefit
▪ System metering and consumer metering ▪ Revenue billing system	
ASEB Restructuring: The Asian Development Bank is providing assistance of USD 150 million for restructuring including investments in the following power system: ▪ Transmission lines. ▪ 132 KV new substations. ▪ Augmentation and extension of existing substations. ▪ Grid Communication system ▪ Control and Protection system. ▪ 33 KV bus capacitor ▪ Switchgear replacement ▪ SCADA system ▪ 33/11 KV substations augmentation under Rural Electrification ▪ Communication system ▪ Metering system. ▪ A major debt restructuring is also being financed as part of the ASEB restructuring.	Consumers will benefit from the reduction in transmission technical losses by 3%, *the* improved voltage profile in the transmission grid (end voltages at 33 kV are within 5% deviations from the rated voltages), improved system operations and from the long term manpower reductions that can be achieved because new substations being built could be unmanned as remote control and monitoring would be done from the SCADA system. The ASEB restructuring will lead to a substantial reduction in debt payments and reduce this burden on consumers.

4.5 The Commission will monitor on an annual basis the progress achieved in the implementation of these projects to ensure that the expected benefits listed above are achieved.

Sales forecast

4.6 The ASEB in its ARR filing for FY 2004 had projected 2,115 MU of sales. However in the ARR filing of FY 2005 the ASEB has revised the figure to 2006 MU based on actual data for the first seven months and on estimates for the remaining five months. On April 13th 2004, the ASEB submitted data on actual sales for entire FY 2003-04 at 1907 MU. The actual sales data is the basis for computing costs and revenues to assess the revenue gap for the FY 2003-04.

4.7 For FY 2005 the Board has provided the sales category and slab wise break up of the projected sales of 2190 MU. The Board has forecast an overall increase in sales of 14.8% for FY 2005 compared to FY 2004. The reasons given by the Board in the filing for the large increase in forecasted sales are:

(a) Sales in past years have been restricted due to the limited availability of power from own generation and from imports due to transmission constraints; and

(b) The 405 MW Ranganadi HEP plant has been commissioned which will increase the availability of power

(c) There has been marginal mitigation in transmission constraints and improvements in the distribution system which may allow the utility to go for more sale of electricity during the FY 2004-05 than what was done in the earlier years.

4.8 The Commission has examined the estimates of growth rates particularly in view of the reduced sales during FY 2004. The table below depicts the category wise actual sales since 1996-97 and the compound annual growth rate for each of the categories for this period.

Table 4.2 Sales MU by Customer Category FY 1996-97 to FY 2004-05

Category	1996-97	1997-98	1998-99	1999-00	2000-01	2001-02	2002-03	2003-04[6]	2004-05
Domestic	443	464	547	629	757	664	730	759	855
Commercial	129	134	143	151	156	164	195	208	237
General purpose	-	-	31	71	119	69	55	46	52
Irrigation	21	20	15	10	9	9	10	16	16
Public Water Works	27	28	27	27	28	29	32	33	34
Public Lighting	5	5	5	4	4	5	5	5	6
Industry	409	405	346	313	357	376	329	282	307
Bulk	204	204	206	199	201	207	228	260	264
Tea, Coffee, Rubber	246	250	274	268	280	295	300	255	353
Coal & Oil	-	-	-	-	-	-	43	42	60
Temp	-	-	-	-	-	-		0.3	6
Total	1,484	1,510	1,594	1,672	1,911	1,818	1,928	1,907	2,190

[6] This is based on the actual sales for the entire FY 2003-04 as submitted by ASEB on April 13,2004.

Table 4.3 Sales MU – Past Trends

Category	1997-98	1998-99	1999-00	2000-01	2001-02	2002-03	2003-04[4]	2004-05	CAGR '97-04
Domestic	5%	18%	15%	20%	-12%	10%	4%	13%	8%
Commercial	4%	7%	6%	3%	5%	19%	7%	14%	7.1%
General purpose	-	100%	129%	68%	-42%	-20%	-16%	13%	8.2%
Irrigation	-5%	-25%	-33%	-10%	0%	11%	60%	0%	-3.8%
Public Water Works	4%	-4%	0%	4%	4%	10%	3%	3%	2.9%
Public Lighting	0%	0%	-20%	0%	25%	0%	0%	20%	0.00%
Industry	-1%	-15%	-10%	14%	5%	-13%	-14%	9%	-5.2%
Bulk	0%	1%	-3%	1%	3%	10%	14%	2%	3.5%
Tea, Coffee, Rubber	2%	10%	-2%	4%	5%	2%	-15%	38%	0.5%
Coal & Oil						100%	-2%	43%	-1.2%
Total	1.8%	5.6%	4.9%	14.3%	-4.9%	6.1%	-1.1%	14.8%	3.7%

4.9 Some key observations from the above tables are:

(a) The compound annual growth rate (CAGR) for the total actual sales during the period FY 1996-97 to FY 2003-04 has been 3.7%. The figure of 1,907 MU (actual sales) as actual sales during FY 2003-04 must be compared against 2,115 MU that was initially projected by ASEB.

(b) The increase in electricity demand has been led by the Domestic, Commercial General purpose and bulk categories which have exhibited a higher growth rate than the growth rate of the total sales.

(c) There is a trend of reducing sales to industry category of –5.2%. The coal & oil category was separated from the industry category in FY 2003-03. Even if we include the sale of this category with industry we note a CAGR of -3.26%.

(d) For 2003-04 filing, ASEB has separately estimated the consumption by rural domestic/ kutir jyoti connections at 50 MU. This sub category is unmetered and the energy sale for this was subsequently modified to 71 MU based. The Commission notes that estimation of energy consumed by such un-metered categories is subjective and dependant upon the number of consumers and average assessed consumption per consumer.

The Commission is of the opinion that any variation introduced in the assessment of energy from this category must be minimised. **ASEB is directed to provide on a monthly basis the number of such consumers (existing and new). Further within three months of the issuance of this order ASEB must conduct a comprehensive study to analyse the energy consumption of a typical consumer of this category. The results of this study will be used by the Commission in devising a consumption norm for assessing the consumption of this category in the future years**.

(e) The overall growth rate for FY 2005 (14.8%) when compared to the actual sales of FY 2003-04 seems to be optimistic yet achievable against the actual annual average growth rate of 3.8%. The Commission is of the opinion that improvement in supply conditions will aid the growth of sales and achievement of the sales target.

The forecast sales for Tea Coffee and Rubber category of 353 MU in FY 2004-05 is very high compared to FY 2003-04 and it is greater than the highest consumption recorded in past seven years. The consumers of this category have represented on numerous occasions to the Commission informing about the poor supply conditions. The Commission has on record reports from several tea estates that grid power is available for only 50% of the time. Such a poor supply situation is unacceptable particularly to an industry which is so important to the Assam economy and the rural areas for wage employment.

The Commission directs the ASEB to undertake immediate initiatives specifically aimed at improving the supply condition to consumers of this category. Such focussed efforts will help meet the potential unrestricted demand of this category.

4.10 The Commission has investigated an alternative sales forecast using an appropriate growth parameter reflecting the past trends. The options to choose from were a compound annual growth rate (CAGR), average annual growth rate for an extended time period. The choice of an average annual growth rate for 5 years seems most appropriate as it does not depend only upon the beginning and end years and factors in any abnormal years. The For FY 2004-05 the Commission computed a scenario wherein the 5 year annual average growth rate was applied to the actual sales for FY 2003-04.

Sales MU – Commission Scenario

Category	Growth rate of FY 2004-05 over FY 2003-04 in % as per filing	5 year annual average growth rate %	2003-04 Actual sale in MU	2004-05 Filed	2004-05 Scenario
Domestic	13%	7.4%	759	855	815
Commercial	14%	7.9%	208	237	224
General purpose	13%	23.6%	46	52	57
Irrigation	0%	4.8%	16	16	17
Public Water Works	3%	4.1%	33	34	34
Public Lighting	20%	2.4%	5	6	5
Industry	9%	-3.4%	282	307	272
Bulk	2%	5.0%	260	264	273
Tea, Coffee & rubber	38%	-1.1%	255	353	252
Coal & Oil	43%	-	42	60	42
Temp. Supply	0%	7.4%	0	6	6
Total	**14.8%**	**3.8%**	**1,907**	**2,190**	**1,998**

In the mean time the Board has furnished additional information vide its submission dated 12.07.04 showing actual sale during FY 2003-04 as 2016 MU which includes consumption of 104 MU by Board's own establishment, energy consumption assessed in compensation bills etc. The commission directs the Board that all electricity consumption in its won establishments are metered and action must be completed within three months time. The Board should submit compliance report immediately thereafter. The Commission however goes ahead in this tariff order with energy sale of 1907 MU for the year 2003-04 as submitted by the Board earlier.

4.11 The Commission has reviewed the scenario of a lower sales forecast than submitted by the ASEB and further considered the following facts:

(a) Last year is regarded by the Board as an abnormal year for the sale of electricity due to load shedding occurring in peak periods because of a transmission constraint.

(b) The Commission noted in the Tariff Order for FY 2002-03 that there is a need to examine estimates for sales based on unrestricted demand since the historical data has been demand restricted by the present generation shortages and practices of load shedding.

(c) The Commission notes that the 405 MW Ranganadi HEP plant has been commissioned which will increase the availability of power. In the FY 2004-05 petition, the Board has stated that MU available from Ranganadi HEP plant are 737.47 MU which compares to 340 MU approved by the Commission in FY 2002-03 tariff order. Moreover there has been some relief in transmission constraints and improvements in the distribution system due to APDRP investments.

4.12 **Given these facts, the Commission approves the sales forecast submitted by the Board for the computation of the ARR and setting of tariffs for FY 2004-05**.

System losses and energy balance

4.13 In its filing for FY 2002-03 the Board submitted that the total energy loss of the ASEB on account of T&D losses were 42.5% for FY 2001-02. This was further split among technical and commercial losses as 23% and 19.5% respectively. In the FY 2002-03 tariff order the Commission accepted the proposed reduction of losses by 2.5% to 40%.

4.14 The Commission also directed that the Board to provide in its next petition a circle wise break up of transmission and commercial losses. The Board was also directed to provide a plan for 100% metering and T&D loss reduction. The Board has complied with this direction and has filed with information with the Commission. A summary of the plan is given in the table below.

Table 4.5 Commercial and Technical Losses Action Plan

<table>
<tr><td colspan="2">100% Metering and Reduce Commercial Losses</td></tr>
<tr><td>APDRP Scheme</td><td>ADB Restructuring Program</td></tr>
<tr><td>Replacement of all defective/stopped meters as well as replacement of electro-mechanical meters by electronic meters.

190,000 electronic meters at a cost of Rs. 33.96 Crores will be installed by March 2005.

(The Commission has been provided with a circlewise scheme of the replacement program.)</td><td>Under the ADB Program, the Board will install 600,000 meters (60,000 for conversion of un-metered consumers to metered consumers, 240,000 for replacement of electro-mechanical meters and defective meters of all registered consumers, and 300,000 for un-registered/prospective consumers).

Installation is to be completed by December 2006.</td></tr>
<tr><td>Replacement of consumer supplied defective meters

There are 26,400 defective meters supplied by consumers which require immediate replacement. The Board is asking consumers to replace these meters.</td><td rowspan="2">Revenue management

A computerised billing system shall be implemented in the Dibrugarh (5 sub-divisions), Jorhat (7 sub-divisions), and Guwahati Circle-II (100%) in Phase 1 (completed by end 2004). The balance of 11 circles will be implemented by May 2005.</td></tr>
<tr><td>For the purpose of circle wise energy auditing metering of 11 kV and 33 KV feeders will be undertaken</td></tr>
<tr><td colspan="2">Reduction of Technical Losses

ASEB is investing Rs 512.0 Crores under the APDRP for improvements in the sub-transmission and distribution systems. (See Table 4.1 above). The planned investments for four years are:

FY 2003-04 Rs. 140 cr

FY 2004-05 Rs. 260 cr</td></tr>
</table>

FY 2005-06 Rs. 90 cr

FY 2006-08 Rs 22 cr

The Board has provided the details of the proposed investments in 9 circles in their submission to the Commission.

The different projects under implementation for improvement in Transmission system are:

New Transmission lines	44 kms of 220 kV d/c Tinsukia-Namrup transmission line
	505 Kms of 132 kV transmission lines associated with Silchar, Moran, Nalbari, Golaghat, Biswanath Chariali, Sipjhar and Narangi sub stations
New sub stations	12 new 132/33 KV sub stations for a total of 426 MVA capacity
Augmentation of existing sub stations	100 MVA addition in transformer capacity on 220/132 kV sub stations
	25 MVA addition in transformer capacity on 132/66 kV sub stations
	316 MVA addition in transformer capacity on 132/33 kV sub stations
Addition of 33 kV bus capacitors	Installation of 200 MVAr capacitors at 33 kV bus on 17 selected 132/33 kV sub stations
Transmission grid communication system	Rehabilitation and installation of PLCC system at 220 kV and 132 kV sub stations
Relays and protection system modernisation	Installation of modem relays and switchgear at major sub-stations to improve system reliability
Switchgear replacement	Replacement of 76 circuit breakers at 132/66 and 33 kV sub stations.

4.15 ASEB also submitted the circle wise segregation of system losses based on actual sales for the month of April 2003. The table below summarises the results:

Circles	**Energy injected**	**Energy billed**	**System loss**	**Loss %**
Dibrugarh	30	21	9	30.00%
Sibsagar	16	9	7	45.29%
Jorhat	23	13	10	44.30%
Tezpur	12	8	4	34.44%
Nagaon	13	9	5	35.71%
Mangaldai	6	4	2	36.33%
Lakhimpur	5	3	2	45.75%
Rangia	13	7	6	46.43%
Bongaigaon	8	5	3	35.78%
Kokrajhar	6	3	3	42.57%
Guwahati-I	35	27	8	23.52%
Guwahati-II	17	10	7	40.12%
Kanch	8	5	3	41.59%
Cachar	24	14	10	41.78%
Total	**215**	**136**	**79**	**36.84%**

4.16 The table below mentions the circle wise record of un-metered consumers as on 31-08-2003. The Commission believes that metering of consumers must be taken on war footing to improve the revenue generation and achieve loss reduction. The Commission directs the ASEB to provide the quarterly progress reports on the achievement of metering such consumers.

		Number of unmetered consumers				
Circle	**Total consumers**	**Domestics**	**Kutir Jyoti**	**Commercial**	**Total**	**% unmetered**
Dibrugarh	98,907	8,739	299	323	9,361	9.46%
Sibsagar	72,863	13,696	1,627	61	15,384	21.11%
Jorhat	104,988	12,445	877	488	13,810	13.15%
Tezpur	38,603	8,682	1,824	637	11,143	28.87%
Nagaon	105,004	14,272	3,542	849	18,663	17.77%
Mangaldai	61,558	6,661	1,003	175	7,839	12.73%
Lakhimpur	29,083	1,523	489	32	2,044	7.03%
Rangia	111,072	8,020		259	8,279	7.45%
Bongaigaon	110,129	484	324	0	808	0.73%
Kokrajhar	60,118	5,396	1,431	45	6,872	11.43%
Guwahati-I	109,691	15,686	2,118	673	18,477	16.84%
Guwahati-II	44,987	3,095	1,224	90	4,409	9.80%
Kanch	48,941	3,142	336	116	3,594	7.34%
Cachar	35,942	5,574	874	167	6,615	18.40%
Total	1,031,886	107,415	15,968	3,915	127,298	12.34%

4.17 In response to the Commission's direction received vide reference of the Commission No.AERC.25/2002/Pt-VII on 31 March 2003, ASEB has provided the loss reduction profile expected to be achieved with the implementation of the projects and schemes under APDRP and ADB funding.

	2002-03	**2003-04**	**2004-05**	**2005-06**	**2006-07**
Transmission Losses	9%	9%	9%	9%	7.5%
Distribution Losses	18%	18%	17.5%	17%	14%
Commercial Losses	14%	11%	10%	9%	8%
Total	41%	38%	36.5%	35%	29.5%

4.18 The Commission believes that the preferred approach for reduction in losses must be to direct focussed efforts on a prioritised basis. This targeted approach necessitates the need for monitoring of high value consumers to safeguard against revenue loss and to analyse consumption patterns. This information will also be helpful in the design of tariffs. One of the most effective methods of conducting such analyses is by reviewing the output from Meter Reading Instrument (MRI) downloads. It has been communicated to the Commission that Electronic Meters (EM) installed in the premises of EHT/HT consumers already have the facility of such through MRI. **The Commission hereby directs ASEB to evolve a suitable process and mechanism and ensure monthly MRI downloads and analysis from the month of January 2005. A brief report on the following heads should be submitted to the Commission by 25th of the following month:**

(a) **No of HT consumers**

(b) **No of MRI downloads taken**

(c) **No of cases where discrepancies found**

(d) **Amount of additional bills raised**

(e) **Collection against such bills**

(f) **Action taken to prevent such cases in future**

4.19 The level of system losses has an impact on the power purchase quantity. In the filing for FY 2003-04 ASEB had projected the system losses at 37.5%. For FY 2003-04 the Commission has approved the actual power purchase costs incurred during the year FY 2003-04.

4.20 For FY 2004-05 the Commission considers the system losses as filed by ASEB at 36.5% on a normative basis only for the purpose of computing the cost of power purchase. The advantage of using a normative basis is that the ASEB bears the financial risk in the event that the actual loss level is any different from the norm. The Commission would like to further clarify that the actual loss levels must be ascertained from the field by co-relating the data on energy injected with the commercial data regarding sale of power. The accuracy of the estimated loss levels will increase progressively as the proportion of sales on metered basis increases. The Commission may at a later date initiate a separate independent study to assess the actual loss level.

4.21 **The Commission is not happy that complete details on energy loss have not been filed by the utility. As stated in clause 4.19 the Commission is approving the loss figure of 36.5% only for the purpose of calculating**

power purchase calculations and the same should not be considered as the approved system loss. The Commission directs ASEB to submit monthly reports (showing category wise the amount of energy sales billed on a metered basis versus that billed on an assessed basis) in the desired formats from the month of August so that the Commission is better equipped to determine the T&D loss during processing of the next tariff application.

4.22 The table below shows the approved total energy losses and power purchase requirements. The Commission has applied the norm of 36.5% as filed by the Board.

Items	FY 2003-04		FY 2004-05	
	Filing	Actual	Filing	Approved
Sales (MU)	**2,115**	**1,907**	**2,190**	**2,190**
T&D Loss %	**37.5%**	**37.5%**	**36.5%**	**36.5%**
T&D Loss MU	**1,269**	**1,144**	**1,259**	**1,259**
Energy Requirement (MUs)	**3,384**	**3,051**	**3,449**	**3,449**
Energy Available from own generation (Sent Out MUs)	**767**	**648**	**806**	**806**
Requirement from outside Source (MUs)	**2,617**	**2,403**	**2,643**	**2,643**
DLF	**130**	**130**	**162**	**162**
Power Purchase from CGS	**2487**	**2273**	**2481**	**2481**
Order approved external Loss	**3.01%**	**3.01%**	**3.30%**	**3.86%**
Power purchase requirement (MUs)	**2,564**	**2,344**	**2,566**	**2,581**
Trading Analysis				
Energy Available from own generation (Sent Out MUs)	**767**	**648**	**806**	**806**
Capacity Entitlements CGS/others (net of losses)	**2,620**	**2,620**	**2,934**	**2,881**
Total Energy Available	**3,387**	**3,268**	**3,740**	**3,687**
Surplus/(Deficit) for inter state trading	**–**	**276**	**–**	**300**

4.23 The Commission notes that for few months of the year ASEB has surplus power which it can trade. The Commission has accepted the ASEB's projection regarding sale of surplus power. The Commission notes that as per the filing for FY 2004-05 the energy traded is less than the total surplus energy available. The Commission accepts this because it is reasonable to assume that some energy has been earmarked as reserve requirement for consumption within the state of Assam.

Fuel cost for generation of power

FY 2003-04

4.24 The Commission has reviewed the generation fuel cost as filed and taken note of additional information filed in the PPFCA filings made during the year 2003-04. The generation cost is dependant upon the cost of gas and station operating parameters.

4.25 The table below mentions the cost of fuel for power generation during FY 2003-04 as filed by the Board and actually incurred by it during the year.

NTPS	Generation in MU	Specific consumption m^3/kwh	Fuel cost in Rs Crores	Transportation cost in Rs Crores	Total cost in Rs Crores
Filing	450	0.46	35.3	2.7	38.00
Actual	389.141	0.40	27.36	3.54	30.911

LTPS	Generation in MU	Specific consumption m^3/kwh	Fuel cost in Rs Crores	Transportation cost in Rs Crores	Total cost in Rs Crores
Filing	360	0.45	30.3	0.4	30.7
Actual	321.528	0.46	27.95	0.4	28.366

4.26 For FY 2003-04, the Commission has considered the actual cost incurred in fuel for generation of power during that period. The actual cost incurred has been estimated using the information filed in the PPFCA filings for the first three quarters, additional information submitted on 26th May and 1st July 2004, by ASEB. For FY 2003-04 the expenditure incurred on fuel for generation of power is Rs 59.26 Crores and the same is allowed in full.

4.27 The table below compares the per unit generation cost over the years 2001-02 to 2004-05. The Commission notes that the cost of generation has increased over the years, due to reasons like increased cost of gas, changes in operating norms loading conditions etc. Strictly speaking the cost of fuel must be reimbursed to the ASEB as per agreed upon operating norms. This creates an incentive for ASEB to improve the operating inefficiency of the machines.

Items	**2001-02 ***	**2002-03 ***	**2003-04 ****	**2004-05 *****
Fuel cost (Rs)	551,969,123	499,127,844	592,674,940	684,818,773
Gross Energy generated (MU)	698	684	710	850
Unit cost (Rs/KWh)	0.79	0.73	0.83	0.81

*Actual as per audited annual accounts

** Actual as per additional information

*** Estimated Projection

FY 2004-05

4.28 For FY 2004-05 and indeed for the future years, it is the Commission's view that the fuel cost for generation must be computed on a normative basis. The norms themselves may be tightened over a period of time to provide the ASEB with sufficient time to respond to the norms. The norm for PLF is not being considered right now because of the lack of gas availability. The other main components that impact the generation cost are station heat rate and the cost of gas and the paragraphs below discuss in detail the Commission's view on each of these items.

Station heat rate (SHR)

4.29 The Commission intends to compute the cost of fuel used in generation based on a norm for SHR. This normative SHR is required to be fixed on the basis of guaranteed heat rate of machines, expected loading pattern of machines, system frequency variation, frequency of start up and shut down etc. **The Commission notes that in the absence of required detailed information (data from capacity tests etc) from the petitioner it is not in a position to fix up such norms for the generating stations. The Commission directs the Board to conduct a study to compute the SHR of the stations from data acquired through actual capacity tests as recommended by the manufacturer/national technical standards**.

4.30 The table below mentions the station heat rate (SHR) for each of the generating stations.

Sources	Actual SHR			Actual Avg (as per Q1 PPFCA info)	Design SHR	CERC to NEEPCO	FY 04 Petition	FY 05 Petition
	Apr '03	May '03	Jun '03					
NTPS	3693	3322	3616	3544	3750*	2250	3910	3324
LTPS	4592	4571	4434	4532	3415	3580	4566	3362

- Open cycle, for closed cycle operation it is 3170 Kcal/KWh

- Above SHR approved by CERC of 2250 KCAL/Kwh is for combined cycle operation AGBPP and 3580 Kcal/Kwh for AGTPP (open cycle plant) of NEEPCO. Since NTPS is not ideally combined cycle plant, above comparative heat rate figures approved by CERC for NEEPCO plants are only indicative.

- Considering the figures submitted by the Board in respect of LTPS other than in the petition for 2004-05, the SHR of 3362 Kcal/Kwh in the petition for 2004-05 appears to be wrong.

4.31 The Commission notes that there is a difference between the average of the actual SHR during Q1 (FY 2003-04) and any of the norms mentioned alongside in the above table. It is the Commission’s firm view that for any norms to be realistic and achievable the actual performance must be kept in mind. The actual performance of the plant includes the impact of highly localised issues like unit capacity, age of equipment, loading trends etc.

4.32 **The Commission is in favour of adopting a SHR improvement profile for a multi year period so that ASEB has time to respond effectively to the new regime. Ideally this improvement profile must be co-related to the R&M expenditure/Investment plan (generation component only). The Commission will consider this in detail when it receives the tariff petition/approval of PPA from the Assam Generation Company**.

4.33 As per their submission dated 9th June 2004, for LTPS ASEB has considered a SHR of 3900 Kcal/KWh versus the design SHR of 3415 Kcal/KWh and the reason given for considering higher SHR is the partial loading of machines. The Commission has reviewed the projected load pattern submitted by ASEB unit wise for LTPS and NTPS. The Commission notes that for estimating the projected energy output from LTPS, ASEB has assumed an average load factor of 80% of the installed capacity.

Here the Commission would like to draw the attention of ASEB to the aspect of optimal loading and its impact on SHR and fuel consumption. The Commission notes that assuming 80% as the load factor may be acceptable for estimating the energy generation for the year ahead. The Commission however insists that the average SHR considered for projecting fuel cost must be done under the assumption that in the actual scheduling of generating units ASEB will run the generating units at close to their maximum rated capacity and in doing so achieve efficiencies in the fuel cost.

It is pertinent at this point to mention that the gas based generating stations are designed to run at their maximum rated capacity. This coupled with fewer start-up and shutdowns will help achieve efficiencies in fuel consumption. In addition to these issues the fact that the installed capacity of the individual units (15 – 25 MW) is small, implies that ASEB has greater flexibility to distribute demand variations among the different generating units.

Keeping these points in mind the Commission is of the view that the SHR furnished for LTPS in the filing for 2004-05 is on the lower side. The Commission considers that the financial impact of SHR as filed by ASEB over and above the design SHR must be shared equally between ASEB and the consumers. Hence the Commission has approved the generation cost at a SHR of 3658 Kcal/KWh which is the average of design SHR and the SHR filed by ASEB.

4.34 For NTPS the ASEB in its submission dated 9th June 2004, mentioned that it has considered the SHR of NTPS at 3900 Kcal/KWh to compute the specific consumption. For computing the gas requirement ASEB has applied the specific consumption on the amount of gas expected to be generated in the open cycle mode.

The Commission is of the view that the SHR norm be computed on a station wise basis duly taking into account the operating mode of the machines. Accordingly using the same norms as filed by the ASEB the Commission has approved the SHR for the complete NTP Station at 3266 Kcal/KWh.

4.35 The Commission believes that the level of norms must balance the interest of the consumers and yet provide enough incentive for the ASEB to achieve. The norms used in this tariff order will be applicable only for FY 2004-05. The table below lists the approved SHR rates:

Sources	FY 2004-05	
	Filing	**Approved**
NTPS	3324	3262
LTPS	3362	3658

4.36 The SHR of a gas based generating station is closely linked with the loading pattern of the generator which in turn is dependant upon the availability of gas. The ASEB in the filing has elaborated on the increased gas availability to LTPS and consequent improvement of the operating plant load factor.

As per the information submitted in the PPFCA filings for FY 2003-04 the actual generation is around 675 MU (NTPS:375 LTPS:310). ASEB has submitted that the generation levels from LTPS will increase due to expected improvement in the gas availability of around 0.2 MSCMD from July 2004 onwards against the existing availability of 0.4 - 0.45 MSCMD. This shows that the gas availability has increased by nearly 33% on an annualised basis. Applying this increase over the FY 2003-04 actual generation of 310 MU results in an estimated generation of 413 MU. The ASEB's submission of 400 MU from LTPS compares favourably with the Commission's estimate of 413 MU.

The Commission has analysed ASEB's argument in favour of increased generation from LTPS at 450 MU for FY 2004-05 in the above paragraph and accept ASEB's estimate for projected gross energy generation of 850 MU.

4.37 The focal point of the argument is the construction of the 3 KM loop line. It has been noted that this project has been under consideration for a long time and the Commission directs the ASEB to make all efforts to complete it without delay and report compliance to the Commission. **The Commission directs that the total liability of consumers on account of 450 MU of energy from LTPS will be restricted to Rs 31.45 Crores. In case of shortfall in generation from LTPS on this account, ASEB will not be allowed to recover through tariffs any amount in excess of Rs 31.45 Crores**.

This implies that for any power purchases made to make up for the shortfall of generation from LTPS, ASEB will be allowed costs only to the extent of Rs 0.79 per KWh.

Price of gas

4.38 The Commission recognises that the Gross Calorific Value (GCV) content of delivered gas is beyond the control of ASEB. Hence ASEB must be compensated for the actual calorific of the delivered gas. In India the price of gas is normalised for the level of calorific value of delivered gas. This means that the price of gas is adjusted to account for any deterioration in GCV content below the threshold level.

4.39 The base price of gas assumed by ASEB in the filing is Rs 1,700/ 1000 SCM corresponding to a GCV of 10,000 Kcal/ SCM. This rate is as per the actual billing done by GAIL. ASEB has provided detail calculation for the delivered price of gas as per their letter dated 9th June 2004 and the same have been approved by the Commission. It must be brought to the notice of the consumers that the pricing of gas is as per Ministry of Petroleum, GoI and any changes in the base price and or other components (Sales tax, royalty etc) will be recovered separately through the PPFCA mechanism.

4.40 For estimating gas price for FY 2004-05 the Commission accepts the ASEB's assumption of GCV:

Source	FY 2004-05	
	Filing	Approved
NTPS	8500	8500
LTPS	8800	8800

4.41 The approved generation cost for FY 2004-05 is summarised in the table below:

Parameters	Filing		Approved	
	NTPS	LTPS	NTPS	LTPS
Generation (MU)	450	400	450	400
Average GCV (Kcal/1000 m^3)	-	-	8500	8800
Average SHR (Kcal/KWh)	-	-	3266	3658
Specific consumption (m^3/kWh)	0.46	0.43	.4588	.4156
Annual requirement (1000 m^3)	176,198	152,856	172,976	166,250
Gas price (Rs/1000 m^3)	2,016	2,094	1,739	1,863
Transportation Cost	Rs.145.00 / 1000 m^3	Rs.347,934 / month	Rs.145.00 / 1000 m^3	Rs.347,934 / month
Total cost (Rs. Crores)	**38.12**	**32.43**	**37.04**	**31.45**
Cost of generation (Rs/KWh)	0.85	0.81	0.82	0.79

4.42 The auxiliary consumption of the two generating stations was NTPS 2.8% and LTPS 7% during FY 2003-04. For FY 2004-05 ASEB has considered auxiliary consumption at 5.2% (weighted average) which has been applied on the combined gross generation of NTPS and LTPS.

The auxiliary consumption as per CERC norms is 3% for combined cycle station and 1% for open cycle stations. Against these norms the auxiliary consumption of LTPS may seem to be high. However the presence of a gas booster compressor increases the auxiliary consumption by 4-5%. The Commission appreciates that the norm for auxiliary consumption must reflect the operating configuration of the different units in NTPS and LTPS. The use of gas fired boilers and open cycle mode of operation for some of the units will also result in a higher auxiliary consumption of the generating stations. Against this background the Commission approves the auxiliary consumption at 5.2% of the gross generation.

Power purchase cost

FY 2003-04

4.43 The Board has proposed to meet the sale requirement of 2,115 MU at a T & D loss of 37.5% by injecting 2,619 MU of energy purchase from outside sources besides injection from its own generating sources for the FY 2003-04. At a loss of 3.01% in the Central Sector Transmission system the proposed purchase of energy has been projected at 2701 MU at an estimated cost of Rs. 545.172 Cr for FY 2003-04 which included Additional Past Liability of Rs. 39.36 Crs. The proposed power purchase for FY 2003-04 compared to the approval accorded in the tariff order dated 26.3.03 for FY 2002-03 is summarised in the table below.

Pursuant to discussions held with Board's official and subsequent information received for the entire year 2003-04, the actual cost incurred and amount of energy purchased during FY 2003-04 is also summarised in the table below.

Sl. No.	Source	Tariff Order FY 2002-03 (MU)	Actual for FY 2002-03 (MU)	Filing for FY 2003-04 (MU)	Actual for FY 2003-04 (MU)
1(a)	KHEP	385		545	440.94
1(b)	Free Power from KHEP	54		70	
1(c)	AGBPP	600		430	716.06
1(d)	AGTPP	230		185	323.30
1(e)	DHEP	140		91	23.85
1(f)	RHEP	340		550	491.67
1	NEEPCO Total	1749	1297.54	1871	1,995.82
2	NHPC	146	145.437	150	130.49
3	NTPC	750	1019.146	200	66.99
4	MeSEB	18	17.362	-	12.93
5	DLF	150	113.614	130	130.55
6	PTC	-	-	350	366.72
7	NVVN	-	-	-	13.95
8	UI transaction	-	-	-	-53.58
TOTAL		**2,813**	**2,593**	**2,701**	**2,663**

4.44 The Board has allotment of share from Central Sector Generating Stations in NER as follows

Name of the Generating Station in Capacity	Percentage Share	New Share	Energy Share (in MU)
*1 Kapili HEP (200 MW)	50.40	100.8	467.13
*1 Khandong HEP (50 MW)	50.40	25.2	138.09
AGBPP (291 MW)	52.85	153.8	1110.8
AGTPP (84 MW)	41.8	35.11	258.83
Ranganadi HEP (405 MW)	39.75	161	737.46
Doyang HEP (75 MW)	40.22	30.17 MW	90.48
Loktak HEP (105 MW)	25.97	27.27 MW	115.18
TOTAL		533.347 MW	2917.97

Note : *1 — This includes 6% free charge.

2 — Energy share has been calculated at 85% plant availability and on the basis of energy sent out.

3 — For hydel plant design energy has been considered for Board's energy share.

4.45 The above purchase of power was made by the Board under two phases; for first seven (7) months during the year 2003-04 when the purchase was made from C.S. generating station in NER was made in single part tariff while for the remaining five (5) months of the year w.e.f. 1.11.03 the purchase was made under two Part tariff following introduction of Availability Based Tariff (ABT) by the Central Electricity Regulatory Commission (CERC) for NEEPCO's generating stations in NER. Accordingly the merit of purchase of power during the year 2003-04 has been judged by the Commission on above two perspectives and station wise / source wise analysis of the purchase are as follows.

KHEP

4.46 Prior to implementation of ABT i.e. w.e.f. 1.11.03, Kapili Hydro Electric Project was operating as a single unit which included the Khandong HEP. With ABT being implemented w.e.f. 1.11.03, this project was divided into two as Kapili Hydro Electric Project and Khandong HEP vide CERC order 16th September' 03 with following design energy and Fixed Charge.

	Kapili HEP	Khandong HEP
Annual Design Energy	936.21 MU	277.65 MU
Total Fixed Charge	Rs. 56.93 Cr.	Rs. 16.88 Cr.

4.47 Prior to implementation of ABT, the Board was purchasing power from the Kapili HEP at a single part tariff of 69.8 pasie / KWH and w.e.f. 1.11.03 the Board was purchasing power from the two divided project under two part tariff as above. The energy purchase from this plant during the corresponding two period are as follows:

<table>
<tr><th></th><th>April' 03 to October' 03</th><th>November' 03 to March' 04</th></tr>
<tr><td>Kapili HEP</td><td rowspan="2">279.27 MU</td><td>138.60 MU</td></tr>
<tr><td>Khandong HEP</td><td>23.03 MU</td></tr>
<tr><td>TOTAL</td><td>279.27 MU</td><td>161.63 MU</td></tr>
</table>

4.48 KHEP having lesser per unit cost, it is essential for the Board to purchase the maximum energy from the project. However considering the annual sent out design energy of the Kapili and Khandong HEP at 1201.72 MU, ASEB should have received 606 MU during the year on the basis of share allotment it has. Instead the Board could purchase only 440.9 MU during FY 2003-04 giving a shortfall of purchase of 165 MU during the year 2003-04. This has resulted in additional power purchase cost incurred by the Board to the extent of Rs. 22.13 Cr. based on approximate average price of Rs. 2.04 / KWH. If this 165 MU is substituted from the purchase of AGBPP, the Board's net saving would have been Rs. 25.6 Cr. during the year 2003-04.

4.49 In respect of lower drawal of energy by the Board from KHEP during the year 2003-04, this issue was discussed in the meeting held on 22.10.03 between the officials of AERC and ASEB. In the said meeting the Board officials indicated that planned shutdown of the plant taken with the approval of NEREB was attributable to the lower generation during early part of the year 2003-04. However it was noted in the meeting dated 22.10.03 that the ASEB could not prevail upon the NEREB to reschedule the re-commissioning of the plant to get maximum energy during the monsoon period. Assam being the largest beneficiary of this plant must have a strong say to protect its interest.

4.50 Considering above, and with due consideration to the methodology adopted in scheduling the Central Sector Generation by NEREB where the Board cannot be directly responsible for low generation of KHEP, the purchase made by the Board from this project during the year 2003-04 is approved.

AGBPPs

4.51 During the period 01.04.03 to 31.10.03. of FY 2003-04 and thereafter, the energy purchased by the Board from AGBPP was as follows:

	Energy purchased during the Period 01.04.03 to 31.10.03	Energy purchased during 01.11.03 to 31.03.04
AGBPP	285 MU	431 MU

4.52 During the period of single part tariff, average energy purchased by the Board was 40 MU per month while under ABT period the same was 86 MU .The per unit cost under single part tariff being Rs. 2.25/KWH which is high considering the unit cost of other projects and the Commission finds reduction of drawal from AGBPP under single part tariff reasonable. Under ABT regime, the fixed charge has become predominant and which is to be paid by beneficiaries on the basis of their allotment. The merit order schedule has to be computed on the basis of energy charge/variable charge only. The purchase of 86 MU of energy per month from AGBPP during this period, the Commission finds reasonable. Hence the purchase from AGBPP during the FY 2003-04 is approved.

AGTPP

4.53 During the period of the two years, the energy purchased by the Board from AGTPP was as follows:

	Energy purchased during the Period 01.04.03 to 31.10.03	Energy purchased during 01.11.03 to 31.03.04
AGTPP	217 MU	106 MU

4.54 Above shows that during the Pre ABT regime the Board purchased energy at 31 MU/month while during the ABT regime it purchased 21 MU/month only. The tariff of AGTPP during pre-ABT regime being Rs.1.95/ Kwh, extra purchase of energy from AGTPP was found reasonable and hence approved. However, the Board purchased energy during the ABT regime close to its share. On above consideration entire purchase of the board from AGTPP during FY 2003-04 is approved.

4.55 **However, the AGTPP is having highest energy cost, any merit order purchasing should ask for curtailment of purchase from this source provided the energy from other sources with lower variable cost is available**.

RHEP

4.56 The Board's purchased quantum of energy from RHEP falls short by around 50 MU from the projection made in the petition. Due to lower energy tariff, it is necessary that the Board purchases entire available generation from the project to its entitlement. Lower drawal from the plant has been reported to be due to outage of the plant during February'04 and partial generation during the initial period of 2003-04.

4.57 The purchase from RHEP for the year 2003-04 is approved.

DHEP

4.58 This plant has the highest per unit cost. The Board purchased only 24 MU from the project during the FY 2003-04 against its entitlement of 90 MU per year. Lower drawal from DHEP due to its having highest per unit cost is justified and the purchase made during the year 2003-04 is approved.

4.59 **Since The Board is required to pay Capacity Charge on the basis of allotment and pay energy charge on the basis of scheduled energy and considering the present two part tariff of the plant it should surrender its**

share from this project to marginalize the power purchase cost. Source having lower tariff should be identified to replace the energy from DHEP.

Loktak HEP

4.60 As the plant has a lower per unit average tariff for energy purchased by the Board, the same for the year 2003-04 is approved.

DLF

4.61 The Board is committed to purchase the entire generation from Adamtilla & Banskandi Combined Cycle plants of M/S DLF Power Ltd. The purchase of 130 MU of energy from the two plants at an average fixed charge of 1.64 per KWH plus the variable charge of Rs. 0.556 per KWH is approved for the year 2003-04

4.62 Besides above the Board has made a claim of Rs. 18.27cr towards other charges payable to M/S DLF Power Ltd. towards Foreign Exchange Rate Variation against Payment of FCL in the month of May' 03. The payment of Rs. 18.27 cr by the Board does not include the interest portion due to IPP arising out of the payment made under installment which was at 16%. This interest amount was decided between M/S DLF and ASEB which is much higher than the then prevailing lending rate.

4.63 On the other hand the payment of Rs. 18.27cr. made to M/S DLF by the Board towards reimbursement of Foreign Exchange Rate variation has resulted in reduction of fixed charge of both the plant from Rs. 1.84 per Kwh to Rs 1.64 per Kwh on the average. Since the benefit of payment of FERV amount of Foreign Currency loan has been passed on to the consumer, the Commission approves the principal portion of FERV amount i.e. Rs. 18.27 Cr. **Since the schedule of this FCL repayment was known to the Board well ahead, it should have made prior arrangement to make this repayment in order to avoid this interest burden**. **The Commission therefore disallows the claim of the interest portion. The board is required to make this payment of interest from its own resources rather than putting burden on the consumers**.

Power Purchase from Traders

4.64 Due to 70 : 30 hydro-thermal mix of C.S. generation in NER, availability of power from the C.S. generation during lean hydel season gets drastically reduced especially during off-peak period of the day. During this period from November to March each year it is essential that the Board purchases power from sources outside the region or from any possible seller inside the region at a reasonable rate. This has become essential when allotment to Assam from the NTPC stations in NER was discontinued in the year 2003-04. On the above consideration following purchases from the traders have been approved.

4.65 Board vide its submission dated 31.10.03 submitted before the Commission that it had entered into an agreement with Power Trading Corporation (PTC) on 29.3.03 for purchase of 50 MW off-peak power during period 1.4.2003 to 31.3.04 at a rate of Rs. 2.05 per KWH inclusive of ER transmission charges, losses etc. With increased generation of hydel stations in NER, the purchase of 50 MW off-peak power from ER was reviewed between parties and this 50 MW off-peak power from ER was substituted by 30 MW round the clock NER power during period 1.8.2003 to 31.10.03 at rate of Rs. 2.00 per KWH inclusive of NER transmission charges, losses etc.

4.66 Besides above, ASEB purchased 50 MW peak power from PTC during period 14.04.03 to 16.4.03 at a rate of Rs. 2.30 per KWH inclusive ER transmission charges, losses etc. to meet the increased demand during Bihu Festival. Following discontinuation NTPC power to the Board, it purchased 50 MW peak power during period 25.6.03 and 1.3.03 to 21.3.03 from PTC at a rate of Rs. 2.65 per KWH which includes ER transmission charges, losses etc.

4.67 With due consideration to above, the Commission approves the purchase of 366.724 MU of energy from PTC during 2003-04 at an average cost of Rs. 2.09 per KWH.

4.68 The Board had intimated that due to forced outage of Ranganadi HEP on 15.2.04, there was shortfall in availability of power in the State of Assam to the extent of 45 MW during off-peak hours and 90 MW during peak hours. Besides this, ASEB could not get schedule 20 MW peak power from Arunachal Pradesh purchased though PTC due to the same reason. In order to meet this system contingency, ASEB entered into an agreement with M/s N V V N on 27.2.04 to purchase 75 MW peak power at a rate of Rs. 2.05 per KWH. GOA has committed to extend financial assistance to the Board of Rs. 1.00 per KWH for this purchase of power from outside source.

4.69 On consideration of system contingency arising out of forced outage of RHEP, purchase of 13.95 MW of energy from N V V N is approved and an amount of Rs. 2.58 Cr has been allowed in the ARR for 2003-04.

4.70 **Above purchases through bilateral contracts are approved post facto as a special case in consideration of urgency. In future the Board must take prior approval of such purchases except when contracted through bidding process**.

4.71 The Board also purchased 66.995 MU of energy from NTPC stations in ER out of allotment it had from time to time till August’ 03 at an average cost of Rs. 2.01 per KWH. This purchase has also been approved.

Past Liability for power purchase

4.72 The Board has made claim of past liability of Rs. 33.36 Cr towards power purchase during the year 2003-04. the break-up of the claim is as follows :

Sources	FY 2003-04	
	Filing	Approved
NHPC	10.66	-
DHEP	4.4	-
RHEP	3	-
DLF	21.3	18.27
Total	39.36	18.27

4.73 **The Board had not furnished any detail of these past claims. It has been brought to the Commission's notice that the past liability of Rs. 10.66 Cr. relates to Loktak HEP of NHPC arising out of retrospective revision of tariff vide CERC order dated 01/11/2002 on this project. GoA vide its letter PEL 114/2003/121 dated 19/11/2003 has intimated NHPC that this liability amount had been taken care of in the FRP for ASEB and hence this amount of Rs. 10.66 Cr. has not been allowed in this order. In respect of past liability claim against DHEP and RHEP, the Board had not furnished any detail and has not been considered. Against past liability claim of Rs. 21.3 Cr. towards DLF, the Commission allows principal portion of FERV amount of Rs. 18.27 Cr. against Foreign Currency Loan. Since the Board could not satisfy the Commission in respect of the interest amount against FERV, this has not been allowed in the tariff.**

4.74 The power purchase costs for FY 2003-04 as filed by the Board are given in the table below. **The Commission has analysed the actual power purchase costs for FY 2003-04 and decided to approve the actual costs as per the PPFCA submissions**.

Sources	FY 2003-04 filing		Actual cost incurred in FY 2003-04	
	Energy (MU)	**Cost (Rs Cr)**	**Energy (MU)**	**Cost (in Rs Cr)**
KHEP & Khandong HEP	615	38.00	440.9	20.72
AGBPP	430	96.75	716.05	145.123
AGTPP	185	35.15	323.3	59.89
RHEP	550	83.6	491.67	81.38
DHEP	91	21.07	23.85	8.829
Loktak HEP	150	15.00	130.496	13.597
NTPC	200	36.46	66.995	13.49
NVVN	-	-	13.95	2.58
PTC	350	72.4	366.724	76.697
DLF	130	29.77	130.549	46.929
a) F.C.	-	21.32	-	21.428
b) Variable Ch.	-	8.45	-	7.231
C) Other Ch.	-	-	-	18.27
MeSEB	-	-	12.933	2.033
Tr. Charge				
a) PGCIL (NER)	2021	72.756	2126.27	73.37
b) PGCIL (ER)	200	3.2	66.995	1.172
NERLDC Ch.	-	-		1.579
UI Charge	-	-	-53.583	-11.516
Reactive energy Ch	-	-	-	0.0257
TOTAL	-	504.16	-	535.898

FY 2004-05

4.75 For FY 2004-05**,** the table below mentions the estimated costs projected for power purchase as filed by ASEB.

Sources	**Energy filed (MU)**	**Energy charges** **Rs Crores**	**Capacity charges** **Rs Crores**	**Total cost** **Rs Crores**
Free power	74.1	-	-	-
Khandong HEP	122.02	1.34	7.17	8.52
Loktak HEP	115.53	6.79	5.07	11.87
Doyang HEP	90.48	5.32	15.62	20.94
Kopili HEP	426.32	25.07	3.65	28.72
Rangana HEP	737.45	43.36	50.16	93.52
DLF	162	8.91	25.62	34.53
Assam Gas PP	1048.31	42.49	180.38	222.86
Agartala GT	244.26	20.41	26.07	46.48
MeSEB	7.8	-	-	-
Transmission losses CGS	94.33	-	-	-
Net Power Available	2934	153.69	313.755	467.45
Net trading		6.5	0	6.5
Net Power Purchases		147.19	313.755	460.95
PGCIL (Eastern Region TX Charges for NTPC)		0	0	0
PGCIL (NERegion TX Charges)		94.71	0	94.71
NRLDC Charges		2.71	0	2.71
Total		**244.61**	**313.75**	**558.36**

4.76 The Commission has reviewed the proposed power purchase costs and made its own estimates based on a review of the CERC orders for each of the Central Sector generating units of North Eastern Region. Under the ABT system which has been introduced in November 2003, the Board shall be required to make payments for energy purchase as per a two part tariff. The table below shows the energy/variable and capacity/fixed costs towards purchase of energy against ASEB's allocated share of the CS generating stations.

Sources	Energy filed (MU)	Energy approved (MU)	Energy Charges Rs/KWh	Energy Charges Rs Crores	Capacity Charges Rs Crores	Total Rs Crores
Free power	74.11	72.10	0.0000	0.00	0.00	0.00
Khandong HEP	116.00	107.50	0.5032	5.41	2.09	7.50
Doyang HEP	90.50	90.48	0.5032	4.55	14.43	18.98
Kopili HEP	426.31	362.46	0.5032	18.24	7.06	25.30
Rangana HEP	737.45	737.47	0.5032	37.11	45.19	82.29
Assam Gas PP	1,048.31	1,110.79	0.4053	45.02	153.32	198.34
Agartala GT	244.26	258.84	0.8457	21.89	22.16	44.05
Loktak HEP	115.52	115.18	0.5032	5.80	5.87	11.66
Available power	2,852	2,854	-	-	-	-
CS Trans. loss	94.33	110.20	-	-	-	-
Net Power Available	2758.13	2744.63	-	-	-	-
DLF	162.00	135.00	0.5500	7.43	25.62	33.05
MeSEB	7.80	7.80	2.6000	2.03	-	2.03
Power purchased during deficit months	300	300	2.05	61.5	-	61.5
PGCIL (ER)	-	-	0.16	-	-	-
PGCIL (NER)	2,858.47	2,854.83	0.35	99.92	-	99.92
NRLDC Charges	-	-	0.01	1.63	-	1.63
Total	-	-	-	308.89	277.37	586.25

Some key assumptions used by the Commission in estimating the cost of the projected power purchase plan for FY 2004-05 are mentioned below:

(a) The design energy and annual fixed costs for each hydro generating station (DHEP, RHEP, KHEP and Loktak) is based on the CERC order applicable to that station. However, the CERC orders are applicable for the FY 2003-04 and the Commission is agreeable to approving the financial impact of the revised target generation and cost as per the CERC order for FY 2004-05 in the Board's next tariff filing.

(b) In the ABT regime, the constituent states are charged capacity charges at a specified level of availability, i.e 85%. For thermal stations i.e AGBPP and AGTPP the Commission has used this threshold availability to estimate the gross energy available.

(c) As per the PPA between DLF and ASEB the entire fixed cost is recovered at the threshold PLF and the gross energy availability has been computed at this PLF. The threshold PLF for DLF as per the PPA is 68.493% and 66.456% for Baskandi and Adamtilla respectively.

(d) The auxiliary consumption has been taken at the same level as that filed by ASEB i.e 1% for all hydro generating stations and those gas based generating stations operating in open cycle mode (AGTPP). Gas based generating stations operating in closed cycle the auxiliary consumption is 3% (AGBPP and DLF).

(e) The Central Sector transmission losses in the filing have been assumed at 3.3%. The Commission has used the actual average loss of 3.86%, for the period April – October 2003 for purpose of estimating the net delivered. However the Commission will allow for recovery as per actual during the course of the year.

(f) The NERLDC charge has been assumed as a fixed charge of Rs 13.6 Lakhs per month based on the actual payment made during FY 2003-04.

4.77 The Commission has allowed transmission losses in the North East Regional transmission network as per the average of the actual losses during the period April 2003- October 2003. Accordingly the power purchase from NEEPCO has been reduced by 3.86% to reflect the transmission losses in the North East Regional transmission network.

4.78 The Commission also notes that:

(a) The PPA with DLF is a take or pay contract so the Board must purchase all energy;

(b) Capacity charges on all plant is payable regardless of the level of energy purchased;

(c) The merit order dispatch of the central generating stations is controlled on a daily basis by the Regional Load Dispatch Centre but the Board can still influence the drawal from the hydro power stations with the targets that are set monthly in consultation with the RLDC.

(d) ASEB has projected an expenditure of Rs 61.5 Crores on purchase of power during the deficit months of April 2003 and November 2004 to March 2005. The Commission approves this amount and has included the cost in the power purchase cost.

4.79 Accordingly the total power purchase cost approved by the Commission is Rs 586.25 Crores.

Employee Costs

4.80 The year wise break up of Employee Cost vis-à-vis approved by the Commission in tariff order of 2002-03 is summarized below: -

Items	As per 2002-03 audited accounts	FY 2003-04 filing and approved	FY 2004-05 filing	FY 2004-05 Approved.
Salaries	146.00	144.15	143.00	143.00
Overtime	0.67	0.50	0.85	0.85
Dearness Allowance	51.11	63.36	78.82	72.93
Other Allowances	20.86	19.86	20.98	20.98
Bonus	0.11	0.07	0.07	0.07
Medical Allowances	0.48	0.65	0.64	0.64
Leave Travel Concession	0.25	2.00	2.20	2.20
Earned Leave Encashment	1.05	4.92	3.97	3.97
Workmen's Compensation Act Payment	0.14	0.25	0.18	0.18

Items	As per 2002-03 audited accounts	FY 2003-04 filing and approved	FY 2004-05 filing	FY 2004-05 Approved.
Other Staff Cost	**0.01**	**0.05**	**0.15**	**0.15**
Staff Welfare Expenses	**0.13**	**0.50**	**0.25**	**0.25**
Terminal Benefits	**29.26**	**51.07**	**81.47**	**55.00**
Total	250.07	287.38	332.58	300.22
Less Capitalization-	**-**	**2.48**	**2.13**	**2.13**
Net Amount	250.07	284.90	330.45	298.09
Terminal Benefits Breakup				
Gratuity	**2.96**	**8.85**	**21.10**	**13.23**
Pension	**26.31**	**42.22**	**60.37**	**41.77**
Total	**29.27**	**51.07**	**81.47**	**55.00**

4.81 It is observed from the above table that the employee cost of the Board is increasing every year. There are two reasons for this 1) DA Increase and 2) Gratuity and Terminal Liability. As per the clarification submitted by ASEB letter dated May 26, 2004 DA increase in 2004-05 is due to expected release of two additional payments under the head of DA by the Board.

4.82 The Commission staff has independently analysed the salary cost and impact of terminal liability based on data provided by ASEB.

(a) As per those calculations the net employee cost for FY 2003-04 was estimated at Rs 287 Crores as compared to Rs 285 Crores as filed by ASEB. Hence the Commission considers the net employee cost as filed by ASEB for FY 2003-04 to be reasonable and the same are approved in full.

(b) For FY 2004-05 the staff has computed Rs 298 Crores as the net employee cost. As compared to this the filing of ASEB at Rs 330

Crores is on the higher side. The estimation of staff terminal liabilities is the main reason for this difference. The Commission approves the estimate provided by the staff for Rs 298 Crores towards employee expenses for FY 2004-05.

4.83 The Commission is appreciative of the Board's responsibility towards meeting the terminal benefits to it's employees. If at the end of the year FY 2004-05 ASEB can demonstrate that the actual payout **attributable to this year only** on account of terminal benefits i.e. pension and gratuity was more than the approved amount of Rs 298 Crores, then the Commission will allow the excess to be recovered through tariff in the next year.

Depreciation Charges

4.84 In principle the Commission is in favour of approving the depreciation amount limiting to the extent of loan repayment. This is because depreciation represents a major source of non-cash expense for ASEB. Moreover this cash generated is vital because in normal course it is utilised in the replenishment of existing assets and repayment of loan.

In the previous tariff order the Commission argued that the admission of full cost in the ARR is a gradual process and the recovery of cash expenses through tariffs must precede that of non-cash items.

Considering the cash requirement of the utility to make repayment of loan and in order to avoid tariff shock, the Commission limits the depreciation to the extent of repayment of principal portion of the loan repayment during the corresponding year of 2003-04 and 2004-05. The portion of amount not allowed here can be sourced by the Board by additional internal cash generation by way of increased efficiency.

The reduction in repayment amount for FY 2003-04 has been the result of cross adjustment of liabilities between ASEB to GoA pursuant to the financial restructuring of the Board. The break up of the amount approved is given below in the following table (Rs. Crores):-

Item	FY 2003-04		FY 2004-05	
	Filing	Approved	Filing	Approved
Repayment	34	7.02	0	8.15

Interest and Financing Charges

4.85 The GoA has as part of this restructuring exercise has done cross liability adjustment of major portion of the outstanding loans of ASEB. Due to this there has been big reduction in the interest and financing costs for FY 2003-04 and FY 2004-05. This is the direct benefit of the power sector restructuring that will accrue to the consumers in Assam.

4.86 The table presents the Commission's analysis of interest payments for FY 2003-04 and the approved interest cost.

Name of the Lender	**FY 2003-04 Filing (Rs. Crores)**	**Approved for FY 2003-04 (Rs. Crores)**	**Remarks**
REC Loan	41.40	0.00	After restructuring the REC Loan has been taken over by the State Government.
Bond	37.68	7.74	As per revised calculation, the interest figure has gone down because the Principal amount and Interest due up to October 28, 2003 has been taken over by the GoA. The interest for five months on remaining portion of Rs.189.47 is calculated (rate of interest 8.5% to 12 %).
LIC	2.91	1.28	Defaulted loan and defaulted interest up to October 28, 2003 is taken by the State Government. Interest on the drawal beyond this date has to be serviced by ASEB. Balance loan remaining Rs.4.97 Crores and rate of interest is 14% p.a.
PFC	3.21	5.18	The figure is as per revised submission dated May 26, 2004. The actual payment of interest is claimed which is @ 9.5% p.a..
HUDCO	0.62	0.00	HUDCO Loan ultimately was not availed by the Board

Name of the Lender	FY 2003-04 Filing (Rs. Crores)	Approved for FY 2003-04 (Rs. Crores)	Remarks
State Government Loan	0.00	0.22	Loan drawn up to October 28, 2003 along with interest has been taken over by the State Government. The remainder amount of Rs 70.29 Crores is to be serviced by ASEB. The rate of interest 10.5% pa.
Discount to Consumers	3.48	3.48	Allowed
Interest to Suppliers	0.46	0.00	There is no such payment found in Annual plan document and hence ignored.
Interest on GPF	16.52	16.52	The Board has not been crediting the Provident Fund contribution of employees to a separate fund. The Board is liable to pay the employee on retirement/withdrawal the provident fund along with interest. The interest figure has been estimated by the Board on the total amount of provident fund after deducting withdrawal @ 6.25% p.a.
Cost of raising finance	0.07	0.00	No new loan raised
Bank Charges	2.64	2.64	Considering level of activity of the Board, the amount claimed is reasonable.
Total	108.99	37.06	
Less: Interest Capitalisation	20.05	2.89	In the absence of details of Capital Work in progress and the source of funding, we have capitalized 20% of Rs.14.42 Crores (Bond+LIC+PFC+State Government) i.e Rs.2.89 Crores.
Net Interest	88.94	34.17	

4.87 The Board is not capitalizing the IDC in their books of accounts. However, prudent accounting policy requires that interest expense incurred during the construction phase of projects be included in the costs of asset at the time of capitalisation. The ASEB is not in a position to provide project wise details of the loans matched with the CWIP. In the absence of details the Commission has considered capitalisation of 20% of gross interest on loans that seem to have been used for creation of assets.

4.88 The interest payments for the year 2004-05 along with figures that are approved are given in the following Table:-

Sources	**FY 2004-05 Filing**	**FY 2004-05 Approved**	**Remarks**
Bond	21.87	21.87	The average interest rate applicable on the different categories of Bond is 11.55% p.a. No repayment is projected for the year 2004-05. The total amount of bond outstanding is Rs.189 Crores. The interest projection appears reasonable and therefore accepted.
LIC	0.77	0.59	As per revised calculation submitted by the Board vide their letter dated May26, 2004 the amount of interest is reduced from the figure given at the time of filing. The revised amount is accepted.
PFC	9.22	12.10	The Board in their revised submission dated May 26, 2004, has revised the interest amount to Rs.12 Crores. The Board in the aforesaid submission has projected a receipt of Rs.79 Crores and repayment of Rs.7 Crores (as per filing repayment projection is Rs.8 Crores). The rate of interest on PFC Loan is 9.5% p.a. The Board's revised interest projection appears reasonable and therefore accepted.
State Government Loan	17.59	16.96	The Board in their revised submission dated May 26, has projected receipt of Rs.189 Crores and repayment of Rs.7 Crores (as per filing repayment projection is nil). The rate of interest on GoA Loan is 10.5%p.a. The Board's revised interest projection appears reasonable and therefore accepted.

Sources	FY 2004-05 Filing	FY 2004-05 Approved	Remarks
Discount to Consumer	3.89	3.89	Approved based on the approved sales forecast of the Board.
Interest to Suppliers	0.36	0	There is no such figure in the FRP submitted to the Commission and therefore disallowed.
Interest on GPF	17.22	17.22	The Board has not been crediting the Provident Fund money collected from the employees to a separate fund independent of the Board. They are utilizing the money deducted from the salaries of the employees as a part of their working capital requirements. In the accounts, they have been showing the total amount at the credit of the employees in the Schedule 35. As per 2002-03 audited accounts, the amount at lying at the credit as on 31/03/03 is Rs.215 Crores. The interest rate applicable is 9%p.a. The interest projection appears to be reasonable and therefore accepted.
Bank Charges	3.02	3.02	Considering the level of activity of the Board, the amount claimed is reasonable.
Total	73.94	75.65	
Less: Interest Capitalization-State Government Loan	0	16.96	The Board has projected capitalization of entire interest on State Government Loan in their revised submission dated May 26. Since after restructuring, new state government loans will be coming for capital expenditure project, the capitalization of entire interest projection is accepted.
Less: Interest Capitalization on Other Loans	0	6.91	The Board has not projected any interest capitalization on the loan from other lenders namely PFC, LIC and Bond. As per normal accounting principle interest on any loan for a capital expenditure project till the date it's commissioning is treated as interest during construction period and treated as a part of the

Sources	FY 2004-05 Filing	FY 2004-05 Approved	Remarks
			capital cost of the project. Board could not furnish detailed information on the projects under taken by them and their source of the funding nor they could furnish how much out of these loans relate to Repairs and Maintenance Project. In the absence of such details, twenty percent of the interest chargeable on the loans taken from these lenders is capitalized.
Net Interest	73.94	51.78	

4.89 In the last tariff order the Commission had capitalised 50% of the gross interest expenses. This had been done because ASEB was not in a position to explain the status of projects under construction and the corresponding loans. The Commission notes that the situation has improved only marginally this year. ASEB has been able to provide only details of only some big generation projects like Karbi Anlong etc.

The Commission recognises that providing more detailed information on a timely basis is an ongoing process and improvement of the accounting and financial systems will take time. Keeping the transition period in mind the Commission continues with the previous practise of capitalising the interest expenses at an adhoc level albeit lower level. As compared to 50% in the last tariff order the Commission in this tariff order allows for 20% of the interest cost to be capitalised. **The Commission directs the Board to hasten their efforts in strengthening the financial information systems so that ASEB can furnish the details of CWIP along with the corresponding sources of funds in the future tariff petitions and the exact IDC can be furnished**.

Return on Fixed Assets-

4.90 The Commission in continuance of its previous order recognises the Board's claim to reasonable return. In the filing for FY 2003-04 the ASEB has deferred the recovery of the reasonable return till the Commission announces the reasonable efficiency benchmark levels. The Commission would like to clarify that in the previous tariff order the ASEB's claim to earn return was accepted. However keeping in mind the immense opportunities that existed for improving the operating efficiency of the Board, the Commission had directed the ASEB to recoup the return through efficiency gains. In no way must this be interpreted as a deferral of the return. The Commission believes that there still exist many opportunities for improving the operating efficiency of the ASEB and all out efforts must be made to capture gains from different areas of operation e.g. revenue billing, collection, quality of supply, optimal loading of generating stations, replacement of meters, increase in metered billing etc.

As per its principle of progressively increasing the costs that may be recovered through tariffs the Commission allows the ASEB to recover the 20% of the return for FY 2003-04 from tariffs and the remaining from internal efficiency gains. Accordingly Rs 3.41 Crores is allowed as return for FY 2003-04.

4.91 The Commission in its tariff order for 2002-03 wanted ASEB to improve efficiency to be eligible for claiming return. There is no noticeable improvement in efficiency during the year 2003-04 for the Commission to change its stand and allow return. But the fact remains that the average cost of electricity has gone down significantly from Rs. 5.38 per kWh in 2002-03 to Rs. 4.69 per kWh in 2004-05 primarily due to cross liability adjustment between Government of Assam and ASEB as a part of ongoing reform process. The Commission has therefore decided to allow 3% return to ASEB to ensure that there is no cash shortfall that may adversely affect the effort to improve efficiency and consequently delay the benefit of reforms to the consumers.

4.92 The Commission takes note of the gathering momentum of revenue improvement measures as enumerated by ASEB in its filings and for reasons recorded in the previous paragraph allows for recovery through tariffs the return of Rs 20.22 Crores as filed for the year FY 2004-05. **While allowing the reasonable return, the Commission directs the Board that they should undertake energy audit, step up regular repairs and maintenance activity, improve billing system of industrial consumers and undertake such other activities as will show an improvement in the quality of supply in the near future.**

4.93 **The Commission hereby direct ASEB to build an asset register that should include information on the status of the assets mentioned. Within two months of notification of this tariff order ASEB should inform the Commission about the expected time to be taken to build the asset register**.

Interest on Working Capital-

4.94 The Commission in principle is agreeable to permitting recovery of interest on working capital. But this requirement of amount of working capital must be established through a detailed lead lag study to be submitted by the ASEB within three months of this tariff order. This lead lag study must provide requirement of working capital under different scenarios of efficiency levels in collection and billing. The Commission would like to initiate proceedings to lay down a comprehensive system for estimation of norms for allowing working capital.

4.95 The Commission notes that the Board has been collecting and holding security deposit from the Consumers on which they have not been paying any interest till now. As per the information submitted in their letter dated May 26, 2004, the amount of security deposit held by ASEB in Rs. Crores is projected as follows:-

As on 31/03/2004	108.73
As on 31/03/2005	150.05

As per the Electricity Act 2003, the ASEB is required to pay interest on such deposits at a rate not less than the bank rate. The interest on the security deposit for nine months on an average balance at an interest rate of 7% p.a is around Rs 7 Crores. Since the Board is not paying any interest on the security deposit of the consumer, the Commission at this stage finds inappropriate to allow any interest on working capital in this tariff order.

4.96 Besides above the Commission will consider this matter again after the review of the results from the lead lag study that ASEB is directed to submit within three months of this tariff order. Hence no amount is approved on account of interest on working capital.

4.97 In addition to the lead lag study, the Commission directs the ASEB to report on a monthly basis the actual category wise billing and collection amounts. This information will be used by the Commission in finalising its view on the norms for assessment of Board's working capital requirement.

Repairs and Maintenance cost:

4.98 The analysis showing the year wise break up and comparison with Commission approved figure is given in the following table:

Heads (Rs. Crores)	FY 2002-03 Actual	FY 2003-04 Filing	FY 2004-05 Filing
Plant and Machinery	5.56	10.5	6.25
Building	0.94	0.71	1
Civil Works	0.24	1.16	.35
Lines, Cables and Net Work	11.38	7.98	13.19
Hydraulic Work	0.02	0.14	.05
Vehicle	1.1	1.26	1.4
Furniture and Fixtures	0.28	0.07	0.3
Other Equipment	0.33	0.12	0.45
Total	19.85	21.94	22.99

4.99 The repairs and maintenance expenses have undergone major changes under two heads, namely, Plant & Machinery and Lines, Cables and Net work. The Commission recognises that for achieving immediate results in the area of improving quality of supply the ASEB will need to resort to increased R&M expenditure.

4.100 The Commission feels that in the long run such costs must either be benchmarked to the underlying asset value or linked to inflation. The filing represents a 7.82% annual increase in R&M costs from the actual incurred during FY 2002-03. This is a reasonable estimate especially given the fact that such activities must be taken up on a war footing to improve the quality of supply. Hence the Commission approves the expenses for R&M as filed for the years 2003-04 and 2004-05. Such an aggressive increase in approved costs is intended to take care of any backlog in maintenance of the power system that might have happened due to inadequate funding prior to the FY 2003 tariff order.

Administration and General Expenses-

4.101 The Commission has analysed the actual expenditure for FY 2002-03 as per the annual accounts and compared this with the filings for FY 2003-04 and FY 2004-05:

Items **(Rs. Crores)**	**FY 2002-03 Actual**	**FY 2003-04 Filing**	**FY 2004-05 Filing**
Rents, Rates & Taxes	2.97	1.04	3.75
Insurance	0.16	.24	0.2
Telephone Charges	0.77	.98	.96
Postage and Telegram	0.61	.79	0.77
Legal Charges	0.26	.55	0.33
Audit fees	0.12	.12	0.15
Consultancy charges	0.01	.20	0.01
Technical fees	0	.02	0.01
Conveyance and Travel Charges	2.87	3.75	3.63
Other Expenses	2.23	1.95	2.82
Freight	1.80	0.45	2.27
Other Purchase related expenses	.61	.35	0.95
Total	12.41	10.44	15.85
Less Capitalized-(Supporting calculation cannot be provided)	0	0.42	0.17
Net Expenses	12.41	10.02	15.68

4.102 The costs items of Rents, rates & taxes, Conveyance, Other expenses and Freight together constitute 70% - 80% of the total Administrative and General expenses and exhibit a wide variation over the three years. Instead of a detailed scrutiny of such items that are less than 5% of the total ARR, the Commission approves an annual escalation of 5 % over the total actual costs incurred during FY 2002-03. As per that principle the Commission approves Rs 13.03 Crores and Rs 13.68 Crores for FY 2003-04 and FY 2004-05 respectively.

Past Liabilities

4.103 The Commission is of the view that as far as possible the revenue gap on account of reasons beyond the control of ASEB must be recovered through tariffs in the immediately succeeding tariff year. The extent of past liability that may be recovered through tariffs in the immediately succeeding year must be balanced with its impact on tariff.

4.104 In the filing for FY 2003-04 ASEB has proposed recovery of Rs 23 Crores on account of reasonable return for the past year. The Commission in its previous order had mentioned that the ASEB is entitled to a reasonable return however it must recovered through internal efficiencies and not through retail tariffs. **The Commission would like to clarify that the annual statutory return is not deferred but expected to be met through efficiency improvements in the same year itself. Hence the Commission does not approve the past liability of Rs 23 Crores.**

4.105 The ASEB filed for ARR and tariff petition of FY 2003-04 in July 2003. However by then half the year was already over and inevitably a time lag had crept in the process of revising tariffs. The Commission through this tariff order disposes the filings for both the years FY 2003-04 and FY 2004-05. **However by now the FY 2003-04 is already over and the Commission is not in favour of revising tariffs with retrospective effect. Hence the Commission approves the inclusion of the approved revenue gap of FY 2003-04 in the ARR of FY 2004-05.**

4.106 The Commission after review of the costs and revenue for FY 2003-04 has arrived at a revenue gap of Rs 177.96 Crores. As per the agreement between ADB, GoA and ASEB the GoA is required to provide financial support for cash deficit incurred by ASEB within two months of ASEB raising the demand to the GoA. GoA has confirmed that Rs 110 Crores pertains to the period FY 2003-04. After including the GoA support of Rs 110 Crores the remaining revenue gap of Rs 44.17 Crores has been included as a past liability in the ARR for FY 2004-05.

Bad Debts and other debits

4.107 The Board has claimed bad debts of 2% of gross revenue or Rs 22.95 Crores.

The Commission will allow for recovery of bad debts if the ASEB proposes to write off from its book of accounts the corresponding items. The Commission is of the opinion that ASEB must actively pursue recovery of past dues up to a reasonable period of time. In addition to this the ASEB must conduct periodic ageing analysis of the receivables and identify the non-recoverable amounts. Such amounts to the extent written off may be considered as pass through in the tariffs. **The Commission reiterates that such a disciplined procedure will make the ASEB's balance sheet more realistic and provide information on its true financial position.**

4.108 The Commission has allowed other debits of Rs 50 Lakhs as filed by ASEB for FY 2003-04.

Miscellaneous receipts

4.109 The analysis of miscellaneous receipts income is given below :-

Particulars (Rs Crores)	**FY 2001-02 Accounts**	**FY 2002-03 Accounts**	**FY 2003-04 Filed**	**FY 2004-05 Filed**
Depooling of PGCIL Transmission charges		6.07	6.75	
Interest of staff loan		0.00	0.01	
Income from investment	7.02	8.98	4.50	
Income from Trading	22.15	27.08	3.75	
Rent of Meters	7.95	8.61	11.92	
Delayed payment surcharge	7.37	4.34	8.18	
Miscellaneous recoveries	30.04	29.55	0.45	
Meter Box Charge	0.00	0.00	0.13	
Fuse Charge	0.00	0.00	0.70	
Reconnection/Disconnection charge	0.00	0.00	0.55	
Other Misc.	0.57	1.09		
Total	75.1	85.72	36.95	31.76

4.110 The other income as per the annual accounts takes into account revenues from other activities incidental to the main business. Till such time that the Commission notifies the detailed regulations on treatment of revenue from other businesses the entire benefit from such activities must accrue to the consumers. For FY 2003-04 the Commission has considered the actual amount Rs 65.72 Crores as submitted by ASEB. For FY 2004-05 the Commission has considered the average of the actual amounts as per the annual accounts for FY 2001-02 (Rs 75.1 Crores) and FY 2002-03 (Rs 85.72 Crores) which works out to Rs 80.41 Crores.

4.111 The Commission has recorded separately the expenses and revenues for trading of surplus power. The revenues from sale of power during the months of surplus have been approved as filed at Rs 68 Crores and the same has been considered in the miscellaneous receipts. Accordingly the total miscellaneous receipts considered are Rs 148.41 Crores.

Summarized ARR

4.112 On the basis of above discussion, the summarized position in respect of the FY 2003-2004 and FY 2004-05 given below:

Items **All in Rs Crores unless stated otherwise**	**Filing**		**Approved**	
	2003-04	**2004-05**	**2003-04**	**2004-05**
Energy sales in MU	2,115	2,190	1,907	2,190
Fuel cost for power generation	68.40	70.55	59.27	68.48
Power purchase costs	545.17	558.36	535.90	586.25
Employee cost	284.90	330.45	284.90	298.09
Repairs and maintenance	21.94	22.99	21.94	22.99
Admin and general expenses	10.02	15.68	13.03	13.68
Depreciation/Repayment	33.77	113.25	7.02	8.15
Interest and Finance Charges	88.94	73.94	34.17	51.78
Other debits	0.50	-	0.50	-
Total expenditure	**1,053.64**	**1,185.22**	**956.73**	**1,049.42**

Miscell receipts	36.95	31.76	65.72	148.41
Net expenditure	1,016.69	1,153.46	891.01	901.01
Statutory return (3%)	-	20.93	3.41	20.93
Gross revenue required	1,016.69	1,174.39	894.41	921.94
Bad debts provision	-	22.96	-	-
Interest on Working Capital	8.93	8.18	-	-
Past Liability	23.13	-	-	44.17
Annual Revenue Requirement (ARR)	**1,048.75**	**1,205.53**	**894.41**	**966.12**
Revenue from current tariff	871	867.59	740.24	867.83
Annual revenue gap	177.75	337.94	154.17	94.88
Financial support from GoA	-	-	110	76
Revenue gap to be recovered from tariffs	**177.75**	**337.94**	**44.17**	**22.29**
Average cost of supply (Rs/kWh)	4.96	5.50	4.67	4.41[7]
Average current tariff (Rs/kWh)	4.12	3.96	3.88[8]	3.96
Financial support from GoA (Rs/KWh)	-	-	0.58	0.35
Tariff increase (%)	**20.41%**	**39.01%**	**-**	**2.57%**

4.113 The Commission would like to highlight the fact that the average cost of supply of Rs 4.67 per KWh for FY 2003-04 and Rs.4.21 per KWh for 2004-05 does not consider the total operating costs for the respective years. Most notable among the amounts excluded are depreciation (repayment included

[7] **Average cost of supply excluding carry forward of loss for 2003-04 is Rs.4.21/kWh**

[8] Actual realisation against average tariff as per 2002-03 order of Rs.4.12 has gone down in 2003-04 due to increase in domestic consumption and decrease in industrial and tea consumption.

instead) and just 20% of the returns for FY 2003-04. The inclusion of the entire amount in depreciation and return will increase the average cost of supply to Rs.5.34 per KWh in 2003-04 and Rs.4.69 per KWh in the year 2004-05. However the point to be noted here is that average cost has gone down in 2004-05 as compared to 2003-04 which gives an opportunity to the Commission to consider allowing full return on Fixed Assets in the year 2004-05.

However the Commission has used the average cost of supply as per the ARR and approved only marginal tariff hike for the high paying consumer categories. This initiative has been to arrest the fall in energy sales and discourage the consumers from seeking alternate sources of energy.

4.114 The Commission would like to highlight the fact that the average cost of supply of Rs. 4.67 per kwh for FY 2003-04 and Rs. 4.21 per kwh does not reflect the total operating costs for the respective years. Most notable among the amounts excluded are depreciation (repayment included instead) and just 20% of the return for FY 2003-04. The inclusion of entire amount of depreciation and return will increase the average cost of supply to Rs 5034 per kwh for FY 2003-04 and Rs. 4.69 per kwh for FY 2004-05. The point to be noted here is that average cost is gradually going down from Rs. 5.38 per kwh in 2003-04 to Rs. 4.21 per kwh in 2004-05. This is primarily due to cross liability adjustment undertaken by GoA as a part of reform and restructuring process. This gives an opportunity to the Commission to consider allowing full return on Fixed Assets for FY 2004-05. However, due to inclusion of revenue gap for the year 2003-04 in the ARR for 2004-05, the weighted average cost for the year 2004-05 is Rs. 4.41 per kwh.

SECTION 5: TARIFF DESIGN

Financial Principles

5.1 In the finalisation of tariffs the Commission has to balance the interests of consumers and the ASEB. The tariffs must be set at a level that encourages the efficient use of electricity and at the same time provide adequate revenues for the sustained operation of the Board. The Commission is of the opinion that in addition to revenue recovery, the retail tariffs also send out a very strong price signal to consumers regarding the impact of their usage pattern on the cost of service.

5.2 The Commission feels that the manner of recovery of revenues must be aligned with the intrinsic nature of underlying costs. For ASEB the majority of costs (80% of ARR) are fixed i.e. invariant to the volume of energy and the revenues from different charges must reflect this. This should be compared against the fact that around 83% of the total revenues accrue from variable charges. This anomaly poses a great demand risk to ASEB. In the event that the projected sales do not materialise then ASEB will see a drastic reduction in revenues and profitability because there will be only a marginal reduction in costs. While fixed charges are beneficial for the utility the consumers have a preference for usage based tariffs and the Commission has to tread a fine line in balancing the interests of both the parties.

The alignment of the revenue and cost proportions must be carried out progressively by targeting the cost side as well as the revenue side. On the revenue side in the approved tariffs the Commission has aimed to increase the proportion of revenues from fixed charges. **However for the cost side the Commission directs the ASEB to explore all avenues for reducing the proportion of fixed costs including initiatives like surrender of high cost central sector allocation on merit order basis and replacing it with take-and-pay based contracts from intermediaries like PTC,NVVNL etc**

5.3 The Commission has tried to balance the interests of the consumers and ASEB when designing the proposed tariff structure. The impact of such a tariff rationalisation exercise will impact every consumer differently based on his load pattern, however the Commission has taken care to ensure that the changes in the tariff design do not cause undue hardship and tariff shock to the small and marginal consumers in each of the categories.

5.4 The Commission recognises that the elimination of cross subsidy and shift to full cost tariffs will encourage the efficient usage of energy. However the elimination of cross subsidy cannot be achieved immediately and the Commission expects that the natural load growth coupled with the efficiency improvement measures will aid the pace of cross subsidy reduction without jeopardising the financial viability of ASEB.

To aid ASEB's financial viability and its ability to independently finance its operations, there is a need to move to a regime where the entire cost is recovered through tariffs. ASEB has pointed out that the investments currently being carried out will bear fruit in the long term, in the form of reduced losses and higher efficiencies. However in the short and medium term, till such time that there exist differences in cost of supply and revenue from tariffs, the upward bias in retail tariffs will need to be offset from immediate efficiency gains made in areas that do not require investments e.g. reduction of commercial losses and improving collections**.** The Commission would reiterate that it is the efficiency gains made by ASEB that can offset the steep tariff increase required to bridge the revenue gap. In this context the Commission would prefer gradual annual increases depending on cost escalation rather than sharp increases done after few years.

5.5 In this tariff order the Commission has rationalised the fixed charges for the different consumer categories. This rationalisation has been achieved through two methods, increasing the level of fixed charges and by linking the fixed charges to level of availability. The former has been used for categories which had a low fixed charge component e.g. Industries, Commercial etc while the latter has been done for categories which have a high fixed charge e.g. Tea, Coffee plantations, Oil & coal etc. The fixed charge has been increased by linking it to a higher level of availability. The intention is that higher tariffs may be charged if it results in an improvement of quality of supply. The Commission would like to point out that this increase in tariffs is still lesser than the charges that such consumers pay when generating power from alternate sources like DG sets etc. To begin with this initiative has been targeted at specific categories which have a high consumption of energy. The Commission would like the ASEB to submit along with the next tariff proposal ways and means of extending this scheme to other categories. Moreover the ASEB may even analyse the success of this scheme and suggest modifications to improve its effectiveness.

5.6 Present tariff methodology involves an annual review of licensees' costs and revenues. This review is conducted using well-established regulations and guidelines and follows a clearly stated tariff policy. Licensees, however, will desire:

– a more quantitative description of tariff policy and standards of performance to avoid different interpretations

– a stated policy on how risks that are beyond their reasonable control will be dealt, and

– a regulatory regime that gives them more flexibility in managing their operations and investments

These measures are intended to help mitigate licensee's business uncertainty and financial risk. The cost of uncertainty and risk, otherwise, falls on both licensees and consumers.

The Commission recognises the requirement of a well defined and enduring set of financial principles that may be applied on a multi - year basis to provide a stable tariff regime and reduce the regulatory risk. It believes that the successful achievement of these objectives will create conditions for inflow of capital and improvement of the operating efficiency.

The Commission would also like to mention that the operating conditions for Assam are unique and the design of tariff related financial principles must address the specific problems faced by the power sector in the state of Assam.

5.7 The ASEB has filed for implementing a mechanism for multi-year tariffs for FY 2003-04 and FY 2004-05. At the outset the Commission would like to clarify that the task of designing and implementing a comprehensive set of long term financial principles is a detailed exercise that will require a thorough analysis of the power sector in Assam and possibly explore its linkages with other sectors most notably that of fuel.

The Commission plans to take up such an exercise separately from the tariff process. However for the interim the Commission plans to address the concern of ASEB by introducing a simplistic benefit sharing mechanism that allows the ASEB to retain a proportion of financial gains made pursuant to the efficiency improvement initiatives. The retention of a part of these gains provides a direct incentive to the ASEB to improve its operating efficiency beyond the levels considered in this tariff order.

5.8 Accordingly the Commission directs that the ASEB may be allowed to retain up to 50% of the financial gain arising out of the efficiency improvement initiatives. This sharing of benefits will be invoked only after the ASEB has completely provided for all costs including depreciation. The inclusion of depreciation has been necessitated to reflect the actual operating cost against which the revenues from operations may be compared to compute the surplus. This principle will be in effect till such time that the Commission

The benefit of the remaining 50% of the excess gains (that has not been retained by ASEB) will flow to the consumers in the next year as a reduction in the ARR of ASEB.

The net efficiency gains achieved by ASEB will be a combination of reduction in costs and increase in revenues. The Commission does not intend to follow an intrusive form of regulation by directing the efforts of ASEB and hence would leave it to the ASEB to formulate and implement strategies as per their understanding of the sector.

Tariff setting process

5.9 The approved tariffs have been set by increasing the tariffs of the categories to a level that fully recovers the approved annual revenue requirement of ASEB. The tariff hike for each of the consumer category is dependant upon its revenues compared to the allocated cost. In the absence of a category-wise cost of service, the cost allocated to the categories has been computed based on the average cost of supply for ASEB. This intermediate tariff schedule is called the full cost tariff i.e. the application of these tariffs fully recover the approved ARR of ASEB.

5.10 Further the GoA has confirmed to AERC, vide their letter dated 24th June 2004, their financial support to ASEB amounting to Rs 186 Crores (Rs 110 Crores for FY 2003-04 and Rs 76 Crores for FY 2004-05). The Commission has taken into cognisance this amount and reduced the full cost tariff to that extent. This reduced tariff is called the retail supply tariff and shall be recovered from the consumers as per the attached schedule.

5.11 The revenue gap and approved tariff for retail supply has been computed on an annual basis. However the approved tariffs for retail supply will be applicable only for 8 months of the year i.e. August 2004 onwards. In order to make up for the under recovery that has happened in the first 4 months of the year, the Commission has worked out the applicable tariffs that would be in force for the next 8 months of FY 2004-05. This has the inevitable impact of the applicable tariffs being marginally higher than the approved tariffs.

To avoid such occurrences in future, the Commission directs the ASEB to maintain strict adherence to the guidelines for submission of ARR and tariff petition (especially that related to the prescribed date for filing) so that mid year application of tariffs may be avoided.

The table in the next page summarises the tariffs.

◈ SUMMARY of TARIFF

Category	Current tariff		Approved tariff for period April 04 to Mar.05		Applicable tariff for period 1st Aug. 04 to 31st Mar05	
	Energy	Fixed	Energy	Fixed	Energy	Fixed
	Ps/KWH	Rs/KW of connected load or Contracted Demand as applicable/month	Ps/KWH	Rs/KW of connected load or Contracted Demand as applicable/month	Ps/KWH	Rs/KW of connected load or Contracted Demand as applicable/month
Category-I: Domestic						
First 60 KWH per month	200	20	200	25	200	28
Next 60 KWH per month	300		300		300	
Next 180 KWH per month	360		365		370	
Balance consumption per month	400		420		430	
Category-II : Commercial						
First 60 KWH per month	360	35	355	50	350	60
Balance consumption per month	480	75	465	100	460	115
Category-III : General purpose	410	35	350	100	320	135

◈ Amended vide order dated 6th August, 2004

Category	Current tariff		Approved tariff for period April 04 to Mar.04-5		Applicable tariff for period 1st Aug. 04 to 31st Mar05	
	Energy	Fixed	Energy	Fixed	Energy	Fixed
	Ps/KWH	Rs/KW of connected load or Contracted Demand as applicable/month	Ps/KWH	Rs/KW of connected load or Contracted Demand as applicable /month	Ps/KWH	Rs/KW of connected load or Contracted Demand as applicable/month
Category-IV :Public lighting	430	00	400	50	385	75
Category-V :Public Water Works	430	60	400	100	385	120
Category-VI : Irrigation						
First 20 KWH per day	165	5	165	5	165	5
Next 20 KWH per day	265		265		265	
Balance consumption per day	335		335		335	
Category-VII : Industries						
A. Small Industries						
(i) Rural Industries	220	22	235	22	245	22
(ii) Urban Industries	310	27	300	50	295	62
B. HT-I Industries	350	55	340	100	335	125
C. HT-II Industries	350	150	350	150	350	150
Category-VIII :Bulk Supply						
(i) Bulk Govt. Educational Institution	320	90	320	100	320	105
(ii) Others	400	90	385	125	380	145

Category	Current tariff		Approved tariff for period April 04 to Mar.04-5		Applicable tariff for period 1st Aug. 04 to 31st Mar05	
	Energy	Fixed	Energy	Fixed	Energy	Fixed
	Ps/KWH	Rs/KW of connected load or Contracted Demand as applicable/month	Ps/KWH	Rs/KW of connected load or Contracted Demand as applicable/month	Ps/KWH	Rs/KW of connected load or Contracted Demand as applicable/month
Category IX : Tea, Coffee & Rubber						
During season	390	195	380	Graded	385	Graded
During off-season	410	195	390	Graded	385	Graded
Category X : Oil and Coal	390	232	385	250	385	260
Category- XI :Rural Un-metered Supply						
Domestic	Rs. 12 per point per month		Rs.20 per point per month		Rs.20 per point per month	
Commercial	Rs.25 per point per month		Rs. 40 per point per month		Rs.40 per point pert month	
Category XII : Temporary Supply						
(a) Domestic	450		450		450	
(b) General Purpose	500		550		550	
© Commercial and others	535		550		550	

Note: (i) For Demand Charge payable by Tea, Coffee & Rubber category, refer para (e) of Category IX of Schedule of Tariff

(ii) Categories covered under TOD tariff shall pay energy charge as per Section 6 : Schedule of Tariff

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Issues in Tariff Design

5.12 Pursuant to the Electricity Act 2003, the Commission is currently in the process of approving the Electricity Supply Code. This tariff order mentions only those conditions related to tariff that have been modified.

5.13 In this section we have discussed some of the specific issues that were considered in the finalization of the tariff structure.

Two part tariff structure

5.14 The existing tariff structure in Assam does have a provision for fixed charges in most of the consumer categories. A rational tariff structure requires a two-part tariff structure incorporating fixed charges to reflect the fixed costs on account of power purchase, employee costs, interest etc. It is, therefore, essential that these fixed costs are reflected as fixed charges recovered from the consumers. Ideally, this should be done in proportion to the demand placed by an individual consumer on the system. This is so because the connected load provides a signal of the consumer's load profile and the maximum demand to arrive at the estimates of the consumption.

5.15 The Commission has rationalized the tariff structure to improve the proportion of total revenues that are recovered through the fixed charges. However this task is an ongoing process and it must not be expected that the proportion of revenues and costs will be aligned in one year itself. What the Commission has provided in the previous order and further reinforced in this order is it's commitment to improving the proportion of total revenues recovered through fixed charges. It may be noted that at current tariffs 14% of the total revenue for FY 2004-05 would have been recovered from energy charges. At tariff approved by the Commission this proportion has been increased to 18%.

5.16 In the previous order the Commission had removed minimum charges because it acts as a disincentive for consumers to conserve energy and for ASEB to improve supply conditions. In line with that principle the Commission has not reintroduced minimum guarantee charges/minimum charge.

Time of use (ToU) tariff

5.17 Higher demand during evening hours is a characteristic of Assam's load curve. Demand is typically met through peaking stations, which are generally more expensive as compared to the base load stations. In order to reflect the higher cost of supply during the peak load hours it is necessary to include a time of use charge in the tariff structure which would provide correct signals to the consumers and also help the utility in maintaining a better system profile. The existing tariff structure includes a time of use charge for the categories of H.T industries, Tea, coffee & rubber and Oil & coal. The ToU tariff is expected to shift consumption during off-peak hours and thereby flatten the load curve. Therefore, it would be rational to apply a ToU charge for consumption during the peak load hours, which should be a part of the tariff structure. However the Commission is of the opinion that the two time period (peak and off peak) are sufficient. The Commission does not agree with the filing of ASEB which has proposed three time periods because Assam's night time demand is not significantly lower than day time off peak demand.

5.18 The Commission has computed the ToD tariffs at a level that makes the revenue estimate same for both the base tariffs and ToD tariffs. The Commission would like to point out that the calculation of these tariffs is dependant upon the consumption during each of the time periods. The Commission has used the data submitted by ASEB in the filing to compute the ToD tariff. In computing this charge it has been assumed that the off peak charges are 95% of the base tariff. The charge for consumption during peak period is then computed at a level that fully recovers the revenue from base tariffs.

5.19 In the previous tariff order the Commission had stated that such a charge should also be introduced in other consumer categories in the future and would therefore like to move in this direction. **In this regard, the Commission directs ASEB to submit an action plan that lists out the ground issues for implementation of such charges for other categories. Most importantly the Commission is expecting ASEB to estimate the time and money that will be required to upgrade the metering at consumer premises and an ABC analysis based on which ASEB can stagger the implementation to reduce the initial investment**.

5.20 Apart from the ToU tariffs there are other measures which can also be taken to reduce the financial risk arising out of a demand profile having considerable difference between peak and off peak demand. In the post Electricity Act 2003 and the emerging opportunities for sourcing of energy through different intermediaries the Commission would like to draw the attention of ASEB towards its power purchase arrangements with existing generators. Specifically ASEB should pursue changes in the existing contractual arrangements that allow for sharing of demand risk between entities.

Standards for quality of service

5.21 The issue of maintaining the required levels of quality of supply and service has been overlooked for many years. However, with the initiation of reforms in the power sector, it has received some attention and importance. Quality of supply and service has a direct bearing on safety aspects, performance of equipment and consumer satisfaction. Poor quality of supply is also proving an impediment in promoting the use of energy efficient appliances. A number of reasons could be attributed to this, including weak distribution system, poor financial health of the utility, lack of consumer awareness, inadequate enforcement mechanisms etc. If the ASEB can increase its quantum of sales, it will improve its financial viability and will have funds to focus on improving its supply and service standards.

5.22 The ASEB has proposed to merge the sub-categories of rural and urban supply within the category of Small Industries. However, the Commission has not approved this merger and these two have been retained as separate categories. **The Commission is of the view that the rural- urban differential will have to be maintained at this stage because the quality of supply and service in the rural areas is poor as compared to the urban areas.** Hence the rural areas should be provided electricity at a lower rate than the urban areas for the time being.

Recovery of revenue shortfall that occurred during April '04 – July '04

5.23 The tariff and ARR has been approved for the entire FY 2004-05 i.e. the approved tariffs are applicable for the period April '04 – March '05). However due to the delay in the tariff finalisation process, the Commission has allowed ASEB to make up for the revenue shortfall that has occurred during the period April '04- July '04 when the previous tariff were in force.

5.24 This has been achieved by increasing the approved tariffs so that ASEB can recover the shortfall in revenue (that occurred in the first 4 months) from the sales in the next 8 months. However the Commission would like to point out that in the next tariff filing the ASEB must take the approved tariffs as the current tariffs.

The major changes in tariff structure introduced in this Order

(a) Increase in recovery of revenue from fixed/demand charges.

(b) Introduction of graded demand charges based on availability of supply for tea, coffee and rubber.

(c) The demand charges for rural industry has been left unchanged to reflect the difference in supply conditions between rural and urban areas.

(d) Tariff for rural unmetered category (Domestic and Commercial) has been increased.

(e) Rebate to consumers of HT – II based on the voltage level of their connection.

Tariff schedule proposed versus approved

Category –1: Domestic

The existing schedule is applicable for supply of power to residential premises, exclusively for domestic purposes only. The existing schedule also includes the occupants of flats in multi-storeyed buildings who get bulk power at single point for domestic purposes.

The following table depicts the changes proposed by the Board:

Energy charge for Domestic Supply (Existing/Proposed)

Description	Energy Charge (paise/unit)	
KWh/Month	Existing	Proposed
0-60 KWh	200	250
60-120 KWh	300	380
120-300 KWh	360	460
More than 300 KWh	400	550

Fixed charge for Domestic Supply (Existing/Proposed)

Description	Fixed Charge	
	Existing	**Proposed**
0-0.5 kW Rs./installation/month	20	30
Above 0.5 kW Rs./kW/month or part thereof per month	20	40

The tariff approved by the Commission for domestic consumers is as follows:

Energy charge for Domestic Supply (Approved)

Description	Energy Charge (Paise/kWh)
Consumption in KWh/month	
0-60 KWh	200
60-120 KWh	300
120-300 KWh	370
More than 300 KWh	430

Fixed charge for Domestic Supply (Approved)

Description	Fixed Charge
Connected load	Rs./kW/month
0-0.5 kW Rs./installation/month	14
Above 0.5 kW Rs./kW/month or part thereof per month	28

The changes proposed by the Board result in an increase of Rs.88.12 Crores in the revenue generated from this category, representing an increase of 35%. The Commission has not accepted this proposal of the Board as this would result in a very high tariff increase of this category.

The tariffs of the domestic consumers have been approved keeping in view the consideration that tariff shocks to consumers should be avoided, but at the same time there should be a gradual movement towards the cost of supply regime. This has been achieved by increasing the tariffs for the higher slabs rather. Accordingly the energy charges for first and second slab have been left unchanged.

The approved tariff will bring additional revenue of Rs. 8.46 Crores in a full year from the domestic consumers representing an increase of 3.36 % over the existing revenue. The approved tariff will generate total revenue of Rs.260 Crores in a full year comprising of Rs. 234 Crores through energy charges and Rs.26 Crores through fixed charge.

Category-II: Commercial

This tariff is applicable to all establishments and institutions of commercial nature and connected with trading activities, including commercial offices, Govt. and Public Sector commercial installations, commercial houses, optical houses, shops, restaurants, bars, refreshment stalls, showcases of advertisements, theatres, cinema halls, guest houses, laundries, dry-cleaners, Railway stations, public and private bus-stands not covered under any other category of consumers, copy works, X-ray installations, private nursing homes/clinical laboratories, photographic studios, battery charging units, workshops, petrol pumps, factory & printing presses not using motive power in the manufacturing process, private educational and cultural institutions, lodging and boarding houses.

Energy charge for Commercial Supply (Existing/Proposed)

Description	Energy Charge (paise/kWh)	
kWh/month	Existing	Proposed
First 0-60 units	360	480
Balance units Above 60	480	580

Fixed charge for Commercial Supply (Existing/Proposed)

Description	Fixed Charge	
Rs./installation/month	Existing	Proposed
0-0.5 kW Rs./installation/month	35	60
Above 0.5 kW Rs/kW/month or part thereof per month	75	120

The changes proposed by the Board result in an increase of Rs.38.09 Crores in the revenue generated from this category, representing an increase of 31%. The Commission has not accepted this proposal of the Board as this would result in a very high tariff increase of this category and would increase the incidence of cross subsidy.

In the existing tariff structure, there are two slabs for monthly consumption in the Commercial LT category: 0-60 kWh and above 60 kWh. The Commission has retained these two slabs in the approved tariff structure. The average realisation from this category is one of the highest in the state. Hence, the increase for this category has been kept low, while simultaneously moving the category towards paying the average cost of supply. However the Commission has enhanced the fixed charges accompanied with a reduction in the energy charges. The Commission has retained a lower rate (energy and fixed charges) for the first slab of consumers to reflect the lower paying capacity of small and marginal users.

Energy charge for Commercial Supply (Approved)

Description	Energy Charge (Paise/kWh)
Consumption in kWh/month	
Commercial LT	
0-60 KWh	350
More than 60 KWh	460

Fixed charge for Commercial Supply (Approved)

Description	Fixed Charge
0-0.5 kW Rs./installation/month	60
Above 0.5 kW Rs./kW/month or part thereof per month	115

The changes approved by the Commission lead to an increase of Rs

4.46 Crores translating into a 3.61% rise over the existing tariffs. The approved tariff will generate total revenue of Rs.127 Crores in a full year comprising of Rs.89 Crores through energy charges and Rs.29 Crores through fixed charge.

Category III-General Purpose Supply

This tariff is applicable to all establishments of non-commercial and non-domestic users of electric power, like Govt. offices, semi-Govt. educational and cultural institutions, Govt. hospitals, dispensaries, charitable institutions and trusts (public or private formed solely for charitable or religious purposes), dharam sala, non-commercial boarding and lodging houses and other non-commercial institutions.

Energy charge for General Purpose Supply (Existing/Proposed)

Description	Energy Charge (paise/kWh)	
kWh/month	Existing	Proposed
All consumption	410	550

Fixed charge for General Purpose Supply (Existing/Proposed)

Description	Fixed Charge	
	Existing	Proposed
Rs./kW or part thereof /per month	35	70

The above changes proposed by the Board would yield Rs. 9.14 Crores of additional revenue representing an increase of 39% over the tariff from current charges.

The tariff of this category has been increased moderately since the Commission intends to gradually move all the consumers towards the cost of supply.

Energy charge for General Purpose Supply (Approved)

Description	Energy Charge (Paise/kWh)
For every KWh of energy consumed	320

Fixed charge for General Purpose Supply (Approved)

Description	Fixed Charge
Rs./kW or part thereof per month	135

The Commission has increased the fixed charges and reduced the energy charges. This is expected to motivate higher consumption from users and reduce the cost of power with increased usage.

The above tariff changes will bring additional revenue of Rs. 0.32 Crores in a full year from this category representing a marginal increase of 1.4% over the revenue from current tariff. The approved tariff will generate total revenue of Rs.23 Crores in a full year comprising of Rs. 18 Crores through energy charges and Rs.5 Crores through fixed charge.

Category IV-Public Lighting

The existing schedule is applicable to street lighting system in municipalities' town committee/Panchayat etc., signal system in road and park lighting, in areas of municipality/town committee/Panchayat etc.

Energy charge for Public Lighting (Existing/Proposed)

Description	Energy Charge (paise/kWh)	
kWh/month	Existing	Proposed
All consumption	430	500

Fixed charge for Public Lighting (Existing/Proposed)

Description	Energy Charge (paise/kWh)	
kWh/month	Existing	Proposed
All consumption	-	30

The above changes proposed by the Board would yield Rs. 3.11 Crores of additional revenue representing an increase of 17% over the existing revenue base of this category. The Commission has not approved the increase proposed by the Board.

The Commission in its previous order had mentioned that the tariffs between the categories of PWW, PL and irrigation should be made identical to the average cost of service as these consumers are mostly government owned organizations. In keeping with that principle the Commission has made the energy charges same for PWW and PL categories.

In the previous order the Commission had expressed its intention to introduce fixed charges in future. In this tariff order the Commission has introduced a fixed charge of Rs 75/kwh/month. The Commission has not increased the overall tariff but rationalized the charges in a manner that fixed charges can be introduced.

Energy charge for Public Lighting (Approved)

Description	Energy Charge (Paise/kWh)
For every KWh of energy consumed	385

Fixed charge for Public Lighting (Approved)

Description	Fixed Charge
Rs./kW or part thereof per month	75

The approved tariff will bring additional revenue of Rs. 0.01 Crores in a full year from the category of Public Lighting presenting an increase of .28% over the existing revenue. The approved tariff will generate total revenue of Rs.2.59 Crores in a full year out of which Rs 2.4 Crores is through energy charges and Rs.0.19 Crores from fixed charges.

Category V-Public Water Works (PWW)

This tariff is applicable for public water supply maintained by Government or Government corporations, Municipalities, Town Committees and Panchayats.

Energy charge for PWW (Existing/Proposed)

Description	Energy Charge (paise/unit)	
kWh/month	Existing	Proposed
All consumption	430	460

Fixed charge for Public Water Works (Existing/Proposed)

Description	Fixed Charge	
	Existing	Proposed
Rs./kW/month or part thereof	60	80

The above changes proposed by the Board result in an increase of Rs. 1.61 Crores in the revenue generated from this category, representing an increase of 9%. However, the Commission has not accepted this proposal of the ASEB.

The Commission has matched the energy charges for this category with that of PL. In addition to this the Commission has increased the fixed charges for this category.

Energy charge for PWW (Approved)

Description	Energy Charge (Paise/kWh)
For every KWh of energy consumed	385

Fixed charge for PWW (Approved)

Description	Fixed Charge
Rs./kW/month or part thereof	120

The approved tariff will bring additional revenue of Rs. 0.15 Crores in a full year from the category of Public Water Works presenting an increase of 0.9% over the existing revenue. The approved tariff will generate total revenue of Rs.17 Crores in a full year comprising of Rs. 14 Crores through energy charges and Rs.3 Crores through fixed charges.

Category VI-Irrigation

Energy charge for Irrigation (Existing/Proposed)

Description	Energy Charge (paise/unit)	
kWh/day	Existing	Proposed
First 20 units	165	300
Next 20 units	265	400
Balance units	335	480

Fixed charge for Irrigation (Existing/Proposed)

Description	Existing	Proposed
Rs./kW/month part thereof	5	20

The above changes proposed by the Board result in additional revenue of Rs.3.3 Crores in the revenue generated from the irrigation, i.e., an increase of 66%.

However, this proposal of the ASEB has not been accepted the Commission as it would result in a very high tariff increase for this category.

The Commission has not changed the existing tariffs.

Energy charge for Irrigation (Approved)

Description	Energy Charge(Paise/kWh)
kWh/day	
0-20 KWh	165
20-40 KWh	265
More than 40 KWh units	335

Fixed charge for Irrigation (Approved)

Description	Fixed Charge
Rs./kW/day	5

Category VII (A)-Small Industries

This tariff is applicable for supply at a single point for industrial purposes for contract demand/connected load upto 25 kVA. This category of small industries has been divided into rural and urban industries in the existing schedule.

Energy charge for Small Industries (Existing/Proposed)

Description	Energy Charge (paise/unit)	
For every KWh consumed in a month	Existing	Proposed
Urban	310	450
Rural	220	320

Fixed charge for Small Industries (Existing/Proposed)

Description	Fixed Charge	
Rs./kW or part thereof per/ month	Existing	Proposed
Urban	27	40
Rural	22	35

The proposed tariff result in an increase of Rs.16.66 Crores per annum in the revenue generated from the Small Industry category. This represents an increase of 46% over the existing tariffs.

In the previous order the Commission was of the view that had stated that the rural-urban differential tariffs will have to be maintained at this stage because of the difference in the quality of supply and service in the urban and rural areas. The Commission has maintained the difference but has increased the energy charges for rural consumers to bring their tariffs closer to the average cost.

(a) Rural Industries

Energy charge for Small Industries-Rural (Approved)

Description	Energy Charge (Paise/KWh)
For every KWh of energy consumed	245

Fixed charge for Small Industries-Rural (Approved)

Description	Fixed Charge
Rs./kW or part thereof per month	22

(b) **Urban Industries**

Energy charge for Small Industries-Urban (Approved)

Description	Energy Charge(Paise/kWh)
For every KWh of energy consumed	295

Fixed charge for Small Industries-Urban (Approved)

Description	Fixed Charge
Rs./kW or part thereof per month	62

The approved tariff will bring additional revenue of Rs. 1.44 Crores in a full year from the category of Small Industries presenting an increase of 3.96% over the existing revenue.

The approved tariff will generate total revenue of Rs. 37.78 Crores (urban Rs 29.50 Crores and rural Rs 8.28 Crores) in a full year comprising of Rs. 32.55 Crores through energy charges (urban Rs 25.50 and rural Rs 7.05 Crores) and Rs. 5.23 Crores (urban Rs 4 Crores and rural Rs 1.23 Crores) through fixed charges. For the rural industries, the approved tariff represents an increase of 8.62% and for the urban industries it is an increase of 5.20%.

Category VII (B)-HT-I Industries

This tariff is applicable for supply of power at a single point for industrial purposes for contract demand/connected load above 25 kVA to 100 kVA.

Energy charge for HT-I Industries (Existing/Proposed)

Description	Energy Charge (Paise/KWh)	
kWh/month	Existing	Proposed
All consumption	350	460

Fixed charge for HT-I Industries (Existing/Proposed)

Description	Fixed Charge	
	Existing	Proposed
Rs./kW or part thereof /per month	55	100

T.O.D tariff for HT-I industries (Existing/Proposed)

Description	Energy Charge (Paise/kwh)		
Existing		Proposed	
Time	Paise/kWh	Time	Paise/kwh
0-1700 Hrs	-	0600-1700	460
1700-2200 Hrs	-	1700-2200	550
2200-2400 Hrs	-	2200-0600	430

The increase in tariff as proposed by the Board will bring in additional revenue of Rs.7.41 Crores per annum, representing an increase of 37 %.

The Commission has not approved the increase in tariff as proposed by the ASEB.

Energy charge for HT-I Industries (Approved)

Description	Energy Charge (Paise/kWh)
For every KWh of energy consumed	335

Fixed charge for HT-I Industries (Approved)

Description	Fixed Charge
Rs./kW or part thereof per month	125

T.O.D tariff for HT-I industries (Approved)

Time	Energy charge (paise/kWh)
0-1700 Hrs	320
1700-2200 Hrs	480
2200-2400 Hrs	320

The approved tariffs will bring additional revenue of Rs. 1.41 Crores in a full year from this category representing an increase of 7.11 % over the existing revenue. The approved tariff will generate total revenue of Rs.21 Crores in a full year comprising of Rs. 17 Crores through energy charges and Rs. 4 Crores through fixed charges.

Category VII (C): HT-II Industries

This tariff is applicable for supply of power at a single point for industrial purposes for contract demand/connected load above 100 kVA.

Energy charge for HT-II Industries (Existing/Proposed)

Description	Energy Charge (paise/unit)	
KWh/month	Existing	Proposed
All consumption	350	400

Fixed charge for HT-II Industries (Existing/Proposed)

Description	Fixed Charge	
	Existing	Proposed
Rs./kVA/month	150	250

T.O.D tariff for HT-II Industries (Existing/Proposed)

Description	Energy Charge (paise/unit)		
Existing		Proposed	
Time	Paise/kWh	Time	Paise/unit
0-1700 Hrs	320	0600-1700	400
1700-2200 Hrs	470	1700-2200	510
2200-2400 Hrs	320	2200-0600	350

The Board has proposed an increase in revenue by Rs.22 Crores, representing an increase of 30% through the above changes in tariff. The Commission has not accepted the ASEB's proposal and has not changed the existing tariffs. This has been done to reduce cross subsidy and discourage the consumers from taking supply from alternate sources.

Energy charge for HT-II Industries (Approved)

Description	Energy Charge (Paise/kWh)
For every KWh of energy consumed	350

Fixed charge for HT-II Industries (Approved)

Description	Fixed Charge
Rs./kVA/month	150

T.O.D tariff for HT-II industries (Approved)

Description	Energy charge (paise/kWh)
Time	**Paise/unit**
0-1700 Hrs	335
1700-2200 Hrs	460
2200-2400 Hrs	335

The approved tariff will generate total revenue of Rs.72 Crores in a full year comprising of Rs.50 Crores through energy charges and Rs.22 Crores through fixed charges.

Category VIII-Bulk Supply

This tariff is applicable to consumers including licensees in bulk with a connected load not less than 50 kVA provided that the consumer is not covered by any other category such as any domestic connection, industries, tea etc. who makes his own internal distribution arrangement at his own cost and received power at the point of supply at high or extra high voltage. This is further classified as under:

(i) Government educational institution-like universities, engineering colleges, medical colleges with residential facilities.

(ii) Others

(i) **Bulk Government educational institutions**

Energy charge for Government educational institutions (Existing/Proposed)

Description	Energy Charge (paise/unit)	
kWh/month	Existing	Proposed
All consumption	320	430

Fixed charge for Government educational institutions (Existing/Proposed)

Description	Fixed Charge	
	Existing	Proposed
Rs./kW or part thereof per /month	90	120

(ii) Others

Energy charge for Others (Existing/Proposed)

Description	Energy Charge (paise/unit)	
kWh/month	Existing	Proposed
All consumption	400	500

Fixed charge for Others (Existing/Proposed)

Description	Fixed Charge	
	Existing	Proposed
Rs./kW or part thereof per/ month	90	180

The Board has proposed an increase in revenue from Rs. 36.57 Crores, representing an increase of 32% over revenue from existing tariff.

The Commission has not approved the increase as proposed by the ASEB, as this would imply a very sharp increase in the tariffs for this category.

The Commission has done a marginal increase of 0.17% for the entire category. The Commission has increased the fixed charges and reduced the energy charges in order to align the revenues with the nature of costs.

The Commission continues with its previous order on allowing a rebate of 10% on energy charges for domestic consumers the network for which is being maintained by the Railways.

(b) **Bulk Government educational institutions**

Energy charge for Government educational institutions (Approved)

Description	Energy Charge (Paise/kWh)
For every kWh of energy consumed	320

Fixed charge for Government educational institutions (Approved)

Description	Fixed Charge
Rs./kW or part thereof per month	105

(ii) Others

Energy charge for Others (Approved)

Description	Energy Charge (Paise/kWh)
For every kWh of energy consumed	380

Fixed charge for Others (Approved)

Description	Fixed Charge
Rs./kVA or part thereof per month	145

Overall the approved tariffs will bring additional revenue of Rs. 0.19 Crores in a full year from the category of Bulk Supply representing an increase of 0.17% over the existing revenue. The approved tariff will generate total revenue of Rs. 115 Crores in a full year comprising of Rs. 100 Crores through energy charges and Rs. 15 Crores through fixed charges.

Category IX-Tea, Coffee and Rubber

This tariff is applicable for tea, coffee and rubber plantation/production by utilisation of electrical power in factory, irrigation, lighting etc. in the Estate.

Energy charge for Tea, Coffee & Rubber (Existing/Proposed)

Description	Energy Charge (paise/unit)	
All consumption kWh/month	Existing	Proposed
Season	390	540
Off season	410	540

Fixed charge for Tea, Coffee & Rubber (Existing/Proposed)

Description	Fixed Charge	
Rs./kVA/month	Existing	Proposed
Season	195	300
Off Season	195	320

T.O.D tariff for Tea, Coffee & Rubber (Existing/Proposed)

Description	**Energy Charge (paise/unit)**		
Existing		Proposed	
Time	Paise/kWh	Time	Paise/unit
0-1700 Hrs	360	0600-1700	540
1700-2200 Hrs	510	1700-2200	600
2200-2400 Hrs	360	2200-0600	520

The proposed tariff will lead to additional revenue to the extent of Rs. 67 Crores, an increase of 40% over the revenue from existing tariff.

The proposal of the Board to increase the tariff of these consumers has not been accepted as the tariff applicable to this category is already high.

The Commission is of the opinion that increase in the fixed charges must be co-related with improvement in the supply situation. In this tariff order the Commission has introduced a graded scheme for fixed charges. **The intention is that as the supply situation improves the consumers will be charged a higher demand charge. Commission has analysed that in spite of the increase in demand charges, the additional supply will still be cheaper than operating a diesel generating set. It is hoped that such measures will motivate the ASEB to improve supply situation to the different tea and coffee estates. At the same time this will reduce the incentive for such consumers to install captive generating set**.

Energy charge for Tea, Coffee & Rubber (Approved)

Description	Energy Charge (Paise/kWh)
For every kWh of energy consumed	
Season	385
Off season	385

Fixed charge for Tea, Coffee & Rubber (Approved)

Description	Fixed Charge
Rs./kVA/month	
Season	{Refer Point 149 (e)}
Off –season	{Refer Point 149 (e)}

T.O.D tariff for Tea, Coffee & Rubber (Approved)

Time	Energy Charge (Paise/kwh)
0-1700 Hrs	365
1700-2200 Hrs	525
2200-2400 Hrs	365

The tariff as approved by the Commission will bring additional revenue of Rs. 3.08 Crores in a full year from this category of representing an increase of 1.85% over the revenue from current tariff. The approved tariff will generate total revenue of Rs.170 Crores in a full year comprising of Rs. 134 Crores through energy charges and Rs. 36 Crores through fixed charges.

Category X-Oil and Coal

This tariff is applicable to supply of power at single point to installations of oil and coal and is supplied at high tension.

Energy charge for Oil & Coal (Existing/Proposed)

Description	Energy Charge (Paise/unit)	
kWh/month	Existing	Proposed
All consumption	390	530

Fixed charge for Oil & Coal (Existing/Proposed)

Description	Fixed Charge	
	Existing	Proposed
Rs./kVA/month	232	300

T.O.D tariff for Oil & Coal (Existing/Proposed)

Description	Energy Charge (Paise/kWh)		
Existing		Proposed	
Time	Paise/kWh	Time	Paise/unit
0600-1700 Hrs	350	0600-1700 Hrs	520
1700-2200 Hrs	490	1700-2200 Hrs	600
2200-06000 Hrs	350	2200-06000 Hrs	470

The Board has proposed an increase of Rs. 10.49 Crores in revenue from the category, representing an increase of 34%.

The Commission has not approved the tariff increase as approved by the Board, as this would even exceed the average cost of supply as approved by the Commission. The Commission has approved a marginal increase in tariff and rationalised the charges by reducing the energy costs and increasing the fixed charges.

Energy charge for Oil & Coal (Approved)

Description	Energy Charge (Paise/kWh)
For every kWh of energy consumed	385

Fixed charge for Oil & Coal (Approved)

Description	Fixed Charge
Rs./kVA/month	260

T.O.D tariff for Oil & Coal (Approved)

Time	Energy charge (Paise/kWh)
0600-1700 Hrs	365
1700-2200 Hrs	480
2200-06000 Hrs	365

The tariff as approved by the Commission will bring additional revenue of Rs. 0.25 Crores in a full year from this category of representing an increase of 0.83% over revenue from current tariff. The approved tariff will generate total revenue of Rs.30.140729.96 Crores in a full year comprising of Rs. 31 Crores through energy charges and Rs. 8 Crores through fixed charges.

Category XI-Rural Unmetered Supply

The Commission finds that the existing point based tariff for these two categories is much lower compare to charge payable by the consumers at the lowest tariff of the approved rate for the respective category on the estimated consumption. Now the approved tariff for this category has been made nearly at par with the payable rate of the lowest slab of the respective category on the estimated consumption.

The Commission recognise that this point based tariff does not pass any signal / benefit to the consumers to go for economising their consumption and the amount payable by them is not against the actual consumption the consumer has made in a given period. However, the tariff approved by the Commission is as follows :

(i) Rural domestic consumers un-metered

(ii) Rural commercial consumers

Tariff for Rural Consumers (Existing/Proposed)

Description	Existing		Proposed	
	Fixed/Demand Rs/kW/Month	Energy Rs/Point/month	Fixed/Demand Rs/kW/Month	Energy Rs/Point/month
Rural Domestic	-	12	-	35
Rural Commercial	-	25	-	75

Rural unmetered Consumers (Approved)

Description	Rs./point/month
Rural domestic consumers un-metered	20
Rural commercial consumers un-metered	40

The tariff for these consumers is directed to the small and marginal users in rural areas falling under the category of domestic and commercial. The fact is that as the low recorded consumption increase the error in metering. Moreover metering of consumers for such small consumption may not be economical also. Hence the Commission has increased the charges for this category and to make them reflective of the charges paid in the first slab of the respective categories.

The Commission is aware about the potential abuse of energy estimated in this category by assuming a large increase in the number of points. **To safeguard against this the Commission directs the ASEB to report on a quarterly basis the number of such connections and conduct sample load surveys every year of such consumers to check for any increase in connected load/multiple points in their premises. Based on the load survey ASEB must compute a normative level of monthly energy consumption per point beyond which the consumer must shift to the regular metered tariff**.

Temporary supply

This tariff incorporates three separate sub categories-domestic, General Purpose and commercial and other consumers.

Energy charge for Temporary supply (Existing/Proposed)

Description	Energy Charge (paise/unit)	
kWh/month	Existing	Proposed
(a) Domestic	450	550
(b) General Purpose	500	700
(c) Commercial & others	535	850

The Board has proposed an increase of Rs. 1.45 Crores in revenue from the category of temporary supply, representing an increase of 47.5%.

The supply in this category is for a short time period only and may arise in different locations at different points in time. Generally, the Board will have to arrange for such supply from external sources and erect required facilities on a pressing basis. Given the arrangements that the Board has to undertake to supply electricity to this category, the Commission has increased the tariff to adequately reflect the costs of doing so. In principles the tariffs for this category must be kept higher than that for corresponding categories. Accordingly the Commission has increased the tariff doe this category.

The additional revenue due to approved tariffs is Rs 1.92 Crores for rural domestic and Rs 0.58 Crores for rural commercial consumers.

Energy charge for Temporary supply (Approved)

Description	**Energy Charge (Paise/kWh)**
For every kWh of energy consumed	
(a) Domestic	450
(b) General Purpose	550
(c) Commercial & others	550

The above tariff changes will bring additional revenue of Rs. 0.15 Crores in a full year from the category of Temporary Supply presenting an increase of 4.75% over the revenue from current tariff.

SECTION 6: SCHEDULE OF TARIFF

6.1 This section lists the tariffs which are applicable in the state of Assam starting from August 1, 2004 upto March 2005.

Category –1: Domestic

(a) **Applicability**

This tariff shall be applicable for supply of power to residential premises, exclusively for domestic purposes only. This shall also include supply of power to occupants of flats in multi storied buildings, receiving bulk power at single point for domestic purposes.

(b) **Tariff**

(i) **Energy Charge:** Energy charge for Domestic Supply

Description	Energy Charge (Paise/kWh)
Consumption in KWh/month	
◈ First 60 KWh	200
Next 60 KWh	300
Next 180 KWh	370
Balance Consumption	430

(ii) **Fixed Charge:** Fixed charge for Domestic Supply

Description	Fixed Charge
Connected load	Rs./kW/month
Per kW of Connected Load	28

The connected load should be rounded up to the first decimal place for determination of per month fixed charge.

◈ Amended vide order dated 6th August, 2004

(c) In case, metering is done is done on the ◈L.T side of the distribution transformer, for a group of consumers receiving power, then for the purpose of billing an additional energy consumption on account of transformer loss computed @ 3% on the consumer's meter reading shall be considered.

(d) For supply at 11/33 kV, rebate @ 3% shall be applicable on energy consumption.

(e) Wherever consumers have paid for HT metering or are being charged for the same, they would not be charged the 3% transformation loss. ◈

(f) **Surcharge for delayed payment**: Surcharge @ 2% per month or part thereof in simple interest shall be levied, if payment is not made on or before the due date.

(g) **Discount for prompt payment:** 1% rebate on current energy charge for prompt payment on or before the due date shall be allowed.

(h) All payments shall be made by cash/local cheque/DD. DD commission shall be borne by the consumers

(i) **Power factor penalty and rebate:** As given in category VII (C), para (e) & (f) of this tariff schedule. This will be applicable to all those consumers who have electronic meters that can record the power factor.

NOTE:

If any part of the domestic connection is utilised for any use other than dwelling purpose like commercial, industrial etc. the entire consumption shall be treated as the case may be, for corresponding category and shall be applied for the entire consumption.

◈ Amended vide order dated 6th August, 2004

Category-II: Commercial

(a) **Applicability**

This tariff shall be applicable to all establishments and institutions of commercial nature and connected with trading activities, including commercial offices, Govt. and public sector commercial installations, commercial houses, optical houses, shops, restaurants, bars, refreshment stalls, showcases of advertisements, theatres, cinema halls, guest houses, laundries, dry-cleaners, Railway stations, public and private bus-stands not covered under any other category of consumers, copy works, X-ray installations, private nursing homes/clinical laboratories, photographic studios, battery charging units, workshops, petrol pumps, factory & printing presses not using motive power in the manufacturing process, private educational and cultural institutions, lodging and boarding houses.

(b) **Tariff**

(i) Energy Charge

Energy charge for Commercial Supply

Description	Energy Charge (Paise/kWh)
Consumption in kWh/month	
Commercial LT	
0-60 KWh	350
More than 60 KWh	460

(ii) Fixed Charge

Fixed charge for Commercial Supply

Description	Fixed Charge
0-0.5 kW Rs./installation/month	60
Above 0.5 kW Rs./kW/month or part thereof per month	115

(c) In case, metering is done is done on L.T side the transformer loss shall be computed @3% on unit consumption and shall be added to the meter reading.

(d) For supply at 11/33 kV, rebate @ 3% shall be applicable on unit consumption.

(e) Wherever consumers have paid for HT metering or are being charged for the same, they would not be charged the 3% transformation loss.

(f) Surcharge for delayed payment: Surcharge @ 2% per month or part thereof in simple interest shall be levied, if payment is not made on or before the due date.

(g) Discount for prompt payment: 1% rebate on current energy charge for prompt payment on or before the due date shall be allowed.

(h) All payments shall be made by cash/local cheque/DD. DD commission shall be borne by the consumers.

(i) Power factor penalty and rebate: As given in category VII (C), para (e) & (f) of this tariff schedule. This will be applicable to all those consumers who have electronic meters that can record the power factor.

Category III-General Purpose Supply

(a) **Applicability**

This tariff is applicable to all establishments of non-commercial and non-domestic users of electric power like Govt. offices, semi-Govt. educational and cultural institutions, Govt. hospitals, dispensaries, Charitable institutions and trusts (public or private formed solely for charitable or religious purposes) , dharam sala, non-commercial boarding and lodging houses and other non-commercial institutions

(b) **Tariff**

(i) Energy Charge

Energy charge for General Purpose Supply

Description	Energy Charge (Paise/kWh)
For every KWh of energy consumed	320

(ii) Fixed Charge

Fixed charge for General Purpose Supply

Description	Fixed Charge
Rs./kW or part thereof per month	135

(c) In case, metering is done is done on LT side the transformer loss shall be computed @3% on unit consumption and shall be added to the meter reading.

(d) For supply at 11/33 kV, rebate @ 3% shall be applicable on unit consumption.

(e) Wherever consumers have paid for HT metering or are being charged for the same, they would not be charged the 3% transformation loss.

(f) Surcharge for delayed payment: Surcharge @ 2% per month or part thereof in simple interest shall be levied, if payment is not made on or before the due date.

(g) Discount for prompt payment: 1% rebate on current energy charge for prompt payment on or before the due date shall be allowed.

(h) All payments shall be made by cash/local cheque/DD. DD commission shall be borne by the consumers.

(i) Power factor penalty and rebate: As given in category VII (C), para (e) & (f) of this tariff schedule. This will be applicable to all those consumers who have electronic meters that can record the power factor.

Category IV-Public Lighting

(a) **Applicability**

This tariff is applicable to street lighting system in municipalities town committee/Panchayat etc., signal system in road and park lighting, in areas of municipality/town committee/Panchayat etc.

(b) **Tariff**

(i) Energy Charge

◈ Energy charge

Description	Energy Charge (Paise/kWh)
For every KWh of energy consumed	385

(ii) Fixed Charge

◈ Fixed charge

Description	Fixed Charge
Rs./kW or part thereof per month	75

(c) For supply at 11/33 kV, rebate @ 3% shall be applicable on unit consumption.

◈ Amended vide order dated 6th August, 2004

(d) Wherever consumers have paid for HT metering or are being charged for the same, they would not be charged the 3% transformation loss.

(e) Surcharge for delayed payment: Surcharge @ 2% per month or part thereof in simple interest shall be levied, if payment is not made on or before the due date.

(f) Discount for prompt payment: 1% rebate on current energy charge for prompt payment on or before the due date shall be allowed.

(g) All payments shall be made by cash/local cheque/DD. DD commission shall be borne by the consumers.

Category V-Public Water Works (PWW)

(a) **Applicability**

This tariff is applicable for public and water supply maintained by Government or Government Corporations, Municipalities, Town Committees and Panchayats.

(b) **Tariff**

(i) Energy Charge

Energy charge for PWW

Description	Energy Charge (Paise/kWh)
For every KWh of energy consumed	385

(ii) Fixed Charge

Fixed charge for PWW

Description	Fixed Charge
Rs./kW/month or part thereof	120

(c) For supply at 33 kV, rebate @ 3% shall be applicable on unit consumption.

(d) In case, metering is done on L.T side the transformer loss shall be computed @ 3% on unit consumption and shall be added to the meter reading.

(e) Wherever consumers have paid for HT metering or are being charged for the same, they would not be charged the 3% transformation loss.

(f) Surcharge for delayed payment: Surcharge @ 2% per month or part thereof in simple interest shall be levied, if payment is not made on or before the due date.

(g) Discount for prompt payment: 1% rebate on current energy charge for prompt payment on or before the due date shall be allowed.

(h) All payments shall be made by cash/local cheque/DD. DD commission shall be borne by the consumers

(i) Power factor penalty and rebate: As given in category VII (C), para (e) & (f) of this tariff schedule. This will be applicable to all those consumers who have electronic meters that can record the power factor.

Category VI-Irrigation

(a) **Applicability**

This tariff shall be applicable for irrigation purpose in the agricultural sector.

(b) **Tariff**

(i) Energy Charge

Energy charge for Irrigation

Description	Energy Charge(Paise/kWh)
Consumption in kWh/day	
◈ First 20 KWh	165
Next 20 KWh	265
Balance Consumption	335

◈ Amended vide order dated 6th August, 2004

(ii) Fixed Charge

Fixed charge for Irrigation

Description	Fixed Charge
Rs./kW/month or part thereof	5

(c) For supply at 33 kV, rebate @ 3% shall be applicable on unit consumption.

(d) In case, metering is done on L.Tside, the transformer loss shall be computed @3% on unit consumption and shall be added to the meter reading.

(e) Wherever consumers have paid for HT metering or are being charged for the same, they would not be charged the 3% transformation loss.

(f) Surcharge for delayed payment: Surcharge @ 2% per month or part thereof in simple interest shall be levied, if payment is not made on or before the due date.

(g) Discount for prompt payment: 1% rebate on current energy charge for prompt payment on or before the due date shall be allowed.

(h) All payments shall be made by cash/local cheque/DD. DD commission shall be borne by the consumers

(i) Power factor penalty and rebate: As given in category VII (C), para (e) & (f) of this tariff schedule. This will be applicable to all those consumers who have electronic meters that can record the power factor.

Category VII (A) -Small Industries

(a) **Applicability**

(b) This tariff is applicable for supply at a single point for industrial purposes for contract demand/connected load upto 25 kVA.

(c) **Tariff**

(i) Rural Industries

Energy charge for Small Industries-Rural

Description	Energy Charge (Paise/KWh)
For every KWh of energy consumed	245

Fixed charge for Small Industries-Rural (Approved)

Description	Fixed Charge
Rs./kW or part thereof per month	22

(ii) Urban Industries

Energy charge for Small Industries-Urban

Description	Energy Charge(Paise/kWh)
For every KWh of energy consumed	295

Fixed charge for Small Industries-Urban

Description	Fixed Charge
Rs./kW or part thereof per month	62

(d) In case, metering is done on L.T side, the transformer loss shall be computed @3% on unit consumption and shall be added to the meter reading.

(e) For supply at 11/33 kV, rebate @3% shall be applicable on unit consumption.

(f) Wherever consumers have paid for HT metering or are being charged for the same, they would not be charged the 3% transformation loss.

(g) Surcharge for delayed payment: Surcharge @ 2% per month or part thereof in simple interest shall be levied, if payment is not made on or before the due date.

(h) Discount for prompt payment: 1% rebate on current energy charge for prompt payment on or before the due date shall be allowed.

(i) All payments shall be made by cash/local cheque/DD. DD commission shall be borne by the consumers

(j) Power factor penalty and rebate: As given in category VII (C), para (e) & (f) of this tariff schedule. This will be applicable to all those consumers who have electronic meters that can record the power factor.

Category VII(B)-HT-I Industries

(a) **Applicability**

(b) This tariff is applicable for supply of power at a single point for industrial purposes for contract demand/connected load above 25 kVA to 100 kVA. **Tariff**

(i) Energy Charge

Energy charge for HT-I Industries

Description	Energy Charge (Paise/kWh)
For every KWh of energy consumed	335

(ii) Fixed Charge

Fixed charge for HT-I Industries

Description	Fixed Charge
Rs./kW or part thereof per month	125

(iii) TOD tariff

T.O.D tariff for HT-I industries

Description	Energy charge (Paise/kWh)
Time	**Paise/kWh**
0-17hrs (normal)	320
17-22 hrs (peak)	480
22-24hrs (normal)	320

(c) In case, metering is done on L.T side, the transformer loss shall be computed @3% on unit consumption and shall be added to the meter reading.

(d) For supply at 33 kV, rebate @3% shall be applicable on unit consumption.

(e) Wherever consumers have paid for HT metering or are being charged for the same, they would not be charged the 3% transformation loss.

(f) Surcharge for delayed payment: Surcharge @ 2% per month or part thereof in simple interest shall be levied, if payment is not made on or before the due date.

(g) Discount for prompt payment: 1% rebate on current energy charge for prompt payment on or before the due date shall be allowed.

(h) All payments shall be made by cash/local cheque/DD. DD commission shall be borne by the consumers

(i) Power factor penalty and rebate: As given in category VII (C), para (e) & (f) of this tariff schedule. This will be applicable to all those consumers who have electronic meters that can record the power factor.

Category VII (C): H.T.-II Industries

(a) **Applicability**

This tariff is applicable for supply of power at a single point for industrial purposes for contract demand/connected load above 100 kVA.

(b) **Tariff**

(iv) Energy Charge

Energy charge for HT-II Industries

Description	Energy Charge (Paise/kWh)
For every KWh of energy consumed	350

(v) Fixed Charge

Fixed charge for HT-II Industries

Description	Fixed Charge
Rs./kVA/month	150

(vi) TOD tariff

T.O.D tariff for HT-II industries

Description	Energy charge (Paise/kWh)
Time	**Paise/kWh**
0-17hrs (normal)	335
17-22 hrs (peak)	460
22-24hrs (normal)	335

(c) In case, metering is done on L.T side, the transformer loss shall be computed @3% on unit consumption and shall be added to the meter reading.

(d) For supply at 33 kV, rebate @3% and for supply at 132 kV rebate @6% shall be applicable on energy charges.

(e) Wherever consumers have paid for HT metering or are being charged for the same, they would not be charged the 3% transformation loss.

(f) Power factor penalty: In case average power factor in a month for a consumer falls below 85%, a penalty @1% for every 1% fall in power factor from 85% to 60%; plus 2% for every 1% fall below 60% to 30% upto and including 30% shall be levied on total unit consumption. Power factor penalty shall be levied on those consumers who have electronic meters that can record the power factor.

(g) Power factor rebate: In case average power factor as maintained by the consumer is more than 85%, a rebate of 1% and if power factor is above 95%, a rebate of 2% on unit consumption shall be applicable. Power factor rebate shall be allowed on those consumers who have electronic meters that can record the power factor.

(h) Contract Demand: The contract demand shall be between 70% to 105% as declared by the consumer of the connected load converted to kVA at 0.85 power factor. In case declaration /option is not made by the consumer within the stipulated time, 100% of the connected load converted to KVA shall be the contracted demand.

(i) Billable demand: Billing demand shall be 100% of contracted Demand or Recorded demand, whichever is higher. If the Recorded Demand is higher than the Contracted Demand in a month, then fixed charge based on contracted demand shall be levied at three times the normal rate for the portion of demand exceeding the Contracted demand. In case the meters remain defective in a month, billing demand shall be considered on the average billing demand of the last three months when the meter was in order.

(j) Surcharge for delayed payment: Surcharge @ 2% per month or part thereof in simple interest shall be levied, if payment is not made on or before the due date.

(k) Discount for prompt payment: 1% rebate on current energy charge for prompt payment on or before the due date shall be allowed.

(l) All payments shall be made by cash/local cheque/DD. DD commission shall be borne by the consumers

Category VIII-Bulk Supply

(a) **Applicability**

(iii) This tariff is applicable to consumers including licensees in bulk with a connected load not less than 50 kVA provided that the consumer is not covered by any other category such as any domestic connection, industries, tea etc. who makes his own internal distribution arrangement at his own cost and receives power at the point of supply at high or extra high voltage. This is further classified as under: Government educational institution-like universities, engineering colleges, medical colleges with residential facilities.

(iv) Others

(b) **Tariff**

(i) Bulk Government educational institutions

Energy charge for Government educational institutions

Description	Energy Charge (Paise/kWh)
For every kWh of energy consumed	320

Fixed charge for Government educational institutions

Description	Fixed Charge
Rs./kW or part thereof per month	105

(ii) Others

Energy charge for Others

Description	Energy Charge (Paise/kWh)
For every kWh of energy consumed	380

Fixed charge for Others

Description	Fixed Charge
Rs./kVA or part thereof per month	145

(c) In case, metering is done on LT side, the transformer loss shall be computed @3% on unit consumption and shall be added to the meter reading.

(d) For supply at 33 kV, rebate @3% shall be applicable on unit consumption.

(e) Wherever consumers have paid for HT metering or are being charged for the same, they would not be charged the 3% transformation loss.

(f) Power factor penalty: As given in category VII (C), para (e) of this tariff schedule.

(g) Power factor rebate: As given in category VII (C), para (f) of this tariff schedule.

(h) Contract Demand: The contract demand shall be between 70% to 105% as declared by the consumer of the connected load converted to kVA at 0.85 power factor. In case declaration /option is not made by the consumer within the stipulated time, 100% of the connected load converted to KVA shall be the contracted demand.

(i) Billable demand: Billing demand shall be 100% of contracted Demand or Recorded demand, whichever is higher. If the Recorded Demand is higher than the Contracted Demand in a month, then fixed charge based on contracted demand shall be levied at three times the normal rate for the portion of demand exceeding the Contracted demand. In case the meters remain defective in a month, billing demand shall be considered on the average billing demand of the last three months when the meter was in order.

(j) Surcharge for delayed payment: Surcharge @ 2% per month or part thereof in simple interest shall be levied, if payment is not made on or before the due date.

(k) Discount for prompt payment: 1% rebate on current energy charge for prompt payment on or before the due date shall be allowed.

(l) All payments shall be made by cash/local cheque/DD. DD commission shall be borne by the consumers.

Category IX-Tea, Coffee and Rubber

(a) **Applicability**

This tariff is applicable for tea, coffee and rubber plantation/production by utilisation of electrical power in factory, irrigation, lighting etc. in the Estate.

(b) **Seasonal Tariff (April to November)**

(i) Energy Charge

Energy charge for Tea, Coffee & Rubber

Description	Energy Charge (Paise/kWh)
For every kWh of energy consumed	385

(ii) Fixed Charge

Fixed charge for Tea, Coffee & Rubber

Description	Fixed Charge
Rs./kVA/month	{Refer Point (e)}

(c) **Off- Season Tariff (December to March)**

Off-Season energy charge for Tea, Coffee & Rubber

Description	Energy Charge (Paise/kWh)
For every kWh of energy consumed	385

◈ *Consumer under this category shall have the option to select any continuous 4 (four) months period between September to March in lieu of normal off-season of December to March. Such option must be exercised on or before 31st August 2004 for the financial year of 2004-05.*

Off-Season fixed charge for Tea, Coffee & Rubber

Description	Fixed Charge
Rs./kVA/month	190 Refer Point (e)}

Other charges will be same as seasonal tariff.

(d) **TOD tariff**

T.O.D tariff for Tea, Coffee & Rubber (for the whole year)

Description	Energy charge (Paise/kWh)
Time	**Paise/kWh**
0-17hrs (normal)	365
17-22 hrs (peak)	525
22-24hrs (normal)	365

◈ Amended vide order dated 6th August, 2004

(e) In this tariff order the Commission announces the introduction of a scheme for linking the fixed charges to the quality of supply at the consumer end. The fixed charges payable by the consumer for a month will be dependent upon the slab in which his availability was for that month. The fixed charges for different slabs of availability are mentioned in the table below: (Definition of availability – total hours power available in a month / total hours in a month.)

Total monthly availability in %	**Fixed charges in Rs/KVA**
Upto 45%	190
More than 45% and upto 50%	210
More than 50% and upto 55%	230
More than 55% and upto 60%	250
More than 60% and upto 65%	260
More than 65% and upto 70%	270
More than 70% and upto 75%	280
More than 75% and upto 80%	290
More than 80% and upto 85%	300
More than 85%	310

The Commission directs the ASEB to evolve in consultation with the consumers suitable mechanism for objectively measuring the availability of power at the consumer end keeping in mind the type of meters available. Due to the introduction of this scheme the Commission has not annualised the fixed charges of this category.

(f) In case, metering is done on L.T side, the transformer loss shall be computed @ 3% on unit consumption and shall be added to the meter reading.

(g) Wherever consumers have paid for HT metering or are being charged for the same, they would not be charged the 3% transformation loss.

(h) Power factor penalty: As given in category VII (C), para (e) of this tariff schedule.

(i) Power factor rebate: As given in category VII (C), para (f) of this tariff schedule.

(j) Contract Demand: The contract demand shall be between 70% to 105% as declared by the consumer of the connected load converted to kVA at 0.85 power factor. In case declaration /option is not made by the consumer within the stipulated time, 100% of the connected load converted to KVA shall be the contracted demand. ◈*Contract Demand for off-season shall be minimum 30% of the seasonal contract demand.*

(k) Billable demand: Billing demand shall be 100% of contracted Demand or Recorded demand, whichever is higher. If the Recorded Demand is higher than the Contracted Demand in a month, then fixed charge based on contracted demand shall be levied at three times the normal rate for the portion of demand exceeding the Contracted demand. In case the meters remain defective in a month, billing demand shall be considered on the average billing demand of the last three months of the same period (season) when the meter was in order

(l) Surcharge for delayed payment: Surcharge @ 2% per month or part thereof in simple interest shall be levied, if payment is not made on or before the due date.

◈ Amended vide order dated 6th August, 2004

(m) Discount for prompt payment: 1% rebate on current energy charge for prompt payment on or before the due date shall be allowed.

(n) All payments shall be made by cash/local cheque/DD. DD commission shall be borne by the consumers

(o) **In the event that it is not possible to measure availability to a particular consumer, Fixed Charge @ Rs.230/Kva will be applicable.**

Category X-Oil and Coal

(a) **Applicability**

This tariff is applicable to supply of power at single point to installations of oil and coal and is supplied at high tension.

(b) **Tariff**

(i) Energy Charge

Energy charge for Oil & Coal

Description	Energy Charge (Paise/kWh)
For every kWh of energy consumed	385

(ii) Fixed Charge

Fixed charge for Oil & Coal

Description	Fixed Charge
Rs./kVA/month	260

(iii) T.O.D Tariff

T.O.D tariff for Oil & Coal

Description	Energy charge (paise/kWh)
Time	Paise/kWh
0-17hrs (normal)	365
17-22 hrs (peak)	480
22-24hrs (normal)	365

(c) In case, metering is done on L.T side, the transformer loss shall be computed @3% on unit consumption and shall be added to the meter reading.

(d) Wherever consumers have paid for HT metering or are being charged for the same, they would not be charged the 3% transformation loss.

(e) Power factor penalty: As given in category VII (C), para (e) of this tariff schedule.

(f) Power factor rebate: As given in category VII (C), para (f) of this tariff schedule.

(g) Contract Demand: The contract demand shall be between 70% to 105% as declared by the consumer of the connected load converted to kVA at 0.85 power factor. In case declaration /option is not made by the consumer within the stipulated time, 100% of the connected load converted to KVA shall be the contracted demand.

(h) Billable demand: Billing demand shall be 100% of contracted Demand or Recorded demand, whichever is higher. If the Recorded Demand is higher than the Contracted Demand in a month, then fixed charge based on contracted demand shall be levied at three times the normal rate for the portion of demand exceeding the Contracted demand.

(i) Surcharge for delayed payment: Surcharge @ 2% per month or part thereof in simple interest shall be levied, if payment is not made on or before the due date.

(j) Discount for prompt payment: 1% rebate on current energy charge for prompt payment on or before the due date shall be allowed.

(k) All payments shall be made by cash/local cheque/DD. DD commission shall be borne by the consumers

Category XI-Rural Unmetered Supply

(a) **Applicability**

This tariff is applicable to existing domestic and commercial un-metered consumers in rural areas outside the local limits of town, city or municipality. This shall remain applicable till they are converted into metered category:

(iii) Rural domestic consumers un-metered

(iv) Rural commercial consumers

(b) **Tariff**

Rural un-metered Consumers

Description	Rs./point/month
Rural domestic consumers un-metered	20
Rural commercial consumers un-metered	40

(c) Surcharge for delayed payment: Surcharge @ 2% per month or part thereof in simple interest shall be levied, if payment is not made on or before the due date.

(d) Discount for prompt payment: 1% rebate on current energy charge for prompt payment on or before the due date shall be allowed.

(e) All payments shall be made by cash/local cheque/DD. DD commission shall be borne by the consumers.

Category XII-Temporary supply

(a) **Applicability**

This tariff incorporates three separate sub categories-domestic, General Purpose and commercial and other consumers. This tariff is applicable for power supply on a temporary basis for a period of 15 days, which can be extended with prior permission from the competent authority.

(b) **Tariff**

Energy charge for Temporary supply

Description	**Energy Charge (Paise/kWh)**
For every kWh of energy consumed	
(a) Domestic	450
(b) General Purpose	550
(c) Commercial & others	550

SECTION 7: ASEB COMPLIANCE OF LAST TARIFF ORDER DATED MARCH 26, 2003.

Subject	Directions of the Commission	Board's Compliance	Comments
T&D Loss	Circle wise break up of transmission and distribution losses to be submitted.	March 2003 and April 2003 submitted at a time	Segregation of Transmission and Commercial Losses not provided.
	Information to be sent to the Commission every month	ASEB has submitted information once only as stated above.	Benchmarking of various circles to promote competition among circles is not possible unless data is received periodically.
	Wide publicity of the information	ASEB not provided any information on this issue.	
Metering	Submission of Plan of Action for 100% metering Submission of plan of action for T&D loss reduction	Submitted in July'2003	Actual progress needs to be measured and submitted to the Commission for review.
Improvement in the performance of the ASEB's Own Generation	ASEB to conduct a study and submit a plan to augment the performance of all generating stations including the two stations lying idle.	Board has submitted plan for improvement in performance of gas based generating stations	Board's plan has only partially addressed the issue. A time bound direction is issued in the Tariff Order for 2004-05 which requires ASEB to submit

Subject	Directions of the Commission	Board's Compliance	Comments
			comprehensive report of its action plan within three months from the date of the order.
Power Purchase Plan	ASEB to submit monthly power purchase plan	Monthly power purchase plan submitted regularly	Up to date information has been furnished.
Manpower Rationalization	ASEB to conduct a study for rationalization of existing manpower in order to bring in improvements in efficiency.	The Board has appointed CMC for this purpose and their report is under consideration of ASEB	Copy of the report is yet to be submitted to the Commission.
Demand study	ASEB to furnish information on demand and consumption from various consumer categories at different times of the day. Board to examine the economics of energy efficient lighting devices and to submit a plan for promoting their use.	ASEB has submitted this information pertaining to industrial consumers.(HT-II, Oil & Coal, Tea Coffee and Rubber) Board is yet to respond on this issue.	The information submitted by the Board is not exhaustive. Within six months from the date of the Tariff order of the Commission for the year 2004-05, should be submitted after further study.

Subject	Directions of the Commission	Board's Compliance	Comments
Load data	ASEB to collect connected Load Data for public lighting	ASEB has submitted this information as on May 2003	
Standards for quality of service.	Board to propose set of standards with penalties	Commission has not received any proposal from ASEB on this issue	The Commission is drafting the Transmission and Distribution Performance Standards that will address this issue
Power factor profile	Board to collect power factor profile of industrial consumers.	ASEB has submitted this information	The Board is directed to conduct further study on load factor profile within six months from the tariff order for the year 2004-05.

SECTION 8: DIRECTIONS AND CONCLUSIONS

In the preceding sections the Commission has given several directions to the petitioner- ASEB for compliance. These directions are now summarised below:-

8.1 **The Commission hereby directs the Board to submit a report on the status of meters installed at offices and premises belonging to ASEB, within two months of the publication of this order.**

8.2 **The Commission has noted that ASEB has only marginally improved the extent of information regarding investment attributable to the projects under construction. The Commission directs that in future ASEB should identify the assets that are under construction and provide a more detailed and accurate estimation of such costs.**

8.3 **The Commission directs that in the next tariff petition ASEB should forecast expenses on account of Repairs and Maintenance based on a widely accepted industry practice and explain the benefits likely to accrue to the consumers due to such works. The ASEB must submit to the Commission details of the expected expenditure for R & M works with an outlay in excess of Rs One Crores.**

8.4 **Commission would like to draw the attention of ASEB to the aspect of gas availability for its generating stations. This issue has been pending for long and the Commission directs ASEB to take it up at highest levels and resolve the long standing problem of gas availability. A report on the status of gas availability should be filed with the Commission within three months of the publication of this order. The Commission also directs ASEB to submit a time-bound plan, within three months of notification of this tariff order, about:**

(a) revival / alternate plan on the closed generation units and

(b) improvement of PLF of the LTPS and NTPS.

8.5 **The Commission directs that the utility should make a fair and equitable load shedding plan for the period ASEB faces power shortages and adequately advertise the plan before implementing the same. Further, the Commission directs that the utility should provide at least 24-hour notice to the consumers (expected to be affected) before carrying out its planned maintenance activities. A copy of the plan should be sent to the Commission for information.**

8.6 **The Commission hereby directs the Board to analyse the economics of**

taking required insurance cover of assets, risks associated with employees or third party etc. and submit a report on this matter within three months of issue of this tariff order.

8.7 **The miscellaneous charges like meter rent, transformer maintenance charges, reconnection charges etc. charged by the utility should be the approved by the Commission. The Commission therefore directs the utility to file for the approval of the 'Schedule of Miscellaneous Charges', along with detailed justifications of the amounts proposed, within two months of the issue of this tariff order.**

8.8 **For 2003-04 filing, ASEB has separately estimated the consumption by rural domestic/ kutir jyoti connections at 50 MU. This sub category is un-metered and the energy sale for this was subsequently modified to 71 MU. The Commission notes that estimation of energy consumed by such un-metered categories is subjective and dependant upon the number of consumers and average assessed consumption per consumer.**

The Commission is of the opinion that any variation introduced in the assessment of energy from this category must be minimised. ASEB is directed to provide on a monthly basis the number of such consumers (existing and new). Further within three months of the issuance of this order ASEB must conduct a comprehensive study to analyse the energy consumption of a typical consumer of this category. The results of this study will be used by the Commission in devising a consumption norm for assessing the consumption of this category in the future years.

8.9 **The forecast sales for Tea Coffee and Rubber category of 353 MU in FY 2004-05 is very high compared to FY 2003-04 and it is greater than the highest consumption recorded in past seven years. The consumers of this category have represented on numerous occasions to the Commission informing about the poor supply conditions. The Commission has on record reports from several tea estates that grid power is available for only 50% of the time. Such a poor supply situation is unacceptable particularly to an industry which is so important to the Assam economy and the rural areas for wage employment.**

The Commission directs the ASEB to undertake immediate initiatives specifically aimed at improving the supply condition to consumers of this category. Such focussed efforts will help meet the potential unrestricted demand of this category and improve the financial performance of the licensee.

8.10 The Commission has rationalised the fixed charges for the different consumer categories. This rationalisation has been achieved through two methods, increasing the level of fixed charges and by linking the fixed charges to level of availability. The former has been used for categories which had a low fixed charge component e.g. Industries, Commercial etc while the latter has been done for categories which have a high fixed charge e.g. Tea, Coffee plantations, Oil & coal etc. The fixed charge has been increased by linking it to a higher level of availability. The intention is that higher tariffs may be charged if it results in an improvement of quality of supply. The Commission would like to point out that this increase in tariffs is still lesser than the charges that such consumers pay when generating power from alternate sources like DG sets etc. To begin with this initiative has been targeted at specific categories which have a high consumption of energy. **The Commission directs ASEB to submit along with the next tariff proposal ways and means of extending this scheme to other categories. Moreover the ASEB may even analyse the success of this scheme and suggest modifications to improve its effectiveness**

8.11 **The Commission believes that metering of consumers must be taken on war footing to improve the revenue generation and achieve loss reduction. The Commission directs the ASEB to provide the quarterly progress reports on the progress on APDRP and ADB funded schemes.**

8.12 **The Commission directs the Board to formulate a strategy to provide quality service and retain the subsidising (where the average tariff is higher than the cost of supply) set of consumers and submit such strategy to the Commission within three months from the date of this order.**

8.13 **The Commission hereby directs ASEB to evolve a suitable process and mechanism and ensure monthly MRI downloads and analysis for all HT consumers from the month of January 2005. A brief monthly report on the following heads should be submitted to the Commission by 25th of the following month:**

(a) No of HT consumers

(b) No of MRI downloads taken

(c) No of cases where discrepancies found

(d) Amount of additional bills raised

(e) Collection against such bills

(f) Action taken to prevent such cases in future

8.14 **The Commission directs ASEB to submit monthly reports (showing**

category wise the amount of energy sales billed on a metered basis versus that billed on an assessed basis) in the desired formats from the month of August so that the Commission is better equipped to determine the T&D loss during processing of the next tariff application.

8.15 **The Commission intends to compute the cost of fuel used in generation based on a norm for SHR. This normative SHR is required to be fixed on the basis of guaranteed heat rate of machines, expected loading pattern of machines, system frequency variation, frequency of start up and shut down etc. The Commission notes that in the absence of required detailed information (data from capacity tests etc) from the petitioner, it is not in a position to fix up such norms for the generating stations. The Commission directs the Board to conduct a study to compute the SHR of the stations from data acquired through actual capacity tests as recommended by the manufacturer/national technical standards.**

8.16 **It has been noted that construction of the 3 KM loop line for LTPS this project has been under consideration for a long time and the Commission directs the ASEB to make all efforts to complete it without delay and report compliance to the Commission.**

8.17 **The Commission directs the Board to hasten their efforts in strengthening the financial information systems so that ASEB can furnish the details of (Capital Work in Progress) CWIP along with the corresponding sources of funds in the future tariff petitions and the exact (Interest during Construction) IDC can be furnished.**

8.18 **The Commission hereby directs ASEB to build an asset register that should include information on the status of the assets mentioned. Within two months of publication of this tariff order ASEB should inform the Commission about the expected time to be taken to build the asset register.**

8.19 **The Commission hereby directs ASEB to conduct a lead lag study to assess the amount of working capital required by the utility. This study should be submitted within three months of this tariff order.**

8.20 **The Commission directs ASEB to submit an action plan within three months that lists out the ground issues for implementation of Time of Use (TOU) charges for categories other than those where such charges are already in force. ASEB should estimate the time and money that will be required to upgrade metering at consumer premises and an ABC analysis based on which the utility can stagger the implementation and thus reduce the initial investment.**

8.21 **The Commission directs the ASEB to report on a quarterly basis the number of un-metered connections and conduct sample load surveys every year of such consumers to check for any increase in connected load/multiple points in their premises. Based on the load survey ASEB must compute a normative level of monthly energy consumption per point beyond which the consumer must shift to the regular metered tariff.**

8.22 **The Commission directs ASEB to surrender costly Central Sector shares such as from DHEP and contract for power from other sources to meet anticipated peak shortages as a consequence. The action in this regard should be taken within three months and compliance report should be sent to the Commission.**

8.23 **The Commission directs ASEB to reduce the purchase from AGTPP being the costliest source in merit order purchasing provided the energy from other sources with lower variable costs is available.**

8.24 **The Commission directs ASEB to explore all avenues for reducing the proportion of fixed costs including initiatives like surrender of central sector allocation and replacing it with the take-and-pay based contracts from intermediaries like PTC, NVVNL, etc.**

8.25 **In future ASEB before entering into bilateral contracts other than through competitive bidding, must seek prior approval of the Commission.**

8.26 **The Commission through this order has provided for full recovery estimated cash requirement of ASEB for 2004-05. Additionally 3% return on net fixed asset value has also been allowed which can be utilised to make up for any unforeseen short fall in cash requirement, so that ASEB has no financial constraint in taking up required repairs and maintenance as well as to meet all its operating costs including power purchase. ASEB in turn must ensure prudent use of resources along with proposed investments from APDRP and ADB assistance, so that consumers are benefited through better quality and increased availability of power. In this order the Commission has not set definite targets for improvements in PLF availability, billing and collection efficiency, etc as it would be unrealistic to set arbitrary targets without detailed analysis of the various issues involved. The Commission at present is seriously handicapped by non availability of staffs to undertake such analysis.**

This tariff order disposes ASEB's tariff petitions for 2003-04 and 2004-05 as well as the PPFCA petitions submitted to the Commission for three monthly quarters of 2003-04.

The Commission under sections 64 & 86 of the Electricity Act' 2003, orders that the tariff approved in this order along with changes in Terms and Conditions of supply shall come into force with effect from 1st August 2004 and shall remain valid upto 31.03.05 or next revision whichever comes earlier.

Sd/-
(Nilamani Barua)
Chairperson

Dated Guwahati the 21st July, 2004