

Status of Under Execution Hydro Electric Projects (above 25 MW) in the Country

As on 31.10.2019

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
Central Sector				
1	Parbati-II NHPC 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: 9394.80 (04/18 PL) Contractors Civil : Gammon / Valecha HM : Om Metals E&M : BHEL	<u>H.P.</u> 2009-10 2021-22 (Dec'21)	All major works related to commissioning of the project completed except HRT. Head Race Tunnel -Excavation: 28.73 km out of 31.5km completed Total Overt lining: 26.79 km lining out of 31.5km completed. E&M Works: All units have been synchronized with grid at part load using water from Jiwa Nallah. 174 MUs have been generated till 30.10.2019.	- Poor geology in HRT especially in Face-4 (TBM-Face). - Re-Award of HRT Face-3 by DBM.
2	Tapovan Vishnugad 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: <u>Original: 2978.48</u> Latest: 5867.38 Contractors Civil : Rithwik/L&T / Patel HM : Om Metals E&M : BHEL	<u>Uttara khand</u> 2012-13 2020-21 (Dec'20)	Barrage: Excavation Completed and Concreting 126313 cum out of 129358 cum completed. HRT: Excavation of 3.52km out of 4.95km by DBM & 5.47km out of 8.27km by TBM completed. 7.10km concrete lining out of 12.09km completed PH Cavern: Excavation and concreting completed. Desilting Chamber & Intake: Excavation completed. TRT: Excavation under completed. Surge shaft: Excavation & Lining completed. Penstock: Excavation completed and Lining almost completed. E&M works: Pit liner erection on all 4 units completed. Turbine housing erection of all 4 units completed. Erection of EOT crane in BVC & service bay completed. Unit #1: Boxed up. Unit #2: Boxed up. Unit #3: Turbine erection in progress. Unit #4: Turbine erection in progress. Critical : HRT	- Completion of HRT. - Associated Transmission system.
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 Power House: U/G TRT: 2, Dia 9m and Length 1070m + 1160m Turbine: VF reversible pump turbine	<u>Uttara khand</u> 2010-11 2021-23 (Jun'22)	Upstream (Tehri Dam) and Downstream (Koteshwar Dam), intake and Head Race Tunnels (2 Nos.) already completed alongwith Tehri Stage-I works. Surge Shafts Upstream (2 nos- 140m): Excavation, Mucking & Rock bolt, Lattice Girder Support work in Progress. Surge Shafts Downstream (2 Nos): Excavation, Mucking & Rock Bolt, Lattice Girder Support work in progress. Butterfly Valve Chamber (BVC 78x10x26m): Excavation of 6 th bench is under progress. Cumulative benching excavation is 9898 cum (59.60%). Penstock Assembly Chamber (PAC): Crown slashing with steel ribs completed. Excavation of 1 st bench has been completed. Power House: Excavation completed. TRT-3(1151 RM): Excavation in Heading 877 RM, Benching	- Poor Geology in under ground works of BVC, PAC, TRT, PH Cavern etc. - Slow progress of works - Cash flow crisis with M/s. HCC.

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	Cost: Original: 1657.60 Latest: 5024.35 (02/2019 PL) Contractors Turnkey : Alstom, France/ HCC		590 RM, Invert Lining-139.9m, Overt Lining 102m completed TRT-4 (1255 RM): Excavation in Heading-948 RM, Benching- 920 RM, Invert Lining-330m & Overt Lining: 106m completed. E&M Works: Manufacturing & supplies are in progress.	
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</u> <u>khand</u> <u>2017-18</u> <u>2023-24</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.	-Works of barrage & HRT yet to start due to protest by villagers. -Construction work stopped vide Hon'ble Supreme Court order dated 7.5.14.
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: 4397.80 (02/2019 PL) Contractors Civil & HM : HCC E&M : BHEL	<u>Uttara</u> <u>khand</u> <u>2013-14</u> <u>2022-23</u> (Dec'22)	River diverted on 02.04.2018. Work on construction of coffer dam is in progress. Development for TBM platform excavation 95% has been completed. Main Access Tunnel (MAT) 413.50m: Excavation completed upto 397.50m. HRT (13400m): 669m completed by DBM. Construction of Adits and infrastructure works are under progress Desilting Chambers (3 No. X 390m) : Crown Slashing completed in DC #2 & DC #3 and Benching is under progress in DC #1, DC #2 and DC#3. Upstream Surge Shaft: 102 RM out of 325.5 RM excavation from bottom adit to Upstream Surge Shaft has been completed. Downstream Surge Shaft : 337.17 RM out of 352 RM excavation from adit to Downstream Surge Tank bottom has been completed.	-Frequent disruption of works by local people. - Slow progress of works - Cash flow crisis with M/s. HCC.
6	Subansiri Lower NHPC 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: Original: 6285.33 Latest: 19496.34 (04/17 PL) Contractors Civil : BGS-SGS-Soma JV HM : Texmaco E&M : Alstom	Arunachal Pradesh Assam <u>2009-11</u> <u>2023-24</u>	Dam: Excavation: Almost completed. Concreting: 10.47 lacs cum completed out of 20.70 lacs cum. Intake Structure: 2.69 lacs cum concreting completed out of 2.79 lacs cum. Head Race Tunnel (I-VIII): 6948 m heading excavation completed out of 7102m. 5139 m benching excavation completed out of 7102 m. 3733 m concrete overt lining completed out of 7102 m. Surge Tunnels (8 nos.): 3027 m heading excavation and 416m benching excavation completed out of 3545 m. Pressure Shaft- Vertical Pressure Shaft Slashing: 199 m excavation out of 384 m completed. Surface Power House: Concreting: 1.59 lacs cum out of 4.46 lacs cum completed. E&M Works: Unit #1: Elbow erection (1 to 6) and Turbine stay ring and Spiral case erection completed.	- Power House civil works to be re-awarded at the earliest by NHPC.

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			<p>Unit #2: Elbow erection (2 to 6) and Turbine stay ring and Spiral case erection completed.</p> <p>HM Works: Erection of diversion tunnel gates 23% completed. Erection of Intake-5: 17% completed. Erection of Intake 7 & 8 – 20% completed each. 201 m pressure shaft steel liner erected out of total 1594 m.</p> <p>All work except safety works were stalled from December, 2011 to July, 2019 due to agitation launched by various activists against construction of Subansiri Lower HE Project and as per directions of NGT. Works restarted in August, 2019 after clearance from NGT.</p>	
7	<p>Teesta-VI NHPC 08.3.2019 4x125= 500 MW Broad Features: Barrage: 34.27m high HRT- 2nos,13.7km long Pressure shaft: 4nos. 5.4m dia. 130m av length, TRT: 4nos 250m av length, 8.5m dia. PH- Under ground Turbine- Francis Cost: Original: 3283.08 Latest : 5748.04 (07/2018 PL) Contractors Civil & HM : Lanco E&M : Alstom</p>	<p><u>Sikkim</u> <u>2012-13</u> <u>2023-24</u> (Subject to re-start of works)</p>	<p>Barrage and Desilting: Excavation completed & concreting 98% of 380003 cum completed. HRT: Heading excavation 10650m and benching excavation 4270 m out of total 27505 m completed. Overt lining 1550 m completed. Surge Tank: Excavation completed & concreting under progress. Pressure Shaft: Underground excavation of 4 no. pressure shaft completed, lining of one no. pressure shaft completed, balance lining under progress. HM works: 2 nos. radial gates erection in bay 1&2 completed. Erection of 1st stage embedded parts of radial gates in bay 3&4 under progress. Power House: Excavation completed & conc. 21945 / 44578 cum completed. Concreting to Draft Tube Liners for all the 4 nos. Units completed. Erection of spiral casing of Unit #1 completed. Transformer Cavern: Excavation completed & concreting 2539/7101 cum completed. TRT: Excavation & Lining almost completed.</p>	<p>- Works stalled since April, 2014 due to financial crunch with the developer. - NHPC Ltd. emerged as H1 bidder during bidding process by NCLT. Government of India approval recd. on 8.3.19. - Re-Award of all packages of the Project.</p>
8	<p>Kameng NEEPCO 02 12 2004 4x150 = 600 MW Broad Features: Dam :Bichom-69m High, 247.3m long. Tenga – 24.4 High, 103m long. HRT- 6.7m dia, 14.45 km. High Pressure Tunnel (HPT)Total length 3.64 km Surge Shaft: 25m dia, 70m Height P.House- semi-U/G Turbine- Francis Cost: Original: 2496.90 Latest: 7927.34 Contractors Civil : Patel HM : Om Metals & JSC JV E&M : BHEL</p>	<p>Arunachal Pradesh <u>2009-10</u> <u>2019-21</u> (Jun'20)</p>	<p>All major works related to commissioning of project completed. All Units Boxed up. Leakage observed in penstocks during water filling in March, 2018. Thereafter, complete NDT of all joints of pressure shaft / penstock is in progress along with rectification of defects.</p> <p>Progress of Rectification :-</p> <p>Penstock-1 :- Rectification / Repair works completed & water filling is in progress.</p> <p>Penstock -2 : i) Repair Welding of WELD DEFECT 1134 RM completed out of 4298 RM. ii) Repair Welding of OFFSETS:- 783 RM completed out of 873.85 RM. Two units are scheduled to be commissioned in November/ December, 2019 & two units in June, 2020.</p>	<p>Rectification / repair works of penstock 2 to be expedited by M/s. Om Metals / NEEPCO.</p>
9	<p>Ramam-III NTPC Hydro Ltd. 10.09.14</p>	<p><u>West Bengal</u> <u>2019-20</u></p>	<p>First stage river diversion done on 23.03.2016. First phase Barrage excavation completed and Raft concreting in progress.</p>	<p>- Works affected due to GJMM Andolan.</p>

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	3x40 = 120 MW Broad Features : Run of the River Scheme Cost : Original: 1381.84 Latest : 1592.34 Contractors Civil & HM : Simplex-Apex JV / Sew E&M : BHEL	2021-22 (Feb,22)	Intake structure 1 & 2: Excavation completed HRT excavation 11% completed. Excavation of Desilting chamber completed. Surge Shaft: Excavation 72% completed. Pressure Shaft: Excavation 32% completed Power House: Excavation 94% completed. TRC: Excavation 84% and concreting 95% completed Switchyard : Excavation and filling completed	- Funds flow constraints with the contractor
10	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 Latest : 648.33 Contractors Civil : JP Associates HM : GMW E&M : Voith	<u>Uttara</u> <u>khand</u> <u>2021-22</u> <u>2021-22</u> (Dec,21)	River Diverted on 31.01.2019 Desilting Tank: Excavation: 96,930cum out of 1,35,000cum completed. Barrage: 85,710 cum out of 1,28,000 cum excavation completed. HRT: Excavation 1733m out of 4338m completed. Power House & Transformer Hall: 7550cum out of 45,000 cum excavation completed. TRT: 16m out of 174m completed. HM works : LoA issued to M/s GMW Private Ltd. on 18.04.18. E&M works : Works awarded to M/s. Voith Hydro Pvt. Ltd. On 11.06.2018.	- Powerhouse & Barrage works critical.
11	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 E&M : Voith Hydro Ltd	<u>J&K</u> <u>2020-21</u> <u>2023-24</u> (Aug.'23)	Infrastructural works: Excavation of MAT and adit to Powerhouse completed. Dam: Letter of Acceptance issued to M/s Jaiprakash Associates on 21.06.18. Power House(157mx20.20mx49m): Letter of Acceptance issued to M/s. AFCON-JP Associates JV on 21.02.18. Excavation of MAT completed on 20.02.18 E&M Package: Letter of Award issued to M/s. Voith Hydro Ltd. On 02.01.2019. HM Works Package: Letter of Award issued to M/s. PES Engineers Pvt. Ltd. on 26.08.2019.	- HRT-TBM package yet to be awarded.
	State Sector			
12	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	<u>J&K</u> <u>2017-18</u> <u>2021-22</u> (Mar,22)	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 29329 cum out of total 46364 cum completed. Concreting 16487 cum out of 34589 cum completed. HRT (D-shaped, 3.2m diameter, 9.236km long):- 4497m out of 9236m excavation completed. Pressure shaft (1no. 2mdia, 1733mlong): Excavation: 11224 cum out of 80,000 cum completed. Concreting: 413cum out of 7212 cum completed. Surge shaft (3.2m dia.) : Excavation: 704cum out of	- Slow progress of works - Contractual Issues.

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	Latest 640.86 Contractors Civil : Patel & Alstom E&M : Andritz		14000cum completed.	
13	Lower Kalnai JKSPDC 16.08.2013 2x24= 48 MW Broad Features: Dam: 110m Span, 49m High HRT: D Shape, 3960m long, 4m dia Surge Shaft: 14m Dia Power House- 55x23.45x32.4 Cost: Original: 576.87 Latest 576.87 Contractors Civil : Coastal E&M : GE	<u>J&K</u> <u>2017-18</u> <u>2022-23</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. After suspending works in January, 2017, works resumed at site since 12 th April, 2017. Due to poor progress of the Contractor, JKSPDC has revoked the advance payment and the performance bank guarantee aggregating to Rs.79.21 Crores. Now the contract with M/s. Coastal Project Ltd. has been terminated and the process of retendering is under progress.	- Project stalled - Re-award of works
14	Shahpurkandi Irrigation Deptt. &PSPCL 04.05.2011 3x33+3x33+1x8=206 MW Cost: Original: 1835.50 Latest 1938.74 (Power Component) Contractors Civil & HM : Soma – BUREYA JV E&M : BHEL	<u>Punjab</u> <u>2015-16</u> <u>2021-22</u> (Mar.22)	Main Dam: 13.55 lacs cum Excavation out of 18.40 lacs cum and 2.06 lacs cum concreting out of 11.05 lacs cum completed. Hydel Channel: Excavation / concreting is in advance stage of completion. 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 is being floated and award of works is expected by January, 2020. E&M contract work earlier accorded to BHEL has been revived, Project is programmed for Commission by March,2022.	- Power House civil works to be awarded.
15	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 57m Penstock- 3.4m x 1860m P.House- Surface Turbine- V. Francis Cost: Original: 431.56 Latest: 1281.52 Contractors Civil : Continental / Abir HM : PES E&M : BHEL	<u>H.P.</u> <u>2006-07</u> <u>2019-20</u> (Mar'20)	All works completed. During Hydro Static pressure Test of Penstock some leakage was observed. Repair work is in progress. Project is Programmed to be commissioned by March, 2020.	
16	Sawra Kuddu	<u>H.P.</u>	All works related to commissioning of the project completed	

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	H.P. Power Corpn. Ltd. Clearance: 10.11.2004 3x37= 111 MW Broad Features: Diversion Structure: 10.45m high Piano Key Weir. HRT- D-Shaped, 5m dia, 11.145Km long. Power House- Under ground Turbine- 500 rpm VF. Switchyard: 220 Kv. Cost: Original: 558.53 Latest: 1181.90 Contractors Civil & HM : HCC / Patel E&M : Andritz	<u>2011-12</u> 2019-20 (Mar,20)	except completion of HRT. In HRT, 2 Adit plugs are balance. The balance works is scheduled to be completed shortly and project is likely to be commissioned by March, 2020.	
17	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: Original: 2807.83 Latest: 2807.83 Contractors Civil & HM : Patel E&M : Andritz	<u>H.P.</u> <u>2016-17</u> 2023-25 (Apr'24)	River Diversion achieved on 10.02.2017. Barrage: Excavation under progress. HRT: Heading excavation of HRT 5.27 km out of 7.712km completed. Surge shaft: 95m out of 100m pilot hole completed. Power House: 80% excavation of Power House completed. Works hampered in some portion of HRT due to re-location of Army ammunition depot. Issue is under resolution between Army, GoHP & HPPCL. Works are stalled since 18.04.2017 due to pending payment. Further, 125 out of 171 labour / workmen have been laid off by M/s. Patel Engg. Ltd w.e.f. 18.05.2017 to 21.07.2017. Work has now been resumed partially.	-Issues with Army authorities for shifting of ammunition depot. - Slow progress of works
18	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: Original: 936.23 Latest: 936.23 Contractors Civil : Gammon / MPCC E&M : BHEL	<u>Uttarakhand</u> <u>2014-15</u> 2020-21 (Dec,20)	Civil Works: Dam : Excavation completed. 3.01 Lakh cum out of 3.6 lakh cum of Concreting completed. Diversion Channel : Completed. Head Race Tunnel (2.7 Km): Excavation of HRT completed. 2612m Overt Lining and 2544m Invert Lining out of 2655m has been done. Pressure Shaft: 4939cum out of 5000cum Excavation completed. Surge Shaft : Excavation completed. Concreting-1418cum out of 6626cum completed. Power House: 2,59,429 cum out of 270,000cum Excavation completed. 1129 cum out of 17,800 cum Concreting of Sub structure completed. Erection of Draft Tube in both the units completed.	-Dam and E&M works are Critical.
19	Koyna Left Bank PSS WRD, Mah. 20.02.2004 2x40 = 80 MW Broad Features: Water from the existing Shivaji Sagar Lake	<u>Maha</u> <u>ashtra</u> <u>2014-15</u> 2022-23 (Subject to re-start of	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	-Slow progress of works. -Funds constraints due to increase in Project cost. RCE under approval. - Contractual Issues - The proposal to

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	(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: Original: 245.02 Latest: 1494.94 Contractors Civil & HM : BT Patil – Malaxmi JV / Patel E&M : Litostroj Slovenia & Koncar, Croatia	works)	6448 / 9223 cum completed. TRT : 364 / 24003 cum excavation completed. Machine Hall : Underground Excavation is under progress. 22600 cum excavation out of 55050 cum completed. E&M works: The contract for details engineering manufacturing supply, supervision erection, testing commissioning and putting into commercial use of pump turbine, generator motor and associated equipments is signed with M/s IVRCL Ltd., Pune on 16.12.2010. Further TG set has been ordered as under: Turbine/Pump: M/s Litostroj 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.	construct the project on BOT basis had been sent to State Govt., as no response has been received from State Govt., WRD is planning to take up the project after availability of funds. -
20	Polavaram APGENCO / Irrigation Deptt., A.P. 21.07.2010/ 25.02.2009 12x80= 960 MW Cost: Original: 4956.39 Latest: 5338.95 (Power Component) Contractors Civil : Navyuga HM : PES E&M : GE	Andhra Pradesh <u>2017-18</u> 2021-23 (Mar,23)	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: Radial Gate 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. B) The LoA for works of Power House on turnkey basis was issued to M/s Navayuga Engineering company limited on 06.12.2017. The contract agreement was signed on 06.01.2018 and the zero date of the contract commenced from 06.01.2018. It is programmed to commission the first three (3) units within 46 month from zero date and the balance 9 units at an interval of 2 months thereafter.	- At present work is standstill, since review of present Contract is under progress.
21	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	Kerala <u>2010-11</u> 2021-22 (Dec,21)	Intake structure: Excavation – 28398/33492 cum completed. Leading channel of Water conductor system replaced by cut & cover/soil tunnel and accordingly intake is shifted. HRT: Excavation –2858/3330 m completed. Overt conc. 1637/3330 m completed. Invert Conc.. – 1637/3330 m completed. Surge Tank/Forebay: Exc.-7640/13400 cum. Conc.423/843 cum. Pressure Shaft: Excavation completed. Fabrication of steel liner completed and erection of 96/1096 m completed. Surface penstock: Excavation –109354/122600 cum. Concreting- 11641/12850 cum and 1701m out of 2036m erection completed. Power House: Excavation completed. Concreting 3980/11225cum. Tail race Channel (2 Nos.): Excavation & lining completed. E&M Works: 75% supply completed. Erection yet to start.	- Poor Geology - Contractual Issues - 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 Sarvasna Industries Pvt. Ltd. and M/s. DSE Anchor Structure. Tender for Erection of Supplied Electro Hydro Mechanical Equipment & Supply and Erection of BoP equipment is under progress.

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	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.			
22	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> 2020-21 (Dec'20)	Civil Works: Weir: 3590.17 cum excavation out of total 10208 cum and 4987 Cum concreting out of 10928 Cum completed. Approach Channel & Intake: Excavation-3184 cum out of 9584 cum done. Power Tunnel : Excavation completed. Power House, switchyard & allied works: 32490 cum excavation out of 43690 cum and 3040 cum concreting out of 16209 m done.	-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. E&M works to be executed by KSEB.
23	Kundah Pumped storage (Phase-I, Phase-II & Phase-III) TANGEDCO 4x125= 500 MW Cost: Original: 1216.59 Latest: 1717.91 Contractors Civil & HM : Patel / Kundah PSP	<u>Tamil Nadu</u> <u>2022-23</u> 2022-23	Civil & HM Works: LOI issued to M/s Patel Engg. Ltd. for Package-I & M/s Kundah PSP Consortium for Package-II on 15-02-2018. Excavation of balance MAT, balance CCVT, Adits to TRT, TRSS, Power House top/bottom, Pressure Shaft bottom have been completed. HRT portal: Benching under progress. Power House: Slashing of PH & transformer cavern completed & benching is in progress. Pressure Shaft: Horizontal & inclined position are under progress. TRT: Excavation under progress. Head Race Surge Shaft:- Excavation under progress. E&M works: Award of works is under progress.	
	Private Sector			
24	Ratle Ratle Hydro Electric Project Pvt. Ltd. 19.12.2012 4x205+1x30= 850 MW Broad Features : Dam Height-133m Length-194.8m Spillway-Radia Gate-(5) Size-10.75x1420 m Diversion Tunnel:2 Nos., Circular (Right back) Pressure Tunnel:11m dia each.	<u>J&K</u> <u>2017-18</u> 2023-24 (Subject to re-start of works)	EPC Contract for Civil & HM works awarded to M/s GVK Projects & Technical Services Limited on 04.07.2013. The infrastructure works of Road & Bridges was under progress and erection of upstream Bridge completed & downstream Bridge was in progress. Works have been suspended at Project site due to frequent local disturbances since 11.07.2014. Power Development Department, GoJK have been requested to resolve the various critical issues including 1) resolving of disturbance at site 2) restoration of congenial atmosphere and 3) IWT issues for resumption of works at site. Excavation of DT1 (298m out of 472m) & DT2 (192m out of 552m) completed.	- Presently works are under hold. - The State Govt. has decided to develop the project through JKSPDC. The matter is now pending adjudication before the Arbitration Tribunal constituted by the Hon'ble High court of J&K State in terms of the PPA.

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	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: 5718.85</u> Latest 5718.85 (11/2018 PL) Contractors Civil & HM : GVK E&M : Alstom		Govt. of J&K, PDD have terminated PPA on 09.02.2017 and directed JKSPDC to take over the project and implement in JV mode with Gol. MoU for execution of project in JV mode was signed on 03.02.2019 between JKPDD, JKSPDC & NHPC. Cost estimate vetted by CEA on 7.5.2019. PIB Memo submitted to MoP on 12.04.2019,16.5.2019 & 2.7.19	
25	Sorang Himachal Sorang Power corporation Ltd. June, 2006/ 2x50= 100 MW Broad Features: HRT- 1.5 km Trench Weir-59 m P.House- underground Turbine- Pelton Gross Head-626 m SWYD- 11/400 kV (GIS) Cost: <u>Original: 586.00</u> Latest: 586.00 Contractors Civil & HM : NCC – Maytas – SS JV E&M : Voith Siemens	<u>H.P.</u> <u>2011-12</u> <u>2019-20</u> (Mar-20) (Critical)	All Civil Works completed. Both the units are boxed up. During the filling of water conductor system in 1 st week of Nov., 2013, leakage occurred in penstock due to cracks. Rectification work completed in April, 2015. Unit #1 synchronized with grid on 30.10.2015, however, could not be commissioned due to non-availability of rated discharge. On 18-11-2015 when Unit # 2 was under trial run, there was rupture in the surface penstock pipe. The incidence caused loss of lives and property. The rectification work is under progress. Land acquisition for new alignment of Penstock & other infrastructure is completed. Fabrication of Ferrules under progress.	- Repair of penstock work -Arrangement of funds to carry out repair works.
26	Tangnu Romai-I M/s Tangnu Romai Power generation 2x22= 44 MW 30.11.2007 (TEC by HPSEB) Broad Features: Barrage at EL ± 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	<u>H.P.</u> <u>2014-15</u> <u>2021-22</u> (Subject to re-start of works)	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. 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.	- Slow progress of works HRT critical, poor geology. - Works are stalled due to finance issues since Jan, 2015. - Developer have initiated the sale of the Project and are in the process of negotiating with Potential Buyers.
27	Bajoli Holi M/s GMR Bajoli Holi	<u>H.P.</u>	Civil Works: 86% works completed. Dam: Excavation completed. Concreting 1,36,844 cum out	-Slow progress of works -Poor approach roads

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	Hydro Power Pvt. Limited 31.12.2011 3x60= 180 MW Broad Features Dam Height-66 M Dam Length-178 M Desilting Chamber- 2 Nos. 240 Mx14.5 MX 10.8 M HRT- Length-15.538 Km., 5.6 M dia P.H. –Surface Cost: <u>Original 1696.93</u> Latest 2205.00 Contractors Civil & HM : Gammon E&M : Alstom/ GE	<u>2018-19</u> 2019-20 (Mar,20) (Critical)	of 2,10,000 cum completed. HRT: 15.605 km excavation out of 16km completed. 6.485 km lining out of 15.9 km completed. Surge Shaft: Excavation completed. Lining-3300/5200 cum completed. Pressure shaft: Excavation completed. Lining-664MT / 2440MT completed. Power house: Excavation completed. 37926 cum out of 40265 cum concreting done. HM Works: 65% works completed. E&M Works: 73% works completed.	-Power evacuation system is critical. - Due to excessive snowfall on 6 th & 7 th Feb 2019, in the entire region up to Chamba, access roads got severely damaged. Power Supply remained completely cut off to the entire region during 6 th ~25 th Feb 2019.
28	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 543.15</u> Latest 1286.27 Contractors Civil & HM : SCL Infratech / Himalaya E&M : Alstom	<u>H.P.</u> <u>2013-14</u> 2021-22 (Oct. 21)	Barrage & River Diversion Works: Common Excavation completed and 71700.84/73409.00 open cut rock excavation completed. 32349 cum out of 37647 cum concreting done. Head Regulator & Desilting arrangement: Common excavation completed. 9763 cum open cut rock excavation out of 10,000 cum completed. HRT (8526m): Excavation 3054m completed and 10,299/83,800 cum Head works concreting has been completed. Surge Shaft: Excavation completed. 13m/88m Lining done. Pressure Shaft: Excavation completed. 67m / 1230m lining completed. Power house and Tail race channel- 87709 cum out of 92500 cum excavation completed. 11237 cum out of 16156 cum concreting completed. Overall 60 % of Powerhouse civil works completed. M/s Statkraft India Pvt Ltd has acquired the 100% equity of the project on 04.09.2018 and remobilization of manpower on the project is in progress. Presently project is scheduled to be commissioned by October 2021.	- Slow progress of works. - Transmission Line critical.
29	Phata Byung M/s Lanco 06.10.2008 2x38 MW = 76 MW Broad Features: Dam – 26m high HRT- 3.2 m dia & 9.38 km length Turbine – Frances Cost: <u>Original: 520.00</u> Latest : 1133 Contractors Civil : Lanco HM : Cimco E&M : Alstom	<u>Uttara khand</u> <u>2012-13</u> 2021-22 (Subject to re-start of works)	Dam concreting: 17800/18000 cum concreting completed. P.H.: Excavation completed & Concreting in progress. HRT: Excavation almost completed. 1400 m Lining has been completed. 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.	- Works severely affected due to flash floods in June, 2013. - Works are stalled since July, 2017 due to Funds constraints with the developer
30	Singoli Bhatwari M/s L&T 11.07.2008 3x33 MW = 99 MW Broad Features: Barrage-FRL 1017 m, MDDL 1009 m,	<u>Uttara khand</u> <u>2012-13</u> 2019-20 (Mar,20) (Critical)	Dam & Dykes/Barrage: Excavation almost completed and concreting 66169 out of 70220 cum completed. HRT: Excavation completed Overt Concrete Lining 9697m out of 11257m completed. Invert Lining: 9697 m out of 11257m completed. Pressure Shaft: Excavation completed. Power House: Excavation completed & concreting	- Works severely affected due to flash floods in June, 2013. - HRT Critical

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	Barrage Top 1020m HRT- 4.65m dia & 11.870m length Surge Shaft-10 m dia & 102.85 m length Pressure Shaft-One, 3.80m dia & 358m length Penstock- 3 Nos., 2.20 m dia & 34m, 42m, 48m long. P. House-Surface Turbine-Vertical Francis TRT- Open Channel, 650m length Cost : Original : 666.47 Latest:1694.00(PL-2018) Contractors Civil : L&T HM : General Mechanical Works E&M : Voith		29365cum out of 29959cum completed. Surge Tank: Excavation completed. 4113.93cum out of 5349cum concreting completed. E&M Works: Boxing up of Unit#1 completed & Boxing up of Unit#2&3 is in progress.	
31	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> <u>2020-22</u> (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. Recently, the GoMP constituted a High-Level Task Force vide Energy Department Order dtd. 18.04.2019, under the Chairmanship of Dr. Rajan Katoch (IAS Retd.) and having Senior IAS Officers from GoMP among others as members to examine the difficulties in implementation of the project and suggest the way forward. In the first meeting of the Task Force held on 25.05.2019, the Chairman of the Task Force directed the Promoter and Lenders to engage in discussions to reach an understanding on the way forward. Pursuant to the directions of the Task Force, a Memorandum of Understanding (MoU) has been executed on 22.07.2019 between the Entegra Limited (Promoter), Power Finance Corporation (Lead Lender) and SMHPCL. As agreed in the MoU, new Management nominated by the Promoter has taken over charge of SMHPCL, in August 2019. Mr. M L Gupta, former CMD, THDCIL, who was also MD of SMHPCL during 2005-2010, has taken over as CMD of SMHPCL. Efforts are being made to initially commission the 3 machines already installed since 2011 and start generation with part filling of reservoir after completing R&R to that level. BHEL has agreed to supervise the restoration and commissioning of 3 machines. Action for arrangement of funds required is being taken.	<ul style="list-style-type: none"> - Completion of R&R works and E&M works. - Works held up due to Fund constraints with developer. - Sub-Judice in NCLT.

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
32	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 : 1692.60 Contractors Civil : Coastal HM : Texmacho E&M : Andritz	<u>Sikkim</u> <u>2011-12</u> <u>2022-23</u> (Subject to re-start of works)	Dam & Intake works: Excavation 409184 / 492775 cum completed and concreting 61045 cum out of 173229 cum completed. Excavation of road diversion tunnel has been completed. HRT: Excavation in progress and 3794 m out of 6488 m completed. Surge Shaft: Excavation has been completed & concreting yet to start. Pressure Shaft: Excavation of Horizontal Pressure Shaft completed. Vertical Pressure Shaft 60.5 m out of 84.7m completed. Power House: Excavation in Power House completed. Concreting 8565 cum out of 19900 cum completed. Desilting chamber: Excavation 2143 m out of 3360 m completed.	Financial crunch with the developer. Work held up since Oct, 2013 due to fund constraints. In the latest Joint Lenders Forum meet held in PFC on 5 th April, 18, Lenders decided to file application in NCLAT and the same has been filed on 24 th April, 18. Last hearing of NCLT held on 29.03.2019 and order pronounced on 9.04.2019. As per the order IRP has been appointed and CIRP has to be completed within 180 days.
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 :Original : 408.50 Latest : 690.30 Contractors Civil : Simplex E&M : Voith	<u>Sikkim</u> <u>2012-13</u> <u>2022-23</u> (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.	- Slow progress of works - Works stalled since Sept., 2016 due to paucity of funds.
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	<u>Sikkim</u> <u>2015-16</u> <u>2021-22</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.	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.

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	E&M : Gammon			
35	Rongnichu Madhya Bharat Power Corporation Ltd. 01.10.2008 2x48= 96 MW Cost : Original : 491.32 Latest : 1187.00 Contractors Civil & HM : Sew E&M : Voith	<u>Sikkim</u> <u>2014-15</u> 2020-21	The civil works have been re-awarded to M/s Moshvaraya Infrastructure Ltd. and E&M works to M/s Litosroj Power, Slovenia & CG Electric system, Hungary. Barrage: Excavation completed & 71300 out of 71700 cum concreting completed. HRT: Excavation completed and concreting 8217cum out of 12600cum completed. Surge shaft: Excavation & Concreting completed. Pressure Shaft: 175m out of 1426.50m of steel lining completed. Civil works of VPS completed. Power House: Excavation completed. 15482cum out of 24644 cum Concreting has been completed. E&M works: EOT Crane works completed Unit #1 & #2 : Erection works are in progress.	- Land acquisition. - Poor geology.
36	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-Height P.House-Surface Turbine-Vertical Francis Cost : Original: 1833.05 Latest :2516.00 Contractors Civil : Essar	<u>Sikkim</u> <u>2018-19</u> 2023-24 (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 earlier held up for want of the National Board of Wild Life (NBWL) clearance. NBWL clearance obtained in December, 2015. However, there is a case challenging the Eco-Sensitive zone notification of MoEF & Climate Change in NGT. The case is disposed on 21.8.2017. The developer applied for issuance of clearance from Forest, Environment & Wild Life Management Dept., Govt. of Sikkim.	-Works stalled for want of NoC from NWLB

Grand Total : 36 nos. – 12,409.5 MW