

केंद्रीय विद्युत प्राधिकरण

(जल विद्युत स्कंध)



निर्माणाधीन जल विद्युत परियोजनाओं की प्रगति

(विद्युत अधिनियम, 2003 के तहत के.वि.प्रा. के दायित्व की पूर्ति में)

त्रैमासिक समीक्षा संख्या. 108

QUARTERLY REVIEW No. 108

जनवरी ~मार्च , 2022

जल विद्युत् परियोजना प्रबोधन प्रभाग

नई दिल्ली

अप्रैल- 2022

I N D E X

Chapter	Contents	Page No.
	Preface	1-2
	Executive Summary	3-4
1.	Milestones achieved during the quarter Jan. ~ March, 2022.	5
2.	Plan wise hydro capacity targets/ achievements from 4 th plan onwards.	6
2.1	Year/Plan wise hydro capacity addition in the country.	7-8
2.1(a)	Hydro Capacity addition during 2012-13	9
2.1(b)	Hydro Capacity addition during 2013-14	10
2.1(c)	Hydro Capacity addition during 2014-15	11
2.1(d)	Hydro Capacity addition during 2015-16	12
2.1(e)	Hydro Capacity addition during 2016-17	13-14
2.1(f)	Hydro Capacity addition during 2017-18	15
2.1(g)	Hydro Capacity addition during 2018 -19	16
2.1(h)	Hydro Capacity addition during 2019-20	17
2.1(i)	Hydro Capacity addition during 2020-21	18
2.1(j)	Hydro Capacity addition during 2021-22	19
2.1(k)	Hydro Capacity addition program for 2022-23	20
2.2	Summary of Hydro Capacity Addition expected during 2022-26	21
2.2(a)	Hydro Capacity addition programmed for 2022-23	22
2.2(b)	Hydro Capacity addition programmed for 2023-24	23
2.2(c)	Hydro Capacity addition programmed for 2024-25	24
2.2(d)	Hydro Capacity addition programmed for 2025-26	25
3.	Growth of installed capacity.	26
3.1	Growth of hydro capacity.	27
4.	Trend of hydro capacity addition. (Hydro and thermal mix)	28
5.	List of sanctioned, Under Execution H.E. Projects.	29
6.	Status of Sanctioned, Under Execution H.E. Projects.	30-54
7.	Financial status of Under Execution H.E. Projects	55-56
8.	Status of Environment & Forest Clearance of sanctioned H.E. Projects.	57
9.	Status of Award of Civil Package for Under Execution H.E. Projects.	58
9.1	Summary of Ordering status of TG sets of Under Execution H.E. Projects.	59
9.2	Status of Ordering status of TG sets of Under Execution H.E. Projects.	60-61
9.3	Ordering Status of various packages of Under Execution H.E. Projects.	62-69
10.	Status of Financial closure of Private Sector H.E. Projects.	70
11.	Details of Under Execution H.E. Projects having Time/Cost over-run	71-78

PREFACE

Present Review

This quarterly review which is **108th** in the series covers the period from **Jan. ~March, 2022**. The objective of this review is to provide up to date information in respect of Hydro Electric (HE) Projects above 25 MW, which are under construction/ implementation in the country.

This quarterly review has been brought out by CEA on the basis of data received from various project authorities, visit made to different HE projects and discussions held with the executing agencies, contractors, suppliers of equipment and other stakeholders from time to time.

Milestone Achieved During Jan. ~ March ,2022

Details of HE Units/Projects synchronised/ Rolled/Commissioned and other major milestones achieved during the Quarter is indicated in Chapter-1.

Plan / Year wise Hydro Capacity Addition / Under Execution

Hydro Capacity Addition – Financial Year Wise Lists are placed in Chapter 2.2(a) to 2.2 (l). Summary of Hydro Capacity Addition is in Ch. 2.3 (2020-26), Hydro Electric Projects Under Execution – Year wise Lists are placed in Chapter 2.3(a) to 2.3(g).

Growth of Installed Capacity, Hydro Capacity Addition

A Graphical representation of Trends & Growth of Installed Capacity, Hydro Capacity Addition of Hydro-Thermal-Nuclear HEPs during Plans/Years is placed in Chapter 3 & 4.

Sanctioned Hydro Electric Projects

A Sector wise list of Sanctioned H.E. project Under Execution is placed in Chapter 5.

Status of Sanctioned Hydro Electric Projects

Broad present status of HE projects commissioned during the financial year & Under Execution is given in Chapter 6.

Financial Status of Hydro Electric Projects

Financial status of HE projects supplied by project authorities (unaudited) is given in Chapter 7.

Status of Environment & Forest Clearances of H.E. Projects.

The status of Environmental & Forest clearance of HE projects is given in Chapters 8.

Dates of Award of First Civil Package

The date of award of First Civil Package for HE projects under execution is indicated in Chapter 9.

Ordering Status of TG set.

Details of Ordering status of TG Set for HE projects under construction is given in Chapters 9.1 and 9.2.

Status of Financial closure of Private Sector Hydro Electric Projects

Details of financial closure of Private Sector HE projects is given in Chapter-10.

Time & Cost Over-run of Ongoing Hydro Projects

The Status of Time & Cost Over-run of HE projects under execution is given in Chapter 11.

Exclusions

The review does not cover HE projects categorised as renewable, each with a total installed capacity of 25 MW and below, as these schemes come under the purview of Ministry of New & Renewable Energy (MNRE).

Any suggestions/feedback for further improvement in the quarterly review shall be appreciated.

The report is in fulfilment of CEA's obligation under Electricity Act, 2003.

Executive Summary

ALL INDIA POWER SECTOR INSTALLED CAPACITY (AS ON 31.03 .2022)

Installed Capacity (IC)	MW	Percentage of total IC
Thermal (Coal, Lignite, Gas & Diesel)	236108.72	(59.10%)
Renewable		
a) Large hydro (above 25MW)	46722.52	(11.69 %)
b) Other Renewables (solar, wind, biomass small hydro etc.)	109885.38	(27.50%)
Nuclear	6,780.00	(1.69 %)
TOTAL (IC)	399496.61	

Sector wise Hydro Capacity under Execution: A hydro capacity (from hydro projects >25 mw) of **12,483.50 MW** is under execution.

Sector wise summary is given as under: -

Sector	Under Active consideration		Presently stalled		Under Execution (MW)	
	Nos	MW	Nos	MW	Nos	MW
Central	14	8314	1	171	15	8485
State	10	2,593.5	2	128	12	2721.50
Private	2	340	6	937	8	1277
Total:	26	11,247.5	9	1236	35	12483.5

Sector wise program/Achievement summary for the financial year 2021-22 is as under:

Year	Monitorable Targets (MW)	Capacity Addition Achieved (MW)	Sector					
			Central		State		Private	
			Tgt.	Act.	Tgt.	Act.	Tgt.	Act.
2021-22	493	393	-	-	100	NIL	393	393

Monitorable Targets for Hydro Capacity Addition for the year 2021-22:

Monitorable Targets for hydro capacity addition for the year 2021-22 was **493 MW** (100 MW in State Sector and 393 MW in Private Sector). Details are as under: -

Sl. No.	Particular	Unit Nos.	Cap. (MW)	Capacity Addition as Programmed	Remarks
A.	State Sector				
1	Pallivasal KSEB, Kerala 2x30=60 MW	Unit #1 Unit # 2	30 30	December'21 December'21	Slipped to 2022-23 Slipped to 2022-23
2	Thottiyar KSEB, Kerala 1x30+1x10=40MW	Unit #1 Unit # 2	10 30	December'21 December'21	Slipped to 2022-23 Slipped to 2022-23
	Sub- total (A):		100 MW		
B.	Private Sector				
3	Sorang HSPCL, H.P. 2x50=100 MW	Unit #1 Unit # 2	50 50	September '21 September '21	Commissioned (Both units each of 50 MW capacity were commissioned during September '2021)
4	Bajoli Holi GMRBHPPL, H.P. 3x60=180 MW	Unit #1 Unit # 2 Unit # 3	60 60 60	October '21 October 21 October '21	Commissioned (all three units each of 60 MW commissioned in March 2022)
5	Rongnichu MBPCL, Sikkim 2x56.5=113 MW	Unit #1 Unit # 2	56.5 56.5	May'21 May'21	Commissioned (Both units each of 56.5 MW capacity were commissioned during June'2021)
	Sub- total (B):		393 MW		
	Total (A+B)		493 MW		393 MW has been commissioned.

CHAPTER- 1

Milestones achieved during the Quarter January ~March 2022

1. Capacity addition

(a) **Bajoli Holi HEP(3 x 60 =180 MW)** by M/s GMR in Himachal Pradesh:

Sl. No.	Particulars	Unit No.	Capacity (MW)	Remarks
1.	Bajoli Holi HEP	Unit #1	60	Taken into capacity addition on 25.03.2022
		Unit #2	60	Taken into capacity addition on 27.03.2022
		Unit #3	60	Taken into capacity addition on 28.03.2022
		Total	180 MW.	
Total during the current quarter (Private Sector) – 180 MW.				

2. Major Awards in the quarter (January to March 2022)

(a) Dhaulasidh Hydro Electric project (SJVN) 2 x 33=66MW: Award placed for E&M works on M/s Voith Hydro Pvt. Ltd. on 19.01.2022 and contract signed on 11.02.2022.

(b) Ratle Hydro Electric Project Pvt. Ltd. (NHPC) 4x205+1x30= 850 MW: EPC contract has been awarded to M/s Megha Engineering & Infrastructures Limited on 18.01.2022 for Turnkey execution of Ratle HEP.

CHAPTER - 2

Plan wise Hydro capacity Target Vs Achievement since 4th Plan

Plan / Year	Target (MW) (Original)	Capacity Addition (MW)	% Achieved
4th Plan (1969-74)	3518.00	1058.39	30.08
5th Plan (1974-79)	4654.00	3867.77	83.11
Annual Plan (1979-80)	548.00	550.9	100.53
6th Plan (1980-85)	4768.00	3076.05	64.51
7th Plan (1985-90)	5541.25	3828.41	69.09
Annual Plan (1990-91)	1006.50	445.5	44.26
Annual Plan (1991-92)	754.30	436	57.8
8th Plan (1992-97)	9282.15	2427.65	26.15
9th Plan (1997-02)	9817.70	4538.25	46.23
10th Plan (2002-07)	14393.20	7886	54.79
11th Plan (2007-12)	15627.00	5544	35.48
12 th Plan (2012-17)	10897.00	5479	50.28
2017-18	1305.00	795	60.92
2018-19	840.00	140	16.67
2019-20	1190.00	300	25.21
2020-21	606.00	510	84.16
2021-22	493.00	393	79.72

CHAPTER - 2.1

Year/Plan wise Hydro Capacity Addition in the Country

S.No.	Year	Target (Original)	Capacity Addition (MW)	% Achieved	Remarks
1st Five Year Plan (1.1.51 to 31.12.55)					
1	1951		15.89		
2	1952		140.00		
3	1953		16.00		
4	1954		62.17		
5	1955		<u>146.13</u>		
	Total :		<u>380.19</u>		
2nd Five Year Plan (1.1.56 to 31.03.61)					
6	1956		121.96		
7	1957-58		152.48		
8	1958-59		147.52		
9	1959-60		168.71		
10	1960-61		<u>386.51</u>		
	Total :		<u>977.18</u>		
3rd Five Year Plan (1.4.61 to 31.03.66)					
11	1961-62		502.44		
12	1962-63		517.25		
13	1963-64		230.67		
14	1964-65		221.71		
15	1965-66		<u>735.01</u>		
	Total :		<u>2207.08</u>		
Annual Plans (1966-67, 67-68, 68-69)					
16	1966-67		633.48		
17	1967-68		729.70		
18	1968-69		419.99		
4th Five Year Plan (1.4.69 to 31.03.74)					
19	1969-70		227.79		
20	1970-71		248.53		
21	1971-72		228.38		
22	1972-73		173.80		
23	1973-74		<u>179.89</u>		
	Total :	3518	<u>1058.39</u>	30.08	
5th Five Year Plan (1.4.74 to 31.03.79)					
24	1974-75		563.94		
25	1975-76		934.36		
26	1976-77		561.30		
27	1977-78		995.32		
28	1978-79		<u>812.85</u>		
	Total :	4654	<u>3867.77</u>	81.11	
Annual Plan (1979-80)					
29	1979-80	548	550.90	100.18	
6th Five Year Plan (1.4.80 to 31.03.85)					
30	1980-81		407.25		
31	1981-82		381.59		
32	1982-83		883.05		
33	1983-84		799.70		
34	1984-85		<u>604.46</u>		
	Total :	4768	<u>3076.05</u>	64.51	

S.No.	Year	Target (Original)	Capacity Addition (MW)	% Achieved	Remarks
7th Five Year Plan (1.4.85 to 31.03.90)					
35	1985-86		1012.00		
36	1986-87		704.525		
37	1987-88		1069.285		
38	1988-89		532.70		
39	1989-90		<u>509.90</u>		
	Total :	5541.25	<u>3828.41</u>	69.09	
Annual Plans (1990-91, 91-92)					
40	1990-91	1006.5	445.50	44.26	
41	1991-92	754.3	436.00	57.8	
8th Five Year Plan (1.4.92 to 31.03.97)					
42	1992-93	372.95	372.95		
43	1993-94	957.65	797.15		
44	1994-95	1192.55	450.00		
45	1995-96	1846	147.05		
46	1996-97	4913	<u>660.50</u>		
	Total :	9282.15	<u>2427.65</u>	26.15	
9th Five Year Plan (1.4.97 to 31.03.2002)					
47	1997-98	233	233.00		
48	1998-99	312	542.50		
49	1999-2000	1543	1371.50		
50	2000-01	2223	1285.00		
51	2001-02	5506.7	<u>1106.25</u>		
	Total :	9817.7	<u>4538.25</u>	46.22	
10th Five Year Plan (1.4.02 to 31.03.07)					
52	2002-03	585	635.00		
53	2003-04	3740	2590.00		Highest till date.
54	2004-05	2401	1015.00		
55	2005-06	2010	1340.00		
56	2006-07	5657	2306.00		3rd Highest
	Total :	14393	7886.00	54.79	
11th Five Year Plan (1.4.07 to 31.03.12)					
57	2007-08	2423	2423		2nd Highest.
58	2008-09	1097	969		
59	2009-10	1805	39		
60	2010-11	1741	690		
61	2011-12	8561	1423		
	Total :	15627	5544.00	35.48	
12th Five Year Plan (1.4.12 to 31.03.17)					
62	2012-13	802 ★	510		
63	2013-14	1198 ★	1058		
64	2014-15	842 ★	736		
65	2015-16	1691 ★	1516		
66	2016-17	1714 ★	1659		4th Highest
	Total :	10897	5479	50.23	
67	2017-18	1305 ★	795	60.92	
68	2018-19	840 ★	140	16.67	
69	2019-20	1190 ★	300	25.21	
70	2020-21	606 ★	510	84.16	
71	2021-22	493 ★	393	79.72	

★ Targets set at the beginning of the year.

Chapter- 2.1a

Hydro Capacity Addition during the Year 2012-13

Sl. No.	Particular	Unit Nos.	Target (MW)	Commissioning as programmed	Actual (MW)	Actual (A)/ Anticipated	Remarks/Critical Issue
A. Central Sector							
1.	Chamera-III NHPC, H.P. 3x77= 231 MW	1 2 3	77 77 77	Jun-12 Aug-12 Oct -12	77 77 77	28.06.2012(A) 12.06.2012(A) 07.06.2012(A)	Commissioned
2.	Uri-II NHPC, J&K 4x60= 240 MW	1 2 3 4	60 60 60 60	Aug -12 Sept -12 Nov-12 Dec-12	-	Slipped Slipped Slipped Slipped	- Local agitation from mid March, 12 to June, 12 end. - TRT was flooded on 17.09.12 due to flash flood. - Filling of U/s Water conductor system delayed due to agitation by local people demanding employment in NHPC.
3.	Chutak NHPC, J&K 4x11 =44 MW	1 2 3 4	11 11 11 11	Sept-12 Sept-12 Nov -12 Dec-12	11 11 11 11	22.11.2012(A) 08.11.2012(A) 11.11.2012(A) 28.01.2013(A)	Commissioned
4.	Parbati-III NHPC, HP 4x130= 520 MW	1	130	Mar-13	-	Slipped	- Non-availability of transmission system. - Non completion of Surge shaft gates.
Sub- total (A):			645		275		
B. State Sector							
5.	Bhawani Kattalai -II TANGEDCO, T.N Tamil Nadu, 2x15 = 30 MW	1 2	15 15	June-12 July-12	-	Slipped	- Unit #1&2 synchronised at part load in July, 11 & Sept, 11 - Reservoir filling delayed on account of less release from Mettur dam.
6.	Bhawani Kattalai -III TANGEDCO, T.N 2x15 = 30 MW	1	15	Oct-12	15	08.12.12(A)	Commissioned
7.	Myntdu MeECL, Meghalaya 3x42 = 126 MW	3	42	Mar-13	42	07.03.2013(A)	Commissioned
Sub- total (B):			87		57		
C. Private Sector							
8.	Budhil Lanco H P 2x35=70 MW	1 2	35 35	May-12 July-12	35 35	30.05.2012(A) 26.05.2012(A)	Commissioned
Sub- total (C):			70		70		
Total (A+B+C)			802		402		
Out side the programme of 2012-13.							
1.	Teesta Low Dam –III NHPC, WB 4x33=132 MW	1 2 3	- - -	2013-14 2013-14 2013.14	33 33 33	30.01.2013(A) 20.01.2013(A) 24.02.2013(A)	Commissioned
2.	Jaldhaka (WBSEDCL) West Bengal 4x9=36 MW	4	-	-	9	08.10.2012(A)	Commissioned
Sub- total : Outside			-		108		
Grand Total: 2012-13			802		510		

Chapter- 2.1b

Hydro Capacity Addition during the Year 2013-14

Sl. No.	Particular	Unit Nos.	Capacity (MW)		Commissioning		Remarks/Critical Issue
			Target	Actual	As Programmed	Actual (A)/ Anticipated	
A. Central Sector							
1	Teesta Low Dam-III NHPC, WB. 4x33= 132 MW	Unit # 4	33	33	April-13	01.04.2013(A)	Commissioned
2	Uri-II NHPC, J&K 4x60= 240 MW	Unit # 1 Unit # 2 Unit # 3 Unit # 4	60 60 60 60	60 60 60 60	May-13 June- 13 July- 13 July- 13	25.09.2013 (A) 16.11.2013 (A) 27.09.2013 (A) 02.02.2014 (A)	Commissioned
3	Parbati-III NHPC, HP 4x130= 520 MW	Unit # 1 Unit # 2 Unit # 3	130 130 130	130 130 130	June-13 July -13 Feb- 14	18.02.2014 (A) 27.02.2014 (A) 15.03.2014 (A)	Commissioned
4	Nimoo Bazgo NHPC, J&K 3x15 =45 MW	Unit # 1 Unit # 2 Unit # 3	15 15 15	15 15 15	Dec- 13 Nov -13 Nov-13	02.11.2013 (A) 31.10.2013 (A) 30.10.2013 (A)	Commissioned
5	Rampur SJVN Limited, HP. 6x68.67 = 412 MW	Unit # 1 Unit # 2 Unit # 5	68.67 68.67 68.67	68.67 68.67 68.67	Jan- 14 Feb- 14 Mar- 14	23.03.2014 (A) 21.03.2014 (A) 29.03.2014 (A)	Commissioned
	Sub- total (A):		914	914			
B. State Sector							
6.	Lower Jurala APGENCO, A.P. (6x40=240 MW)	Unit # 1	40	-	Dec-13	Slipped	-Unit was synchronized at part load on 29.12.13, but full load commissioning could not be achieved due to non-availability of sufficient water.
7	Bhawani Kattalai -II TANGEDCO, T.N Tamil Nadu, 2x15 = 30 MW	Unit # 1 Unit # 2	15 15	15 15	July -13 Aug- 13	27.08.2013 (A) 06.09.2013 (A)	Commissioned
8	Bhawani Kattalai -III TANGEDCO, T.N Tamil Nadu, 2x15 = 30 MW	Unit # 2	15	15	June -13	25.09.2013 (A)	Commissioned
	Sub- total (B):		85	45			
C. Private Sector							
9	Sorang Himachal Sorang Power Pvt. Ltd, H P. 2x50=100 MW	Unit # 1 Unit # 2	50 50	- -	Nov-11 Dec-11	Slipped	- Commissioning delayed, cracks developed in penstock during filling of water conductor system in 1 st week of Nov-2013.
10	Chuzachen Gati Infra. Limited, Sikkim 2x49.5= 99 MW	Unit # 1 Unit # 2	49.5 49.5	49.5 49.5	June -13 July -13	21.04.2013(A) 20.04.2013(A)	Commissioned
	Sub- total (C):		199	99			
	Total (A+B+C)		1198	1058			

Out side RFD achievements: Unit # 2 (40 MW) of Lower Jurala HEP was synchronized at part load on 10.01.2014, but full load commissioning could not be achieved due to non-availability of sufficient water.

Chapter- 2.1c

Hydro Capacity Addition during the Year 2014-15

Sl. No.	Particular	Unit Nos.	Capacity (MW)		Commissioning		Remarks/Critical Issue
			Target	Actual	As Programmed	Actual (A)/ Anticipated	
A. Central Sector							
1	Parbati-III NHPC, HP 4x130= 520 MW	Unit # 4	130	130	Aug- 14	22.05.2014 (A)	Commissioned
2	Rampur SJVN Limited, HP. 6x68.67 = 412 MW	Unit # 3 Unit # 4 Unit # 6	68.67 68.67 68.67	68.67 68.67 68.67	Jun 14 May 14 Apr 14	31.07.2014(A) 12.06.2014(A) 04.12.2014(A)	Commissioned
Out side the Programme							
3	Koldam NTPC, H.P. 4x200 = 800 MW	Unit # 1 Unit # 2	200 200	200 200	Mar-15 Mar-15	31.03.2015 (A) 30.03.2015 (A)	Commissioned
	Sub- total (A):		736	736			
B. State Sector							
4	Lower Jurala TSGENCO, Telangana 6x40= 240 MW	Unit # 1 Unit # 2 Unit # 3 Unit # 4	40 40 40 40	0 0 0 0	Jul.-14 Jul.-14 Oct.-14 Mar.-15	Slipped	- Slipped due to flooding of Power House on 30.07.2014 during synchronization process for Unit # 1 to Unit# 3.
5	Nagarjuna Sagar APGENCO, A.P. 2x25= 50 MW	Unit # 1 Unit # 2	25 25	0 0	Sep-14 Dec-14	Slipped	- Commissioning delayed due to non-availability of water.
	Sub- total (B):		210	0			
C. Private Sector							
6	Jorethang Loop DANS Pvt. Ltd., Sikkim 2x48= 96 MW	Unit # 1 Unit # 2	48 48	0 0	Feb-15 Mar-15	Slipped	- Slipped due to non-completion of HRT.
7	Teesta-III Teesta Urja, Sikkim 6x200= 1200 MW	Unit # 6	200	0	Mar-15	Slipped	- Slipped due to Financial crunch with the Developer.
	Sub- total (C):		296	0			
	Total (A+B+C)		842	736			

Out side RFD achievements:

Unit #1 & # 2 (400 MW) of Kol Dam HEP commissioned during March, 2015.

Chapter- 2.1d

Hydro Capacity Addition during the Year 2015-16

Sl. No.	Particular	Unit Nos.	Capacity (MW)		Commissioning		Remarks/Critical Issue
			Target	Actual	As Programmed	Actual (A)/ Anticipated	
A.	Central Sector						
1	Koldam NTPC, HP 4x200= 800 MW	Unit # 3 Unit # 4	200 200	200 200	4/15 5/15	10.04.2015(A) 12.06.2015(A)	Commissioned
2	Teesta Low Dam-IV NHPC, W.B 4x40 = 160 MW	Unit # 1 Unit # 2	40 40	40 40	2/16 3/16	14.02.2016 16.03.2016	Commissioned
3	Pare NEEPCO, Ar. Pradesh 2x55=110 MW	Unit # 1 Unit # 2	55 55		8/12 8/12	Slipped Slipped	Slipped due to inundation of dam area with flood water after overtopping of Coffey Dam in June'15 and many times thereafter. Slow progress of works in Dam concreting.
	Sub- total (A):		590	480			Achieved:-480 MW
B.	State Sector						
4	Baglihar - II JKPDC, J&K 3x150= 450 MW	Unit # 1 Unit # 2 Unit # 3	150 150 150	150 150 150	9/15 9/15 2016-17	05.09.2015(A) 29.09.2015(A) 26.10.2015(A)	Commissioned
5	Kashang - I HPPCL, H.P. 1x65=65 MW	Unit # 1	65		3/16	Slipped	Slow progress of E&M works.
6	Lower Jurala TSGENCO, Telangana 6x40= 240 MW	Unit # 1 Unit # 2 Unit # 3 Unit # 4	40 40 40 40	40 40 40 40	7/15 8/15 9/15 10/15	14.10.2015(A) 30.09.2015(A) 04.01.2016(A) 05.03.2016(A)	Commissioned
7	Nagarjuna Sagar TR APGENCO, AP 2x25=50 MW	Unit # 1 Unit # 2	25 25		7/15 7/15	Slipped Slipped	Unit 1 & 2 could not be commissioned due to non-availability of rated discharge.
	Sub- total (B):		575	610			Achieved:-610 MW
C.	Private Sector						
8	Sorang HSPCL, H.P. 2x50 = 100 MW	Unit # 1 Unit # 2	50 50		11/11 12/11	Slipped Slipped	Unit # 1 synchronized , but could not be commissioned due to non-availability of rated discharge. Penstock ruptured on 18.11.2015.
9	Srinagar AHPCL, Uttarakhand 4x82.5=330	Unit # 1 Unit # 2 Unit # 3 Unit # 4	82.5 82.5 82.5 82.5	82.5 82.5 82.5 82.5	4/15 4/15 5/15 6/15	10.04.2015(A) 08.06.2015(A) 20.04.2015(A) 03.06.2015(A)	Commissioned
10	Jorethang Loop DANS Pvt. Ltd., Sikkim 2x48= 96 MW	Unit # 1 Unit # 2	48 48	48 48	9/15 10/15	22.09.2015(A) 23.09.2015(A)	Commissioned
	Sub- total (C):		526	426			Achieved:-426 MW
	Total (A+B+C)		1691	1516			Achieved:-1516 MW
Note: 1516 MW out of 1691 MW is Commissioned during 2015-16.							

Out side RFD achievements:

Unit #3 (150 MW) of Baglihar-II HEP commissioned ahead of Programme during Oct-2015.

Chapter- 2.1e

Hydro Capacity Addition during the Year 2016-17

Sl. No.	Particular	Unit Nos.	Capacity (MW)		Commissioning		Remarks/ Critical Issue
			Target	Actual	As Programmed	Actual(A)/ Anticipated	
A.	Central Sector						
1	Teesta Low Dam IV NHPC, West Bengal 4x40 = 160 MW	Unit # 3 Unit # 4	40 40	40 40	Jun.16 Sep.16	03.07.2016(A) 11.08.2016(A)	Commissioned
2	Pare NEEPCO, Ar. Pradesh 2x55=110 MW	Unit # 1 Unit # 2	55 55	- -	Aug.12 Aug.12	Slipped Slipped	Slow progress in Dam concreting and erection of spillway gates.
3	Kameng NEEPCO, Ar. Pradesh 4x150= 600 MW	Unit # 1 Unit # 2	150 150	- -	Dec.'09 Dec.'09	Slipped Slipped	Slow progress in Dam & HM works.
	Sub- total (C.S.):		490	80			
B.	State Sector						
1	Sainj HPPCL, H.P 2x50= 100 MW.	Unit # 1 Unit # 2	50 50	- -	Dec.16 Jan.17	Slipped Slipped	Slow progress of concreting barrage, pressure shaft & power house.
2	Kashang – I HPPCL, H.P. 1x65=65 MW	Unit # 1	65	65	May 16	10.10.2016(A)	Commissioned
3	Lower Jurala TSGENCO, Telangana 6x40= 240 MW	Unit # 5 Unit # 6	40 40	40 40	Sept.16 Nov.16	20.08.2016(A) 29.09.2016(A)	Commissioned
4	Pulichintala TSGENCO,Telangana 4x30=120 MW	Unit # 1 Unit # 2	30 30	30 -	Aug.16 Dec16	25.09.2016(A) Slipped	Commissioned Due to non-availability of water in the Dam.
5	New Umtru MePGCL,Meghalaya 2x20=40 MW	Unit # 1 Unit # 2	20 20	- -	Nov.16 Dec.16	Slipped Slipped	Slow progress of works.
6	Teesta-III Teesta Urja Ltd. Sikkim 6x200= 1200 MW	Unit #1 Unit # 2 Unit # 3	200 200 200	200 200 200	Dec.16 Jan.17 Feb.17	15.01.2017(A) 27.01.2017(A) 14.01.2017(A)	Commissioned
7	Nagarjuna Sagar TR APGENCO, Telangana 2x25= 50 MW	Unit #1 Unit #2	25 25	25 25	Aug.16 Aug.16	05.01.2017(A) 28.01.2017(A)	Commissioned
	Sub- total (B):		995	825			
C.	Private Sector						
1	Chanju-I IA Energy ; H.P. 3x12= 36 MW	Unit # 1 Unit # 2 Unit # 3	12 12 12	12 12 -	July 16 Sept.16 Dec.16	17.02.2017(A) 01.02.2017(A) Slipped	Commissioned Commissioned Slow progress of E&M works.
2	Dikchu Sneha Kinetic Power Projects (P).Ltd., Sikkim 2x48= 96 MW	Unit # 1 Unit # 2	48 48	- -	July.16 Sept.16	Slipped Slipped	Slow progress of HM & EM works.
3	Tashiding Shiga Energy Pvt. Ltd. Sikkim 2x48.5= 97 MW	Unit # 1 Unit # 2	48.5 48.5	- -	Jan.17 Feb.17	Slipped Slipped	Non completion of power evacuation system.
	Sub- total (P.S.):		229	24			

Chapter- 2.1e

	Total C.S.+S.S.+P.S.)		1714	929			
		Out Side Programme					
1	Kashang-II & III HPPCL , HP 1x65+1x65= 130MW	Unit # 1 Unit # 2	65 65	65 65	NA NA	02.01.2017(A) 22.08.2016(A)	Commissioned
2.	Teesta-III Teesta Urja Ltd. Sikkim 6x200=1200 MW.	Unit #4 Unit # 5 Unit # 6	200 200 200	200 200 200	Outside Programme	16.02.2017(A) 24.01.2017(A) 28.01.2017(A)	Commissioned
		Total Outside Programme :		730			
		Grand Total (31.03.2017)		1659			

Chapter- 2.1f

Hydro Capacity Addition during the Year 2017-18

Sl. No.	Particular	Unit Nos.	Capacity (MW)		Commissioning		Remarks / Critical Issues
			Actual	Target	As Programmed	Actual (A)/ Anticipated	
A.	Central Sector						
1	Tuirial NEEPCO, Mizoram 2x30 = 60 MW	Unit # 1 Unit # 2	30 30	30 30	Jun '17 Sep '17	25.08.2017(A) 28.11.2017(A)	Commissioned
2	Kishanganga NHPC, J&K 3x110 = 330 MW	Unit #1 Unit # 2 Unit # 3	110 110 110	110 110 110	Jan '18 Feb '18 Mar '18	13.03.2018(A) 21.03.2018(A) 30.03.2018(A)	Commissioned
3	Pare NEEPCO, Arunachal Pradesh 2x55=110 MW	Unit # 1 Unit # 2	55 55	55 55	May'18 May'18	Slipped Slipped	Seepage from diversion tunnel during impounding of reservoir.
4	Kameng NEEPCO, Arunachal Pradesh 4x150=600 MW	Unit # 1 Unit # 2	150 150	-	Mar. '18 Mar. ' 18	Slipped Slipped	Leaking observed in Penstock during water filling
	Sub- total (A):		800	390	Total Commissioned in Central Sector : 390 MW		
B.	State Sector						
1	Sainj HPPCL, H.P. 2x50= 100 MW	Unit # 1 Unit # 2	50 50	50 50	May.17 Jun.17	04.09.2017(A) 04.09.2017(A)	Commissioned
2	Uhl - III BVPCL, H.P. 3x33.33=100 MW	Unit #1 Unit # 2 Unit # 3	33.33 33.33 33.33	-	Jan.'18 Feb.'18 Mar.'18	Slipped Slipped Slipped	Delay in completion of HRT lining due to heavy ingress of water in HRT.
3	Pulichintala TSGENCO,Telangana 4x30=120 MW	Unit # 2 Unit # 3	30 30	30 30	Aug.17 Oct.17	26.10.2017(A) 01.11.2017(A)	Commissioned
4	New Umtru MePGCL, Meghalaya 2x20=40 MW	Unit # 1 Unit # 2	20 20	20 20	Apr.17 Jul.17	22.04.2017 (A) 30.06.2017 (A)	Commissioned
	Sub- total (B):		300	200	Total Commissioned in State Sector :200 MW		
C.	Private Sector						
1	Chanju-I IA Energy, H.P. 3x12 = 36 MW	Unit # 3	12	12	May.17	26.07.2017 (A)	Commissioned
2	Dikchu Sneha Kinetic Power Projects Pvt. Ltd., Sikkim,2x48MW= 96	Unit # 1 Unit # 2	48 48	48 48	Apr.17 May.17	11.04.2017 (A) 12.04.2017 (A)	Commissioned
3	Tashiding Shiga Energy Pvt. Ltd. Sikkim 2x48.5= 97 MW	Unit # 1 Unit # 2	48.5 48.5	48.5 48.5	Jul.17 Aug.17	06.11.2017 (A) 06.11.2017(A)	Commissioned
	Sub- total (C):		205	205	Total Commissioned in Private Sector : 205 MW		
	Total (A+B+C)		1305	795	Total Commissioned during 2017-18 : 795 MW.		

Chapter- 2.1g

Hydro Capacity Addition during the Year 2018-19

Sl. No.	Particular	Unit Nos.	Capacity (MW)		Commissioning		Remarks / Critical Issues
			Target	Actual	As Programmed	Actual (A)/ Anticipated	
A.	Central Sector						
1	Pare NEEPCO, Arunachal Pradesh 2x55=110 MW	Unit # 1 Unit # 2	55 55	55 55	May'18 May'18	28.05.2018 21.05.2018	Commissioned
2	Kameng NEEPCO, Arunachal Pradesh 4x150=600 MW	Unit # 1 Unit # 2 Unit # 3 Unit # 4	150 150 150 150		March'19 March'19 March'19 March'19	Slipped to 2019-20	Non-completion of Rectification works of leakage observed in penstock1&2 during water filling..
	Sub- total (A):		710	110	Total Commissioned in Central Sector :110 MW		
B.	State Sector						
3	Uhl - III BVPCL, H.P. 3x33.33=100 MW	Unit #1 Unit # 2 Unit # 3	33.33 33.33 33.33		Aug. 18 Aug.18 Sep.18	Slipped to 2019-20	During HST, some leakage in Penstock is observed which is being rectified.
4	Pulichintala TSGENCO, Telangana 4x30=120 MW	Unit # 4	30	30	Sep.18	08.09.2018(A)	Commissioned
	Sub- total (B):		130		30		
	Total (A+B)		840		140	Total Comm. 140 MW	

Chapter-2.1h

Hydro Capacity Addition during the Year 2019-20

Sl. No.	Particular	Unit Nos.	Capacity (MW)		Commissioning		Remarks / Critical Issues
			Target	Actual	As Programmed	Actual (A)/ Anticipated	
A.	Central Sector						
1	Kameng NEEPCO, Arunachal Pradesh 4x150=600 MW	Unit # 1 Unit # 2 Unit # 3 Unit # 4	150 150 150 150	150 150	Aug'19 Aug'19 Aug'19 Aug'19	Feb,20 Feb,20 Slipped Slipped Slipping to (March-21)	-Seepage of water during welding affecting progress of works and causing delays. -Difficult approach and working condition. -Ventilation constrains Works effected due to heavy rains this monsoon.
	Sub- total (A):		600	300			
B.	State Sector						
2.	Uhl - III BVPCL, H.P. 3x33.33=100	Unit #1 Unit # 2 Unit # 3	33.33 33.33 33.33		Oct,19 Nov,19 Dec,19	Slipping to (Dec,22)	-Difficult approach -Delay in welding of liner in bend. - Rupture in Penstock in May,2020
3	Sawra Kuddu HPPCL, H.P. 3x37=111 MW	Unit #1 Unit # 2 Unit # 3	37 37 37		Sep,19 Oct,19 Nov,19	Slipping to (March,21)	- Delay in completion of HRT works & associated transmission line. - During filling of water conductor system in May,20, leakage is observed in adit to HRT
	Sub- total (B):		211				
C.	Private Sector						
4.	Bajoli Holi GMR,H.P. 3x60=180 MW	Unit #1 Unit # 2 Unit # 3	60 60 60		Jan.,20 Feb.,20 Mar.,20	Slipping to (Dec,21)	-Works affected due to heavy rainfall in August,19 and inclement weather from early Dec,19. to end of Jan,20 -Poor financial health of civil contractor.
5.	Singoli Bhatwari L&T, Uttarakhand 2x33=99 MW	Unit #1 Unit # 2 Unit # 3	33 33 33		Mar.,20 Mar.,20 Mar.,20	Slipping to (Dec,20)	-Commissioned
6.	Sorang HSPCL Uttarakhand 2x50=100 MW	Unit #1 Unit # 2	50 50		Nov,19 Dec.,19	Slipping to Dec,21	- Poor planning of re-erection of penstock works - Weather constraints.
	Sub- total (C):		379				
	Total (A+B+C)		1190	300			

Hydro Capacity Addition during the Year 2020-21

Sl. No.	Particular	Unit Nos.	Capacity (MW)		Commissioning		Remarks / Critical Issues
			Target	Actual	As Programmed	Actual (A)/ Anticipated	
A.	Central Sector						
1	Kameng NEEPCO, Arunachal Pradesh 4x150=600 MW	Unit # 3 Unit # 4	150 150	300	March,21 March,21	21.01.2021 11.02.2021	Commissioned Commissioned
	Sub- total (A):		300	300			
B.	State Sector						
2	Sawra Kuddu HPPCL, H.P. 3x37=111 MW	Unit #1 Unit # 2 Unit # 3	37 37 37	111	(March,21) (March,21) (March,21)	12.11.2020 05.12.2020 16.12.2020	Commissioned Commissioned Commissioned
	Sub- total (B):		111	111			
C.	Private Sector						
3.	Singoli Bhatwari L&T, Uttarakhand 2x33=99 MW	Unit #1 Unit # 2 Unit # 3	33 33 33	99	March.,20 March.,20 March.,20	19.11.2020 18.12.2020 25.12.2020	Commissioned Commissioned Commissioned
4.	Rongnichu 2x48= 96 MW* Madhya Bharat Power Corpn., Sikkim	Unit #1 Unit # 2	48 48	--	March,21 March,21	*To be commissioned in FY 2021-22 with 17 MW enhanced capacity	
	Sub- total (C):		195				
	Total (A+B+C)		606	510			

Note: 510 MW capacity addition has been achieved in FY 2020-21 out of programmed capacity of total 606 MW

Chapter -2.1 j

Hydro Capacity addition Programme for 2021-22

Sl. No.	Particular	Unit Nos.	Capacity (MW)		Capacity Addition		Remarks/Critical Issues
			Target	Actual	As Programmed	Actual/Anticipated	
A.	State Sector						
1	Pallivasal KSEB, Kerala 2x30=60 MW	Unit #1 Unit # 2	30 30		December'21 December'21	2022-23 2022-23	Slipped to 2022-23
2	Thottiyar KSEB, Kerala 1x30+1x10=40MW	Unit #1 Unit # 2	10 30		December'21 December'21	2022-23 2022-23	Slipped to 2022-23
	Sub- total (A):		100 MW				
B.	Private Sector						
3	Sorang HSPCL, H.P. 2x50=100 MW	Unit #1 Unit # 2	50 50	100	June'21 June'21	23.09.2021 21.09.2021	Commissioned Commissioned
4	Bajoli Holi GMRBHHPL, H.P. 3x60=180 MW	Unit #1 Unit # 2 Unit # 3	60 60 60		June'21 June'21 June'21	25.03.2022 27.03.2022 28.03.2022	Commissioned Commissioned Commissioned
5	Rongnichu MBPCL, Sikkim 2x56.5=113 MW	Unit #1 Unit # 2	56.5 56.5	113	May'21 May'21	25.06.2021 30.06.2021	Commissioned Commissioned
	Sub- total (B):		393 MW	213			
	Total (A+B)		493 MW				

Chapter -2.1 K

Hydro Capacity addition Programme for 2022-23

Sl. No.	Particular	Unit Nos.	Capacity (MW)		Capacity Addition		Remarks/Critical Issues
			Target	Actual	As Programmed	Actual/ Anticipated	
A	Central Sector						
1	Naitwar mori	Unit #1 Unit # 2	30 30			Dec'22 Jan'23	
2	Subansiri Lower 8x250= 2000 MW	Unit #1 Unit # 2	250 250			Jan'23 Feb'23	
3	Tehri PSS 4x250= 1000 MW	Unit #1	250			Mar'23	
	Sub total (A)		810 MW				
B	State Sector						
1	Pallivasal KSEB, Kerala 2x30=60 MW	Unit #1 Unit # 2	30 30			Mar'23 Mar'23	
2	Thottiyar KSEB, Kerala 1x30+1x10=40MW	Unit #1 Unit # 2	10 30			Feb'23 Mar'23	
3	Vyasi 2x60=120 MW	Unit #1 Unit # 2	60 60			Apr'22 May'22	
	Sub- total (B):		220 MW				
C.	Private Sector						
1	Tidong-I 2x50= 100 MW	Unit #1	50			Mar'23	
	Sub- total (C):		50MW				
	Total (A+B +C)		1080MW				

SUMMARY

Hydro Capacity Addition during the Period 2022-26

Sector	2022-23		2023-24		2024-25		2025-26		Total	
	MW	Nos.	MW	Nos.	MW	Nos.	MW	Nos.	MW	Nos.
Central Sector	810	3#	3550	4#	1828	5	2297	5	8485	15
State Sector	220	3	637.5	3	1416	4#	448	3#	2721.5	12
Private Sector	50	1#	450	2#	237	4	540	2	1277	8
Total	1080	7#	4637.5	9#	3481	13#	3285	10#	12483.5	35

Note:

At present, there are **35 no.** of Hydro Electric Projects (above 25 MW) totaling to **12483.50 MW**. Central Sector – 15 nos. (8485 MW), State Sector – 12 nos. (2721.50 MW), Private Sector – 8 nos. (1277 MW). Out of these, **26 nos.** of Hydro Power Project totaling to **11247.5 MW** are under active construction and on **9 nos.** of Hydro Power Project totaling to **1236 MW** for which construction is held-up.

Subansiri Lower, Tehri ,Polavaram and Tidong Hydroelectric Projects are bifurcated for benefits during more than one year.

Chapter -2.2 (a)

List of under construction Hydro projects
(above 25 MW & excluding Projects under Ministry of New & Energy)

FY: 2022-23

Sl. No.	Name of Project	Unit No.	State/ Implem. Agency	Capacity (MW)	Remarks
	Central Sector				
1	Naitwar Mori 2x30=60 MW	U-1 to U-2	Uttarakhand/SJVNL	60	
2	Subansiri Lower 8x250= 2000 MW	U-1 to U-2	Arunachal Pradesh/NHPC	500	
3	Tehri PSS 4x250= 1000 MW	U-1	Uttarakhand/THDC	250	
			Sub- total (Central):	810	
	State Sector				
4	Pallivasal 2x30= 60 MW	U-1 to U-2	Kerala/ KSEB Ltd.	60	
5	Thottiyar 1x30 + 1x10= 40 MW	U-1 to U-2	Kerala/ KSEB Ltd.	40	
6	Vyasi 2x60=120 MW	U-1 to U-2	Uttarakhand/UJVNL	120	
			Sub- total (State):	220	
	Private Sector				
7	Tidong-I 2x50= 100 MW	U-1	Himachal Pradesh/M/s Statkraft India Pvt. Ltd.	50	
			Sub- total (Private):	50	
Total (CS+SS+PS)				1080	

Chapter -2.2 (b)

List of under construction Hydro projects
(above 25 MW & excluding Projects under Ministry of New & Energy)

FY: 2023-24

Sl. No.	Name of Project	Unit No.	State/ Implem. Agency	Capacity (MW)	Remarks
	Central Sector				
1	Tehri PSS 4x250= 1000 MW	U-2 to U-4	Uttarakhand/THDC	750	
2	Subansiri Lower 8x250= 2000 MW	U-3 to U-8	Arunachal Pradesh/NHPC	1500	
3	Parbati St. II 4x200= 800 MW	U-1 to U-4	Himachal Pradesh/NHPC	800	
4	Teesta- VI 4x125= 500 MW	U-1 to U-4	Sikkim/NHPC	500	
			Sub- total (Central):	3550	
	State Sector				
5	Kundah Pumped Storage (Phase-I, Phase-II & Phase-III)	U-1 to U-4	Tamil Nadu/TANGEDCO	500	
6	Uhl III 3x33.33= 100 MW	U-1 to U-3	Himachal Pradesh/BVPCL	100	
7	Parnai 3x12.5= 37.5 MW	U-1 to U-3	Jammu & Kashmir/JKSPDC	37.5	
			Sub- total (State):	637.5	
	Private Sector				
8	Maheshwar # 10x40= 400 MW	U-1 to U-10	Madhya Pradesh/SMHPCL	400	Subject to re-start of works
9	Tidong-I 2x50= 100 MW	U-2	Himachal Pradesh/M/s Statkraft India Pvt. Ltd.	50	
			Sub- total (Private):	450	
Total (CS+SS+PS)				4637.5	
# PFC as lead lender have acquired majority equity i.e. 51% in the SMHPCL w.e.f. 1 st June, 2016. Matter Sub-judice.					

Chapter -2.2 (c)

List of under construction Hydro projects
(above 25 MW & excluding Projects under Ministry of New & Energy)

FY: 2024-25

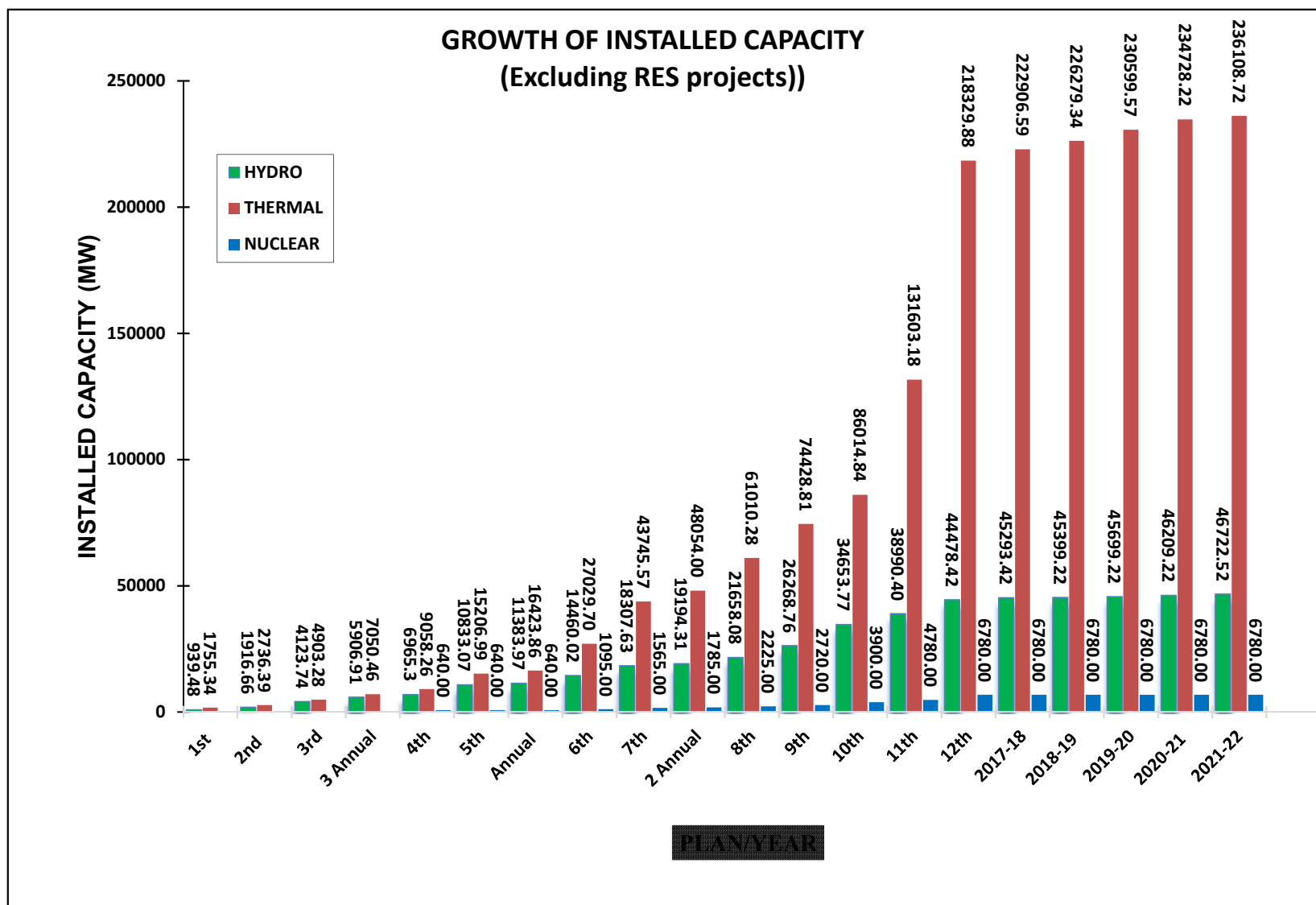
Sl. No.	Name of Project	Unit No.	State/ Implem. Agency	Capacity (MW)	Remarks
	Central Sector				
1	Kiru 4x156=624 MW	U-1 to U-4	Jammu & Kashmir/CVPPL	624	
2	Rammam - III 3x40=120 MW	U-1 to U-3	West Bengal/ NTPC Ltd.	120	
3	Vishnugad Pipalkoti 4x111=444 MW	U-1 to U-4	Uttarakhand/THDC	444	
4	Rangit-IV 3x40=120 MW	U-1 to U-3	Sikkim/NHPC Ltd.	120	
5	Tapovan Vishnugad 4x130=520 MW	U-1 to U-4	Uttarakhand /NTPC	520	
			Sub- total (Central):	1828	
	State Sector				
6	Polavaram 12x80=960 MW	U-1 to U-8	Andhra Pradesh/ Polavaram Project Authority	640	
7	Shongtong Karcham 3x150=450 MW	U-1 to U-3	Himachal Pradesh/HPPCL	450	
8	Lower Kopili 2x55+2x2.5+1x5	U-1 to U-5	Assam/APGCL	120	
9	Shahpurkandi 3x33+3x33+1x8 = 206 MW	U-1 to U-7	Punjab/Irr. Deptt. & PSPCL	206	
			Sub- total (State):	1416	
	Private Sector				
10	Phata Byung 2x38= 76 MW	U-1 to U-2	Uttarakhand/ M/s Lanco	76	Subject to re-start of works
11	Rangit-II 2x33= 66 MW	U-1 to U-2	Sikkim/ Sikkim Hydro Power Ltd.	66	Subject to re-start of works
12	Bhasmey 2x25.5= 51 MW	U-1 to U-2	Sikkim/Gati Infrastructure	51	Subject to re-start of works
13	Tangnu Romai- I 2x22= 44 MW	U-1 to U-2	Himachal Pradesh/Tangu Romai Power Generation	44	Subject to re-start of works
			Sub- total (Private):	237	
Total (CS+SS+PS)				3481	

Chapter -2.2 (d)

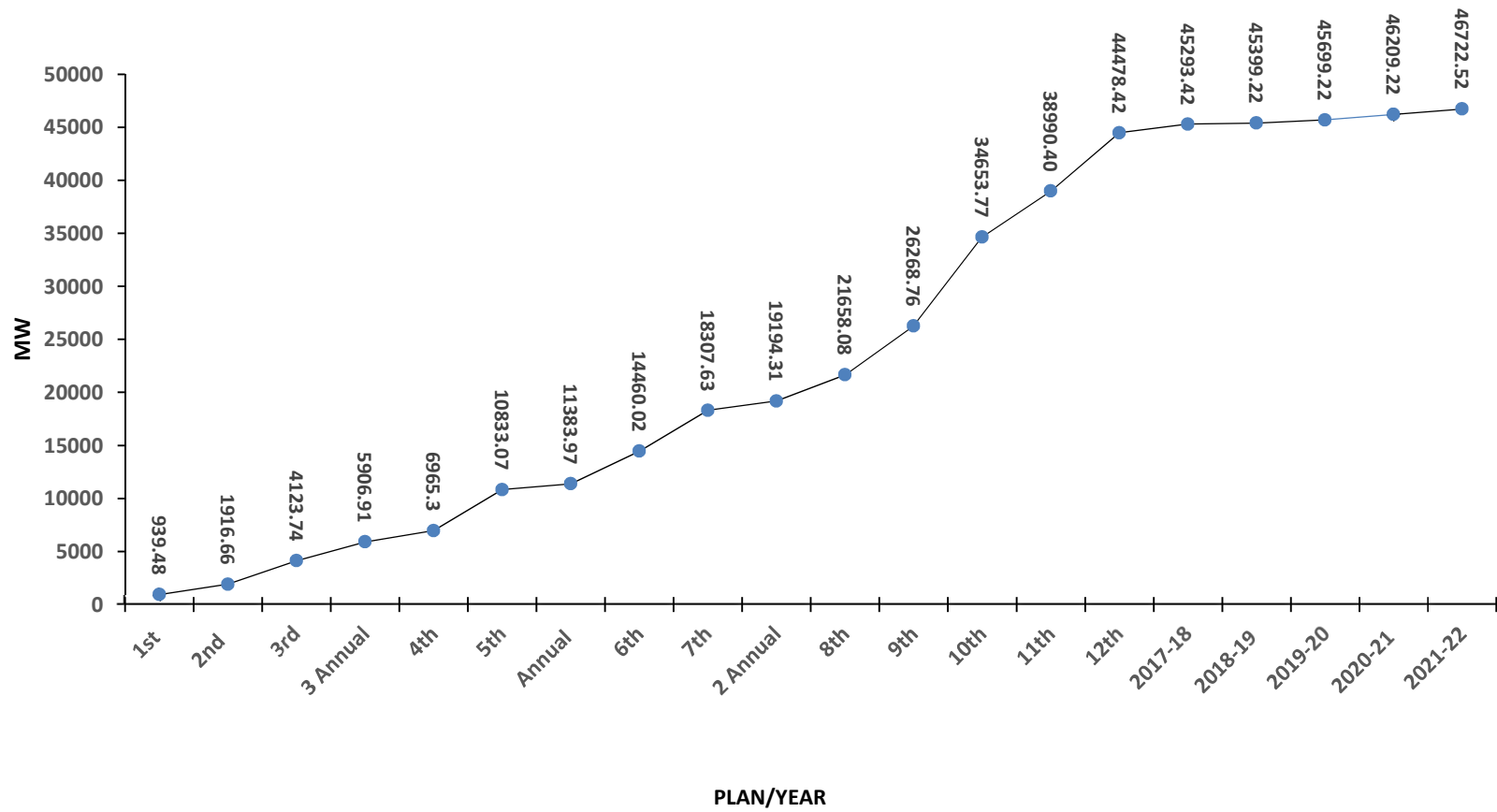
List of under construction Hydro projects
(above 25 MW & excluding Projects under Ministry of New & Energy)

FY: 2025-26

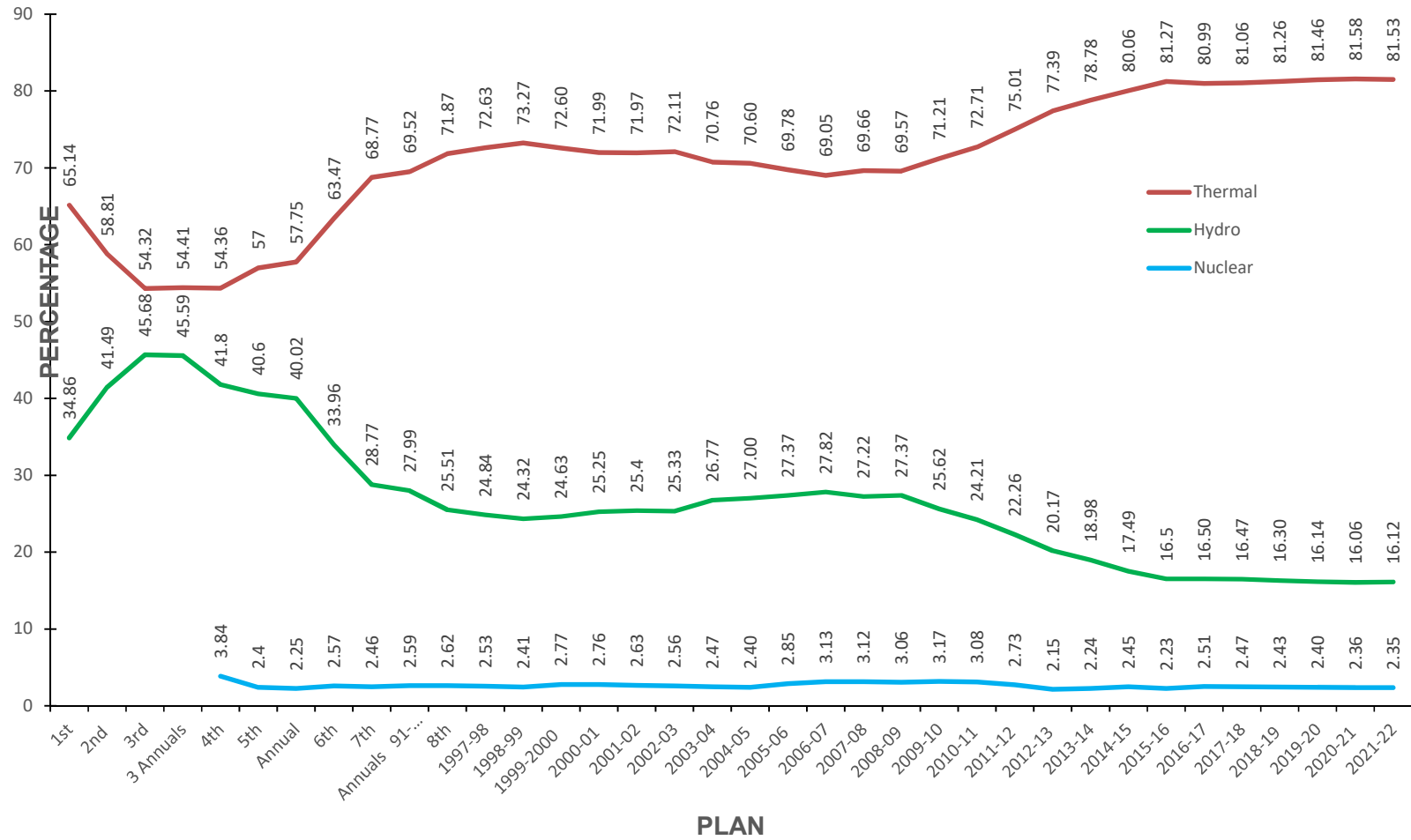
Sl. No.	Name of Project	Unit No.	State/ Implem. Agency	Capacity (MW)	Remarks
	Central Sector				
1	Rattle 4x205+1x30= 850 MW	U-1 to U-5	Jammu & Kashmir/ NHPC	850	
2	Lata Tapovan 3x57= 171 MW	U-1 to U-3	Uttarakhand/NTPC	171	Subject to re-start of works
3	Pakal Dul 4x250= 1000 MW	U-1 to U-4	Jammu & Kashmir/CVPPL	1000	
4	Luhri-I 2x80+2x25= 210MW	U-1 to U-4	Himachal Pradesh/SJVN	210	
5	Dhaulasidh 2x33=66 MW	U-1 to U-2	Himachal Pradesh/SJVN	66	
			Sub- total (Central):	2297	
	State Sector				
6	Lower Kalnai 2x24= 48 MW	U-1 to U-2	Jammu & Kashmir/JKSPDC	48	Subject to re-start of works
7	Koyna Left Bank PSS 2x40= 80 MW	U-1 to U-2	Maharashtra/WRD, GO Mah.	80	Subject to re-start of works
8	Polavaram 12x80= 960 MW	U-9 to U-12	Andhra Pradesh/Polavaram Project Authority	320	
			Sub- total (State):	448	
	Private Sector				
9	Kutehr 3x80=240 MW	U-1 to U-3	Himachal Pradesh/JSW Energy	240	
10	Panan 4x75= 300 MW	U-1 to U-4	Sikkim/Himgiri Hydro Energy Pvt. Ltd.	300	Subject to re-start of works
			Sub- total (Private):	540	
			Total (CS+SS+PS)	3285	



Growth of Hydro capacity in MW



TREND OF CAPACITY ADDITION AS % OF Hydro Thermal Mix



Chapter 5
Sanctioned Hydro Electric Projects for Construction
(Excluding projects under Ministry of New & Renewable Energy)

Sl. No.	Name of Scheme	State	I.C. (No. x MW)	Benefits (MW)	Date of Approval	Scheduled Commissioning
Central Sector						
1	Pakal Dul (CVPPL)	J&K	4x250	1000.00	28.10.14	2025-26
2	Parbati St. II (NHPC)	H.P.	4x200	800.00	11.09.02	2023-24
3	Tapovan Vishnugad (NTPC)	Uttarakhand	4x130	520.00	11/2006	2024-25
4	Subansiri Lower (NHPC)	Ar. Pr./Assam	8x250	2000.00	09.09.03	2022-24
5	Tehri PSS (THDC)	Uttarakhand	4x250	1000.00	18.07.06	2022-24
6	Lata Tapovan (NTPC)	Uttarakhand	3x57	171.00	17.07.12	2025-26*
7	Vishnugad Pipalkoti (THDC)	Uttarakhand	4x111	444.00	21.08.08	2024-25
8	Naitwar Mori (SJVN)	Uttarakhand	2x30	60.00	16.10.17	2022-23
9	Ramam-III (NTPC)	West Bengal	3x40	120.00	10.09.14	2024-25
10	Teesta St. VI (NHPC)	Sikkim	4x125	500.00	08.03.19	2023-24
11	Ratle (Ratle Hydro) (NHPC)	J&K	4x205+1x30	850.00	11.02.21	2025-26
12	Kiru (CVPPL)	J&K	4x156	624.00	08.03.19	2024-25
13	Rangit-IV (NHPC)	Sikkim	3x40	120.00	30.03.2021	2024-25
14	Luhri -I (SJVN)	H.P.	2x80+2x25	210.00	20:11:20	2025-26
15	Dhaulasidh (SJVN)	H.P.	2x33	66.00	01:10:20	2025-26
Sub- total (Central Sector) :				8485.00		
State Sector						
16	Parnai (JKSPDC)	J&K	3x12.5	37.50	25.10.13	2023-24
17	Lower Kalnai (JKSPDC)	J&K	2x24	48.00	16.08.13	2025-26*
18	Uhl-III (BVPCL)	H.P.	3x33.33	100.00	26.09.03	2023-24
19	Shongtom Karcham (HPPCL)	H.P.	3x150	450.00	16.08.12	2024-25
20	Vyasi (UJVNL)	Uttarakhand	2x60	120.00	25.10.11	2022-23
21	Shahpurkandi (PSPCL)	Punjab	3x33+3x33+1x8	206.00	04.05.11	2024-25
22	Koyna Left Bank (WRDMah)	Maharashtra	2x40	80.00	20.02.04	2025-26*
23	Indrasagar Polavaram (PPA)	Andhra Pradesh	12x80	960.00	25.02.09	2024-26
24	Pallivasal (KSEB)	Kerala	2x30	60.00	31.01.07	2022-23
25	Thottiyar (KSEB)	Kerala	1x30+1x10	40.00	05.06.08	2022-23
26	Kundah Pumped Storage-I (TANGENDCO)	Tamil Nadu	4x125	500.00	03.12.08	2023-24
27	Lower Kopli (APGCL)	Assam	2x55+2x2.5+1x5	120.00	Nov.2020	2024-25
Sub- total (State Sector) :				2721.50		
Private Sector						
28	Tidong-I (Statkraft India Pvt. Ltd.)	H.P.	2x50	100.00	23.07.07	2022-24
29	Tangnu Romai- I (Tangnu Romai Power Generatio	H.P.	2x22	44.00	30.11.07	2024-25*
30	Phata Byung (LANCO)	Uttarakhand	2x38	76.00	30.11.07	2024-25*
31	Maheshwar (SMHPCL) #	M.P.	10x40	400.00	29.09.06	2023-24*
32	Bhasmey (GATI Infrastructure)	Sikkim	2x25.5	51.00	Dec-08	2024-25*
33	Rangit-II (Sikkim Hydro Power)	Sikkim	2x33	66.00	10.02.10	2024-25*
34	Panan (Himagiri Hydro Energy)	Sikkim	4x75	300.00	07.03.11	2025-26*
35	Kutehr (JSW Energy (Kutehr)Ltd.	H.P.	3x80	240.00	31.03.10	2025-26
Sub- total (Private Sector) :				1277.00		
Total - Under execution (as on 31.12.2021)				12483.50		

PFC as lead lender have acquired majority equity i.e. 51% in the SMHPCL w.e.f. 1st June, 2016. Matter Sub-judice.

*Stalled Projects Commissioning subject to Re-Start of works.

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Chapter 6A
Status of Under Execution Hydro Electric Projects (above 25 MW) in the Country
(As on 31.03.2022)

Sl. No.	Name of Project Executing Agency Date of CEA clearance / Approval Capacity (MW) Broad Features Cost (original/latest) In Rs. Crores.	State Comm. Sch. (original/ Now Ant.	Broad Present Status / Critical Area	Remarks/ Critical issues
A	Central Sector			
1	Parbati-II NHP 11.09.2002 4x200 = 800 MW Broad Features : Dam – 85m High, 109. m long at top, concrete gravity type HRT- 6m x 31.23km P.House- Surface 23.5mx 39.7mx 123m. Turbine- Pelton Swyd.- 13.8/400 kV Cost: <u>Original:3919.59</u> Latest: 9897.59 (04/20 PL) Contractors Civil : Gammon / Valecha HM : Om Metals E&M : BHEL	<u>H.P.</u> <u>2009-10</u> <u>2023-24</u> (Sep'23)	CIVIL WORKS Dam & Intake Structure (83.7m high and 3.7m D-shaped intake structure) - Completed. Head Race Tunnel (6m diameter, 31.545Km long) – 30.61 km (97.04%) excavation out of 31.545 km completed. TBM excavation resumed since 16.10.2015 and 3052.82 m advancement has been made till 28.02.2022. Progress during the month hampered due to frequent derailment of muck cars & loco. Further, accumulation of muck behind the cutter head due to ingress of ground water also hampered the progress of work. Muck removal is being done manually which requires considerable time resulting in longer cycle time for excavation. The work at DBM front came to stand still on 12.07.2021 due to heavy ingress of water of about 6000-8000 LPM resulting in flooding of tunnel which could not be controlled with existing dewatering arrangement. Dewatering capacity was augmented by deploying additional resources i.e. high capacity pumps, dewatering pipe lines. After dewatering of tunnel, ingress of water could be channelized on 28.09.2021. Thereafter, Probe drilling & Face treatment carried out & despite of injection of approx. 3 Ton PU grout, no reduction in ingress water is observed. Tunnel detoured on left side at RD 4980 m i.e. 20 m behind the face i.e. RD 5000 m at an angle of 30 degrees. First blast for detouring the tunnel taken on 31.10.2021. After, moving ahead cautiously with the help of Pre-grouting (microfine/PU) & probe drilling up to 61 m on detoured alignment, ingress of about 100-300 LPM was observed from a rock joint on right hand side during drilling activity on 29th & 30th Nov'21. Subsequently, flow of fine sand & slush material resulted in choking of pumps. As a result, tunnel was flooded with water upto RD 3570 m. Tunnel could be dewatered on 09.01.2022 and major ingress water channelized from the face RD ±5002 m to RD ±2700 m through 200 mm dia. MS pipe successfully, where a major pumping station has already been set up comprising of multiple dewatering pumps. Gate	- Completion of balance HRT Excavation.

			valves were connected on either side of the T-joint to regulate the water and major ingress of water. After Silt removal, cavity treatment, rib erection & necessary face treatment, excavation of HRT re-started on 24.01.2022. Further, weak zone encountered on left side resulting in wedge failure on 28.01.2022 along with continued popping sound which strengthened with additional rock anchors and placing SFRS. Excavation with all safety precautions is in progress. However, progress remained very less during the month due to encountering of weak zone in right side of tunnel resulting in continuous loose fall. Further, intermittent popping sound and rock bursting from left side also hampered the progress of HRT excavation. Weak zone is being negotiated with the help of pre-grouting with Cement/Microfine cement grout, Self-Driving Anchors (SDA), Rib support, wire mesh, rock anchors, forepoles, pipe roofing, cement capsule, SFRS and backfill concreting etc.. Pre-grouting with cement /micro-fine cement was attempted on 24/25.02.2022, however, it was observed that pre-grouting was not found effective as not much micro-fine cement could be injected in these pre-grout holes. Total Overt lining: 27.92 km (88.5%) lining out of 31.545 km completed. Power House (23.5m x 39.7m x 123m size): Completed. Nallah Works -Completed ELECTROMECHANICAL WORKS: All the Units were Synchronized with grid at part load using water from Jiwa Nallah. After fire incident on 29.07.2020, generation got suspended. After restoration works, Unit#1 and Unit#2 synchronized with grid on 17.08.20 & 29.08.20 respectively and generation restored. Restoration works of remaining 02 units are in progress. HYDROMECHANICAL WORKS: All the major HM works completed.	
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2	TapovanVishnugad NTPC 11.08.2004/Nov, 2006 4x130 = 520 MW Broad Features : Barrage–5 bays of 12m HRT- 5.4m x 11.97km P.House- underground Turbine- V.Pelton Cost: Original: 2978.48 Latest:5867.38 Agencies: • Barrage Package: M/s RPPL • HRT Package: M/s HCC • Powerhouse and Penstock Package: Ms Patel Engineering Ltd. • HM Package: Om Metals • E&M Package: BHEL • Switchyard Package: M/s GE T&D India Ltd. • GT Package: ABB Ltd.	<u>Uttarakhand</u> <u>2012-13</u> <u>2024-25</u> U#1- Sep-24 U#2- Oct-24 U#3- Dec-24 U#4- Nov-24)	Barrage: Excavation Completed and Concreting 127628 cum out of 129358 cum completed. HRT: Excavation of 2.79 km out of 3.81 km by DBM & 5.50km out of 8.27km by TBM completed. 6.61 km concrete lining out of 12.09km completed PH Cavern: Excavation and concreting completed. Desilting Chamber & Intake: Excavation and concreting completed. TRT: Excavation and lining completed. Surge shaft: Excavation & Lining completed. Penstock: Excavation and Lining completed. E&M works: Pit liner erection on all 4 units completed. Turbine housing erection of all 4 units completed. Unit #1: Boxed up. Unit #2: Boxed up. Unit #3: Turbine erection completed. Unit #4: Turbine erection in progress. Bus Duct: Erection of all units completed Critical : HRT On 07.02.2021, there was a sudden flash flood in Dhauli Ganga river due to an avalanche resulting in part damage to NTPC hydro power plant. A detailed analysis is to be done to assess the extent of physical and financial damage to the project. A team of Expert(ToE) from CWC, CEA, GSI, CSMRS and NTPC have been constituted for preparing action plan for restoration of project. Panel of Experts (PoE) comprising members from CWC, NHPC, NTPC and THDC visited sites on 21-22nd Feb 2021.Further, A Team of Experts (ToE) headed by CWC and members from CEA, CSMRS, GSI and NTPC also visited Site during 16 to 18th March 2021. Work has been further hampered due to heavy rains along with washing out of approach road. Temporary access is restored. The rescue cum restoration works have been taken up in line with their recommendations. Structural integrity testing of concrete structures in barrage is done by SERC Chennai. Structures are repairable and repair work is going on as per methodology provided by SERC. Consultancy of Hydraulic model study of barrage is given to CWPRS Pune and work is going on Muck removal from DC basin completed and from HRT, Intake, SFT and Power house is going on. Slide above TBM portal on 25.07.2021 got portal covered. Work for opening is going on. Implementation of Automatic Flood Warning System (Level and Velocity sensors at 6 locations at river upstream plus command & control room) commenced in Dec 2021 and is expected to be completed by April'22.	-Completion of HRT./ Barrage Restoration Works -Associated Transmission system -Due to flash flood in Dhauli Ganga River on 07 Feb 2021 Muck has filled damages occurred to intake, Barrage, DC, SFT, and HRT.
3	Tehri PSS, THDC, 18.7.06 Nov-11 (Revised CCEA) 4x250=1000 MW Broad Features : Surge Shaft: U/s – 2 nos. D/s – 2 nos	<u>Uttara khand</u> <u>2010-11</u> <u>2022-24</u> (June'23)	Upstream (Tehri Dam) and Downstream (Koteshwar Dam), intake and Head Race Tunnels (2 Nos.) already completed alongwithTehri Stage-I works. Widening of Upstream Surge Shaft-3&4 (Depth 140m each): Cumulative widening completed in a depth of 138 m in each. Downstream Surge Shaft-3&4 (Depth 80.9 m	- Poor Geology in under ground works of BVC, PAC, TRT, PH Cavern etc. - Slow progress of works - Cash flow crisis with M/s. HCC.

	Power House: U/G TRT: 2, Dia 9m and Length 1070m & 1160m Turbine: VF reversible pump turbine Cost: Original: 1657.60 Latest: 4835.60 (02/2019 PL) Contractors Turnkey : Alstom, France/ HCC		each): Widening of DSSS-3 & 4 has been completed. Butterfly Valve Chamber (BVC 78X10X26m): Excavation completed. Penstock Assembly Chamber (PAC 95X12X19.30 m): Excavation completed. Upper Horizontal Penstocks (UHP): Excavation is in progress. Vertical Penstocks(4 Nos. each of Dia 6.1 m and 135 m depth): Excavation completed. Power House (203m x 28.20m x 56m size): Excavation completed and erection of EM equipment is in progress in all 4 units. Control Room: All 9 slabs have been casted. Further, cleaning work is in progress and architectural works are being taken up. Tail Race Tunnels- 3 & 4 (2406 m): Excavation: -Heading & Benching: Completed 2123 m & 1680 m respectively. Lining - Invert & Overt: Completed 1641 m & 1049 m respectively. E&M Works: Both EOT cranes have been commissioned in service bay .	
4	Lata Tapovan, NTPC Aug-2012 3x57= 171 MW Broad Features : Barrage-14 bays of 11m each HRT- 7.51 Km, 4.7m dia P.House- underground Turbine- V.Francis Cost: Original: 1527.00 Latest: 1801.07 Contractors Civil & HM : L&T E&M : BHEL	<u>Uttara khand</u> <u>2017-18</u> <u>2025-26</u> (Subject to re-start of works)	Infrastructure works are almost completed. Main works to re-start after clearances from Hon'ble Supreme Court. EPC contract for Civil & HM works awarded to M/s L&T on 17-08-2012. E&M package awarded to M/s BHEL on 07.12.12. MoWR vide letter dated 24.01.2019 to MoEF has communicated that only 7 out of 51 Hydro Projects which are under various stages of construction in Uttarakhand has been recommended for implementation. LataTapovan project is not included in the 7 recommended projects. ➤ Barrage (29 m high)-Not started yet. ➤ Desilting chamber (135 m L x 33m W x 17.5 m H)--Not started yet. ➤ HRT (4.7 m diameter, 7.51 km long)-Not started yet. ➤ Surge Shaft (7 m diameter 144.8 m height)-Not started yet. ➤ Pressure Shaft (3no. 2.0 m diameter 297 m long)-Not started yet. ➤ Power House (85mx 17mx 40.5m)-Not started yet. On 08.07.2020, Director /Conservator forest NDNP, submitted report to Chief Conservator forest Dehradun for LTHEPP mentioning that as per revised notification, project is out of ESZ boundaries.	Construction work stopped vide Hon'ble Supreme Court order dated 7.5.14. Clearance from Hon'ble Supreme Court for resumption of works.
5	Vishnugad Pipakoti THDC 21.08. 2008 4x111= 444 MW Broad Features : Dam – 65m High, 89.3m long, concrete gravity HRT- 13.4 Km, 8.8m dia Horse shoe shape P. House-Underground 127mx 20.3mx 50m Turbine- Francis SWYD- 13.8/420 kV Cost:Original: 2491.58 Latest:3860.35 (02/2019 PL) Contractors Civil &HM : HCC E&M : BHEL	<u>Uttara khand</u> <u>2013-14</u> <u>2024-25</u> (Jun.'24)	River diverted on 02.04.2018. Concreting of U/S coffer dam has been completed. TBM has been commissioned on 24.11.19. Desilting Chambers:-Heading of all 3 De-silting Chambers has been completed and benching 71.48% completed. HRT :Heading excavation of 1075m out of 975m by DBM has been completed. TBM has been commissioned. During operation of TBM in the RBM zone, big boulders have been encountered, which has hampered TBM operation. To overcome this problem two Approach Adits are being constructed to reach the cutter head.. cutter head of TBM is now free. Power House: In Machine Hall, crown excavation has been completed and strengthening of geologically weak section with steel rib supports is in progress.	-Frequent disruption of works by local people. - Cash flow crisis with M/s. HCC.

			Transformer Hall, 124.5m crown excavation completed (out of 140m). Balance work in progress. TRT :- Heading excavation 716.75 m out of 3070m completed. At TRT outlet area, 85% slope stabilization work has been completed	
6	Subansiri Lower NHP 09.09.2003 8x250= 2000 MW (1000 MW in 12 th Plan) Broad Features : Dam –116m High, concrete gravity HRT- 8 x 9.5m x 1145m Power House- Surface Turbine- Francis SWYD- 16/400 kV Cost: <u>Original: 6285.33</u> Latest: 19992.43 (04/17 PL) Contractors Civil : BGS-SGS-Soma JV HM : Texmaco E&M : Alstom	Arunachal Pradesh Assam <u>2009-11</u> 2022-24 (Unit#1&2 in 2022-23 and Unit#3-8 in 2023-24)	➤ Dam (116m high and 284m long):- Dam concreting 16.05 lac Cum (78%) out of 20.56 lac Cum & Intake concreting 272940 cum (97.7%) out of 279454 cum completed. ➤ HRT (Total length-7102 m, 9.5m diameter):-99.5% heading excavation, 93.5% benching excavation, 81.6 % concrete overt lining and 47.2 % Invert lining completed. ➤ Surge Tunnel (8 nos., 9.5 M dia, Horse Shoe):-Heading excavation 90.5% & benching excavation 52.5% completed. ➤ Pressure Shaft (8 nos. 9.5/8/7 dia.):- PS liner 681 m (43%) out of 1594m completed. ➤ Power House (285m x 61m x 64m size):- Cumulative Power house concrete qty achieved 271991 cum out of 512000 cum (53.12% achieved so far). ➤ E&M Works:- Unit-1: Stator in pit, Rotor and Turbine assembly is in progress. Stator: Cleaning of winding is in progress. Rotor: Assembly of lower bracket with hub is completed. Assembly of Lower Bracket with Arms completed. Assembly of brake jack on lower bracket arms completed. Preparations and arrangements for Lifting of Generator lower shaft is in progress. Turbine: Fitting of intermediate bushings on wicket gates completed. Installation of Wicket Gate Upper bush is in progress. (Cumulative progress 06/24) MIV: Erection work of MIV of Unit-1 started and in progress. Erection work at GSU transformer started and in progress. Unit-2: Rotor: Stacking of rim lamination is in progress. (Cumulative progress 908 mm/2336mm). Preparations for 1st press of rim lamination completed. Stator: All segment of Stator frame lowered in pit and assembly completed. Fixing of intermediate key bars is completed. (Cumulative progress	Signing of PPA is pending with Govt. of Delhi.

			135/135). Measurement of radius of intermediate key bars is in progress. Turbine: Matching of DT part 1 is in progress. Unit-4: Draft Tube installation is in progress. Unit-5: Installation of bracings inside Draft Tube sections completed. Unit-6: Draft Tube Drainage Box of Uni-6 lowered on 06.02.22 and in progress. Other works like Cable laying, Cable tray installation, cooling water pipeline work at Unit-1 & 2, Fire hydrant pipelines work etc. are in progress. ➤ HM Works: Erection of Diversion Tunnel Gates: 96.66 % completed. Erection of Intake Gates: 76.48% completed. Fabrication of ferules and erection work of Pressure shaft liner is in progress Out of total 1594m, 681 m pressure shaft steel liner erected. (43% completed)	
7	Teesta-VI NHPC 08.3.2019 4x125= 500 MW Broad Features: Barrage: 26.5m high HRT- 2nos,27.52km long Pressure shaft: 4nos. 5.4m dia. 151m to 198m length, TRT: 4nos 247m each length, 7.5x7.0m D-shapped. PH- Under ground Turbine- Francis Cost: Original: 3283.08 Latest : 5748.04 (07/2018 PL) Contractors Civil : JAL & Gammon E&M : Alstom	<u>Sikkim</u> <u>2012-13</u> 2023-24 (Mar'24)	(A) Civil works: Barrage (31.5 high and 105 m long) Excavation 7.62 lac cum (78%) out of 9.83 lac cum completed Concreting 1.27 lac cum (51%) out of 2.51 lac cum completed HRT (9.8m diameter) Heading excavation of approx.11.22 km (41%) executed out of total 27.51 km, benching excavation of approx.3.08 km (11%) , Overt Lining of approx.1.55 km (5.63%), Invert lining of approx 0.14 km (0.01%) has been completed. Desilting Basin Surface Excavation of approx. 2.50 lac cum (73%) executed out of 3.42 lac cum, underground excavation of Approx 1.4 thousand cum (20.65%) executed out of 6.78 thousand cum, concreting of 0.56 lac cum (22%) executed out of 2.5 lac cum. Surge Shaft (2 nos., 16 M dia, 89.3 M height): Excavation 67 % & concreting 59% completed Pressure Shaft (2 nos. steel lined 5.4 internal dia.): Excavation 100 % & Backfill concrete 29% completed Power House (142m x 18.5m x 52.44m size):	The progresses of works have been hampered on account of 1st, 2nd & 3rd wave of Covid-19 and have been subjected to series of lockdowns and restrictions imposed by Central/ State Govt. However LTHPL is making efforts to expedite the balance works to the extent possible.

			Excavation 100 %, cumulative concrete qty achieved 44944 cum out of 52289 cum (86%). MIV Cavern: Excavation of MIV cavern is completed. Downstream Surge Chamber: Excavation of Adit has been completed; however concrete lining is still to be taken up. Tail Race Tunnel: Excavation of all four tail race tunnel (TRT-I, TRT-II, TRT-III &, TRT-IV) have been completed leaving the required plugs of 20m length at the river end. The concrete lining of all four TRT's are completed leaving a small patch near the junction as per the excavation plan. (B) HM works: (a) Barrage Radial Gates: i. Erection of Barrage Radial Gate No. 1 and 2 without flap has been completed and gate is in dogged position without rubber Seals. ii. All major component of Radial gate No. 3 & 4 with flap has been supplied at site. (b) Barrage Stoplogs: i. Upstream stop logs: 4 sets of upstream stop logs fabricated. ii. Downstream Stoplogs: 3 sets of downstream stop logs out of 4 found fabricated. (c) Gantry Crane & Lifting Beam for Barrage Stop log: Upstream stop logs: One stop log gantry crane for upstream stop logs is installed with lifting beam which require repairs to be made operational. (d) Installation of ferrules in vertical section of 1 no. Pressure shaft has been completed. (e) Supply of four Radial gates and Stop logs (First Stage & Second Stage Embedded Parts, Gate Parts and Hoists) for the Barrage received at Site. Most of the materials for Pressure Shaft Liners received at Site from which fabrication of ferrules have been completed. (C) E & M works: Erection of Spiral Casing–Unit 1 is completed; 2 no. 200 MT. EOT cranes have been installed and refurbishment for the same is under progress; Earth Mat laying work has been completed; Cooling Water System embedded piping is completed; Most of the materials of Major T-G Package-EM-I (Turbine, Generator, MIV, Governing System, Excitation System, Control & Monitoring System and Protection System has already been supplied by M/s GE Power.	
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8	Rammam-III NTPC Hydro Ltd. 10.09.14 3x40 = 120 MW Broad Features : Run of the River Scheme Cost :Original: 1381.84 Latest : 1592.34 Contractors - Barrage and Part HRT Package: M/s Simplex Infrastructures Ltd & M/s Apex-Encon Project Pvt Ltd (JV))- - Power-House and Part HRT Package: M/s SEW Infra Ltd. – - EM Package: M/S BHEL-	West Bengal <u>2019-20</u> <u>2024-25</u> (Dec'24)	Barrage (27m height and 122.5 m length): - First stage river diversion done in Mar'2016. Excavation of 62105 cum (out of 1, 59,000 cum) and concreting of 37232 cum (out of 1, 22,750 cum) have been completed. 2nd Stage River diversion done in 27th Mar' 2022. De-silting chamber (U/G, 2 nos. each of 140 m length x 7.5 m width x 12.55 m depth):- Excavation of both De-silting chamber completed, DC-1 lining completed (140 m/140 m). Approach tunnel from DC-1 to DC-2 excavation work under progress, 20m/25m excavation completed. DC-2 kerb concreting work is in progress for lining. SFT excavation: - Out of 360m of SFT, 74m i.e., 21% has been completed. HRT (3.5 m diameter, 8.2 km long): - As of now, 1794 m HRT have been excavated (650 m from Adit-1 and 1144 m from Adit-3). Adit-2 excavation: - 319 m/800 m have been done. Cavity encountered rectification WIP. Muck removal work, Rib installation and backfilling completed from RD 310-317.0 m. At present from RD 317.0 m – 318.5 m Fore polling is in progress for further rib installation. Intake tunnel, Branch tunnel and Adit-1 to GOC –DC: - excavation completed. (Completed 100%). Surge Shaft (14.50 m diameter 53.75 m height): - Surge Shaft well excavation is completed. RD 17.00-33.50 m, raft & both side wall final lift completed. From RD 33.50 m to 36.0 m, raft completed & both side wall casting 1st lift completed, right side 2nd lift completed, left side 2nd lift shuttering is in progress. Orifice slab casting by Apr' 22. Vertical Pressure Shaft (2.7m diameter 1526 m long): – Out of 74m of Vertical pressure shaft, excavation of 52m (70%) has been completed. Powerhouse (73.50m x 22.40 m x 41.60 m): - Out of 1,56,099 cum of excavation, 1,46,099 cum (94%) has already been excavated. Slope Stabilization work under progress. Switchyard: -Tower foundation & equipment foundation work completed & handed over to EM agency for erection. TRC (657m): - Excavation & Concreting completed. EM Works: - Tower and AC kiosk installation completed. Beam & Switchyard Equipment Erection work is under progress completion by Jun'22.	Signing of PPA/ATS: - Clearance for signing of PPA by West Bengal Govt. awaited. Power Evacuation Line: Power Evacuation line/ ATS also not getting finalized due to pending decision for PPA. Meeting of Eastern Region Standing Committee on Transmission held on 05.07.2019 at Siliguri. After deliberations, CEA suggested that NTPC and West Bengal may resolve the matter of PPA bilaterally. Further, PPA, if refused by Govt. of WB, the issue may be discussed in forthcoming meeting of ERSCT. Acquisition of supplementary Land: -NTPC Board approved direct purchase of additionally required 14.75 acre of private land on 22.03.2017. Received NOC from Ministry of Power, GoI on 23.04.2019. For 1st&2ndPhase land acquisition (7.864acre+ 1.87 acre), cabinet approval & GTA purchase committee gazette notification has been done in Jan'2021. District land purchase committee meeting held on 20.07.2021. Demand amount of Rs 5.64 Cr dt 02.09.2021 against 9.739 acre land deposited to Spl LA office on 02.02.2022. Notice to the concerned 29 nos. owner was issued by the Land department on 25.02.2022. The registration of deed between Land Department and 27 nos. landowners was completed on 25.03.2022. Two nos. owners were not available for the registration. As communicated, the land department will hand over the same to NTPC within next few days and subsequently NTPC Ltd. will apply for mutation of the said land. Homestead Shifting: Balance 10 Homesteads & 01 School to be shifted out of 72 Homesteads. 02 nos homestead (payment taken) to be shifted and 8 nos. not accepting (revised) award and not shifted. Individual letters were also served to homesteads on 30.11.2021 & 04.12.2021. Letter was submitted
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				to DM, SDO, and BDO on 08.12.2021 regarding vacating houses and dispute resolution of plots. A meeting was also held between Senior official of NTPC and DM (Darjeeling) & Spl LA on 08.12.2021. Request letters were given on 24.01.2022 to DM, ADM, SDO, BDO for vacating houses. Matter is being followed up with local administration for early resolution.
9	Naitwar Mori SJVN Limited 16.10.2017 2x30=60 MW Broad Features : Barrage: 30.5m height HRT: 5.6m horse shoe, 4330m long Pressure shaft: 4m dia, 109m long Surge shaft: 18m dia, 51.65m height Cost : Original: 648.33 (10/2016 PL) Latest : 947.89 (12/2020 PL) under approval Contractors Civil : JP Associates HM : GMW E&M : Voith	<u>Uttara khand</u> <u>2021-22</u> 2022-23 (Jan'-23)	➤ Barrage (30.5m high above deepest foundation, Length at top 48.9m):- Barrage excavation 1,37,875cum (98%) out of 1,40,000cum completed. Concreting:41931 cum (97%) out of 43065 cum completed. Desilting tank excavation completed. Concreting: 54111 cum (92%) out of 59000 cum completed. ➤ Diversion channel completed. ➤ HRT- (5.6m modified Horse Shoe Shape, 4329 m long):- Excavation of HRT completed, Overt Lining: 3455 m (80%) completed and invert Lining started ➤ Surge Shaft (18m dia, 50.28m height):- Excavation completed and Lining in progress. ➤ Pressure shaft (4.0m dia, 97.50 m long):-95.50 m (98%) excavation completed. Excavation completed and Lining in progress. ➤ Power House (Underground 57.70m x 18.60m x 33.07m size):-Excavation of Power House cavern: 53185 cum (98.04%) out of 54250 cum completed. Concrete works in progress ➤ Tail Race Tunnel (D-shaped, 8.0m (W) x 8m(H), 235.62m long, TRC-6.0m(W)x5.75m(H), 60.39m long):- Outfall structure completed. Tail race channel work is in progress. ➤ E&M works: Erection of E&M components of both units are in progress. EOT crane is operational.	➤ Completion of Powerhouse/ Barrage ➤ Completion of transmission line
10	Pakal Dul CVPPL 03.10.2006 4x250 = 1000 MW Broad Features : Dam – 167m High, Width-305m), CFRD, HRT- 2 nos. 7.2m dia 1000m long S.Shaft-16m dia 200m Height P.House- Underground (157mx20.20mx49m) TRT- 5.5m dia, 125m long. Cost: Original:8112.12 Latest: 8112.12 Contractors Civil : Afcons – JAL – JV L&T,JAL HM: PES E&M : Voith Hydro Ltd	<u>J&K</u> <u>2020-21</u> 2025-26 (July.'25)	Infrastructure works are in progress. ➤ Dam Package (CFRD 167m high and 305m width):- LoA issued to M/ Jaiprakash Associates on 21.6.2018 at a cost of Rs.2853 crores. Construction activities at the site are in progress. access adit to HRT-1 & 2 have been completed of a total of 698.2 m and 686m respectively. 2272.5m excavation of HRT- 1 & 2 have been completed out of a total of 4117m. Diversion Tunnel (1 no, diameter 11 m, length 851 m.): .. Works of Diversion Tunnel completed. River Diversion achieved on 01.11.2021 and the same was e-inaugurated by Hon'ble Minister of Power & NRE in presence of senior officers from GoI, GoJK, NHPC and CVPPL. Construction of upstream and downstream coffer dam is in	HRT & Dam works are critical.

			progress. ➤ HRT-TBM Package (HRT 2Nos., 7.2m dia, 9.6 km long each (7.3 Km through TBM))- LoA issued to M/s L&T Ltd on 3.7.2020 at a cost of Rs.2575.63 crores. Contract agreement signed on 14.08.2020. Construction of TBM Adit Portal, development of platform and associated infrastructure works are in progress. Detail Engineering of TBM completed. Detail Engineering of TBM completed. Factory Acceptance Test of TBM-1 completed successfully in Germany between 7-15, November, 2021 and same for TBM-2 completed between 17-21 January, 2022. TBM-1 has been dispatched on 14.02.2022 and expected to reach at site by mid of April, 2022 ➤ Hydro Mechanical Package- LoA issued to M/s PES Engineers Pvt. Limited on 26.08.2019 at a cost of Rs 286.58 Crs.Detailed Engineering/manufacturing as well as supply of HM components are in progress. Commencement of Erection of Steel Liner at PS-1B through MIV Cavern started on 09.02.2022 ➤ Electro Mechanical Package-Letter of Award issued to M/s Voith Hydro Limited on 2.1.2019 at a cost of Rs.689.76crores. Detailed Engineering of E&M equipment's including submission/checking of drawings, layout plan etc and equipment manufacturing/inspection/supply at site are in progress. . 260 T EOT crane successfully Erected in Powerhouse Cavern. ➤ Power House Package (PH Cavern 166m (L) x 20.2 m(W) x 50.5 m(H))- LoA issued to M/s Afcon –JP Associates JV on 21.2.2018 at a cost of Rs. 1051 crores. Construction work at the site is in progress. UG Excavation of Power House Cavern is completed. Excavation of 4nos pit for draft tube is in progress (unit-1 and unit-2 completed) Surge Shaft (16m diameter 200m height) Construction of access road to SS top from TBM platform completed. Adit to surge shaft bottom 1 & 2 completed . Pilot Hole and service hole drilling of SS-I and 2 Completed. Pressure Shaft (Pressure Shaft-6.0 m dia-423.45m (Horizontal); 3.9 m dia- 1528.7m (Horizontal & Vertical): Excavation of adit to Pressure Shaft bottom & top has been completed. Excavation of Penstock Bottom Horizontal Portion (From MIV to PH side) is completed. Raise Borer for boring of pilot hole of vertical PS of 291m (PS-4) has been placed successfully on 10.07.2021 and work at PS-4 nad Ps-2 is in progress.	
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			Transformer Hall: UG Excavation Transformer Cavern – 98% work completed. Concreting Works started. MIV - UG Excavation MIV Cavern - 95% work completed. Concreting of MIV cavern started	
11	Kiru CVPPL 13.06.2016 4x156=624 MW Broad Features : Dam – 135m High, Width-193m), Concrete gravity, Penstock 4nos., 5.5m dia. P.House- Underground (182mx23.6mx51.2m) TRT- 4 nos., 7.0m dia, 165 to 190m long. Cost: <u>Original:4287.59</u> Latest: 4287.59 Contractors Civil : Patel Engg. HM: PES Engineers E&M : Andritz Hydro	<u>J&K</u> <u>2023-24</u> <u>2024-25</u> (Aug.'24)	□ Construction of approach roads for Dam to (215m), DT inlet (1.6Km) & outlet (1.2Km) completed □ Dam (135mhigh and 193m width): Civil works Package-Letter of Award issued to M/s Patel Engg. Limited on 24.02.2020 at a cost of Rs.2240.2 crores. Construction of Cofferdam, PH Cavern, T Cavern, Adit to Pressure Shaft top & bottom is in progress. Further dam abutment stripping works are in progress.. Dam abutment stripping and Sam excavation below river bed is in progress. Diversion Tunnel (1 no, diameter 9 m, length 666 m): D works completed and River Diversion achieved on 31.12.2021. □ Hydro Mechanical Package-Letter of Award issued to M/s PES Engineers Pvt. Limited on 24.02.2020 at a cost of Rs.202.10 crores. Contract agreement signed on 11.06.2020. Detailed Design Engineering/manufacturing of HM components is in progress. □ Electro Mechanical Package-Letter of Award issued to M/s Andritz HydroPvt. Limited on 24.02.2020 at a cost of Rs.552.52 crores. Contract agreement signed on 22.06.2020. Detailed Design Engineering/manufacturing of E&M equipment is in progress. □ Pressure Shaft (4 Nos., Internal Diameter 5.5m , 316.0m to 322.0m Length) Excavation of Adit to Pressure Shaft top is in progress and progress of 330m against total length of 370m. Excavation of Adit to P bottom completed and excavation of Bottom horizontal PS-1 is also completed. • Power House (182m (L)x 23.6m(W) 51.2m(H))– Power House Pilot Excavation (182m) is completed. PH Cavern crown widening is in progress (98% complete) • Transformer Hall Cavern – TC pilot excavation (137 m) is completed. TH Cavern Crown widening is in progress. (66% complete)	The project is in initial stage of construction.
12	Ratle Ratle Hydro Electric Project Pvt. Ltd. / NHPC 19.12.2012 4x205+1x30= 850 MW Broad Features : Dam Height-133m	<u>J&K</u> <u>2017-18</u> <u>2025-26</u> (Feb'26)	• Govt of India and Govt of UT of J&K decided to execute the Ratle HE Project through a Joint Venture between NHPC & JKSPDC. A Tripartite Memorandum of Understanding (MoU) was signed on 03.02.2019 and further a supplementary MoU was signed on 03.01.2021 for formation and incorporation of a Joint Venture Company (JVC)	Works recently awarded. Issues: • Land for the project has been acquired in the name of JKSPDC and approval of Government of UT of J&K is required for

Length-194.8m Spillway-Radia Gate-(5) Size-10.75x1420 m Diversion Tunnel:2 Nos., Circular (Right back) Pressure Tunnel:11m dia each. Pressure Shaft : 6.6 m each steel lined. P.House-Underground Turbine- Francis Average Gross Head- 100.39m Addl. Unit(30MW) Housed in Main P.H. Cavity) Rated Head-98.9m Cost : <u>Original: Rs 5281.94 Crore</u> <u>Latest Rs. 5281.94 Crore</u> Contractors Civil & HM : GVK E&M : Alstom	between NHPC and JKSPDC with equity contribution of 51% & 49%, respectively. • The Promoters agreement between NHPC & JKSPDC was signed on 13.04.2021 for the formation of JV. • The JV has been incorporated as Ratle Hydroelectric Power Corporation Limited on 01.06.2021. • JV Board approved the proposal for entrusting NHPC to undertake EPC (Single Package Turnkey mode) Tendering for execution of Ratle HEP in its meeting held on 05.07.2021. • EPC Single Package (Turnkey) tender for execution of 850 MW Ratle HE Project has been uploaded on ccpp portal by NHPC on behalf of RHPCL on 22.07.2021. <u>Project Background- Works done by Previous Developer:</u> • The Project was previously allotted by Government of Jammu & Kashmir (GoJK) to M/s GVK Ratle Hydroelectric Project Pvt. Ltd. in May 2010. The Detailed Project Report (DPR) prepared by M/s GVK Ratle Hydroelectric Project Pvt. Ltd. was appraised by Central Electricity Authority (CEA) vide O.M dated 19.12.2012. • The preliminary works, such as, construction of access roads, bridges and diversion tunnel were started in 2013. But work was stopped in July 2014 due to various issues between M/s GVK & GoJK. • GoJK terminated award of the project/PPA with M/s GVK Ratle Hydroelectric Project Pvt. Ltd vide its Letter dt. 09.02.2017. Further, state Govt. decided to develop the project through JKSPDC. <u>Civil works (executed earlier by GVK):</u> ➤ Upstream bridge completed. ➤ Upstream roads, Downstream access roads and road from upstream to downstream have been completed. ➤ Diversion Tunnel (2 nos. Each of 11m dia, 472m & 552m long):- Excavation of DT1 298m (63%) out of 472m and DT2 192m (35%) out of 552m completed. ➤ Dam (133m high):- Not started ➤ Pressure Shaft (4nos. 6.6m diameter 211m, 197m, 184m, 172m long for main units, 1 no., 3m dia, 162m long for aux. unit):- Not started ➤ Power House (168m x 24.5m x 49m size):- Not started <u>Present Status of Works</u> • Govt of India and Govt of UT of J&K decided to execute the Ratle HE Project through a Joint Venture between NHPC & JKSPDC. A Tripartite Memorandum of Understanding (MoU) was signed on 03.02.2019 and further a supplementary MoU was signed on 03.01.2021 for formation and incorporation of a Joint Venture Company (JVC) between NHPC and JKSPDC with equity contribution of 51% & 49%, respectively. • The Promoters agreement between NHPC & JKSPDC was signed on 13.04.2021 for the formation of JV. • The JV has been incorporated as Ratle Hydroelectric Power Corporation Limited on 01.06.2021. • JV Board approved the proposal for entrusting NHPC to undertake EPC (Single Package Turnkey mode) Tendering for execution of Ratle HEP in its meeting held on 05.07.2021.	transfer of land to the JV. On request of RHPC, JKSPDC has processed the land transfer case file to Govt of J&K. • RHPC has submitted revised estimates for R&R Plan to JKSPDC/GoJK as per Kishanganga R&R Plan rates as per MoU provision. The Process of approval of R&R Plan is underway.
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			- EPC Single Package (Turnkey) tender for execution of 850 MW Ratle HE Project has been uploaded on CPP portal by NHPC on behalf of RHPCL on 22.07.2021. - EPC contract awarded to M/s Megha Engineering and Infrastructure Limited on 18/01/2022. - Contractor has started initial mobilization. Infrastructure works, repair and improvement of Road Network and bridges are in progress.	
13	Rangit-IV Jal Power corp. Ltd. 06.07.2007 3x40= 120 MW Broad Features: Dam: Concrte 44m high .HRT : D- 6.4m L- 6.5km Power House : Surface Turbine: Francis Cost: Original:726.17 Latest : 938.29 (10/19 PL) Contractors Civil : Ritwik (27.08.2021) HM : PES (28.06.2021) E&M : Andritz (08.07.2021)	<u>Sikkim</u> <u>2011-12</u> 2024-25 (May'24)	CIVIL WORKS: ☐ Dam (44 m high and 135.35 m long) Excavation 4.09 lac cum (83.04%) out of 4.92 lac cum completed Concreting 0.66 lac cum (38.10%) out of 1.73 lac cum completed Removal/ clearance of material deposited due to flooding in working area. 0.49 lac cum (24.56%) out of 2.0 lac cum completed. ☐ HRT (6.4 m diameter) Heading excavation of approx.3.87 km (59.65%) executed out of total 6.48 km, benching excavation of approx.3.70 km (57.09%) has been completed. ☐ Desilting Chamber (3 nos. each of 120 m length x 13m width x 15 m depth) 2183m (64.97%) excavation out of 3360 m is completed. ☐ Surge Shaft (1 nos., 18 M dia., 56 M height): Excavation 100% completed ☐ Pressure Shaft (1 no. 5.5m dia., 206m length) : Excavation 89.77% completed ☐ Surface Power House (75.3m (L) x 20.20m (W) x 41.35 m (H): Excavation 96.88% & concreting 43.91% has been completed. ELECROMECHANICAL WORKS: 76% Supplies of E&M Package-I and 17% supplies of Package-II have been received at site HM Package: For Execution of balance works, HM package LOT-II awarded on 28.06.2021. E&M Package (7 Packages): For execution of balance works, Status of Award of various packages: 1. EM -1 (i) & 1 (ii) – Tender cancelled on 26.11.2021 and re tendering is in process. 2. EM -1 (ii) – awarded on 31.01.2022. 3. E&M 2 - awarded BOP items on 08.07.2021. 4. E&M 3 - Work is being done through PGCIL. 5. E&M 4 - awarded on 09.12.2021 6. E&M 5 - awarded on 09.12.2021 7. E&M 6 - awarded on 24.01.2022. Civil Package: For execution of balance civil works, Civil Package Lot-I awarded on 27.08.2021	Works recently awarded.
14	Luhri Stage-1 SJVN Ltd. 01.05.2018 2x80+2x25=210 MW Broad Features: Dam: 86 m high HRT: 9m dia 38 km length Power House:Underground Turbine: Francis Cost: Original - 1810.56(05/2020) Contractor :	<u>Himachal Pradesh</u> <u>2025-26</u> <u>2025-26</u> (Jan'26)	Investment approval accorded on 20.11.2020. Civil & Hydro-mechanical Works awarded on 24.11.2020. Electro-mechanical package awarded on 16.07.2021. ➤ Diversion Tunnel (617 m): Heading & Benching excavation completed. Concreting inprogress. ➤ Dam: 125460 cum (46%) out of total 272242 cum stripping of Dam right bank	

	Civil: Luhri Hydro Power Consortium dt. 24.11.2020 E&M works: Voith Hydro dt. 16.7.2021		abutment completed . ➤ Power House: 113450 cum (36%) out of total 311114 cum stripping of power house area completed ➤ Tail race channel: 228100 cum (44%) out of total 519806 cum stripping completed. ➤ Construction of Bailey bridge completed on 06.05.2021. ➤ Construction of approach roads: Approach road from Bailey bridge to Batching plant completed. Realignment of NH is under progress.	
15	Dhulasidh Hydro Electric Project SJVN Ltd (2x33 MW = 66 MW) Broad Features: Dam: 69 m high, 195 m long concrete gravity Power House: Surface Dam toe power house Panstocks (2 no.) : 4.3 m dia & 62 m length Turbine: Francis Cost: Original: Rs. 687.97 Cr Civil & HM works: M/s Rithwik Projects Pvt. Ltd. dt. 6.5.2021 EM works: M/s Voith Hydro dt. 19.1.2022	<u>Himachal Pradesh</u> <u>2025-26</u> <u>2025-26</u> <u>(Nov '25)</u>	Investment approval accorded on 1.10.2020. ➤ Diversion tunnel (253 m), River Diversion achieved on 15.02.2022 ➤ Dam: Stripping: Right Bank 94190 cum (54%) out of total 174024 and Left Bank 30700 cum (73%) out of total 42101 cum completed. ➤ Power house stripping: 23500 cum (34%) out of total 70000 cum completed ➤ Road to Power House in progress.	
B	State Sector			

16	Parnai JKSPDC 21.10.2013 3x12.5= 37.5 MW Broad Features: Barrage: 107m Long, 11.7m High HRT: D Shape, 9236m long, 3.2m dia Surge Shaft: 3.2m Dia Power House- Surface- 60x12x28 Cost: Original: 640.86 Latest 640.86 Contractors Civil : Patel & Alstom E&M : Andritz	<u>J&K</u> <u>2017-18</u> <u>2023-24</u> <u>(Dec,23)</u>	The implementation of the project has been undertaken by awarding the EPC contract in favour of M/s. Patel Engg. Ltd. in 2013. Barrage:- Excavation 41402cum out of total 46364 cum completed. Concreting 27416 cum out of 34589 cum completed. HRT (D-shaped, 3.2m diameter, 9.236km long):-5142.50m out of 9236m excavation completed. Pressure shaft (1no. 2mdia, 1733mlong): Excavation 15723 cum out of total 34560 cum completed. 693 cum out of 7212 cum concreting has been completed.. Power house: excavation 49641 Cum excavation out of 60000 Cum has been completed.	- Slow progress of works - Contractual Issues.
17	Lower Kalnai JKSPDC 16.08.2013 2x24= 48 MW Broad Features: Dam: 110m Span, 49m High HRT: D Shape, 3960m long, 4m dia	<u>J&K</u> <u>2017-18</u> <u>2025-26</u> (Subject to re-start of works)	EPC contract awarded to M/s. CPL in Sept., 2013. Diversion tunnel has been completed and river diversion made on 30.11.2016. Work on coffer dams has been started Dam:- Excavation work completed for right abutment of the dam bridge. Excavation of left abutment completed upto 50%. HRT:-Adit excavation is in progress.	- Project stalled - Re-award of works

	Surge Shaft: 14m Dia Power House- 55x23.45x32.4 Cost: <u>Original:</u> 576.87 Latest 576.87 Contractors Civil : Coastal E&M : GE		Works on all fronts at Dam and Power House site are stalled since 24.01.2018 due to payment dispute with subcontractors and due to non-settlement of extension of time of the contract by the JKSPDC .The contract with M/s. Coastal Projects Ltd. has been terminated and The Balance Work stands tendered out by JKSPDC in EPC mode vide E-NIT No 01 on 24-03-2022.	
18	Shahpurkandi Irrigation Deptt. &PSPCL 04.05.2011 3x33+3x33+1x8=206 MW Cost: <u>Original:</u> 1835.50 Latest 1938.74 (Power Component) Contractors Civil & HM for Main Dam with two Head Regulators : Soma – BUREYA JV Power Houses : M/s OMIL JV E&M : BHEL	<u>Punjab</u> <u>2015-16</u> <u>2024-25</u> (Aug.24)	Main Dam: Overall 67% work of Main Dam portion has been completed. Hydro Mechanical work for dam, fabrication work is completed by 94.41 % and 27.62 % of erection work. Hydel Channel: Excavation / concreting is in advance stage of completion at Shahpurkandi Channel and on Ravi Canal Hydel Channel work is yet to be started. Works of Dam stopped since 29.08.2014 due to inter-state dispute between states of J&K & Punjab on sharing of waters of river Ravi & tariff. An agreement was signed on 8.9.2018 between Chief Secretary, Govt. of Jammu & Kashmir and Chief Secretary, Govt. of Punjab. The Punjab Cabinet ratified the above agreement. Zero date of the project is 1st November, 2018. NIT for Civil works of Power House was floated and work is awarded to M/s OMIL JV on 24.02.2021 for both power houses. The civil work for both power houses has been started. E&M contract work earlier accorded to BHEL has been revived, Project is programmed for Commission by August,2024.	
19	Uhl-III Beas Valley Power Corporation Ltd. (HPSEB) 19.09.02 / (TEC -2x50 MW) 3x33.3 =100 MW (Revised vide HPSEB letter dt. 19.01.07. Broad Features: HRT-4.15m x 8.47 km S.Shaft- 13m x 68.8m Penstock- 3.4m x 1851.946 m (main) P.House- Surface Turbine- V. Francis Cost: <u>Original:</u> 431.56 Latest:1281.52 Contractors Civil : Continental / Abir HM : PES E&M : BHEL	<u>H.P.</u> <u>2006-07</u> <u>2023-24</u> (Dec'23)	All works completed in July, 2018. During Hydro Static pressure Test (HST) of Penstock, some leakage was observed. Repair of penstock & HST completed by March, 2020. On 17.05.2020 after Trial run of Unit-1, during synchronisation to grid transmission load rejection was done but the penstock ruptured along penstock ferrule # 345 which is about 110m upstream of surface power house. The restoration of the Penstock by replacing/recladding the SAILMA 550HI steel and that of power House is to be carried out. Tender for restoration of Penstock was floated and four bidders have been participated after Techno-Commercial Evaluation by the Tender evaluation committee and after approval from BOD of BVPCL, works awarded to M/S P&R InfraprojectsPvt Ltd on November 06, 2021. The entire work of restoration work of penstock and allied civil works is accessed to be completed within 23 months after the award of work.	
20	Shongtong Karcham H.P. Power Corpn. Ltd. Clearance: 16.08.2012 3x150= 450 MW Broad Features: Intake Tunnel: 4 Nos. Horse shoe 6.4m dia 192 to 280m length HRT- Circular, 10.5m dia, 8096m long. Power House- Under ground Turbine- VF. Switchyard: 400 Kv. Cost: <u>Original:</u> 2807.83	<u>H.P.</u> <u>2016-17</u> <u>2024-25</u> (Mar'25)	River Diversion achieved on 10.02.2017. Barrage: Downstream Coffor Dam completed. Upstream Coffor Dam 84% completed. HRT:Heading excavation 7344 m out of 7712.7m completed. Benching excavation 2721.93 m completed Surge shaft: Pilot hole excavation completed. Power House:- 100% excavation of Powerhouse Cavern, 100% excavation of Transformer hall completed. Concreting of EOT crane beam completed.	

	Latest:2807.83 Contractors Civil & HM : Patel E&M : Andritz			
21	Vyasi UJVNL 25.10.2011 (TEC) 2x60= 120 MW Broad Features: Dam: Conc. Gravity H- 86m L-207.2m HRT- Circular, 7m dia, 2.7Km long. Power House- Surface Turbine- VF. Switchyard: 220 Kv. Cost: <u>Original: 936.23</u> Latest:1581.01 Contractors Civil : Gammon / MPCC E&M : BHEL	<u>Uttarakhand</u> <u>2014-15</u> <u>2022-23</u> (May,22)	All civil works have been completed. Now the R&R issues have been resolved. The transmission line is ready. GIS fault rectification is under progress.	-Dam and E&M works are Critical. -Local issues regarding compensation under R&R package.
22	Koyna Left Bank PSS WRD, Mah. 20.02.2004 2x40 = 80 MW Broad Features: Water from the existing ShivajiSagar Lake (Koyna reservoir) is to be utilized for generation. Intake Tunnel: Dia – 7.20 M Length – 235.5 M (including Lake tap) HRT: Dia – 7.20 M Length – 80 M Penstock – 2 nos ,Dia – 2.9M Length – 10 M each P.House – Underground Turbine – Reversible Cost: <u>Original: 245.02</u> Latest: 691.95 Contractors Civil &HM : BT Patil – Malaxmi JV / Patel E&M : LitostrojSlovenia&Koncar, Croatia	<u>Maharashtra</u> <u>2014-15</u> <u>2025-26</u> (Subject to re-start of works)	Civil Works: Excavation of intake structure 4781 cum out of 14105 cum and lining 2485 cum out of 3381 cum completed. Excavation of Switchyard completed. Excavation of Approach tunnel & Ventilation tunnel is in progress. Tail surge shaft :Excavation in soft strata completed. Excavation for inclined / vertical / lateral shafts in hard rock 6448 / 9223 cum completed. TRT : 364 / 24003 cum excavation completed. Machine Hall : Underground Excavation is under progress. 31500 cum excavation out of 55050 cum completed. E&M works: The contract for details engineering manufacturing supply, supervision erection, testing and commissioning of pump turbine, generator motor and associated equipment is signed with M/s IVRCL Ltd., Pune on 16.12.2010. Further TG set has been ordered as under: Turbine/Pump: M/s Litosroj Power, Slovenia (European Union) Generator/Motor: M/s Koncar Power, Plant & Electric Traction Engineering, Croatia (European Union). EOT Crane :- Works awarded to M/s Pedvak Cranes Private Limited Hyderabad on 12.04.2013. Tail surge shaft: Excavation for inclined/vertical/lateral shafts in hard rock 6448 cum out of 9223 completed. Excavation in soft strata completed.	The project works are stalled since March, 2015 since expenditure already reached to almost original approved cost level. Now, WRD has intimated that preparation of draft of Expression of Interest is in process for completing the balance Civil and Electro-Mechanical works of the project
23	Polavaram APGENCO / Irrigation Deptt., A.P. 21.07.2010/ 25.02.2009 12x80= 960 MW Broad Features:	Andhra Pradesh <u>2017-18</u> 2024-26	A) Spillway, Earth cum Rockfill Dam, Power House Foundations Works awarded in March, 2013 to M/s. Transtroy- JSC EC UES JV. ECRF DAM:Earth work of 508.06 L.Cum /833.169L.Cum is completed. Diaphragm Wall concreting – completed. SPILLWAY: Excavation-838.80 L Cum out of 1115.59 L Cum completed. Concreting 9.60 L Cum out of 36.79 L cum completed. Gates: RadialGate fabrication – 11010 MT completed out of 18000 MT (61.17%). Power House: Earth work of 112.20 L Cum / 114 L.Cum is completed & embankment of 9.79 L.Cum / 10 L.Cum is completed.	

	ECRF Dam- L-2454 m, H-57.9m, Spillway- L-1128m, Spill gate -48 Nos. Approach channel-175m. Intake tunnel: Ø 9m, L- 130m (12 Nos) Power House- Surface type, Turbine- Vertical Kaplan Tail Race Channel- 1130m. Cost: Original: 4956.39 Latest: 5338.95 (Power Component) Contractors Civil : Navyug contract terminated and awarded to M/s Megha Engineering and Infrastructure Ltd. (MEIL) (EPC contractor) E&M : BHEL		Works stalled since 19.07.2019 as APGENCO asked contractor M/s Navayuga Engineering Company Ltd. (NECL) to stop all works and termination of contract issued on 14.08.2019. The writ petition filed by NECL was disposed by Hon'ble High Court on 14.12.2020. Final Contract concluded with new contractor M/s MEIL for execution of PHEP works on 30.03.2021.. Effective zero date of project is 30.03.2021. The Engineering Designs & Drawings for various components of Project are under progress and the witnessing of the Turbine Model Test was 14.07.2021. The price break up schedule of Civil and Hydro Mechanical work approved on 22.10.2021. Power house excavation work is under progress.	
24	Pallivasal KSEB 2x30= 60 MW 31.01.2007 Broad Features: HRT: 3.50m X 3396m Surge Shaft: 7.0m X 49m Pressure Shaft: 2.50m X 1019.20m Penstock: 2.nos., 1161.20m each. Power House: Surface Turbine: Pelton S. Yard: 220kV – Single bus Cost: Original: 222.00 Latest: 550.00 Contractors Single Package (Except Intake & balance Tunneling works) ESSAR – DEC – CPPL JV -M/s Bumi-Zillion JV (for Intake works & balance Tunneling works) -M/s Anchor structure-PSE-SSIPCV, M/s. Shri Sarvasana Industries Pvt. Ltd.	<u>Kerala</u> <u>2010-11</u> <u>2022-23</u> (Mar'23)	Contract for Civil & HM works has been terminated w.e.f. 13.09.18. Balance work has been re-tendered on the risk & cost of Contract, Subsequently balance works have been awarded to M/s. Sri Sarvasana Industries Pvt. Ltd. and M/s. DSE Anchor Structure. Intake structure: Excavation completed. Leading channel of Water conductor system replaced by cut & cover/soil tunnel and accordingly intake is shifted. HRT: Excavation –3388/3347 m completed. Overt conc. 2941/3347 m completed. Invert Conc.. – 2400/3347 m completed. Surge Tank / Forebay: Excavation completed. Concreting. 650/843 m³ completed. Pressure Shaft: Excavation completed. Fabrication of steel liner completed and erection of 1096/1096 m completed. Surface penstock: Excavation –12000/122600 m³. Concreting- 122800/12850 m³ and 1986m out of 2036m erection completed. Power House: Excavation & Concreting completed. Balance work from FACE II tunnel to Power House Contractor- M/s. Anchor Structurals Tail race Channel (2 Nos.): Excavation & lining completed. E&M Works: 75% supply completed, balance of E&M works –Tendering finalized. The overall progress achieved :- 88.67%.	
25	Thottiyar KSEB 1x30 + 1x10= 40 MW 05.06.2008 Broad Features: Weir: 222m Long 11 blocks 7.5m height Tunnel: Circular 2.6m dia 199m long. Power House: Surface Turbine : Vertical Pelton Cost: Original: 136.79 Latest: 280 Contractors Civil & HM : PRIL- Sri Sarvana Industries	<u>Kerala</u> <u>2012-13</u> <u>2022-23</u> (Mar'23)	Original contract for Civil & HM works foreclosed without risk & cost of Contractor M/s. Coastal Project Ltd. -Civil & HM works re-awarded to M/s PRIL-Sri Sarvana Industries Pvt. Ltd. on 05.01.2018. KSEB decided to execute E&M works departmentally & tendering was awarded to M/s Fitwell. Civil Works: Weir: 70% completed 9 out of 11 block completed. Approach Channel & Intake: 4011 m³ excavation out of 9584 m³. done. Power Tunnel: Excavation & Concreting completed. Steel line fabrication and erection completed.	Lok down imposed to prevent spread of Covid-19 pandemic has affected the achievement of the target progress. Due to restriction ,Civil Contractor failed to the arrange the work in separate shift and also the arrangements round the clock and hence the work at several work fronts was delayed

			Penstock, Anchor, Rocker support: - Excavation 32932 m3 out of 37839.37 m,3. concreting 6138 m3 out of 12082 m3 completed, Fabrication of penstock 1953 MT out of 2286.32MT completed and erection 1544 out of 2341 MT completed. Power House, switchyard & allied works: 40283/43690 m3 excavation and 9670 /16209 m3 concreting completed. E&M Works: Tender for erection of supplied Electro/ Hydro Mechanical equipment for power house was awarded to M/s Fitwell. Work commenced on 10.07.2020 and at present 54% work have been completed.	
26	Kundah Pumped storage (Phase-I, Phase-II & Phase-III) TANGEDCO 4x125= 500 MW Broad Features: HRT: Ø 8.5mX1247.33m. Surge Shaft: Ø (28m/16m/10m) x68m depth. Pressure Shaft: 2 Nos. Ø 5.50m X 463.38 m (each) Penstock: 4.nos. Ø 3.9m x45.4m each. Power House: Under Ground. Tail race surge chamber: 10m(W);52m(L);48m(H) Tail Race Tunnel: Ø 8.5mx895m Turbine: Francis reversible turbine. Cost: Original: 1216.59 Revised: 1831.29 EPC cost: Rs. 2424.09 crore (capital cost under revision by TANGEDCO) Contractors Civil &HM : Patel / Kundah PSP E&M: MEIL	<u>Tamil Nadu</u> <u>2022-23</u> 2023-24 (March'24)	Civil & H&M Works: - Phase-I, Package I & II (Civil and HM works), LOI issued for package - I to M/s Patel engineering, and for package - II M/s Kundah PSP Consortium on 15.02.2018. The site was handed over on 05.03.2018. Electro-Mechanical works was awarded to M/s Megha Engg. & Infrastructure Ltd. on 28.11.2019 HRT: Excavation completed and Benching under progress (887 M completed) Pressure Shaft: : excavation of Lower Horizontal Portion of Pressure Shafts PS1 & PS2 Completed. Pilot tunnel excavation in Inclined portion completed and shaft widening is under progress.. Head race Surge Shaft: excavation completed. Tail Race Surge Chamber: excavation completed Power House: Mining completed upto El+1928m from crown level El+1952m. Further benching below 1923m under progress. To be completed upto El+1908m, 4 Nos. Bus ducts completed. Transformer Cavern: Mining completed. Excavation for Draft tube Gate shafts under progress. TRT: Mining completed and Concrete lining under progress. E&M Works: - Virtual Model Test Completed , Design and Engineering works are under progress.	
27	Lower Kopli APGCL 2x55+2x2.5+1x5= 120 MW Broad Features: Dam: Conc. Gravity HRT- Circular, 7m dia, 3.64Km long. Power House- Surface Turbine- VF. Switchyard: 220 Kv. Cost: Original:1115.91 Latest:1847.07 Contractors Civil : L&T	<u>Assam</u> <u>2023-24</u> 2024-25 (Jun,24)	At present detailed survey work, geotechnical investigation work etc. are being carried out by M/s L&T. Civil work preliminary survey and geo technical investigations going on at site . Overall Physical progress - 21% Overall financial progress - 26% HM work – not yet started E&M works – contract awarded to M/S Andritz Hydro Pvt. Ltd on 09.09.21	
C	Private Sector			
28	Tangnu Romai-I M/s Tangnu Romai Power generation 2x22= 44 MW 30.11.2007 (TEC by HPSEB)	<u>H.P.</u> <u>2014-15</u> 2024-25 (Subject to re-start of	Civil works awarded on 14.06.2010 to M/s Sai Urja Hydel Project (P) Ltd. Barrage and Diversion Cannel: 26211 cum out of 93800 cum excavation completed.	- Works are stalled since Jan, 2015 due to finance issues. Developer has earlier initiated the sale of project and in the process of

	Broad Features: Barrage at EL $\pm$ 2555 m HRT-3.1m dia& 7.220 km length Surge Shaft- 5m dia, Top Level 2570 m & Bottom Level 2520 m Penstock- 2 m dia& 609.3 m length P.House- Surface Turbine – Vertical Francis Cost: <u>Original:255.00</u> Latest:641.89 Contractors Civil & HM : Sai Urja E&M : Andritz	works)	Desilting Chambers & SFTPC: Excavation completed. SFT excavation 420 / 450.66 m completed. HRT: 2826m out of 6300m excavation completed. Power House, Switchyard & Misc.: 60275 m ³ out of 72000 m ³ excavation completed. In February-2015, due to land slide the steel bridge on Pabbar River, connecting Project components has been completely damaged. The restoration works are completed.	negotiating with potential buyers to enable the project implementation.
29	Tidong-I M/s Statkraft India Pvt. Ltd. 2x50 = 100 MW 28.07.2006 Broad Features: HRT–D-3.5m L- 8461 m P.H. Surface Turbine –Vertical Pelton Cost: <u>Original</u> 543.15 Latest 1472 Contractors Civil &HM : SCL Infratech / Himalaya E&M : Alstom	<u>H.P.</u> <u>2013-14</u> <u>2022-24</u> (April-23)	Barrage& River Diversion Works: Common Excavation completed and 71700.84/73409.00 open cut rock excavation completed. 32144 cum out of 37159 cum concreting done. Head Regulator & Desilting arrangement: Common excavation completed. 9763 cum open cut rock excavation out of 10,000 cum completed. HRT (8409m): Excavation completed and 7925/8409 m lining concreting has been completed. Intake Complex 72% progress achieved. 78% percent progress achieved Surge Shaft: Excavation completed. Full steel lining remaining. 65 % percent progress achieved Pressure Shaft: Excavation completed. 80% lining remaining. 50 % progress achieved Power house and Tail race channel- 87709 cum out of 92500 cum excavation completed. 11237 cum out of 16156 cum concreting completed. Overall 92 % of Powerhouse civil works completed. E&M works Supply 97% completed and erection 90% Mechanical works and 50% Electrical works completed. 75 % progress achieved The work of transmission line is critical due to forest land clearance for 17 towers out of 54 towers due to realignment of the transmission line. 65 % progress achieved M/s Statkraft India Pvt Ltd has acquired the 100% equity of the project on 04.09.2018	- Transmission Line critical. - Pressure shaft blockage due to geological reasons. - Surge shaft lining due to harsh weather condition
30	Kutehr M/s JSW Energy (Kutehr) Ltd. 3x80 = 240 MW 31.08.2010 Broad Features: Cost: <u>Original:</u> 1798.13 Latest : 1798.13 Contractors Civil &HM : M/s Angelique – PCC consortium, M/s MF BumiGeotech Pvt. Ltd. & M/s. PES Engineers Pvt. Ltd. E&M : M/s Andritz Hydro Pvt Ltd.	<u>H.P.</u> <u>2024-25</u> <u>2025-26</u> (Nov'25)	Civil works, HM works and E&M works awarded on 20.10.2019, 19.09.2019 and 13.02.2020 respectively. River diversion achieved on 25.01.2020. Barrage (27m high): Barrage excavation (left bank) completed to the tune of 146631 Cum out of 158696 Cum. Barrage excavation (right bank) completed to the tune of 9072 Cum out of 52101 Cum HRT : Five out of Six Construction Adits to HRT completed (i.e. 1453.5 m out of 1612 m completed). 9385m out of 14538 m of Head Race Tunnel excavation completed.	-
31	Phata Byung M/s Lanco 06.10.2008 2x38 MW = 76 MW Broad Features: Dam – 26m high	<u>Uttara khand</u> <u>2012-13</u> <u>2024-25</u> (Subje to re-start of	Dam concreting: 17800/18000 cum concreting completed. P.H.: Excavation completed & Concreting in progress. HRT: Excavation almost completed. 1400 m Lining has been completed.	- Works severely affected due to flash floods in June, 2013. - Works are stalled since July, 2017 due to Funds constraints with the developer.

	HRT- 3.2 m dia& 9.38 km length Turbine – Frances Cost: <u>Original: 520.00</u> Latest : 1133 Contractors Civil : Lanco HM : Cimmco E&M : Alstom	works)	Excavation and lining of Intake-I & Intake-II completed. Pressure shaft: Excavation completed & lining is under progress. TRT: Excavation 178/235m completed. E&M Works: Pit liner erection of units completed. EOT Crane installed and Commissioned. Ferrule Fabrication work is in progress. Work progress is stalled since July'17 on account of main EPC contractor and holding Company M/s LancoInfratech Limited (LITL) being referred to NCLT under the Corporate Insolvency Resolution Process (CIRP) and subsequently, the initiation of liquidation proceeding as per NCLT Liquidation order in August 2018. However, the preservation works of Project are being carried out regularly at site by the Company, LancoMandakini Hydro Energy Private Limited (LMHEPL). Presently, the company is undergoing a corporate insolvency resolution process initiated under IBC for resolution and revival of the project since June 2020. Under this process, the resolution professional appointed by the NCLT has initiated the process for inviting prospective investors for the project.	- Presently, the company is undergoing corporate insolvency resolution process initiated under IBC for resolution and revival of the project.
32	Maheshwar, SMHPCL 30 12 96/ 29.9.2006 (FC) 10x40= 400 MW Broad Features: Dam-35m High, concrete gravity P.Shaft-10x7.82m x 52m P.House - Surface Turbine- Kaplan Cost: <u>Original: 1569.27</u> Latest: 8121.00 Contractors Civil & HM : Sew E&M : BHEL	<u>M. P.</u> <u>2001-02</u> 2023-24 (Subject to re-start of works)	Civil & HM Works: All major civil works completed. All 27 nos radial gates commissioned. Unit Erection: Unit-10: Initial spinning achieved on 14.10.2011. Unit-9 & 8: Ready for spinning. Unit-7: Guide apparatus trial assembly in progress. Unit-6: Erection of turbine embedded parts & foundation parts completed. Unit-5 to 1: Erection of units is in initial stages. Works suspended since Nov-11 due to cash flow problem with developer. M.P. Power Management Company Ltd. has terminated the Power Purchase Agreement, R&R Agreement & Escrow Agreement with SMHPCL on 18.04.2020 & 20.04.2020 respectively .	- Completion of R&R works and E&M works. - Works held up due to Fund constraints with developer. - Sub - Judice in NCLT.
33	Bhasmey Gati Infrastructure 2x25.5= 51 MW Broad Features : Dam-33.2m High, Symmetrical gravity HRT-5.3m dia&5.132 km length , Circular. Surge Shaft- 89.8m Hight& 14m dia. P.House-Outdoor Turbine-VF TRT-2 Nos, L- 50m Swityard-132/11 KV Cost :<u>Original : 408.50</u> Latest : 746.01 Contractors Civil : Simplex E&M : Voith	<u>Sikkim</u> <u>2012-13</u> 2024-25 (Subject to re-start of works)	Project is in initial stage of construction. River diversion achieved. Barrage: 61555cum/194600cum excavation completed. HRT: 1670m/4460m excavation completed. PH: 136105 cum/185937cum excavation completed. Surge Shaft : 8567cum / 22000cum Surface excavation completed. Overall Physical progress: 38% .	- Slow progress of works - Works stalled since Sept., 2016 due to paucity of funds. -No investor showing interest for executing the project.

34	Rangit-II Sikkim Hydro Power Limited 10.02.2010 2x33= 66 MW Broad Features : Dam-47m High, Concrete Gravity HRT-3.9m dia&4.745 km length , Surge Shaft- 65.5m High & 10m dia. Underground Pressure Shaft : 1.7 m dia& 2.5 km length. P.House-Outdoor Turbine- Pelton Vertical Swityard- GIS, 132/11KV Cost :Original : 496.44 Latest : 496.44 Contractors Civil &HM : Coastal E&M : Gammon	<u>Sikkim</u> <u>2015-16</u> <u>2024-25</u> (Subject to re-start of works)	EPC contract awarded to M/s Coastal in February, 2012. Diversion Tunnel: River diversion through diversion tunnel has been achieved. Dam : Excavation 53100cum out of 85000cum completed. HRT: Excavation 623m out of 4745m completed. Surge Shaft: Excavation completed. Concreting 37/1667 cum done. Pressure shaft: Excavation of pressure shaft I - 25m out of 128m and pressure shaft II - 154m out of 377m completed Power House: Excavation of surface power house is being taken up. Overall Physical progress: 40% .	Works are stalled due to non releasing of funds by lenders because of Power evacuation and land acquisition issues. Works restarted. A meeting with financiers were held on 23.09.2016 for release of funds. The developer was asked to submit certain document for release of funds. Works are stalled since December, 2017 due to funds constraints with developer. Project is in NCLT since 30.07.2020.
35	Panan Himagiri Hydro Energy Pvt. Ltd. 07.03.2011 4x75= 300 MW Broad Features : Dam-115m from deepest foundation level Desilting Chambers : Underground, 2 Size (14Lx22Wx2.5H) HRT- modified horse shoe, 6 m dia& 9549m length , Surge Shaft- 102 m High & 15m dia. Pressure Shaft : 2/4, 3.4/2.4m dia, 707.4 m- Long P.House-Surface Turbine-Vertical Francis Cost :Original: 1833.05 Latest :2675.00 Contractors Civil : Essar	<u>Sikkim</u> <u>2018-19</u> <u>2025-26</u> (Subject to re- start of works)	Civil works awarded on 22.02.2014. Infrastructural works and geological investigations are in progress. Starting of civil construction works was held up for want of the National Board of Wild Life (NBWL) clearance. On dismissal of the case in NGT on 21.08.17, the developer has made an application to PCCF cum-Secretary, Forests, Environment & Wild Life Management Department for grant of NOC, in National Board for Wildlife (NBWL) angle. Now, the NoC in regard to NBWL has been received vide state Govt letter dated 4.10.2019. In view of the new hydro policy announced by Ministry of Power, GOI, which will help in convincing the investors to release the funds to start the project works. An artificial lake (Mantham Lake) created in August 2016 due to heavy landslide resulting no accessibility for several years to the Upper Dzongu/ Dam site, which are beyond the control of the company/ force majeure. It is being understood that now Road and Bridge Department of Govt of Sikkim started erecting 60 Tonne Bridge, but work may progress in full stretch only after this rainy season i.e. of year 2022 and the construction work is likely to be completed by 4 th quarter of 2022 then the project work will re-start. The project is likely to be commissioned in 2025-26, subject to restart of works. Overall Physical progress: NIL	-Works was stalled for want of NOC from State Govt. from NBWL angle and now it is received. - Issue of Mantham Lake. - Some of the infrastructure works developed earlier to be redone.

Grand Total : 35 nos. – 12,483.5 MW

Status of Under Execution Hydro Electric Projects in Bhutan

Sl. No.	Name of Project / Capacity (MW)/Executing Agency/Date of CEA clearance / Approval / Broad Features/Commissioning Schedule	Award of works	Present Status/ Issue
1.	Punatsangchhu-I 6x200=1200 MW PHPA, Bhutan Date of TEA: 27.07.2007 Broad Features : Dam – 130m High, 249m long, Concrete gravity (RCC) HRT- 10m x 8.9 km Pressure Shaft: Two nos. 6.0mx936.42 m each Surge Shaft: 24.5mx128.5m TRT: 10.0m x1182.20m P.House-Underground Turbine- Vertical Francis SWYD- 400 kV Original Commissioning Schedule: Nov' 2016 Anticipated commissioning schedule : 2024-25 (As presented in the 22nd PHPA-I meeting held on 25.09.2019 which will be revised after decision on Dam Vs Barrage) Original Cost: Rs.3514.80 Crores Latest revised Cost: Rs9375.60Cr.(Dec 2013 PL) Expenditure: Rs. 8212.423 Crores (March 2022)	Civil Works: Package-I: L&T Ltd. on 27.03.2009 Package-II: Gammon India Ltd on 27.03.2009 Package-III:HCC ltd. 27.03.09 E&M Main Works: Package-I : BHEL Ltd. on 04.02.2010 Package-II: BHEL Ltd. on 27.02.2012 Package-III: Hyosung Corporation on 28.02.2012 Package-IV: SudkabelGmbh on 27.05.2011 Package-V: Schneida Electric Ltd. on 21.11.2013. Transmission Works: Joyti Structures & Gammon (India) JV on 12.08.2010 (Amended on 10.6.2013)	• Dam (130 m high and 249 m long):- The works of Coffor Dam, Diversion Tunnels, and major excavation of Dam are complete. The balance works left are concreting of Dam, Intake Structures and related HM works.100% reinforcement and concreting of Power Intake structure completed. As on date, there is no agreement to continue with the construction of Dam at the existing location, due to which, the progress of Dam works is nil. • Desilting chamber (4 nos. each of 330 m length x 18 m width x 24 m depth):- Both excavation and concreting completed (100%). • Progress for MC-I Package is 69.87%. • HRT (10m diameter, 8.9 km long):- Both excavation and lining completed (100%). • Surge Shaft (24.5 m diameter 128.5 m height):- Both boring & lining completed (100%). • Progress for MC-II Package is 100%. • Pressure Shaft (2 nos. each of 6 m diameter 936.42 m long and 6 penstocks of 3.32 m diameter):- Boring, steel liner fixing and backfill concreting works completed (100%). • Power House (236.9 m x 22.9 m x 53 m size):- Both excavation and concreting completed (100%). • TRT (10.0 m diameter and 1182 m long): Both excavation and lining completed (100%). • Progress for MC-III Package is 99.05%. • E&M Works:- - Over all 88.60% works completed for Unit # 1 - Over all 99.60% works completed for Unit # 2 - Over all 99.95% works completed for Unit # 3 - Over all 99.92% works completed for Unit # 4 - Over all 73% works completed for Unit # 5 - Over all 99.80% works completed for Unit # 6 • Progress for Transmission work is 100%. • Overall physical progress achieved is 87.44% as on 31.03.2022

Sl. No.	Name of Project / Capacity (MW)/Executing Agency/Date of CEA clearance / Approval / Broad Features/Commissioning Schedule	Award of works	Present Status/ Issue
			Critical/ Major issue: Movement & subsidence at right bank hill. Completion of dam works. ➤ Final decision regarding construction of Barrage vs Dam. ➤ Shortage of manpower in MC#3 and EM contract Package to complete the balance work due to limited quarantine facilities inside Bhutan due to Covid-19.
2.	Punatsangchhu-II 6x170=1020 MW PHPA, Bhutan Date of TEA: 30.04.2010 Broad Features : Dam – 91m High, 225m long, concrete gravity HRT- 11m x 8.51 km Pressure Shaft: 3 nos. 5.5mx997m each Surge Shaft:31 m x137m TRT: 11.0m x2869 m P.House-Underground Turbine- Vertical Francis SWYD- 400 kV Original Commissioning Schedule: Dec' 2017 Anticipated commissioning schedule: 2023-24 (July 2023) Original Cost: Rs.3777.80 Crores (03/2009PL) Latest1st revised Cost: Rs7290.62Cr.(03/ 2015 PL) Latest 2nd revised Cost:8977.045 Crore (to be approved by MEA) Expenditure: Rs. 7479.895 Crores(31 March 2022)	Civil Works: Package- CI : JP Associate Ltd. on 25.07.2011 Package-CII: Gammon India Ltd on 25.07.2011 Package-CIII: JP Associate Ltd. on 25.07.2011 E&M Main Works: Package-I: BHEL Ltd. on 18.07.2012 Package-II: BHEL Ltd. on 7.05.2013 Package-III: Hyosung Corporation on 7.05.2013 Package-IV:LS Cables & System Ltd. on 7.05.2013 Package V : M/s ABB Ltd. on 18.11.2014 Package VI : M/s BAEL, Bhutan on 31.12.2018 Package VII (A) : M/s S.K. Systems on 13.02.2017 Package VII (B) : M/s Technico (India) on 21.03.2017 Package VIII (A) : M/s Avaid's Technovators Pvt Ltd. on 18.11.2019 Transmission Works: Bhutan Power Corp.Ltd on 16.01.2014 (on deposit work basis)	Dam (91 m high and 225 m length) Excavation completed. Adverse geological situation faced at the left bank of the dam stands resolved. Conc.8.765 lakh cum completed out of 9.08 lakh cum. Desilting Chamber and Silt Flushing Tunnel All works of Desilting Chamber and Silt Flushing Tunnel stand completed except Concreting of 2063 cum and silt flushing gate and miscellaneous work which are pending due to unavailability of manpower. Total Progress for C-I Package – 93.52% HRT (11m diameter, 8.51 km long) HRT in C-2 package is completed in all respect and extensive grouting has also been carried out. It is ready to be taken over. Only invert lining of 439 m in C-3 package is remaining. Total Progress for C-II Package – 99.38% Surge Shaft (31m diameter 137 m height) Excavation and lining completed and HM works of Gate is yet to be taken up. Pressure Shaft Erection & backfill concrete of Steel Liner 1236 M completed out of 1454 M. (95.50%). The balance work lies in bottom Adit of pressure shaft which is at present used as access road to North Surge Tunnel and can be taken up only after the North Surge Tunnel is completed in all respect. Power House (240 m x 23.5m x 51m size) Machine Hall Excavation is completed. Unit-I & II have reached to Spiral case level and Electro Mechanical works of Erection of Spiral case is in progress. Civil work in Unit-III upto MIV level is completed and from MIV floor level to Spiral case level is in progress. Planned 30m Excavation of draft

Sl. No.	Name of Project / Capacity (MW)/Executing Agency/Date of CEA clearance / Approval / Broad Features/Commissioning Schedule	Award of works	Present Status/ Issue
			tube tunnel VI from Machine hall side is completed and Preparation for raft concrete for erection of Draft tubes VI will be taken up soon. Similarly for draft tube V initial 30m excavation from Machine Hall is in progress. The balance length of tunnel in both Draft tube V& VI will be done from DSSG side. Transformer hall (216.1 X 14.7 X 26.5) Excavation is completed and 30m of GIS slab is also completed. Firewall and raft foundation for accommodating 3 transformers is also completed and lying of floor is in progress and rail line for shifting Transformer will be laid soon. Down Stream Surge Gallery About 47% excavation had been completed before the collapse of the DSSG. Now the DSSG is divided into two caverns of North and South with abandoned portion in-between. Balance excavation in South and North has to be taken up once strengthening and restoration works of DSSG is completed. As of now grouting of the loose muck in abandoned portion is completed. Construction of RCC wall at both North and South to hold the loosed grouted muck is also completed. Installation of Passive Cable Anchor is in progress. 4 rows both in North and south out of 10 and 12 rows respectively stand completed. Installation of FMI is in also in progress. Total Progress for C-III Package – 82.03% E&M Works: Erection and Commissioning of EOT crane has been completed upto Unit-II. Erection works of Spiral case for Unit-I & II including hydro pressure test completed and concreting is in progress. Erection of Spiral case for Unit-III is in progress. Stator for Unit-I completed at service bay and for Unit-II is in progress. Similarly Rotor Rim building for Unit-I and II at service bay has been completed. Erection of draft tube for unit VI is completed and concreting is halt due to shortage of man power and for Unit V is in progress. Regarding the supply part more than 80% of the supply EM supply stands completed. Total Progress for E&M Package – 80.43% Total Progress for Transmission work – 100% Overall Cumulative Physical Progress of the Project on 31.03.2022 is 91.38%. Critical: - Restoration & completion of downstream Surge gallery works.

Sl. No.	Name of Project / Capacity (MW)/Executing Agency/Date of CEA clearance / Approval / Broad Features/Commissioning Schedule	Award of works	Present Status/ Issue
	3. Kholongchhu HEP (4x150 MW = 600 MW) A joint venture company between SJVN Ltd and DGPC Bhutan (50:50) created on 12.06.2015 as “Kholongchuu Hydro Energy Ltd.” DPR approved by CEA on 5.11.2012 and RGoB on 23.05.2013 EC obtained on 21.07.2014 FC obtained on 13.11.2012 Construction license obtained on 16.7.2015 Dam – 94.35 m (above foundation) high concrete gravity dam, 372 m long HRT- 5.7 m dia, 15.77 km long, Horse shoe shap. Pressure shafts – 2nos. Of 3.3.m dia and 1300 and 1286 m long Turbine – 4 no. Pelton type. Original Cost: Rs.3305.00 Crores (03/2011 PL) Latest 1st revised Cost: Rs 3859.77Cr.(06/ 2013 PL) (including IDC & FC)	Civil works:- All three main civil works packages awarded on 04.03.2021 Package-I Work awarded to M/s Jaiprakash Associates. Contract Agreement yet to be signed. Package-II Work awarded to Ms Valecha – Rigsar JV. Contract Agreement signed on 26.05.2021 and 10.06.2021 for 2A & 2B. Package – III Work awarded to M/s Jaiprakash Associates. Contract Agreement yet to be signed.	- E&M works. Package 2A : Construction of portals of Adit -3, 4 & 5 and construction of site camps are in progress. Package 2B : Construction of approach roads & portal of Adit-2 in progress. Drilling at drop shaft completed and drilling in HRT at four locations in progress. Access roads (31.97 km) and road to desilting chamber (848 m) completed. Bridge –I & II completed on 08.01.2018 & 24.01.2018. Widening of Doksum-Buyang Highway in progress. Work is being executed through Department of Roads, RGoB and 15.18 km out of 16.503 km completed. Widening of balance road is in progress. Work for temporary site office at Power House, Adits, Surge Shaft and Pressure Shaft completed. Electrical work in progress. Integrated township at Duksam (KHEL Colony) work is in progress. Work for providing construction power completed.

Chapter-7

Financial Status of Under Construction H.E.P.

Figures in Crores

Sl. No.	Name of project/ State	Capacity (MW)	Benefits (MW)	Cost	Ant .Cost.	Total Expend. Upto Mar'18	Total Expend. Upto Mar'19	Total Expend. Upto (Mar' 20)	Expend. in FY 2020-21	Total Expend. Upto Mar'21	Actual Expend.till Mar. 22(FY2021-22)
	(State)			(PL)	(PL)						
	Under Execution										
	Central Sector										
1	Pakal Dul (CVPPPL)	4x250	1000	8112.12	8112.12	993.93	1086.32	1465.44	429.55	1894.99	2223.86
	J&K			(03/2013)	(03/2013)						
2	Parbati -II(NHPC)	4x200	800	3919.59	9897.59	6670.12	7277.60	7858.50	989.94	8848.44	9596.51
	H.P.			(12/2001)	(04/2018)						
3	Tehri PSP (THDC),	4x250	1000	1657.60	5024.35	2540.27	2792.49	3374.95	565.59	3940.54	4497.78
	Uttarakhand			(12/2005)	(02/2019)						
4	Tapovan Vishnugad (NTPC)	4x130	520	2978.48	5867.38	3521.00	3938.20	4467.43	425.99	4893.42	5301.62
	Uttarakhand			(03/2004)	(04/2019)						
5	Lata Tapovan(NTPC)	3x57	171	1527.00	1527.00	148.00	149.16	149.21	*	149.21	149.93
	Uttarakhand			(07/2012)	(07/2012)						
6	Vishnugad Pipalkoti (THDC)	4x111	444	2491.58	4397.80	1393.66	1604.36	1936.99	270.96	2207.95	2454.35
	Uttarakhand			(03/2008)	(02/2019)						
7	Ramam-III (NTPC)	3x40	120	1381.84	1381.84	322.00	447.75	517.86	142.20	660.06	778.01
	West Bengal			09/2014	09/2014						
8	Subansiri Lower (NHPC)	8x250	2000	6285.33	19992.43	9966.92	10749.37	12225.96	1380.72	13606.68	15506.40
	Ar. Pradesh/Assam			(12/2002)	(04/2017)						
9	Naitwar Mori (SJVN)	2x30	60	648.33	947.89	100.37	198.68	355.65	214.15	569.80	870.80
	Uttarakhand			(10/2016)	(12/2020)						
10	Teesta St. VI (NHPC)	4x125	500	5748.04	5748.04		897.50		*		1440.50
	Sikkim			(07/2018)	(07/2018)						
11	Ratle (NHPC)	4x205 + 1x30	850	5281.94	5281.94	1451.00			*		10.36
	J&K			(NA)	(NA)	(Mar-16)					
12	Kiru (CVPPPL)	4x156	624	4287.59	4287.59		128.10	305.35	185.68	491.03	707.60
	J&K			(9/2014)	(9/2014)						
13	Luhri-I	2x80+2x25	210	1912.59				178.19	239.77	417.96	645.19
	H.P.			(2017)							
14	Rangit-IV (NHPC)	3x40	120	726.16	1692.60	818.44			*		209.43
	Sikkim			(2011-12)	(06/2016)	(Jun-17)					
15	Dhulasidh (SJVN)	2x33	66	688	688	51.44	59.76	125.12	19.2	144.32	226.89
	Himachal Pradesh			(05/2020)	(05/2020)						
A	Sub Total: Central Sector		8485.00	46958.19	74158.57	27977.15	29329.29	32960.65	4863.75	37824.40	44619.23
	State Sector										
16	Parnai	3x12.5	37.50	640.86	640.86	136.50	189.62	221.69	19.48	241.17	287.25
	J&K			(NA)	(NA)						
17	Lower Kalnai	2x24	48	576.87	576.87	87.94			*		*
	J&K			(NA)	(NA)	(Dec-17)					
18	Uhl-III	3x33.33	100	431.56	1281.52	1459.21	1602.78	1927.49	157.38	2084.87	2150.91
	H.P.			(09/2002)	(12/2012)	(Feb-18)	(Feb-19)	(Mar,20)			
19	Shontong Karcham	3x150	450	2807.83	2807.83	657.56	918.05	1130.90	189.42	1320.32	1503.74
	H.P.			(07/2011)	(07/2011)						
20	Vyasi	2x60	120	936.23	1581.01	430.67	825.73	1213.14	355.61	1568.75	1778.00
	Uttarakhand			(02/2010)	2019						

Sl. No.	Name of project/ State	Capacity (MW)	Benefits (MW)	Cost	Ant .Cost.	Total Expend. Upto Mar'18	Total Expend. Upto Mar'19	Total Expend. Upto (Mar' 20)	Expend. inFY 2020-21	Total Expend. Upto Mar'21	Actual Expend.till Mar. 22(FY2021-22)
	(State)			(PL)	(PL)						
21	Shahpurkandi #	3x33+3x33+1x8	206	1835.50	1938.74	650.00	729.96	1241.58	241.84	1483.42	1513.40
	Punjab			(4/2008)	(2/2018)	(Mar-18)					
22	Koyna Left bank PSS	2x40	80	245.02	1403.77	165.39	165.39	165.39	*	165.39	*
	Maharashtra			(1999)	(2014)						
23	Polavaram HEP (PPA)	12x80	960	3013.68	5338.95	608.74	758.708	802.18	0.00	802.18	802.82
	Andhra Pradesh			(2010-11)	(2016-17)						
24	Pallivasal (KSEB)	2x30	60	222	550	259.35	302.36	356.18	39.25	395.43	436.76
	Kerala			(1999)	(2018)						
25	Thottiyar (KSEB)	1x30 +	40	136.79	280	61.08	63.61	100.79	23.45	124.24	132.05
	Kerala	1x10		(2007)	(2018)						
26	Kundah Pumped Storage-I	4x125	500.00	1216.59	1831.29	136.74	221.52	270.34	70.37	340.71	480.42
	Tamil Nadu / (TANGENDCO)			(2007-08)	(2014)						
27	Lower Kopili	55+2x2.5+1x	120						#		478.63
	Assam										
B	Sub-total: State Sector		2721.50	12062.93	18230.84	4653.18	5777.73	7429.68	1096.80	8526.48	9563.98
	Private Sector										
28	Tidong-I	2x50	100	543.15	1472.00		163.74	780	78.00	858.00	1174.10
	H.P.			(06/2018)							
29	Tangnu Romai- I	2x22	44	255.00	641.89	329.36			*		*
	H.P.			(1/2007)	(2018)	(Mar-18)					
30	Phata Byung	2x38	76	520.00	1132.00	1135.00	1263.00		*		*
	Uttarakhand			(2013-14)	(9/2016)	(Dec-17)	(Dec-18)				
31	Maheshwar	10x40	400	1569.27	6793.00				*		Nil
	M.P.			(1996-97)	(2016-17)						
32	Bhasmey	2x25.5	51	408.50	746.01	353.00			*		Nil
	Sikkim			(2012-13)	(03/2018)	(Jun-17)					
33	Rangit- II	2x33	66	496.44	496.44	125.76	126.83		*		*
	Sikkim			(2011-12)	(2011-12)	(Feb-18)	(June-18)				
34	Panan	4x75	300	1833.05	2671.00	165.00	170.00	155.10	*	155.10	0.05
	Sikkim			(2009)	(2018)		(Nov.18)				
35	Kutehr (JSW Energy (Kutehr)I	3x80	240.00	1798.13	1798.13			279.97	133.00	412.97	995.00
	H.P.			(09/2011)	(09/2011)						
C	Sub-total: Private Sector		1277.00	7423.54	15750.47	2108.12	1723.57	1215.07	211.00	1426.07	2169.15
	Total : (Under Execution):		12,483.50	66,444.66	108,139.88	34,738.45	36,830.59	41,605.40	6,171.55	47,776.95	56,352.36
Note:-It is to mention that investment data is tentative (un-audited) as furnished by the developers in the monthly progress reports											

Chapter 8

Status of Environmental and Forest Clearance of Under Construction Hydro Electric Projects

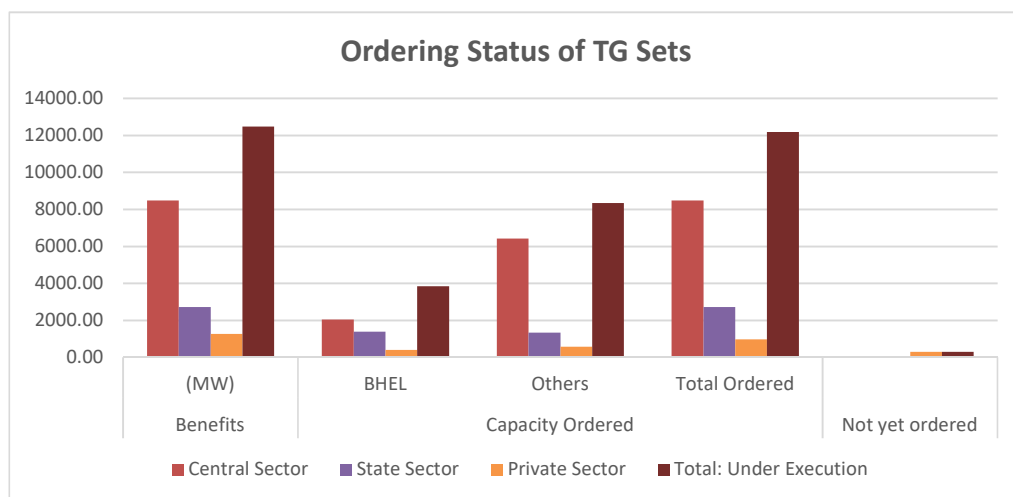
Status of Environmental and Forest Clearance of Under Construction Hydro Electric Projects								
Sl. No.	Name of Project	State	I.C. (No.xMW)	Benefits (MW)	Date of TEC Clearance	Date of Env. Clearance	Date of Forest Clearance	Date of I. Approval
I	Central Sector							
1	Pakal Dul (CVPPL)	J&K	4x250	1000	03.10.06	12.07.12	15.12.15	28.10.14
2	Parbati-II (NHPC)	H.P.	2x400	800.00	03.01.01	04.06.01	04.09.2001	11.09.02
3	Tehri PSS (THDC)	Utt.	4x250	1000.00	10.10.88	19.07.90	04.06.87	18.07.06
4	Tapovan Vishnugad (NTPC)	Utt.	4x130	520.00	11.08.04	08.02.05	22.04.06	11/2006
5	Lata Tapovan (NTPC)	Utt.	3x57	171.00	08.02.06	21.02.07	30.04.07	01.08.12
6	Vishnugad Pipalkoti (THDC)	Utt.	4x111	444.00	09/2006	22.08.07	28.05.13	21.08.08
7	Ramam-III (NTPC)	W.B.	3x40	120.00	12.09.06	17.08.07	18.10.08	10.09.14
8	Subansiri Lower (NHPC)	Ar. Pr./Asm.	8x250	2000.00	13.01.03	16.07.03	24.06.2004	09.09.03
9	Naitwar Mori (SJVN)	Uttarakhand	2x30	60.00	02.03.10	16.06.2016	05.08.2016	16.10.17
10	Teesta St. VI	Sikkim	4x125	500.00	27.12.2006	21.09.06	23.05.2008	08.03.2019
11	Ratle (NHPC)	J&K	4x205+1x30	850.00	19.12.2012	12.12.12	15.10.14	11.02.2021
12	Kiru (CVPPL)	J&K	4x156	624.00	13.06.2016	24.06.16	19.05.16	08.03.19
13	Rangit-IV	Sikkim	3x40	120.00	06.07.2007	16.05.07	26.12.07	30.03.2021
14	Luhri -I (SJVN)	H.P.	2x80+2x25	210.00	01.05.2018	17.03.2020	28.03.2019	20.11.2020
15	Dhaulasidh (SJVN)	H.P.	2x33	66.00	25.06.2011	21.02.2013	11.08.2020	01.10.2020
Sub-total (Central Sector):				8485.00				
II	State Sector							
16	Parnai (JKSPDC)	J&K	3x12.5	37.50	11.12.1992	24.12.2010	17.05.2013	25.10.2013
17	Lower Kalnai (JKSPDC)	J&K	2x24	48.00	16.08.2013	22.08.2014		16.08.2013
18	Uhl-III	H.P.	3x33.33	100.00	19.09.02	15.11.02	20.12.02	26.09.03
19	Shongtong Karcham	H.P.	3x150	450.00	16.8.12	19.05.11	22.03.11	-
20	Vyasi	Uttarakhand	2x60	120.00	25.10.2011	22.04.10	14.10.13	25.10.2011
21	Shahpurkandi	Punjab	x33+3x33+1x	206.00	08/2009	18.11.81	Not Req'd.	04.05.11
22	Koyna Left Bank PSS	Mah.	2x40	80.00	-	16.05.07	Not Req'd.	20.02.04
23	Indrasagar Polavaram (PPA)	Andhra Pr.	12x80	960.00	21.07.2010	28.07.10	21.07.10	25.02.09
24	Pallivasal Extn.	Kerala	2x30	60.00	31.01.07	Not Req'd.	11.07.07	31.01.07
25	Thottiyar	Kerala	1x30 + 1x10	40.00	05.06.08	Not Req'd.	11.07.07	05.06.08
26	Kundah Pumped Storage-I (T. Tamil Nadu)	4x125	500.00	15.02.18	08.05.07	27.11.08	03.12.08	
	Lower Kopli (APGCL)	Assam	2x55+2x2.5	120.00	24.05.16			
27			+1x5			04.09.2019	04.12.2020	Nov,2020
Sub-total (State Sector):				2721.50				
III	Private Sector							
28	Tidong-I	H.P.	100.00	100.00	-	18.06.08	18.06.08	23.07.07
29	Tangnu Romai- I	H.P.	2x22	44.00	-	01.05.09	19.01.10	30.11.07
30	Phata Byung	Uttarakhand	2x38	76.00	-	01.05.09	-	30.11.07
31	Maheshwar	M.P.	10x40	400.00	-	07.01.94	Not Req'd.	29.09.06
32	Bhasmey	Sikkim	2x25.5	51.00	-	15.05.07	13.09.10	-
33	Rangit- II	Sikkim	2x33	66.00	-	16.04.10	22.10.10	10.2.10
34	Panan	Sikkim	4x75	300.00	-	02.01.07	21.09.10	07.03.11
35	Kutehr	H.P.	3x80	240.00		05.07.11	19.02.13	31.03.10
Sub-total (Private Sector):				1277.00				
Total : Under Execution				12483.50				

Chapter 9

Status of Civil Package Award (First Package) of Under Construction Hydro Electric Projects

Sl. No.	Name of Project	State	Capacity (MW)	Benefits	Date of CCEA/ Investment	Date of letter of award
Central Sector						
1	Pakal Dul(CVPPL)	J&K	4x250	1000.00	28.10.14	21.02.2018
2	Parbati-II (NHPC)	H.P.	4x200	800.00	11.09.02	11.09.2002
3	Tehri PSP	Uttarakhand	4x250	1000.00	18.07.06	23.06.2011
4	Tapovan Vishnugad (NTPC)	Uttarakhand	4x130	520.00	11/06	11/2006
5	Lata Tapovan (NTPC)	Uttarakhand	3x57	171.00	08/2012	17.08.2012
6	Vishnugad Pipalkoti (THDC)	Uttarakhand	4x111	444.00	21.08.08	17.01.2014
7	Ramam-III	W.B.	3x40	120.00	10.9.14	10.09.2014
8	Subansiri Lower (NHPC)	Ar.Pr./ Assam	8x250	2000.00	09.09.03	19.12.2003
9	Naitwar Mori (SJVN)	Uttarakhand	2x30	60.00	16.10.2017	05.12.2017
10	Teesta St. VI	Sikkim	4x125	500.00	08.03.19	31.03.2020
11	Ratle (NHPC)	J&K	4x205+1x30	850.00	11.02.2021	18.01.2022
12	Kiru (CVPPL)	J&K	4x156	624.00	08.03.2019	24.02.2020
13	Rangit-IV	Sikkim	3x40	120.00	30.03.2021	27.08.2021
14	Luhri -I (SJVN)	H.P.	2x80+2x2	210.00	20.11.20	24.11.2020
15	Dhaulasidh (SJVN)	H.P.	2x33	66.00	01.10.2020	06.05.2021
Sub-total (Central Sector):				8485.00		
State Sector						
16	Parnai (JKSPDC)	J&K	3x12.5	37.50	21.10.2013	25.10.2013
17	Lower Kalnai (JKSPDC)	J&K	2x24	48.00	16.08.2013	12.09.2013
18	Uhl-III	H.P.	3x33.33	100.00	19.09.02	02.04.2003
19	Shongton Karcham	H.P.	3x150	450.00	16.08.12	04.08.2012
20	Vyasi	Uttarakhand	2x60	120.00	25.10.11	10.12.2013
21	Shahpurkandi	Punjab	3x33+3x33+1x8	206.00	04.05.11	11.02.2013
22	Koyna Left Bank PSS	Mah.	2x40	80.00	20.02.04	20.06.2007
23	Indrasagar Polavaram (PPA)	Andhra Pr.	12x80	960.00	21.02.2012	20.12.2017
24	Pallivasal	Kerala	2x30	60.00	31.08.07	31.01.2007
25	Thottiyar	Kerala	1x30 + 1x10	40.00	05.06.08	22.12.2008
26	Kundah Pumped Storage-I (TAN)	Tamil Nadu	4x125	500.00	03.12.08	15.02.2018
27	Lower Kopli (APGCL)	Assam	2x55+2x2.5+1x5	120.00	Nov,2020	21.08.2020
Sub-total (State Sector):				2721.50		
Private Sector						
28	Tidong-I	H.P.	100.00	100.00	23.07.07	07.11.2008
29	Tangnu Romai- I	H.P.	2x22	44.00	2014-15	14.06.2010
30	Phata Byung	Uttarakhand	2x38	76.00	06.10.08	12.04.2008
31	Maheshwar	M.P.	10x40	400.00	30.12.96	20.02.1997
32	Bhasmey	Sikkim	2x25.5	51.00	Dec-08	12.04.2010
33	Rangit-II	Sikkim	2x33	66.00	10.02.10	24.10.2011
34	Panan	Sikkim	4x75	300.00	07.03.11	22.02.2014
35	Kutehr (JSW Energy (Kutehr)Ltc)	H.P.	3x80	240.00	31.03.10	20.10.2019
Sub-total (Private Sector):				1277.00		
Total - Under Execution:				12483.50		

Ordering Status of TG sets for Under Construction Hydro Electric Projects					
Summary- Units Ordered					
Sector	Benefits	Capacity Ordered			Not yet ordered
	(MW)	BHEL	Others	Total Ordered	
Central Sector	8485.00	2055.00	6430.00	8485.00	0.00
State Sector	2721.50	1386.00	1335.50	2721.50	0.00
Private Sector	1277.00	400.00	577.00	977.00	300.00
Total: Under Execution	12483.50	3841.00	8342.50	12183.50	300.00



Chapter 9.2

Ordering Status of TG sets of Under Construction Hydro Electric Projects

Sl. No.	Name of the Project/State	Capacity (No.x MW)	Benefits (MW)	Make/Supplier of TG set	Date of Order
A. Central Sector					
BHEL Units					
1	Parbati-II (NHPC),(H.P.	4x200	800.00	BHEL	24.12.02
2	Tapovan Vishnugad (NTPC), Utt.	4x130	520.00	BHEL	01/2008
3	Lata Tapovan, Uttarakhand	3x57	171.00	BHEL	12/2012
4	Vishnugad Pipalkoti (THDC)	4x111	444.00	BHEL	18.11.14
5	Ramam-III (NTPC)	3x40	120.00	BHEL	19.02.15
Sub-total- BHEL			2055.00		
Other Units					
6	Tehri PSP (THDC)	4x250	1000.00	Alstom, France	27.07.11
7	Subansiri Lower (NHPC), Ar. Pr.	8x250	2000.00	Alstom, France & India	11.02.05
8	Naitwar Mori (Uttarakhand)	2x30	60.00	Voith Hydro Pvt. Ltd.	11.06.18
9	Teesta St. VI, (Sikkim)	4x125	500.00	Alstom, India	04/2009
10	Pakal Dul(J&K)	4x250	1000.00	Voith Hydro Pvt. Ltd.	01/2019
11	Rangit-IV, (Sikkim)	3x40	120.00	Andritz Hydro, India	28.08.09
12	Kiru (CVPPL)	4x156	624.00	M/s Andritz Hydro Pvt. Ltd.	24.02.20
13	Luhri -I (SJVN)	2x80+2x25	210.00	Voith Hydro Pvt. Ltd.	16.07.21
14	Dhaulasidh (SJVN)	2x33	66.00	Voith Hydro Pvt. Ltd.	19.01.2022
15	Ratle (J&K)	4x205+1x30	850.00	M/s Megha Engineering & Infrastructures Limited	18.01.2022
Sub-total- Others			6430.00		
Sub-total (Central Sector):			8485.00		
B State Sector					
BHEL Units					
16	Uhl-III (H.P.) BVPCL	3x33.33	100.00	BHEL	15.02.07
17	Shahpurkandi, Punjab ; PSPCL	3x33+3x33+1x8	206.00	BHEL	28.02.14
18	Vyasi , Uttarakhand UJVNL	2x60	120.00	BHEL	31.07.14
19	Polavaram (PPA) Andhra Pr.	12x80	960.00	BHEL	30.03.21
Sub-total- BHEL			1386.00		
Chinese					
20	Pallivasal, Kerala ;KSEB	2x30	60.00	Dongfang Elec.Corp., China	31.01.07
21	Thottiyar, Kerala KSEB	1x30 + 1x10	40.00	Chongqing, China	22.12.08
Sub-total- Chinese			100.00		
OTHER UNITS					
22	Koyna Left Bank PSS, Maharashtra	2x40	80.00	IVRCL Ltd	16.12.10
23	Shontong Karcham, H.P.	3x150	450.00	Andritz Hydro, India	04.03.15
24	Parnai (JKSPDC) J&K	3x12.5	37.50	Andritz Hydro, India	-
25	Lower Kalnai (JKSPDC) J&K	2x24	48.00	GE Power India Pvt. Ltd.	-
26	Kundah Pumped Storage-I (Tamil Nad	4x125	500.00	Megha Engineering & Infrastructure Ltd.	28.11.2019
27	Lower Kopli (APGCL)	2x55+2x2.5+1x5	120.00	M/s ANDRITZ HYDRO Private Ltd	09.09.2021
Sub-total- Others			1235.50		
Sub-total (State Sector):			2721.50		

Sl. No.	Name of the Project/State	Capacity (No.x MW)	Benefits (MW)	Make/Supplier of TG set	Date of Order
C	Private Sector				
	BHEL Units				
28	Maheshwar (M.P.)	4x100	400.00	BHEL	25.06.07
	Sub-total- BHEL		400.00		
	OTHER UNITS				
29	Tidong-I, (H.P.)	100.00	100.00	Alstom, India	28.02.11
30	Tangnu Romai- I, (H.P.)	2x22	44.00	Andritz Hydro, India	17.04.13
31	Phata Byung, (Uttarakhand)	76.00	76.00	Alstom, India	12.04.08
32	Bhasmey, (Sikkim)	2x25.5	51.00	Voith Hydro, India	14.04.10
33	Rangit-II, (Sikkim)	2x33	66.00	Gammon India Ltd.	24.03.12
34	Kutehr(HP)	3x80	240.00	Andritz Hydro Pvt. Ltd., India	13.02.20
	Sub-total- Others		577.00		
	Sub-total (Private Sector):		977.00		
	Under Execution Total (Units Ordered):		12183.50		
<u>Units not yet ordered</u>					
<u>A</u>	Central Sector		0.00		
<u>B</u>	State sector		0.00		
<u>C</u>	Private Sector				
35	Panan, Sikkim	4x75	300.00		
	Sub-total (Private Sector):		300.00		
Total: (Units not yet ordered)			300.00		
Total: Under execution			12483.50		

Chapter 9.3

Status of ordering of various packages for Under Construction Hydro Electric Projects

Sl. No.	Project name/ Exec. Agency CEA clearance/ Approval Capacity (MW)	State <u>Region</u>	Contract	Scope of works & brief details	Contracting Agency (Name & Location)	Contract value (Rs. Crs.)	Date of Contract (commencem ent)/ Completion
Under Execution							
A Central Sector							
1	Pakal Dul CVPPL 03.10.2006/ 28.10.2014 4x250 = 1000MW	UT of J&K North Region	Civil works	Power House Package- Power House, Transformer Cavern, MIV cavern, Valve House, TRT , Pressure shaft , Surge Shaft and associated works.	M/s. Afcons- Jaiprakash Associates JV	1051.00	<u>21.02.2018</u> 20.12.2022
				Dam Pkg. - Diversion Tunnel works, Dam works, Spillways, and Part of HRT by DBM and associated works.	M/s Jaiprakash Associates	2853.00	<u>21.06.2018</u> 20.03.2023
			E&M Works	Letter of Award Issued: Supply, Erection & commissioning of E&M components.	M/s. Voith Hydro Limited	703.63	<u>02.01.2019</u> 01.11.2023
			H&M Works	Letter of Award Issued: Supply, Erection & commissioning of HM components.	M/s PES Engineers Pvt. Ltd	286.58	<u>26.08.2019</u> 25.06.2023
			HRT- TBM	Letter of Award Issued- HRT by TBM	M/s L&T Ltd.	2575.63	<u>03.07.2020</u> 02-01-2025
2	Parbati-II NHPC 12.10.1999/ 11.09.2002 4x200 = 800 MW	Himachal Pradesh, North Region	Civil works	Lot-1: Civil & HM works for Dam and Part HRT (0-3500m)	M/s Patel-SEW JV,	322.9	<u>11.09.2002</u> <u>13.08.2011</u> (revised)
				Lot-2: Civil & HM works of HRT (3500-24733m)	M/s Himachal JV	419.89	11.09.2002 10.09.2007
				Contract terminated in March-12 and Fresh awarded as under.			
				Lot-2A: Balance civil works of HRT by TBM	M/s Gammon-CMC JV, Mumbai	455.63	<u>13.08.2013</u> 27.01.2020 (revised)
				Lot-2B: Balance civil works of HRT by DBM and associated HM works *contract has been terminated on 22.12.2018	M/s Valecha Engg. Ltd, Mumbai	176.30	<u>21.11.2013</u> 24.01.2018 (revised)
				Lot 2C : Execution of 1500 m Head Race Tunnel by DBM	M/s Gammon Engineers Contractors Pvt Limited	211.64	<u>02.06.2020</u> <u>01.03.2023</u>
				Lot-3: Civil & HM works of Power House, Pressure Shaft, Surge Shaft & Part HRT (24733-31525)	M/s Gammon India Ltd.	603.69	<u>13.09.2002</u> 24.05.2016 (revised)
				Lot-4: Jiwa Nallah Works	M/s BJ_Techno-HAS (JV)	56.47	<u>11.09.2002</u> 10.09.2007
				Contract terminated and Fresh awarded as under:			
				Lot-4A: Balance Civil & HM works of Jiwa Nallah and associated works *contract has been terminated on 25.05.2019	M/s Coastal Projects, Noida	78.34	<u>22.06.2011</u> 24.03.2015 (revised)

Sl. No.	Project name/ Exec. Agency CEA clearance/ Approval Capacity (MW)	State <u>Region</u>	Contract	Scope of works & brief details	Contracting Agency (Name & Location)	Contract value (Rs. Crs.)	Date of Contract (commencement)/ Completion
			E&M works	Generating Units, EOT Crane Main step up Transformers, Switch Yard and	M/s BHEL	354.44	<u>24.12.2002</u> 23.04.2007
				Electrical & Mechanical Auxiliaries	M/s BHEL	34.2	<u>24.12.2002</u> 23.04.2007
				Design, Manufacture, Supply, Erection , Testing & commg.	M/s BHEL	391.11	<u>29.12.2006</u> 02/2011
			H&M Works	Hydro-Mechanical Packages	M/s Patel-Sew JV	23.61	<u>11.09.2002</u> 13.08.2011 (revised)
3	Tehri PSS, THDC, 18.7.06 Nov-11 (Revised CCEA) 4x250=1000 MW	<u>Uttara khand NR</u>	EPC/ Turnkey Contract	i. Planning, Design and Engg. ii. Civil works iii. Supply of EM & HM (off shore) iv. Supply of E&M and HM (on shore) E&M and HM services	Consortium of M/S Alstom Hydro France and Hindustan Construction Company with M/s Alstom Hydro, France as lead partner	Total in 1843.49 E&M equip:- Euro 62.92 million + 474.43 Cr.	<u>23.06.2011</u> 27.07.11 26.01.2016 (Commencement Date)
							U-1: 48 Mth. U-2: 50 Mth. U-3: 52 Mth. U-4: 54 mth. (from commenc.)
4	Tapovan Vishnugad NTPC 11.08.2004/Nov, 2006 4x130 = 520 MW	<u>Uttara khand NR</u>	Civil works	Construction of Barrage and De- silting chambers	M/s SSJV Projects Pvt. Ltd. and M/s ZVS, Russia	276..91	01/2007 07/2012 Contract terminated in Nov-10.
				Contract terminated in November-10 and fresh award made in July-12			
				Construction of Barrage and De- silting chambers (Balance Works)	M/s Rithwik Projects Pvt. Ltd., Hyderabad.	457.57	07/2012 03/2015
				Works have been re-awarded. Details to be provided.	M/s L&T Ltd. and M/s Alpine Mayreder Bau GmbH	455.921	11/2006 08/2012
				Power House & Penstock package	M/s Patel Engg. Pvt. Ltd.	221.28 Cr. + Euro 37.58m	05/2007 08/2012
			E&M works	Turbine generating units and associated auxiliaries	M/s BHEL	328.28 crs.	1./2008 12/12
			H&M works	Manufacturing, erection & Commissioning of various gates.	M/s Om Metal Infra project Ltd.	64.19 Cr. + €1.26m	10./07 09/12
5	Lata Tapovan, NTPC Aug-2012 3x57= 171 MW	<u>Uttara khand NR</u>	Civil & HM works	EPC Contract	M/s L&T	780.54	17.08.2012 16.08.2017
			E&M Package		BHEL	2611.04	Dec, 12 June, 17
6	Vishnugad Pipalkoti, THDC 21.08.2008 4x111= 444 MW	<u>Uttara khand NR</u>	Civil & HM works	EPC Contract	M/s HCC Ltd	1597.30	17.01.2014 16.07.2018
			E&M Package	EPC Contract	BHEL	360.36	18.11.2014 17.11.2018
7	Teesta-VI NHPC 08.03.2019/ 07./2007(FC) 4x125= 500MW	<u>Sikkim NER</u>	Civil works	Barrage, Desilting Basin, SFT, Intake part of HRT-I &HRT-II & other associated structure	M/s Jaiprakash Associate Limited	1710	31.03.2020
				Part of HRT-I &HRT-II , Surge Shaft, Power House ,TRT & other associated structure	M/s Patel Engineering Limited	1251	22.09.2021

Sl. No.	Project name/ Exec. Agency CEA clearance/ Approval Capacity (MW)	State <u>Region</u>	Contract	Scope of works & brief details	Contracting Agency (Name & Location)	Contract value (Rs. Crs.)	Date of Contract (commencem ent)/ Completion
			H&M works		M/s PES Engineers Private Limited	INR 100.76 & EURO 17.5 lakhs	27.10.2021
			E&M works	E&M Package, EM-I	M/s GE Power India Ltd.	107.49	14.12.2020
				E&M Package, EM-II	M/s BHEL	150.10	04.09.2020
				E&M Package, EM-III	M/s Technico India Pvt Ltd	3.98	22.09.2020
				E&M Package, EM-IV	M/s Jakson Ltd	3.07	1.10.2021
				E&M Package, EM-V	M/s SHES Air and Automation	5.63	06.08.2021
				E&M Package, EM-VI	M/s Aavids Technovators Pvt. Ltd.,	3.89	16.04.21
				E&M Package, EM-VII	M/s PGCIL	55.57	21.12.2021
				E&M Package, EM-VIII	M/s B. C. Technomation	6.23	28.08.2021
8	Subansiri Lower NHPC 07.06.2001/09.0 9.03 8x250= 2000 MW	<u>Ar.Pr/ Assam NER</u>	Civil works	Dam/Barrage	M/s BGS – SGS - Soma JV, Hyderabad	1098.32	19.12.2003 12/2009
				Power House & Tail Race civil works	M/s L & T LTD, Chennai	921.59	19.12.2003 12/2009 (Contract Foreclosed on 28.04.2015)
				Surge Tunnel Works	M/s L & T LTD, Chennai	422.50	14.05.2009 11/2012 (Contract Foreclosed on 28.04.2015)
				Balance civil work of Powerhouse complex from HRT to Tail Race Channel	M/s Patel Engineering Ltd, Mumbai	1564.41	01.09.2021 12/2023
			E&M works	Supply of CIF/CIP: Supply of all off shore equipments and material including general and specified spares.	Consortium of M/s Alstom Power Hydraulique, France And M/s Alstom Project India Ltd.	Euro 76.80 million + US\$ 6,779,760.	11.02.2005 08/2010
				Ex-works supply of all equipment and material including general and specified spares of Indian origin.	Consortium of M/s Alstom Power Hydraulique, France and M/s Alstom Project India Ltd.	€ 23.21 million + US\$ 14,56 million + 727.97 crs	11.02.2005 08/2010
				Local transportation including port clearance and port charges and inland insurance and installation services.	M/s Alstom Project India Ltd.	1,23,74,37,486. 00	11.02.2005 08/2010
			H&M works	Supply, erection & commng. of gates	M/s Texmaco Ltd.	283.48 Cr. + Euro 2.22 M	19.06.2006 04/2010

Sl. No.	Project name/ Exec. Agency CEA clearance/ Approval Capacity (MW)	State <u>Region</u>	Contract	Scope of works & brief details	Contracting Agency (Name & Location)	Contract value (Rs. Crs.)	Date of Contract (commencement)/ Completion
9	Ramam-III NTPC Ltd. 3x40= 120 MW	W.B. E.R.	Civil works & HM works	Approach road to right bank of barrage to access various project component, Barrage construction, Under ground de- silting chamber with SFT and 5.1 km HRT	M/s. Simplex-Apex-JV	360.83	<u>10.09.14</u> 09/2019
				Access from bridge on Rammam river to various proj. components, 3.1 km HRT , Surface Power House, 740 m TRC and 132 KV Switchyard.	M/s. SEW Infrastructure Ltd.	265.39	<u>12.12.14</u> <u>12/2019</u>
			E&M works	Design, Engineering, Manufacturing, Supply, Insurance, Erection, Testing & Commissioning works for EM works EPC contract package.	M/s. BHEL	224.67	<u>19.02.2015</u> <u>11/2018</u>
10	Naitwar Mori (SJVN Ltd.) 02.03.2010 (2x30=60 MW)	Uttarakha nd	Civil Works	C/o all civil works of barrage, intake, desilting tank, HRT, Power house, surge shaft, TRT, Adits & infra works etc.	M/s. Jaiprakash Associates Ltd.	370.87	05.12.2017/ 04.09.2021
			E&M works	Design, engineering, manufacture, transportation, erection and commissioning of all EM components of project.	M/s. Voith Hydro Pvt. Ltd.	113.49	11.06.2018/ 10.10.2021
			H&M works	Design, engineering, procurement, fabrication, transportation, erection and commissioning of all HM components incl. Pressure shaft liner of project.	M/s GHW Pvt. Ltd.	34.44	18.04.2018/ 17.06.2022
11	Ratle GVK Ratle HEP Pvt. Ltd. (GRHEPPL) 19-12-2012 <u>4x205+1x30=</u> <u>850 MW</u>	<u>J&K</u> <u>NR</u>	Turnkey execution of 850MW Ratle Hydroelectric project has been awarded to M/s Megha Engineering & Infrastructures Limited on 18.01.2022 on EPC basis for 52 months at contract value Rs. 3485.14 crores.				
12.	Kiru CVPPL 13.06.2016 4x156=624 MW	<u>J&K</u> <u>NR</u>	Civil Works	Civil and HM works of DT, concrete gravity Dam, Intake, Pressure shaft, TRT and underground Power House.	M/s. Patel Engineering Ltd.	2240.27	<u>24.02.2020</u> <u>23.04.2024</u>
			HM Works	Providing all service, Model testing, transportation, testing, Commissioning of Radial Gates, Vertical Gate, Gantry Cranes, Stoplogs, Steel liner for Pressure Shaft and Trash racks.	M/s PES Engineers Pvt. Ltd.	202.10	<u>24.02.2020</u> <u>23.01.2024</u>
			E & M works	Design, Manufacture, Supply Erection, Testing & commissioning of TG, 400 KV GIS, 400 KV outdoor pothead yard equipment, Associated Accessories and Auxiliaries,	M/s Andritz Hydro Pvt. Ltd.	552.52	<u>24.02.2020</u> <u>23.07.2024</u>

Sl. No.	Project name/ Exec. Agency CEA clearance/ Approval Capacity (MW)	State Region	Contract	Scope of works & brief details	Contracting Agency (Name & Location)	Contract value (Rs. Crs.)	Date of Contract (commencem ent)/ Completion
13.	Rangit-IV Jal Power Corp. Ltd. 06.07.2007/23. 10.2007(FC) 3x40 MW= 120	Sikkim NER	Civil works	Construction of Balance Civil works package: Diversion Channel, Coffe Dams, Dam, Spillway & Stilling Basin, Intake structure, Desilting Chambers, SFT, HRT, Surge Shaft, Pressure Shaft, Surface power house, TRC & other associated structures etc.	M/s Rithwik-HIPL Joint Venture	452.11	27.08.2021
			H&M works	Hydro-mechanical Works package of Rangit Stage-IV HE Project,	M/s PES Engineers Private Limited	100.40	28.06.2021
			E&M works	Electromechanical Works Package EM-2 for Design, Supply, Erection, Testing 7 Commissioning of Balance of Plant (BOP) items	M/s Andritz HydroPrivate Limited	80.12	08.07.2021
14.	Luhri Stage-1 SJVN Ltd. 01.05.2018 2x80+2x25=21 0 MW	Himacha l Pradesh	Civil and HM works	Design & engineering services, Civil and HM works of project.	M/s Luhri Hydro Power Consortium (A consortium of Patel Engineering and HES Infra Pvt. Ltd.)	976.50	24.11.2020/ 23.11.2025
			E&M works	Design, engineering, manufacture, transportation, erection and commissioning of all EM components of project.	M/s. Voith Hydro Pvt. Ltd.	420.28	16.07.2021/ 15.05.2025
15	Dhulasidh Hydro Electric Project SJVN Ltd (2x33 MW = 66MW)	Himacha l Pradesh NR	Civil and HM works	Design & engineering services, Civil and HM works of project.	M/s Rithwik Projects Pvt Ltd	526.92	06.05.2021/ 05.05.2025
			E&M works	Design, engineering, manufacture, transportation, erection and commissioning of all EM components of project.	Voith Hydro Pvt. Ltd.	136.64	18.01.2022
B	State Sector						
16	Parnai JKSPDC 21.10.2013 3x12.5= 37.5 MW	NR J&K	Civil works	EPC contract	M/s. Patel Engineering Ltd. & M/s. Alstom India.		25.10.2013
			E&M works	T.G. Set	M/S.Andritz Hydro, India		
17	Lower Kalnai JKSPDC 16.08.2013 2x24= 48 MW	NR J&K	Civil works	EPC contract	M/s Coastal Projects Ltd.		12.09.2013
			E&M works	T.G. Set	M/s. GE Power India Pvt. Ltd.		
18	Uhl-III, BVPC Ltd. 19.09.02 / ----- - (TEC -2x50 MW) 3x33.3 =100	H.P. NR	Civil works & HM Works	Neri Intake works & power channel	M/s SSJVPP Ltd. 12 th floor S.N.Tower 25/2 M.G.Road, Bangalore Fresh Package awarded on 25.10.08 to: Continental Corp Project Ltd.	8.68	18.04.05 15.8.07 Re-awarded on 25.10.08

Sl. No.	Project name/ Exec. Agency CEA clearance/ Approval Capacity (MW)	State <u>Region</u>	Contract	Scope of works & brief details	Contracting Agency (Name & Location)	Contract value (Rs. Crs.)	Date of Contract (commencem ent)/ Completion
				Head Race Tunnel (HRT)	M/s SSJVPP Ltd. 12 th floor S.N.Tower 25/2 M.G.Road, Bangalore 560001 Package re-awarded to: Continental Corp Project Ltd., Re-awarded to M/s Abir Infrastructure Pvt. Ltd., Gurgaon.	69.58	<u>02.04.03</u> 30.04.07 15.10.2010
				Rana Intake Works & Power channel	M/s TRG Industries Pvt Ltd E- 461 Greater Kailash –II New Delhi	17.53	<u>26.07.05</u> 26.10.07
				Penstock fabrication, erection	M/s PES.Engineers Pvt. Ltd. Hyderabad-500016	57.26	<u>27.05.05</u> 27.11.07
				Power House	M/s Pilot Engg., Ludhiana	9.87	<u>19.6.2007</u> 12/2009
			E&M works	Generating Equipment & Associated Aux, Transformers	M/s BHEL	117.36	<u>15.02.07</u> 15.04.10
19	Shongtong Karcham H.P. Power Corpn. Ltd. Clearance: 16.08.2012/ 3x150= 450 MW	H.P. 2017-18 2017-18	Civil And H&M works	EPC Contract Package for Civil & HM works	M/s Patel Engineering Ltd.	103.24	<u>04.08.2012</u> 03.08.2017
20	Shahpurkandi, Irrigation Deptt/PSPCL 04.05.2011 3x33+3x33+1x8 = 206 MW	<u>Punjab NR</u>	Civil works & HM works	Main Dam alongwith Two head regulators	SOMA-BUREYA Joint Venture	687.51	<u>11.02.2013</u> Oct- 2016
				Hydel Channel	M/s Gurinder Singh Contractor	90.11	<u>26.02.2013</u> Oct- 2015
			E&M works	EPC Contract	BHEL		<u>28.02.14</u>
21	Koyna Left Bank PSS WRD, Govt. of Mah. 20.02.2004 2x40 = 80 MW	<u>Maha. WR</u>	Civil and H&M works	Barrage, Intake tunnel, Twin lake tap, Ventilation tunnel, Power house, Intake structure ,HRT, Pressure shaft, tail surge shaft, pen stoke, TRT, Bus duct tunnel, Lower intake structure	M/s B.T. Patil-Malaxmi (JV), Pune M/s Patel Engg. Ltd. Mumbai	131.91 Crs. 118.86 Crs.	<u>20.06.2007</u> 30.06.2013 <u>03.10.2007</u> 30.06.2016
			E&M works	Design, manufacture, testing & commissioning of TG unit and auxiliaries	M/s IVRCL Ltd. Pune Turbine- Litostroj Slovenia Generator- Koncar, Croatia	Euro 4.03 Crs + 177.99 Crs	<u>16.12.2010</u> 15.12.2014
22	Polavaram (PPA) 21.07.10/ 25.02.09 12x80 = 960MW	<u>Andhra Pradesh</u> <u>S.R.</u>	Civil works & HM works & E&M works	Investigation and L.P schedules etc., (Balance) &	M/s. Trans stroy-JSCECUES (JV), Hyderabad	4054.00	<u>02.03.2013</u> <u>01.03.2018</u>
				EPC contract on TURNKEY basis.	M/s. Navayuga Engineering Company Contract terminated on 14.08.2019 & re-awarded to M/s Megha Engineering and Infrastructure Limited on 01.11.2019	3220.28 Crs 2810.88 Cr.	<u>20.12.2017</u> <u>01.11.2019</u>
23	Pallivasal KSEB/ Not Req./31.1.2007 2x30=60	<u>Kerala SR</u>	Civil, H&M works and E&M works	The work was awarded to M/s ESSAR – DEC – CPPL consortium as a single package and an agreement in this regard was executed on 31.01.2007. The contractual date of completion is 48 months i.e. 01.3.2011. E&M: Dongfang Electric Corporation, China (DEC)		242.96 Crs + US\$57 million	<u>31.01.2007</u> 01.03.2011
22	Thottiyar KSEB	<u>Kerala SR</u>	Civil works	Dam, Water Conductor System, power House	M/s Coastal Projects Private Ltd-	44.23	<u>22.12.2008</u> 19.05.2012

Sl. No.	Project name/ Exec. Agency CEA clearance/ Approval Capacity (MW)	State Region	Contract	Scope of works & brief details	Contracting Agency (Name & Location)	Contract value (Rs. Crs.)	Date of Contract (commencem ent)/ Completion
	1x30 + 1x10= 40 MW		H&M works	Gates, erection, commissioning	Chongqing Joint Venture, Hyderabad E&M: Chongqing, China	24.09	<u>22.12.2008</u> 19.05.2012
			E&M works	Planning, Engineering, Manufacture, Supply, Erection, testing & commissioning		75.68	<u>22.12.2008</u> 19.05.2012
25	Vyasi UJVNL 2x60=120 MW	Uttra khand	Civil works	Intake, Dam half portion of HRT 1.35 km.	M/s. Gammon India Ltd.	317 Crs.	
				Half posrtion of HRT 1.35 km, Surge Shaft, Penstock, Powerhouse, TRC	M/s. NPCC Contract value	114.59 Crs.	
			E&M works	EPC contract for E&M Works	M/s. BHEL	125 Crs.	<u>26.03.2014</u>
26	Kundah Pumped Storage Phase -4 x125=125 MW <						

Sl. No.	Project name/ Exec. Agency CEA clearance/ Approval Capacity (MW)	State Region	Contract	Scope of works & brief details	Contracting Agency (Name & Location)	Contract value (Rs. Crs.)	Date of Contract (commencem ent)/ Completion
			E&M works	Supply, Installation, testing & commissioning of TG sets	M/s Alstom Projects, India	84	<u>28.02.2011</u> 27.05.2013
29	Tangnu Romai-I M/s Tangu Romai Power generation 2x22= 44 MW 30.11.2007 HPSEB	<u>HP</u> <u>NR</u>	Civil works	Construction of Diversion Barrage, Intake, desilting, HRT, Surge Shaft, Penstock, Power House & Tail Race Channel	M/s Sai Urja Hydel Projects (P) Ltd., Shimla	164.7	<u>14.06.2010</u> 06/2014
			E&M works	Supply, installation, T&C of TG set, Switchyard equipment & associated auxiliaries	M/s Andritz Hydro, India	56	<u>17.04.2013</u> 16.07.2015
30	Phata Byung M/s Lanco 06.10.2008 2x38 MW = 76 MW	<u>Uttarakha</u> <u>nd</u> <u>NR</u>	Civil works	Dam, water conductor System, power House	Lanco Infratech Ltd.	206	<u>12.04.2008</u> 07/2012
			H&M works	Design, Engineering, Manufacture, Fabrication & Erection of all hydro- mechanical equipment	M/s CIMMCO	34	<u>12.04.2008</u> 08/2012
			E&M works	Manufacturing., Supply, erection & commng. of TG units	M/s Alstom Project, India	84	<u>12.04.2008</u> 08.2012
31	<u>Maheshwar,</u> SMHPCL 12 96/ 29.9.2006 (FC) 10x40= 400MW	<u>M. P.</u> <u>WR</u>	Civil and HM works	All civil works like dam, Power Dam, HRC, Penstock PH etc.	M/s SEW Construction –Prasad and Company Ltd.	275.0 Crs. 22.02.97	<u>22.02.1997</u> 03/2005
			E&M works	Manuf., Supply, erection & commng. of TG units	M/s BHEL	470.5 Crs. + USD \$ 11.74 M 18.05.2001	<u>25.06.2007</u> 10/ 2009
32	Bhasmey Gati Infrastructure 2x25.5 = 51 MW	<u>Sikkim</u> <u>NER</u>	Civil works	Dam, Tunnels , Power House, Surge Shaft, Pressure Shaft, Intake	M/s Simplex Infrastructure Ltd.	160	<u>12.04.2010</u> 11/2012
			H&M works	N.A.			
			E&M works	Manufacturing., Supply, erection & commng. of TG units	M/s Voith Hydro, India	93	<u>14.04.2010</u> 10/2012
33	Rangit-II Sikkim Hydro Power Limited 2x33= 66 MW	<u>Sikkim</u> <u>NER</u>	Civil &HM works	EPC Contract	M/s Coastal Project Limited	220.35	<u>13.12.2011</u> 23.10.2013
			E&M works		M/s. Gammon India Ltd.		<u>24.03.2012</u>
34	Panan Himagiri Hydro Energy Pvt. Ltd. 07.03.2011 4x75= 300 MW	<u>Sikkim</u> <u>NER</u>	Civil works	Coffer Dam, Diversion Tunnel, Dam, Desilting Basin, Power House, Surge Shaft, Pressure Shaft, Intake etc.	M/s Essar Projects (India) Ltd..	392.40 (Excl. cost of cement, Steel, explosives)	<u>22.02.2014</u> 21.02.2018 (48 months)
			E&M works	Manufacturing., Supply, erection & commng. of TG units	Under Award		
35	Kutehr M/s JSW Energy (Kutehr) Ltd. 3x80 = 240 MW 31.08.2010	<u>HP</u> <u>NR</u>	Civil works	Lot-1 Civil works for River diversion, Barrage,Power intake & Part of HRT.	-M/s Angelique-PCC Constorium.	567.00	<u>20.10.2019</u> 19.06.2023
				Lot-2 Civil works for balance HRT, Surge Shaft, Pr. Shaft, Steel liner, under ground power house, TRT, and Pothead yard.	-M/s MF Bumi Geotech private ltd.	507.40	<u>25.11.2019</u> <u>19.05.2023</u>
				Lot-3 Complete HM works Lot-1D Design, fabrication ,supply and erection of steel liner and pen stock.	-M/s P.E.S. Engineers Pvt Ltd. -M/s Greyhound Engineers India Private Ltd.	60.00 18.00	19.09.2019 (LOI date) 19.09.2019 (LOI date)
			E&M works	Electro Mechanical works.	M/s Andritz Hydro Pvt. Ltd.	270.74	13.02.2020 (LOI date)

CHAPTER – 10

Status of financial closure of Under Execution Private Sector H. E. Projects

I. No.	Name of Project, State, Capacity, Date of TEC	Implementing Agency	Financial Closure Status	Remarks/ Constraints
	Under Execution			
1	Maheshwar, M.P., 10x40 MW, 30.12.96	Shree Maheshwar Hydel Power Corporation Ltd.	Financial closure achieved on 29.9.2006.	
2.*	Teesta-VI, Sikkim 4x125 MW 27.12.2006	M/s Lanco Energy Pvt. Ltd.	Financial closure achieved in July, 07.	
3.	Rangit-IV, Sikkim 3x40 MW 06.07.2007	M/s Jal Power corporation Ltd.	Financial closure achieved on 25.01.2010.	
4.	Tidong-I, H.P. 100 MW 23.07.2007	M/s Nuziveedu Seeds	Financial closure achieved on 25.03.2010.	
5.	Tangu Romai, H.P. 2x22 MW 30.11.2007	Tangu Romai Power Gen. Pvt. Ltd.	Financial closure achieved on 22.01.2010.	
6.	Phata Byung Uttarakhand 2x38 MW 06.10.2008	M/s Lanco	Financial closure achieved on 25.07.2009.	
7.	Bhasmey, Sikkim 2x25.5= 51 MW Dec, 2008	M/s Gati Infrastructure	Financial closure achieved on 25.03.2010	
8.	Rangit Stage- II Sikkim 2x33= 66 MW 10.02.2010	M/s Sikkim Hydro Power Ventures Limited	Financial closure achieved on 15 th Jan, 2014, 31 st March 2015 (Revised).	
9.*	Ratle, J&K 4x205+1x30= 850 MW	M/s GVK Ratle HEP Pvt. Ltd. (GRHEPPL)	Financial closure achieved.	
10.	Panan, Sikkim 4x75= 300 MW 07.03.2011	Himagiri Hydro Energy Pvt. Ltd.	Financial closure with total debt of Rs. 1516.42 is tied up with PFC ((808.76 Crores), PTC (Rs. 120 Crores) & REC (Rs 587.67 Crores).	
11.	Kutehr, H.P. 3x80=240 MW	M/s JSW Energy (Kutehr) Ltd	Financial closure achieved on 14.01.2021	

*Now these are CPUS's Projects

CHAPTER-11

DETAILS OF UNDER DEVELOPMENT HYDRO ELECTRIC PROJECTS (ABOVE 25 MW) HAVING TIME/COST OVERRUN-State Wise

Sl. No	Project Name/(I.C.)/ Executing Agency	Unit No.	Cap. (MW)	Org. Comm. Sched.	Ant. Comm. Sched.	Time over run (month s)	Org. Cost (Rs. in Crores) (Price Level)	Latest/Ant. Cost (Rs. in Crores) (Price Level)	Cost over run (Rs. in Crores) (%)	Major reasons for time over run
1	2	4	5	6	7	8	9	10	11	12
	Andhra Pradesh									
1	Polavaram (12x80 = 960 MW) APGENCO / Irr. Deptt., A.P.	1 2 3 4 5 6 7 8 9 10 11 12	80 80 80 80 80 80 80 80 80 80 80 80	2016-17 2016-17 2016-17 2016-17 2016-17 2017-18 2017-18 2017-18 2017-18 2017-18 2017-18 2017-18 (Mar'18)	2024-25 2024-25 2024-25 2024-25 2024-25 2025-26 2025-26 2025-26 2025-26 2025-26 2025-26 2025-26 (Mar,26)	96	3013.68 (2010-11 PL) (Power Component)	5338.95 (2016-17 PL) (Power Component)	2325.27 (77.15)	Works stalled since 19.07.2019 till 30.03.2021 as APGENCO asked contractor Navayuga Engineering Company Ltd. (NECL) to stop all works and termination of contract issued on 14.08.2019. The writ petition filed by NECL was disposed by Hon'ble High Court against NECL on 14.12.2020. Final Contract concluded with new contractor M/s MEIL for execution of PHEP works on 30.03.2021
	Arunachal Pradesh									
2	Subansiri Lower (8x250 = 2000 MW) NHPC	1 2 3 4 5 6 7 8	250 250 250 250 250 250 250 250	2009-11 2009-11 2009-11 2009-11 2009-11 2009-11 2009-11 2009-11 (Sep'10)	2022-23 2022-23 2023-24 2023-24 2023-24 2023-24 2023-24 2023-24 (Aug'23)	155	6285.33 (12/02)	19992.43 (04/17)	13707.10 (218.08)	➤ Delay in transfer of forest land. ➤ Disruption of works by locals in Ar. Pradesh side. ➤ Slope failure in Power House in Jan, 2008. ➤ All works except safety works were stalled from December, 2011 to October, 2019 due to agitation launched by activists in Assam against construction of Project. Work restarted w.e.f. 15.10.2019.
	Assam									
3	Lower Kopili (2x55+2x2.5+1x5 =120MW)	1 2 3 4 5	55 55 5 2.5 2.5	2024-25 2024-25 2024-25 2024-25 2024-25 (Jun'24)	2024-25 2024-25 2024-25 2024-25 2024-25 (Jun'24)	NIL	1115.91 (01/15)	1795 (2021)	638 (60.94)	The project is in initial stage of construction.
	Himachal Pradesh									

Sl. No	Project Name/(I.C.)/ Executing Agency	Unit No.	Cap. (MW)	Org. Comm. Sched.	Ant. Comm. Sched.	Time over run (month s)	Org. Cost (Rs. in Crores) (Price Level)	Latest/Ant. Cost (Rs. in Crores) (Price Level)	Cost over run (Rs. in Crores) (%)	Major reasons for time over run
1	2	4	5	6	7	8	9	10	11	12
4	Parbati - II (4x200 = 800 MW) NHPC	1 2 3 4	200 200 200 200	2009-10 2009-10 2009-10 2009-10 (Sept'09)	2023-24 2023-24 2023-24 2023-24 (Sep,23)	168	3919.59 (12/01)	9897.59 (04/18)	5978 (152.51)	➤ Delay in revised forest clearance. ➤ TBM suffered extensive damage due to heavy ingress of water and slush in TBM face in Nov, 2006. Due to poor geology. ➤ Flash flood in 2004,2005,2010 and 2011. ➤ Contractual issues. ➤ Cash flow issues with civil contractors.
5	Uhl-III (3x33.33 = 100 MW) BVPCL	1 2 3	33.33 33.33 33.33	2006-07 2006-07 2006-07 (Mar'07)	2022-23 2022-23 2022-23 (Dec,23)	201 201 201	431.56 (09/02)	2400 (2022)	1968.44 (456.12)	➤ Delay in transfer of forest land. ➤ Delay in acquisition of private land ➤ Delay in transfer of quarry sites. ➤ Contract for construction of HRT rescinded twice i.e. during April, 2008 & July, 2010 due to slow progress and non-performance by the contractor. ➤ Poor geology in HRT. ➤ Leakage in Penstock in July,2018 and Rupture in May,2020
6	Shongtom Karcham (3x150 = 450 MW) HPPCL	1 2 3	150 150 150	2016-17 2016-17 2016-17 (Mar'17)	2024-25 2024-25 2024-25 (Mar,25)	92 94 96	2807.83 (07/11)	2807.83 (07/11)	#	➤ Shifting of Army Ammunition Depot. ➤ Disruption of works by local people.
7*	Tangnu Romai-I (2x22 = 44 MW) TRPGPL	1 2	22 22	2014-15 2014-15 (Jun'14)	2024-25 2024-25 (subject to re-start of works(4 years))	129	255.00 (01/07)	641.89 (2018)	386.89 (151.72)	➤ Works are stalled since January, 2015 due to fund constraints with developer.
8	Tidong-I 2x50 =100 MW NSL Tidong (w.e.f. 04.09.2018 Statkraft India Pvt. Ltd. Has acquired the 100% equity in the project)	1 2	50 50	2013-14 2013-14 (Dec'13)	2022-23 2023-24 (Apr 23)	112	543.15 (06/18)	1472.00	928.85 (171.01)	➤ Delay in NOC by Projects affected Panchayats. ➤ Suspension of works by Govt. for one year. ➤ Funds constraints with the developer ➤ Forest Clearance is pending for 17 Towers in transmission line since past two years. Transmission line is on critical path.
9	Kutehr 3x80=240 MW JSW Energy (Kutehr) Ltd	1 2 3	80 80 80	2024-25 2024-25 2024-25	2025-26 2025-26 2025-26	12	1798.13 (09/2011)	2879 (09/2011)	1080.87 (60.11)	➤ Slow mobilization due to Covid-19 Lockdown.

Sl. No	Project Name/(I.C.)/ Executing Agency	Unit No.	Cap. (MW)	Org. Comm. Sched.	Ant. Comm. Sched.	Time over run (month s)	Org. Cost (Rs. in Crores) (Price Level)	Latest/Ant. Cost (Rs. in Crores) (Price Level)	Cost over run (Rs. in Crores) (%)	Major reasons for time over run
1	2	4	5	6	7	8	9	10	11	12
				(Nov'24)	(Nov'25)					
10	Luhri Hydro Electric Project Stage-I (2X 80+2X25 MW = 210 MW)	1 2 3 4	80 80 25 25	2025-26 2025-26 2025-26 (Jan'26)	2025-26 2025-26 2025-26 (Jan'26)	NIL	1912.59 (2017)	1912.59 (2017)	NIL	➤ Work started recently ➤ Rs. 1810.56 Crore which includes project cost of Rs. 1744.37 Crores (05/2020 PL) and Rs. 66.19 Crore for enabling infrastructure (to be availed as budgetary support from GoI)
11	Dhulasidh (SJVN) 2x 33+66MW Hamirpur/ Kangra	1 2	33 33	2025-26 2025-26 (Nov'25)	2025-26 2025-26 (Nov'25)	NIL	687.97 (05/2020)	687.97 (05/2020)	NIL	• Work started recently • (Rs. 687.97 Crores which includes project cost of Rs. 666.32 Crores (05/2020 PL) and Rs. 21.65 Crores for enabling infrastructure (to be availed as budgetary support from GoI)
	Govt. of UT of J&K									
12	PakalDul (4x250= 1000 MW) CVPPL	1 2 3 4	250 250 250 250	2020-21 2020-21 2020-21 2020-21 (Apr'20)	2025-26 2025-26 2025-26 2025-26 (July'25)	} 63	8112.12 (03/13)	8112.12 (03/13)	#	➤ Contractual and Legal issues before award of works. (40 Months) ➤ Delay in award of works due to higher bids. ➤ Impact of COVID-19.
13	Parnai 3x12.5= 37.5 MW JKSPDC	1 2 3	12.5 12.5 12.5	2017-18 2017-18 2017-18 (Jan'18)	2022-23 2022-23 2022-23 (Dec,23)	} 71	640.86 (Completion cost)	640.86 (Completion cost)	#	➤ Delay in Land acquisition.
14*	Lower Kalnai 2x24= 48 MW JKSPDC	1 2	24 24	2017-18 2017-18 (Sep'17)	2025-26 2025-26 (subject to re-start of works (4 years))	} 102	576.87 (12/12) (Completion cost)	576.87 (12/12) (Completion cost)	#	➤ Works on all fronts at Dam and Power House site are stalled since 24.01.2018 due to payment dispute with subcontractors and due to non-settlement of extension of time of the contract by the JKSPDC. The contract with M/s. Coastal Projects Ltd. has been terminated and re-tendering for selection of EPC contractor is under process.
15	Kiru (4x156=624 MW) CVPPL	1 2 3 4	156 156 156 156	2023-24 2023-24 2023-24 2023-24	2024-25 2024-25 2024-25 2024-25	} 12	4287.59 (09/14)	4287.59 (09/14)	#	➤ Delay in award of works due to issue regarding sanction of Sub debt for the project between GoI and GoJK.

Sl. No	Project Name/(I.C.)/ Executing Agency	Unit No.	Cap. (MW)	Org. Comm. Sched.	Ant. Comm. Sched.	Time over run (month s)	Org. Cost (Rs. in Crores) (Price Level)	Latest/Ant. Cost (Rs. in Crores) (Price Level)	Cost over run (Rs. in Crores) (%)	Major reasons for time over run
1	2	4	5	6	7	8	9	10	11	12
				(Aug,23)	(Aug,24)					➤ Slow mobilization due to Covid-19 lockdown
16	Ratle (4x205+1x30) = 850 MW RHPPL / NHPC	1 2 3 4 5	205 205 205 205 30	2017-18 2017-18 2017-18 2017-18 2017-18 (Jan,18)	2025-26 2025-26 2025-26 2025-26 2025-26 (Feb'26)	97	5517.02 (Completion Cost)	5281.94 (11/18)	#	➤ Project was stalled since 11.07.2014 due to various issues viz. R&R issues, Local issues, Law & order problem, etc. Earlier, it was under execution by private sector developer and some works have already been done. There was no progress from 11.07.2014 to 18.01.2022. JV of Govt. of UT of J&K and NHPC was formed and contract was awarded on turnkey basis on 18.01.2022.
	Kerala									
17	Pallivasal 2x30 = 60 MW KSEB	1 2	30 30	2010-11 2010-11 (Mar'11)	2022-23 2022-23 (Mar,23)	144	222 (1999)	550.00 (2018)	328 (147.74)	➤ Delay in land acquisition. ➤ Poor geology strata in HRT. ➤ Works stopped by contractor since 28.1.15 to 11.04.2017 due to contractual issues. Contract terminated on 13.09.2018 and re-awarded in August, 2019.
18	Thottiyar (1x30+1x10)= 40MW KSEB	1 2	30 10	2012-13 2012-13 (Apr'12)	2022-23 2022-23 (Mar,23)	131	136.79 (2007)	280 (2018)	143.21 (104.69)	➤ Land acquisition issue. ➤ The works of weir and approach channel stopped from 2010 to 2012 by local people. ➤ The work stopped by Court from 12.12.2012 to April-2013. ➤ Financial crunch with contractor leading to foreclosure of contract in April,2017 and balance works re-awarded in January, 2018.
	Madhya Pradesh									
19*	Maheshwar (10x40 = 400 MW) SMHPCL	1 2 3 4 5 6 7 8 9 10	40 40 40 40 40 40 40 40 40 40	2001-02 2001-02 2001-02 2001-02 2001-02 2001-02 2001-02 2001-02 2001-02 2001-02	2023-24 (subject to re- start of works(Two years)	264	1569.27 (96-97)	6793 (2016-17)	6551.73 (332.87)	➤ Works suspended since Nov-11 due to cash flow problem with developer. M.P. Power Management Company Ltd. has terminated the Power Purchase Agreement with SMHPCL on 18.04.2020.

Sl. No	Project Name/(I.C.)/ Executing Agency	Unit No.	Cap. (MW)	Org. Comm. Sched.	Ant. Comm. Sched.	Time over run (month s)	Org. Cost (Rs. in Crores) (Price Level)	Latest/Ant. Cost (Rs. in Crores) (Price Level)	Cost over run (Rs. in Crores) (%)	Major reasons for time over run
1	2	4	5	6	7	8	9	10	11	12
				(Mar'02)						
	Maharashtra									
20*	Koyna Left Bank PSS 2x40 = 80 MW WRD, Maha	1 2	40 40	2014-15 2014-15 (Oct'14)	2025-26 (subject to re- start of works (4 years)	137	245.02 (1999)	379.78 (2014)	134.76 (54.99)	➤ Project stalled since July, 2015. The current expenditure on the project has already reached to almost original administrative approved cost level. Proposal for revival of the project is submitted to the Govt. of Maharashtra.
	Punjab									
21	Shahpurkandi 3x33+3x33+1x8 =206 MW, Irrigation Deptt. &PSPCL	1 2 3 4 5 6 7	33 33 33 33 33 33 8	2015-16 2015-16 2015-16 2015-16 2015-16 2015-16 2015-16	2024-25 2024-25 2024-25 2024-25 2024-25 2024-25 2024-25 (Aug, 24)	101 101	1835.50 (04/08) (Power Component)	1938.74 (02/18) (Power Component)	103.24 (5.62)	➤ Works of Dam stopped since 29.08.2014 due to inter-state dispute between states of J&K & Punjab on sharing of waters of river Ravi and Tariff.
	Sikkim									
22	Teesta Stage VI (4x125 = 500 MW) LancoTeesta Hydro Power Ltd. (LTHPL) (Project taken over by NHPC w.e.f. 08.03.2019)	1 2 3 4	125 125 125 125	2012-13 2012-13 2012-13 2012-13 (Jul'12)	2023-24 2023-24 2023-24 2023-24 (Mar,24)	140	3283.08 (Completion Cost)	5748.04 (07/2018)	2464.96 (75.08)	➤ Poor geology. ➤ Land acquisition. ➤ Contractual issues ➤ Funds constraints with developer (Private) and stalled from April, 2014 to October, 2019 ➤ M/s. LTHPL came under Corporate Insolvency Resolution Process. NHPC Ltd. emerged as H1 bidder. CCEA approval was accorded to NHPC on 08.03.2019. NCLT on 26.07.2019 approved resolution plan of NHPC for acquisition of LTHPL.
23*	Bhasmey (2x25.5 =51 MW) Gati Infrastructure	1 2	25.5 25.5	2012-13 2012-13 (Jun'12)	2024-25 2024-25 (subject to re- start of works(3 years))	153	408.50 (2012-13)	746.01 (03/18)	337.51 (82.62)	➤ Works are stalled since Sept., 2016 due to funds constraints with developer
24	Rangit-IV HE Project (3X40 = 120 MW)	1 2	40 40	2011-12	2024-25 2024-25	148	737.28	938.29 (10/19)	201.01 (27.26)	Project was stalled since October, 2013 due to funds constraints with the developer.

Sl. No	Project Name/(I.C.)/ Executing Agency	Unit No.	Cap. (MW)	Org. Comm. Sched.	Ant. Comm. Sched.	Time over run (month s)	Org. Cost (Rs. in Crores) (Price Level)	Latest/Ant. Cost (Rs. in Crores) (Price Level)	Cost over run (Rs. in Crores) (%)	Major reasons for time over run
1	2	4	5	6	7	8	9	10	11	12
	NHPC	3	40	2011-12 2011-12 (Jan'12)	2024-25 (May'24)		(Completion Cost)			The project was under NCLT process since 9th April, 2019. Final hearing was held on 31.07.2020. The project has been awarded to NHPC. CCEA approval was accorded on 30.03.2021. The contract was awarded in 2021 and the works have resumed.
25*	Rangit-II 2x33= 66 MW Sikkim Hydro Power Ltd.	1 2	33 33	2015-16 2015-16 (Apr'15)	2024-25 2024-25 (subject to re-start of works(2-½ years))	119	496.44 (2011-12)	496.44 (2011-12)	#	➤ Works are stalled since December, 2017 due to funds constraints with developer. Project is in NCLT since 30.07.2020.
26*	Panan 4x75= 300 MW Himagiri Hydro Energy Pvt. Ltd.	1 2 3 4	75 75 75 75	2018-19 2018-19 2018-19 2018-19	2025-26 2025-26 2025-26 2025-26 (subject to re-start of works(4-½ years))	84	1833.05 (2009)	2675.00 (2020)	841.95 (45.93)	Project was under construction in the private sector but stalled due to Issue of construction of bridge on Mantham Lake for accessibility of site which is pending with the State Govt. The works was stalled for want of NOC from State Govt. from NBWL angle and now it has been received. It is being understood that concerned deptt of Govt of Sikkim started erecting 60 Tonne Bridge, but work may progress in full stretch only after this rainy season and will take atleast 12 to 18 months resulting delay in getting the civil bids price to start the project works.
	Tamil Nadu									
27	Kundah PSP (Phase-I, Phase-II & Phase-III) (4x125=500 MW) TANGEDCO	1 2 3 4	125 125 125 125	2021-22 2021-22 2021-22 2021-22 (Aug,21)	2023-24 2023-24 2023-24 2023-24 (Mar,24)	31	1216.59 (2007-08)	1831.29 (2014)	614..7 (50.52)	➤ Civil & HM works have been taken up from 05/2018 only
	Uttarakhand									
28*	Lata Tapovan (3x57 = 171 MW) NTPC	1 2 3	57 57 57	2017-18 2017-18 2017-18 (Aug'17)	2025-26 2025-26 2025-26 (subject to re-start of works(4 years))	103	1527.00 (07/12)	1527.00 (07/12)	#	Infrastructure works almost completed. As per Hon'ble Supreme Court vide its order dated 07.05.2014 stayed the construction of 24 Hydro projects in Uttarakhand including Lata Tapovan HEPP. According all construction activities stopped since 08.05.14. Main works to re-start after clearance from Hon'ble Supreme Court.

Sl. No	Project Name/(I.C.)/ Executing Agency	Unit No.	Cap. (MW)	Org. Comm. Sched.	Ant. Comm. Sched.	Time over run (month s)	Org. Cost (Rs. in Crores) (Price Level)	Latest/Ant. Cost (Rs. in Crores) (Price Level)	Cost over run (Rs. in Crores) (%)	Major reasons for time over run
1	2	4	5	6	7	8	9	10	11	12
29	TapovanVishnughad (4x130 = 520 MW) NTPC	1 2 3 4	130 130 130 130	2012-13 2012-13 2012-13 2012-13 (Mar'13)	2024-25 2024-25 2024-25 2024-25 (Jun'24)	135	2978.48 (03/04)	5867.38 (04/19)	2888.90 (96.99)	➤ Heavy water ingress due to bad geology in HRT and rock fall on TBM. TBM stuck up thrice. ➤ Flash flood in Aug'12 & June, 2013 damaging coffer dam. ➤ Termination of civil contracts for Barrage and HRT. ➤ Cash flow issues with civil contractors.. ➤ The unprecedented, devastating flash flood on 07.02.2021,due to glacial outburst, avalanching into Rishiganga River has hit the project Components. ➤ Barrage DC basin, Intake Part HRT and SFT was filled with Muck. Radial gates of barrage packages were washed away.
30	Tehri PSS (4x250 = 1000 MW) THDC	1 2 3 4	250 250 250 250	2010-11 2010-11 2010-11 2010-11 (July'10)	2022-23 2023-24 2023-24 2023-24 (Jun'23)	155	1657.60 (12/05)	4825.60 (02/19)	3168 (191.12)	➤ Poor geology. ➤ Local agitation at Asena Quarry / muck disposal area. ➤ Revision of Lay out of machine hall due to poor geology. ➤ Funds constraints with contractor.
31	Naitwar Mori (2x30 = 60 MW) SJVNL	1 2	30 30	2021-22 2021-22 (Dec'21)	2022-23 2022-23 (Jan'-23)	13	648.33 (10/2016)	947.89 (12/2020)	299.56 (46.20)	➤ COVID-19 related restrictions. ➤ Delay in Environment Clearance for Quarry site.
32	VishnugadPipalkoti (4x111 = 444 MW) THDC	1 2 3 4	111 111 111 111	2013-14 2013-14 2013-14 2013-14 (Jun'13)	2023-24 2023-24 2023-24 2023-24 (Jun'24)	132	2491.58 (03/08)	3860.35 (02/19)	1368.77 (54.93)	➤ CCEA approval in Aug-2008 but works could not be awarded due to Forest clearance/diversion of forest land. Forest land was acquired in January-14 and subsequently works awarded in January-2014. ➤ Disruption of works by local people. ➤ Cash flow problem with contractor.
33	Vyasi 2x60=120 MW, UJVNL	1 2	60 60	2014-15 2014-15 (Dec'14)	2022-23 2022-23 (May,22)	89	936.23 (02/10)	1800 (2022)	863.77 (92.26)	➤ Delay in award of works. ➤ Agitation by Local people.
34*	Phata Byung (2x38 = 76 MW), LANCO	1 2	38 38	2012-13 2012-13 (Jun'12)	2024-25 2024-25 (subject to re-start of works(3 years))	153	520.00 (2013-14)	1132 (09/16)	612 (117.69)	➤ Works stalled since July, 2017 due to Financial crunch with the contractor / developer.The company is undergoing a corporate insolvency resolution process initiated under IBC for resolution and revival of the project since June 2020.

Sl. No	Project Name/(I.C.)/ Executing Agency	Unit No.	Cap. (MW)	Org. Comm. Sched.	Ant. Comm. Sched.	Time over run (month s)	Org. Cost (Rs. in Crores) (Price Level)	Latest/Ant. Cost (Rs. in Crores) (Price Level)	Cost over run (Rs. in Crores) (%)	Major reasons for time over run
1	2	4	5	6	7	8	9	10	11	12
										Under this process, the resolution professional appointed by the NCLT has initiated the process for inviting prospective investors for the project.
	West Bengal									
35	Rammam-III (3x40= 120 MW)	1 2 3	40 40 40	2019-20 2019-20 2019-20 (Sep'19)	2022-23 2022-23 2022-23 (Dec,24)	} 63	1381.84 (09/14)	1381.84 (09/14)	#	➤ Delay in getting permission for tree felling from Govt. of West Bengal for Access road from Adit-1 to Adit-2. ➤ Cash flow issues with civil contractors. ➤ Strike / bandh during Gorkhaland agitation in 2017.

Note:- It is to mention that cost overrun has been calculated as the difference between the Latest Cost (provided by the developer to CEA alongwith the Price Level) and the Original Cost approved by the Central Government / State Government. In most of the cases the Latest cost at the current Price Level has not been provided by the developers.

* Construction is held-up.

Cost overrun could not be calculated due to non-availability of latest cost.