

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

(As on 28.02.2019)

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:</u> 3919.59 Latest: 9394.80 (04/18 PL) Contractors Civil : Gammon / Valecha HM : Om Metals E&M : BHEL	<u>H.P.</u> <u>2009-10</u> <u>2021-22</u> (Dec'21)	Dam & Intake Structure- Concreting completed. Head Race Tunnel- 28.14 km Excavation out of 31.5km completed Total Overt lining: 26.49 km lining out of 31.5km completed. Power House: Concreting completed. Jiwa Nallah Feeder Tunnel: Completed. E&M Works: Unit # 1&2 : Unit 1 & 2 have been Synchronized with grid at part load on 14.09.2018 & 22.09.2018 respectively using water from Jiwa Nallah after rectification work of left pressure shaft. Presently generation is in progress and 39.62Mus have been generated upto Nov'18. Unit # 3&4: Boxed up. HM Works: About 92% works completed. Critical Area: HRT.	Poor geology in HRT especially in Face-4 (TBM-Face).
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:</u> 2978.48 Latest: 3846.30 Contractors Civil : Rithwik/L&T / Patel HM : Om Metals E&M : BHEL	<u>Uttara khand</u> <u>2012-13</u> <u>2020-21</u> (Dec'20)	River diversion achieved on 13.04.2013 Barrage: Excavation completed and Concreting 122230 cum out of 125575 cum completed. HRT: 9.3 Km excavation completed out of 13.72 Km, TBM struck due to cavity (5.43m completed out of 8.27km) PH Cavern: Excavation and concreting completed. Desilting Chamber & Intake: 6.81 lakhs m ³ out of 7.01 lakh m ³ Excavation completed. TRT: Excavation 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: Turbine erection in progress. Unit #3: Turbine erection in progress. Unit #4: Distributor Barrel Concreting completed. Critical : HRT	- Completion of HRT. - Restoration of TBM - 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	<u>Uttara khand</u> <u>2010-11</u> <u>2021-22</u> (Mar'22)	EPC contract has been awarded on 23.06.11 with commencement date from 27.07.11. Upstream (Tehri Dam) and Downstream (Koteswar Dam), intake and Head Race Tunnels (2 Nos.) already completed alongwith Tehri Stage-I works. Surge Shafts upstream (2nos- 140m): After completion of Crown slashing, widening is in progress. Erection of Gantry completed. Butterfly Valve Chamber (BVC): Crown slashing with steel ribs completed. Benching work and additional stabilization work is nearing completion. Cumulative Benching Excavation 7942 Cum (49.42%) completed. Penstock Assembly Chamber (PAC): Crown slashing with steel ribs completed. Excavation of 1 st bench has been	- 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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	Turbine: VF reversible pump turbine Cost: <u>Original:</u> 1657.60 Latest: 4401.90 Contractors Turnkey : Alstom, France/ HCC		completed. Power House: Excavation completed. Surge Shafts downstream (2nos): Excavation of Top Chamber completed. Surge Shaft-4: Works for Collar beam completed. Surge Shaft-3: Excavation for Collar Beam completed. Widening is under progress. TRT-3(1151 RM): Excavation in Heading 862 RM, Benching 188.5 RM. Invert Lining-126m Overt Lining - 48m completed TRT-4 (1255 RM): Excavation in Heading-948 RM, Benching- 422.5 RM Invert Lining-156m 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: <u>Original:</u> 1527.00 Latest: 1801.07 Contractors Civil & HM : L&T E&M : BHEL	<u>Uttara khand</u> <u>2017-18</u> <u>2022-23</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: <u>Original:</u> 2491.58 Latest: 4105.30 Contractors Civil & HM : HCC E&M : BHEL	<u>Uttara 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) 407m: Excavation completed upto 397.50m. HRT (13400m): 395.8m completed by DBM. Construction of Adits and infrastructure works are under progress Desilting Chambers (3 No. X 390m) : Crown Slashing completed. In DC #1, DC #2 & DC #3 and Benching is under progress in DC #1 and DC#3.	-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: <u>Original:</u> 6285.33	Arunachal Pradesh Assam <u>2009-11</u> <u>2022-23</u> (Subject to re-start of works)	Dam: Excavation- 169441 cum completed out of 173000 cum. Concreting: 7.6lacs cum completed out of 19.96 lacs cum. Intake Structure: 261377 cum concreting completed out of 279454 cum. Head Race Tunnel (I-VIII): 7050 m heading excavation completed out of 7124m. 4279 m benching excavation completed out of 7124 m. 3199 m concrete overt lining completed out of 7124 m. Surge Tunnels (8 nos.): 3109 m heading excavation completed out of 3545 m. Pressure Shaft- Vertical Pressure Shaft Slashing: 199 m excavation out	- Signing of MoU with State Government of Assam. - Issue of Downstream Impact Assessment & demand for stoppage of works by anti dam activists. -Since 16.12.2011 works stopped due to agitation by various activists of Assam.

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	Latest: 19496.34 (04/17 PL) Contractors Civil : BGS-SGS-Soma JV / L&T/Alstom HM : Texmaco E&M : Alstom		of 384 m completed. Surface Power House: Concreting: 124887 cum out of 302600 cum completed. E&M Works: Unit #1: Elbow erection (1 to 6) and Turbine stay ring and Spiral case erection completed. Unit #2: Elbow erection (2 to 6) and Turbine stay ring and Spiral case erection completed. 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. Work stopped since 16.12.11 due to agitation launched by various activists against construction of Subansiri Lower HE Project. In this regard, as decided in the tripartite meeting dated 06.12.13, discussions between Expert Group formed at the request of AASU (All Assam Students Union) and Experts of Govt. of India & NHPC was held on 23.12.13. Last meeting between Expert Group of Assam and Experts of Govt. of India was held on 02.06.14 at Guwahati. Thereafter, meetings with Expert Group of Assam on 10.12.2014 and on 21.02.2016 & 22.02.2016 with various Stakeholders of Subansiri Lower Project on 11.12.2014 were held to discuss the issues. The meetings were Co-chaired by Hon'ble MOS (I/C) for Power, Coal and New & Renewable Energy and Hon'ble MOS (I/C) for Skill Development, Entrepreneurship, Youth Affairs & Sports. As decided in stakeholders meeting on 11.12.2014, a Project oversight Committee (POC) was constituted vide MoP's OM dated 13.01.2015. Due to difference in opinion on some issues mainly seismic issues, the Expert Group of Assam has submitted the final report to MoP & members of POC from Government of India have also submitted a separate report to MoP in Jan / Feb'2016. Matter related to Subansiri Lower HEP was being heard by Hon'ble National Green Tribunal (NGT), Kolkata. The judgment has been pronounced by NGT Kolkata on 16.10.2017. <i>"In this judgement, NGT has directed MOEF&CC to constitute a committee of three expert members from the field of Seismology, Geology and Hydrology and one of these members shall be from Northeast to examine the entire matter and reports of various committees constituted. The Terms of Reference (TOR) of the committee will be same as made to POC as contained in OM no. 2/5/2002-NHPC dated 13.01.2015. The MOEF&CC shall constitute the Committee within one month and the committee shall give its report in three months from the constitution of the committee to MOEF&CC which will be placed before Expert Appraisal Committee (EAC) for appraisal under Environment Impact Assessment (EIA) Notification 2006. EAC shall complete the appraisal within 60 days and place it before the competent authority for final decision."</i> Subsequently, MoEF&CC has constituted a Committee consisting of three expert members vide order dated	

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			27.11.2017. The committee has to give its report within 3 months from date of issue of order. In the meantime, the Applicant (Sh. Aabhijeet Sharma) raised objection in NGT, Kolkata on the constitution of committee by Ministry of Environment, Forest & Climate Change (MoEF &CC). NGT, Principal Bench, New Delhi vide order dated 19.11.2018 dismissed the Application (MA) of Sh. Aabhijeet Sharma. Caveat has been filed by NHPC in Supreme Court on 22.11.2018. The hearing on Application filed by Sh. Tularam Gogoi was scheduled to be held on 14.12.2018. On hearing dated 14.12.2018, after hearing the counsel of Appellant, the court dismissed the application based on the order given in identical matter of Sh.Aabhijeet Sharma on 19.11.2018. Subsequent to order of Hon'ble NGT, Principal Bench, dated 19.11.2018, 3rd meeting of Expert Committee held on 12.12.2018 at MoEF & CC, New Delhi. Meeting with the members of POC-Assam also took place. Applicants (Sh. Aabhijeet Sharma and Sh. Tularam Gogoi) did not attend the meeting. Expert Committee visited Subansiri Lower HE Project on 09.01.2019. Submission of Expert Committee Report to EAC is awaited. <u>Signing of MOA with Govt. of Assam:-</u> Signing of MOA with State of Assam is pending yet. NHPC had sent the draft MOA, approved by MOP, to the States of Assam and Arunachal Pradesh in April-03 for their consent / signing of Agreement. The MOA with Arunachal Pradesh Government has already been signed on 27.1.2010.	
7	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: <u>Original:</u> 2496.90 Latest: 6179.96 Contractors Civil : Patel HM : Om Metals & JSC JV E&M : BHEL	Arunachal Pradesh <u>2009-10</u> 2019-20 (Sept'19)	All major works related to commissioning of project completed. All Units Boxed up. Leakage observed in penstocks during water filling. Complete NDT of all circumferential joints of pressure shaft / penstock is in progress along with rectification of defects.	Rectification works of leakage observed in penstock 1&2.
8	Ramam-III NTPC Hydro Ltd. 10.09.14 3x40 = 120 MW Broad Features : Run of the River Scheme	<u>West Bengal</u> <u>2019-20</u> 2021-22 (Feb,22)	Infrastructure works are in progress. Civil & HM works of Barrage including Part HRT Package awarded to M/s Simplex –Apex JV on 10.09.14. Civil & HM works of Power House including Part HRT awarded to M/s SEW Infrastructure Ltd. on 12.12.2014. Electro-Mechanical (EM) Package awarded to M/s BHEL in Feb-2015.	- Works affected due to GJMM Andolan. - Funds flow constraints with the contractor

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	Cost : Original: 1381.84 Latest : 1592.34 Contractors Civil & HM : Simplex-Apex JV / Sew E&M : BHEL		First stage river diversion done on 23.03.2016. First phase Barrage excavation completed and Raft concreting in progress. Adits Excavation completed. Excavation of Desilting chamber completed and concrete lining works started. Surge Shaft: Excavation 60% completed. Pressure Shaft: Excavation 29% completed Power House: Excavation 94% completed. TRC: Excavation 84% and concreting 82% completed Switchyard : Excavation and filling completed	
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 Latest : 648.33 Contractors Civil : JP Associates HM : GMW E&M : Voith	<u>Uttara khand</u> 2021-22 2021-22 (Dec,21)	LoA for civil works has been issued to M/s. Jaiprakash Associates Ltd. on 05.12.2017. Desilting Tank : Removal of slide deposit in desilting tank area is in progress. Cumulative 22,820 cum out of 48,000 cum completed. Diversion channel : Open excavation of diversion channel is in progress. Cumulative 1,01,600 cum out of 1,16,260 cum completed. Adit 1&2 : Excavation of Adit #1 Completed and that of Adit #2 2m out of 361m completed. HRT: Excavation 31.1m completed. HM works : LoA issued to M/s GMW Private Ltd. on 18.04.18. M/s GMW has submitted the construction schedule. E&M works : Works awarded to M/s. Voith Hydro Pvt. Ltd. On 20.07.18.	-
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 & HM : Afcons – JAL - JV E&M : BHEL	<u>J&K</u> 2020-21 2023-24 (Aug.'23)	Infrastructural works : Excavation of MAT and adit to Powerhouse are in progress. 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. E&M Package: Bids evaluated and are under consideration of the Board	
	State Sector			
11	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	<u>J&K</u> 2017-18 2021-22 (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 19129 cum out of total 82178cum completed. HRT (D-shaped, 3.2m diameter, 9.236km long):- 3434m out of 9236m excavation completed. Pressure shaft (1no. 2mdia, 1733mlong) :- Excavation 11224cum out of 80,000cum completed. Surge shaft (3.2m dia.) : 704cum excavation out of	- Slow progress of works - Land acquisition issues at Adit-I to HRT & Power House area.

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	Power House- Surface- 60x12x28 Cost: <u>Original:</u> 640.41 Latest 640.41 Contractors Civil : Patel & Alstom E&M : Andritz		14000cum completed.	
12	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: <u>Original:</u> 576.87 Latest 576.87 Contractors Civil : Coastal E&M : GE	<u>J&K</u> <u>2017-18</u> 2022-23 (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.	- Slow progress of works
13	Shahpurkandi Irrigation Deptt. &PSPCL 04.05.2011 3x33+3x33+1x8=206 MW Cost: <u>Original:</u> 1835.50 Latest 1835.50 (Power Component) Contractors Civil & HM : Soma – BUREYA JV E&M : BHEL	<u>Punjab</u> <u>2015-16</u> 2021-22 (Nov.21)	Main Dam: 1286552 cum Excavation out of 1981500 cum and 89286 cum concreting out of 1135295 cum completed. Hydel Channel: 2696210 cum excavation out of 3900000 cum and 22153 cum concreting out of 42864 cum completed. 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 and the project would be completed in 3 years..	
14	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: <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> 2019-20 (July 19)	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 July, 2019.	
15	Sawra Kuddu H.P. Power Corpn. Ltd.	<u>H.P.</u>	Barrage: Excavation completed & concreting is under advance stage of completion.	- HRT is critical

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	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: <u>Original: 558.53</u> Latest: 1181.90 Contractors Civil & HM : HCC / Patel E&M : Andritz	<u>2011-12</u> 2019-20 (Sept,19)	HRT: Excavation completed and 9200 m out of 10834 m overt lining completed. Steel Liner erection 60m out of 530m completed. Surge Shaft: Excavation & Lining completed. Pressure shaft: Excavation & lining completed. Power House: Excavation completed and concreting almost completed. TRT: lining completed. E&M: All units boxed up. Critical : HRT.	
16	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: 2807.83</u> Latest: 2807.83 Contractors Civil & HM : Patel E&M : Andritz	H.P. <u>2016-17</u> 2023-25 (Apr'24)	River Diversion achieved on 10.02.2017. Barrage: Excavation under progress. HRT: Heading excavation of HRT 4.036km out of 7.712km completed. Surge shaft: 95m out of 100m pilot hole completed. Power House: 63% 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
17	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: 936.23 Contractors Civil : Gammon / MPCC E&M : BHEL	<u>Uttarakhand</u> <u>2014-15</u> 2019-20 (Mar,20)	Civil Works: Dam : Excavation completed. 2.26 Lakh cum out of 3.6 lakh cum of Concreting completed. Diversion Channel : Completed. Head Race Tunnel (2.7 Km): Excavation of HRT completed. 2506m Overt Lining and 1541m Invert Lining out of 2655m has been done. Pressure Shaft: 3649cum out of 5000cum Excavation completed. Surge Shaft : Excavation completed. Concreting-250cum out of 6626cum completed. Power House: 258500 cum out of 270,000cum Excavation completed.	-Dam and E&M works are Critical. -Local issues.
18	Koyna Left Bank PSS WRD, Mah. 20.02.2004 2x40 = 80 MW Broad Features: Water from the existing Shivaji Sagar Lake (Koyna reservoir)	<u>Maharashtra</u> <u>2014-15</u> 2022-23 (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.	-Slow progress of works. -Funds constraints due to increase in Project cost. RCE under approval.

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	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		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 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.	
19	Polavaram APGENCO / Irrigation Deptt., A.P. 21.07.2010/ 25.02.2009 12x80= 960 MW Cost: <u>Original: 4956.39</u> Latest: 5338.95 (Power Component) Contractors Civil : Navyug 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 98.86 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.	
20	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	<u>Kerala</u> <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. 1634/3330 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. Fabrication completed and 1147m 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. -Works stopped by the civil contractor from 22.07.2015. After resuming the work on 11.04.2017, the contractor stopped work w.e.f. 10.04.2018 demanding an enhanced claim. The Board has served a termination notice on 13.09.2018 at the risk and cost of the contractor. The contractor has filed a writ petition in the Hon'ble High Court of Kerala challenging the termination order and the court has issued an

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	works) ESSAR – DEC – CPPL JV -M/s Bumi-Zillion JV (for Intake works & balance Tunneling works)			interim stay order on enforcement of termination order and the case is pending in the Hon'ble High Court. Retendering of the balance works of Face-II have been accorded to M/s. Zillion JV on 05.01.2018. Work is in progress.
21	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: <u>Original:</u> 136.79 Latest: 195.55 Contractors Civil & HM : PRIL- Sri Sarvana Industries	<u>Kerala</u> <u>2012-13</u> <u>2020-21</u> (Dec'20)	Civil Works: Weir: 3340 cum excavation out of total 10200 cum and 2317 Cum concreting out of 10928 Cum completed. Approach Channel & Intake: 3184 cum out of 9584 cum done. Power Tunnel : Excavation completed. Power House, switchyard & allied works: 31390 cum excavation out of 43690 cum and 2658 cum concreting out of 16209 m done. Critical – The progress of works badly affected due the heavy rain and flood in the month of August,18. Machineries stored in the sheds and open yard at lower Periyar HEP yard have got flooded and damaged. The work of lifting and rearranging the submerged machineries from the slit and mud completed.	-Works are stand still since 2015 due to Contractual Issues. Accordingly the contractor put forwarded a proposal for foreclosure of the project due to their financial stringency. -Civil & HM works was re-awarded to the L1 bidder- M/s PRIL- Sri Sarvana Industries Pvt. Ltd. on 05.01.2018. Tendering process for balance Electrical works under process.
22	Kundah Pumped storage Phase-I TANGEDCO 1x125= 125 MW Cost: <u>Original:</u> 488.48 Latest: 989.80 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 MAT and Adits are under progress. HRT portal development under progress. E&M works: Award of works is under progress.	
	Private Sector			
23	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. Pressure Shaft : 6.6 m each steel lined. P.House-Underground Turbine- Francis Average Gross Head-100.39m	<u>J&K</u> <u>2017-18</u> <u>2023-24</u> (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. Govt. of J&K, PDD have terminated PPA on 09.02.2017 and directed JKSPDC to take over the project. JV of JKSPDC & NHPC formed for implementation of project. The State Govt. has decided to develop the project through	- Presently works are under hold. - Local Issues

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	Addl. Unit(30MW) Housed in Main P.H. Cavity) Rated Head-98.9m Cost : <u>Original: 5517.02</u> Latest 6275.00 (09/2013) Contractors Civil & HM : GVK E&M : Alstom		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.	
24	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> 2019-20 (Dec'19)	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.	- Repair of penstock work
25	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> 2021-22 (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.
26	Bajoli Holi M/s GMR Bajoli Holi Hydro Power Pvt. Limited 31.12.2011 3x60= 180 MW Broad Features Dam Height-66 M	<u>H.P.</u> <u>2018-19</u> 2019-20 (Sept,19)	Civil Works: 75% works completed. Dam : Excavation completed. 1,21,216 cum out of 2,10,000 cum concreting completed. HRT: 14.814km excavation out of 16km completed. Surge Shaft: Excavation completed. Pressure shaft: Excavation completed. Lining-2117cum out of 20500 cum completed. Powerhouse: Excavation completed. 36271cum out of	-Slow progress of works -Poor approach roads -Power evacuation system is critical.

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	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		49720cum concreting done. HM Works: 50% works completed. E&M Works: 67% works completed.	
27	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 completed and 1879m lining completed. Surge Shaft: Excavation completed. Pressure Shaft: Excavation completed Power house and Tail race channel- 87709 cum out of 92500 cum excavation completed. 11237 cum out of 16156 cum concreting 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.
28	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 : 1225.53 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.	- Works severely affected due to flash floods in June, 2013. - Works are stalled since July, 2017 due to Funds constraints with the developer
29	Singoli Bhatwari M/s L&T 11.07.2008 3x33 MW = 99 MW Broad Features: Barrage-FRL 1017 m, MDDL 1009 m, 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	<u>Uttara khand</u> <u>2012-13</u> 2019-20 (Jun,19)	River diversion – completed. Dam & Dykes/Barrage: Excavation almost completed and concreting 65039 / 70220 cum completed. HRT: Excavation completed Overt Concrete Lining 5373m / 11257m completed. Invert Lining 5373m / 11257m completed. Pressure Shaft: Excavation completed. PH: Excavation completed & concreting 28009/ 29959cum completed. Surge Tank: Excavation completed. 4113.93cum out of 5349cum concreting completed. E&M Works: Erection of spiral casing of Unit#1 is in progress. Draft tube erection and EOT crane Erection & Load testing completed.	- Works severely affected due to flash floods in June, 2013. - HRT Critical

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	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			
30	<u>Maheshwar,</u> 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> 2020-21 (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. A high level committee under the chairmanship of Additional Chief Secretary(Finance) GoMP, was formed on 16 th Oct, 2014 to find ways to complete the project. The committee has submitted its report on 2.5.2015. The committee has recommended three scenarios for commissioning the Maheshwar Project. Under the first scenario, another attempt to complete the project with the present private developer has been envisaged. Timeline for first Scenario has elapsed (2nd August 2015) without the promoter complying with its requirements. As per second scenario, Lenders as Govt. Companies (PFC as lead lender) have acquired majority equity i.e. 51% in the SMHPCL w.e.f. 1 st June, 2016. National Company Law Tribunal (NCLT), Ahmedabad inter-alia declaring shareholding of lenders bad in law. Against the adverse order of NCLT, appeal has been filed in National Company Law Appellate Tribunal (NCLAT), New Delhi. NCLAT passed the order on 12-03-2018 against the share holding of lenders. NCLAT in the order also mentioned that Central Govt. may also as a part of investigation, direct, at the cost of the company, forensic audit of the company under supervision of the official of CAG at least since 2005 if not earlier. PFC has filed an application in NCLT Ahmedabad on 16 th February 2018 to start Corporate Insolvency Resolution Professional (CIRP) under Insolvency and Bankruptcy Code(IBC). The way forward is now dependent on the outcome of the petition filed by PFC in NCLAT seeking resolution under IBC and also on the forensic audit by CAG.	- Completion of R&R works and E&M works. - Works held up due to Fund constraints with developer. - Sub-Judice in NCLT.
31	Teesta-VI LANCO 27.12.2006 4x125= 500 MW Broad Features: Barrage: 34.27m high HRT- 2nos,13.7km long Pressure shaft: 4nos.	<u>Sikkim</u> <u>2012-13</u> 2021-22 (Subject to re-start of works)	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.	- Works stalled since April, 2014 due to financial crunch with the developer. - NHPC Ltd. emerged bidder during bidding process NCLT. Process for Govt approval is in progress.

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	5.4m dia. 130m av length, TRT: 4nos 250m av length, 8.5m dia. PH- Under ground Turbine- Francis Cost: Original: 3283.08 Latest : 7542.00 Contractors Civil & HM : Lanco E&M : Alstom		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 1 st 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.	
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>2021-22</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. High Power Hydro Sub Committee (HPC), Govt. of Sikkim has taken a meeting on 20.04.2017 wherein they have agreed to enhance their equity to 51% and asked Lenders, i.e. PFC to submit their proposal for making the tariff viable by giving incentives viz reducing rate of Interest, increasing payback period of loan etc so that the project work can be started early and balance works ca be completed in 3.5 years from revival of project.
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>2021-22</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	<u>Sikkim</u> <u>2015-16</u> <u>2020-21</u>	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.	Works are stalled due to non releasing of funds by lenders because of Power evacuation and

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	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 Switaryd- GIS, 132/11KV Cost : Original : 496.44 Latest : 496.44 Contractors Civil & HM : Coastal E&M : Gammon	(Subject to re-start of works)	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.	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.
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, Slovania & CG Electric system, Hungary. Barrage: Excavation completed & 71255 out of 71670 cum concreting completed. HRT: Excavation completed and concreting 5050cum out of 14115.56cum completed. Surge shaft: 49m excavation out of 88m completed. Pressure Shaft: 97% Civil works LHPS & 48% 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	- 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> 2022-23 (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. – 12,034.5 MW