

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 hydro electric 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 XI 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 VIII Plan, 20 in the IX Plan & 32 in the X Plan) with an aggregate installed capacity of 10511 MW at a cost of Rs. 1726 crores have been completed by the end of the X Plan (i.e by 31st March 2007) & have accrued a benefit of 2351 MW through Life Extension, Uprating and Restoration. The state-wise list of Hydro RM&U schemes completed during VIII, IX & X Plans are given at Annex.-I, II & III respectively.

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, 17 schemes (4 in central sector & 13 in state sector) with an installed capacity of 4803 MW were completed till March, 2012 at a cost of about Rs.239 Crore 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 have been completed at a cost of about Rs.295 Crore and have accrued a benefit of 735 MW through Life Extension, Uprating and Restoration. The state-wise list of these 18 hydro R&M schemes is given at Annex.-IV. The remaining 4 schemes of XI Plan namely Bassi (64.5 MW) in HP, Lower Sileru (460 MW) in AP, Nagarjuna Sagar (815.6 MW) in AP and Nagjhari Units 4-6 (435 MW) in Karnataka are now programmed to be completed in XII Plan.

During XII Plan, a total of 45 hydro R&M schemes (5 in Central Sector and 40 in State Sector) having an installed capacity of about 7646 MW and which will accrue benefit of about 3449 MW through uprating, life extension and restoration are planned for completion at an estimated cost of about Rs.4967 Crores. One scheme of MeECL namely Umium St.III (Kyrdekulai) and one scheme of TANGEDCO namely Moyar PH is programmed to be taken up in XII Plan and will accrue benefit of 66 MW (6 MW uprating & 60 MW-LE) during XIII Plan. The state-wise list of hydro R&M schemes programmed for completion during XII Plan (45 schemes) and XIII Plan (2 schemes) is given at Annex.-V and Annex.-VI respectively. Out of the 45 schemes programmed for completion during XII Plan, 3 schemes in State sector with an installed capacity of about 941 MW have been completed till December, 2012 and have accrued a benefit of 50 MW through Life Extension.

Plan-wise summary of R&M of H.E. Projects starting from VIII Plan is given below:

Summary of R&M of Hydro Projects
(As on 31.12.2012)

I Hydro R&M schemes completed up to XI 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.	VIII Plan Schemes completed	2	11	13	1282.00	125.57	127.37	429.00 [39.00(U) + 336.00(Res.) + 54.00(LE)]
2.	IX Plan Schemes completed	8	12	20	4892.10	597.84	570.16	1093.03 [339.00(U) + 331.03(Res.) + 423.00(LE)]
3.	X Plan Schemes completed	5	27	32	4336.60	1016.31	1028.97	829.08 [123.40(U) + 701.25 (LE) + 4.43(Res.)]
4.	XI 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 programmed for completion during XII 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 (Original)	5	40	45	7645.60	4967.29	1046.17	3449 [192(U) + 3242(LE) + 15(Res.)]
	Revised							
b)	Completed	-	3	3	940.60	95.35	62.17	50 [50 (LE)]
c)	Under implementation	3	16	19	5002	2148	970	1643 [133.00(U) + 1495.10(LE) + 15.0(Res.)]
d)	Under Tendering	2	16	18	1353	2515	14	1401 [53.80(U) + 1347.35(LE)]
e)	Under DPR Finalisation	-	3	3	250	159	-	255 [5.25(U) + 249.75(LE)]
f)	Under RLA Studies	-	2	2	100	49.94	-	100.00 [100.00(LE)]

Abbreviations:

MW – Mega Watt;
Res. – Restoration;
U – Uprating;
LE – Life Extension

III Candidate Hydro R&M schemes to be taken up during XII Plan and programmed for completion in XIII 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	-	2	2	96	376.68	-	66 [6(U) + 60(LE)]
b)	Under DPR Preparation	-	1	1	60	376.68	-	66 [6(U) + 60(LE)]
c)	Under RLA Studies	-	1	1	36	-	-	-

Abbreviations:

MW – Mega Watt;

Res. – Restoration;

U – Uprating;

LE – Life Extension

State wise List of Hydro RM&U schemes completed upto the VIII Plan

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

Abbreviations: R&M – Renovation & Modernisation; U – Upgrading; 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 IX Plan

S. No	Project, Agency	CS/ SS	Inst. Cap. (MW)	Est. Cost	Actual Exp.	Benefits (MW)	Category	Year of Completion
				(Rs. in Crs.)				
Himachal Pradesh								
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
Jammu & Kashmir								
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
Punjab								
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
Uttarakhand								
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
Andhra Pradesh								
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
Karnataka								
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
Orissa								
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.)				
Gujarat								
18	Ukai, U-1&3, GSECL	SS	2x75	24.99	24.99	75.00 (Res)	R&M+Res.	1997-98
Maharashtra								
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
	Total		4892.10	597.84	570.16	1093.03 [339.0(U) + 331.03(Res) +423.0(LE)]		

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 X Plan

S. No	Project, Agency	CS/ SS	Inst. Cap. (MW)	Est. Cost	Actual Exp.	Benefits (MW)	Category	Year of completion
				(Rs. in Crs.)				
Himachal Pradesh								
1.	Pong, BBMB	CS	6x60	17.70	17.79	36.00 (U)	RM&U	2003-04
Punjab								
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
Uttarakhand								
9.	Chibro, UJVNL	SS	4x60	10.45	10.52	-	R&M	2006-07
Karnataka								
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
Kerala								
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
Tamilnadu								
23	Pykara, TANGEDCO	SS	3x6.65+1x11+2x14	26.06	20.147	58.95(LE)	RM&LE	2004-05
24	Papanasam, TANGEDCO	SS	4x7	27.05	22.61	4.00 (U) + 28.00 (LE)	RMU&LE	2005-06
Orissa								
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
West Bengal								
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.)				
Maharashtra								
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
Meghalaya								
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
	Total		4336.60	1016.31	1028.9704	829.08 [123.40(U) +701.25 (LE) + 4.43(Res.)]		

\$ - 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 Hydro RM&U schemes completed in the XI Plan

S. No	Project, Agency	CS/SS	Inst. Cap. (MW)	Estimated Cost	Actual Expenditure	Benefits (MW)	Category	Completion Schedule
				(Rs. in Crs.)				
Completed Schemes								
Himachal Pradesh								
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
Uttarakhand								
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
Andhra Pradesh								
6	Upper Sileru, APGENCO	SS	4x60	4.20	3.34	-	R&M	2009-10 Completed
Karnataka								
7	Nagjhari, U1 to 6, KPCL	SS	3x150 + 3x135	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
Tamil Nadu								
12	Mettur Dam, TANGEDCO	SS	4x10	30.17	24.16	10 (U) + 40 (LE)	RMU&LE	2007-08 Completed
Maharashtra								
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
Manipur								
17.	Loktak, NHPC	CS	3x30 derated	18.55	17.88	15.00 (Res.)	R&M + Res.	2011-12 Completed

S. No	Project, Agency	CS/SS	Inst. Cap. (MW)	Estimated Cost	Actual Expenditure	Benefits (MW)	Category	Completion Schedule
				(Rs. in Crs.)				
Meghalaya								
18	Umium St.II , MeSEB	SS	2x9	90.46	55.67 (as on 31.03.12)	2(U)+ 18.00 (LE)	RM&LE	2011-12
	Total		4821.20	412.83	294.84	735 [12.00(U) + 708.00 (LE) + 15.0(Res)]		

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 programmed for completion in the XII Plan

As on 31.12.2012

S. No	Project, Agency	CS/ SS	Inst. Cap. (MW)	Est. Cost (Prov.)	Actual Exp.	Benefits (MW)	Category	Year of Completion
				(Rs. in Crs.)				
Completed Schemes								
Odisha								
1	Rengali Unit-1 OHPC	SS	1x50	47.50	36.76 (as on 30.06.12)	50(LE)	RM&LE	2012-13
Andhra Pradesh								
2	Nagarjuna Sagar, APGENCO	SS	1x110+ 7x100.8	33.35	13.90 (as on 31.03.2012)	-	R&M	2012-13
Kerala								
3	Idamalayar, KSEB	SS	2x37.5	14.50	11.51 (as on 28.12.12)	-	R&M	2012-13
	Sub Total(A)		940.60	95.35	62.17	50		
Ongoing Schemes – Under implementation								
Himachal Pradesh								
4	Bhakra LB, BBMB	CS	5x108	489.77	238.49 (as on 31.12.12)	540.00 (LE) + 90.00 (U)	RMU&LE	2014-15
5	Bassi, HPSEB	SS	4x16.5	119.83	133.28 (as on 31.10.12)	6.0(U)+ 60 (LE)	RMU&LE	2013-14
Jammu & Kashmir								
6	Chenani, J&KPDC	SS	5x4.66	39.18	5.89 (as on 31.12.12)	23.30 (LE)	RM&LE	2013-14
7	Sumbal Sindh, J&KPDC	SS	2x11.3	45.92	20.79 (as on 31.12.12)	-	R&M	2012-13
8	Lower Jhelum, J&KPDC	SS	3x35	126.41	93.88 (as on 31.12.12)	15.00 (Res.)	R&M+ Res.	2013-14
Uttar Pradesh								
9	Obra, UPJVNL	SS	3x33	43.14	13.39 (as on 31.12.12)	99.00 (LE)	RM&LE	2015-16
10	Rihand, UPJVNL	SS	6x50	132.20 (Rev.)	70.38 (as on 31.12.12)	300.00 (LE)	RM&LE	2015-16
Uttarakhand								
11	Pathri, UJVNL	SS	3x6.8	92.82	13.8 (as on 31.03.12)	20.40 (LE)	RM&LE	2013-14

S. No	Project, Agency	CS/ SS	Inst. Cap. (MW)	Est. Cost (Prov.)	Actual Exp.	Benefits (MW)	Category	Year of Completion
				(Rs. in Crs.)				
12	Khatima, UJVNL	SS	3x13.8	256.76	17.26 (as on 31.03.12)	41.40 (LE)	RM&LE	2014-15
Andhra Pradesh								
13	Srisaillam RB, APGENCO	SS	7x110	16.70	13.36 (as on 31.03.12)	-	R&M	2013-14
14	Lower Sileru, APGENCO	SS	4x115	8.75	6.66 (as on 31.03.12)	-	R&M	2012-13
Karnataka								
15	Nagihari, U-1to6, KPCL	SS	6x135	16.5	0.5 (upto 31.12.12)	-	R&M	2013-14
16	Sharavathy (Ph B), KPCL	SS	10x103.5	20	0.3 (upto 31.12.12)	-	R&M	2014-15
17	Bhadra, KPCL	SS	2x12	7.5	0.07 (upto 31.12.12)	-	R&M	2014-15
Kerala								
18	Sabarigiri, KSEB	SS	1x60	52.2	50.5 (as on 28.12.12)	5(UR)	RMU&LE	2013-14
19	Poringal-kuthu,KSEB	SS	4x8	88.63	2.34 (as on 31.12.12)	32.00 (LE)+ 4 (U)	RM&LE	2014-15
Tamil Nadu								
20	Periyar, TANGEDCO	SS	2x42+ 2x35	161.18	121.99 (as on 31.12.12)	140.00 (LE) + 28.00(U)	RMU&LE	2014-15
West Bengal								
21	Maithon, U-1&3, DVC	CS	2x20	49.05	Nil	40.00 (LE)	RM&LE	2016-17
22	Jaldhaka St.I, WBSEB	SS	3x9	88.62	76.04 (as on 31.12.12)	27.00(LE)	RM&LE	2012-13
Odisha								
23	Rengali Unit-2 OHPC	SS	1x50	25.2 (approx)	Nil	50(LE)	R&M	2012-13
24	Hirakud-II, OHPC	SS	3x24	192.47	58.97 (as on 31.03.12)	72.00 (LE)	RM&LE	2014-15
Assam								
25	Kopili, NEEPCO	CS	2x50 + 2x50	50.22	16.76 (as on 31.12.12)	-	R&M & Refurbishment of Units 1 & 2	2013-14
26	Khandong, NEEPCO	CS	2x25	25.05	15.26 (as on 31.12.12)	50.00 (LE)	RM&LE	2013-14
	Sub Total(B)		5002	2148	970	1643		

S. No	Project, Agency	CS/ SS	Inst. Cap. (MW)	Est. Cost (Prov.)	Actual Exp.	Benefits (MW)	Category	Year of Completion
				(Rs. in Crs.)				
Ongoing Schemes – Under Tendering								
Jammu & Kashmir								
27	Ganderbal, J&KPDC	SS	2x3+ 2x4.5	34.65	9.91 (as on 31.12.12)	9.00 (LE)	RM&LE	2016-17
Uttar Pradesh								
28	Matatila, UPJVNL	SS	3x10.2	10.29	1.47 (as on 31.12.12)	30.6 (LE)	RM&LE	2015-16
Uttarakhand								
29	Chilla Ph B UJVNL	SS	4x36	337.00	-	28.8(U) + 144(LE)	RMU&LE	2015-16
30	Dhakrani, UJVNL	SS	3x11.25	113.18	-	33.75 (LE)	RM&LE	2015-16
31	Dhalipur, UJVNL	SS	3x17	113.71	-	51.00 (LE)	RM&LE	2015-16
32	Tiloth, UJVNL	SS	3x30	163.75	-	90 (LE)	RM&LE	2015-16
33	Kulhal, UJVNL	SS	3x10	115.44	-	30(LE)	RM&LE	2015-16
34	Chibro, UJVNL	SS	4x60	201.25	-	240(LE)	RM&LE	2015-16
35	Khodri UJVNL	SS	4x30	165.85	-	120(LE)	RM&LE	2015-16
Tamil Nadu								
36	Sholayar-I, TANGEDCO	SS	2x35	40.68	-	14.00(U) + 70.00 (LE)	RMU&LE	2016-17
Jharkhand								
37	Panchet, U-1, DVC	CS	1x40	58.22	1.99 (as on 31.03.12)	40.00 (LE)	RM&LE	2016-17
Odisha								
38	Hirakud-I U5&6, OHPC	SS	2x37.5	296.83	0.24 (as on 31.12.12)	75.00 (LE)+ 11 (UR)	RM&LE	2014-15
39	Balimela, OHPC	SS	6x60	664.7	0.56	360(LE)	RM&LE	2016-17
Kerala								
40	Sholayar, KSEB	SS	3x18	199	0.044 (as on 31.12.10)	54.00 (LE)	RM&LE	2016-17
	Sub Total(C)		1353	2515	14	1401		
Ongoing Schemes – Under DPR Preparation/Finalisation								
Himachal Pradesh								
41	Giri, HPSEB	SS	2x30	34.80	-	60.00 (LE)	RM&LE	2014-15

S. No	Project, Agency	CS/ SS	Inst. Cap. (MW)	Est. Cost (Prov.)	Actual Exp.	Benefits (MW)	Category	Year of Completion
				(Rs. in Crs.)				
Andhra Pradesh								
42	Machkund, APGENCO	SS	3x17 (St.I) & 3x21.25 (St.II)	124.45	-	5.25 (U) + 114.75 (LE)	RMU&LE	2016-17
Kerala								
43	Kuttiadi, KSEB	SS	3x25	Not estimated	-	75.00 (LE)	RM&LE	2016-17
	Sub Total(D)		250	159	-	255		
Ongoing Schemes – Under RLA Studies								
Andhra Pradesh								
Tamil Nadu								
44	Kodayar Ph.I, TANGEDCO	SS	1x60	30.00	-	60.00 (LE)	RM&LE	2015-16
45	Kodayar PH-II, TANGEDCO	SS	1x40	19.94	-	40.0(LE)	RM&LE	2015-16
	Sub Total(E)		100	49.94	-	100.00		
	Total (A+B+C+D+E)		7645.60	4967	1044.17	3449 [192(U) + 3242(LE) + 15(Res.)]		

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 programmed for completion in the XIII Plan

As on 31.12.2012

S. No	Project, Agency	CS/ SS	Inst. Cap. (MW)	Est. Cost (Prov.)	Actual Exp.	Benefits (MW)	Category	Year of Completion
				(Rs. in Crs.)				
Ongoing Schemes – Under DPR Preparation								
Meghalaya								
1	Umium St.III, Kyrdemkulai, MeECL	SS	2x30	376.68	-	60(LE)+ 6 (UR)	RMU&LE	XIII Plan
Ongoing Schemes – Under RLA Studies								
Tamil Nadu								
2	Moyar PH, TANGEDCO	SS	3x12	-	-	-	R&M	XIII Plan
	Total		96	376.68	-	66		

Abbreviations of Agencies

- | | | |
|-----|----------|---|
| 1. | APGENCO | Andhra Pradesh Generation Corporation |
| 2. | BBMB | Bhakra Beas Management Board |
| 3. | DVC | Damodar Valley Corporation |
| 4. | HPSEB | Himachal Pradesh State Electricity Board |
| 5. | J&KPDC | Jammu & Kashmir Power Development Corpn. |
| 6. | KPCL | Karnataka Power Corporation Ltd. |
| 7. | KSEB | Kerala State Electricity Board |
| 8. | MeECL | Meghalaya Electricity Corporation Ltd. |
| 9. | NEEPCO | North-East Electric Power Corporation |
| 10. | OHPC | Odisha Hydro Power Corporation |
| 11. | TANGEDCO | Tamilnadu Generation and Distribution Corporation Ltd |
| 12. | UPJVNL | Uttar Pradesh Jal Vidyut Nigam Ltd. |
| 13. | UJVNL | Uttarakhand Jal Vidyut Nigam Ltd. |
| 14. | WBSEDCL | West Bengal State Electricity & Dist. Co. Ltd. |