

## **RENOVATION, MODERNISATION & UPRATING OF HYDRO ELECTRIC POWER PROJECTS**

For optimization of resources and to tide over the shortage of electricity in the country, Renovation & Modernisation, Life Extension and Uprating (RM&U) of the existing old hydro electric power projects is considered a cost effective option to ensure efficiency, better availability and also to augment capacity addition.

Recognising the benefits of the R&M of hydroelectric power projects, Govt. of India set up a National Committee in 1987 and a Standing Committee in 1998 thereafter and have identified the projects/schemes to be taken up for implementation under R&M. The National Perspective Plan document for R&M of hydro electric power projects in the country was also prepared in C.E.A. during the year 2000, incorporating the status of various projects/schemes already identified for implementation/completion till the end of XIth Plan, i.e. March, 2012.

Under the hydro R&M programme, 65 (15 in Central and 50 in State Sector) hydro R&M schemes (13 upto the VIIIth Plan, 20 in the IXth Plan & 32 in the Xth Plan) with an aggregate installed capacity of 10511 MW at a cost of Rs. 1726 crores have been completed by the end of the Xth Plan (i.e by 31<sup>st</sup> March 2007) & have accrued a benefit of 2351 MW through Life Extension, Uprating and Restoration.

During the XI Plan, 21 schemes with an installed capacity of 6173 MW at an estimated cost of Rs.530 crore were planned to accrue benefit of about 826 MW. Out of these 21 schemes, 17 schemes (4 in central sector & 13 in state sector) with an installed capacity of 4803 MW at a cost of about Rs.239 Crore were completed till March, 2012 and have accrued a benefit of 715 MW through Life Extension, Uprating and Restoration. In addition, one scheme namely Umium St-II (18 MW) of MeECL, scheduled during XII Plan, was completed during 2011-12. Thus, during XI plan, a total of 18 hydro R&M schemes (4 in central sector & 14 in state sector) with an installed capacity of about 4821 MW at a cost of about Rs.295 Crore have been completed and have accrued a benefit of 735 MW through Life Extension, Uprating and Restoration. The remaining 4 schemes of XI Plan namely Bassi (64.5 MW) HP, Lower Sileru (460 MW) AP, Nagarjuna Sagar (815.6 MW) AP and Nagjhari Units 4-6 (435 MW) Karnataka will be completed in XII plan.

Considering above changes, during XII Plan a total of 43 hydro R&M schemes (5 in Central Sector and 38 in State Sector) having an installed capacity of about 6668 MW at an estimated cost of about Rs.4433 Crores which will accrue benefit of about 3773 MW through uprating, life extension and restoration are planned for implementation. One scheme of MeECL namely Umium St.III (Kyrdemkulai) shall be taken up in XII plan and will accrue benefit of 66 MW (6 MW uprating & 60 MW-LE) during XIII plan.

Plan-wise summary of R&M of H.E. projects starting from IX plan is enclosed.

*Note: Installed capacity, Benefit & cost figures are rounded to nearest zero.*

## Summary of R&M of Hydro Projects

(As on 31.03.2012)

### I Hydro R&M schemes completed up to XIth Plan

Sl. No	Plan Period	No. of Projects			Installed Capacity (MW)	Estimated Cost (Rs. in Crs.)	Actual Expenditure (Rs. in Crs.)	Benefit (MW)
		Central Sector	State Sector	Total				
1.	IXth Plan Schemes completed	8	12	20	4892.10	597.84	570.16	1093.03 [339.00(U) + 331.03(Res.) + 423.00(LE)]
2.	Xth Plan Schemes completed	5	27	32	4336.60	1016.31	1028.97	829.08 [123.40(U) + 701.25 (LE) + 4.43(Res.)]
3.	XIth Plan Schemes completed	4	14	18	4821.20	412.83	294.84	735 [12 (U) + 15 (LE) + 708 (Res.)]

### II Candidate Hydro R&M schemes for XIIth Plan

Sl. No	Plan Period	No. of Projects			Installed Capacity (MW)	Estimated Cost (Rs. in Crs.)	Actual Expenditure (Rs. in Crs.)	Benefit (MW)
		Central Sector	State Sector	Total				
a)	Programmed	5	38	43	6667.75	4433.67	994.72	3773.25 [266.05(U) + 3492.20(LE) + 15.00(Res.)]
a)	Ongoing	4	16	20	4683	1932	966	1977.00 [208.00(U) + 1754.00(LE) + 15.0(Res.)]
b)	Under Tendering	1	14	15	1340.75	2189.41	28.73	1377.55 [42.80(U) + 1334.75(LE) ]
c)	Under DPR Finalisation	-	5	5	304	252	0.04	319.00 [15.25(U) + 303.75(LE)]
d)	Under RLA Studies	-	3	3	340.00	59.94	-	100.00 [100.00(LE) ]

**Abbreviations:**

MW – Mega Watt;

Res. – Restoration;

U – Uprating;

LE – Life Extension

## State wise List of Hydro RM&amp;U schemes completed upto the VIIIth Plan

. No	Project, Agency	CS/SS	Inst. Cap. (MW)	Est. Cost	Actual Exp.	Benefits (MW)	Category	Year of Completion
				(Rs. in Crs.)				
<b>Himachal Pradesh</b>								
1.	Bairasiul, NHPC	CS	3x60	25.98	25.98	18.00 (U)	RM&U	1991-92
2.	Giri, HPSEB	SS	2x30	9.85	7.90	6.00 (U)	RM&U	1995-96
<b>Punjab</b>								
3.	UBDC-I, PSEB	SS	3x15	11.00	8.00	11.00 (Res)	R&M+Res.	1990-92
<b>Uttar Pradesh</b>								
4.	Rihand, UPJVNL	SS	6x50	1.43	1.43	100.00 (Res)	R&M+Res.	1995-96
<b>Karnataka</b>								
5.	Nagjhari, U-2, KPCL	SS	1x135	11.97	11.32	15.00 (U)	RM&U	1995-96
6.	Shivasamudram, VVNL	SS	6x3 + 4x6	8.00	8.00	18.00 (LE)	RM&LE (3 MW Units)	N.A.
<b>Kerala</b>								
7.	Sholayar, KSEB	SS	3x18	7.58	7.58	-	R&M	1996-97
<b>Tamil Nadu</b>								
8.	Kadamparai (Units 3&4), TNEB	SS	2x100	23.17	33.69	200.00 (Res)	R&M+Res.	1993-95
9.	Kundah III (Units 1&2), TNEB	SS	2x60	5.45	3.20	-	R&M	1991-92
10.	Moyar, TNEB	SS	3x12	1.62	1.30	36.00 (LE)	RM&LE	1990-91
11.	Sholayar-I, TNEB	SS	2x35	1.40	0.85	-	R&M	1994-95
<b>Meghalaya</b>								
12.	Khandong, U-1, NEEPCO	CS	1x25	0.62	0.62	25.00 (Res)	R&M+Res.	1991-92
<b>Tripura</b>								
13.	Gumti, TSECL	SS	3x5	17.50	17.50	-	R&M	1994-95
	<b>Total</b>		<b>1282.00</b>	<b>125.57</b>	<b>127.37</b>	<b>429.00</b> <b>[39.0 (U) + 336.0 (Res) + 54.0(LE)]</b>		

Abbreviations: R&M – Renovation & Modernisation; U – Uprating; LE – Life Extension; Res – Restoration; MW – Mega Watt; CS-Central Sector; SS- State Sector

**State wise List of Hydro RM&U schemes completed in the IXth Plan**

S. No	Project, Agency	CS/SS	Inst. Cap. (MW)	Est. Cost	Actual Exp.	Benefits (MW)	Category	Year of Completion
				(Rs. in Crs.)				
<b>Himachal Pradesh</b>								
1.	Bhakra RB, BBMB	CS	5x132	88.45	90.68	125.00 (U)	RM&U	2000-01
2.	Dehar U-2, BBMB	CS	1x165	10.74	10.74	25.00 (Res.)	R&M+Res.	1998-99
3.	Bairasiul, NHPC	CS	3x66	18.45	18.45	-	R&M	2000-01
4.	Bassi, HPSEB	SS	4x15	5.35	4.3446	-	R&M	2000-01
<b>Jammu &amp; Kashmir</b>								
5.	Salal St.I, NHPC	CS	3x115	51.50	51.50	-	R&M	2000-01
6.	Chenani, J&KPDC	SS	5x4.66	11.00	11.00	0.93 (Res)	R&M+Res.	2000-01
<b>Punjab</b>								
7.	Ganguwal, U-2, BBMB	CS	1x24.2	18.90	15.00	22.00 (LE)+ 2.20 (Res)	RM&LE+ Res.	1997-98
8.	Kotla, U-3, BBMB	CS	1x24.2	18.90	16.90	22.00 (LE)+ 2.20 (Res)	RM&LE+ Res.	1998-99
9.	Ganguwal U-3, BBMB	CS	1x24.2	25.00	43.40	22.00 (LE)+ 2.20 (Res)	RM&LE+ Res.	2000-01
10	Kotla U-2, BBMB	CS	1x24.2	25.00		22.00 (LE)+ 2.20 (Res)	RM&LE+ Res.	2001-02
<b>Uttarakhand</b>								
11	Chilla U-1, 3&4, UJVNL	SS	3x36	4.25	4.1136	-	R&M	1998-99
12	Tiloth, UJVNL	SS	3x30	8.02	5.513	6.00 (U)	RM&U	1998-99
<b>Andhra Pradesh</b>								
13	Lower Sileru, APGENCO	SS	4x115	13.35	9.30	24.00 (Res)	R&M+Res.	2001-02
14	Srisailam, APGENCO	SS	7x110	16.32	11.40	-	R&M	2001-02
<b>Karnataka</b>								
15	Sharavathy, U-1 to 8, KPCL	SS	8x89.1	65.00	63.49	178.20 (Res) + 115.20 (U)	RM&U +Res.	1997-98
16	Sharavathy, U-9&10, KPCL	SS	2x89.1	17.96	14.68	19.10 (Res) + 28.80(U)	RM&U +Res.	1997-98
<b>Orissa</b>								
17	Hirakud-I, U1&2, OHPC	SS	2x37.5	95.10	95.10	24.00(U) + 75.00(LE)	RMU&LE	1997-98

S. No	Project, Agency	CS/ SS	Inst. Cap. (MW)	Est. Cost	Actual Exp.	Benefits (MW)	Category	Year of Completion
				(Rs. in Crs.)				
<b>Gujarat</b>								
18	Ukai, U-1&3, GSECL	SS	2x75	24.99	24.99	75.00 (Res)	R&M+Res.	1997-98
<b>Maharashtra</b>								
19	Koyna I&II, MSPGCL	SS	4x65+4x75	74.91	74.91	40.00 (U) + 260.00 (LE)	RM&U of St-I & II & LE of St-I	1999-2000
20	Koyna III, U-10, 11 &12, MSPGCL	SS	3x80	4.65	4.65	-	R&M	1997-98
	<b>Total</b>		<b>4892.10</b>	<b>597.84</b>	<b>570.16</b>	<b>1093.03</b> <b>[339.0(U) + 331.03(Res) +423.0(LE)]</b>		

Abbreviations: R&M – Renovation & Modernisation;. U – Uprating; LE – Life Extension; Res – Restoration; MW – Mega Watt; CS-Central Sector; SS- State Sector

## State wise List of Hydro RM&amp;U schemes completed in the Xth Plan

S. No	Project, Agency	CS/SS	Inst. Cap. (MW)	Est. Cost	Actual Exp.	Benefits (MW)	Category	Year of completion
				(Rs. in Crs.)				
<b>Himachal Pradesh</b>								
1.	Pong, BBMB	CS	6x60	17.70	17.79	36.00 (U)	RM&U	2003-04
<b>Punjab</b>								
2.	Ganguwal,U-1, BBMB	CS	1x29.25	51.28 (incl. IDC 6.28)	81.9935	25.89 (LE) +2.10 (Res)	RM&LE+Res.	2006-07
3.	Kotla, U-1, BBMB	CS	1x29.25	51.28 (incl. IDC 6.28)		26.61 (LE) +2.33 (Res)	RM&LE + Res.	2006-07
4.	Shanan Ph.A, PSEB	SS	4x15+ 1x50 \$	11.35	10.93	-	R&M	2003-04
5.	Shanan, Ph.B, PSEB	SS	4x15+ 1x50 \$	35.95	13.34	60.00 (LE)	RM&LE (LE for 15 MW units + R&M for 50 MW unit )	2006-07
6.	Anandpur Sahib, PSEB	SS	4x33.5	3.68	1.04	-	R&M	2006-07
7.	UBDC I&II, PSEB	SS	3x15 + 3x15.45	7.89	2.44	45.00 (LE)	RM&LE (LE for 3x15 MW & R&M for 3 x 15.45 MW	2006-07
8.	Mukerian St.I, PSEB	SS	3x15	6.04	4.38	-	R&M	2006-07
<b>Uttarakhand</b>								
9.	Chibro, UJVNL	SS	4x60	10.45	10.52	-	R&M	2006-07
<b>Karnataka</b>								
10.	Nagjhari, U-1&3, KPCL	SS	2x135	26.12	21.62	30.00 (U)	RM&U	2002-03
11.	Supa PH, KPCL	SS	2x50	2.64	2.47	-	R&M	2002-03

S. No	Project, Agency	CS/SS	Inst. Cap. (MW)	Est. Cost	Actual Exp.	Benefits (MW)	Category	Year of Completion
				(Rs. in Crs.)				
12	Mahatma Gandhi, VVNL	SS	4x12+4x18	44.66	43.13	19.20 (U)+120.00 (LE)	RMU&LE	2002-03
13	Munirabad, VVNL	SS	2x9+1x10.3	3.64	3.53	28.30 (LE)	RM&LE	2002-03
14	Mani Dam, KPCL	SS	2x4.5	1.00	1.00	-	R&M	2002-03
15	Shivasamudram, VVNL	SS	6x3+4x6	68.38	73.17	42.00 (LE)	RM&LE	2004-05
16	Bhadra, Ph.II, KPCL	SS	1x2	3.30	2.51	2.00 (LE)	RM&LE	2005-06
17	Varahi, KPCL	SS	2x115	2.57	2.66	-	R&M	2006-07
18	Sharavathy, Ph.A, KPCL	SS	10x103.5	5.22	3.52	-	R&M	2006-07
<b>Kerala</b>								
19	Neriamangalam KSEB	SS	3x15	58.00	53.05	45.00 (LE) + 9.00 (U)	RMU&LE	2006-07
20	Pallivasal, KSEB	SS	3x5+3x7.5	94.00	371.71	37.50 (LE)	RM&LE	2002-03
21	Sengulam, KSEB	SS	4x12	114.00		48.00 (LE)	RM&LE	2002-03
22	Panniar, KSEB	SS	2x15	62.00		30.00 (LE)	RM&LE	2002-03
<b>Tamilnadu</b>								
23	Pykara, TNEB	SS	3x6.65+1x11+2x14	26.06	20.147	58.95(LE)	RM&LE	2004-05
24	Papanasam, TNEB	SS	4x7	27.05	22.61	4.00 (U) + 28.00 (LE)	RMU&LE	2005-06
<b>Orissa</b>								
25	Hirakud-I (Sw.yard), OHPC	SS		9.85	15.88	-	R&M	2006-07
26	Hirakud-I, U-3&4, OHPC	SS	2x24	126.14	108.86	16.00(U)+48.00(LE)	RMU&LE	2005-06
<b>West Bengal</b>								
27	Maithon, U-2, DVC	CS	1x20	42.08	36.94	20.00(LE)+3.20(U)	RMU&LE	2004-05

S. No	Project, Agency	CS/SS	Inst. Cap. (MW)	Est. Cost	Actual Exp.	Benefits (MW)	Category	Year of completion
				(Rs. in Crs.)				
<b>Maharashtra</b>								
28	Bhira Tail Race, MSPGCL	SS	2x40	1.60	0.70	-	R&M	2003-04
29	Tillari, MSPGCL	SS	1x60	4.50	4.24	6.0 (U)	RM&U	2004-05
30	Koyna Gen. Complex, MSPGCL	SS	4x70+4x80+4x80	12.00	11.50	-	R&M	2004-05
<b>Meghalaya</b>								
31	Umium St.I MeSEB	SS	4x9	81.88	84.21	36.00 (LE)	RM&LE	2002-03
32	Khandong, NEEPCO	CS	2x25	4.00	3.3499	-	R&M	2003-04
	<b>Total</b>		<b>4336.60</b>	<b>1016.31</b>	<b>1028.9704</b>	<b>829.08 [123.40(U) +701.25 (LE) + 4.43(Res.)]</b>		

\$ - Installed Capacity of Shanan, Ph.B, at Sl. No. 5 not included in the total, as the same has already been accounted for at Sl. No. 4.

Abbreviations: R&M – Renovation & Modernisation; U – Uprating; LE – Life Extension; Res – Restoration; MW – Mega Watt; CS-Central Sector; SS- State Sector

State wise List of Completed/Ongoing Hydro RM&U schemes programmed for  
Implementation during the XIth Plan

As on 31.03.2012

S. No	Project, Agency	CS/SS	Inst. Cap. (MW)	Estimated Cost	Actual Expenditure	Benefits (MW)	Category	Completion Schedule
				(Rs. in Crs.)				
<b>Completed Schemes</b>								
<b>Himachal Pradesh</b>								
1.	Dehar Ph. A BBMB	CS	6x165	11.00	6.936		R&M	2010-11 Completed
2.	Dehar Ph. B BBMB	CS	6x165	49.00	24.454	330 (LE)	RM&LE	2009-10 Completed
<b>Uttarakhand</b>								
3	Tanakpur, NHPC	CS	3x31.4	10.77	11.95	-	R&M	2007-08 Completed
4	Khodri Ph.A UJVNL	SS	4x30	5.25	6.39	-	R&M	2008-09 Completed
5	Chilla Ph.A, UJVNL	SS	4x36	23.55	21.24	-	R&M	2008-09 Completed
<b>Andhra Pradesh</b>								
6	Upper Sileru, APGENCO	SS	4x60	4.20	3.34	-	R&M	2009-10 Completed
<b>Karnataka</b>								
7	Nagjhari, U1 to 6, KPCL	SS	5x150 + 1x135	14.75	15.31	-	R&M	2009-10 Completed
8	Sharavathy Ph.B, KPCL	SS	10x103.5	20.50	11.14	-	R&M	2009-10 Completed
9	Supa, KPCL	SS	2x50	3.45	4.90	-	R&M	2009-10 Completed
10	Bhadra, KPCL	SS	2x12	1.44	0.85	-	R&M	2009-10 Completed
11	Lingnamakki, KPCL	SS	2x27.5	3.81	2.62	-	R&M	2010-11 Completed
<b>Tamil Nadu</b>								
12	Mettur Dam, TNEB	SS	4x10	30.17	24.16	10 (U) + 40 (LE)	RMU&LE	2007-08 Completed
<b>Maharashtra</b>								
13	Koyna St.I & II, MSPGCL	SS	4x70 + 4x80	87.50	81.82	-	R&M	2008-09 Completed
14	Vaitarna, MSPGCL	SS	1x60	16.00	0.14	-	R&M	2009-10 Completed
15	Koyna Dam PH, MSPGCL	SS	2x18	5.78	0.25	-	R&M	2009-10 Completed
16	Koyna St.III, MSPGCL	SS	4x80	16.65	5.79	320 (LE)	RM&LE	2011-12 Completed
<b>Manipur</b>								

17.	Loktak, NHPC	CS	3x30 derated	18.55	17.88	15.00 (Res.)	R&M + Res.	2011-12 Complete d
<b>Meghalaya</b>								
18	Umium St.II , MeSEB	SS	2x9	90.46	55.67 (as on 31.03.1 2)	2(U)+ 18.00 (LE)	RM&LE	2011-12
	<b>Total</b>		<b>4821.20</b>	<b>412.83</b>	<b>294.84</b>	<b>735</b> <b>[12.00(U)</b> <b>+</b> <b>708.00</b> <b>(LE)</b> <b>+</b> <b>15.0(Res)</b>		

Abbreviations: R&M – Renovation & Modernisation;. U – Uprating; LE – Life Extension; Res – Restoration; MW – Mega Watt; CS-Central Sector; SS- State Sector

## State wise List of Hydro RM&amp;U schemes for completion in the XIIth Plan

As on 31.03.2012

S. No	Project, Agency	CS/ SS	Inst. Cap. (MW)	Est. Cost (Prov.)	Actual Exp.	Benefits (MW)	Category	Year of Completion
				(Rs. in Crs.)				
<b>Ongoing Schemes – Under implementation</b>								
<b>Himachal Pradesh</b>								
1	Bhakra LB, BBMB	CS	5x108	489.77	222.15 (as on 31.03.12)	540.00 (LE) + 90.00 (U)	RMU&LE	2014-15
2	Bassi, HPSEB	SS	3x16.5+ 1x15	119.83	109.97 (as on 31.03.12)	6.0(U)+ 60 (LE)	RMU&LE	2012-13
<b>Jammu &amp; Kashmir</b>								
3	Chenani, J&KPDC	SS	5x4.66	39.14	3.98 (as on 31.03.12)	23.30 (LE)	RM&LE	2013-14
4	Sumbal Sindh, J&KPDC	SS	2x11.3	34.17	18.89 (as on 31.03.12)	-	R&M	2012-13
5	Lower Jhelum, J&KPDC	SS	3x35	101.30	78.25 (as on 31.03.12)	15.00 (Res.)	R&M+ Res.	2012-13
<b>Uttar Pradesh</b>								
6	Obra, UPJVNL	SS	3x33	43.14	12.7 (as on 31.03.12)	99.00 (LE)	RM&LE	2015-16
7	Rihand, UPJVNL	SS	6x50	132.20 (Rev.)	62.62 (as on 31.03.12)	300.00 (LE)	RM&LE	2015-16
<b>Uttarakhand</b>								
8	Pathri, UJVNL	SS	3x6.8	92.82	13.8 (as on 31.03.12)	20.40 (LE)	RM&LE	2013-14
<b>Andhra Pradesh</b>								
9	Srisailem RB, APGENCO	SS	7x110	16.70	13.36 (as on 31.03.12)	-	R&M	2012-13
10	Lower Sileru, APGENCO	SS	4x115	8.75	6.66 (as on 31.03.12)	-	R&M	2012-13
11	Nagarjuna Sagar, APGENCO	SS	1x110+ 7x100.8	33.35	13.90 (as on 31.03.2012)	-	R&M	2012-13
<b>Karnataka</b>								
12	Nagihari, U-4to6, KPCL	SS	2x150+ 1x135	45.22	51.99 (as on 31.03.12)	45.00 (U)	RM&U	2013-14
<b>Kerala</b>								
13	Sabirigiri, KSEB	SS	5x55+	104.36	96.95	300.00	RMU&LE	2012-13

			1x60		(as on 31.03.12)	(LE) + 35.00(U)		
14	Idamalayar, KSEB	SS	2x37.5	11.70	5.45 (as on 31.03.12)	-	R&M	2012-13
15	Poringal- kuthu,KSEB	SS	4x8	96.10	2.34 (as on 31.03.12)	32.00 (LE)+ 4 (U)	RM&LE	2015-16
<b>Tamil Nadu</b>								
16	Periyar,TNEB	SS	3x35+ 1x42	161.18	114.28 (as on 31.03.12)	140.00 (LE) + 28.00(U)	RMU&LE	2013-14
<b>West Bengal</b>								
17	Maithon, U-1&3, DVC	CS	2x20	49.05	3.76 (as on 31.03.12)	40.00 (LE)	RM&LE	2016-17
18	Jaldhaka St.I, WBSEB	SS	3x9	88.62	74.28 (as on 31.03.12)	27.00(LE)	RM&LE	2012-13
<b>Orissa</b>								
19	Rengali OHPC	SS	1x50	47.50	14.67 (as on 31.03.12)	50(LE)	RM&LE	2012-13
20	Hirakud-II, OHPC	SS	3x24	125.52	58.73 (as on 31.03.12)	72.00 (LE)	RM&LE	2014-15
<b>Assam</b>								
21	Kopili, NEEPCO	CS	2x50 + 2x50	66.42	9.25 (as on 31.03.12)	-	R&M & Refurbishme nt of Units 1 & 2	2013-14
22	Khandong, NEEPCO	CS	2x25	25.05	10.15 (as on 31.03.12)	50.00 (LE)	RM&LE	2014-15
	<b>Sub Total(A)</b>		<b>4683</b>	<b>1932</b>	<b>966</b>	<b>1977</b>		
<b>Ongoing Schemes – Under Tendering</b>								
<b>Jammu &amp; Kashmir</b>								
23	Ganderbal, J&KPDC	SS	2x3+ 2x4.5	21.95	8.23 (as on 31.03.12)	9.00 (LE)	RM&LE	2016-17
<b>Uttar Pradesh</b>								
24	Matatila, UPJVNL	SS	3x10.2	10.29	1.00 (as on 31.03.12)	30.6 (LE)	RM&LE	2013-14
<b>Uttarakhand</b>								
25	Khatima, UJVNL	SS	3x13.8	256.76	17.26 (as on 31.03.12)	41.40 (LE)	RM&LE	2014-15
26	Chilla Ph B UJVNL	SS	4x36	472.00	-	28.8(U) + 144(LE)	RMU&LE	2015-16
27	Dhakrani, UJVNL	SS	3x11.25	113.18	-	33.75 (LE)	RM&LE	2015-16

S. No	Project, Agency	CS/ SS	Inst. Cap. (MW)	Est. Cost	Actual Exp.	Benefits (MW)	Category	Year of Completion
				(Rs. in Crs.)				
28	Dhalipur, UJVNL	SS	3x17	113.71	-	51.00 (LE)	RM&LE	2015-16
29	Tiloth, UJVNL	SS	3x30	163.75	-	90 (LE)	RM&LE	2015-16
30	Kulhal, UJVNL	SS	3x10	115.44	-	30(LE)	RM&LE	2015-16
31	Chibro, UJVNL	SS	4x60	201.25	-	240(LE)	RM&LE	2015-16
32	Khodri UJVNL	SS	4x30	165.85	-	120(LE)	RM&LE	2015-16

#### Tamil Nadu

33	Sholayar-I, TNEB	SS	2x35	40.68	-	14.00(U) + 70.00 (LE)	RMU&LE	2016-17
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#### Jharkhand

34	Panchet, U-1, DVC	CS	1x40	58.22	1.99 (as on 31.03.12)	40.00 (LE)	RM&LE	2016-17
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#### Orissa

35	Hirakud-I U5&6, OHPC	SS	2x37.5	296.83	0.25 (as on 31.03.12)	75.00 (LE)	RM&LE	2014-15
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36	Balimela, OHPC	SS	6x60	160	-	360(LE)	RM&LE	2016-17
<b>Sub Total(B)</b>			<b>1340.75</b>	<b>2189.91</b>	<b>28.73</b>	<b>1377.55</b>		

#### Ongoing Schemes – Under DPR Preparation/Finalisation

##### Himachal Pradesh

37	Giri, HPSEB	SS	2x30	48.48	-	60.00 (LE)	RM&LE	2014-15
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##### Andhra Pradesh

38	Machkund , APGENCO	SS	3x17 (St.I) & 3x21.25 (St.II)	124.45	-	15.25 (U) + 114.75 (LE)	RMU&LE	2016-17
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##### Kerala

39	Sholayar, KSEB	SS	3x18	54.00	0.044 (as on 31.12.10)	54.00 (LE)	RM&LE	2016-17
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40	Kuttiadi, KSEB	SS	3x25	25.00	-	75.00 (LE)	RM&LE	2016-17
<b>Sub Total(C)</b>			<b>304</b>	<b>252</b>	<b>0.044</b>	<b>319</b>		

#### Ongoing Schemes – Under RLA Studies

##### Andhra Pradesh

41	Upper Sileru, APGENCO	SS	4x60	10.00	-	-	R&M	2016-17
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##### Tamil Nadu

42	Kodayar Ph.I, TNEB	SS	1x60	30.00	-	60.00 (LE)	RM&LE	2015-16
43	Kodayar	SS	1x40	19.94	-	40.0(LE)	RM&LE	2015-16

	PH-II, TNEB						
	<b>Sub Total(D)</b>		<b>340</b>	<b>59.94</b>	<b>-</b>	<b>100.00</b>	
	<b>Total (A+B+C+D)</b>		<b>6667.75</b>	<b>4433.67</b>	<b>994.72</b>	<b>3773.25 [266.05(U) + 3492.20(LE) + 15(Res.)]</b>	

Abbreviations: R&M – Renovation & Modernisation; U – Uprating; LE – Life Extension; Res – Restoration; MW – Mega Watt; CS-Central Sector; SS- State Sector

## **Abbreviations of Agencies**

1. APGENCO           Andhra Pradesh Generation Corporation
2. BBMB             Bhakra Beas Management Board
3. DVC              Damodar Valley Corporation
4. GSECL            Gujarat State Electricity Corporation Ltd.
5. HPSEB            Himachal Pradesh State Electricity Board
6. J&KPDC          Jammu & Kashmir Power Development Corpn.
7. JSEB             Jharkhand State Electricity Board
8. KPCL             Karnataka Power Corporation Ltd.
9. KSEB             Kerala State Electricity Board
10. MPPGCL          Madhya Pradesh Power Generation Co. Ltd.
11. MSPGCL          Maharashtra State Power Generation Co. Ltd.
12. MeECL           Meghalaya Electricity Corporation Ltd.
13. NHPC            National Hydro Electric Power Corporation
14. NEEPCO          North-East Electric Power Corporation
15. OHPC            Orissa Hydro Power Corporation
16. PSEB            Punjab State Electricity Board
17. RRVUNL          Rajasthan Rajya Vidyut Utpadan Nigam Ltd.
18. TSECL            Tripura State Electricity Corporation Ltd.
19. TNEB            Tamil Nadu Electricity Board
20. UPJVNL          Uttar Pradesh Jal Vidyut Nigam Ltd.
21. UJVNL            Uttarakhand Jal Vidyut Nigam Ltd.
22. WBSEDCL         West Bengal State Electricity & Dist. Co. Ltd.