

**AHEC  
WORK PROFILE**

**Alternate Hydro Energy Centre  
Indian Institute of Technology, Roorkee  
Roorkee - 247 667  
February, 2005**

**WORK PROFILE OF AHEC  
ON  
SMALL HYDRO POWER**

<b>SL. NO.</b>	<b>ITEM</b>	<b>NUMBERS</b>	<b>PAGE NO.</b>
<b>A.</b>	<b>EDUCATION/TRAINING/PUBLICATION</b>		
1.	Academic Programmes Offered by AHEC	ENCLOSED	1
2.	Short Term Training Courses – National	51	2
3.	Publications in the field of Small Hydro	9	5
4.	Seminars/Workshops	15	6
<b>B.</b>	<b>R&amp;D/MONITORING/EVALUATION/ TESTING/RECOGNISATION</b>		
5.	R&D/Monitoring Projects	42	7
6.	Techno-economic and Appraisal	73	8
7.	Performance & RMU Related Testing	21	11
8.	Lender's Engineer/Nominee Director	3	12
9.	Technical Expert Organisation	4	12
10.	On National Committee Membership/Awards	ENCLOSED	13
<b>C.</b>	<b>PLANNING/DESIGNS/EXECUTION</b>		
11.	Detailed Project Reports	187	14
12.	Pre-Feasibility Reports	208	22
13.	Planning, Designs and Execution	12	28
14.	Detailed Engineering Designs and Construction Drawings	65	29
15.	Technical Specifications of turn key execution/equipment supply	27	31
16.	Renovation and Modernisation of SHP Stations	42	32
17.	Drainage/Irrigation Related Projects	11	33
18.	Remote Sensing and GIS based Projects	12	34
19.	Environment Impact Assessment and Ecorestoration	20	35
<b>D.</b>	<b>INTERNATIONAL COOPERATION</b>		
20.	Projects with International Inputs	9	36
21.	Short Term Training Courses – International	13	37
22.	International Visits	ENCLOSED	38
23.	Collaboration International	11	40
<b>E.</b>	<b>INFRASTRUCUTRE</b>		
24.	Professionals	ENCLOSED	41
25.	Infrastructure	ENCLOSED	42
26.	Financial Status	ENCLOSED	46

## ACADEMIC PROGRAMMES OFFERED BY AHEC

### I. M. Tech.

(a) Four semester **Master of Technology (M. Tech.) Degree Programme in "Alternate Hydro Energy Systems"**.

\* **Total Intake** : 16 Regular (with Institute Fellowship) + 5 (with National Renewable Energy Fellowship) + 5 sponsored

\* **Eligibility** : A recognised Bachelor degree in Civil/Electrical/Mechanical/Industrial/Chemical/Electronics/Computer/Agricultural/Environmental Engineering or any other equivalent qualification acceptable to the University (with atleast 60% marks).

Or

Civil/Electrical/Mechanical/Industrial/Chemical/Electronics/Computer/ Agricultural/Environmental Engineering after passing examination to section 'A' & 'B' of the Institution of Engineers (India) & possessing at B.Sc. degree or a 3 years Diploma in Engineering & having atleast 3 years of research or professional experience in responsible position.

**Admission Criteria** : Regular : On the basis of GATE Score  
Sponsored : 60% marks or 6.75 CGPA on '10' point grading system minimum qualification & Experience (2 years)

(b) Four Semester M. Tech. Programme in **"Conservation of Rivers and Lakes"**, - 10 seats sponsored by **Ministry of Environment and Forests, Government of India**.

A recognized degree in Civil /Electrical /Mechanical/Industrial/Chemical/Agricultural/Environmental Engineering/Architecture/Town Planning or equivalent with at least **60% marks** or a CGPA of 6.75 on a 10 point scale at the Bachelor's level. OR Masters of Science with Mathematics at graduation level limited to 30% of total seats.

Plus

A minimum of **two years** of professional experience in an organization/department /institution dealing in water and/or waste water /environmental engineering, or pollution monitoring/control, or environmental conservation, or management of natural resources, area/regional/town planning or environmental impact assessment.

### II. Ph.D.

Research leading to **Ph.D. degree in "Alternate Hydro Energy Systems"**.

- 3 candidates completed/Awarded
- 7 number are under progress (5 full time + 3 part time)
- (3 National Renewable Energy Fellowship in the area of Renewable Energy are available)

### III. B. Tech. (45 students per semester).

2 elective subjects on **"IAH-01: Small Hydro Power Development Technology"** and **"IAH02: Renewable Energy Sources Development Technology"** are offered to B. Tech students every year.

## SHORT TERM COURSES ORGANISED BY AHEC – NATIONAL

S.No.	Name of Course	Schedule	No. of Participants	Remarks
1.	Design of Sub Stations	3 Weeks in 1986	14	Under Continuing Education Deptt.
2.	Design of Small Hydro Power Stations	4 Weeks in 1987	12	-do-
3.	Turbine & Governors of Mini Micro Hydro	2 Weeks in 1987	11	-do-
4.	Design of Micro Hydro Electric Projects (Under Continuing Education Department)	July 16-Aug.2,1990	16	-do-
5.	Small Hydro Power Development on Canal Falls & Irrigation Dams	Aug. 7-Sept.1,1990	10	Supported partially by DNES
6.	Gates and Trash Racks for SHP Stations	Nov.14-23,1990	8	Under Continuing Education Deptt.
7.	Run-off river Small Hydro Development	Dec. 18,1990-Jan.5,1991	17	Supported partially by DNES
8.	Planning, Implementation & Operation of SHP projects	April 9-12,1991	7	-do-
9.	Construction, Planning & Management of SHP Projects	June 4-8,1991	5	-do-
10.	Economic & Financial Analysis of SHP Projects	June 18-22,1991	10	-do-
11.	Small Hydro Power Development	June 24-26,1991	10	Under QIP & Centre, UOR
12.	Design Operation & Maintenance of SHP Projects	July 9-12,1991	10	Supported partially by DNES
13.	Renewable Energy Source Development Technology	Aug. 6-10,1991	6	Supported partially by DNES
14.	SHP Development on Canal Falls & Irrigation Dams	April 17-May 5,1992	10	Self Supported
15.	Small Hydro Power Development	July 21-Aug.1,1992	19	Under Continuing Education Deptt.
16.	Electro-Mechanical Equipment for Small Hydro Power	Sept 28-Oct.3,1992	12	-do-
17.	Planning & Design of Hydroelectric Stations	Apr 07-17'93	15	-do-
18.	Design of Small Hydro Power Projects	Dec. 01-10'93	26	-do-
19.	Small Hydro Power Development	Sept. 7-12'94	10	Supported by Him Urja, Shimla
20.	Planning of Small Hydro Power Stations	Jan. 2-12'95	17	Under Continuing Education Deptt.

S. No.	Name of Course	Schedule	No. of Participants	Remarks
21.	Renovation & Refurbishment of Hydro Power Plants	March 7-12'95	15	Sponsored by PFC, New Delhi
22.	Hydropower projects siting, licensing and safety management	Jan. 9-13,1996	15	-do-
23.	Orientation course on SHP at MeSEB, Shillong	Dec. 1-3,1995	37	UNDP-GEF Hilly Hydro Project
24.	Refresher course on SHP, Nainital	June 3-9,1996	20	-do-
25.	Trainees Training Course, Itanagar	Feb. 27-Mar 2'97	18	UNDP-GEF Hilly Hydro Project
26.	Special Course for NGO, Roorkee	Oct. 15-27,1997	25	Sponsored by MNES
27.	Small Hydro Refresher Course, Roorkee	Nov. 5-7,1997	15	Sponsored by NEDA
28.	Water Mill Training , Roorkee	Jan. 15-17,1998	33	Sponsored by HHP
29.	Workshop Training of GIS based Identification of SHP sites at Roorkee	Jan. 30-31,1998	20	Sponsored by HHP
30.	Workshop Training of GIS based Identification of SHP sites at Guwahati	Feb. 20-21,1998	18	Sponsored by HHP
31.	Hands on Training for Operators & Manager of MHP Plants	Apr 16-May 9,1998	12	ICIMOD
32.	Training for Surveyors and Designers for MHP Development	May 14 - June 06, 1998	14	ICIMOD
33.	For Government officers Training Programme "SHP Development"	Aug. 8-14, 2000	17	MNES
34.	Short term course on Renewable Energy Technology	Aug. 7-14, 2001	17	MNES, Govt. of India
35.	Training cum Workshop on Low Flow Estimation	Oct. 9-13, 2001	18	CEH, UK
36.	Training for ANERT Engineers and Public Representatives, Thirunanthapuram	Oct. 16-20, 2001	50	MNES & ANERT
37.	Training on Identification and ground verification of SHP potential sites including water mills in Uttaranchal	Nov. 2-4, 2001	26	Deptt. of Power, Govt. of Uttaranchal
38.	Short term course on Renewable Energy Technology	Aug. 7-14, 2001	17	MNES, Govt. of India
39.	SHP Development including O&M Aspects	Sept. 10-14, 2002	15	MNES, Govt. of India
40.	Identification, planning and selection of Technology for SHP Project for North Eastern Region	Sept. 24-28, 2002	25	MNES, Govt. of India
41.	SHP development in Chhattisgarh	Dec. 19-24, 2002	4	CREDA, Chhattisgarh

S. No.	Name of Course	Schedule	No. of Participants	Remarks
42.	E&M works, design of O&M for SHP	June 16-22, 2003	16	HimUrja, Shimla
43.	Short term training course on Design and Selection of SHP Works	Sept. 6-10, 2003	23	MNES, Govt. of India
44.	Short term training course on Investigation and Report Preparation for SHP Projects	Oct. 6-10, 2003	24	MNES, Govt. of India
45.	Short term training course on Rural Electrification through SHP	Dec. 26&27, 2003	11	TERI
46.	RMU Studies and Testing of SHP Stations	Jan. 6-10, 2004	12	MNES, Govt. of India
47.	RMU Studies and Testing of SHP Stations	Jan. 20-24, 2004	26	MNES, Govt. of India
48.	Training course on Water Mills Development	March 15-19, 2004	20	MNES, Govt. of India
49.	Training course on Micro Hydro	July 6-10, 2004	18	CANMET
50.	Training course on Performance Testing	Dec. 6-10, 2004	20	MNES, Govt. of India
51.	Training course on SHP	Dec. 3-10, 2004	6	Govt. of Kerala

**RECENT PUBLICATIONS IN THE FIELD OF SMALL HYDRO WHERE AHEC PROVIDED ALL TECHNICAL INPUTS**

1.	Small Hydro Power - Private Sector Participation (1996), Second issue in 1999. Third issue in 2003, Fourth Issue in 2005 (under preparation).
2.	Zonal Plan – SHP Resource Assessment for MNES, UNDP/GEF.
3.	Publication in Hindi and English (4 volumes) Manuals for Micro Hydro Power Development-Material Provided by ICIMOD – Reprinted in 2002
4.	Small Hydro Programme in India 1999 - for MNES.
5.	Urja Bharati-Special Issue on Small Hydro for Ministry of Non-Conventional Energy Sources- August 1992 and 2nd issue (draft)
6.	Indian Standard : 12800 (Part.3) - 1991 - Guidelines for Selection for Hydraulic Turbine. Preliminary Dimension and Layout and Surface Hydroelectric Power House, Part-III, small, mini/micro hydel power station for Bureau of Indian Standard, New Delhi.
7.	Draft 8th Plan Proposal for Ministry of Non- Conventional Energy Sources 1988-89.
8.	Low Head Small Hydro Turbine (State of Art) for UNESCO-1986.
9.	Small/Mini Hydro Power Technology, Research and Education (State of Art) for UNESCO - 1983.

**PUBLISHED RESEARCH PAPERS IN JOURNALS/CONFERENCES/SEMINARS**

YEAR	1997-98	1998-99	1999-2000	2000-2001	2001-2002	2002-2003	2003-2004	2004-2005
Journal	2	-	1	1	-	1	1	2
Conference/ Seminar	7	7	12	16	6	9	10	18
Others	-	4	1	1	-	2	-	1
Total	9	11	14	18	6	12	11	21

## LIST OF SEMINARS/WORKSHOPS ORGANISED BY AHEC

1.	Workshop on <b>Performance Testing of SHP Stations</b> , Roorkee, Oct. 7-9, 2004 (40 participants).
2.	Training cum Workshop <b>Small Hydropower: Where We Are</b> , Gangtok, Sikkim, Sept. 16-18, 2004 (22 participants)
3.	Training cum Workshop <b>Small Hydropower Development Opportunities And Challenges</b> , June 5-7, 2003 (23 participants)
4.	Training cum Workshop <b>Implementation of an Integrated Water Resources Management Tool in Himalaya</b> , May 13, 2003 (20 participants).
5.	National Workshop on <b>Small Hydropower Development in Uttaranchal</b> , Roorkee, June 26-27, 2001 (60 participants)
6.	Dissemination Workshop on <b>'REFRESHA' Hydra HP, Software</b> , Shimla, June 21-23, 2001 (50 participants)
7.	National Seminar on <b>"Exploitation of Hydro Power in Bihar : Strategy and Approach"</b> at Patna during May 2001.
8.	International Symposium on <b>"Hydrology of Ungauged Stream in Hilly for Small Hydro Power Development"</b> March 9-10,1998, New Delhi (60 participants)
9.	National Seminar on <b>Small Scale Hydro Power Development in Himalayan Region-Achievements, Issues &amp; Constraints</b> at New Delhi, Jan 20-21' 1995 (117 participants)
10.	Round Table Meet on <b>Small Hydro</b> at AHEC Roorkee, April 22, 1994. (60 participants)
11.	National Workshop on <b>Small Hydro Power Development</b> at Shimla, July 17-18' 1993 (200 participants)
12.	Workshop on <b>Human Resources Development for Small Hydro Power Development</b> at Roorkee, March 5-6 1993 (80 participated)
13.	Regional Workshop on <b>Eco restoration, environment conservation &amp; management</b> at Roorkee, March 14' 1990
14.	National seminar on <b>Potential Development of Small/Micro Energy Systems in Himalayan regions</b> Dec 19-20' 1987
15.	International Workshop on <b>Micro Hydel Hybrid Energy System</b> Indo-US collaboration, Jan 27' 1982

## R&D/MONITORING PROJECTS IN AHEC

S.No.	Title of the Project	Project cost (Rs. In lacs)	Funding Agency	Status of Project
1.	Development of Hydraulic Air Compressor	2.4	DST	Completed
2.	Study, Design & Modification of Pump as Turbine	9.0	DST	Completed
3.	Pilot Testing of Biomass Gasifier based electricity generation system 415 kVA rating	2.60	DNES	Completed
4.	Site Efficiency Measuring Equipment	5.0	DNES	Completed
5.	Appropriate Technology for Rural Development	3.0	SBI	Completed
6.	Appropriate Technology for Rural Technology	3.5	SBI	Completed
7.	Management Information System on Small Hydro Projects Phase I Phase II	5.1 5.0	DNES MNES	Completed
8.	Centre for Hydro Energy Phase I Phase II Phase III	10.0 4.0 1.0	MHRD MHRD AICTE	Completed Completed Completed
9.	Strengthening of Infrastructure Facilities Alternate Energy System Phase II	10.0 0.5	MHRD AICTE	Completed Completed
10.	Strengthening of Infrastructural Facilities Modernisation AHEC Labs	1.0	MHRD	Completed
11.	Reinforced Earth	5.3	UPCST	Completed
12.	Post Commissioning Performance Evaluation of Micro Hydro Projects with X Flow Turbine	3.14	DST	Completed
13.	Training, Research & Consultancy	15.00	-do-	Completed
14.	Technology Selection	4.00	-do-	Completed
15.	Water Mills	7.00	-do-	Completed
16.	Renewable Energy Park	6.66	MNES	Completed
17.	Renewable Energy Tech.	3.00	AICTE	Completed
18.	Micro-processor Control for SHP	3.00	AICTE	Completed
19.	Monitoring of light weight portable sets implementation (50 Nos.)	20.0	MNES	Completed
20.	Pre-Investment Study for New Small Hydro Options	16.5	IREDA, New Delhi	Completed
21.	International Hydrological Programme of UNESCO – Study – CEH	5.01	DFID/CEH	Continued
22.	International Hydrological Programme of UNESCO – Training – CEH	3.24	DFID/CEH	Completed

S.No.	Title of the Project	Estimated cost (Rs. In lacs)	Funding Agency	Status of Project
23.	Dissemination of Regional Flow Regimes Estimation for Small Hydropower – CEH, UK	10.85	DFID/CEH	Continued
24.	Monitoring of Demonstration Projects	7.5	MNES-HHP	Continued
25.	Water Mills Development	6.00	AICTE	Completed
26.	Design of Self Sustaining models for SHP	20.00	PFC	Completed
27.	Establishment of Cost benching for SHP	1.50	IREDA	Completed
28.	Strengthening of AHEC labs	14.50	AICTE	Completed
29.	Strengthening of AHEC	44.0	HHP-MNES	Completed
30.	Development of standard water mill in Uttaranchal	15.46	TIFAC, DST	Under progress
31.	Consultancy Capability in SHP	4.0	DISR	Completed
32.	Strengthening of AHEC Library	16.50	MNES	Under progress
33.	Strengthening of Testing Facility	16.50	HHP-MNES	Under progress
34.	Establishing of Real Time Small Hydro Simulator	200.00	MNES	Under progress
35.	Strengthening of Infrastructure – FIST	10.00	DSI	Under progress
36.	Strengthening of Infrastructure-Equipment	35.00	MHRD/IIT Roorkee	Under progress
37.	Strengthening of Infrastructure-Civil & R&M Works	14.56	MHRD/IIT Roorkee	Completed
38.	Strengthening of Testing Facility	250.00	MNES, GoI	Under Progress
39.	Unelectrified villages – surveys, potential sources and electricity demand	28.00	UREDA	Completed
40.	Formulation of Policy for SHP in Assam	2.80	ASEB	Under progress
41.	Cost Benching Marks of SHP	8.50	IREDA	Under progress
42.	Dynamic Study of the Excitation and Transmission	3.50	SPC, Delhi	Under progress
<b>TOTAL</b>		<b>570.12 lacs</b>		

## TECHNO-ECONOMIC ANALYSIS

S.No.	Scheme	Installed Capacity	Owner/Support Provided by
1.	Harbhangi Mini Hydel Scheme	2.0 MW	OPGC Orissa/MNES
2.	Andharebangi Mini Hydel Scheme	325 kW	-do-
3.	Badnala Mini Hydel Scheme	650 kW	-do-
4.	Biribati Mini Hydel Scheme	650 kW	-do-
5.	Banpur Mini Hydel Scheme	350 kW	-do-
6.	Jaidhari Mini Hydel Scheme	250 kW	HSEB Haryana/MNES
7.	Sipit Mini Hydel Scheme	1.5 MW	PWD Arunachal Pradesh/MNES
8.	Siddip Mini Hydel Scheme	2.5 MW	-do-
9.	Kitpi Mini Hydel Scheme	2.0 MW	-do-
10.	Mukto Mini Hydel Scheme	3.0 MW	-do-
11.	Liromaba Mini Hydel Scheme	2.5 MW	-do-
12.	Sirnyuk Mini Hydel Scheme	2.0 MW	-do-
13.	Kush Mini Hydel Scheme	1.5 MW	-do-
14.	Payu Mini Hydel Scheme	1.0 MW	-do-
15.	Pacha Mini Hydel Scheme	1.5 MW	-do-
16.	Domkhorong Mini Hydel Scheme	1.5 MW	-do-
17.	Pankang Mini Hydel Scheme	200kW	PWD Arunachal Pradesh/MNES
18.	Rupa Micro Hydel Scheme	250 kW	-do-
19.	Sangad Micro Hydel Scheme	50 kW	NEDA, Lucknow/MNES
20.	Leti Micro Hydel Scheme	50 kW	-do-
21.	Lathi Micro Hydel Scheme	100 kW	-do-
22.	Baichham Micro Hydel Scheme	100 kW	-do-
23.	Gogina Micro Hydel Scheme	100 kW	-do-
24.	Badiyakot Micro Hydel Scheme	50 kW	-do-
25.	Surag Micro Hydel Scheme	50 kW	-do-
26.	Khati Micro Hydel Scheme	50 kW	NEDA, Lucknow/MNES
27.	Bagar Micro Hydel Scheme	50 kW	-do-
28.	Karmi Micro Hydel Scheme	50 kW	-do-
29.	Barboria Mini Hydel Scheme	650 kW	OPGC Orissa/MNES
30.	Kendupatna Mini Hydel Scheme	500 kW	-do-
31.	Ramthirth Micro Hydel Scheme	100 kW	Bihar Engg. College
32.	Agnoor Mini Hydel Scheme	1000 kW	Bihar State HEPC
33.	Dabol SHP in U.P.	3000 kW	IREDA (for Pvt. Developer)
34.	Jain Bist SHP in U.P.	3000 kW	IREDA (for Pvt. Developer)
35.	Bhandardhara SHP in Maharashtra	14000 kW	IREDA (for Pvt. Developer)

S.No.	Scheme	Installed Capacity	Owner/Support Provided by
36.	Madhavamantri SHP in Karnataka	3000 kW	IREDA (for Pvt. Developer)
37.	SHP on GBC at M18-2-303 in A.P.	800 kW	IREDA (for Pvt. Developer)
38.	SHP on OBC at M 1-6-850 in A.P.	1700 kW	IREDA (for Pvt. Developer)
39.	SHP on OBC at M 0-3-080 in A.P.	1700 kW	IREDA (for Pvt. Developer)
40.	Narsimhaswamy SHP in A.P.	6000 kW	IREDA (for Pvt. Developer)
41.	Richington in WB	2000 kW	WBSEB/MNES (R&M Project)
42.	Bijenbari in WB	2000 kW	WBSEB/MNES (R&M Project)
43.	Jali in Sikkim	2250 kW	DOP/MNES (R&M Project)
44.	Rognichu in Sikkim	2000 kW	DOP/MNES (R&M Project)
45.	Chhaba in HP	1750 kW	HPSEB/MNES (R&M Project)
46.	Nogli in HP	2500 kW	HPSEB/MNES (R&M Project)
47.	Rongtong in HP	2000 kW	HPSEB/MNES (R&M Project)
48.	Rajawakti SHP in Uttaranchal	2x1.8 MW	HimUrja Pvt. Ltd./IREDA
49.	Gumti SHP in Tripura	3x5.0 MW	MNES/DOP, Tripura
50.	Maharani SHP in Tripura	2x0.5 MW	MNES/DOP, Tripura
51.	Neora SHP	2.4 MW	IREDA
52.	Rukti SHP	4x375 kW	MNES/HPSEB
53.	Upper Kolab SHP in Orissa	3x4 MW	IREDA
54.	Lower Kolab SHP in Orissa	2x12 MW	IREDA
55.	Varahai Tail Race in Karnataka	2x10 MW	Sondur Power Company
56.	Neogal SHP in H.P.	2x7.5 MW	IREDA
57.	Neogal in HP	3x7.5 MW	IREDA
58.	Tentulugima in Orissa	2x12 MW	IREDA
59.	Lower Kolab in Orissa	3x4 MW	IREDA
60.	MGHE TRC - SHP in Karnataka	2x11 MW	REC
62.	Varahi TRC – SHP in Karnataka	3x7.5 MW	Sandur Power Co., Hyderabad
63.	Ghanvi HP in H.P.	2x4 MW	REC
64.	Chunni – Suri	3x8 MW	UJVN, Dehradun
65.	Rambara – Gamukhad	2x12 MW	UJVN, Dehradun
66.	Singoli – Bhatwai	3x20 MW	UJVN, Dehradun
67.	Birahi Ganga-I	2x3.0 MW	UJVN, Dehradun
68.	Birahi Ganga-II	2x1.8 MW	UJVN, Dehradun
69.	Bhilangna SHP in Uttaranchal	3x7.5 MW	Swati Power Project, Delhi
70.	Aleo Manali SHP in HP	2x1.5 MW	REC
71.	Kalmali SHP in Karnataka	2x4.5 MW	REC
72.	Baliz Nalla in HP	2x1.75 MW	REC
73.	Somasila SHP in A.P.	2x5 MW	IREDA

**SHP STATION PERFORMANCE & RMU  
RELATED TESTING CARRIED OUT BY AHEC**

S.No.	Name of Project	Capacity	Type of Testing	Sponsor	Year
1.	Mohammadpur in UA	3x3.1 MW	RMU	UJVN	2002-03
2.	Galogi	2x1+2x0.5 MW	RMU	UJVN	2002-03
3.	Nirgajni in UP	2x2.5 MW	RMU	UPJVN	2003-04
4.	Kothi in HP	2x100 kW	Performance	MNES	2003-04
5.	Solang in HP	2x500 kW	Performance	MNES	2003-04
6.	Bhola in UP	4x0.35 + 2x0.6 kW	RMU	UPJVN	2003-04
7.	Salawa in UP	2x1.5 MW	RMU	UPJVN	2003-04
8.	Chitaura in UP	2x1.5 MW	RMU	UPJN	2003-04
9.	20 Water Mills	2x1.5 MW	RMU	UPJVN	2003-04
10.	Dhalipur in UA	3x11 MW	RMU	BHEL/UJVN	2002-03
11.	Dhakrani in UA	3x11 MW	RMU	BHEL/UJVN	2002-03
12.	Obra in UP	3x30 MW	RMU	BHEL/UJVN	2003-04
13.	Matatilla in UP	3X10 MW	RMU	BHEL/UJVN	2003-04
14.	UBC in Punjab	3 stations 1x15 MW each	RMU	BHEL/PSEB	2004-05
15.	Shanan in Punjab	4x15+1x50 MW	RMU	BHEL/PSEB	2004-05
16.	Madhavaram	2x2 MW	New Project	KMP Hyderabad	2004-05
17.	Babbanpur	2x0.5 MW	New Project	KPH, Noida	2004-05
18.	Testing of water mill developed by M/s Gopal Engineering Works, Almora	5.0 kW	Performance Testing in Laboratory	GEW, Almora	2004-05
19.	Testing of water mill developed by M/s Gita Flow Pumps India Pvt. Ltd., Saharanpur	5.0 kW	Performance Testing in Laboratory	GFIPL, Saharanpur	2004-05
20.	Testing of water mill developed by M/s Standard Electronics Instruments Corpn., Roorkee	5.0 kW	Performance Testing in Laboratory	SEIC Roorkee	2005-06
21.	Testing of water mills developed by M/s Ushmil Hydro Systems (P) Ltd., New Delhi	5.0 kW	Performance Testing in Laboratory	UHSPL, New Delhi	2005-06

### LENDER'S ENGINEER/NOMINEE DIRECTOR

S.No.	Name of Project	Capacity	Sponsor	Year
1.	Rajwakti SHP in Uttarakhand	2x1.8 MW	IREDA – Nominee	2000-2003
			Lender Engineer	
2.	Titang SHP in HP	2x0.4 MW	IREDA – Nominee	2000-2002
3.	Neora SHP in WB	2x1.5 MW	Lender Engineer	2001-2005

### SERVING AS TECHNICAL EXPERT ORGANISATION FOR SHP THROUGH MOU

1.	Government of Uttarakhand, Power Deptt., Dehradun Further Renewed in Oct. 2003	For 3 years (from June 2001)
2.	Bihar State Hydro-electric Power Corporation Ltd., Patna Further Renewed in Nov. 2004	For 3 years (from Nov 2001)
3.	HimUrja, Govt. of H.P.	For 3 years (from Jan 2004)
4.	J&K State Power Development Corporation, Govt. of J&K	For 3 years (from July 2004)

### ON NATIONAL COMMITTEES/MEMBERSHIP

S.No.	Designation/Name	Committee	Since
1.	Head, AHEC	High powered Project Implementation Committee of Ministry of Non-Conventional Energy Sources, Govt. of India for UNDP-GEF Hilly Hydro Project	1994
2.	Representation of AHEC	Project Execution Committee of Ministry of Non-Conventional Energy Sources, Govt. of India, for UNDP-GEF Hilly Hydro Project	1995
3.	Head, AHEC	Project Purchase Committee of Ministry of Non-Conventional Energy Sources, Govt. of India, for UNDP-GEF Hilly Hydro Project	1997
4.	Head, AHEC	Member of Sub Group of connected Power from Renewable Sources of Energy Constitute by Planning Commission (Power & Energy Division), Govt. of India	1997
5.	Head, AHEC	Member of Committee on Technology Development Plan for SHP by Ministry of Non-Conventional Energy Sources	1997
6.	Shri Arun Kumar	Convener of Sub Group I – Civil Covering hydrological, geological, water conductor system and civil structure by Ministry of Non-Conventional Energy Sources	1997
7.	Prof. J.D. Sharma	Convener of Sub Group III – Generator, Electrical Equipment and Controls	1997
8.	Shri Arun Kumar	IREDA's nominee on Board of Director's "HimUrja Pvt. Ltd.	2000
9.	Shri Arun Kumar	Member of "Policy Making Cell" for Renewable Energy of UP Government	2000
10.	Shri Arun Kumar	Member of Remote Village Electrification Committee of Uttaranchal Government.	2001
11.	Shri Arun Kumar	Member of Power Infrastructure Committee of Uttaranchal Government	2001
12.	Shri Arun Kumar	Member of Power Infrastructure Committee of IG Open University.	2002
13.	Shri Arun Kumar	Member of CII – Sohrabji Godrej Green Business Centre	2002
14.	Shri Arun Kumar	Chairman, Cost Evaluation Committee for SHP – Village Electrification constituted by MNES, Govt. of India.	2004
15.	Dr. M.P. Sharma	Expert Member of Environmental Appraisal Committee of MoEF, GoI	2004

### MEMBER OF INTERNATIONAL FORUM/ASSOCIATIONS

1.	International Network – Small Hydropower	Hangzhou, China
2.	International Centre for Hydropower	Trondheim, Norway
3.	International Association of Small Hydropower	New Delhi, India
4.	International Hydropower Association	U.K./India
5.	Solar Energy Society of India	India

### AWARDS

S.No.	Year	Award	By
1.	Jan. 2004	Business Leadership – Hydropower – 2003	Solar Energy Society of India – SESI, 2003
2.	Oct. 2002	AHEC for outstanding work – Surya II Prize of Rs. 30,000/-	Indian Institute of Rural Development & Social Services, Aurangabad
3.	Jan. 2001	Shri Arun Kumar – for outstanding work in renewable energy - Surya III Prize of Rs. 11,000/-	Indian Institute of Rural Development & Social Services, Aurangabad
4.	Oct. 1997	Citation for AHEC – For outstanding contribution towards Education in Renewable Energy	IREDA on its decade celebration
5.	Nov., 1991	Dr. S.P. Singh – Khosla Research Award – 1991	University of Roorkee, Roorkee
6.	Feb. 1991	Shri Arun Kumar – Cash your ideas Award – 1991	CBIP, New Delhi

**SOME OF THE DETAILED PROJECT REPORTS  
PREPARED/UNDER PREPARATION BY AHEC**

S. No.	Name of Project	Installed capacity no. x kW	Agency	Year of completion	Status
1.	Sarkari Mini Hydel	2x750	U.P. Laghu Jal Vidyut Nigam Ltd.	1991	State PIB cleared
2.	Netarhat Micro Hydel	1x50	Bihar State EB/BSHPC	1990	Under Construction
3.	Sadani Mini Hydel	2x500	Bihar State Hydro Electric Power Corporation, Patna	1994	Under Construction
4.	Lower Ghagri Mini Hydel	2x200	Bihar State Hydro Electric Power Corporation, Patna	1994	Under Construction
5.	NTU Micro Hydel	1x100	Govt. of Nagaland Deptt. of Forest	1993	Submitted to Govt
6.	Bilkot Micro Hydel	1x50	Non-Conventional Energy Development Agency, Govt. of U.P.	1989	Commissioned
7.	Pantwari Micro Hydel	1x50	-do-	1989	Dropped by State Govt.
8.	Baram Micro Hydel	2x25	-do-	1987	Under consideration by State Govt.
9.	Khet Micro Hydel	2x50	-do-	1987	Commissioned
10.	Ralla Mini Hydel	1x250	DNES & PSEB	1986	Govt. sanction received
11.	Bahadrabad Mini Hydel	2x125	DNES & UPLJV	1987	Govt. sanction received
12.	Kendupatna Mini Hydel	2x125	DNES & OPGC	1987	Commissioned
13.	Barboria Mini Hydel	2x150	-do-	1987	Under Execution
14.	Killara (Pangi Valley)	3x100	DNES & HPSEB	1986	Commissioned
15.	Bargarh Mini Hydel	1x250	DNES & OPGC	1987	Under Construction
16.	Deverebelkere Mini Hydel	2x1000	Karnataka Power Corporation Ltd., Bangalore	1993	Ready for Commissioning
17.	Siddip mini hydel	3x1000	Deptt. of Power Govt. of Arunachal Pradesh Naharlagun	1993	Under Construction
18.	Sipit mini hydel	2x1000	Deptt. of Power Govt. of Arunachal Pradesh Naharlagun	1993	Under Construction
19.	Liromoba mini hydel	2x1000	Deptt. of Power Govt. of Arunachal Pradesh Naharlagun	1993	Under Construction

S. No.	Name of Project	Installed capacity no. x kW	Agency	Year of completion	Status
20.	Kitpi-II mini hydel	3x1000	Deptt.of Power Govt. of Arunachal Pradesh Naharlagun	1993	Under Construction
21.	Mukto small hydel	3x3000	Deptt.of Power Govt. of Arunachal Pradesh Naharlagun	1993	Under Construction
22.	Kambang mini hydel	2x1500	Deptt.of Power Govt. of Arunachal Pradesh Naharlagun	1993	Under Construction
23.	Domkhorong mini	2x1000	Deptt.of Power Govt. of Arunachal Pradesh Naharlagun	1993	Ready for Commissioning
24.	Kush mini hydel	2x1000	Deptt.of Power Govt. of Arunachal Pradesh Naharlagun	1993	Under Construction
25.	Sirnyuk mini hydel	3x1000	Deptt.of Power Govt. of Arunachal Pradesh Naharlagun	1993	Commissioned
26.	Khangtang small hydel	3x2500	Deptt.of Power Govt. of Arunachal Pradesh Naharlagun	1993	Under Construction
27.	Nuranang small hydel	3x2000	Deptt.of Power Govt. of Arunachal Pradesh Naharlagun	1993	Commissioned
28.	Passighat-II mini hydel	2x250	Deptt.of Power Govt. of Arunachal Pradesh Naharlagun	1993	Submitted to Govt.
29.	Payu mini hydel	2x500	Deptt.of Power Govt. of Arunachal Pradesh Naharlagun	1993	Submitted to Govt.
30.	Pacha mini hydel	2x1000	Deptt.of Power Govt. of Arunachal Pradesh Naharlagun	1993	Under Construction
31.	Sippi mini hydel	3x1000	Deptt.of Power Govt. of Arunachal Pradesh Naharlagun	1994	Under Construction
32.	Sigrauli Super TPS return canal fall SHP	2x1500	Sigrauli Super Thermal Power Station NTPS, Sonebhadra (UP)	1993	Under Construction
33.	Feroz Gandhi Unchahar Thermal Power Project- mini hydro power	1x250	NTPC, Unchahar	1993	Submitted to Govt.
34.	Hnahchangu Mini Hydel Project.	2x400	Power & Electricity Deptt., Govt. of Mizoram	1997-98	Completed

S. No.	Name of Project	Installed capacity no. x kW	Agency	Year of completion	Status
35.	Ampani mini hydel		Deptt. of Power, Govt. of Ar.P		DPR Completed
36.	Dao mini hydel		Deptt. of Power Govt. of Ar.P.		Under Preparation
37.	Urinfall mini hydel		Deptt. of Power Govt. of Ar. P.		Under preparation
38.	Halaipani mini hydel	3x3000	Deptt. of Power Govt. of Ar. P.	1998	DPR Completed
39.	Baraf mini hydel		Deptt. of Power Govt. of Ar. P.	1998	Dropped
40.	Wakka mini hydel		Deptt. of Power Govt. of Ar. P.	1998	Dropped
41.	Tarrit Tara mini hydel	2x1500	Deptt. of Power Govt. of Ar. P.	1998-99	DPR Completed
42.	Jugding mini hydel	3x1000	Deptt. of Power Govt. of Ar. P.	1996	Under Construction
43.	Subbong mini hydel	3x1000	Deptt. of Power Govt. of Ar. P.	1996	Submitted
44.	Ganga mini hydel	2x250	Deptt. of Power Govt. of Ar.P.	1998	DPR Completed
45.	Sekku mini hydel	3x250	Deptt. of Power Govt. of Ar. P.	1997	DPR Completed
46.	Siemen mini hydel	3000	Deptt. of Power Govt. of Ar. P. Power & Dev. Deptt., J&K Govt.	1996	DPR Completed
47.	Sasoma Hydel Scheme in Nobra valley	3x300	Deptt. of Power Govt. of Ar. P. Power & Dev. Deptt., J&K Govt.	1996	DPR Completed
48.	Hanu Hydel Scheme Leh-Khalsi	3000	Deptt. of Power Govt. of Ar. P. Power & Dev. Deptt., J&K Govt.	1996	DPR Completed
49.	Dah Hydel Scheme Leh-Khalsi	3000	Deptt. of Power Govt. of Ar. P. Power & Dev. Deptt., J&K Govt.	1997	DPR Completed
50.	Upshi-Igo Hydel Scheme	3000	Deptt. of Power Govt. of Ar. P. Power & Dev. Deptt., J&K Govt.		Under Construction

S. No.	Name of Project	Installed capacity no. x kW	Agency	Year of completion	Status
51.	Stakna State II	(2.5 MW)	Power Dev. Corporation		Under Preparation
52.	Thusgam stage I	(2x100 kW)	-do-	1996	DPR Completed
53.	Phyang in Leh	(340 kW)	-do-		Under Preparation
54.	Chillong in Kargil	(250 kW)	-do-	1997	DPR Completed
55.	Tangste-Nyoma Leh	(300 kW)	-do-		Submitted
56.	Bogdong in Norba	(200 kW)	-do-	1996	Submitted
57.	Kumdong Leh	(100 kW)	-do-	1997	Submitted
58.	Igo-Mercllong	(3 MW)	-do-		Under Preparation
59.	Augmentation Canal	2x500	Haryana State EB Yamuna Nagar	1995	Submitted
60.	Jaidary Canal	2x100	Haryana State EB Yamuna Nagar	1996	DPR Submitted
61.	Farakka SHP	2x250	NTPC/FSTPS	1996	Submitted
62.	Jhamri dam micro	1x50	REDA, Jaipur	1995	Submitted
63.	Jamar Kotra micro hydel	1x50	REDA, Jaipur	1995	Submitted
64.	Tukvar Tea Estate Small Hydro	2x200	Jayshree Tea Darjeeling	1995	Submitted
65.	Korba Small Hydro Project	2x750	NTPC, Korba	1994	Submitted
69.	Rambhadra Mini Hydrel Project	2x1000	Deptt. of Power Agartalla	1997	Submitted
70.	Rina Mini Hydrel Along	4x500	Deptt of Power Arunachal Pradesh	1996	Submitted
71.	Hanuman Ganga Small Hydro Uttarkashi	2x1500	Regency Motels Paonta Sahib (HP)	1996	Under Construction
72.	Gangotri micro hydel	2x100	NEDA, UP Govt	1996	Under Construction
73.	Lingti SHP	2X200	HIM Urja, HP Govt	1997	Under Construction
74.	Rajouri small hydro	3x1000	Power Dev Corp J&K Govt	1995	Submitted
75.	Kanvaashram	2x50	UNDP-GEF	1997	Under Construction
76.	Kakra Gad/Akash Kamini	2x20	UNDP-GEF	1998	Under Construction

S. No.	Name of Project	Installed capacity no. x kW	Agency	Year of completion	Status
77.	Miyagam Branch Canal RD 2315 m	3x750	Sardar Sarovar Narmada Nigam Ltd.	1997	Submitted
78.	Review of SHP Scheme at Rishiganga	2x3500	Subhash Projects & Marketing Ltd.	1997	Under Construction
79.	Review of SHP Scheme at Birhiganga	2x1250	Subhash Projects & Marketing Ltd.	1997	Under Construction
80.	Review of SHP Schemes at Tons I	2x1500	Subhash Projects & Marketing Ltd.	Continued	Completed
81.	Review of SHP Scheme at Tons II	2x1500	Subhash Projects & Marketing Ltd.	-do-	Completed
82.	Review of SHP Scheme at Tons III	3x5000	Subhash Projects & Marketing Ltd.	-do-	Completed
83.	Saurashtra BC-Ch 5.15 km	2x8000	SSNNL, Gandhinagar	2000	Submitted
84.	Saurashtra BC-Ch 17.76 km	2x8000	-do-	2000	Submitted
85.	Saurashtra BC-Ch 32.94 km	2x8000	-do-	2000	Submitted
86.	Miyagam BC SHP CH 16700 m	3x750	SSNNL	2001	Under Progress
87.	Miyagam BC SHP CH 4150 m	2x750	SSNNL, Gandhinagar	20001	Under Progress
88.	Miyagam BC SHP CH 6415 m	2x750	SSNNL, Gandhinagar	2001	Under Progress
89.	Miyagam BC SHP CH 7500 m	2x750	SSNNL, Gandhinagar	20001	Under Progress
90.	Miyagam BC SHP CH 8531 m	2x500	SSNNL, Gandhinagar	20001	Under Progress
91.	Miyagam BC SHP CH 9900 m	3x750	SSNNL, Gandhinagar	2001	Under Progress
92.	Valipur fall	2x200 kW	NEDA	2000	Submitted
93.	Manjusha	2x250 kW	BHPC	2001	Under Progress
94.	Telhargad	2x1000 kW	BHPC	2001	Under Progress
95.	Pachim, HE Scheme	2x150 kW	WBSEB, Siliguri	1999	Under Progress
96.	Sangma, HE Scheme	2x150 kW	WBSEB	1999	Under Progress
97.	Rangmuk, HE Scheme	2x250 kW	WBSEB	2000	Under Progress
98.	Mirik, HE Scheme	2x300 kW	WBSEB	2000	Under Progress

S. No.	Name of Project	Installed capacity no. x kW	Agency	Year of completion	Status
99.	Dilpa, HE Scheme	1000 kW	WBSEB	2000	Under Progress
100.	Shiri, HE Scheme	2000 kW	WBSEB	2000	Under Progress
101.	Gurdum, HE Scheme	1000 kW	WBSEB	2000	Under Progress
102.	Siti khola H.E. Scheme	100 kW	WBSEB	2000	Under Progress
103.	Mechi, HE Scheme	200 kW	WBSEB	2000	Under Progress
104.	Rithu, HE Scheme	1500 kW	WBSEB	2000	Under Progress
105.	Tanglu, HE Scheme	2x300 kW	WBSEB	2000	Under Progress
106.	Kali Khola	500 kW	WBSEB	2000	Under Progress
106.	Jhepi, HE Scheme	2x200 kW	WBSEB	2000	Under Progress
107.	Giel, HE Scheme	2x175 kW	WBSEB	2000	Under Progress
109.	Rongdong, HE Scheme	2x200 kW	WBSEB	2000	Under Progress
110.	Rangnu, HE Scheme	1000 kW	WBSEB	2000	Under Progress
111.	Teesta Bazar, HE Scheme	1000 kW	WBSEB	2000	Under Progress
112.	Rilli, HE Scheme	300 kW	WBSEB	2000	Under Progress
113.	Sindibong, HE Scheme	1000 kW	WBSEB	2000	Under Progress
114.	Payong, HE Scheme	2x700 kW	WBSEB	2000	Under Progress
115.	Chel-I, HE Scheme	1200 kW	WBSEB	2000	Under Progress
116.	Chel-II, HE Scheme	1200 kW	WBSEB	2000	Under Progress
117.	Git, HE Scheme	2x200 kW	WBSEB	2000	Under Progress
118.	Jit Chiehu, HE Scheme	2x100 kW	WBSEB	2000	Under Progress
119.	Chel-III, HE Scheme	1200 kW	WBSEB	2000	Under Progress
120.	Tanglu Mane Bhanjan, HE Scheme	200 kW	WBSEB	2000	Under Progress
121.	Bagarasitong, HE Scheme	2x350 kW	WBSEB	2000	Under Progress
122.	Rishi, HE Scheme	1000 kW	WBSEB	2000	Under Progress
123.	Pedong, HE Scheme	500 kW	WBSEB	2000	Under Progress
124.	Tindharia-Gayabari, HE Scheme	300 kW	WBSEB	2000	Under Progress
125.	Jimigad HE	900 kW	NEDA, Lucknow	2001	Under Progress

S. No.	Name of Project	Installed capacity no. x kW	Agency	Year of completion	Status
126.	Baran HE	1000 kW	NEDA, Lucknow	2001	Under Progress
127.	Amritganga HE	500 kW	NEDA, Lucknow	2001	Under Progress
128.	Rellichu	6000 kW	DOP, Sikkim	2001	Completed
129.	Rongli-I	5000 kW	DOP, Sikkim	2001	Completed
130.	Ringyang	1000 kW	DOP, Sikkim	2001	Completed
131.	Lachen	2000 kW	DOP, Sikkim	2001	Completed
132.	Lamchula	50 kW	UREDA	2002	Under Progress
133.	Tarula	100 kW	UREDA	2002	Under Progress
134.	Ghes	100 kW	UREDA	2002	Under Progress
135.	Rotan	50 kW	UREDA	2002	Under Progress
136.	Mukerian Stage-II	2x9000 kW	PSEB	2002	Completed
137.	Uhl	2x1000 kW	Puri Oil Mills	2002	Under Progress
138.	Chaksi	2x500 kW	Puri Oil Mills	2002	Under Progress
139.	Dhukwa Dam	2x15000 kW	UP Jal Vidyut Nigam	2002	Under Progress
140.	Sikasar Dam	2x3500 kW	Chhattisgarh State Electricity Board	2003	Completed
141.	Manglay	2x1000 kW	Deptt. Of Power, Sikkim	2003	Completed
142.	Main Canal – Golapar	1x150 kW	UREDA, Uttaranchal	2002	Completed
143.	Nandhor Main river – Chorgalia	1x100 kW	UREDA, Uttaranchal	2002	Completed
144.	Dabka river – Dabka	1x80 kW	UREDA, Uttaranchal	2003	Under Progress
145.	Dhokti Gaon	1x20 kW	UREDA, Uttaranchal	2000	Completed
146.	Kanol Gad	2x50 kW	UREDA, Uttaranchal	2000	Completed
147.	Karmi-II	2x25 kW	UREDA, Uttaranchal	2000	Completed
148.	Ratmoli	2x25 kW	UREDA, Uttaranchal	2000	Completed
149.	Rawat Sera	1x50 kW	UREDA, Uttaranchal	2000	Completed
150.	San Gad	1x50 kW	UREDA, Uttaranchal	2000	Completed
151.	Satteshwar	2x25 kW	UREDA, Uttaranchal	2000	Completed
152.	Thosegar in Satara	4.5 MW	MEDA, Maharashtra	2002	Under Progress
153.	Thugaon in Pune	2.2 MW	MEDA, Maharashtra	2002	Under Progress
154.	Gangapur in Nashik	2 MW	MEDA, Maharashtra	2002	Under Progress

<b>S. No.</b>	<b>Name of Project</b>	<b>Installed capacity no. x kW</b>	<b>Agency</b>	<b>Year of completion</b>	<b>Status</b>
155.	Gandak – Saran Canal RD II	1000 kW	BHPC, Patna	2002	Submitted
156.	Gandak Saran RD-II	1000 kW	BHPC, Patna	2002	Completed
157.	Updating/Revision of of DPR – Mohumangath MHS	2x300 kW	JKPDC, Jammu	2003	Under progress
158.	Updating/Revision of of DPR – Poonch SHP	2x250 kW	JKPDC, Jammu	2003	Under progress
159.	Updating/Revision of of DPR – Bhalla SHP	2x750 kW	JKPDC, Jammu	2003	Under progress
160.	Updating/Revision of of DPR – Chingus SHP	2x300 kW	JKPDC, Jammu	2003	Under progress
161.	Updating/Revision of of DPR – Brenwar SHP	2x1000 kW	JKPDC, Jammu	2003	Under progress
162.	Updating/Revision of of DPR – Tulei SHP	2x350 kW	JKPDC, Jammu	2003	Under progress
163.	Dasna SHP	2x1000 kW	NEDA, Lucknow	2003	Under progress
164.	Betwa canal Head SHP	3x650 kW	NEDA, Lucknow	2003	Under progress
165.	Jamini Dam-I	1x100 kW	NEDA, Lucknow	2003	Under progress
166.	Jamini Dam-II	1x100 kW	NEDA, Lucknow	2003	Under progress
167.	Kuthond-I SHP	2x350 kW	NEDA, Lucknow	2003	Under progress
168.	Kuthond-II SHP	2x350 kW	NEDA, Lucknow	2003	Under progress
169.	Gunchai SHP	2x400 kW	NEDA, Lucknow	2003	Under progress
170.	Betwa SHP	2x1000 kW	NEDA, Lucknow	2003	Under progress
171.	Chudiyala SHP	2x250 kW	NEDA, Lucknow	2003	Under progress
172.	Akbarpur SHP	2x250 kW	NEDA, Lucknow	2003	Under progress
173.	Upgradation/Revision – Dah	2x1500 kW	J&K SPDC Ltd.	2003	Completed
174.	Upgradation/Revision – Hanu	2x1500 kW	J&K SPDC Ltd.	2003	Completed
175.	Upgradation/Revision – Tangste	2x250 kW	J&K SPDC Ltd.	2003	Completed
176.	Upgradation/Revision – Kumdok	2x75 kW	J&K SPDC Ltd.	2003	Completed

<b>S. No.</b>	<b>Name of Project</b>	<b>Installed capacity no. x kW</b>	<b>Agency</b>	<b>Year of completion</b>	<b>Status</b>
177.	Upgradation/Revision – Bogdong	2x500 kW	J&K SPDC Ltd.	2003	Completed
178.	Upgradation/Revision – Sasoma	2x250 kW	J&K SPDC Ltd.	2003	Completed
179.	Upgradation/Revision – Dumkhar	1x200 kW	J&K SPDC Ltd.	2003	Under progress
180.	Badarpur TPS-Tail Water SHP	1x350 kW	NPTI, Faridabad	2003	Completed
181.	Palor-II, H.P.	2x1500 kW	Manglam SHP, Noida	2004	Under Progress
182.	Kunnu Charang	2x100 kW	HimUrja, Shimla	2003-04	Under Progress
183.	Tarkiana on Canal Fall	2x100 kW	PEDA, Punjab	2004	Under Progress
184.	2 SHP in Uttaranchal		UREDA	2004	Under Progress
185.	Niti SHP	2x25 kW	Samiti and UREDA	2004-05	Under Progress
186.		2x500	J&KPDC	2004	Under Progress
187.			UREDA	2004	

**SMALL HYDRO POWER PROJECTS FOR WHICH  
PRE-FEASIBILITY REPORTS PREPARED BY AHEC**

S.No.	Name of Project	Distt.	Installed capacity (kW)		Total
			No. of Unit	Size	
For Deptt. of Power, Government of Ar.P.					
1.	Tippi	West Kameng	3	1000	3000
2.	Jugdini	Upper Subansiri	2	250	500
3.	Ul-Nallah	Lohit	2	3000	6000
4.	Halipani	Lohit	3	3000	9000
5.	Sikke	West Siang	2	1000	2000
6.	Thun Pani	Dibang Valley	2	1000	2000
7.	Ampani	Lohit	3	1000	3000
8.	Matakrong	Lohit	3	1000	3000
9.	Tarit-Tara	-	3	2000	6000
10.	Keter	Lower Subansiri	2	1000	2000
11.	Pai Pabung	Lower Subansiri	2	1000	2000
12.	Pachi Suko	Lower Subansiri	2	1000	2000
13.	Tama Chung	Upper Subansiri	2	250	500
14.	Gang-IV	West Kameng	2	1000	2000
15.	Gang-II	West Kameng	2	1000	2000
16.	Edung	East Siang	2	1000	2000
17.	Kiding	Lower subansiri	3	1000	3000
18.	Par Suko	Lower Subansiri	2	1000	2000
19.	Lapti	Lohit	2	3000	6000
20.	Seepa	West Siang	2	2000	4000
21.	Gang-I	West Kameng	2	3000	6000
22.	Subbong	East Siang	2	1000	2000
23.	Dao	Lohit	4	2000	8000
24.	Sumba	West Kameng	2	1000	2000
25.	Gang-III	West Kameng	2	1000	2000
26.	Urin Nallah	Dibang Valley	2	200	400
27.	Mebo	West Siang	2	400	800
28.	Kibithu	Lohit	2	200	400
29.	Urin Fall	Dibang Valley	2	500	1000

S.No.	Name of Project	Distt.	Installed capacity (kW)		Total
			No. of Unit	Size	
30.	Wakka	Tirap	1	250	250
31.	Pakke Kassang	East Kameng	1	250	250
32.	Nuranang-II	Tawang	3	1000	3000
33.	Miang	West Kameng	3	1000	3000
34.	Nyamjang Chu-I	West Kameng	3	1000	3000
35.	Nyamjang Chu-II	-do-	2	2000	4000
36.	Nyamjang Chu-III	-do-	3	1000	3000
37.	Nyamjang Fall I	-do-	3	500	1500
38.	Nyamjang Fall II	-do-	3	250	750
39.	Nyamjang Fall III	-do-	2	1000	2000
40.	Nyamjang Fall IV	-do-	3	250	750
For Govt. of Nagaland					
41.	Ntu		1	100	100
For Govt. of Bihar					
42.	Lower Ghaghari	Pelton	2	200	400
43.	Sadani	Francis	2	500	1000
44-114	Projects in Bihar are Under Preparation.				
115-117	Micro Projects in ITBP Field Establishments.				
118.	Rano Gad	ITBP, New Delhi	2	50	100
119.	Poyta Gad	-do-	2	50	100
120.	Gangeri	-do	3	200	600
121.	Seeyok Tea , Seeyok Tea Co., Calcutta				
122.	Selimbong	Jayshree Tea Co., Calcutta			
123.	Tukvar Tea	Jayshree Tea Co., Calcutta	2	200	400
124.	Assi Ganga	Mohan Steel Co., Kanpur	2	1500	3000
125.	Pilan Gad	-do-	2	1500	3000
126.	Sone Gad	-do-	2	1000	2000
127.	Siyon Gad	-do-	2	1000	2000
128.	Jadandhari Gad	-do-	2	1000	2000
129.	Kakora Gad	Mohan Steel Co., Kanpur	2	1000	2000

S.No.	Name of Project	Distt.	Installed capacity (kW)		Total
			No. of Unit	Size	
130.	Kail Ganga	KM Sugar Mills, Faizabad	2	1500	3000
131.	Taluka shp	Subhash Projects & Marketing Ltd., Delhi	2	1000	2000
132.	Siyan gad	-do-	2	1500	3000
133.	Jakhol shp	-do-	2	1500	3000
134.	Supin shp	-do-	2	1500	3000
135.	Rupin I & II	-do-	2	1500	3000
136.	Chamong Tea Estate SHP	RPG-CESC, Calcutta	2	250	500
137.	Pussimbing Tea Estate shp	Darjeeling	2	100	200
138.	Mim Tea Estate Andrew Yule	Darjeeling	1	100	100
139.	Lingti SHP	Him Urja, Shimla	3	250	750
140.	Guling SHP	-do-			
141.	Lamu SHP	-do-			
142.	Dagroth SHP	-do-			
143.	Gangotri-II	Uttarkashi	2	50	100
144.	Gangotri-II	Uttarkashi	2	50	100
145.	Shirir	Kullu	1	100	100
146.	Vasundhara	Andaman	2	15	30
147.	Panchvati	Andaman	2	25	50
148.	Shoal Bay-19	Andaman	1	5	5
149.	Badakhari	Andaman	2	5	10
150.	Korang	Andaman	2	10	20
151.	Dhanikhari	Andaman	2	50	100
152.	Zuraantee	Jalpaiguri	2	350	700
153.	Uhl Khad 1	Mandi, HP	2	1000	2000
154.	Dharmar	Mandi, HP	2	1000	2000
155.	Chaksi Nallah	Kullu	2	500	1000
156.	Pachim	Darjeeling, WB	2	150	300
157.	Sangma	Darjeeling, WB	2	150	300

S.No.	Name of Project	Distt.	Installed capacity (kW)		Total
			No. of Unit	Size	
158.	Rangmuk	Darjeeling, WB	2	250	500
159.	Mirik	Darjeeling, WB	2	300	600
160.	Tindhariya-Gayabari	Darjeeling, WB	2	150	300
161.	Giel	Darjeeling, WB	2	175	350
162.	Teesta Bazar	Darjeeling, WB	2	500	1000
163.	Rongdong	Darjeeling, WB	2	200	400
164.	Rangu	Darjeeling, WB	2	500	1000
165.	Pedong	Darjeeling, WB	2	250	500
166.	Rishi	Darjeeling, WB	2	500	1000
167.	Jit Chechu	Darjeeling, WB	2	100	200
168.	Git	Darjeeling, WB	2	200	400
169.	Rilly	Darjeeling, WB	2	150	300
170.	Sindibong	Darjeeling, WB	2	500	1000
171.	Payong	Darjeeling, WB	2	700	1400
172.	Dilpa	Darjeeling, WB	2	500	1000
173.	Shiri	Darjeeling, WB	2	1000	2000
174.	Mechi	Darjeeling, WB	2	100	200
175.	Gurdam	Darjeeling, WB	2	500	1000
176.	Chel I	Darjeeling, WB	2	600	1200
177.	Chel II	Darjeeling, WB	2	600	1200
178.	Chel III	Darjeeling, WB	2	600	1200
179.	Bagarasotpmg	Darjeeling, WB	2	350	700
180.	Jhepi	Darjeeling, WB	2	200	400
181.	Tanglu	Darjeeling, WB	2	150	300
182.	Tanglu Mane Bhanjan	Darjeeling, WB	2	100	200
183.	Rithu	Darjeeling, WB	2	750	1400
184.	Siti Khola	Darjeeling, WB	2	50	100
185.	Kali Khola	Darjeeling, WB	2	250	500
186.	Ramthi	Darjeeling, WB			
187.	Paunbu	Darjeeling, WB			
188.	Mangpong	Darjeeling, WB	Non-feasible		

S.No.	Name of Project	Distt.	Installed Capacity (kW)		Total
			No. of Unit	Size	
189.	Lopchu	Darjeeling, WB	Non-feasible		NV
190.	Rato	Darjeeling, WB	Non-feasible		NV
191.	Tangta	Darjeeling, WB	Non-feasible		NV
192.	Bhishnpur Canal Hydro Project Ch. 788.2	Bankura	Non-feasible		NV
193.	Khatra Main Canal Hydro Project Ch. 254	Bankura	2	750	1500
194.	Khatra Main Canal Hydro Project Ch. 370	Bankura	Non-feasible		NV
195.	Khatra Main Canal Hydro Project Ch. 590	Bankura	Non-feasible		NV
196.	Khatra Canal Hydro Project Ch. 646	Bankura	Non-feasible		NV
197.	Akbarpur SHP on Apponsahar BC (16 M)	Meerut	2	250	500
198.	Kabubpur SHP on Apponsahar BC (10 M)	Meerut	2	250	500
199.	Ghunchai Hardoi BC (10 M)	Pilibhit	2	400	800
200.	Betwa Main Canal (M-6)	Jhansi	2	1000	2000
201.	Betwa Main Canal Head	Jhansi	3	650	1950
202.	Dasna on UGC	Ghaziabad	2	1000	2000
203.	Jamni Dam-LHS	Lalitpur	1	100	100
204.	Jamni SHP-MHS	Lalitpur	1	100	100
205.	Kuthond BC 4.2 km	Urai	2	350	700
206.	Kuthond BC 7.5 km	Urai	2	350	700
207.	Ken SHP	Banda	2	250	500
208.	Kodak	Ar.P	2	100	200

**SMALL HYDRO POWER STATIONS  
PLANNED, DESIGNED AND EXECUTED BY AHEC**

S.No.	Name of Project	Installed Capacity	Agency	Year of commissioning	Remark
1.	Manali Mini Hydel Project	2x100 kW	HPSEB/ DNES	1985	National Demonstration Project Commissioned
2.	Jubbal Micro Hydel Project	1x100 kW + 2x25 kW	-do-	1985	-do-
3.	Kakroi Mini Hydel Project	3x100 kW	HSEB/ DNES	1989	-do-
4.	Bilkot Micro Hydel Project	1x50 kW	NEDA	1991	Commissioned
5.	Janaki Chatti Micro Hydel Project	2x6 kW	Hill Dev. Deptt., U.P.	1985	-do-
6.	Hanuman Chatti Micro Hydel Project	2x6 kW	-do-	1989	-do-
7.	Maldeota Mini Hydel Project	1x6 kW	PPCL/ Hill Dev. Org.	1983	-do-
8.	Yakla SHP in Sikkim	1x100 kW	Indian Army	2000-2001	Commissioned
9.	Richington, Bijanbari and Sidrapong – Supervision of Renovation	2x1000 kW 2x1000 kW 3x200 kW	WBSEB/ MECON	2000-2001	Commissioned
10.	Identification, surveys, design, procurement and installation of 20 Water Mills in Uttarkashi District	Each 1-2 kW	UREDA	2003-04	Under Commissioning
11.	Erection of Gangotri SHP	2x50 kW	MNES	2004-05	Under Commissioning
12.	Village Electrification SHP Projects for Livelihood in Uttaranchal	2 Projects	MNES/ UNDP	2004-07	Under Progress

**SMALL HYDRO POWER PROJECTS FOR DETAILED ENGG.  
DESIGNS & CONSTRUCTION DRAWINGS**

S.No.	Name of Project	Installed Capacity	Agency	Year
1.	Kakroi Mini Hydro Sonapat	3x100 kW	DNES/HSEB	1985-87
2.	Manali Mini Hydro, Kullu	2x100 kW	DNES/HPSEB	1983-85
3.	Jubbal Micro Hydro, Shimla	1x100 kW	-do-	1983-85
4.	Bilkot Micro Hydro Pauri	1x50 kW	NEDA	1990-91
5.	The standard type designs for proposed World Bank Aid canal small hydro project on AutoCad computer files	6 types to cover all canal band projects.	MNES/IREDA	1991-92
6.	Design & construction drawings Kambang small hydro project	2x1500 kW	DOP Govt. of Ar.P.	1994-95
7.	Passighat small hydro	2x250 kW	-do-	1995-96
8.	Design & Construction Drawings Domkhorong Mini Hydrel	2x1000 kW	DOP, Govt of Ar.P.	1994-2002
9.	Kush Mini Hydrel	2x1000 kW		
10.	Sirnyuk Mini Hydrel	3x1000 kW		
11.	Checking of Engg. Drawings for Siddip Mini Hydrel	3x1000	DOP, Govt. of Ar.P.	1994-95 1995-96
12.	Sipit Mini Hydrel	2x1000		
13.	Liromoba Mini Hydrel	2x1000		
14.	Kitpi-II Mini Hydrel	3x1000		
15.	Mukto Small Hydrel	1x3000		
16.	Nuranang Small hydrel	2x3000		
17.	Design Drgs for Kanvashram	2x50 kW	UNDP-GEF Hilly Hydro	1996-97
18.	Kakra Gad	2x250 kW		-do-
19.	Bazgo	2x150 kW		-do-
20.	Review of Engg. Designs Rishi Ganga	2x3500 kW	SPML, Kolkatta SPML, Kolkatta	1996-97
21.	Birhi Ganga	2x1250 kW		-do-
22.	Design & construction drawings Jhamri dam		RSMML-Udaipur	1995-96
23.	Dhamar Kotra dam	1x50 kW 1x50 kW		
24.	Checking of Engg. Designs Sadani shp	2x500 kW	BHPC, Patna	1995-96
25.	Lower Ghagri shp	2x200 kW		
26.	Checking of Engg. Drgs for Melkhet	2x50 kW	NEDA NEDA	1997-98
27.	Bursol	2x100 kW		1997-98
28.	Design of Engg. Drgs. for Halaipani SHP	3x3000 kW	DOP Itanagar	1998-99
29.	Design of Engg. Drgs. for Pacha SHP	3x1000 kW	DOP Itanagar	1998-99
30.	Engg. Designs for Sonprayag SHP	2x250 kW	HHP-MNES	1998-99
31.	Engg. Design for Bhikuriagad SHP	2x250 kW	HHP-MNES	1998-99

S.No.	Name of Project	Installed Capacity	Agency	Year
32.	Engg. Designs for Gangotri SHP	2x50 kW	HHP-MNES	1998-99
33.	Vetting/Checking of Designs Agnoor	2x500 kW	BHPC, Patna	1999-2000
34.	Netrahat	1x50 kW	BHPC, Patna	1999-2000
35.	Vetting of Designs – Raskat SHP	1x800 kW	HHP-MNES	2000-2001
36.	Vetting/Checking of Design Nindigagh	2x200 kW	BHPC, Patna	2001-2002
37.	Jalimghah	1x200 kW	BHPC, Patna	2001-2002
38.	Engineering Designs of Mukerian Stage-II	2x9000 kW	PSEB, Chandigarh	2002
39.	Engineering Designs of Triveni Link Canal	2x1500 kW	BHPC, Patna	2002
40.	Engineering Designs of Tejpura	2x500 kW	BHPC, Patna	2003
41.	Engineering Designs of Nasarganj	2x500 kW	BHPC, Patna	2003
42.	Engineering Designs of Delhabagh	2x750 kW	BHPC, Patna	2003
43.	Engineering Designs of Jainagara	2x500 kW	BHPC, Patna	2003
	Checking of Civil Designs			
45.	Checking of Civil Designs Kanolghad	2x50 kW	UREDA, Uttaranchal	2002-03
46.	Checking of Civil Designs Satteshwar	2x25 kW	UREDA, Uttaranchal	2002-03
47.	Checking of Civil Designs Karmi-II	2x25 kW	UREDA, Uttaranchal	2002-03
48.	Checking of Civil Designs Dhokti	7x20 kW	UREDA, Uttaranchal	2002-03
49.	Checking of Civil Designs Ratmoli	2x25 kW	UREDA, Uttaranchal	2002-03
50.	Checking of Civil Designs Chotting	2x50 kW	UREDA, Uttaranchal	2002-03
51.	Checking of Engg. Design of Korba West SHP	1x1000 kW	CSEB, Raipur	2003
52.	Checking of Engg. Design of Sikasar Project	2x3.5 MW	CSEB, Raipur	2003
53.	Engg. Design of Kodak SHP	2x100 kW	APCST, Itanagar	2003
54.	Engg. Design of Dehra SHP	2x500 kW	BHPC, Patna	2004
55.	Engg. Design of Walidad SHP	2x700 kW	BHPC, Patna	2004
56.	Engg. Design of Sebari SHP	2x500 kW	BHPC, Patna	2004
57.	Engg. Design of Sipaha SHP	2x500 kW	BHPC, Patna	2004
58.	Engg. Design of Arwal SHP	1x500 kW	BHPC, Patna	2004
59.	Engg. Design of Shirkhinda SHP	2x350 kW	BHPC, Patna	2004
60.	Engg. Design of Rampur SHP	1x250 kW	BHPC, Patna	2004
61.	Engg. Design of Paharma SHP	2x500 kW	BHPC, Patna	2004
62.	Engg. Design of Amethi SHP	1x500 kW	BHPC, Patna	2004
63.	Engg. Design of Natwar SHP	1x250 kW	BHPC, Patna	2004
64.	Engg. Design of Belsar SHP	1x500 kW	BHPC, Patna	2004
65.	Engg. Design of Kajapur SHP	1x700 kW	BHPC, Patna	2004

**SMALL HYDRO POWER PROJECTS FOR WHICH TECHNICAL SPECIFICATIONS  
HAVE BEEN PREPARED/UNDER PREPARATION BY AHEC**

S.No.	Name of Project	Installed Capacity	Agency	Year of Completion
1.	Standard technical specification proposed ICB on Irrigation Canals & Dams in India for proposed World Bank Projects under MNES/IREDA (about 60 Projects with 110 MW)		Ministry of Non-Conventional Energy Sources	1991-92
2.	Technical Specifications for turn key execution (9 micro projects in remote area hills of U.P.)		NEDA	1992
3. 4. 5. 6. 7. 8. 9. 10. 11.	Technical specifications for turn key execution of 9 small Power hydro schemes Siddip mini hydel Sipit mini hydel Liromoba mini hydel Kitpi-II mini hydel Mukto small hydel Domkhorong mini hydel Kush mini hydel Sirnyuk mini hydel Nuranang small hydel	2 documents 3x1000 kW 2x1000 kW 2x1000 kW 3x1000 kW 1x3000 kW 2x1000 kW 2x1000 kW 3x1000 kW 3x2000 kW	Deptt. of Power, Ar.P.	
12.	Technical specification of E&M works for Kambang small hydro project (2x1500 kW)	(2x1500 kW)	Deptt. of Power, Ar. Pradesh	1994
13.	Technical Specifications of E&M for Singrauli SHP (2x1500 kW)	(2x1500 kW)	NTPC Singrauli	1995-96
14. 15.	Technical Specification for Civil and E&M Jhamri dam SHP Jhamar Kotra Mines SHP	1x50 kW 1x50 kW (2 documents)	RSMM Udaipur	1995-96
16.	Technical Specification for Civil and E&M works Kanvaashram	2x50 kW	UNDP-GEF HHP	1996-97
17.	Technical specification for Civil and E&M Works of SHP on Miyagam Canal	3x750 kW	SSNN Gandhinagar	1997-98
18.	Technical Specification for Civil and E&M Works Raskat	1x800 kW	UNDP-GEF HHP	1997-98
19.	Technical Specification for Civil and E&M Works for 3 SHP (16 MW each) on SBC, Gujarat	3 Nos. 2x8000 kW each	SSNNL Rajkot	1999-2000 2004-05
20.	Technical Specification for Civil and E&M Works for 6 SHP on Miyagam BC.	6 Nos. of total 8 MW	SSNNL Vadodara	1998-1999
21.	Tender Evaluation of 9 SHP – Completed Agnoor, Lower Gaghari, Sadani, Netarhat, Triveni Link Canal, 4 shp on Gandak Canal	Below 3 MW	BHPC	1996-97 1998-99 2000-2001 2001-2002
22.	Technical Specification for Mukerian Stage-II	2x9000 kW	PSEB	2002
23.	Model tender specification for canal SHP in Bihar	6 projects	BHPC, Patna	2002
24.	Tender specifications for Manglay and Lachung SHP in Sikkim	2 stations	Power Deptt., Sikkim	2002-03
25.	Model tender specifications for O&M of SHP stations in Bihar	3 stations	BHPC, Patna	2003
26.	Tender specifications for Sikasar Dam SHP	2x3500 kW	CSEB, Chhattisgarh	2003
27.	Tender specifications for Matnar HEP	3x20 MW	CSEB, Chhattisgarh	2003

## RENOVATION AND MODERNISATION OF SHP STATIONS

Involvement at different levels for following stations:

S.No.	Project	Capacity	State	Sponsored agency	Year
1.	Galogi	2x1.45 MW	UP	UPSEB& UPJVN	1996-98
2.	Massanjore	2x2.2 MW	WB	WBSEB	1999-2000
3.	Matalila	3x10.0 MW	UP	UPSEB	1998-99
4.	Kitpi	4x0.5 MW	Ar.P.	DOP, Ar.P.	1997-2000
5.	Sissiri	2x0.25 MW	Ar.P.	DOP, Ar.P.	1997-2000
6.	Along	4x0.1 MW	Ar.P.	DOP, Ar.P.	1997-2000
7.	Mai-I	4x0.5 MW	Ar.P.	DOP, Ar.P.	1997-2000
8.	Ampani	2x0.25 MW	Ar.P.	DOP, Ar.P.	1997-2000
9.	Deopani	3x0.25 MW	Ar.P.	DOP, Ar.P.	1997-2000
10.	Anini	2x0.05 MW	Ar.P.	DOP, Ar.P.	1997-2000
11.	Tafragam	2x0.25 MW	Ar.P.	DOP, Ar.P.	1997-2000
12.	Abhapani	3x0.15 MW	Ar.P.	DOP, Ar.P.	1997-2000
13.	Yambung	4x0.50 MW	Ar.P.	DOP, Ar.P.	1997-2000
14.	Tuting	2x50 kW	Ar. P.	DOP, Ar.P.	1997-2001
15.	Rajauri	2x0.280 MW	JK	PDD	1994-1996
16.	Jammu Canal	2x0.50 MW	JK	PDD	1994-1999
17.	Mohammadpur	3x3.3 MW	UP	UPSEB/UJVN	1999-2000 and 2001-2003
18.	Nirgajni	2x2.5 MW	UP	UPSEB/UPJVN	1999-2000
19.	Chitaura	2x1.5 MW	UP	UPSEB/UPJVN	1999-2000
20.	Salawa	2x1.5	UP	UPSEB/UPJVN	1999-2000
21.	Bhola	4x0.375+ 3x0.6 MW	UP	UPSEB/UJVN	1999-2000
22.	Palra	3x0.2 MW	UP	UPSEB/UJVN	1999-2000
23.	Sumera	2x0.6 MW	UP	UPSEB/UJVN	1999-2000
24.	Bhandardhara	1x14.36 MW	Maharashtra	IREDA & DIL,USA	1997-1998
25.	Sidrapong	3x200 kW	WB	WBSEB	2000-2001
26.	Singtam	2x480 kW	WB	WBSEB	2000-2001
27.	Fazi	2448 kW	WB	WBSEB	2000-2001
28.	Richington	2 MW	WB	WBSEB	2000-2001
29.	Little Rangit	2 MW	WB	WBSEB	2000-2001
30.	Jubilee	1x0.20 MW	WB	WBSEB	2000-2001
31.	Bilkot	1x50kW	Uttaranchal	UREDA	2000-2001
32.	Dehri-on-Sone	4x1.65 MW	Bihar	BHPC	2000-2001
33.	Barun	2x2.64 MW	Bihar	BHPC	2000-2001
34.	Valmikinagar	3x5 MW	Bihar	BHPC	2000-2001
35.	Dhalipur & Dhakrani		Uttaranchal	BHEL, Hardwar	2001-2002
36.	Kosi Canal - Katai	4x5 MW	Bihar	BSHPC	2002-2003
37.	Upper Rongnichu	2x4 MW	Sikkim	PD	2002-2003
38.	Rongnichu	5x0.5 MW	Sikkim	PD	2002-2003
39.	Kataiya SHP (Kosi)	4x5 MW	Bihar	BSHPC	2003-04
40.	Stakna in Leh	2x2 MW	J&K	JKPDC	2003-04
41.	Rimbi I&II	1 MW	Sikkim	PD	2003-04
42.	Jali	2.5 MW	Sikkim	PD	2003-04

## DRAINAGE/IRRIGATION RELATED PROJECTS

S.No.	Title of the Project	Cost (Rs. in lacs)	Funding Agency	Status of Project
1.	Identification of Sources for Irrigation & Drinking Water	9.00	Darjeeling Tea Planters' Association	Completed
2.	Design of External Drainage of Tronica City	16.50	UPSIDC, Kanpur	Completed
3.	Design of External Drainage for Kosi Kotwan Industrial Area	4.50	UPSIDC	Completed
4.	Vetting of Estimates and Review of Designs of protection works of Balia Nallah, Nainital, Uttaranchal	4.00	Irrigation Deptt., Uttaranchal	Completed
5.	Inspection of works on Balia Nallah	1.00	Irrigation Deptt., Uttaranchal	Completed
6.	Design of Regulators at UGC in Ghaziabad	1.80	Irrigation Deptt., Uttaranchal	Completed
7.	Design of weris at Nandhaur & Kota	3.50	Irrigation Deptt., Uttaranchal	Completed
8.	Proof checking of protection works for Agra Taj heritage project	22.50	National Project Construction Corporation, Faridabad	Under progress
9.	Study of Minimum Flows at Chitrakoot Fall	0.75	CSEB, Raipur	Completed
10.	Drainage & Sewage Design – DPR for Bhubaneshwar City	86.16	Orissa Water Supply and Sewage Board	Under progress
11.	Technical Specifications of Drainage – Pumping Station	4.0	UP Irrigation/ UPSIDC	Completed
<b>TOTAL</b>		<b>149.95</b>		

### REMOTE SENSING / GIS BASED PROJECTS

S.No.	Title of the Project	Project cost (Rs. In lacs)	Funding Agency	Status of Project
1.	Preparation of Zonal Plan for 13 Hilly States	20.00	UNDP-GEF Hilly Hydro, MNES	Completed
2.	Design of External Drainage of Tronica City	16.0	UPSIDC, Kanpur	Completed
3.	Identification of Sources for Irrigation & Drinking Water	9.00	Darjeeling Tea Planters' Association, Calcutta	Completed
4.	GIS Based Data Base for SHP in Himachal Pradesh	10.0	Him Urja, Shimla	Completed
5.	Regional Flow Regimes Estimation for SHP assessment, Institute of Hydrology, UK	21.00	DFID/CEH, U.K.	Completed
6.	Nepal District SHP Data Base, WIDP & WECS, Nepal	6.60	WECS & CIDA, Nepal	Completed
7.	Impact Assessment of Hydropower Dams on Vegetation Using RS & GIS	12.00	MoEF, Govt. of India	Completed
8.	State level master plan of SHP potential in Chhattisgarh	38.69	CREDA, Raipur	Completed
9.	Drainage & Sewage Design for Bhubaneshwar City	86.16	OWSSB	Under Progress
10.	GIS based database and Renewable Energy Maps	2.82	MNES	Completed
11.	State level identification plan for SHP in Punjab	27.32	PEDA	Under progress
12.	Identification of state level plan for remote village electrification in 5 States	78.70	MNES	Under progress
<b>TOTAL</b>		<b>316.65</b>		

## ENVIRONMENT IMPACT ASSESSMENT/ECO-RESTORATION

S. No.	Title of the Project	Funding Agency	Project cost (Rs. in lacs)	Status of Project
1.	Intensive Air quality monitoring of Doon Valley for carrying capacity evaluation	MoEF/NEERI	5.00	Completed
2.	Energy and Environment Auditing of Sugar Mills (Jagraon)	Jagraon Sugar Mills	0.80	Completed
3.	Emission Control System for Cupolas	Sterling Co., Agra	0.18	Completed
4.	DPR preparation for Conservation and Management of Dal & Nagin Lake	MoEF, GoI	154.00	Completed
5.	Review of Conservation Plan for Hussain sagar lake in Hyderabad	MoEF, GoI	2.11	Completed
6.	Review of Conservation Plan for Kodai Kanal lake in Tamil Nadu	MoEF, GoI	2.49	Completed
7.	Preparation of Vision Document for NRCD – 10 <sup>th</sup> Plan	MoEF, GoI	10.82	Completed
8.	Preparation of PFR for use of solar, tobacco waste and small hydropower energy sources in ITC factory	ITC, Saharanpur	0.35	Completed
9.	Preparation of detailed guidelines of NRCD for preparing the proposal	MoEF, GoI	0.86	Completed
10.	EIA of Rural Roads under Improving Rural Infrastructure	Uttaranchal Government	6.00	Completed
11.	Performance Evaluation of works carried under Yamuna Action Plan	MoEF, Govt. of India	12.00	Completed
12.	Preparation of DPR for Conservation and Management Plan of Nainital Lake	Uttaranchal Govt.	34.41	Completed
13.	Preparation of DPR for Conservation and Management Plan of 4 lakes in Nainital District	MoEF, Govt. of India	53.95	Completed
14.	Review of 10 Plan Proposals – NRCD	MoEF, Govt. of India	5.38	Completed
15.	Member of evaluation committee for YAP Projects	MoEF, Govt. of India	0.16	Completed
16.	Drainage & Sewage Design – DPR for Bhubaneswar	OWS & SB, Bhubaneswar	86.15	Under Progress
17.	ASSESS – Development of an Assessment System to Evaluate the Ecological Status of Rivers in the HKH Region	EC/Union of Vienna, Austria (Joint)	58.00	Under Progress
18.	Tender Specifications for 3 Conservation Related Works for Nainital Lake	Nainital Lake Development Authority, Nainital	28.00	Under Progress
20.	Checking of quantity and designs of works under Nainital Lake	Nainital Lake Development Authority, Nainital	5.01	Under Progress
<b>TOTAL</b>			<b>550.92</b>	

## PROJECTS WITH INTERNATIONAL INPUTS

S. No.	Project	International Parameter	Amount (Rs. in Lacs)	International Funds	Year
1.	DPR for Renovation and Modernisation of Galogi SHP	SGP Gestion Conceil Sherbrook Canada	3.18	CIDA	1997-98
2.	Regional Flow Regimes Estimation for SHP assessment	Institute of Hydrology, UK	21.00	DFID	1998-99
3.	Nepal District SHP Data Base	WIDP & WECS, Nepal	6.60	WECS & CIDA	1998-99
4.	Demonstration of Remote Auto-operation of Sobla SHP in U.P.	SGP Gestion Conceil, Sherbrook, Canada	5.53	CIDA-DEA	1998-99
5.	Modernisation and Privatisation State owned SHP Stations in U.P.	SGP Gestion Conceil, Sherbrook, Canada	9.60	CIDA-DEA	1998-99
6.	International Hydrological Programme of UNESCO – Study	Centre for Ecology & Hydrology (UK)	5.01	DFID	2001-02
7.	International Hydrological Programme of UNESCO – Training	Centre for Ecology & Hydrology (UK)	3.34	DFID	2001-02
8.	Dissemination of Regional Flow Regimes Estimation for SHP	Centre for Ecology & Hydrology (UK)	10.85	DFID	2001-02
9.	SHP – Technology Transfer	CANMET, Govt.of Canada	8.30	CIDA	2003-04
	<b>Total</b>		<b>73.41</b>		

## SHORT TERM COURSES ORGANISED BY AHEC – INTERNATIONAL

S. No.	Name of Course	Schedule	No. of Participants	Remarks
1.	International Course on SHP at Roorkee	Nov. 15-30,1996	45	Self supported partially funded by MNES
2.	International Course on Planning, Design & Implementation of SHP Projects at Roorkee	Mar 15-25, 1999	28	MNES & NAM Centre for S&T
3.	International Training Course on SHP at Dhaka, Bangladesh	May 6-9, 1999	80	ICIMOD, REPSO, BUET(CES)
4.	International Course on Planning of Small Hydro Power Projects, Roorkee	March 7-16, 2000	23	MNES
5.	International Course on Small Hydro Power Development, Kathmandu	April 17-22, 2000	53	WECS, APEPC, ICIMOD, ITECO(N), Jyoti Ltd.
6.	International Course on Planning, Technology Selection and Implementation of Small Hydro Power at Roorkee	Feb. 13-22, 2001	32	Supported by MNES, GOI, New Delhi
7.	International course on 'Cost Effective Planning & Designs' for Small Hydro Projects	Feb. 5-14, 2002	23	MNES, Govt. of India
8.	International Training Course on Technology Selection for SHP Development	Feb. 18-March 02, 2003	25	MNES, Govt. of India
9.	International Training Course on Small Hydropower Development	Feb. 10-22, 2004	28	MNES, Govt. of India
10.	BIMSTEC & ASEAN, SHP Aspect	Dec. 16-17, 2004	21	MNES, Govt. of India
11.	International Training Course on Grid Based Small Hydropower Development	Jan. 27-Feb. 09, 2005	21	MNES, Govt. of India
12.	International Training Course on "SHP: Option for Rural Electrification"	March 08-18, 2005	20 (Expected)	MNES, Govt. of India
13.	International Training cum Workshop "SHP Development"	Aug. – Sept. 2005	50 (Proposed)	UNIDO & MNES

## INTERNATIONAL VISITS BY AHEC FACULTY/SCIENTISTS

### Year 2004

1.	Shri Sunil K. Singal	Technology Transfer – IMP for Resource Assessment	BC, Canada
2.	Dr. R.P. Saini	Technology Transfer, Pump as Turbine	Canada
3.	Shri M.K. Singhal	International GIS Based Resource Assessment, June 5-July 2, 2004	Kathmandu, Nepal
		International GIS Based Resource Assessment, Aug. 19-Sept. 25, 2004	Enschede, Netherlands
4.	Shri Arun Kumar	Presented Paper in International Seminar on Renewable Energy, University of Moratowa, June 9-11, 2004	Colombo, Sri Lanka
		UNIDO Expert on SHP, June 23-July 04, 2004	Khortam, Sudan
		To present paper in International Conference on Hydraulic Turbine Testing, July 12-19, 2004	Lucern, Switzerland
		Regional Workshop on Standards for Micro-Hydro, Sept. 5-7, 2004	Colombo, Sri Lanka

### Year 2003

1.	Shri Sunil K. Singal	“Regional training course on Applications of Geo Informatics for Water Resources Management” at ICIMOD, March 17-18, 2003	Kathmandu, Nepal
2.	Shri Arun Kumar	HKH Friend Steering Committee Meeting, May, 2003	Kathmandu, Nepal
3.	Dr. M.P. Sharma	“HKH-FRIEND Regional Training Workshop on Capacity Building for Monitoring River Quality in Hindu-Kush Himalayan Region”, May 10-15, 2003	Kathmandu, Nepal
4.	Dr. R.P. Saini	• “Hydropower Development in the Context of Integrated Water Resources Management”, June, 2003.	Trondheim, Norway
		• “Inspection of Equipment at manufacturing Unit at Bhutwal”, Bhutwal, Nepal Sept. 21-24, 2003.	Bhutwal, Nepal
5.	Shri M.K. Singhal	Training on “Strengthening Regional Energy Linkages in South Asia”, Academy for Educational Development, SARI, July 18-23, 2003	Dhaka, Bangladesh
6.	Shri Arun Kumar	To deliver lecture to International Training on “Strengthening Regional Energy Linkage in South Asia”, July 18-19, 2003.	Dhaka, Bangladesh

### Year 2002

1.	Shri S.N. Singh	Training Course on Hydropower Development, June 2-21, 2002	Trondheim, Norway
2.	Shri Arun Kumar	Invited to Centre for Ecology and Hydrology, UK, Dec. 2-8, 2002	U.K.

### Year 2001

1.	Shri M.P. Sharma	Short term training course on Hydropower & Environment, September 3-20, 2001	Trondheim, Norway
2.	Shri M.K. Singhal	Workshop, 10-21, Sept., 2001	Kathmandu, Nepal
3.	Shri S.K. Singal	Short term training course on hydropower resource Development and Management, May 21-June 7, 2001	Trondheim, Norway

### Year 2000

1.	Sh. Arun Kumar	Workshop on Lean flows – FRIENDS, April 12-14, 2000	Kathmandu, Nepal
2.	Shri Arun Kumar	International Course on Small Hydro Power Development, April 17-22, 2000	Kathmandu, Nepal
3.	Dr. R.P. Saini		
4.	Sh. M.K. Singhal		
5.	Dr. R.P. Saini	Visit to manufacturers and SHP projects sites, June 3-24, 2000	Chezk, Norway and U.K.
6.	Sh. Arun Kumar	Visit to manufacturers, financial institutions and SHP project sites, Nov. 12 – Dec. 02, 2000	Norway, Switserland and U.K.

**Year 1999**

1.	Sh. Arun Kumar	GIS based data base on SHP inventory of Nepal districts, Mar.7-9, 1999.	Kathmandu, Nepal
2.	Sh. M.K. Singhal	Training on low flow measurements and analysis at ICIMOD, Apr.18-24, 1999	Kathmandu, Nepal
3.	Sh. Arun Kumar	Low flow workshop at ICIMOD, Apr. 24-25, 1999	Kathmandu, Nepal
4.	Sh. Arun Kumar	International course on small hydro power development, Organised jointly with CES, BUET, Dhaka, May 5-9, 1999	Dhaka, Bangladesh
5.	Dr. S.P. Singh		
6.	Dr. S. Mittal		
7.	Dr. R.P. Saini		
8.	Sh. Arun Kumar	Exchange visit to ITDG, small hydro and decentralised renewable energy projects, Jun.7-12, 1999	Colombo, Sri Lanka
9.	Sh. S.N. Singh		
10	Sh. M.K. Singhal	Working on REFRESHA project at Institute of Hydrology, U.K., Oct.17-Nov.13, 1999	Wallingford, UK

**Year 1998**

1.	Sh. Arun Kumar	Invited to Present Indian Methodologies for SHP Assessment at IEA Workshop on Small Hydro, Oct. 11-16, 1998.	Nice, France
2.	Dr. M.P. Sharma	To Present paper in World Renewable Energy Congress, Sept. 18-25, 1998.	Italy
3.	Sh. Arun Kumar	To Undertake Study Tour on SHP Stations in China, Aug.30-Sept.4, 1998, Visited Regional Environment Centre at AIT, Bangkok, Thailand, Sept. 05, 1998	China & Bangkok
4.	Dr. R.P. Saini	International Workshop on Small Hydro July 21-28, 1998	Indonesia

## COLLABORATION

<b>INTERNATIONAL</b>			
<b>S.No.</b>	<b>Institutions/Organisation</b>	<b>Subject</b>	<b>MOU Signed</b>
1.	International centre for Integrated Mountain Development, Kathmandu, Nepal	SHP Training, Manual	Since 1997
2.	SCP Gestion Conceil Sherbrook, Quebec, Canada	R&M Small Hydro Projects	Since 1997
3.	Institute of Hydrology, United Kingdom	Hydrology for Ungauged streams for SHP	Since 1997
4.	International Network-Small Hydro Power Hangzhou, China	SHP - Training	Dec.'98
5.	ITECO, Nepal	To work on SHP project execution	Since 1998
6.	Canada Natural Resources (CANMET)	GIS Training	Nov. 1996
7.	Regional Environment Management Centre, AIT, Bangkok	* Training SHP * R&D Project	Dec. 1998
8.	Water & Energy Commission Secretariat, HMG Nepal	Small Hydro Projects	Mar 1998
9.	International Centre for Hydro Power, Trondheim Norway	* Hydro Power Projects * Education	* Membership received from 1999 * MOU proposed
10.	Mead & Hunt Inc, Madison, USA	To work planning of Hydropower project	Proposed
11.	Asian Development Bank	Registered as Institutional consultant	Since 1997

## PROFESSIONALS

Since its inception AHEC has been trying to make its presence felt at national level in the field of small hydro development and other new and renewable energy sources (NRES) notably biomass, solar and wind. The centre has been able to generate interaction at international level also by way of exchange programmes for scientists from country like UK, The Netherlands, China and New Zealand.

In the last 23 years AHEC has gained valuable experience in the design & execution of small hydro projects & biomass based gasifier. Young scientific staff has gained excellent expertise in the entire gamut of activities connected with small hydro and biomass gasification with post graduate and doctoral degrees in Civil, Electrical, Electronics, Computers, Mechanical & Chemistry. The faculty is well supported by an excellent team of technicians, consisting of lab technician, computer personnel, fitters, welders etc who have worked on erection & commissioning of micro hydel projects undertaken by Centre.

### (a) Faculty of AHEC

#### Head

Shri Arun Kumar, Chief Scientific Officer

#### Civil Engineering

1. Shri S.K. Singal, Senior Scientific Officer
2. Shri M.K. Singhal, Senior Scientific Officer

#### Electrical Engineering

1. Sh. S.N.Singh, Senior Scientific Officer

#### Mechanical Engineering

1. Dr. R.P. Saini, Senior Scientific Officer

#### Environment/Biomass Engineering

1. Dr. M.P. Sharma, Senior Scientific Officer

- (b) In addition to the above, the experts/drawn from departments of Civil Engg., Mechanical Engg., Electrical Engg., Earthquake Engg., Chemical Engg., Water Resources Development Training Centre, Earth Sciences, Hydrology and Management Studies of the Indian Institute of Technology Roorkee and the individual experts including eminent alumni also work for different projects/assignment. Specifically some of are:

Mission Leader - RMU & Performance Testing, Dr. H.K. Verma, Professor, Elect. Engg. Deptt.

Mission Leader - Small Hydropower Simulator, Dr. J.D. Sharma, Professor, Elect. Engg. Deptt.

### (c) Other Scientific Staff

Shri Deepak Mathur, Fellow `B`  
Shri Ashwani Kumar Shukla, Fellow `A`  
Shri Pervaj Alam, Fellow `A`  
Ms. Sejal D. Kunchwar, Fellow `A`  
Shri Ashish Ghassi, Fellow `A`  
Shri S. Hanumantu, Fellow `A`  
Shri Ziaul Badar, Fellow `A`  
Shri M.R.K. Perumal, SRF  
Shri Vijay Saini, JRF  
Shri Mansih Singh, JRF  
Shri Amit K. Verma, JRF  
Shri Ankit Gupta, JRF  
Shri Sasank Sekhar Patnaik, JRF

## INFRASTRUCTURE AVAILABLE AT AHEC

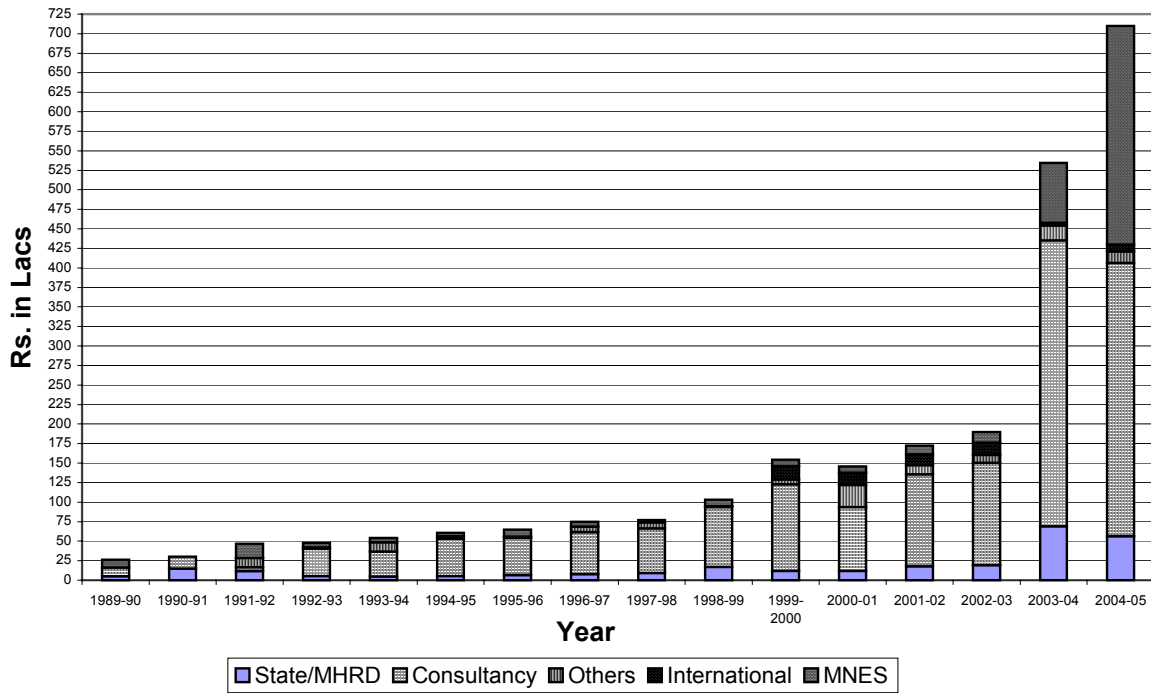
		<b>Equipment</b>	<b>Qty</b>
(i)	Information System & Computer Aided Design Lab (CADIS)		
	1.	PC-Pentium with 40 GB and graphic terminals	40
	2.	Computer Printer including Network Printer	6
	3.	Laser Printer (A3 & A4)	6
	4.	Digitizer (A0 & A3)	1
	5.	Plotter (A0)	2
	6.	Protection UPS Devices and Temperature controls	40
	7.	Photo copying M/c (A3 duplex) – Digital – Networking	3
	8.	Plan Printer	1
	9.	Software Packages	20 nos.
	10.	Scanner (A4 Size)	10
	11.	Fax Machine	1
(ii)	GIS Lab		
	1.	Pentium 40 GB and 128 MB RAM 21" Colour monitor	2 no.
	2.	Inkjet A3 Printer	1 no.
	3.	GIS Software SPANS	2 nos.
	4.	EASI-PACE Software	1 no.
	5.	Arc-View	1 no.
	6.	Laptop	1 no.
	7.	R2V Software	1 no.
	8.	GIS Based data on India	1 lot
(iii)	Control Systems Lab		
	1.	Intel's MDS System	3 set
	2.	Universal Prom Programmer	1 set
	3.	Z-80 based trainee kits	5 set
	4.	100 MHz 4-channel oscilloscope	1 set
	5.	PCB Making facility	1 set
	6.	Digital Earth Tester	1 set
	7.	20 MHz Oscilloscope (Dual Trace)	1 set
	8.	Frequency counter 100 MHz	1 set
	9.	Variable Speed DC Drive	1 set
	10.	Digital Multimeter 4+digit; 3+ digit;	1 set

		<b>Equipment</b>	<b>Qty</b>
	11.	X-Y 8-Channel recorder	1 set
	12.	Wind Data Logger	1 set
	13.	High Voltage Power Supply	1 set
	14.	DC Motor	1 set
	15.	Synchronous Motor	1 set
	16.	Portable High-Voltage Capacitance Meter	1 set
	17.	Portable Partial Discharge Detector	1 set
	18.	Portable ELCID Tester	1 set
	19.	Non-contact Type Vibration Meter	1 set
	20.	Portable AC/DC Hipot Tester	1 set
	21.	Portable 5.0 kV Megger	1 set
	22.	Contact Resistance Tester	1 set
	23.	Infra-Red Non-Contact Thermometer	1 set
	24.	Portable Relay Test Set	1 set
(iv)	Hydromechanical System Lab		
	1.	10 kW semi-closed loop pump turbine test rig.	1 set
	2.	50 kW Semi-closed loop pump test rig.	1 set
	3.	Water mill test ring	1 set
	4.	Accusonic Flow Measuring Equipment	1 set
	5.	Hydraulic Pressure Test Pump	1 set
	6.	Closed Loop vertical turbine/pump test rig	1 set
	7.	Workshop facility	1 set
	8.	Discharge measurement equipment	2 nos.
	9.	Digital multimeter	4 nos.
	10.	Camera	14 nos.
	11.	Portable Ultrasonic Flow Detector	1 set
	12.	Flow meter for flow measurement in closed pipe	1 set
	13.	Water Level Indicator	1 set
	14.	Portable Digital Transit – Time Flow meter	1 set
	15.	Electronic Torque Meter	1 set
	16.	Potable Digital Flow Meter for Pipes	1 set

		<b>Equipment</b>	<b>Qty</b>
(v)	CIVIL Engg. Lab		
	1.	Digital Altimeter 3 types	10 nos.
	2.	Current meter - 4 types	6 no.
	3.	Electronic total Station (leica met) with LISCAD software	1 Set
	4.	Digital Video CAM Recorder	1 no.
	5.	Digital Curvimeter	1 no.
	6.	Mobile PC Pentium	2 no.
	7.	GPS (10 channels)	4 nos.
	8.	Portable Ultrasonic Concrete Tester	1 no.
	9.	Micro Cover Meter	1 no.
	10.	Concrete Test Hammer M-Type	1 no.
	11.	Concrete Test Hammer N-Type	1 no.
(vi)	Biomass System Lab		
	1.	Briquetting Fuel Plant (5-Ton per day capacity)	1 set
	2.	Liquid Fertiliser Production Unit	1 set
	3.	Electrical Gasification System	1 set
	4.	Wind Mill	1 set
	5.	Wet type gas flow metre	1 set
	6.	Family size Biogas Plant	1 set
	7.	Digital Temp. Indicators & Controllers	1 set
	8.	Solari Meter Solar Collectors & Solar Cookers, Air Heaters etc.	1 set
	9.	Bomb and Junker's Calorimeter	1 set
	10.	Muffle Furnaces	1 set
	11.	Modified C.I. Engine to run on 100% biogas	1 set
	12.	Digital balance	1 set
	13.	3.5, 7.5 and 12 kW rating DG sets	1 set
	14.	Ethanol production digesters and reactors	1 set
	15.	Deep freezer	1 set
	16.	PC base spectrophotometer	1 set
	17.	Biological Incubator	1 set
	18.	Steriliser	1 set
	19.	Flue Gas Analyser	1 (under process)

		<b>Equipment</b>	<b>Qty</b>
	20.	Automatic Hydrologic Station	1 set
	21.	Digital Analytical Balance	1 set
	22.	Water Testing Kit	1 set
	23.	High Volume Samplers	1 set
	24.	Gear type deep well wind mill pump	1 set
	25.	Wind mill pump	1 set
	26.	BOD & COD Analysers	1 set
	27.	Pensky-Martens Flash Point Apparatus	1 set
	28.	Redwood Viscometer	1 set
(vii)	General Facilities		
	1.	Tata Sumo/Maruti Jeep / Qualis	1 each
	2.	Over head projector	4 nos.
	3.	Slide Projector	4 nos.
	4.	Portable Small Hydro Generation unit	3 set
	5.	Briquetting Fuel Plant for different biomass residues	1 set
	6.	Liquid Fertiliser Production Unit	1 set
	7.	Hydraulic Air Compressor Unit	1 set
	8.	Family size biogas plant	1 set
	9.	PUL-500 Wind mill	1 set
	10.	Aerogenerator cum battery charger	1 set
	11.	Electronic/Mechanical Controller actuators	1 set
	12.	Automatic Weather Station (6 parameters)	1 set
	13.	Digital Video Camera	1 No.
	14.	Renewable Energy Technology Park	1 lot
(viii)	Departmental Library Facility (Books & Journals)		Over 2600 nos.

## RECEIPTS



## EXPENDITURE

