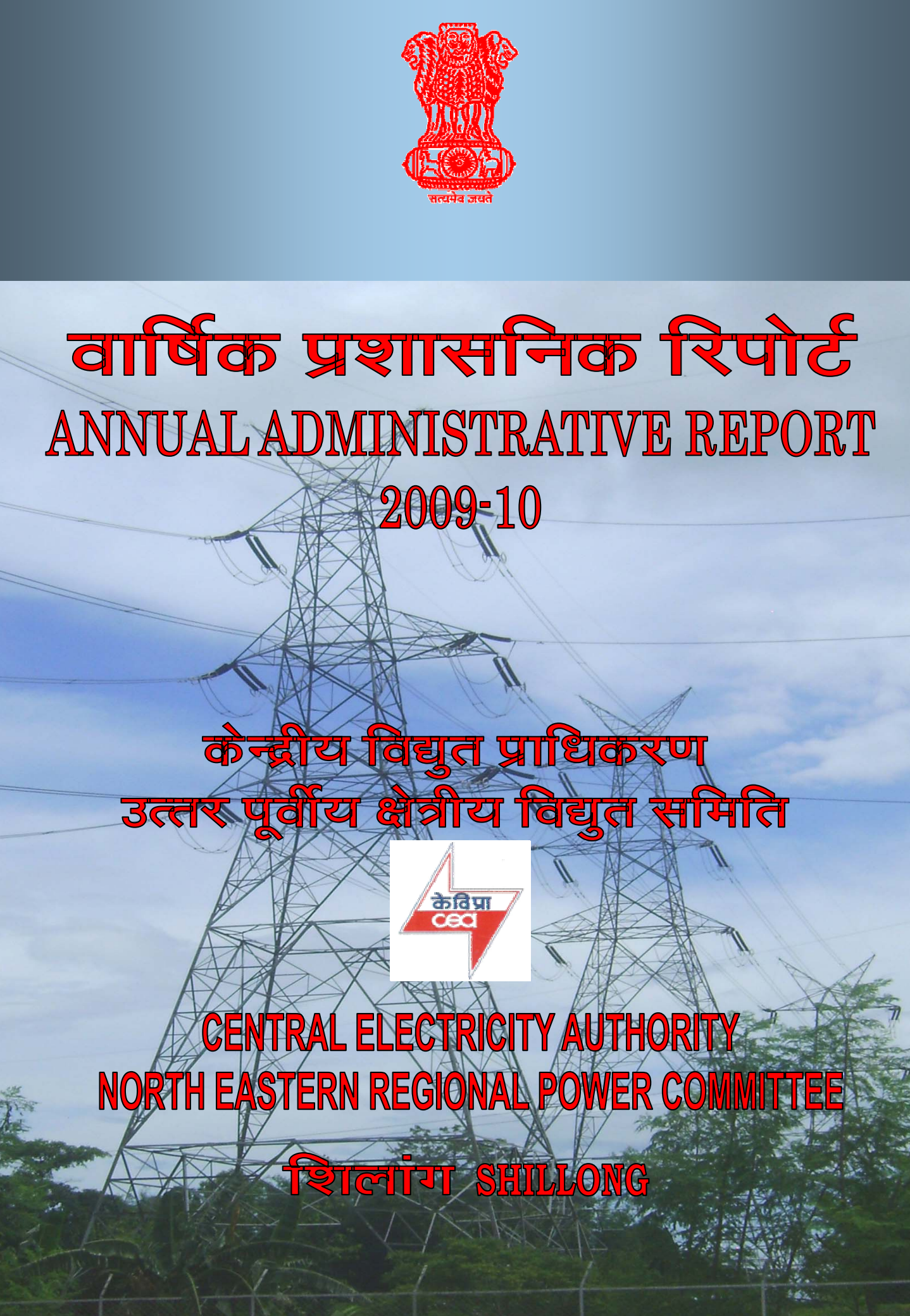


वार्षिक प्रशासनिक रिपोर्ट

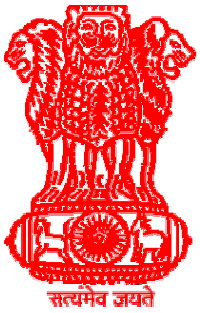
ANNUAL ADMINISTRATIVE REPORT

2009-10

केन्द्रीय विद्युत प्राधिकरण
उत्तर पूर्वीय क्षेत्रीय विद्युत समिति

CENTRAL ELECTRICITY AUTHORITY
NORTH EASTERN REGIONAL POWER COMMITTEE

शिलांग SHILLONG



वार्षिक प्रशासनिक रिपोर्ट

ANNUAL ADMINISTRATIVE REPORT

2009-10

भारत सरकार GOVERNMENT OF INDIA

विद्युत मंत्रालय MINISTRY OF POWER

उत्तर पूर्वी क्षेत्रीय विद्युत समिति

NORTH EASTERN REGIONAL POWER COMMITTEE

शिलोंग SHILLONG

CONTENTS

CHAPTER 1

Introduction, Constitution, Functions, Organizational setup and Budget of North-Eastern Regional Power Committee

1.1 Introduction:

During the early sixties, a decision was taken by the Government of India to plan the Power System in the country on regional basis. The technological considerations strongly supported the decision to promote a coordinated operation of the entire generation and transmission system of the region through inter-connection of State Grids into Regional Grid for various benefits in terms of:

1. Improved stability of the system,
2. Improved reliability,
3. Improved availability
4. Improved operation both from technical and economical considerations,
5. Improved quality of supply,
6. Improved grid discipline,
7. Improved service to an electricity-deficit area from an electricity-surplus area,
8. Coordinated planning for both maintenance & future growth of the system and
9. Coming together of a large pool of experienced personnel requiring regular interaction amongst themselves thereby enabling experience sharing
10. Optimum utilization of energy resources.

Therefore, Government of India, with the concurrence of concerned State Governments, established five **Regional Electricity Boards (REBs)** viz., Eastern, North-Eastern, Northern, Southern and Western REBs with their Headquarters at Kolkata, Shillong, Delhi, Bangalore and Mumbai respectively, in the year 1964 through an executive resolution. These REBs with representatives of the States as members were responsible to promote the concept of regional operation. The North-Eastern Regional Electricity Board was constituted in pursuance to the **Govt. of India's Resolution No.EL.II-35 (10)/163 dated 12-3-1964**. The North-Eastern Region comprises seven States, namely Arunachal Pradesh, Assam, Manipur, Meghalaya, Mizoram, Nagaland and Tripura.

Later on, with the advent of the Central Sector Generating Companies (PSUs) during the seventies alongside the State Sector Generating Companies, the representatives of these PSUs were also included as members in the REBs. The five REBs thus cover the entire Power Sector of the country. The Chairman of an SEB functions as Chairman of an REB by rotation for a period of one year, except for the North-Eastern Region where Power Ministers of the Constituent States are members of the Board and hence functions as Chairman of NEREB by rotation for a period of one year.

Thereafter, Government of India enacted the Electricity Act, 2003 through Gazette notification no. 23/24/99-R&R (vol XV), dated 10th June, 2003**. The Electricity Act 2003** envisages establishment of **Regional Power Committee(s) (RPCs)** by a resolution of the Central Government for a specified region for facilitating the integrated operation of the power system in that region. Further, the act provides that the Regional Power Committee may, from time to time, agree on matters concerning the smooth operation of the integrated grid and economy and efficiency in the operation of the power system of that region. In pursuance of the aforesaid provision Government of India vide their resolution dated 25th May, 2005 established the North Eastern Regional Power Committee (NERPC). This Notification was amended vide resolutions dated 29th November, 2005. A power map showing the transmission systems of the region is given at **Exhibits-I (A)** & **I (B).**

1.2 Constitution of NERPC:

The various power sector agencies in the North-Eastern Region e.g. AEGCL, APGCL, 3 DISCOMs of Assam, TSECL of Tripura, State Electricity Board of Meghalaya, Power Departments of the other four State Governments i.e. Arunachal Pradesh, Manipur, Mizoram, Nagaland and Central Sector power agencies, namely North Eastern Electric Power Corporation Ltd.(NEEPCO), National Hydro - electric Power Corporation(NHPC), Power Grid Corporation of India Ltd. (PGCIL), North Eastern Regional Load Dispatch Centre (NERLDC), representatives of Power Trading Cos. and IPPs are members of NERPC.

Chairmanship of NERPC is held by Hon'ble Ministers of Power of the constituent States for a period of one year by rotation in alphabetical order of the name of the State of the Region. The Chairman of NERPC as on 31.03.2010 is Shri Phungzathang Tonsing, Hon'ble Minister of Power, Govt. of Manipur, Imphal. Members of the NERPC as on **31.03.2010** are given at **Annexure-I.**

The Secretariat of NERPC is located at Shillong and is headed by Member Secretary, who is appointed by Central Electricity Authority, Ministry of Power, Govt. of India and he is an officer of Central Power Engineering Services (Group-A). Member Secretary is the administrative and technical head of NERPC Secretariat with the powers of the Head of Department. The other Personnel of the Secretariat as on **31.03.2010** are given in **Annexure-II** whereas **Annexure-III** shows posts sanctioned and filled as on 31.03.2010.

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1.3 Functions of NERPC:

Different functions performed by NERPC can be broadly categorized as:

- Commercial
- Operational and
- Monitoring and Data Management

1.3.1 Commercial:

1) Preparation of Agenda/Minutes of Commercial Sub-committee meetings and follow up action.
2) Issue of Weekly UI and Re-active Energy Accounts
3) Preparation and Issue of Monthly Regional Energy Account
4) Preparation of Monthly progress Reports
5) Works relating to the commercial issues of intra-regional and inter-regional power transfer.
6) Settling of the issues arising out of revision and fixation of tariff for the Central Sector power.
7) Coordinating the Task Forces and Committees on Techno-commercial problems of the Regional Power System.

1.3.2 Operational:

1) Operational Planning.
2) Formulation of general policy for safe and economic operation of the Regional Grid by optimizing resource utilization.
3) Preparation of agenda notes, proceedings and arrangement for OCC meetings and taking follow up actions.
4) Coordination with RLDC regarding day-to-day Grid Operation.
5) Working as Regional Electric Power System Information Center to provide information to CEA.
6) Coordinating the task forces of operational issues raised in day-to-day operation of the grid.

7) Preparation of agenda notes, Minutes and follow-up action on the decisions of TCC/RPC meetings.
8) To carryout system analyses and analyse Grid disturbance.
9) To study and finalization of protective scheme for Transmission line, Elements, equipment at generation station, islanding scheme for the Region.
10) Transmission Availability Certification of CTU.
11) Allocation of unallocated power of ISGS.

1.3.3 Monitoring and Data Management:

1) To prepare annual reports, load generation balance report etc.
2) To collect data, analysis thereof & documentation.
3) To monitor progress of construction of Generating units and Transmission lines in the region.
4) Monitoring the performance of Hydro & Thermal power stations of North-Eastern Region, daily, monthly and yearly basis based on their generation, PLF, auxiliary consumption and availability, etc.
5) Investigating the reasons for low performance of Thermal power stations and Performance analysis of thermal units in the region.
6) To associate with power survey works as and when necessary;
7) To prepare coordinated maintenance schedule for the region with the help of operation coordinating committee;
8) Load forecasting.

Further, as per **Para (6) of the MoP Resolution dated 25.05.2005**; NERPC shall discharge the following functions:

i. To undertake Regional Level operation analysis for improving grid performance
ii. To facilitate inter-state/inter-regional transfer of power.
iii. To facilitate all functions of planning relating to inter-state/intra-state transmission system with CTU/STU.
iv. To coordinate planning of maintenance of Generating Machines of various Generating Companies supplying electricity to the Region on annual basis and also to undertake review of maintenance programme on monthly basis.
v. To undertake operational planning studies including protection studies for stable operation of the grid.
vi. To undertake planning of outage of Transmission System on monthly basis.
vii. To undertake planning for maintaining proper voltages through review of Reactive Compensation requirement through System Study Committee and monitoring of installed capacitors
viii. To evolve consensus on all issues relating to economy and efficiency in the operation of power system in the region.

1.4 Budget of NERPC:

Presently, NERPC has two major Budget Heads, namely, Regional Co-ordination Centre (2801-Non-Plan) and Load Dispatching Station (2801-Non-Plan) under which all the expenditures are done. Total Sanctioned Budget/Expenditure during 2009-10 was Rs. 1, 64, 84,000/- against the actual expenditure of Rs. 1, 67, 82,410/-. The details of the expenditure are at **Annexure-IV.**

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CHAPTER – 2

Regional Grid Performance

2.1 Installed Capacity:

Total installed capacity of the power generating stations in North Eastern Region (NER) connected to the Regional Grid is 2033.12 MW as on 31st March, 2010 out of which 22.92, 1184.20 and 764 MW are contributed by thermal, hydel and gas turbine stations respectively. Apart from this, there is around 162.04 MW of isolated capacity in the region consisting of hydel 59.48 (MW) and GT/ Diesel 102.56 (MW). So, total installed capacity of the region as on 31st March, 2010 is 2195.16 MW.

Constituent-wise Installed Capacity of NER Grid (in MW) as on **31st March, 2010**:-

Constituents	Installed Capacity (GRID)			
	Thermal	Hydel	GT	Total
Central Sector				
1.NEEPCO				
a) KHANDONG		50		50
b) KOPILI		200		200
c) KOPILI Stage-II		25		25
d) AGBPP		-	291	291
e) AGTPP			84	84
f) DOYANG		75		75
g) RANGANADI		405		405
2. NHPC				
a) LOKTAK		105		105
Total Central Sector :		860	375	1235
State Sector				
1. ASSAM + DLF		100	323.50	423.50
2. MEGHALAYA		185.20		185.20
3. MIZORAM	22.92			22.92
4. TRIPURA		15	127.50	142.50
5. NAGALAND		24		24.00
Total State Sector :	22.92	324.20	451.00	798.12
Total NER Grid	22.92	1184.20	826.00	**2033.12**

The growth of installed capacity of the region during last five years is as given below. Refer: **Exhibit-III**:

Year	Installed Capacity (MW)		
	Grid	Isolated	Total
2005-06	2180.62	132.44	2313.06
2006-07	2255.28	132.44	2387.72
2007-08	2033.12	162.04	2195.16
2008-09	2033.12	162.04	2195.16
2009-10	2033.12	162.04	2195.16

Power Supply Position in North-Eastern Region

2.2 Generation:

Energy generation by the constituents of NER during last five years is given below:

States/ Utilities	Gross Energy Generation (MU)				
	2005-06	**2006-07**	**2007-08**	**2008-09**	**2009-10**
ASEB	932.05	953.28	1634.04	1759.98	1713.60
MeSEB	509.50	394.51	665.42	555.28	526.16
Tripura	483.62	564.43	621.29	659.64	669.47
Nagaland	0.00	0.00	90.41	85.39	77.41
Mizoram	0.00	0.00	1.66	0.97	0.00
Total State Sector	1925.17	1912.22	3012.82	3061.26	2986.64
Kopili+Khand+Kopili-II	1298.88	965.67	1280.54	1171.15	933.85
Doyang	183.11	182.01	268.14	238.38	183.56
AGBPP	1723.12	1805.04	1726.51	1766.17	1744.15
AGTPP	638.19	652.87	659.81	665.23	662.70
Ranganadi	1411.86	957.72	1539.71	1569.20	1033.07
Loktak	587.01	475.10	604.54	497.58	381.39
Total Central Sector	5842.17	5038.39	6079.25	5907.72	4938.72
Total NER	**7767.34**	**6950.62**	**9092.07**	**8968.97**	**7925.36**

Growth of energy generation in NER during last five years is depicted in **Exhibit-IV.**

2.3 Demand: During the FY 2008-09 & 2009-10, the Peak Demand & Demand met in NER is furnished below:

Peak Demand in MW

	Ar.Pradesh	Assam	Manipur	Meghalaya	Mizoram	Nagaland	Tripura	NER
Apr-08	102	826	110	456	97	86	159	1724
Apr-09	75	819	99	239	66	91	175	1460
May-09	102	808	108	452	95	84	156	1710
May-10	87	819	99	260	64	90	145	1569
Jun-08	102	818	111	457	96	80	157	1744
Jun-09	75	850	110	270	65	90	145	1620
Jul-08	114	879	115	414	82	87	153	1705
Jul-09	76	920	100	260	65	89	155	1665
Aug-08	102	849	116	422	99	93	150	1691
Aug-09	73	920	111	255	65	95	160	1760
Sep-08	92	830	105	413	100	95	155	1665
Sep-09	95	870	110	270	65	94	176	1672
Oct-08	130	958	128	397	88	91	167	1820
Oct-09	90	864	100	250	65	91	159	1609
Nov-08	70	800	110	241	70	88	141	1520
Nov-09	85	850	100	270	66	99	158	1624
Dec-08	70	776	110	239	70	90	134	1490
Dec-09	78	884	100	275	69	100	138	1678
Jan-09	69	774	110	240	65	91	137	1491
Jan-10	79	835	100	280	70	100	139	1599
Feb-09	75	760	100	240	64	90	131	1459
Feb-10	86	890	90	280	65	96	134	1654
Mar-09	75	795	100	240	65	90	130	1460
Mar-10	80	830	93	280	65	96	135	1565

Demand met in MW

	Ar.Pradesh	Assam	Manipur	Meghalaya	Mizoram	Nagaland	Tripura	NER
Apr-08	71	690	86	194	53	84	130	1197
Apr-09	65	784	79	195	64	71	172	1270
May-09	79	786	84	293	53	83	132	1343
May-10	66	803	74	214	56	68	134	1342
Jun-08	56	768	88	268	51	78	134	1340
Jun-09	66	809	78	224	57	76	143	1380
Jul-08	79	787	93	258	52	82	136	1343
Jul-09	65	816	82	238	61	82	135	1400
Aug-08	59	740	95	250	52	86	137	1330
Aug-09	72	777	85	218	55	94	156	1369
Sep-08	58	770	90	270	51	86	148	1322
Sep-09	78	781	92	223	54	93	173	1383
Oct-08	59	757	93	223	51	77	156	1358
Oct-09	72	845	97	211	58	89	158	1445
Nov-08	68	750	93	217	56	81	122	1326
Nov-09	78	809	98	212	60	94	157	1410
Dec-08	62	739	90	234	58	86	132	1309
Dec-09	72	833	96	217	64	96	138	1434
Jan-09	62	762	90	206	59	85	136	1310
Jan-10	73	818	99	221	62	94	137	1429
Feb-09	68	734	73	206	59	74	124	1255
Feb-10	75	874	88	250	57	94	122	1415
Mar-09	67	797	78	231	64	73	128	1283
Mar-10	71	788	91	204	59	95	132	1358

2.4 Energy Requirement vs. Availability: During the FY 2008-09 & 2009-10, the energy requirement Vs availability in NER are furnished below:

Energy Requirement in MU

	Ar.Pradesh	Assam	Manipur	Meghalaya	Mizoram	Nagaland	Tripura	NER
Apr-08	44.38	418.10	35.01	122.77	26.62	34.19	64.00	745.08
Apr-09	25.02	386.95	37.27	99.64	28.11	51.82	71.61	700.42
May-09	44.55	418.74	34.89	123.28	26.47	33.78	64.28	746.00
May-10	28.44	419.43	37.21	116.24	29.24	47.42	73.41	751.37
Jun-08	44.46	419.23	37.09	140.38	26.45	32.93	64.29	764.83
Jun-09	25.86	440.93	37.11	124.07	28.34	39.86	74.81	770.96
Jul-08	36.50	494.76	53.98	179.78	27.45	32.07	71.36	895.91
Jul-09	32.28	465.36	38.64	131.72	28.42	39.42	78.57	814.41
Aug-08	38.33	490.03	56.67	198.80	29.31	33.32	78.94	925.40
Aug-09	41.77	490.71	45.73	145.49	30.26	46.07	76.83	876.85
Sep-08	33.28	463.57	58.68	185.84	26.28	27.90	69.44	864.97
Sep-09	41.08	488.07	50.02	146.06	29.46	45.57	78.37	878.63
Oct-08	41.44	474.07	62.88	153.26	25.38	39.97	73.15	870.15
Oct-09	40.30	479.80	49.10	129.94	31.11	45.16	74.15	849.55
Nov-08	36.38	404.13	50.44	143.30	28.77	41.67	65.08	769.78
Nov-09	33.04	408.86	47.62	128.46	30.28	45.98	63.81	758.04
Dec-08	30.75	391.76	47.31	135.68	31.13	50.65	61.85	749.14
Dec-09	35.89	414.28	50.25	135.16	32.02	49.09	65.24	781.91
Jan-09	28.85	379.43	43.09	126.66	28.78	51.09	65.06	722.97
Jan-10	34.85	400.75	47.31	142.35	31.34	48.12	65.09	769.81
Feb-09	23.15	352.72	35.70	99.55	26.36	45.22	58.01	640.70
Feb-10	32.77	359.62	42.72	118.05	28.47	41.49	57.30	680.41
Mar-09	24.64	400.11	40.20	103.17	28.90	51.75	66.34	715.10
Mar-10	32.01	383.60	44.09	127.00	29.75	42.59	72.05	731.08

Energy Availability/Consumed in MU

	Ar.Pradesh	Assam	Manipur	Meghalaya	Mizoram	Nagaland	Tripura	NER
Apr-08	22.20	332.55	34.28	81.57	21.76	33.48	55.84	581.68
Apr-09	18.42	356.48	27.23	80.26	20.92	42.04	64.63	609.98
May-09	25.87	363.41	34.17	107.28	21.89	33.08	60.24	645.94
May-10	20.61	378.66	24.86	92.37	22.12	37.22	63.12	638.96
Jun-08	21.59	386.54	36.31	137.45	21.13	32.24	60.53	695.79
Jun-09	20.03	398.91	26.46	105.21	21.52	32.46	68.21	672.80
Jul-08	24.61	429.59	48.14	136.46	22.26	31.43	66.48	758.97
Jul-09	27.64	410.78	29.48	117.51	22.48	32.10	69.35	709.34
Aug-08	24.42	446.66	49.90	133.40	22.62	32.88	69.71	779.60
Aug-09	35.11	432.38	37.59	122.46	24.44	40.69	66.11	758.77
Sep-08	20.97	412.39	50.17	136.05	20.48	27.53	68.51	736.09
Sep-09	33.28	432.65	43.20	124.35	23.05	41.96	70.15	768.64
Oct-08	25.62	413.19	51.64	132.05	22.45	39.29	67.39	751.63
Oct-09	31.96	433.65	44.63	114.11	25.19	42.03	66.96	758.53
Nov-08	24.01	365.81	42.84	119.60	24.27	37.14	54.25	667.93
Nov-09	28.29	381.73	42.23	114.48	27.20	43.09	57.10	694.12
Dec-08	24.76	362.24	39.22	118.92	26.52	46.20	55.36	673.22
Dec-09	30.20	393.25	43.55	124.00	28.93	46.57	58.07	724.57
Jan-09	22.04	361.32	35.89	110.69	23.67	44.78	58.25	656.64
Jan-10	29.29	385.26	42.15	127.91	27.39	43.53	61.18	716.72
Feb-09	16.95	328.25	26.48	86.97	19.88	37.64	50.82	566.99
Feb-10	27.38	338.79	36.46	104.90	23.32	38.04	52.29	621.20
Mar-09	16.99	365.08	28.85	85.96	22.04	41.40	59.69	620.01
Mar-10	28.38	361.28	35.63	95.26	25.40	37.44	71.24	654.64

2.5 Inter Regional Energy Exchange:

During the last five years inter regional energy exchanges in MU between NER and ER are as given below:

Year	Net Export from NER to ER
2005-06	819.174
2006-07	-92.33
2007-08	1163.05
2008-09	693.14
2009-10	-676.45

Month-wise inter regional energy exchange during 2009-10 is given in **Annex-VI.**

2.6 Frequency:

Frequency profile of NER grid during 2009-10 is depicted in **Exhibit-VII.** It has been observed that frequency profile has improved considerably during last couple of years in comparison with previous years.

Month	Grid Frequency in Hz			Frequency Range in %age of time			Freq Variation Index		
	Max	Min	Aver	<49.2	49.2 – 50.5	> 50.5	Max	Min	Aver
Apr-09	50.81	48.37	49.61	59.55	40.45	0.00	6.583	0.683	3.767
May-09	51.03	48.75	49.68	31.62	67.87	0.51	5.051	0.317	2.121
Jun-09	50.59	48.70	49.51	49.34	50.48	0.18	8.209	0.548	3.530
Jul-09	50.57	48.74	49.67	5.03	94.61	0.36	4.347	0.585	1.817
Aug-09	50.59	48.60	49.42	25.17	74.70	0.13	8.553	0.324	4.404
Sep-09	50.49	48.65	49.59	16.62	82.87	0.51	6.906	0.325	2.983
Oct-09	50.71	48.17	49.66	5.03	94.67	0.31	4.897	0.361	1.937
Nov-09	50.58	48.87	49.89	0.17	94.24	5.59	2.127	0.3	0.845
Dec-09	50.57	48.83	49.78	1.45	97.49	1.06	1.943	0.55	1.147
Jan-10	51.08	48.79	49.72	3.13	95.27	1.60	3.161	0.629	1.671
Feb-10	50.62	48.84	49.82	0.38	97.98	1.64	2.087	0.28	0.820
Mar-10	50.69	48.80	49.58	4.06	94.27	1.67	5.49	0.49	2.269

2.7 Voltage:

Voltage profile at major grid sub-stations of NER during **2009-10** are given below:

Figures in kV

SN	Sub-Station	Max. Voltage	Min. Voltage
1	Balipara 400 kV	444	365
2	Misa 400 kV	444	382
3	Misa 220 kV	237	207
4	Salakati 220 kV	238	209
5	Haflong 132 kV	149	122
6	Aizawl 132 kV	145	113
7	Kumarghat 132 kV	146	118

Voltage profiles at the above mentioned major grid sub-stations of NER during 2009-10 are given at **Annex-VII.**

IEGC Norms:

System Voltage	kV	PU
400 kV	360-420	0.9-1.05
220 kV	200-245	0.9-1.11
132 kV	120-145	0.9-1.09

2.8 Plant Load Factor:

Plant load factor of the thermal power stations of NER for three year is depicted in **Exhibit-IX** and the detail data of year 2009-10 is furnished in **Annex-VIII**.

2.9 System Load Factor:

The annual load factor of NER system is depicted in **Exhibit-X** and the detail data furnished in **Annexure-IX** for the current and previous year. NER being predominantly hydro based, the load curves are upward bow shaped.

2.10 Parallel Operation:

NER system is running in synchronism with Eastern Regional Grid, Western Regional and Northern Regional Grid through AC links of 400 kV Bongaigaon – New Siliguri D/C & 220 kV Salakati-Birpara D/C lines since August, 2006 which is known as "NEW" Grid. So, the integrated frequency of these regions remains same. Due to this parallel inter-connection between NER & ER the surplus power of NER during monsoon season is exported to ER which is predominantly thermal, and during winter when NER faces shortage of own generation from its hydel stations, power is imported from ER.

2.11 Reservoir Levels:

Water levels of major reservoirs of NER for the year 2009-10 along with energy content at the end of each month are furnished in **Annex-X**. The water levels of major reservoirs of NER for last three years are depicted in **Exhibit-XI** and energy content for the year 2009-10 is depicted in **Exhibit- XII**.

2.12 Power Cuts:

There were no notified power cuts. The constituent States of NER resorted to load shedding on day to day basis due to more demand than availability of power, during peak hours and lean season.

2.13 Units & Transmission Lines Commissioned:

There were no new Units or Transmission Lines commissioned during the year 2009-10

2.14 Progress of Construction of Gen. Units & TR. Elements:

The status of progress of construction of Generating Stations and Transmission elements during 2009-10 is given below:

Progress of Generation Projects in NER

Name of the Generation Scheme	No. of Units	Capacity (MW)	Commissioning Schedule	REMARKS
A. NEEPCO				
1. Monarchak TGBPP		104	12th Plan	Activities in progress
2. Tuirial HEP Mizoram	2	2 X 30	Works Held-Up	Being reviewed by PIB
3. Kameng HEP A. Pradesh	4	4X150	2012-13	Activities in progress
4. Tipaimukh HEP		1500	12th Plan	Activities in progress
5. Mawphu HEP	2	90	12th Plan	UNDER CCEA
6. Pare HEP, Ar. Pradesh		110	12th Plan	UNDER CCEA
B. NHPC				
1. Loktak Downstream HEP	3	66	2012	Activities in progress
2. Subansiri Lower HEP		2000	2012-14	Activities in progress
3. Siang Middle HEP		2000	12th Plan	Activities in progress
4. Subansiri Upper HEP		2000	DPR Under prep	
5. Subansiri Middle HEP		1000	DPR Under prep	
6. Dibang Multipurpose Project		3000	Under TEC	Activities in progress
C. NTPC				
1. Bongaigaon TPS	3	3X250	Unit # I&II- 2011-12	Activities in progress
			Unit # III- 12th Plan	
D. JV PROJECT				
1. Palatana CCPP	2	2X323.3	12th Plan	Activities in progress
F. ASEB				
1. Lakuwa Waste Heat Power Station		37.2	2012	Activities in progress
G. MIZORAM				
1. Bairabi Dam Project	2	2x40	2010-11	Activities in progress
H. MeSEB				
1. Myntdu - Leishka HEP	3	3x42	2010-11	Activities in progress

Progress of Transmission Lines in the Region

Name of the line	Length (ckt kms)	Comm. Schedule		Total no. of loc.	Stubs com-pleted(nos)	Tower erected	Stringing complted-ckm	REMARKS
		Ann. Pl	Ant / revd					
A. Lines under ASEB :								
1.132 kV Nazira - Lakwa 2nd Ckt	21						Completed	Work in progress
2. 132 kV, S/C Rangia - Sipajhar - Rowta- Depota	147							Work in progress
3. 132 kV, S/C Sarusajai - Kahilipara	8							Work in progress
4. LILO of 132 kV Mariani - Dimapur S/C at Bokajan	6					Completed		Rly Clearance awaited
5. 132 kV Nazira- Garmur (Mariani) S/C	63							Tender is in progress
6. 220 kV Kathalguri - Tinsukia 2nd Ckt	50	2006-07						Work in progress
B. Lines under Meghalaya :								
1.220kv Misa- Byrinahat D/C			June 2010					Work in Progress
2. Myntdu Leshka-Khlieriat 132kV D/C			2010					Work in Progress
3.132kv Agia- Nangalbibra								Work in Progress
C. Lines under Mizoram :								
1.132kVKhawzawl-LungdarS/C	48			100	100	76	0	Work in progress
2.132 kVKhawzawl-Ngopa S/C	57			117	117	117	57	Work in progress
3.132 kV Kolasib-Turial S/C	41			114	114	114	41(only conductor)	Work in progress
4.Kolasib-Sairul B D/C	25							Work in progress
5. Kolasib-Melriat S/C	90			369	Nil	Nil	Nil	Work in progress
5.132kV Bairabi-Bawktiang S/C	30			93	91	85	14	Work in progress
6.132 kv Khawzawl-Champhal S/C	30			90	Nil	Nil	Nil	Work in progress
D. CTU Lines:								
1.LILO of 132KVDimapur-Kohima at Dimapur(PG)	2	09/2009	03/2011	3				ROW problem
2. 132 kv Kopili- Khandong	12	09/2009	08/2010	43	37	24	8	ROW problem
3.132kv Aizwal-Aizwal (Deposit work)			03/2011					
4. +/- 800kv HVDC Bipole Biswanath Chariyali - Agra	1971	08/2013	08/2013	1343	174			Award is in progress
5. 400kv Balipara - Biswanath Chariyali D/C	130	08/2013	08/2013	167	25	5		
6. LILO of 400 kv Ranganadhi Balipara D/C at Biswanath	54	08/2013	08/2013	68				Engg. & Survey under process
7. 132 kV D/C Biswanath Chariyali-B. Chariyali (AEGCL)	32	08/2013	08/2013	55				Award placed
8. 400 KV Kameng-Balipara D/C	110	02/2013	02/2013	142	7			
9.400kv Balipara- Bongaigaon D/C line	596	02/2013	02/2013	838	205	44		
10.400kv Lower Subansari-Biswanath Charrali line-I	334	02/2013	02/2013	432	80	18		
11.400kv Lower Subansari-Biswanath Charrali Line-II	340	02/2013	02/2013	442	13	3		Award placed
12. 400 kv Palatana- Silchar	248							
13.400 kv Silchar- Bongaigaon	405							

2.15 Allocation of Central Sector Power:

Central Sector Generating Stations (CSGS) of NEEPCO and NHPC located in various parts of NER are the main source of power in the region. During 2009-10 States generated nearly 2986.64 MU (37.68%) and CS generation was nearly 4938.72 MU (62.32%). Scheduled Entitlements of the States from the CSGS are furnished below. Actual drawal by the States varies from the entitlement depending on the availability of CS generation and States own requirement or other commercial policies.

Figures in MU

Month	Ar.Pradesh	Assam	Manipur	Meghalaya	Mizoram	Nagaland	Tripura
Apr-09	24.107	144.277	27.131	34.415	16.065	17.001	26.581
May-09	31.780	174.232	31.456	42.782	19.270	20.212	30.756
Jun-09	34.915	204.755	33.860	52.289	21.890	24.485	33.921
Jul-09	48.284	242.276	41.022	62.017	26.690	30.609	40.559
Aug-09	60.350	289.109	54.732	77.160	32.382	39.775	49.320
Sep-09	41.827	243.735	52.543	66.005	27.031	33.948	43.389
Oct-09	41.281	257.217	55.985	69.059	28.269	35.387	45.412
Nov-09	29.018	199.522	42.767	52.243	21.646	25.175	35.655
Dec-09	26.489	189.348	39.413	48.767	20.405	23.120	33.834
Jan-10	21.580	156.770	32.664	38.311	17.153	18.998	29.308
Feb-10	18.014	132.340	26.840	30.938	14.574	15.724	24.911
Mar-10	25.195	142.312	31.135	34.773	16.379	17.411	27.967

Cumulative weighted Average Share allocation (in %) in CSGS in the NER, based on GoI order w.e.f. 17.01.2008 is given below. This CSGS share allocation changes from time to time as per GoI orders due to various reasons like addition of new Units in the grid, changes in requirements from the beneficiary States etc. The Cumulative wt. Average Share Allocation in CSGS as on **31.03.2010** is as follows:

States	Kopili (200MW)	Kopili-II (25 MW)	Khandong (50 MW)	RHEP (405 MW)	DHEP (75 MW)	AGBPP (291 MW)	AGTPP (84MW)	Loktak (105 MW)
Ar. Pradesh	5.193	6.193	4.192	18.462	6.882	5.693	6.180	4.942
Assam	53.455	46.615	56.277	43.328	43.742	56.465	45.178	29.415
Manipur	7.385	7.225	6.565	8.373	7.893	8.125	8.143	30.115
Meghalaya	17.150	18.650	16.650	11.250	11.230	11.550	11.340	12.140
Mizoram	4.619	6.278	3.940	5.710	5.240	5.429	6.190	5.068
Nagaland	6.155	5.656	6.653	5.335	17.935	5.805	5.607	6.427
Tripura	6.043	9.383	5.723	7.542	7.078	6.933	17.362	11.893
Total	100.000	100.000	100.000	100.000	100.000	100.000	100.000	100.000

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CHAPTER 3

Grid Disturbances

The details of the occurrences of major grid disturbances occurred during the period from 1st April 2009 to 31st March 2010 in North Eastern Region are given below. The type of the disturbance(s) was of partial in nature only.

Sl. No.	Date and Time (Hrs.) of Occurrence	Areas affected	Causes	Date and Time (Hrs.) of restoration
1.	23/04/2009 at 22:15 Hrs	part of Assam, Nagaland, Manipur, Mizoram & Tripura	At 2215 Hrs (Due to Stromy and Rainy weather) 220 KV Balipara - Samaguri tripped on Earth Fault. At the same time 220 kV Misa-Samaguri-D/C and 400/220 KV 315 MVA ICT at Misa also tripped on 67 NX (Dir. E/F).This further resulted in tripping of 220 kV Mariani- Samaguri line on O/C at Mariani end. This caused isolation of part of Assam, Nagaland, Manipur, Mizoram & Tripura. System progressively restored at 2311 Hrs	23/04/2009 at 23:11 Hrs
2.	10/05/2009 at 22:46 Hrs	Southern part of Assam, Arunachal Pradesh, Meghalaya ,Manipur, Mizoram Nagaland, & Tripura	NER grid was running in synchronization with NEW grid through 400 kV Bongaigaon-New Siliguri-II & 220 kV Birpara-Salakati-D/C. At 2246 Hrs 400 kV Balipara-Bongaigaon-I triped on D/P Z-I,R-Φ-N at B'Gaon, Balipara-D/P,R-Φ-N & 400 KV Balipara-Bongaigaon-II tripped on D/P,Z-I,Y-Φ-N at B'Gaon, Balipara-No tripping [As reported by CPCC stormy weather was observed at surrounding areas of Bongaigaon during that time].These trippings caused isolation of NER grid [Except part of Assam] from NEW grid. Immediately after that 400 kV Balipara-Ranganadi-I also tripped on O/V and RHEP units tripped. This resulted in dip in frequency of isolated grid and all the running units (except NTPS with local load) tripped on U/F and power interruption occurred in isolated grid.	10/05/2009 at 23:47 Hrs
4.	27.03.2010 at 04:39 Hrs	Assam, Arunachal Pradesh, Meghalaya ,Manipur, Mizoram Nagaland, & Tripura	NER Grid was synchronized with NEW Grid through 220 kV Birpara - Salakati I & II. At around 0439 Hrs, 220kV Salakati - Birpara I tripped (Salakati – DP, Z-I, B-E & Birpara – DP, Z-I, B-E) and 220 kV Salakati – Birpara II tripped (Salakati – DP, Z-I, B-E,40.6% & Birpara – DP, Z-I, B-E). Salakati was importing around 100 MW from Birpara before the incident. Due to tripping of above elements, NER Grid (except Part of Upper Assam comprising with NTPS Generation & its Load of around 22 MW) collapsed due to mismatch between load & generation. Power recived from NEW Grid at 05:25 Hrs through 400 kV Bongaigaon-New Siliguri-I. 400 kV Birpara - Salakati I was charged from Salaakti at 0620 Hrs but tripped immediately (R phase LA at Salakati burst. Salakati – DP, Z-I, B-E & Birpara - DP, Z-I, B-E). NER Grid was progressively restored at 0628 Hrs.	27.03.2010 at 08:37 Hrs.

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CHAPTER 4

Commercial and Energy Accounting Activities

4.1 Regional Energy Accounts (REA):

The CERC regulations on ABT were implemented in NER w.e.f 01.11.2003. REAs were prepared by using the latest CERC regulations from time to time. The following are the major components of ABT:

1. Capacity Charge - Monthly Cumulative basis based on Plant Availability Factor for the Month (PAFM)
2. Energy Charges - Monthly basis based on design energy
3. Incentives - Monthly basis and included in the monthly PAFM achieved
4. Transmission Charges - Monthly basis based on Transmission Availability Factor for the Month (TAFM)
5. Unscheduled Interchange - Weekly basis based on actual generation/drawal
6. Reactive Charges - Weekly basis based on consumption/injection of VAR, Mainly for voltage control.

REAs are prepared on monthly basis by compiling the average Declared Capacity (DC), Cumulative share allocation from the region and outside the region, actual generation of ISGS, and actual drawl of beneficiaries for a month. For thermal stations, average DC for the day (in ex-bus MW) is considered while for hydro stations, DC for at least 3 hours is considered as DC for the day. Scheduled energy from CGSs within the region and Scheduled Bilateral Exchanges are also reflected in the monthly REAs. The settlements of bills are made by ISGS, CTU etc with the beneficiaries on the basis of monthly REAs.

If there is any discrepancy, the constituents or Trader member of NERPC may intimate within 15 (fifteen) days from the date of issue of REAs for needful.

The Annual Capacity Charges and Design Energy for thermal and hydro power stations of Central Sector Generators in the North Eastern Region as on **31.03.2010** are as follows:

Power Stations	Installed Capacity (MW)	Design Energy (GWh)	Annual Fixed Charge (Rs. Crore)
KOPILI HEP	200	1186.14	57.6738
KOPILI -II	25	86.3	12.9511
KHANDONG HEP	50	277.61	19.6328
RHEP	405	1509.69	203.4081
DHEP	75	227.24	58.5
AGBPP	291	NA	233.59
AGTPP	84	NA	52.71
LOKTAK HEP	105	448.00	50.0353

4.2 Unscheduled Interchanges (UI)

Unscheduled Interchanges (UI) Charges is one of the important part of Availability Based Tariff (ABT) mechanism. UI rates are fixed by CERC considering the prevailing market conditions so that grid frequency is maintained at a desirable level. The main aim of ABT is being to achieve good quality and reliable power, where UI is acting as a vital component in maintaining the grid discipline. It also acts as a settlement mechanism for intra day power transfer between the surplus and deficit areas.

For a Generator, UI energy is the difference between actual generation (Ex-bus) and Schedule generation (Ex-bus), whereas for a beneficiary, it is equal to actual drawl (periphery) and schedule drawl (periphery). UI charge is obtained by multiplying the UI energy with UI rate. UI rate is a frequency dependent energy rate notified by Central Electricity Regulatory Commission (CERC). A constituent may receive / pay UI charge depending on whether it has assisted/ undermined the grid frequency.

The UI rates applicable during the year 2009-10 were as under:

(Vide CERC's order no. L-1(1)2009-CERC dated 30th March, 2009)

Average frequency of time block	UI rate (Paisa per kWH)
50.3 Hz and above	0
Below 50.3 Hz and up to 50.28 Hz	12
Between 50.3 Hz and 49.5 Hz	Linear in 0.02 Hz step (each 0.02 Hz step is equivalent to 12 paisa per kWH within this range)
Below 49.50 Hz and up to 49.48 Hz	497
Below 49.2 Hz	735 and additional UI of 40% of 735
Between 49.50 Hz and 49.2 Hz	Linear in 0.02 Hz step (each 0.02 Hz step is equivalent to 17 paisa per kWH within this range)

4.3 Unscheduled Interchanges (UI) Payable:

The Unscheduled Interchanges (UI) payable (in Rs. Lakhs) of North-Eastern Region for the financial year 2009-10 is given as below: -

(Figures in Rs. Lakhs)

Organisation	Apr-09	May-09	Jun-09	Jul-09	Aug-09	Sep-09	Oct-09	Nov-09	Dec-09	Jan-10	Feb-10	Mar-10
Ar. Pradesh	142.14	-77.48	-187.80	-232.30	-390.02	-159.86	-88.06	5.82	76.02	177.65	169.24	129.25
ASEB	-1798.19	-767.01	-476.54	756.59	-441.27	327.46	-539.50	-253.86	-1007.71	-445.41	-484.21	-1051.70
Manipur	49.44	-189.01	-257.39	-400.72	-1025.15	-520.47	-476.30	-35.89	112.21	310.95	243.36	136.99
MeSEB	61.69	-84.43	-309.07	-306.40	-783.87	-464.90	-40.84	396.17	524.25	785.45	446.68	177.42
Mizoram	177.39	59.12	-118.33	-200.78	-422.11	-257.85	-169.07	79.59	173.81	280.84	183.92	301.47
Nagaland	310.13	93.43	-215.51	124.49	-98.03	199.51	252.54	101.16	279.18	355.41	234.54	321.16
Tripura	208.16	-93.02	-5.97	-127.12	-336.29	-468.43	-406.04	-176.95	-330.53	-89.05	-75.19	-146.83
Loktak	36.04	-5.02	3.97	-3.09	-18.48	3.97	-1.44	-4.62	-5.02	-18.86	-0.35	-22.31
Khandong	0.42	3.50	3.32	2.54	2.16	3.32	2.08	1.15	6.21	10.44	9.18	18.30
Kopili	6.45	4.13	4.03	18.77	-83.36	4.03	-7.45	1.93	0.75	-2.57	-1.83	-1.84
Kopili Stg II	1.19	-1.08	-0.24	-0.30	-2.20	-0.24	-0.43	0.22	0.12	0.48	0.77	1.08
DHEP	2.03	2.79	-9.00	-13.92	-1.25	-9.00	0.23	-3.89	2.71	-1.87	2.53	-0.07
RHEP	106.24	-128.50	-179.05	-58.07	-61.99	-179.05	-9.20	6.37	-21.29	-28.38	10.34	-64.97
AGTPP	31.98	-18.38	-31.45	-23.00	-38.11	-31.45	-23.82	-10.63	-13.01	-17.44	-8.39	-27.77
AGBPP	14.99	7.49	-0.62	28.54	12.27	-0.62	-5.31	20.39	-114.64	-239.85	21.99	84.87
ER	549.54	1066.88	1848.31	534.97	4892.54	1848.31	1590.82	-123.03	330.53	-1025.48	-749.48	150.22

(-) indicates UI receivable (in Rs. Lakhs)

The detail data of UI energy is furnished in **Annexure-XI** for the financial year 2009-10.

4.4 Transmission Tariff:

In NER from 01.04.2007 onwards, UCPTT (Uniform Common Pool Transmission Tariff) has been replaced by the normal tariff by CERC. The details of Billing for Transmission Charges of CTU As per CERC orders dated 11/08/09, 08/09/09,19/08/09,12/08/09,21/08/09,07/09/09,21/08/09 (3 orders), in nine Petitions numbering 82-90/2006 is given below:

(Rs in Lakh)*

(i) (a) Transmission charges for the year 2004-09	Annual charges for 2004-09
A. Transmission charges for Ranganadi-Ziro Line	401.92
B. Transmission charges for ATS* of Loktak HEP	148.29
C. Transmission charges for ATS of Ranganadi HEP^	2230.71
D. Transmission charges for Kopli Extension HEP	316.66
E. Transmission charges for Agartala GBPP#	453.5
F. Transmission charges for Kathalguri GBPP!	9706.4
G. Charges for Augmentation Scheme of NER	2345.06
H. Transmission charges for ATS of Doyang HEP$	1969.43
I. Transmission charges for ATS of Kopli-Khandong	1704.18
Total	19276.15

*ATS-Associated Transmission System.
Rs 155.73/153.31 Lakhs for 2007-08/2008-09 for (132 KV Nirjuli Dikrong line) & Rs 2195.75/2147.14 lakhs for 2007-08/2008-09 for (400 KV D/C Rangandi - Balipara line).

Rs 121.49/123.39 Lakhs for 2007-08/2008-09 for (132 KV D/C Agartala - Agartala tr. line) & Rs 274.18/ 272.55 lakhs for 2007-08/2008-09 for (132 KV S/C Agartala - Kumarghat Line).

Sum of Tr. Assets I, II, III.

$ Rs 810.79/822.13 Lakhs for 2007-08/08-09 (220 KV D/C Dimapur-Misa tr. Line, LILO of 220 KV Kopli-Samaguri and LILO of 132 KV Mariani-Dimapur tr. Line) & Rs 1201.60/ 1203.16 Lakhs for 2007-08/08-09 (132 KV D/C Doyang -Dimapur tr.line and 132 KV s/C Dimapur-Imphal Line with associated bays.

(i) (b) Transmission charges for 400 KV Malda-Bongaigaon Transmission Line(As per the CERC order dated 15.05.2009 in Petition No 75/2008) .

Year	Transmission Tariff for Inter Regional Bongaigaon-New Siliguri Segment (Rs in Lakhs, to be shared by NER &ER)
2008-09	**2966.26**

(ii)Weighted Average Entitlement of the beneficiaries for the purpose of Distribution of Transmission Charges:

States	**Weighted Average Entitlement in ISGS of NER**		**Weighted Average Entitlement in ISGS outside NER**		**Total Weighted Average Entitlement of NER Constts.**	
	(MW)	**(%)**	**(MW)**	**(%)**	**(MW)**	**(%)**
Ar. Pradesh	120.17	9.8499	3.28	1.26	123.45	8.3387
Assam	583.72	47.8462	204.37	78.48	788.10	53.2354
Manipur	117.28	9.6128	0.00	0.00	117.28	7.9220
Meghalaya	155.33	12.7323	31.97	12.28	187.30	12.6522
Mizoram	65.39	5.3600	0.00	0.00	65.39	4.4172
Nagaland	79.50	6.5160	20.78	7.98	100.28	6.7735
Tripura	98.61	8.0828	0.00	0.00	98.61	6.6610
Total	1220.00	100.0000	260.40	100.00	1480.40	100.0000

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CHAPTER 5

Operation, Protection, Communication & System Studies

5.1 UFR Scheme:

Based on the detailed deliberations the TCC recommended that in view of high shortfall conditions that prevail throughout the region in lean hydro conditions, the proposal for UFRs under defense mechanism with total load relief of 120 MW (Stage-I: 60 MW, Stage-II: 30 MW and Stage-III: 30 MW) prorata for each State to their respective original load quantum as per the following details:-

UFR contribution recommended by TCC of NERPC ***(Figures in MW)***

Load relief	Stage-I (48.8 Hz.)	Stage-II (48.5 Hz.)	Stage-III (48.2 Hz.)	Total
Quantum	60	30	30	120

Distribution of load relief	Ar.Pr.	Assam	Manipur	Mizoram	Meghalaya	Nagaland	Tripura	Total
Stage-I (48.8 Hz.)	3	35	3	3	8	3	5	60
Stage-II (48.5 Hz.)	-	15	-	-	8	-	7	30
Stage-III (48.2 Hz.)	-	15	-	-	8	-	7	30

Further the NER constituents' States have identified the locations to achieve the required total load relief as above. Assam has already installed the UF relays while other States are in the process of procurement for installation of UFRs.

5.2 Special Protection Scheme:

In order to prevent frequent grid disturbances due to tripping of important EHV lines, a Special Protection Scheme (SPS) was proposed to implement in NER which would minimize the impact on grid due to tripping of any important EHV lines in NER grid. The scheme considers four most credible contingencies on tripping of the following lines:-

Contingency I: 132 kV Dimapur-Imphal S/C line
Contingency II: 132 kV Loktak-Jiribam S/C line
Contingency III: 132 kV Sarusajai-Umtru line
Contingency IV: 132 kV Umiam Stage-I Mawlai line

SPS comprise of following provisions:-

1. Inter-trip provision on tripping of the identified transmission lines under each of above four contingencies.
2. Automatic under-frequency load-shedding relays (UFRs) at the following strategic locations to limit frequency drop in case of islanding :-

   (i) Aizwal-Zembawk feeder to be set at 48.2 Hz
   (ii) Loktak – Ningthoukhong to be set at 48.4 Hz
   (iii) Mawlai-Nongstoin feeder to be set at 48.6 Hz

Above UFRs may be relocated from existing 3 Nos. UFR locations in NER at following:-

i) 132 kV Nirjuli-Gohpur line (48.4 Hz)
ii) 132 kV Samaguri (ASEB) local load (48.2 Hz)
iii) 132 kV RHEP-Nirjuli line and (48.4 Hz)

In addition to above, the SPS would also involve opening of the following lines:-

1. 132 kV Imphal-Ningthoukhong (Manipur)
2. 132 kV Panchgram-Lumshnong (Assam-Meghalaya)

The SPS would trigger inter-trip of following 132 kV lines under each of the following contingencies:-

Contingency I: Tripping of Dimapur-Imphal line.

(a) Inter-tripping of Imphal-Imphal triggered in lean-hydro period
(b) Inter-tripping of Loktak-Ningthoukhong triggered in normal-hydro period

Contingency II: Tripping of Loktak-Jiribam line.

(a) Inter-tripping of Badarpur-Panchgram triggered

Contingency III: Tripping of Sarusajai-Umtru line.

(a) Inter-tripping of Umtru-Brynihat triggered

Contingency IV: Tripping of Umiam Stage-I - Mawlai line.

(a) Inter-tripping of NEHU-Mawlai triggered

5.3 Inspection of UF relays:

Inspections of UF Relays are carried as and when required.

5.4 Single Phase Auto-Reclosure (SPAR) Scheme:

Single Phase Auto-Reclosure (SPAR) is required on important 132 kV transmission lines in NER as transmission system in NER is predominantly 132 kV and tripping of lines on transient faults causes interruption of power supply and grid disturbances. The issue has been discussed in OCC meetings and list of 132 kV transmission lines which requires Single Phase Auto Reclosure (SPAR) is prepared. PGCIL has also agreed to replace the gang operated 3-phase MOCBs with 1-phase breakers in the line bay owned by them. NHPC has agreed to replace the Loktak end breaker of 132 kV Jiribam-Loktak-II during 2010-11. NEEPCO has also stated that they will check the existing Single Phase Auto-Reclosure protection facility wherever available and requested to initiate a joint inspection with PGCIL for checking and operationalise the SPAR scheme.

5.5 ULDC Scheme:

The unified load dispatch centre for North Eastern Region has been implemented since August, 2003 and full fledged ULDC is working in three States viz. Assam, Meghalaya and Tripura. Other four States are operating using Remote Console (RC).

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CHAPTER 6

Meetings of North-Eastern Regional Power Committee

NERPC's interactions with its constituents for strategic operational planning & commercial arrangements for exchange of power and settling of dues/disputes and other unresolved technical and commercial issues are discussed in the meetings of various Standing Committees viz. OCC, TCC and Power Committee meetings set up for the purpose. These meetings under the aegis of NERPC were held regularly and periodically with the convenience and consent of all the constituents and important decisions taken or arrived at these meetings are implemented, for optimum supply of power and to give maximum benefits to the constituents of the Region. The list of various meeting of different committees held during 2009-10 are at **Annexure-V**.

6.1 North-Eastern Regional Power Committee (NERPC) Meeting:

The 8th NER Power Committee meeting was held during the year 2009-10. In the meeting following major issues were discussed:-

6.1.1 8th NERPC Meeting: The meeting was held on 12th January, 2010 at Hotel Classic, Imphal, Manipur. The following major issues were deliberated upon during the meeting:

1. Transmission System associated with Evacuation of power from Pallatana GBPP and Bongaigaon TPS.
2. Signing of BPTA
3. Comprehensive scheme for strengthening of Transmission System in NER
4. Installation of new UFRs in NER constituent systems and constituent-wise load relief quantum as recommended by the sub-committee
5. Installation of Line Reactor at Kathalguri end of Misa - Kathalguri Line
6. Security Assistance for Routine Patrolling/ Maintenance Activities of Transmission Lines due to adverse situation prevailing in the area
7. Missing Link Scheme by PGCIL in NER
8. 132 kV Loktak – Jiribam Line
9. Membership of NTPC Ltd. in NERPC

6.2 Technical Co-ordination Committee (TCC) Meeting:

The Technical Co-ordination Committee, which is the main technical committee of the Power Committee comprising of the Members & Principal Chief Engineers of SEBs/Power Departments/ Corporations of the respective constituents. During the year 2009-10, 8th TCC meeting was held under the Chairmanship of the TCC Chairman. The following major issues were discussed:

1. Transmission System associated with Evacuation of power from Pallatana GBPP and Bongaigaon TPS
2. Comprehensive scheme for strengthening of Transmission System in NER
3. Setting-up/up-gradation of SLDCs in NER
4. Vacation of 2.3–2.4 GHz frequency band and establishment of Fiber Optic Communication Scheme in lieu of existing Microwave Links in NER - PGCIL (LD&C – Corporate Engg.)
5. R & M scheme for various substations of POWERGRID in NER.
6. Corrosion of Kopili Unit # 1 & 2 due to Low pH value of water inflows at Kopili Reservoir
7. Special Protection Scheme (SPS) for NER
8. Single-Phase Auto-Reclosure of Transmission Lines
9. Declaration of Commercial Operation of 100 MVA, 220/132 kV Dimapur transformer
10. Installation of Line Reactor at Kathalguri end of Misa - Kathalguri Line.
11. Transfer facility in Bus Bar arrangement
12. Training of System operators utilizing Reactive pool account
13. Missing Link Scheme by PGCIL in NER
14. Outstanding UI Payments.
15. Long outage of Rokhia Phase – II Unit #5 & 6 with effect from 31.01.2007 and 16.09.2006
16. Overhead Charges on AMC
17. ULDC Scheme for NER
18. Forest clearance by Mizoram Government for Tipaimukh H.E. Project (1500 MW) in Manipur
19. Construction of Imphal (PG) – Imphal (Manipur) 132 kV 2nd Circuit
20. Deed of Adherence of NETC not signed by Meghalaya and Nagaland
21. Equity capital of Rs. 10.5 crores and Rs 15 crores not received from Mizoram and Assam Electricity Grid Corporation (AEGCL) towards upfront equity contribution for 400kV D/C Pallatana-Bongaigaon transmission system being developed by NETC.
22. Construction of 400kV Pallatana-Surajmaninagar- P K Bari/Agartala/Udaipur transmission system for availing start up power for OTPC.
23. Refund of transmission charges on UI
24. Bank interest on UI Account
25. Commissioning Schedule of Generation Projects in NER
26. Measurement of harmonics in NER System

6.3 Commercial Committee (CC) Meeting:

Two Commercial Committee meetings (11th to 12th) were held under the Chairmanship of the Member Secretary, NERPC. The main issues discussed in these meetings were as below:

1. Amendment to the list of ATS and System Strengthening of Inter-State / Regional System under POWERGRID scope of works (Pooled system of NER)
2. R & M of various substations of POWERGRID in NER
3. Vacation of 2.3 – 2.4 GHz frequency band and establishment of Fiber Optic Communication Scheme in lieu of existing Microwave Links in NER
4. Revival of 132 kV PK Bari-Dharmanagar-Dullavcherra-Panchgram link between Assam and Tripura.
5. Setting-up/Up-gradation of existing SLDCs in NER
6. Refund of transmission charges on UI
7. Downloading of SEM data from SEM meters
8. Implementing of CERC (Terms and Conditions of Tariff) Regulations, 2009

9. Payment of Transmission Charges for Inter-State Transmission System
10. North East-Northern/Western Interconnector-I project
11. Inclusion of traders in NERPC member
12. Energy metering problem in Balipara S/S of POWERGRID
13. Signing of PPA with OTPC regarding Pallatana project
14. Outstanding UI payment.
15. Weighted average entitlement of the beneficiaries for the purpose of distribution of transmission charges from Apr'04 to Mar'07
16. Refund of transmission charges on UI
17. Non receipt of Inter-state Meter reading of 33/11 kV feeders of ASEB since August '08
18. Testing of Special Energy Meters

6.4 Operation Co-ordination Committee (OCC) Meeting:

The Operation Coordination Committee (OCC) represented by nominees from the State Electricity Boards/Electricity Department and Central Sector Power Agencies, meet once in every month. During the year 2009-10, 37th to 48th OCC meetings were held under the Chairmanship of the Member Secretary, NERPC. In the OCC meetings the subjects like Generation Schedule, Power requirements including emergency requirements, Central Sector allocation, shortfalls and maintenance and shutdown schedule were discussed and finalized among all the constituents. Under Frequency Load Shedding Scheme, Capacitor Installation, Impact of ABT, Reactive Energy Accounting, minimum technical limit for AGBPP, deviation from schedule were discussed. Long outage of the generating and transmission elements were regularly discussed and pursued for early restoration. The overall performance of the Grid was reviewed and decisions were taken for necessary improvement. System disturbances during the month were discussed and necessary instructions were conveyed for the Grid discipline.

6.5 Protection Co-ordination Committee (PCC) Meeting:

The Protection Committee is represented by Protection Engineers of State Electricity Boards/Electricity Dept. and Central Sector Power Agencies. Objective of this Committee is to analyze different grid disturbances, frequently occurring faults, co-ordination of relay setting, etc. No Protection Co-ordination Committee meeting was held during this financial year.

6.6 Load Generation Balance Report Committee (LGBRC) Meeting:

Load Generation Balance Report Committee is represented by members of Load Despatch Stations of all the states of the region. Objective of this Committee is to prepare a coordinated generation outage programme for the regional grid considering all the available resources, auxiliary consumption, probable forced & partial outages, hydro availability etc. and also taking into account transmission constraints. No LGBR Committee meeting was held during this financial year.

6.7 Important Decisions Taken in the Regional Power Committee:

Transmission System associated with Evacuation of power from Pallatana GBPP and Bongaigaon TPS

NERPC endorsed the decision of TCC and Chairperson, NERPC requested Assam to sign the BPTA within a week keeping in view the commissioning schedule of Pallatana GBPP & Bongaigoan TPS so that construction of transmission lines could be taken up by POWERGRID immediately to match with commissioning schedule of generating stations

Vacation of 2.3–2.4 GHz frequency band and establishment of Fiber Optic Communication Scheme in lieu of existing Microwave Links in NER - PGCIL (LD&C – Corporate Engg.)

RPC endorsed the TCC recommendation. The length of fiber optic network in Central Sector would be now: 227 + 150 = 377 KMs

Foreign training status

RPC endorsed the recommendation of TCC. NERPC Secretariat would explore the possibility of arranging training abroad and also through IIMs/NPTI. The proposal for training and cost of training shall be got approved by Member Secretary from Chairperson NERPC.

Installation of new UFRs in NER constituent systems and constituent-wise load relief quantum as recommended by the sub-committee

RPC approved the implementation of scheme. Member Secretary informed that the progress of the scheme shall be monitored in OCC meetings of NERPC.

Security Assistance for Routine Patrolling/ Maintenance Activities of Transmission Lines due to adverse situation prevailing in the area.

The RPC requested POWERGRID to write directly to all the Hon'ble Power Ministers of the State concerned with a copy to District Administration and Hon'ble Power Ministers of Manipur, Tripura & Nagaland assured that necessary assistance shall be provided to POWERGRID in the matter

132 kV Loktak – Jiribam Line

POWERGRID requested Manipur that not only the part portion of the line is to be restored but the entire line has to be restored.

Chairperson, NERPC requested Manipur to take up the matter and complete the work at the earliest.

Construction of 400kV Pallatana-Surajmaninagar- P K Bari/Agartala/Udaipur transmission system for availing start up power for OTPC

RPC advised OTPC, TSECL & POWERGRID to take necessary action in the matter to provide start up power for Pallatana GBPS.

Membership of NTPC in NERPC

The RPC approved the recommendation of TCC for the membership of NTPC in NERPC Forum.

CHAPTER 7

Reports & Certification

7.1 Reports Issued:

NERPC has been issuing various reports regarding system operational data, load generation balance data, system studies data etc. The details of various reports issued by NERPC are given below: -

a) Monthly Power Supply Position;
b) Monthly Progress Reports;
c) Load Generation Balance Report;
d) Annual Administrative Report.

7.2 Certification of Transmission Availability:

As per CERC Regulations 2009 vide notification No. L-7/145 (160)-2008-CERC dated 19-01-09 effective from 01-04-09, a Provisional Availability Certificate of Power grid element in NER during 2009-10 was certified by NERPC Secretariat on monthly basis. The detail of Availability for the year 2009-10 is given at **Annexure – XII**.

Year	Availability (%) Bus Reactor			Total system Availability for North Eastern Region (%)	Total System Availability of Inter-Regional Lines (%)
	A.C.Lines	ICT	Bus Reactor		
2005-2006	99.611	99.251	99.929	99.5895	99.6049
2006-2007	99.350	99.528	99.996	99.4429	99.5155
2007-2008	99.392	99.626	99.771	99.4660	99.4248
2008-2009	99.218	99.132	99.981	99.2826	99.7689

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अध्याय 8

राजभाषा नीति का कार्यान्वयन

8.1 हिन्दी प्रशिक्षण : -
सभी अधिकारियो एव कर्मचारियो को हिन्दी का कार्यसाधक ज्ञान है ।

8.2 पत्राचार एव अनुवाद : -
राजभाषा समिति के आवश्यकताओ को पूरा करने के लिए समुचित प्रयास किया गया जैसे पत्राचार एव अग्रेषण पत्र, द्विभाषिक लेटरहेड इत्यादि ।

8.3 राजभाषा कार्यान्वयन समिति की वैठक : -
राजभाषा कार्यान्वयन समिति की प्रगति की मानिटरिगं के लिए प्रत्येक तिमाही में एक वार राजभाषा कार्यान्वयन समिति की वैठक आयोजित की जाती है ।

8.4 प्रोत्साहन योजनाएं : -

राजभाषा शील्ड एंव ट्राफी पुरस्कार हेतु प्रोत्साहन योजना :-
प्रोत्साहन योजना के वावजूद राजभाषा शील्ड एंव ट्राफी पुरस्कार के लिए शिलांग में असम राइफल, ग्रह मंत्रालय भारत सरकार, समन्वय अभिकरण के रूप में स्थापित है । राजभाषा कार्यान्वयन से संवंधित सभी डेटा / प्रगति इत्यादि असम राइफल के कार्यालय को भेजा जाता है ।

कार्यालयी कार्यो में प्रयोग की जाने वाली मौलिक हिन्दी टिप्पण / प्रारुप के लिए प्रोत्साहन योजना : -
कार्यालय में राजभाषा हिन्दी के प्रगति को गतिशील वनाने के लिए हिन्दी टिप्पण / प्रारुप इत्यादि का अनुपालन जारी है ।

आंशुलिपिक एंव टाइपिस्टो को उनके अंग्रेजी कार्यो के अतिरिक्त राजभाषा हिन्दी के कार्यो के लिए "प्रोत्साहन भत्ता" की मंजूरी : -
पूर्वोत्तर क्षेत्र होने के कारण, आंशुलिपिक एंव टाइपिस्टो को प्रशिक्षित किया गया है । उनके पास राजभाषा हिन्दी का न्यूनतम ज्ञान है । इस लिए इसका अनुपालन नही किया जा सका ।

8.5 हिन्दी पखवाडा एंव हिन्दी दिवस का आयोजन : -
उत्तर पूर्वीय क्षेत्रीय विद्युत समिति में हिन्दी सप्ताह मनाया गया जिसके दौरान हिन्दी भाषी एंव गैर हिन्दी भाषी लोगो के मध्य निवंध प्रतियोगिता, डिवेट, जोक्स, टिप्पण आलेखन इत्यादि आयोजित किया गया । उपर्युक्त प्रतियोगिता, पुरस्कार, पुरस्कार वितरण के परख के लिए एक समिति की नियुक्ति की गई ।

8.6 हिन्दी कार्यशाला : -
इस अवधि के दौरान एक दिवसीय हिन्दी कार्यशाला आयोजित की गई ।

8.7 निरीक्षण : -
राजभाषा संसदीय समिति द्वारा कोई निरीक्षण नही किया गया ।

8.8 विशिष्ट कार्य : -
उत्तर पूर्वीय क्षेत्रीय विद्युत बोर्ड में आयोजित हिन्दी सप्ताह के दौरान सभी अधिकारियो एव कर्मचारियो ने सक्रिय रूप से भाग लिया ।

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ANNEXURES

&

EXHIBITS

Annex-I

CONSTITUTION OF NORTH EASTERN REGIONAL POWER COMMITTEE SHILLONG (MEGHALAYA)

Chairman, NERPC
Shri Phungzathang Tonsing,
Hon'ble Minister of Power,
Govt. of Manipur,
Imphal.

Members of the North Eastern Regional Power Committee (As on 31.03. 2010)

1	Shri Dorjee Khandu, Hon'ble Chief Minister & Minister of Power, Govt. of Arunachal Pradesh, Itanagar.	2	Shri Lal Thanhawla, Hon'ble Chief Minister & Minster of Power, Govt. of Mizoram, Aizawl.
3	Shri Pradyut Bordoloi, Hon'ble Minister of Power, Govt. of Assam, Dispur, Guwahati.	4	Shri Doshehe Y. Sema, Hon'ble Minister of Power, Govt. of Nagaland, Kohima
5	Shri Manik Dey Hon'ble Minister of Power, Govt. of Tripura, Agartala.	6	Shri Conrad Sangma Hon'ble Minister of Power, Govt. of Meghalaya, Shillong.
7	Shri S.M. Dhiman Member (GO&D), Central Electricity Authority, New Delhi.	8	Shri A.K. Sachan, IAS Chairman, ASEB, Guwahati.
9	Shri W.M.S. Pariat, IAS Chairman , MeSEB, Shillong.	10	Shri I.P. Baroah, Chairman &.Managing Director NEEPCO Ltd., Shillong.
11	Shri D. P. Bhargava Director (Tech.), N.H.P.C., Faridabad (Haryana).	12	Shri R.N. Nayak Director (Opn. & Projects), POWERGRID, New Delhi.
13	Shri Shashi Shekhar, IAS Director(Operation), Power Trading Corporation of India Ltd., New Delhi.	14	Sh. A.K. Goyal C.E.O. NVVNL, New Delhi.
15	Shri B.K. Jain Member Secretary N.E.R.P.C Shillong	16	Shri B.K.Dev Varma, IAS Principal Secretary (Power) Govt. of Meghalaya, Shillong.

17	Shri Alok Kumar, IAS Pricipal Secretary of Power, Govt. of Assam, Dispur, Guwahati.	18	Shri Sanjeev Ranjan, IAS Secretary of Power, Govt. of Tripura, Agartala.
19	Shri R.B. Thong, Secretary of Power, Govt. of Nagaland, Kohima.	20	Shri L.P. Gonmei, IAS Secretary of Power, Govt. of Manipur, Imphal.
21	Shri T. Bagra, IAS Secretary of Power, Govt. of Ar. Pradesh, Itanagar.	22	Shri Vanhela Pachuau, IAS Secretary (Power), Govt. of Mizoram, Aizawl.
23	Shri S.K. Handique Managing Director, AEGCL Govt. of Assam, Guwahati.	24	Shri S.K. Soonee, Executive Director (OS), NLDC, New Delhi.
25	Shri Dipak Ganguly, Chairman &.Managing Director TSECL, Agartala.	26	Shri T.S. Singh Addl. General Manager N.E.R.L.D.C' Shillong

Annex –II

PERSONNEL OF NERPC SECRETARIAT
(as on 31.03.2010)

Member Secretary	1.	Shri Bhupendra Kumar Jain
Superintending Engineer	1.	Shri Ajay Kumar Jain
	2.	Shri P. D. Siwal
Assistant Secretary	1.	Shri Brieflee Lyngkhoi
Executive Engineer	1.	Shri Satbir Singh
	2.	Shri Lalrinsanga
Asstt. Executive Engineer	1.	Shri S. Mangsothang Aimol
	2.	Shri Dinesh Kumar Bauri

In addition to the above 11 official of Group C & D are also on the strength of NERPC

Annex –III

POSTS SANCTIONED AND FILLED IN NERPC AS ON 31.03.10

Sl. No.	Name of the Post	Sanctioned	Filled	Vacant	Remarks
1	Member Secretary	1	1	0	
2	Superintending Engineer	2	2	0	
3	Executive Engineer	5	3	2	
4	Assistant Director-I	6	2	4	
5	Assistant Director-II	1	0	1	
6	Technical Officer	1	0	1	
7	Stenographer Gr. I	1	1	0	
8	Hindi Translator	1	0	1	
9	Hindi Translator Gr. II	1	0	1	
10	Assistant	1	1	0	
11	U.D.C.	1	1	0	
12	L.D.C.	3	2	1	
13	Driver	1	0	1	
14	Daftary	1	1	0	
15	Attendant/Peon	3	2	1	
16	Chowkidar	3	3	0	
	Total:	32	19	13	

Annex-IV

FINANCIAL BUDGET OF NERPC DURING THE YEAR 2009-10

The Sanctioned Budget and Actual Expenditure incurred by the NERPC during the year 2009-10 was as follows:

(Rs. in Thousand)

Particulars	Sanctioned Budget 2009-10	Actual Expenditure 2009-10
Regional Co-ordination Centre (2801-NON-PLAN)		
Medical	95.000	93.186
Salary	6,000.000	5,816.365
Overtime Allowances	10.000	10.000
Travelling Expenditure	450.000	449.060
Tech. Improvement Scheme in GM	0.000	0.000
Office Expenditure	495.000	494.976
Total	7,050.000	6,863.587
Load Despatching Station (2801-NON-PLAN)		
Medical	67.000	66.626
Salary	7,100.000	7,599.942
Overtime Allowances	10.000	9.150
Travelling Expenditure	428.000	424.279
Office Expenditure	1,440.000	1,439.812
Advertisement/Publicity	9.000	4.068
Other Charges	380.000	374.947
Total	9,434.000	9,918.824
Aggregate Total	16,484.000	16,782.410

Annex-V

LIST OF MEETINGS DURING THE YEAR 2009-10

Meetings	Date	Venue
North Eastern Regional Power Committee:		
1. 8th NERPC Meeting	12.01.10	Hotel Classic, Imphal, Manipur
Technical Co-ordination Committee:		
1. 8th TCC Meeting	11.01.10	Hotel Classic, Imphal, Manipur
Operation Co-ordination Committee:		
1. 37th OCC Meeting	08.04.09	NERPC, Shillong
2. 38th OCC Meeting	08.05.09	NEEPCO, Guwahati
3. 39th OCC Meeting	10.06.09	NERPC, Shillong
4. 40th OCC Meeting	13.07.09	NERLDC, Shillong
5. 41st OCC Meeting	12.08.09	NERPC, Shillong
6. 42nd OCC Meeting	11.09.09	NERPC, Shillong
7. 43rd OCC Meeting	12.10.09	NERPC, Shillong
8. 44th OCC Meeting	05.11.09	NERPC, Shillong
9. 45th OCC Meeting	11.12.09	SLDC, TSECL, Tripura
10. 46th OCC Meeting	05.01.10	NERLDC, Shillong
11. 47th OCC Meeting	10.02.10	NERLDC, Shillong
12. 48th OCC Meeting	12.03.10	NERLDC, Shillong
Commercial Committee:		
1. 11th CC Meeting	16.06.09	NERPC, Shillong
2. 12th CC Meeting	12.02.10	NERLDC, Shillong

Protection Committee:

Nil

Load Generation Balance Report Committee:

Nil

Annex-VI

INTER REGIONAL ENERGY EXCHANGE DURING 2009-10

Figures in MU

Month	NER-->ER	ER-->NER	Net Export
Apr-09	1.56	103.48	-101.92
May-09	10.97	93.50	-82.53
Jun-09	13.38	53.20	-39.82
Jul-09	80.92	49.89	31.03
Aug-09	157.19	33.73	123.47
Sep-09	83.97	44.98	39.00
Oct-09	82.46	36.05	46.41
Nov-09	7.32	71.36	-64.04
Dec-09	0.00	117.76	-117.76
Jan-10	0.08	175.01	-174.94
Feb-10	0.02	172.92	-172.91
Mar-10	0.45	162.89	-162.44
Total FY 09-10	438.32	1114.77	**-676.45**

Annex-VII

VOLTAGE PROFILE OF NER GRID DURING 2009-10

	Balipara 400kV		Misa 400kV		Misa 220kV		Salakati 220kV		Haflong 132 kV		Aizawl 132 kV		Kumarghat 132kV	
	Max (kV)	Min(kV)	Max (kV)	Min(kV)	Max (kV)	Min(kV)	Max (kV)	Min(kV)	Max (kV)	Min(kV)	Max (kV)	Min(kV)	Max (kV)	Min(kV)
Apr-08	429	383	429	389	237	208	236	211	149	122	143	117	139	127
May-08	444	386	440	390	231	207	238	213	141	125	140	120	146	118
Jun-08	434	365	435	396	237	207	236	211	140	126	138	114	136	118
Jul-08	433	395	434	395	231	209	232	213	140	127	137	114	135	126
Aug-08	431	393	431	395	232	209	233	212	138	125	137	117	135	124
Sep-08	428	390	428	382	229	211	232	212	140	128	145	119	140	124
Oct-08	429	389	429	391	230	209	234	214	138	130	139	119	137	126
Nov-08	429	390	444	388	233	214	230	209	140	128	137	122	138	125
Dec-08	428	394	429	395	231	215	235	211	139	128	137	113	135	125
Jan-09	433	391	435	395	234	216	235	211	140	127	137	122	134	124
Feb-09	429	393	437	395	233	213	234	210	141	129	138	122	134	121
Mar-09	431	389	432	394	237	212	235	210	142	122	137	114	137	122
Maximum	**444**		**444**		**237**		**238**		**149**		**145**		**146**	
Minimum	**365**		**382**		**207**		**209**		**122**		**113**		**118**	
Average	409.83		412.83		221.88		222.79		133.54		128.25		130.25	

Annex-VIII

PLANT LOAD FACTOR OF THERMAL POWER STATIONS IN NER

Sl. No.	Thermal Plant	Installed Capacity	Apr-09		May-09		Jun-09		Jul-09		Aug-09		Sep-09	
			Gen (MU)	PLF	Gen (MU)	PLF	Gen (MU)	PLF	Gen (MU)	PLF	Gen (MU)	PLF	Gen (MU)	PLF
1	LTPS Aseb	120	63.56	73.56	68.46	76.68	60.40	69.91	61.03	68.36	60.45	67.71	57.62	66.69
2	NTPS Aseb	117	49.88	59.21	46.71	53.66	46.94	55.72	53.06	60.95	44.76	51.42	48.07	57.06
3	Baramura Tripura	37.5	14.55	53.87	14.680	52.62	14.94	55.31	15.47	55.43	14.87	53.31	14.16	52.44
4	Rokhia Tripura	90	36.21	55.88	37.34	55.76	37.87	58.43	35.39	52.86	23.68	35.37	34.09	52.61
5	AGBPP Neepco	291	140.00	66.82	145.60	67.25	144.84	69.13	145.92	67.40	128.74	59.46	133.65	63.79
6	AGTPP Neepco	84	54.15	89.54	54.27	86.84	54.37	89.90	56.45	90.33	55.47	88.75	54.45	90.03

			Oct-09		Nov-09		Dec-09		Jan-10		Feb-10		Mar-10	
1	LTPS Aseb	120	57.99	64.95	60.81	70.38	70.16	78.58	71.31	79.87	65.20	75.46	67.63	75.75
2	NTPS Aseb	117	42.90	49.28	39.96	47.44	40.80	46.87	43.63	50.12	44.78	53.16	47.12	54.13
3	Baramura Tripura	37.5	14.98	53.69	14.70	54.44	15.49	55.51	14.82	53.12	13.84	51.26	14.82	53.12
4	Rokhia Tripura	90	39.54	59.06	37.42	57.75	40.15	59.97	42.10	62.87	36.52	56.36	42.10	62.87
5	AGBPP Neepco	291	160.26	74.02	152.97	73.01	157.30	72.66	155.01	71.60	151.11	72.12	128.75	59.47
6	AGTPP Neepco	84	55.56	88.90	54.65	90.36	56.93	91.09	58.28	93.26	52.55	86.89	55.57	88.92

Annual PLF for 2009-10

1	LTPS Aseb	120	764.62	72.74
2	NTPS Aseb	117	548.61	53.53
3	Baramura Tripura	37.5	177.31	53.97
4	Rokhia Tripura	90	442.42	56.12
5	AGBPP Neepco	291	1744.15	68.42
6	AGTPP Neepco	84	662.70	90.06

Annex-IX

Load factor for 2007-08

Month	Energy available (MU)	Peak Deamnd (MW)	Load Factor
Apr-06	513.12	1435	49.66
May-06	587.16	1589	49.67
Jun-06	638.44	1566	56.62
Jul-06	724.27	1589	61.26
Aug-06	741.78	1554	64.16
Sep-06	705.40	1560	62.80
Oct-06	720.62	1657	58.45
Nov-06	653.51	1652	54.94
Dec-06	649.72	1655	52.77
Jan-07	630.28	1684	50.31
Feb-07	566.40	1682	50.11
Mar-07	581.83	1742	44.89

Load factor for 2008-09

Month	Energy available (MU)	Peak Deamnd (MW)	Load Factor
Apr-07	581.68	1724	46.86
May-07	645.94	1710	50.77
Jun-07	695.79	1744	55.41
Jul-07	758.97	1705	59.83
Aug-07	779.60	1691	61.97
Sep-07	736.09	1665	61.40
Oct-07	751.63	1820	55.51
Nov-07	667.93	1520	61.03
Dec-07	673.22	1490	60.73
Jan-08	656.64	1491	59.19
Feb-08	566.99	1459	55.82
Mar-08	620.01	1460	57.08

Load factor for 2009-10

Month	Energy available (MU)	Peak Deamnd (MW)	Load Factor
Apr-08	609.98	1460	58.03
May-08	638.96	1569	54.75
Jun-08	672.80	1620	57.70
Jul-08	709.34	1665	57.26
Aug-08	758.77	1760	57.95
Sep-08	768.64	1672	63.87
Oct-08	758.53	1609	63.38
Nov-08	694.12	1624	59.37
Dec-08	724.57	1678	58.04
Jan-09	716.72	1599	60.23
Feb-09	621.20	1654	53.95
Mar-09	654.64	1565	56.24

Load Factor for Three years

Month	2007-08	2008-09	2009-10
Apr	49.66	46.86	58.03
May	49.67	50.77	54.75
Jun	56.62	55.41	57.70
Jul	61.26	59.83	57.26
Aug	64.16	61.97	57.95
Sep	62.80	61.40	63.87
Oct	58.45	55.51	63.38
Nov	54.94	61.03	59.37
Dec	52.77	60.73	58.04
Jan	50.31	59.19	60.23
Feb	50.11	55.82	53.95
Mar	44.89	57.08	56.24

Annex-X

Water Level and Energy Content of major Reservoirs during 2009-10

Months	Khandong				Kopili				Loktak				Barapani				Gumti				Doyang			
	FRL	MDDL	Level	Energy	FRL	MDDL	Level	Energy	FRL	MDDL	Level	Energy	FRL	MDDL	Level	Energy	FRL	MDDL	Level	Energy	FRL	MDDL	Level	Energy
	(m)	(m)	(m)	MU	(m)	(m)	(m)	MU	(m)	(m)	(m)	MU	(ft)	(ft)	(ft)	MU	(m)	(m)	(m)	MU	(m)	(m)	(m)	MU
Apr-08	719.30	704.00	709.00	5.50	609.50	592.83	598.20	21.50	770.00	766.20	766.80	20.00	3220.00	3150.00	3168.41	7.80	93.55	83.60	82.20	0.50	333.00	306.00	307.69	2.50
May-08	719.30	704.00	711.40	8.50	609.50	592.83	599.50	28.90	770.00	766.20	766.59	15.60	3220.00	3150.00	3170.88	8.80	93.55	83.60	82.35	0.60	333.00	306.00	308.12	3.00
Jun-08	719.30	704.00	711.10	8.40	609.50	592.83	601.60	41.50	770.00	766.20	766.64	16.40	3220.00	3150.00	3169.81	8.40	93.55	83.60	85.80	3.79	333.00	306.00	310.26	5.50
Jul-08	719.30	704.00	719.80	25.00	609.50	592.83	606.62	76.50	770.00	766.20	767.38	50.00	3220.00	3150.00	3197.25	27.50	93.55	83.60	88.00	8.89	333.00	306.00	318.80	21.00
Aug-08	719.30	704.00	719.25	24.50	609.50	592.83	609.29	98.20	770.00	766.20	768.27	191.00	3220.00	3150.00	3214.23	43.50	93.55	83.60	89.18	12.65	333.00	306.00	324.00	36.10
Sep-08	719.30	704.00	718.05	21.90	609.50	592.83	609.40	98.20	770.00	766.20	768.46	242.00	3220.00	3150.00	3213.11	42.20	93.55	83.60	89.35	13.20	333.00	306.00	324.30	37.00
Oct-08	719.30	704.00	717.20	20.00	609.50	592.83	608.68	94.50	770.00	766.20	768.61	250.00	3220.00	3150.00	3213.70	42.90	93.55	83.60	89.30	13.00	333.00	306.00	321.05	27.50
Nov-08	719.30	704.00	715.00	16.50	609.50	592.83	605.80	71.50	770.00	766.20	768.56	250.00	3220.00	3150.00	3209.19	38.00	93.55	83.60	88.37	10.10	333.00	306.00	318.20	19.00
Dec-08	719.30	704.00	713.30	12.00	609.50	592.83	600.93	36.20	770.00	766.20	768.32	206.00	3220.00	3150.00	3202.39	30.50	93.55	83.60	87.65	7.80	333.00	306.00	316.33	15.50
Jan-09	719.30	704.00	706.05	1.80	609.50	592.83	602.80	49.00	770.00	766.20	768.02	120.00	3220.00	3150.00	3194.22	24.60	93.55	83.60	86.22	4.50	333.00	306.00	313.70	11.00
Feb-09	719.30	704.00	703.13	0.00	609.50	592.83	601.91	43.50	770.00	766.20	767.77	81.00	3220.00	3150.00	3185.27	17.80	93.55	83.60	85.47	3.35	333.00	306.00	311.40	7.50
Mar-09	719.30	704.00	703.13	0.00	609.50	592.83	600.35	34.00	770.00	766.20	767.28	44.00	3220.00	3150.00	3176.28	11.60	93.55	83.60	84.35	2.00	333.00	306.00	308.85	4.00

Annex-XI

UI Energy (in MU)

Organisation	Apr-09	May-09	Jun-09	Jul-09	Aug-09	Sep-09	Oct-09	Nov-09	Dec-09	Jan-10	Feb-10	Mar-10
Ar. Pradesh	142.14	-77.48	-187.80	-232.30	-390.02	-159.86	-88.06	5.82	76.02	177.65	169.24	129.25
ASEB	-1798.19	-767.01	-476.54	756.59	-441.27	327.46	-539.50	-253.86	-1007.71	-445.41	-484.21	-1051.70
Manipur	49.44	-189.01	-257.39	-400.72	-1025.15	-520.47	-476.30	-35.89	112.21	310.95	243.36	136.99
MeSEB	61.69	-84.43	-309.07	-306.40	-783.87	-464.90	-40.84	396.17	524.25	785.45	446.68	177.42
Mizoram	177.39	59.12	-118.33	-200.78	-422.11	-257.85	-169.07	79.59	173.81	280.84	183.92	301.47
Nagaland	310.13	93.43	-215.51	124.49	-98.03	199.51	252.54	101.16	279.18	355.41	234.54	321.16
Tripura	208.16	-93.02	-5.97	-127.12	-336.29	-468.43	-406.04	-176.95	-330.53	-89.05	-75.19	-146.83
Loktak	36.04	-5.02	3.97	-3.09	-18.48	3.97	-1.44	-4.62	-5.02	-18.86	-0.35	-22.31
Khandong	0.42	3.50	3.32	2.54	2.16	3.32	2.08	1.15	6.21	10.44	9.18	18.30
Kopili	6.45	4.13	4.03	18.77	-83.36	4.03	-7.45	1.93	0.75	-2.57	-1.83	-1.84
Kopili Stage II	1.19	-1.08	-0.24	-0.30	-2.20	-0.24	-0.43	0.22	0.12	0.48	0.77	1.08
DHEP	2.03	2.79	-9.00	-13.92	-1.25	-9.00	0.23	-3.89	2.71	-1.87	2.53	-0.07
RHEP	106.24	-128.50	-179.05	-58.07	-61.99	-179.05	-9.20	6.37	-21.29	-28.38	10.34	-64.97
AGTPP	31.98	-18.38	-31.45	-23.00	-38.11	-31.45	-23.82	-10.63	-13.01	-17.44	-8.39	-27.77
AGBPP	14.99	7.49	-0.62	28.54	12.27	-0.62	-5.31	20.39	-114.64	-239.85	21.99	84.87
ER	549.54	1066.88	1848.31	534.97	4892.54	1848.31	1590.82	-123.03	330.53	-1025.48	-749.48	150.22

(-) indicates underdrawl

Annex-XII

Month	**Composite Availability for Intra-Regional POWERGRID elements in NER (in %)**
April-09	99.0410
May-2009	98.9916
June-2009	99.3560
July-2009	99.1538
August-2009	99.6475
September-2009	98.5634
October-2009	99.6012
November-2009	99.2507
December-2009	99.6389
January-2010	99.6099
February, 2010	99.2788
March - 2010	98.6504

Annex-XIII

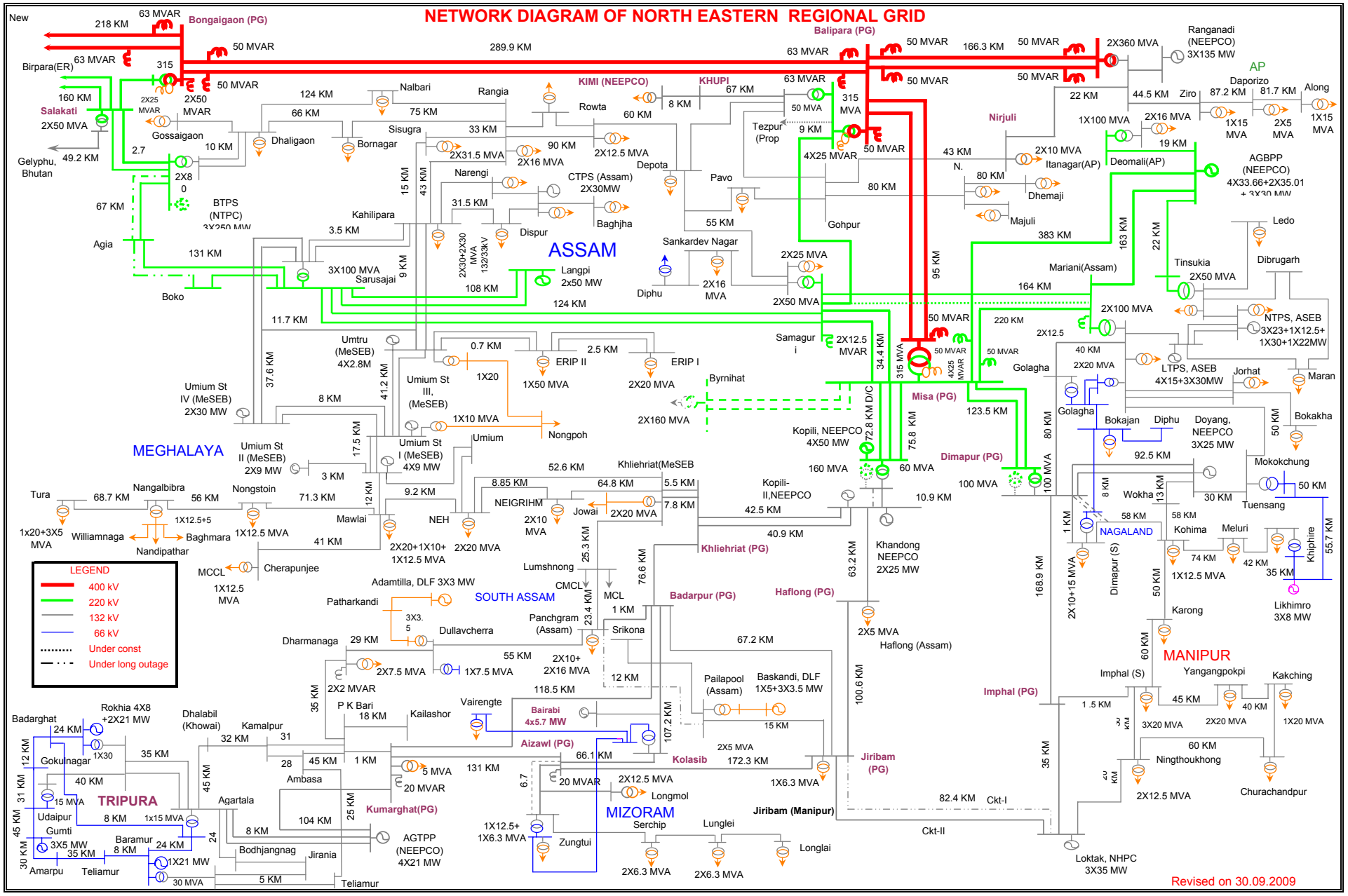
Inauguration of 8th NERPC Meeting at Imphal (from left to right Shri Phungzathang Tonsing, Hon'ble Power Minister, Govt. of Manipur, **Shri I. Obobi Singh**, Hon'ble Chief Minister, Govt. of Manipur, **Shri Manik Dey**, Hon'ble Power Minister, Govt. of Tripura, Shri B.K. Jain, Member Secretary, NERPC & **Shri D.Y.Sema**, Hon'ble Power Minister, Govt. of Nagaland)

Inaugural address by Shri I. Obobi Singh, Hon'ble Chief Minister, Govt. of Manipur, Imphal

Welcome address by Shri Phungzathang Tonsing, Chairman, NER Power Committee & Hon' ble Power Minister, Govt. of Manipur, Imphal

8th NERPC Meeting at Imphal (from left to right Shri D.Y.Sema, Hon'ble Power Minister, Govt. of Nagaland, Shri Manik Dey, Hon'ble Power Minister, Govt. of Tripura, Shri I. Obobi Singh, Hon'ble Chief Minister, Govt. of Manipur, Shri Phungzathang Tonsing, ,Hon'ble Power Minister, Govt. of Manipur & Shri B.K. Jain, Member Secretary, NERPC)

EXHIBIT-I


NETWORK DIAGRAM OF NORTH EASTERN REGIONAL GRID
New
Bongaigaon (PG)
Birpara(ER)
Salakati
Gelyphu, Bhutan
Gossaigaon
Dhaligaon
Bornagar
Nalbari
Rangia
Sisugra
Narengi
Kahilipara
Agia
Boko
BTPS (NTPC) 3X250 MW
Sarusajai
Dispur
CTPS (Assam) 2X30MW
Baghjha
Langpi 2x50 MW
Sankardev Nagar
Diphu
Rowta
KIMI (NEEPCO)
KHUPI
Tezpur (Prop
Depota
Pavo
Balipara (PG)
Gohpur
Nirjuli
Itanagar(AP)
Deomali(AP)
Dhemaji
Majuli
AGBPP (NEEPCO) 4X33.66+2X35.01 + 3X30 MW
Ranganadi (NEEPCO) 3X135 MW
AP
Daporizo
Ziro
Along
Tinsukia
Ledo
Dibrugarh
Mariani(Assam)
NTPS, ASEB 3X23+1X12.5+ 1X30+1X22MW
LTPS, ASEB 4X15+3X30MW
Jorhat
Maran
Golagha
Bokajan
Diphu
Doyang, NEEPCO 3X25 MW
Bokakha
Mokokchung
Tuensang
Wokha
Dimapur (PG)
Misa (PG)
Kopili, NEEPCO 4X50 MW
Kopili-II,NEEPCO
Khandong NEEPCO 2X25 MW
Haflong (PG)
Haflong (Assam)
Badarpur (PG)
Khliehriat (PG)
Khliehriat(MeSEB
NEIGRIHM
Jowai
NEH
Mawlai
Umium
Umium St I (MeSEB) 4X9 MW
Umium St II (MeSEB) 2X9 MW
Umium St III, (MeSEB)
Umium St IV (MeSEB) 2X30 MW
Umtru (MeSEB) 4X2.8M
ERIP I
ERIP II
Byrnihat
Nongpoh
Samagur i
Tura
Nangalbibra
Nongstoin
Williamnaga
Baghmara
Nandipathar
Cherapunjee
MCCL
Lumshnong
CMCL
Srikona
Panchgram (Assam)
Patharkandi
Adamtilla, DLF 3X3 MW
Dullavcherra
Dharmanaga
SOUTH ASSAM
MEGHALAYA
NAGALAND
MANIPUR
TRIPURA
MIZORAM
Imphal (S)
Yangangpokpi
Kakching
Karong
Kohima
Meluri
Khiphire
Likhimro 3X8 MW
Loktak, NHPC 3X35 MW
Imphal (PG)
Jiribam (PG)
Jiribam (Manipur)
Kolasib
Aizawl (PG)
Bairabi 4x5.7 MW
Vairengte
Pailapool (Assam)
Baskandi, DLF 1X5+3X3.5 MW
Longmol
Zungtui
Serchip
Lunglei
Longlai
Rokhia 4X8 +2X21 MW
Gokulnagar
Udaipur
Gumti
Amarpu
Teliamur
Baramur
Agartala
Ambasa
Dhalabil (Khowai)
Kamalpur
P K Bari
Kailashor
Bodhjangnag
Jirania
AGTPP (NEEPCO) 4X21 MW
Kumarghat(PG)
Ckt-I
Ckt-II
LEGEND
400 kV
220 kV
132 kV
66 kV
Under const
Under long outage
Revised on 30.09.2009

POWER MAP OF NORTH EASTERN REGION AND SIKKIM

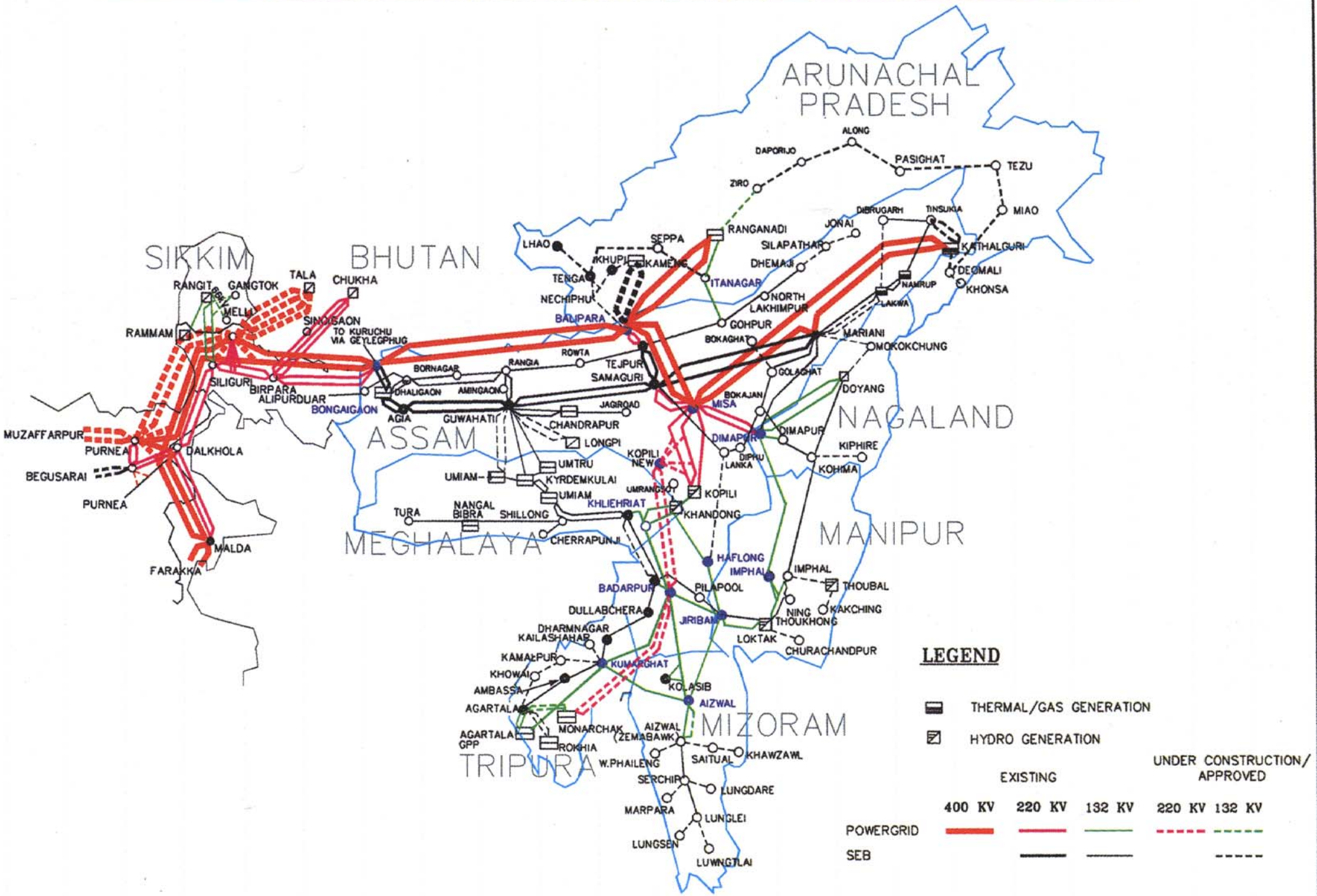


Exhibit-II

Installed Capacity (MW) of NER as on 31.03.10

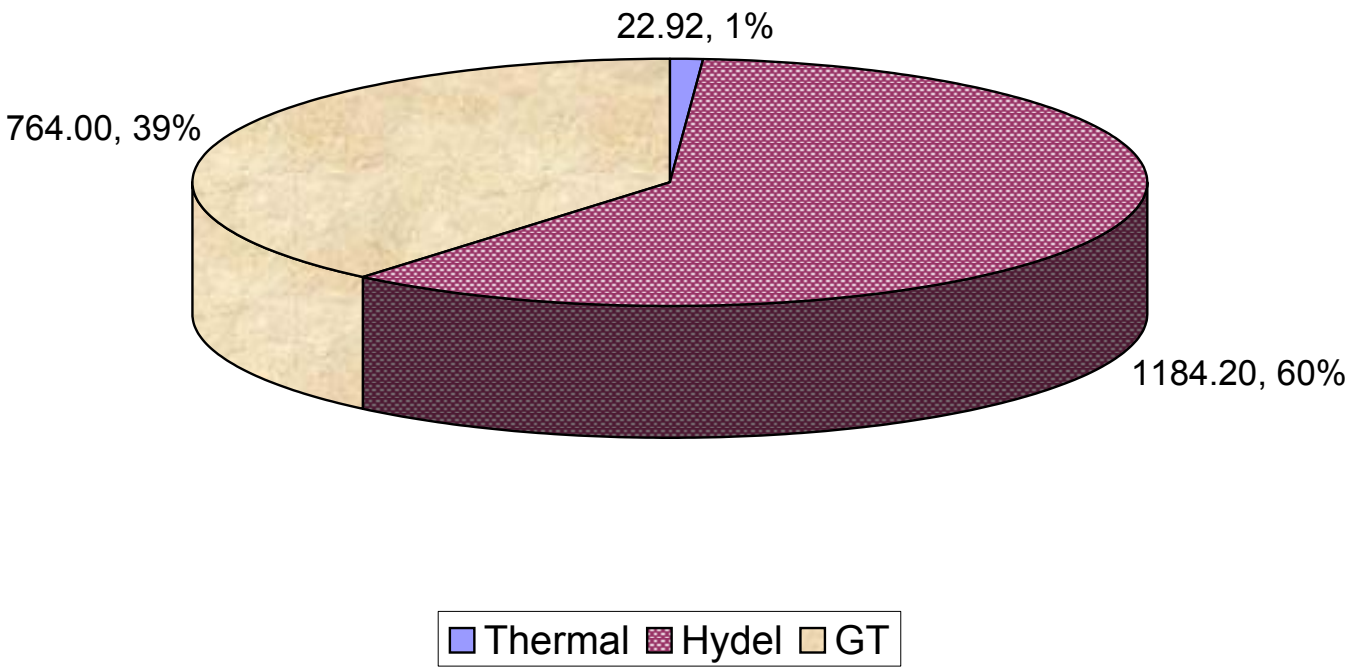


Exhibit-III

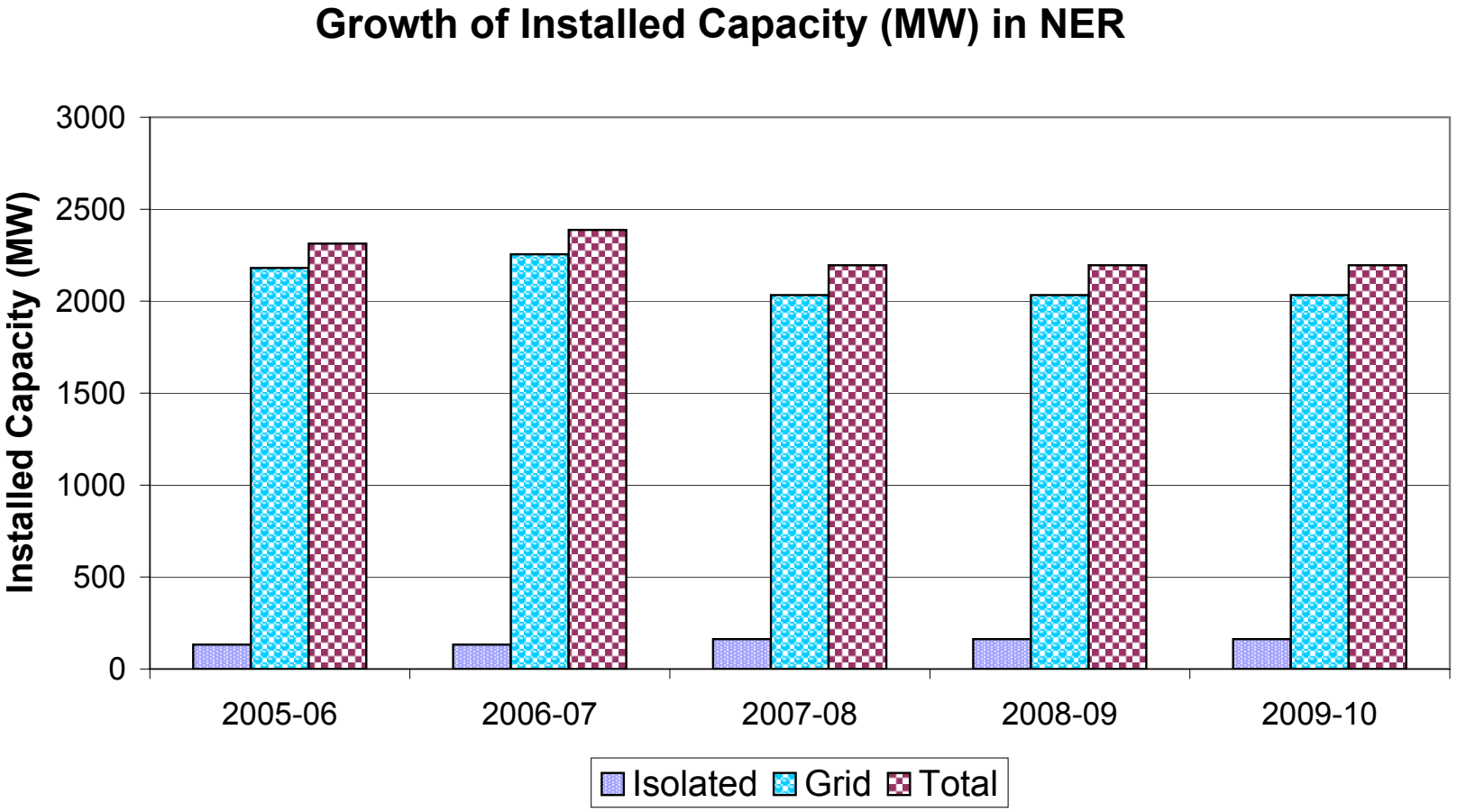

Growth of Installed Capacity (MW) in NER
Installed Capacity (MW)
3000
2500
2000
1500
1000
500
0
2005-06
2006-07
2007-08
2008-09
2009-10
Isolated
Grid
Total

Exhibit-IV

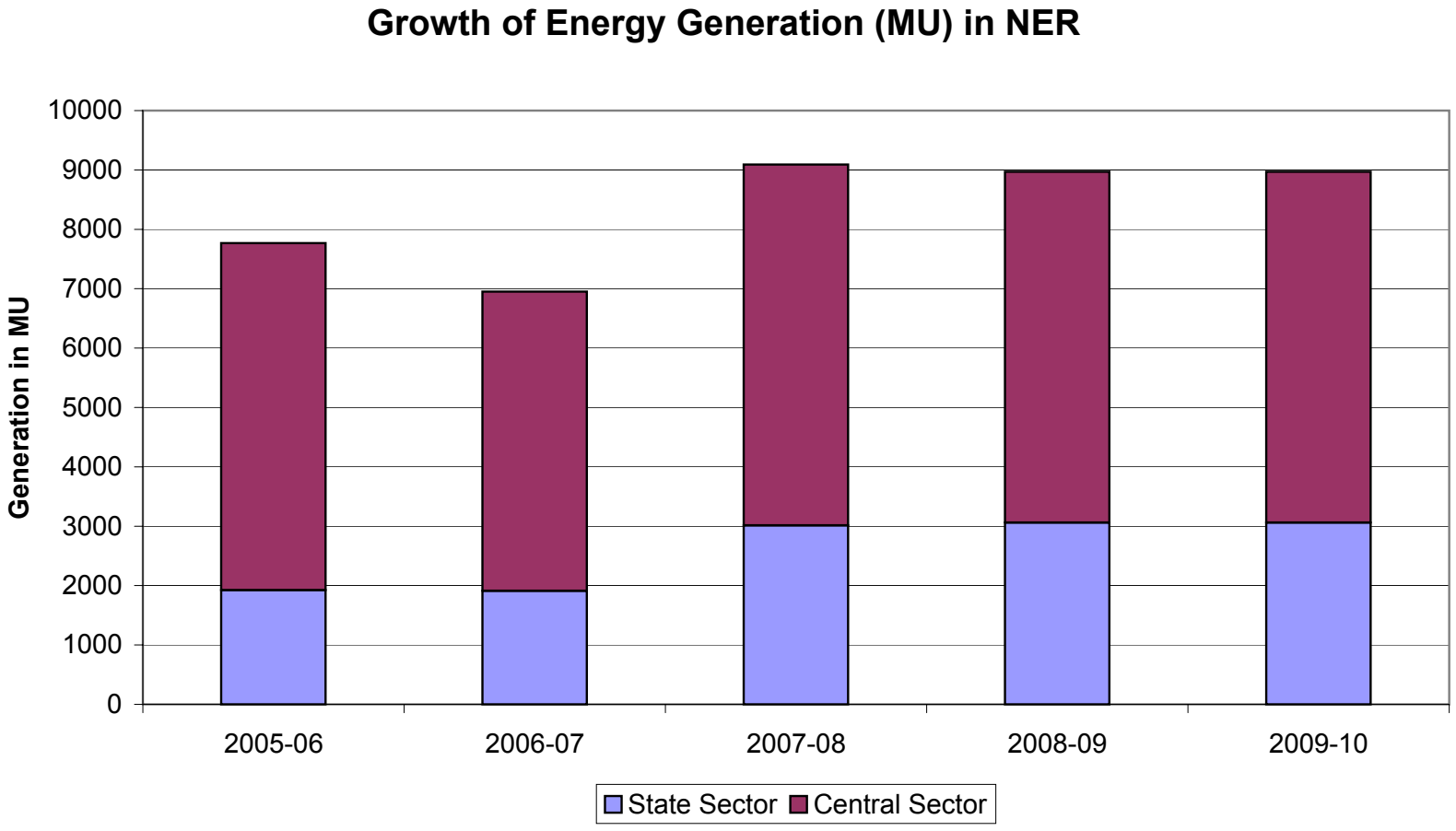
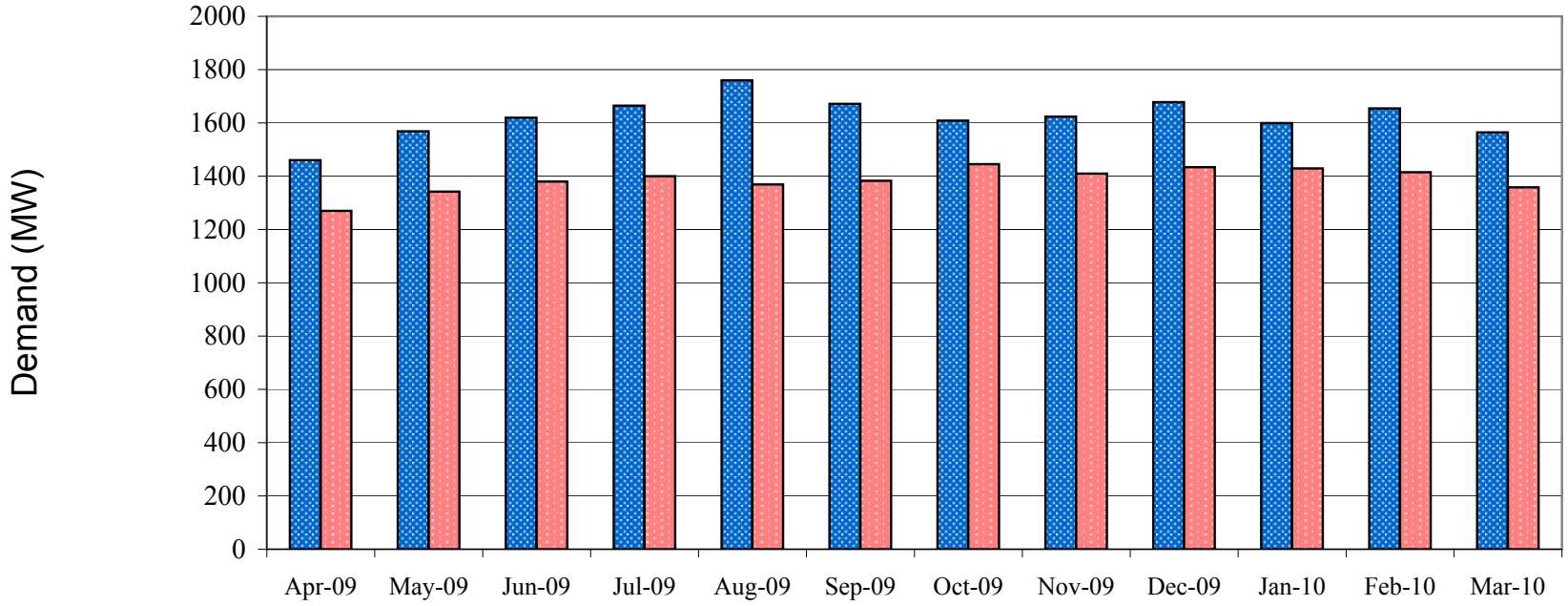

Growth of Energy Generation (MU) in NER
Generation in MU
10000
9000
8000
7000
6000
5000
4000
3000
2000
1000
0
2005-06
2006-07
2007-08
2008-09
2009-10
State Sector
Central Sector

Exhibit-V

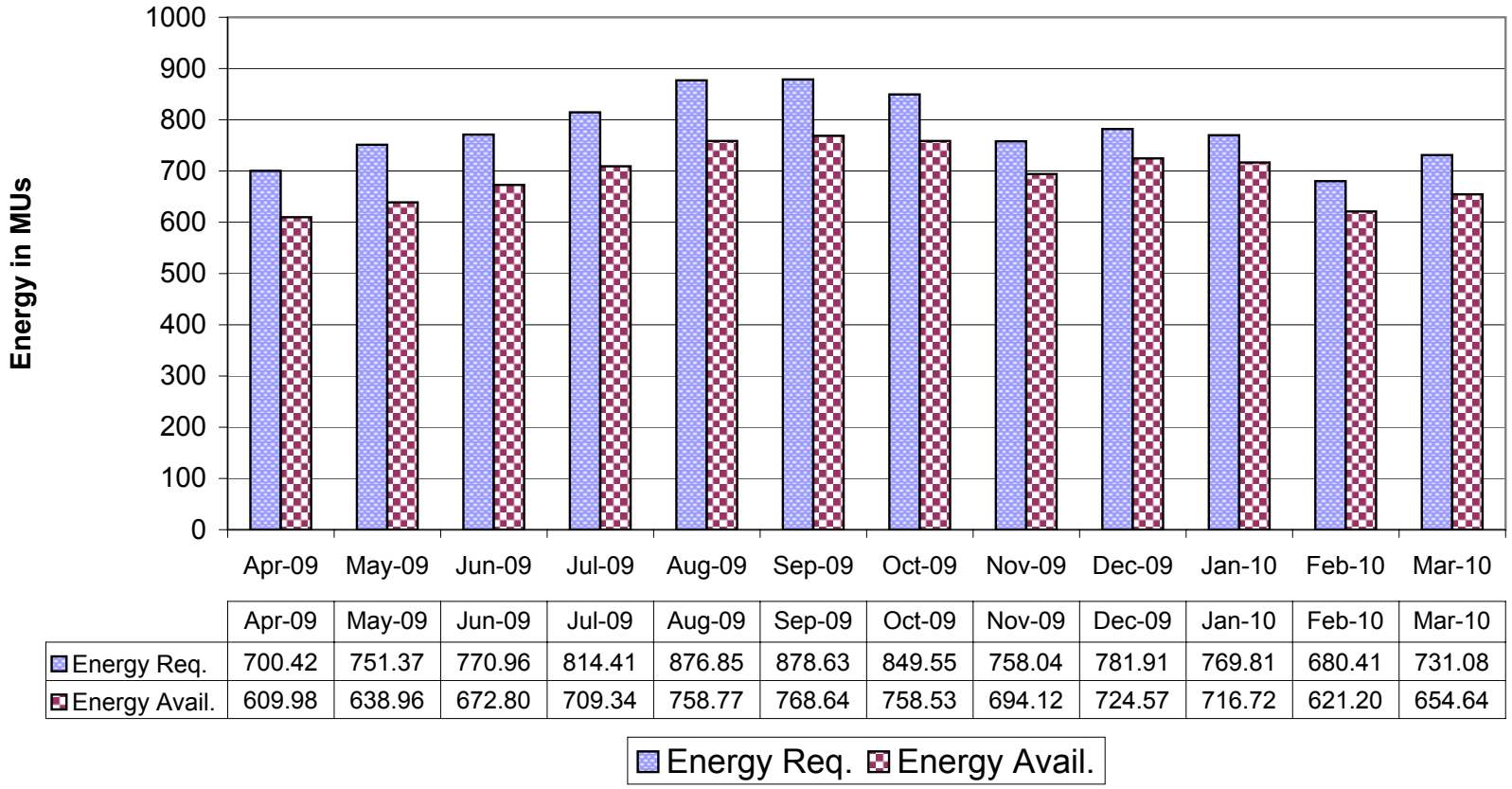
Peak Demand (MW) Vs Demand met (MW) during 2009-10



	Apr-09	May-09	Jun-09	Jul-09	Aug-09	Sep-09	Oct-09	Nov-09	Dec-09	Jan-10	Feb-10	Mar-10
Peak Demand(MW)	1460	1569	1620	1665	1760	1672	1609	1624	1678	1599	1654	1565
Demand met(MW)	1270	1342	1380	1400	1369	1383	1445	1410	1434	1429	1415	1358

Exhibit-VI

Monthwise Energy Requirement Vs Availability during 2009-10



	Apr-09	May-09	Jun-09	Jul-09	Aug-09	Sep-09	Oct-09	Nov-09	Dec-09	Jan-10	Feb-10	Mar-10
Energy Req.	700.42	751.37	770.96	814.41	876.85	878.63	849.55	758.04	781.91	769.81	680.41	731.08
Energy Avail.	609.98	638.96	672.80	709.34	758.77	768.64	758.53	694.12	724.57	716.72	621.20	654.64

Exhibit-VII

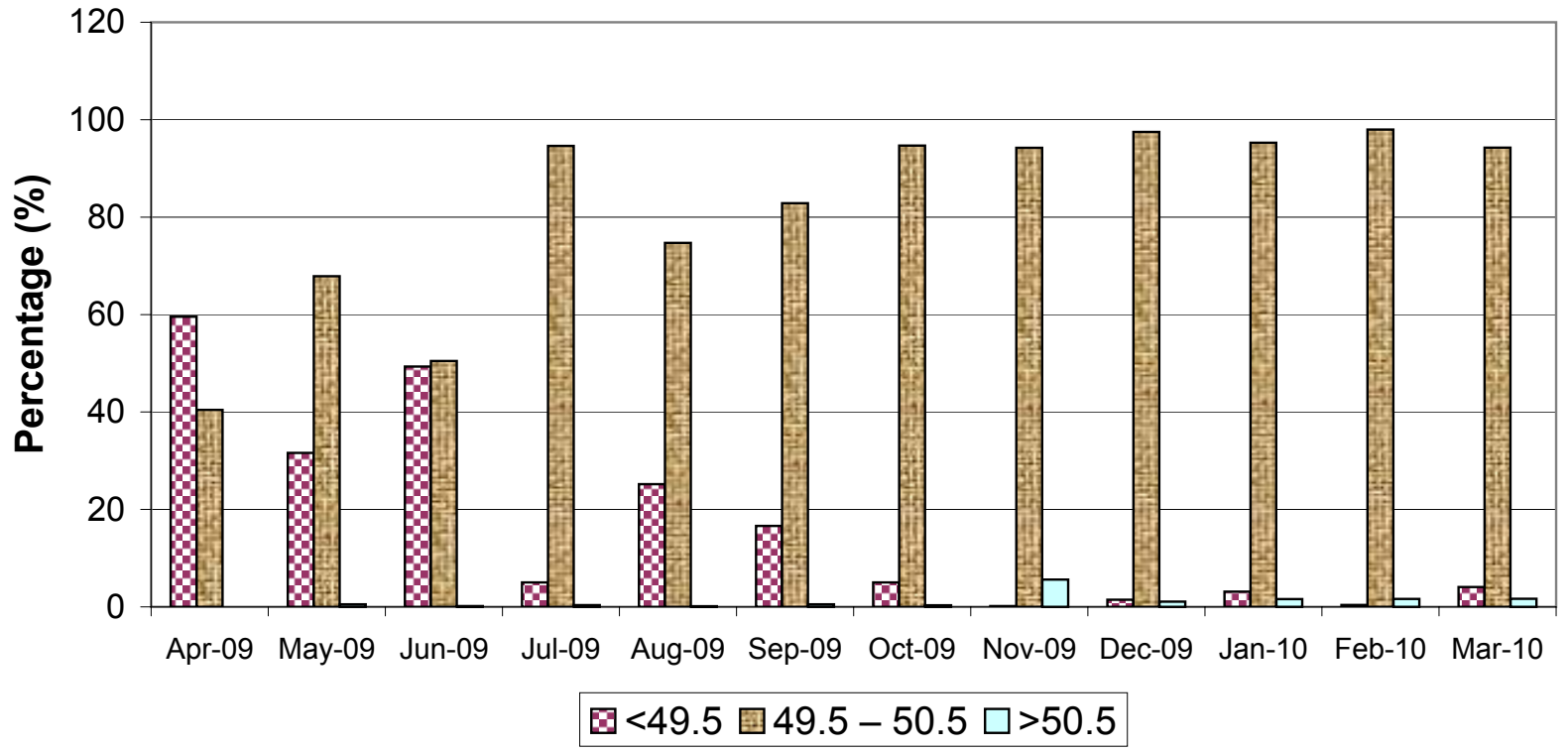

Frequency profile of NER Grid during 2009-10
Percentage (%)
120
100
80
60
40
20
0
Apr-09
May-09
Jun-09
Jul-09
Aug-09
Sep-09
Oct-09
Nov-09
Dec-09
Jan-10
Feb-10
Mar-10
<49.5
49.5 – 50.5
>50.5

Exhibit-VIII

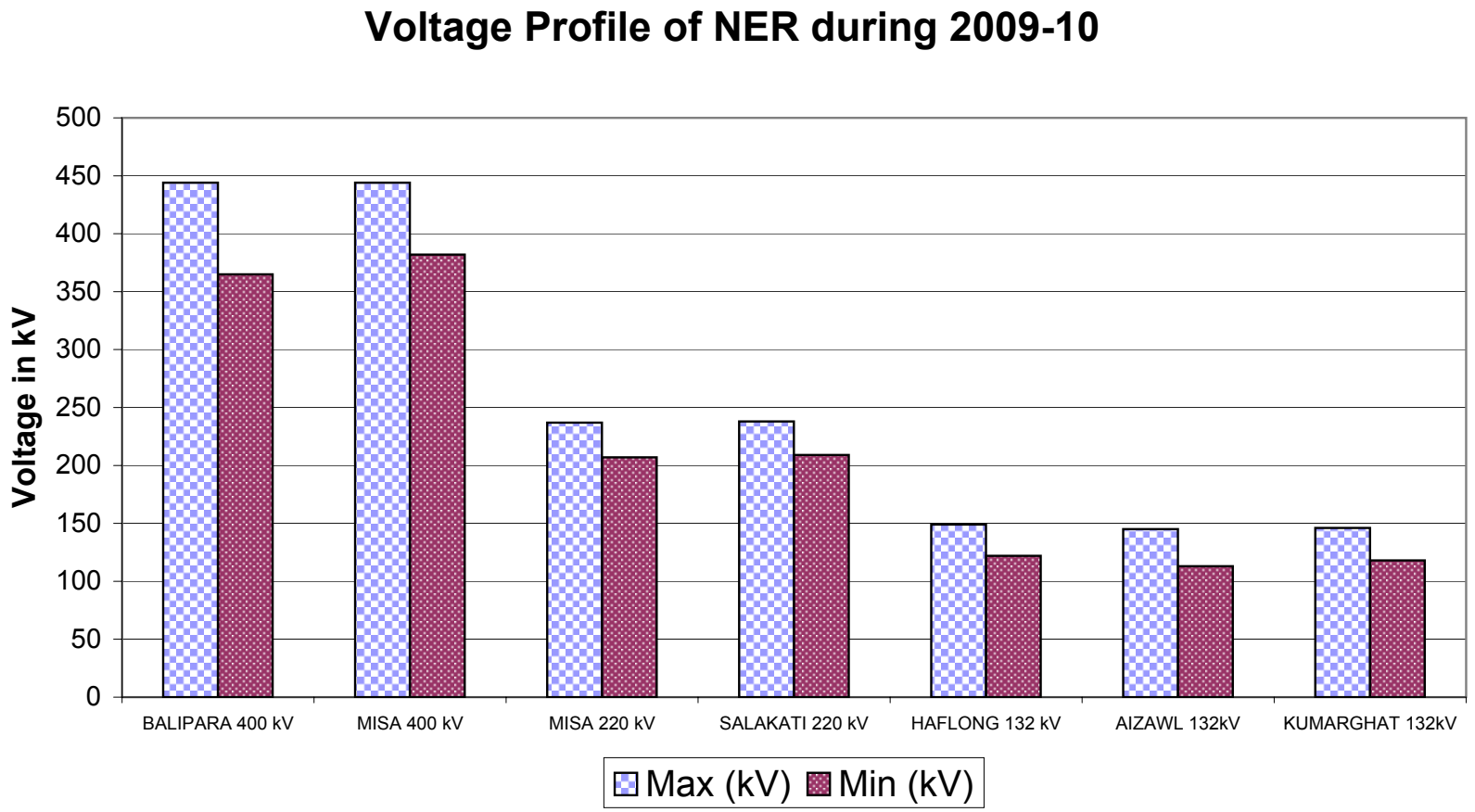


Exhibit-IX

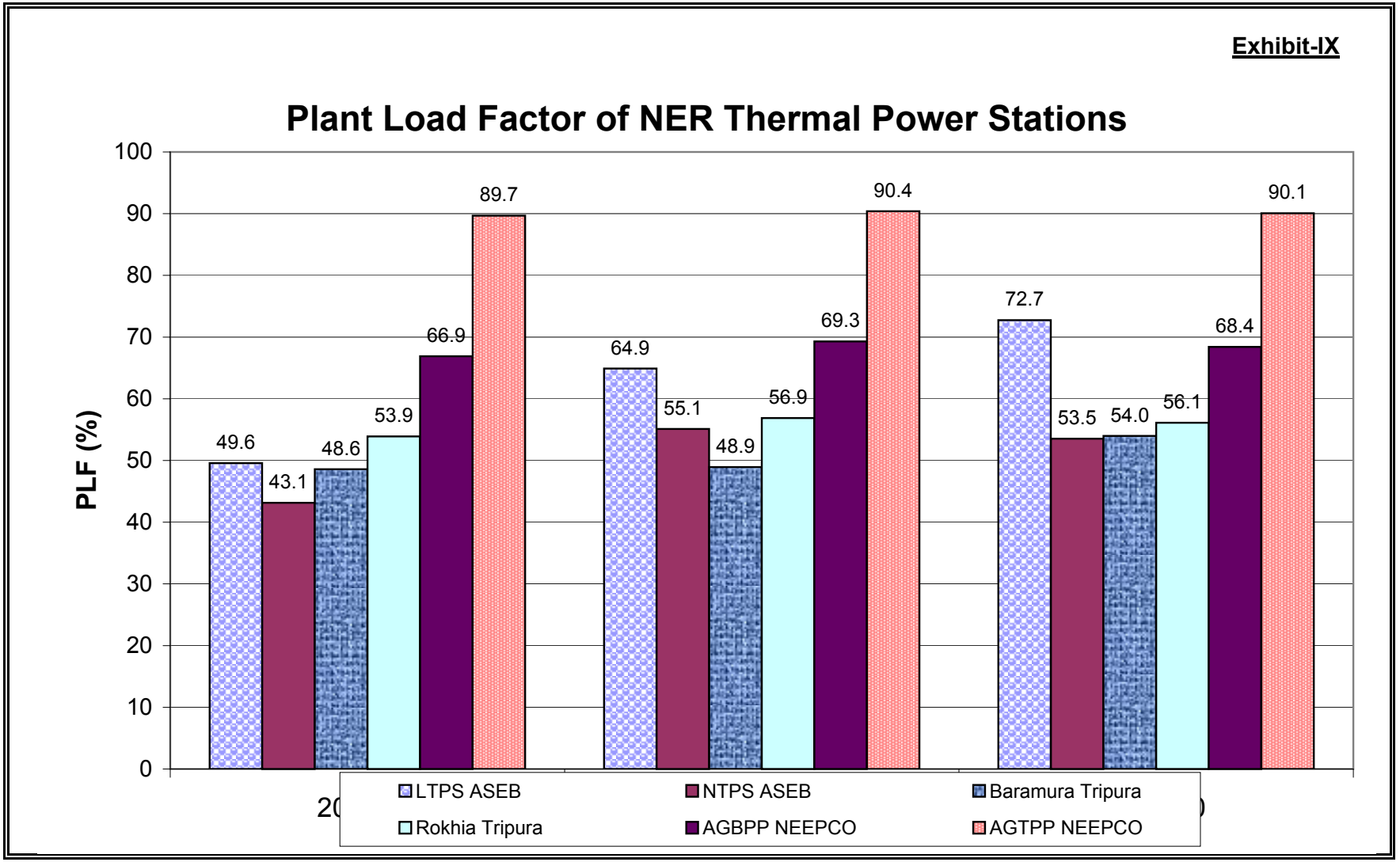

Plant Load Factor of NER Thermal Power Stations
PLF (%)
100
90
80
70
60
50
40
30
20
10
0
49.6
43.1
48.6
53.9
66.9
89.7
64.9
55.1
48.9
56.9
69.3
90.4
72.7
53.5
54.0
56.1
68.4
90.1
LTPS ASEB
NTPS ASEB
Baramura Tripura
Rokhia Tripura
AGBPP NEEPCO
AGTPP NEEPCO

Exhibit-X

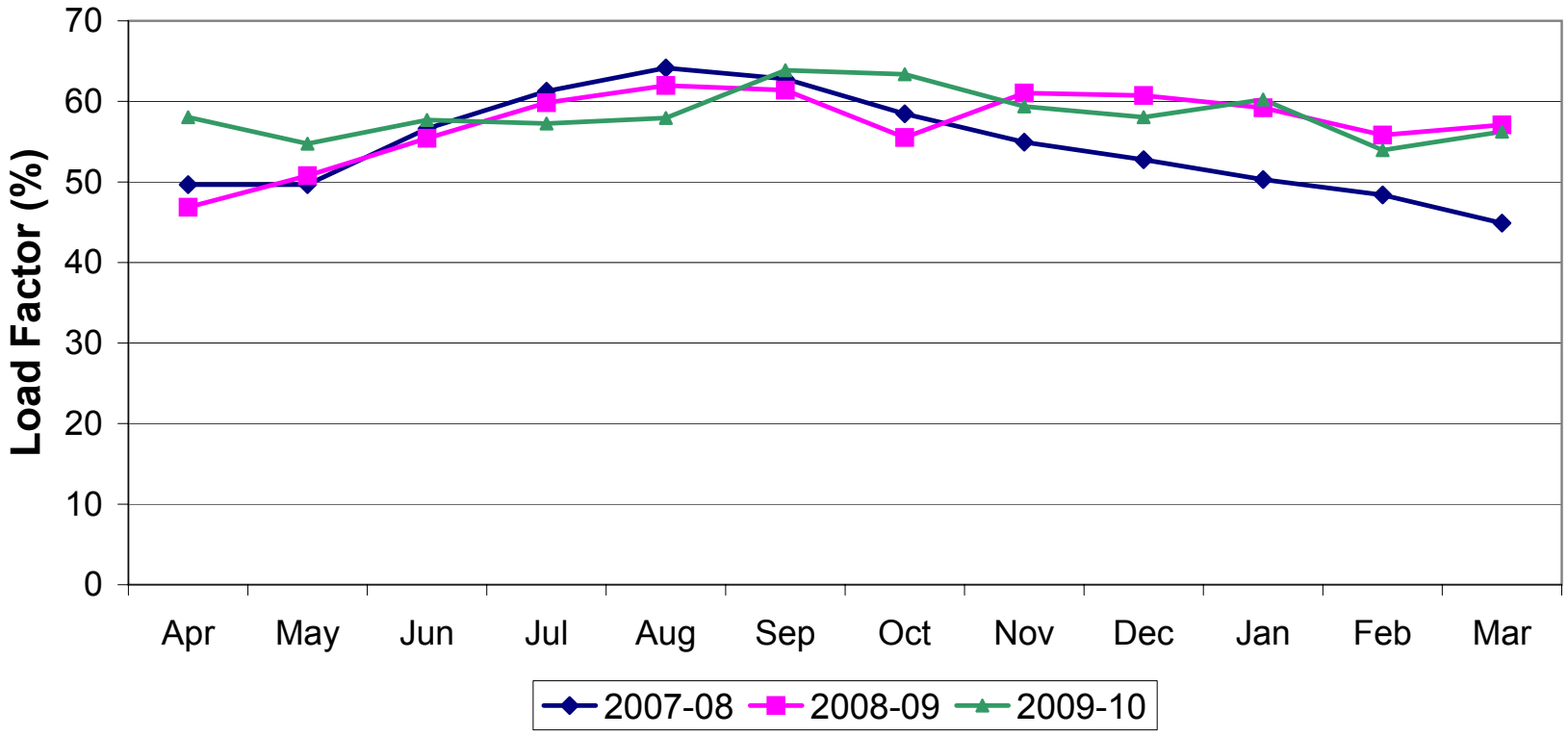
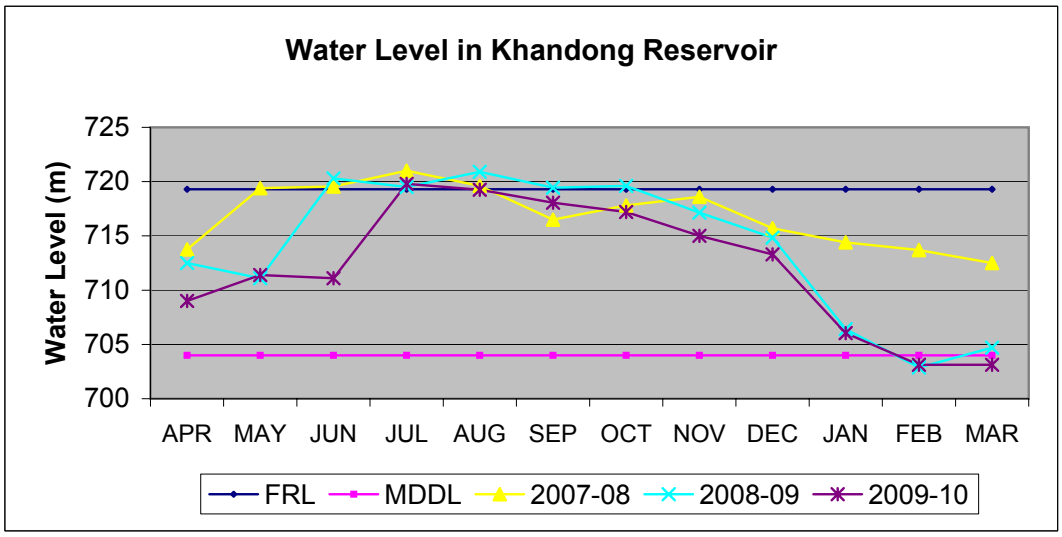
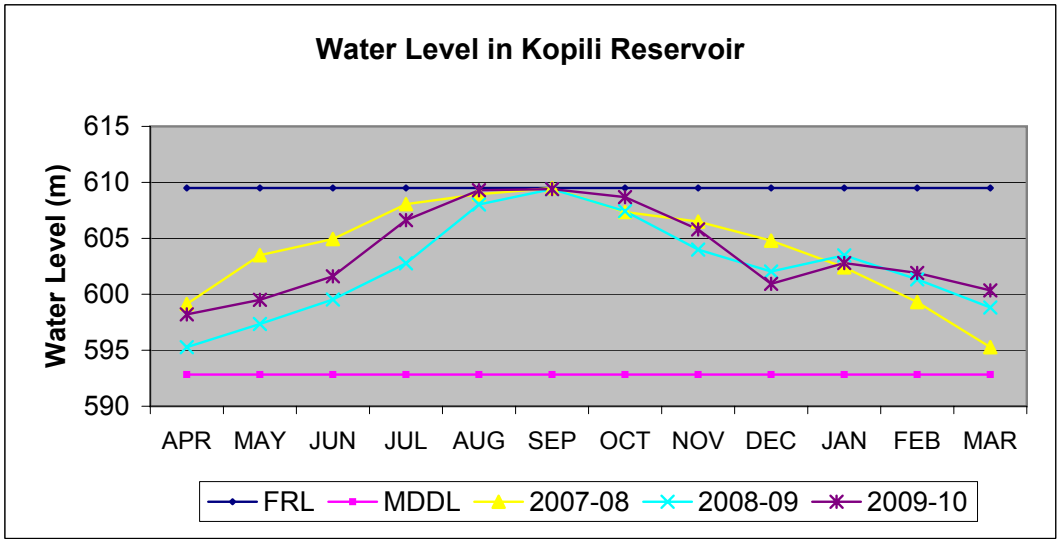
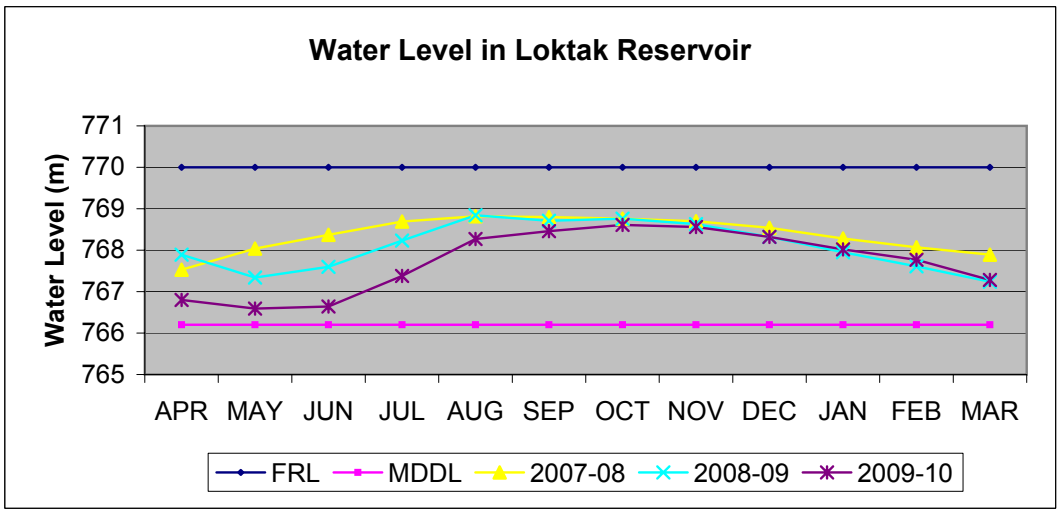
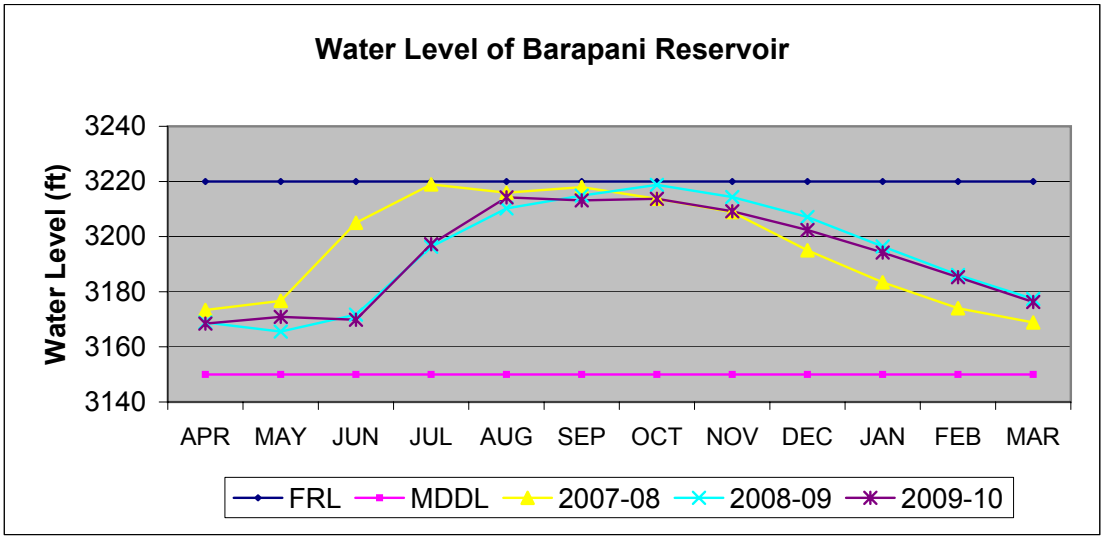

Annual Load Factor Curve of NER
Load Factor (%)
70
60
50
40
30
20
10
0
Apr
May
Jun
Jul
Aug
Sep
Oct
Nov
Dec
Jan
Feb
Mar
2007-08
2008-09
2009-10

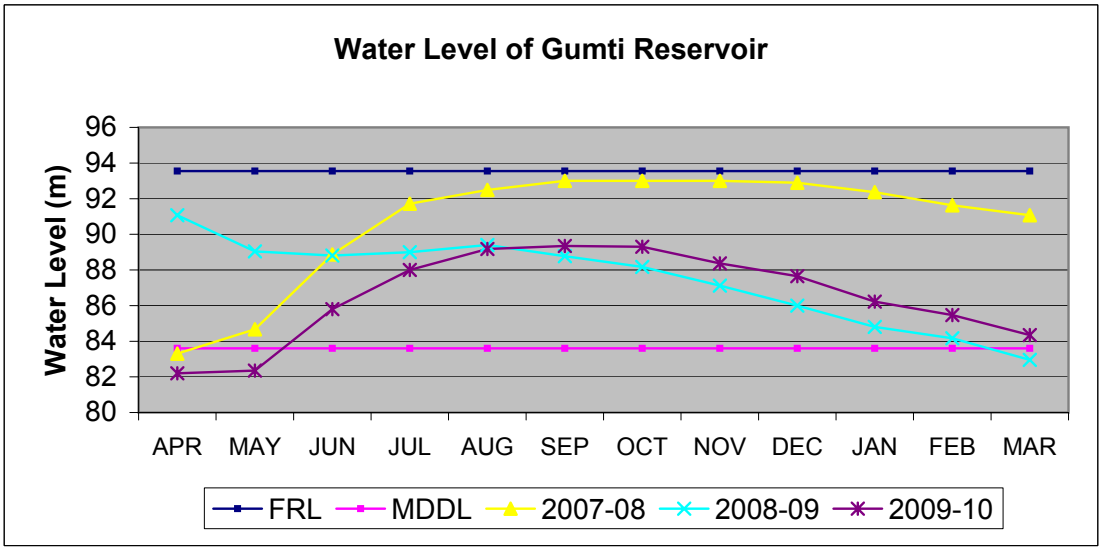
Exhibit-XI


Water Level in Khandong Reservoir
Water Level (m)
725
720
715
710
705
700
APR MAY JUN JUL AUG SEP OCT NOV DEC JAN FEB MAR
FRL MDDL 2007-08 2008-09 2009-10


Water Level in Kopili Reservoir
Water Level (m)
615
610
605
600
595
590
APR MAY JUN JUL AUG SEP OCT NOV DEC JAN FEB MAR
FRL MDDL 2007-08 2008-09 2009-10


Water Level in Loktak Reservoir
Water Level (m)
771
770
769
768
767
766
765
APR MAY JUN JUL AUG SEP OCT NOV DEC JAN FEB MAR
FRL MDDL 2007-08 2008-09 2009-10


Water Level of Barapani Reservoir
Water Level (ft)
3240
3220
3200
3180
3160
3140
APR MAY JUN JUL AUG SEP OCT NOV DEC JAN FEB MAR
FRL MDDL 2007-08 2008-09 2009-10


Water Level of Gumti Reservoir
Water Level (m)
96
94
92
90
88
86
84
82
80
APR MAY JUN JUL AUG SEP OCT NOV DEC JAN FEB MAR
FRL MDDL 2007-08 2008-09 2009-10

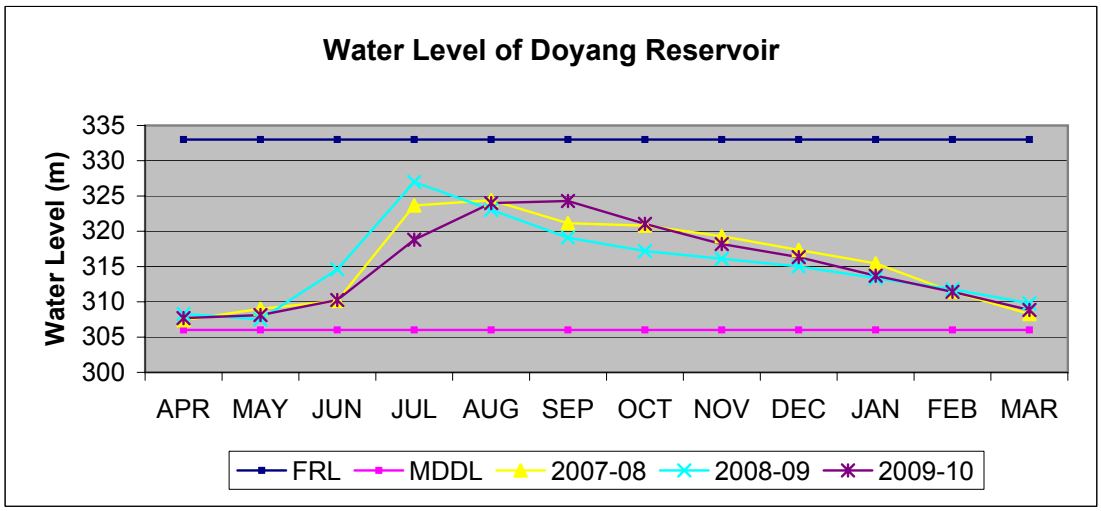

Water Level of Doyang Reservoir
Water Level (m)
335
330
325
320
315
310
305
300
APR MAY JUN JUL AUG SEP OCT NOV DEC JAN FEB MAR
FRL MDDL 2007-08 2008-09 2009-10

Exhibit-XII

Energy Content of Reservoirs during 2009-10