

Bindhyabashini Hydropower Development Co. Ltd.
New Baneshwor-10, Kathmandu Nepal
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RUDI-B SMALL HYDRO POWER PROJECT (6.6 MW)

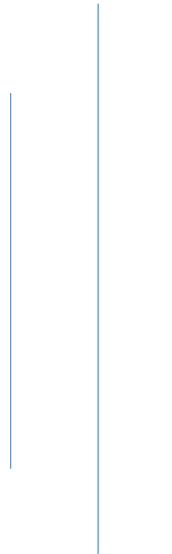


MONTHLY PROGRESS REPORT

UP to January 2020

Bindhyabashini Hydropower Development Co. Ltd.
New Baneshwor-10, Kathmandu Nepal
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RUDI-B SMALL HYDRO POWER PROJECT (6.6 MW)



PROGRESS REPORT

January, 2020

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1. PROJECT OVERVIEW AND INSTITUTIONAL ARRANGEMENT

Rudi Khola-B Small Hydropower Project (6.6MW) is located in Kolasothar village municipality-5 Singdibesi Lamjung district, Western Development Region of Nepal. Rudikhola-B Small Hydropower Project was identified as potentially viable project by BHDC during Desk Study Report prepared in June 15 2010. After identifying the project, BHDC applied for survey license in Department of Electricity Development, Ministry of Water Resources, and Government of Nepal. BHDC obtained the survey license for developing the project. The project comprises of one major headwork's at Togo and three minor headwork's with collection scheme from Ligur, Karbu and Kaiyu Khola, Gravel trap and desander is common Headrace Pipe including Kholsi crossings (3033m), Surge tank, Penstock including Surge Tank connecting (650m) and Powerhouse contains two units followed by Tailrace canal to Rudi A Head pond. The generated power is evacuated through 33 kV transmission line of about 8.8km length to Mungri Substation.

I. CONSTRUCTION MANAGEMENT

- The Employer/ Client: Bindhyabashini Hydropower Development Company Ltd. (BHDC)
- The Consultant: Clean Energy Consultant (CEC) Pvt.Ltd.
- The Contractor(Civil): High Himalaya Hydro Construction Pvt. Ltd.(3HC)
- The Contractor (Hydro Mechanical): North Hydro & Engineering Pvt. Ltd.(NH)
- The Contractor (Electro Mechanical): TPSC India Pvt. Ltd.
- Bank Consultant: Sanima Hydro and Engineering Pvt.Ltd.

2. KEY DATES

Table 1 Key Dates

SN	Development and Progress Details	Key Dates	Remarks
1	Bindhyabashini Hydropower Company was established	Dec 18,2000	
2	License awarded to Bindhyabashini Hydropower Dev. Company.	Jan 10,2013	
3	PPA Signed with NEA	Aug-5,2014	
4	Civil Contract agreement date	Dec 29,2016	
5	HM contract agreement date	Mar 16,2017	
6	EM Contract agreement date	Jun 2,2016	
7	Work Completion (Target Date)	January 2020	

3. Manpower Management at site

Table 2 Employer's Manpower at site

Description	Number
Dy. Project Manager	1
Sr. Civil Engineer	2

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Civil Engineer	1
Mechanical Engineer	1
EM Engineer	1
Surveyor	1
Site Supervisor	4
Electrical sub engineer	3
Sub overseer	4
Powerhouse helper	4
Heavy Equipment Operator	2
Driver	2
Operator Helper	2
Security Guard	2
Cook	2
Total	32

I. Civil

Table 3 Civil Manpower

Description	Number
Project Manager	1
Civil Engineer	2

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Contract and Billing	1
Site Supervisor	2
Overseer	1
Surveyor	3
Surveyor Helper	3
Foreman	1
Accountant	1
Mechanic Helper	1
Electrician	2
Equipment operator/helper	3
Store keeper/Helper/cook	3
Crusher operator	2
Lab technician	1
Sub-contractor Skilled worker	35
Sub-Contractor Semi Skilled worker	45
Sub-Contractor Unskilled worker	60
Total	167

II. Hydro mechanical

Table 4 Hydro Mechanical Manpower

Description	Number
Project Manager	1
Site Engineer	1
Supervisor	2
Electrician	1
Roller Operator	1
Welder	20
Tractor Driver	1
Skill Helper	5
Cutter	5
Helper	30
Rigger	2
Fitter	15
Painter	4
Pipe shifting Labor	15
Cook	1
Security	1
Total	105

4. CIVIL PROGRESS DETAILS

A. Tago Headwork's

Table 5: A1. Diversion weir Intake and under sluice

A1	<u>Diversion Weir, Intake and Under Sluice</u>			Original Contract Amount			Up to Previous Month Progress	Month January	Cumulative Progress		% Complete	
	S.N.	Item No.	Description of Items	Unit	Quantity	Rate (Nrs)	Amount (NRs.)	Quantity	Quantity	Quantity	Amount (NRS)	
1			River Diversion Works	LS	1.00	779,120.00	779,120.00	1.00	0	1	779,120.00	100.00
2	1.2		Excavation of Earth soil (Excluding Hard Rock) by equipment	m ³	1219.62	175.00	213,433.50	-	0		-	
3	1.5		Earth Work in excavation in hard rock without blasting including disposal upto 10m lead and 1.5m lift	m ³	152.45	1,314.77	200,436.69	1,073.67	0	1073.665	1,411,622.53	
4	1.7		Earth Work in excavation in shallow water foundation including disposal upto 10m lead and 1.5m lift	m ³	152.45	224.00	34,148.80	3,679.36	0	3679.358	824,176.19	
5	1.8		E/W in Backfilling by Ordinary Soil in 15cm thick layer and compaction with sprinkling of water, haulage distance 10m.	m ³	152.45	194.78	29,694.21	213.74	0	213.736	41,631.50	
6	2.1		Dry Stone Soling	m ³	146.90	1,168.68	171,679.09	131.84	0	131.841	154,079.94	
7	2.2		Laying 15cmm thick stone aggregates inclusive haulage up to 10 m and lift up to 1.5m	m ²	420.66	2,434.75	1,024,201.94	14.00	0	14.495	35,291.70	

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8	2.3	Boulder Riprap (upto 1.0m Dia. Boulder)	m ³	140.22	1,753.02	245,808.46	607.22	0	607.216	1,064,461.79	
9	2.5	20 cm thk. Hard Stone Lining 1:3 Cement mortar	m ²	163.36	4,869.50	795,481.52	-	0		-	
10	3.1	Providing and Placing M10/40 Cement Concrete machine mixed for the foundation, footing etc, including upto 30m lead.	m ³	59.68	8,463.19	505,083.18	80.04	0	80.053	677,503.75	
11	3.2	Providing and Placing M15/40 Cement Concrete machine mixed for the foundation, footing etc, including upto 30m lead.	m ³	214.34	10,430.47	2,235,666.94	484.20	0	484.201	5,050,444.00	
12	3.3	Providing and Placing M20/40 Cement Concrete machine mixed Concrete etc, including upto 30m lead.	m ³	627.84	11,706.28	7,349,670.84	12.43	0	12.429	145,497.35	
13	3.5	Providing and Placing M25/20 Cement Concrete machine mixed Concrete etc, including upto 30m lead.	m ³	4.64	13,634.60	63,264.54	385.88	0	385.882	5,261,346.72	
14	3.8	Providing, fixing and removing formworks for Concreting Works.	m ²	1201.76	633.04	760,762.15	1,432.25	0	1432.245	906,668.37	
15	3.10	Reinforcement works for RCC Concrete.	MT	67.75	105,181.20	7,126,026.30	60.88	0	60.88	6,403,431.46	
16	4.3	Providing and Laying Random Rubble Masonry in 1:4 Cement and sand mortar, lead 30m marooned 0-5m	m ³	262.96	5,755.75	1,513,532.02	601.26	0	601.26	3,460,702.25	
17	4.4	Providing and Laying Random Rubble Masonry in 1:6 Cement and sand mortar, lead 30m &0-5m	m ³	97.26	5,190.89	504,865.96	76.94	0	76.939	399,381.89	

18	4.5	Gabion Works	m ³	385.5	3,846.51	1,482,829.61	-	0		-	
19	New	30 cm thk. Hard Stone Lining 1:3 Cement mortar	m ²		12,600.00		261.70	0	261.699	3,297,407.40	
20	New	Filter material collection and laying	m ³		3,000.00	0	61.73	0	61.728	185,184.00	
21	New	Weep hole placing 63mm dia HDEP pipe	m		350	0	61.91	0	61.909	21,668.15	
22	New	16mm Dowel bar deilling, grouting complete	m		1300	0	96.00	0	96	124,800.00	
23	New	Non-shrinkage chemical emcrete type A supplying for hard stone lining and second stage concreting	kg		90.00	0	11400.00	0	11400	1,026,000.00	
24	New	300mm pvc water stopper	rm		1753.02	0	46.71	0	46.713	81,888.82	
25	New	25mm thick expansion board	m2		2142.58	0	10.13	0	10.134	21,712.91	
26	New	Providing and laying Geotextile	m2		121.74	0	101.28	0	101.28	12,329.83	
					Total	25035705.74				31,386,350.55	125.37

A2 Table 6: Tagokhola Gravel Trap and Spillway

			Original Contract Amount				Up to Previous Month Progress	Month January	Cumulative Progress		% Complete
S.N.	Item No.	Description of Items	Unit	Quantity	Rate (Nrs)	Amount (NRs.)	Quantity	Quantity	Quantity	Amount (NRS)	
1	1.2	Excavation of Earth soil (Excluding Hard Rock) by equipment	m ³	335.79	175.30	58,863.99	-	0	0	-	
2	1.5	Earth Work in excavation in hard rock without blasting including disposal upto 10m lead and 1.5m lift	m ³	41.97	1,314.77	55,180.90	66.83	0	66.83	87,866.08	

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3	1.7	Earth Work in excavation in shallow water foundation including disposal upto 10m lead and 1.5m lift	m ³	41.97	224.00	9,401.28	-	0	0	-	
4	1.8	E/W in Backfilling by Ordinary Soil in 15cm thick layer and compaction with sprinkling of water, haulage distance 10m.	m ³	41.97	194.78	8,174.92	-	0	0	-	
5	2.1	Dry Stone Soling	m ³	39.23	1,168.68	45,847.32	53.30	0	53.302	62,292.98	
6	3.1	Providing and Placing M10/40 Cement Concrete machine mixed for the foundation, footing etc, including upto 30m lead.	m ³	41.76	8,463.19	353,422.81	34.76	0	34.757	294,155.09	
7	3.2	Providing and Placing M20/40 Cement Concrete machine mixed for the wall etc, including upto 30m lead.	m ³	221.16	11,706.28	2,588,960.88	-	0	0	-	
8	3.8	Providing, fixing and removing formworks for Concreting Works.	m ²	892.08	633.04	564,722.32	834.68	0	834.683	528,387.73	
9	3.10	Reinforcement works for RCC Concrete.	MT	19.90	105,181.20	2,093,105.88	27.82	0	27.823	2,926,456.53	
10	9.1	300 mm PVC Water Stopper	rm	30.00	1,753.00	52,590.06	23.89	0	23.891	41,880.97	
11	9.2	25mm thick Expansion Joint Board (Saltax Board)	m ²	4.50	2,142.58	9,641.61	8.92	0	8.923	19,118.24	
12	9.3	Joint Sealant	m	4.50	1,947.80	8,765.10	-	0	0	-	
13	New	Providing and Placing M25/40 Cement Concrete machine mixed for the wall etc, including upto 30m lead.	m ³		13,634.60	285.50	254.92	0	254.915	3,475,664.06	

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14	New	Providing and Laying Random Rubble Masonry in 1:4 Cement and sand mortar, lead 30m masoned 0-5m	m ³	87.02	5,755.75	89.50	89.46	0	89.455	514,880.62	
15	New	3mm thick neat cement punning	m ²	65.60	300.00		28.31	0	28.308	8,492.40	
16	New	20 cm thk. Hard Stone Lining 1:3 Cement mortar	m ²		4,869.50		165.81	0	165.812	807,421.53	
17	New	12 mm thick plaster in 1:4 mortar	m ²		365.21		28.31	0	28.308	10,338.36	
					Total	5,849,052.07				8,776,954.60	150.06
		Total For TagoKhola Headworks			Total	30,884,757.81				40,163,305.14	130.04

Key works:

1. Complete Tagokhola Headwork's weir intake and under sluice.
2. Complete Tagokhola Gravel Trap and spillway
3. Togo H/W weir, intake has 100% completed.

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Fig: Togo Khola (major HW) after Diversion of River into Headwork's Intake

B: Kaiyu Khola Headwork's

Table 7:

				Original Contract Amount			Up to Previous Month Progress	Month January	Cumulative Progress		% Complete
S.N.	Item No.	Description of Items	Unit	Quantity	Rate (Nrs)	Amount (NRs.)	Quantity	Quantity	Quantity	Amount (NRS)	
1		River Diversion Works	LS	1.00	779,120.00	779,120.00	-	1	0.5	389,560.00	
2	1.2	Excavation of Earth soil (Excluding Hard Rock) by equipment	m ³	749.17	175.30	131,329.50	-	531	530.5	92,996.65	
3	1.5	Earth Work in excavation in hard rock without blasting including disposal upto 10m lead and 1.5m lift	m ³	93.65	1,314.77	123,128.21	-	111	110.5	145,282.09	
4	1.7	Earth Work in excavation in shallow water foundation including disposal upto 10m lead and 1.5m lift	m ³	93.65	224.00	20,977.60	-	0	-	-	
5	1.8	E/W in Backfilling by Ordinary Soil in 15cm thick layer and compaction with sprinkling of water, haulage distance 10m.	m ³	121.96	194.78	23,755.37	-	0	-	-	
6	2.1	Dry Stone Soling	m ³	89.21	1,168.68	104,257.94	-	38	37.5	43,825.50	
7	2.2	Laying 15cmm thick stone aggregates inclusive haulage up to 10 m and lift up to 1.5m	m ²	138.09	2,434.75	336,214.63	-	0	-	-	

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8	2.3	Boulder Riprap (upto 1.0m Dia. Boulder)	m ³	66.03	1,753.02	115,751.91	-	0	-	
9	2.5	20 cm thk. Hard Stone Lining 1:3 Cement mortar	m ²	38.08	4,869.50	185,430.56	-	0	-	
10	3.1	Providing and Placing M10/40 Cement Concrete machine mixed for the foundation, footing etc, including upto 30m lead.	m ³	44.61	8,463.10	377,538.89	-	17	17.366	146,970.19
11	3.2	Providing and Placing M15/40 Cement Concrete machine mixed for the wall etc, including upto 30m lead.	m ³	63.42	10,430.47	661,500.41	-	0	-	
12	3.3	Providing and Placing M20/40 Cement Concrete machine mixed for the wall etc, including upto 30m lead.	m ³	592.52	11,706.28	6,936,205.03	-	0	-	
13	New	Providing and Placing M25/40 Cement Concrete machine mixed for the wall etc, including upto 30m lead.	m ³		13,151.55	-	-	131	130.5	1,716,277.28
14	3.8	Providing, fixing and removing formworks for Concreting Works.	m ²	1235.37	633.04	782,038.62	-	450	450.2	284,994.61
15	3.10	Reinforcement works for RCC Concrete.	MT	52.47	105,181.20	5,518,857.56	-	31	30.5	3,208,026.60
16	4.40	Providing and Laying Random Rubble Masonry in 1:6 Cement and sand mortar, lead 30m masoned 0-5m	m ³		5,190.89	-	-	150	150.3	780,190.77
17	New	Rammed earth	m ³		3,000.00	-	-	0	-	

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18	New	Geotextile	m ²		121.74	-	-	0	-	
19	New	30cm thk. Clay blanket	m ³		5,000.00	-	-	0	-	
21	New	30mmPVC water stopper	RM		1,753.02	-	-	0	-	
	New	Joint Sealant	m		1,947.80	-	-	0	-	
		Kaiyu Khola Total				16,096,106.23	-		6,808,123.68	42.30

Key Words

1. Kaiyu khola Diversion work has completed
2. Under sluice base work is completed
3. Gravel trap and bell Mouth work is on Progress
4. Kaiyu Alignment works is completed



Fig: Ongoing Works at Kaiyu Headworks

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C: Karbu Khola Headwork's (Table 8)

C1	<u>Diversion Weir, Intake and Under Sluice</u>										
	-	-	Original Contract Amount				Up to Previous Month Progress	Month January	Cumulative Progress		% Complete
S.N.	Item No.	Description of Items	Unit	Quantity	Rate (Nrs)	Amount (NRs.)	Quantity	Quantity	Quantity	Amount (NRS)	
1		River Diversion Works	LS	1.00	779,120.00	779,120.00	1.00	0.00	1	779,120.00	
2	1.2	Excavation of Earth soil (Excluding Hard Rock) by equipment	m ³	389.28	175.30	68,240.78	-	0.00	0	-	
3	1.5	Earth Work in excavation in hard rock without blasting including disposal upto 10m lead and 1.5m lift	m ³	111.22	1,314.77	146,228.72	563.45	95.87	659.315	866,847.58	
4	1.7	Earth Work in excavation in shallow water foundation including disposal upto 10m lead and 1.5m lift	m ³	55.61	224.00	12,456.64	-	5397.52	5397.516	1,209,043.58	
5	1.8	E/W in Backfilling by Ordinary Soil in 15cm thick layer and compaction with sprinkling of water, haulage distance 10m.	m ³	55.61	194.78	10,831.72	-	56.38	56.376	10,980.92	
6	2.1	Dry Stone Soling	m ³	27.58	1,168.68	32,232.19	27.92	28.12	56.0376	65,490.02	
7	2.3	Boulder Riprap (upto 1.2m Dia. Boulder)	m ³	36.00	1,753.02	63,108.72	450.00	500.36	950.361	1,666,001.84	
8	2.5	20 cm thick. Hard Stone Lining 1:3 Cement mortar	m ²	11.28	4,869.50	54,927.96	-	48.21	48.21	234,758.60	

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9	3.1	Providing and Placing M10/40 Cement Concrete machine mixed for the foundation, footing etc, including upto 30m lead.	m ³	13.79	8,463.19	116,707.39	20.46	15.93	36.396	308,026.26	
10	3.2	Providing and Placing M15/40 Cement Concrete machine mixed for the foundation, footing etc, including upto 30m lead.	m ³	86.58	10,430.47	903,070.09	-	88.70	88.704	925,224.41	
11	3.3	Providing and Placing M20/40 Cement Concrete machine mixed for the wall etc, including upto 30m lead.	m ³	159.43	11,706.28	1,866,332.22	187.50	81.93	269.43	3,154,023.02	
12	New	Providing and Placing M25/40 Cement Concrete machine mixed for the wall etc, including upto 30m lead.	m ³		11,706.28	-	65.40	57.48	122.875	1,438,409.16	
13	3.8	Providing, fixing and removing formworks for Concreting Works.	m ²	431.49	633.04	273,150.43	563.50	464.05	1027.55	650,480.25	
14	3.10	Reinforcement works for RCC Concrete.	MT	19.68	105,181.20	2,069,966.02	25.65	6.98	32.63	3,432,062.56	
15	4.3	Providing and Laying Random Rubble Masonry in 1:4 Cement and sand mortar, lead 30m marooned 0-5m	m ³	77.51	5,755.75	446,128.18	150.30	63.37	213.67	1,229,831.10	
16	4.4	Providing and Laying Random Rubble Masonry in 1:6 Cement and sand mortar, lead 30m marooned 0-5m	m ³	8.4	5,190.13	43,597.09	-	0.00	0	-	
17	New	Red Clay	m ³		5000	0	58.95	0.00	58.948	294,740.00	

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18	New	Geotextile for filter material, all complete	m ²		121.74	0.00	327.24	0.00	327.241	39,838.32	
19	New	Filter materials	m ³		3000	0	0.00	0.00		-	
20	New	300mm PVC water stopper	RM		1753.02		27.50	5.10	32.6	57,148.45	

C2: Gravel trap and spillway

				Original Contract Amount			Up to Previous Month Progress	Month January	Cumulative Progress		% Complete
S. N.	Item No.	Description of Items	Unit	Quantity	Rate (Nrs)	Amount (NRs.)	Quantity	Quantity	Quantity	Amount (NRS)	
1	1.2	Excavation of Earth soil (Excluding Hard Rock) by equipment	m ³	181.31	175.30	31,783.64	-	0.00	0	-	
2	New	Earth Work in excavation in boulder mix soil including disposal upto 10m lead and 1.5m lift	m ³		224.00	-	1,842.07	0.00	1842.07	412,624.13	
3	1.5	Earth Work in excavation in hard rock without blasting including disposal upto 10m lead and 1.5m lift	m ³	51.80	1,314.77	68,105.09	187.50	35.82	223.322	293,617.07	
4	1.8	E/W in Backfilling by Ordinary Soil in 15cm thick layer and compaction with sprinkling of water, haulage distance 10m.	m ³	25.90	194.78	5,044.80	-	0.00	0	-	
5	2.1	Dry Stone Soling	m ³	13.15	1,168.68	15,368.14	10.50	11.55	22.05	25,769.39	
6	New	20 cm thk. Hard Stone Lining 1:3 Cement mortar	m ³		4,869.50	-		0.00	0	-	

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7	3.1	Providing and Placing M10/40 Cement Concrete machine mixed for the foundation, footing etc, including upto 30m lead.	m ³	6.57	8,463.19	55,603.16	7.80	3.83	11.628	98,409.97	
8	3.3	Providing and Placing M20/40 Cement Concrete machine mixed for the wall etc, including upto 30m lead.	m ³	88.53	11,706.28	1,036,356.97	-	0.00	0	-	
9	New	Providing and Placing M25/40 Cement Concrete machine mixed for the wall etc, including upto 30m lead.	m ³		13,151.55	-	120.50	22.95	143.449	1,886,576.70	
10	3.8	Providing, fixing and removing formworks for Concreting Works.	m ²	317.89	633.04	201,237.09	350.20	154.88	505.075	319,732.68	
11	3.10	Reinforcement works for RCC Concrete.	MT	8.88	105,181.20	934,009.06	12.50	3.46	15.96	1,678,691.95	
12	New	Random Rubble Masonry in 1:4 Cement and sand mortar	m ³		5,755.75	-	25.00	3.65	28.652	164,913.75	
13	9.1	300 mm PVC Water Stopper	rm	10.00	1,753.02	17,530.20	12.30	0.00	12.3	21,562.15	
14	9.2	25mm thick Expansion Joint Board (Saltax Board)	m ²	3.00	2,142.58	6,427.74	3.34	0.00	3.34	7,156.22	
15	9.3	Joint Sealant	m	3.00	1,947.80	5,843.40	-	22.60	22.6	44,020.28	
					Total	2,377,309.28				4,953,074.28	208.35

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C3 Collection Pipe form Karbu to Tago											
				Original Contract Amount			Up to Previous Month Progress	Month January	Cumulative Progress		% Complete
S.N.	Item No.	Description of Items	Unit	Quantity	Rate (Nrs)	Amount (NRs.)	Quantity	Quantity	Quantity	Amount (NRS)	
1	1.2	Excavation of Earth soil (Excluding Hard Rock) by equipment	m ³	1162.80	175.30	203,838.84	-	0.00	0	-	
2	1.5	Earth Work in excavation in hard rock without blasting including disposal upto 10m lead and 1.5m lift	m ³	290.70	1,314.77	382,203.64	300.00	52.10	352.1	462,930.52	
3	1.8	E/W in Backfilling by Ordinary Soil in 15cm thick layer and compaction with sprinkling of water, haulage distance 10m.	m ³	145.35	224.00	32,558.40	-	1709.44	1709.443	382,915.23	
4	2.1	Dry Stone Soling	m ³	21.07	1,168.69	24,624.30	5.00	11.99	16.99	19,856.04	
5	3.1	Providing and Placing M10/40 Cement Concrete machine mixed for the foundation, footing etc, including upto 30m lead.	m ³	10.53	8,463.19	89,117.39	5.00	3.49	8.49	71,852.48	
6	3.2	Providing and Placing M15/40 Cement Concrete machine mixed for the foundation, footing etc, including upto 30m lead.	m ³	3.99	10,430.47	41,617.58	25.00	62.24	87.238	909,933.34	
7	3.6	Providing and Placing M15/40 Cement Concrete machine mixed for the	m ³	86.15	7,294.51	628,422.04	-	0.00	0	-	

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		foundation, footing etc, including upto 30m lead.									
8	3.8	Providing, fixing and removing formworks for Concreting Works.	m ²	193.10	633.04	122,240.02	54.20	140.75	194.95	123,411.15	
9	3.10	Reinforcement works for RCC Concrete.	MT	3.45	105,181.20	362,875.14	0.67	3.08	3.75	394,429.50	
10	New	Earth Work in excavation in boulder mix soil including disposal upto 10m lead and 1.5m lift	m ³		224.00	-	1,820.50	229.70	2050.2	459,244.80	
11	New	Boulder Rip Rab up to 1m Dia.	m ³		1,753.02	-	-	55.20	55.2	96,766.70	
						1,887,497.34				2,921,339.77	154.77
		Total for Karbu Khola				11,150,904.78				24,236,440.12	217.35

Key Works:

1. Overall structure of Diversion weir, under sluice completed.
2. Flushing canal completed
3. Overall progress 100%.
4. Karbu Alignment is 100% completed.

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Photo: Karbu Khola Diversion Works

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Photo: Karbu collection Dropped in the Tago Headwork's

Table 9

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E: Desander and Spillway

S.N.	Item No.	Description of Items	Unit	Original Contract Amount			Up to Previous Month Progress	Month January	Cumulative Progress		% Complete
				Quantity	Rate (Nrs)	Amount (NRs.)	Quantity	Quantity	Quantity	Amount (NRS)	
1	1.2	Excavation of Earth soil (Excluding Hard Rock) by equipment	m ³	3,774.60	175.30	661,687.38	-	0.00	0	-	
2	New	Earth Work in excavation in boulder mix soil including disposal upto 10m lead and 1.5m lift	m ³		224.00	-	2,452.39	0.00	2452.39	549,335.36	
3	1.5	Earth Work in excavation in hard rock without blasting including disposal upto 10m lead and 1.5m lift	m ³	843.70	1,314.77	1,109,271.45		2452.50	2452.5	3,224,473.43	
4	1.8	E/W in Backfilling by Ordinary Soil in 15cm thick layer and compaction with sprinkling of water, haulage distance 10m.	m ³	421.85	194.78	82,167.94	407.71	0.01	407.72	79,415.70	
5	2.1	Dry Stone Soling	m ³	167.43	1,168.68	195,672.09	120.55	0.00	120.55	140,884.37	
6	2.3	Boulder Riprap (upto 1.2m Dia. Boulder)	m ³	30.00	1,753.02	52,590.60	-	0.00	0	-	
7	3.1	Providing and Placing M10/40 Cement Concrete machine mixed for the foundation, footing etc, including upto 30m lead.	m ³	83.72	8,463.19	708,538.27	80.88	0.00	80.881	684,511.27	

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8	3.2	Providing and Placing M15/40 Cement Concrete machine mixed for the wall etc, including upto 30m lead.	m ³	188.41	10,430.47	1,965,204.85	141.17	0.00	141.174	1,472,511.17	
9	3.3	Providing and Placing M20/40 Cement Concrete machine mixed Concrete etc, including upto 30m lead.	m ³	827.77	11,706.28	9,690,107.40	-	0.00	0	-	
10	New	Providing and Placing M25/40 Cement Concrete machine mixed for the wall etc, including upto 30m lead.	m ³	-	13,634.60	-	643.30	0.00	643.304	8,771,192.72	
11	3.8	Providing, fixing and removing formworks for Concreting Works.	m ²	1,222.18	633.04	773,688.83	294.42	0.00	294.417	186,377.74	
12	3.9	Providing, fixing and removing formworks for Concreting Works.up to 9 m	m ²	1,684.11	827.82	1,394,139.94	1,365.51	0.00	1365.51	1,130,396.49	
13	3.10	Reinforcement works for RCC Concrete.	MT	81.29	105,181.20	8,550,179.75	65.98	0.00	65.98	6,939,855.58	
14	4.3	Providing and Laying Random Rubble Masonry in 1:4 Cement and sand mortar, lead 30m masoned 0-5m	m ³	72.75	5,755.75	418,730.81	648.69	-0.01	648.68	3,733,639.91	
15	4.4	Providing and Laying Random Rubble Masonry in 1:6 Cement and sand mortar, lead 30m masoned 0-5m	m ³	209.50	5,190.89	1,087,491.46	-	0.00		-	
16	New	Gabion Works	m3		3,805.96	-	-	0.00		-	
17	9.1	300 mm PVC Water Stopper	rm	200.00	1,753.02	350,604.00	80.86	0.00	80.86	141,749.20	

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18	9.2	25mm thick Expansion Joint Board (Saltax Board)	m ²	60.00	2,142.58	128,554.80	50.90	0.00	50.899	109,055.18	
19	9.3	Joint Sealant	m ²	60.00	1,947.80	116,868.00	130.00	0.00	130	253,214.00	
20	New	Weep hole placing 63mm dia HDEP pipe	m		350.00	-	55.10	0.00	55.1	19,285.00	
21	New	12 mm thick cement plaster with mortar 1:4	m ²		365.21	-	52.00	75.95	127.95	46,728.62	
22	New	3mm thick cement punning	m ²		300.00	-	52.00	75.95	127.95	38,385.00	
		Desander			Total	27,285,497.56				27,521,010.73	100.86

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Key Works:

1. Desander after Filling the Water

Headrace Alignment

Table 10:

F1 Alignment E/W Excavation, Backfilling and Structure											
				Original Contract Amount			Up to Previous Month Progress	Month January	Cumulative Progress		% Complete
S.N.	Item No.	Description of Items	Unit	Quantity	Rate (Nrs)	Amount (NRs.)	Quantity	Quantity	Quantity	Amount (NRS)	
1	1.1	Site Clearance	m ²	27500.00	24.35	669,625.00	74,655.50	-0.50	74655.00	1,817,849.25	
2	1.2	Excavation of Earth soil (Excluding Hard Rock) by equipment	m ³	37533.00	175.30	6,579,534.90	28,507.00	1238.50	29745.50	5,214,386.15	
3	New	Earth Work in excavation in boulder mix soil including disposal upto 10m lead and 1.5m lift	m ³		224.00	-	10,125.00	560.20	10685.20	2,393,484.80	
4	1.5	Earth Work in excavation in hard rock without blasting including disposal upto 10m lead and 1.5m lift	m ³	9383.25	1,314.77	12,336,815.60	24,587.00	721.90	25308.90	33,275,382.45	
5	1.8	E/W in Backfilling by Ordinary Soil in 15cm thick layer and compaction with sprinkling of water, haulage distance 10m.	m ³	14074.88	194.78	2,741,505.13	6,750.00	3800.00	10550.00	2,054,929.00	

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6	4.3	Providing and Laying Random Rubble Masonry in 1:4 Cement and sand mortar, lead 30m masoned 0-5m	m ³	226.68	6,047.92	1,370,942.51	79.23	0.00	79.23	479,182.75	
7	4.5	Gabion Works	m ³	206.25	3,846.51	793,342.69	124.90	0.00	124.90	480,429.10	
8	9.5	Providing and Laying and fixing of Geo-textile (Filter Fabrics), lead 30m	m ²	206.25	121.74	25,108.88	-	124.90	124.90		
						Total	24,516,874.70			45,715,643.50	186.47
F2	Anchor Block										
	-	-		Original Contract Amount			Up to Previous Month Progress	Month January	Cumulative Progress		% Complete
S.N.	Item No.	Description of Items	Unit	Quantity	Rate (Nrs)	Amount (NRs.)	Quantity	Quantity	Quantity	Amount (NRS)	
1	1.3	Earthwork Excavation in Common Material including disposal upto 10m lead and 1.5m lift	m ³	526.69	175.30	92,328.76	5,531.50	-0.10	5531.41	969,655.30	
2	1.4	Earth Work in excavation in boulder mix soil including disposal upto 10m lead and 1.5m lift	m ³	421.35	224.00	94,382.40	4,749.70	0.00	4749.70	1,063,932.80	

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3	1.5	Earth Work in excavation in hard rock without blasting including disposal upto 10m lead and 1.5m lift	m ³	105.34	1,314.77	138,497.87	6,436.50	0.00	6436.50	8,462,517.11	
4	2.1	Dry Stone Soling	m ³	175.56	1,266.07	222,271.25	213.98	81.52	295.50	374,123.69	
5	3.1	Providing and Placing M10/40 Cement Concrete machine mixed for the foundation, footing etc, including upto 30m lead.	m ³	87.76	8,950.14	785,464.29	115.60	30.83	146.43	1,310,542.15	
6	3.6	Providing and Placing Plum M15/40 Cement Concrete machine mixed for the foundation, footing etc, including upto 30m lead.	m ³	1215.25	10,917.42	13,267,394.66	1,850.60	548.69	2399.29	26,194,056.63	
7	3.8	Providing, fixing and removing formworks for Concreting Works.	m ²	1570.51	730.42	1,147,131.91	2,456.60	918.60	3375.20	2,465,313.58	
8	3.10	Reinforcement works for RCC Concrete.	MT	48.61	106,155.10	5,160,199.41	70.50	16.00	86.50	9,182,416.15	

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9	New	Random stone Masonry 1:4	m ³		6,047.91		11.16	0.00	11.16	67,488.63	
10	New	Providing and Placing Plum M20/40 Cement Concrete machine mixed for the foundation, footing etc, including upto 30m lead.	m ³		11,706.28		30.50	49.63	80.13	938,047.63	
					Total	20,907,670.54		%		51,028,093.66	244.06
F3	Simple Support										
	-	-		Original Contract Amount			Up to Previous Month Progress	Month January	Cumulative Progress		% Complete
S.N.	Item No.	Description of Items	Unit	Quantity	Rate (Nrs)	Amount (NRs.)	Quantity	Quantity	Quantity	Amount (NRS)	
1	1.3	Earthwork Excavation in Common Material including disposal upto 10m lead and 1.5m lift	m ³	603.59	175.30	105,808.45	-	0.00	0.00	-	
2	2.1	Dry Stone Soling	m ³	116.50	1,266.07	147,497.16	97.50	-0.02	97.48	123,416.50	
3	3.1	Providing and Placing M10/40 Cement Concrete machine mixed	m ³	58.12	8,950.14	520,182.14	40.50	11.55	52.05	465,836.89	

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		for the foundation, footing etc, including upto 30m lead.									
4	3.2	Providing and Placing M15/40 Cement Concrete machine mixed for the foundation, footing etc, including upto 30m lead.	m ³	79.77	10,917.42	870,882.59	101.50	13.00	114.50	1,250,044.59	
5	3.8	Providing, fixing and removing formworks for Concreting Works.	m ²	786.90	730.43	574,775.37	501.20	99.15	600.35	438,513.65	
6	3.10	Reinforcement works for RCC Concrete.	MT	7.89	106,155.10	837,563.74	5.85	0.83	6.68	709,116.07	
7	New	Random stone Masonry 1:4	m ³		6,047.91		40.50	14.50	55.00	332,635.05	
					Total	3,056,709.44				3,319,562.75	108.60
F4	Saddle Support										
	-	-		Original Contract Amount			Up to Previous Month Progress	Month January	Cumulative Progress		% Complete
S.N.	Item No.	Description of Items	Unit	Quantity	Rate (Nrs)	Amount (NRs.)	Quantity	Quantity	Quantity	Amount (NRS)	
1	1.3	Earthwork Excavation in	m ³	262.35	175.30	45,989.96	-	0.00	0.00	-	

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		Common Material including disposal upto 10m lead and 1.5m lift									
2	2.1	Dry Stone Soling	m ³	85.14	1,266.07	107,793.20	10.50	7.20	17.70	22,409.44	
3	3.1	Providing and Placing M10/40 Cement Concrete machine mixed for the foundation, footing etc, including upto 30m lead.	m ³	42.57	8,950.14	381,007.46	5.78	3.07	8.85	79,208.74	
4	3.2	Providing and Placing M15/40 Cement Concrete machine mixed for the foundation, footing etc, including upto 30m lead.	m ³	36.40	10,917.42	397,394.09	10.50	7.43	17.93	195,694.75	
5	3.8	Providing, fixing and removing formworks for Concreting Works.	m ²	339.24	730.43	247,791.07	61.20	16.30	77.50	56,608.33	
6	3.10	Reinforcement works for RCC Concrete.	MT	1.80	106,155.10	191,079.18	0.75	0.25	1.00	106,155.10	

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7	4.3	Providing and Laying Random Rubble Masonry in 1:4 Cement and sand mortar, lead 30m masoned 0-5m	m ³	235.13	6,047.92	1,422,047.43	35.50	10.10	45.60	275,785.15	
						Total	2,793,102.39			735,861.51	26.35
F5	Saddle Support (RCC)										
	-	-		Original Contract Amount			Up to Previous Month Progress	Month January	Cumulative Progress		% Complete
S.N.	Item No.	Description of Items	Unit	Quantity	Rate (Nrs)	Amount (NRs.)	Quantity	Quantity	Quantity	Amount (NRS)	
1	1.3	Earthwork Excavation in Common Material including disposal upto 10m lead and 1.5m lift	m ³	82.56	175.30	14,472.77	-	0.00	0.00	-	
2	2.1	Dry Stone Soling	m ³	8.71	1,266.07	11,027.47	-	0.00	0.00	-	
3	3.1	Providing and Placing M10/40 Cement Concrete machine mixed for the foundation, footing etc,	m ³	4.36	8,950.14	39,022.61	4.89	0.00	4.89	43,766.18	

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		including upto 30m lead.									
4	3.2	Providing and Placing M15/40 Cement Concrete machine mixed for the foundation, footing etc, including upto 30m lead.	m ³	67.06	10,917.42	732,122.19	66.60	0.00	66.60	727,100.17	
5	3.8	Providing, fixing and removing formworks for Concreting Works.	m ²	299.02	730.43	218,413.18	255.95	0.00	255.95	186,953.56	
6	3.10	Reinforcement works for RCC Concrete.	MT	4.02	106,155.10	426,743.50	6.45	0.00	6.45	684,700.40	
	New	Providing and Laying Random Rubble Masonry in 1:4 Cement and sand mortar, lead 30m masoned 0-5m	m ³	0.00	6,047.92	-	80.10	0.00	80.10	484,438.39	
						1,441,801.71				147.52	
			Total of Headrace Alignment			52,716,158.78				2,126,958.70	195.25
										102,926,120.12	

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Key Works;

1. Alignment excavation has completed.
2. Anchor Block works is 100% Completed
3. Saddle and simple support work is fully completed
4. Backfilling works has 95 % completed.

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Fig: Syphon area headrace alignment after Completion

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Fig: Headrace alignment Stiffeners work at 26-27 to protect the pipe

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G: Surge TANK**G2: Upper Surge Tank with Anchor Block****Table 11**

S.N.	Item No.	Description of Items	Unit	Original Contract Amount			Up to Previous Month Progress	Month January	Cumulative Progress		% Complete
				Quantity	Rate (Nrs)	Amount (NRs.)	Quantity	Quantity	Quantity	Amount (NRS)	
1	1.1	Site Clearance	m ²	375.00	24.35	9,131.25	2,410.71	0.04	2410.75	58,701.76	
2	1.2	Excavation of Earth soil (Excluding Hard Rock) by equipment	m ³	2091.68	175.30	366,671.50	-	0.00	0	-	
3	New	Earth Work in excavation in boulder mix soil including disposal upto 10m lead and 1.5m lift	m ³		224.00	-	3,695.95	-0.85	3695.1	827,702.40	
4	1.5	Earth Work in excavation in hard rock without blasting including disposal upto 10m lead and 1.5m lift	m ³	232.41	1,314.77	305,565.70	389.90	0.10	390	512,760.30	
5	1.8	E/W in Backfilling by Ordinary Soil in 15cm thick layer and compaction with sprinkling of water, haulage distance 10m.	m ³	232.41	209.39	48,664.33	-	0.00	0	-	

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	2.1	Dry Stone Soling	m ³	23.76	1,314.77	31,238.94	20.05	41.93	61.98	81,489.44	
6	3.1	Providing and Placing M10/40 Cement Concrete machine mixed for the foundation, footing etc, including upto 30m lead.	m ³	12.04	8,950.14	107,759.69	10.50	20.49	30.991	277,373.79	
	3.2	Providing and Placing M15/40 Cement Concrete machine mixed for the foundation, footing etc, including upto 30m lead.	m ³	74.93	10,917.42	818,042.28	137.50	100.22	237.717	2,595,256.33	
	3.4	Providing and Placing M20/40 Cement Concrete machine mixed for the foundation, footing etc, including upto 30m lead.	m ³	69.06	12,193.23	842,064.46	-	101.03	101.034	1,231,930.80	
	3.5	Providing and Placing M25/40 Cement Concrete machine mixed for the foundation, footing etc, including upto 30m lead.	m ³	148.82	13,634.60	2,029,101.17	-	0.00	-	-	
	3.8	Providing, fixing and removing formworks for Concreting Works.	m ²	172.72	827.82	142,981.07	125.50	200.00	325.5	269,455.41	

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	3.9	Providing, fixing and removing formworks for Concreting Works for wall	m ²	877.00	827.82	725,998.14	-	0.00	0	-	
	3.10	Reinforcement works for RCC Concrete.	MT	22.23	106,155.10	2,359,827.87	5.50	2.00	7.5	796,163.25	
7	4.3	Providing and Laying Random Rubble Masonry in 1:4 Cement and sand mortar, lead 30m masoned 0-5m	m ³	60.85	6,242.70	379,868.30	50.50	110.62	161.121	1,005,830.07	
8	5.1	12mm thick cement plaster in 1:4 mortar	m ³	231.19	340.87	78,805.74	-	0.00		-	
		Providing fixing and removing scaffolding		L.s		292,170.00	-	0.00		-	
9	9.5	BioEngineering	m ²	L.s	1.00	500,000.00	-	0.00		-	
										-	
		Total Surge tank				9,037,890.43				7,656,663.55	84.72

Key works:

- 1. Two anchor blocks (ST-1 &ST-2) out of 3 has been completed.**
- 2. Surge pipe erection work is completed**
- 3. Surge pipe support work is completed**
- 4. ST-03 bend is 50% completed**

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**Fig: ST-2 Surge
View after
completion of works**



**Fig:
ST-03 Progress**



H: PENSTOCK ALIGNMENT

Table 12:

H1. Excavation and Backfilling works				Original Contract Amount			Up to Previous Month Progress	Month January	Cumulative Progress		% Complete
S.N.	Item No.	Description of Items	Unit	Quantity	Rate (Nrs)	Amount (NRs.)	Quantity	Quantity	Quantity	Amount (NRS)	
1	1.1	Site Clearance	m ²	3605.00	24.35	87,781.75	8,528.62	-0.12	8528.5	207,668.98	
2	1.2	Excavation of Earth soil (Excluding Hard Rock) by equipment	m ³	1416.64	175.30	248,336.99	6,106.90	-0.02	6106.88	1,070,536.06	
3	1.5	Earth Work in excavation in hard rock without blasting including disposal upto 10m lead and 1.5m lift	m ³	354.16	1,655.63	586,357.92	1,862.50	0.30	1862.8	3,084,107.56	
4	1.8	E/W in Backfilling by Ordinary Soil in 15cm thick layer and compaction with sprinkling of water, haulage distance 10m.	m ³	177.08	209.39	37,078.78	560.50	218.35	778.85	163,083.40	
5	4.3	Providing and Laying Random Rubble Masonry in 1:4 Cement and sand mortar, lead 30m masoned 0-5m	m ³	50.99	6,242.70	318,315.27	41.50	10.00	51.499	321,492.81	
6	4.5	Gabion Works	m ³	46.35	3,944.30	182,818.31	-	0.00	0	-	
7	9.5	Providing and Laying and fixing of Geo-textile (Filter Fabrics),	m ²	46.35	126.61	5,868.37	-	0.00	0	-	

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11	New	Earth Work in excavation in Boulder Mixed soil including disposal upto 10m lead and 1.5m lift	m ³		224.00	-	860.50	99.60	960.1	215,062.40	
					Total		1,466,557.40			5,061,951.21	345.16
H2	Anchor Block	-		Original Contract Amount			Up to Previous Month Progress	Month January	Cumulative Progress		% Complete
S.N.	Item No.	Description of Items	Unit	Quantity	Rate (Nrs)	Amount (NRs.)	Quantity	Quantity	Quantity	Amount (NRS)	
1	1.3	Earthwork Excavation in Common Material including disposal upto 10m lead and 1.5m lift	m ³	209.79	175.30	36,776.19	557.10	0.00	557.1	97,659.63	
2	1.4	Earth Work in excavation in boulder mix soil including disposal upto 10m lead and 1.5m lift	m ³	125.87	224.00	28,194.88	1,150.50	651.70	1802.2	403,692.80	
3	1.5	Earth Work in excavation in hard rock without blasting including disposal upto 10m lead and 1.5m lift	m ³	83.92	1,655.63	138,940.47	1,013.85	-0.02	1013.83	1,678,527.36	
4	2.1	Dry Stone Soling	m ³	34.97	1,314.77	45,977.51	50.50	4.98	55.48	72,943.44	
5	3.1	Providing and Placing M10/40 Cement Concrete machine mixed for the foundation, footing etc, including upto 30m lead.	m ³	17.48	8,950.14	156,448.45	25.60	4.75	30.345	271,592.00	

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6	3.6	Providing and Placing Plum M15/40 Cement Concrete machine mixed for the foundation, footing etc, including upto 30m lead.	m ³	605.55	10,917.42	6,611,043.68	350.50	150.80	501.3	5,472,902.65	
7	New	Providing and Placing Plum M20/40 Cement Concrete machine mixed for the foundation, footing etc, including upto 30m lead.	m3		12,193.23	-	704.60	-0.10	704.5	8,590,130.54	
8	3.8	Providing, fixing and removing formworks for Concreting Works.	m ²	714.28	827.82	591,295.27	948.50	298.40	1246.9	1,032,208.76	
9	3.10	Reinforcement works for RCC Concrete.	MT	24.22	106,155.10	2,571,076.52	20.50	2.60	23.1	2,452,182.81	
10	New	Providing Admixture	ltr		161.00		500.00	0.00	500	80,500.00	
11	New	Providing and Laying Random Rubble Masonry in 1:4 Cement and sand mortar, lead 30m masoned 0-5m	m ³		10,001.55	-	45.88	0.00	45.88	458,871.11	
12	New	20mm Dowel bar	m		1,500.00	-	21.60	0.00	21.6	32,400.00	
					Total	10,179,752.96				20,643,611.09	202.79

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H3	-	Saddle Support for Penstock	Unit	Original Contract Amount			Up to Previous Month Progress	Month January	Cumulative Progress		% Complete
				Quantity	Rate (Nrs)	Amount (NRs.)	Quantity	Quantity	Quantity	Amount (NRS)	
1	1.3	Earthwork Excavation in Common Material including disposal upto 10m lead and 1.5m lift	m ³	187.68	175.30	32,900.30	-	0.00	0	-	
3	2.1	Dry Stone Soling	m ³	41.49	1,314.77	54,549.81	54.30	0.00	54.3	71,392.01	
4	3.1	Providing and Placing M10/40 Cement Concrete machine mixed for the foundation, footing etc, including upto 30m lead.	m ³	20.75	8,950.14	185,715.41	29.31	0.00	29.31	262,328.60	
5	3.2	Providing and Placing M15/40 Cement Concrete machine mixed for the foundation, footing etc,	m ³	38.46	10,917.42	419,883.97	70.10	0.00	70.1	765,311.14	
6	3.8	Providing, fixing and removing formworks for Concreting Works.	m ²	143.61	827.82	118,883.23	280.10	0.00	280.1	231,872.38	
7	3.10	Reinforcement works for RCC Concrete.	MT	1.38	106,155.10	146,494.04	3.30	0.00	3.3	350,311.83	
8	4.3	Providing and Laying Random Rubble Masonry in 1:4 Cement and sand mortar, lead 30m masoned 0-5m	m ³		158.98	6,242.70	992,464.45	12.53	0.00	12.53	78,221.03
	New	Stone Masonry wall 1:4 for Penstock slope protection	m ³		10,000.00	-	363.90	0.00	363.9	3,639,000.00	
								%			276.72

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Photo: Penstock Final View from RB-02 to RB-03

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I. Powerhouse**Table 13:Powerhouse civil progress**

	-	-		Original Contract Amount			Up to Previous Month Progress	Month January	Cumulative Progress		% Complete
S.N.	Item No.	Description of Items	Unit	Quantity	Rate (Nrs)	Amount (NRs.)	Quantity	Quantity	Quantity	Amount (NRS)	
1	1.1	Site Clearance	m ²	2800.00	24.35	68,180.00	2,472.60	0.00	2472.60	60,207.81	
2	1.2	Excavation of Earth soil (Excluding Hard Rock) by equipment	m ³	7063.13	175.30	1,238,166.69	18,852.50	0.00	18852.50	3,304,843.25	
3	1.5	Earth Work in excavation in hard rock without blasting including disposal upto 10m	m ³	784.79	1,314.77	1,031,818.35	3,622.10	0.00	3622.10	4,762,228.42	
4	1.8	E/W in Backfilling by Ordinary Soil in 15cm thick layer	m ³	784.79	194.78	152,861.40	1,546.30	0.00	1546.30	301,188.31	
5	2.1	Dry Stone Soling	m ³	85.87	1,168.68	100,354.55	70.56	10.11	80.67	94,277.42	
6	3.1	Providing and Placing M10/40 Cement Concrete,	m ³	47.62	8,463.19	403,017.11	85.60	10.90	96.50	816,697.84	
7	3.2	Providing and Placing M15/40 Cement Concrete,	m ³	100.72	10,430.47	1,050,556.94	32.85	0.00	32.85	342,640.94	

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8	3.3	Providing and Placing M20/40 Cement Concrete,	m ³	313.67	11,803.67	3,702,457.17	65.20	2.40	67.60	797,928.09	
9	3.4	Providing and Placing M20/20 Cement Concrete,	m ³	154.17	11,803.67	1,819,771.80	-	0.00		-	
10	3.5	Providing and Placing M25/20 Cement Concrete,	m ³	16.45	13,634.60	224,289.17	913.97	0.00	913.97	12,461,615.36	
11	3.7	25mm Cement Concrete Flooring in 1:1.5:3 cement sand mortar with 20mm gauge stone	m ²	173.28	779.12	135,005.91	-	0.00		-	
12	3.8	Providing, fixing and removing formworks for Concreting Works.	m ²	963.97	730.43	704,113.34	1,702.50	95.72	1798.22	1,313,470.91	
13	3.9	Providing, fixing and removing formworks for Beam and Column	m ²	782.98	730.43	571,912.08	1,609.47	0.00	1609.47	1,175,604.44	
14	3.10	Reinforcement works for RCC Concrete.	MT	56.86	106,155.10	6,035,978.99	121.50	0.80	122.30	12,982,768.73	
15	4.3	Random Rubble Masonry in 1:4 Cement and sand mortar	m ³	153.94	5,755.75	886,040.16	120.50	8.82	129.32	744,339.35	
16	4.4	Random Rubble Masonry in 1:6 Cement and sand mortar	m ³	149.88	5,190.89	778,010.59	398.07	0.00	398.07	2,066,347.96	

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17	4.6	Brick Masonry work in 1:4 cement and sand mortar	m ³	135.06	17,530.20	2,367,628.81	-	0.00		-	
18	5.1	12mm thick Cement Plaster in 1:4 cement and sand mortar	m ²	877.47	365.21	320,460.82	450.01	0.09	450.10	164,381.02	
19	New	3mm thick neat cement punning	m ²	513.20	300.00	153,960.00	413.70	0.00	413.70	124,110.00	
20	6.1	window chaukhat	m ³	3.32	267,822.50	889,170.70	-	0.00		-	
21	6.2	1.5" salwood for Door Shutter	m ²	6.72	6,817.30	45,812.26	-	0.00		-	
22	6.3	Glass Shutter for Window	m ²	76.68	2,921.70	224,035.96	-	0.00		-	
23	6.4	False Ceiling with 3 mm plywood	m ²	95.20	2,921.70		-	0.00		-	
24	7.1	Two Coat Water Proof Cement Painting on plastered surface.	m ²	877.47	340.87	299,103.20	550.50	2320.00	2870.50	978,467.34	
25	7.2	One Coat Enamel Painting over One Coat Priming.	m ²	82.35	340.87		-	0.00		-	
26	8.1	CGI Sheet Roofing works with supply of Materials complete.	m ²	436.02	1,753.02	764,351.78	-	0.00		-	
27	9.4	Barbed Wire Fencing	rm	300.00	1,947.80	584,340.00	-	0.00		-	
28	9.7	Flat iron grill in windows with red oxide paint	Kg	1720.44	146.09	251,339.08	-	0.00		-	
29		Powerhouse Entrance Gate	L.S.	1	97390.05	97,390.00	-	1.00	1.00	97,390.05	
30		Providing, fixing		1	973900			0.00	1.00		

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		and removing Scaffolding	L.S.			973,900.00	1.00			973,900.00	
31		Sanitary, Plumbing and Electrical Works, 3% of Total	L.S	1		973,900.00	-	0.00		-	
32	New	Heritage colored sheet for Roofing	m2		2000.31		439.10	0.00	439.10	878,336.12	
33	New	AAC Block work in 1:4 cement and sand mortar	m ³		21,000.00	-	116.70	0.00	116.70	2,450,700.00	
34	New	Providing Admixture	ltr		161	-	1,107.80	0.00	1107.80	178,355.80	
35	New	Alumunium Door 90 mm Normal	m2		8339.8	-	41.65	0.00	41.65	347,352.67	
36	New	Alumunium Sliding window Normal 78mm	m2		7130	-	28.10	0.00	28.10	200,353.00	
37	New	Alumunium Fixed window Normal 78mm	m2		6440	-	68.10	0.00	68.10	438,564.00	
38	New	1:4 Stone Masonry for Slope Protection	m3		7500	-	250.50	117.35	367.85	2,758,875.00	
39	New	Gabion Works	m ³		3,944.30	-	-	144.00	144.00	567,979.20	
	New	Geotextile works	m2		126.61	-	-	85.00	85.00	10,761.85	
		Total of Powerhouse				26,847,926.84				51,393,684.88	191.43

Key works:

1. Power house civil works has completed.
2. Powerhouse overall progress 100 %.
3. Backside slope Protection work is on Progress.

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Photo: Powerhouse Back Side Slope Protection Works

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Table 14

J: Tailrace and River Protection works

S.N.	Item No.	Description of Items	Unit	Original Contract Amount			Up to Previous Month Progress	Month January	Cumulative Progress		% Complete
				Quantity	Rate (Nrs)	Amount (NRs.)	Quantity	Quantity	Quantity	Amount (NRS)	
1	1.2	Excavation of Earth soil (Excluding Hard Rock) by equipment	m ³	645.19	175.30	113,101.81	-	0.00		-	
2	1.5	Earth Work in excavation in hard rock without blasting including disposal upto 10m lead and 1.5m lift	m ³	71.69	1,314.77	94,255.86	-	0.00		-	
3	1.8	E/W in Backfilling by Ordinary Soil in 15cm thick layer and compaction with sprinkling of water, haulage distance 10m.	m ³	71.39	194.78	13,905.34	-	0.00		-	
4	2.1	Dry Stone Soling	m ³	102.50	1,168.68	119,789.70	10.50	0.00	10.50	12,271.14	
5	3.1	Providing and Placing M10/40 Cement Concrete	m ³	96.25	8,463.19	814,582.04	4.62	0.00	4.62	39,099.94	
6	3.2	Providing and Placing M15/40 Cement Concrete machine mixed for	m ³	61.00	10,430.47	636,258.67	-	0.00		-	

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7	3.8	Providing, fixing and removing formworks for Concreting Works.	m ²	407.50	633.04	257,963.80	247.70	0.00	247.70	156,804.01	
8	3.10	Reinforcement works for RCC Concrete.	MT	4.88	105,181.20	513,284.26	7.69	0.00	7.69	808,317.52	
9	4.3	Random Rubble Masonry in 1:4 Cement and sand mortar	m ³	693.00	5,755.75	3,988,734.75	30.10	0.40	30.50	175,550.38	
10	9.1	300 mm PVC Water Stopper	rm	20.00	1,753.02	35,060.40	15.65	0.00	15.65	27,431.26	
11	9.2	25mm thick Expansion Joint Board (Saltax Board)	m ²	6.00	2,142.58	12,855.48	-	0.00		-	
12	9.3	Joint Sealant	m ²	6.00	1,947.80	11,686.80	-	0.00		-	
13	9.5	Providing and Laying and fixing of Geo-textile (m ²	450.00	121.74	54,783.00		0.00		-	
14	New	Providing and Placing M25/40 Cement Concrete,	m ³		13,634.60	-	57.80	0.00	57.80	788,079.88	
					Total	6,666,261.91				2,007,554.12	30.12

Key works:

Tailrace work has 100% completed.

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Table 15

Switchyard at Powerhouse and its Interconnection

S.N.	Item No.	Description of Items	Unit	Original Contract Amount			Up to Previous Month Progress	Month January	Cumulative Progress		% Complete
				Quantity	Rate (Nrs)	Amount (NRs.)	Quantity	Quantity	Quantity	Amount (NRS)	
1	1.3	Earthwork Excavation in Common Material	m ³	273.65	175.30	47,970.85	479.85	0	480.00	84,144.00	
2	1.8	E/W in Backfilling by Ordinary Soil	m ³	27.36	194.78	5,329.18	-	0	326.00	63,498.28	
	2.1	Dry Stone Soling	m ³	30.09	1,168.68	35,165.58	44.20	0	44.11	51,544.63	
3	2.2	Laying 15cmm thick stone aggregates inclusive haulage up to 10 m and lift up to 1.5m	m ²	554.76	2,434.75	1,350,701.91	86.35	0	86.32	210,165.19	
4	3.1	Providing and Placing M10/40 Cement Concrete including upto 30m lead.	m ³	15.05	8,463.19	127,371.01	29.75	0	29.73	251,627.57	
5	3.2	Providing and Placing M15/40 Cement concrete	m ³	64.27	10,430.47	670,366.31	121.15	0	121.15	1,263,630.58	
6	3.8	Providing, fixing and removing formworks for	m ²	24.30	633.04	15,382.87	532.20	0	532.20	336,903.89	

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		Concreting Works.									
7	3.10	Reinforcement works for RCC Concrete.	MT	18.20	105,181.20	1,914,297.84	5.15	0	5.15	541,683.18	
7	4.3	Random Rubble Masonry in 1:4 Cement and sand mortar	m ³	74.32	5,755.75	427,767.34	106.00	0	106.00	610,109.50	
8		Chainling Fencing	LS		4,869.50		-	0	65.55	319,195.73	
		Total Of Switchyard				4,594,352.89				3,732,502.53	81.24

Key works:

1. Switchyard at powerhouse and its interconnection at Remote Sub Station is 100% completed

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Photo: Rudi B Connection from Bus Bar at Remote sub station

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S.N.	Description of Works (Civil)	Progress %	Remarks
1	Togo Weir,Undersluice,intake,Gravel trap works.	100%	
2	Togo Khola Desander	100%	
3	Karbukholaweir,Undersluice,intake works	100%	
4	Karbukhola Gravel trap	100%	
5	Headrace alignment excavation works	100%	
6	Headrace alignment anchor block concreting.	100%	
7	Penstock alignment excavation works	100%	
8	Penstock alignment anchor block concreting	100%	
9	Surge pipe excavation works.	100%	
10	Surge pipe anchor block concreting works.	90%	
11	Powerhouse and tailrace works	100%	
12	switchyard and interconnection	100%	
	Average Civil work completion	99.5%	

5. Hydro mechanical Works

Hydro Mechanical Work Progress Details

<i>TAGO HEADWORKS (Major Headworks)</i>						
S/N	HM WORK	Total Nos	Fabrication Status (Nos)	Erection Status (Nos)	% Completion	REMARK
1	Steel lining				100%	steel lining work all completed
2	Gate Frame	10 set	10 set	10 set	100%	Installation all completed
3	Gate Leaf	10	10	10	100%	Installation all completed
4	Trashrack	2	2	1	100%	Installation all completed
7	Bellmouth	1	1	1	100%	erection completed
8	Tailrace Stoplog Gate Frame	2	2	2	100%	Installation all completed
9	Tailrace Stoplog Gate leaf	2	2	1	80%	Fabrication all completed, Installation remaining
Total Progress					99%	
<i>KARBU HEADWORKS/ COLLECTION PIPE</i>						
S/N	HM WORK	Total Nos	Fabrication Status (Nos)	Erection Status (Nos)	% Completion	REMARK
1	Steel lining				100%	steel lining work all completed
2	Gate Frame	4	4	4	100%	Installation completed
3	Gate Leaf	4	4	2	100%	
4	Trash rack	1	1	1	100%	Completed
5	Bell mouth	1	1	1	100%	Completed
6	Bends	6	5	5	100%	completed
7	Pipe Length (m)	278.8	268.8	268.8	100%	
9	Reducer	2	2	2	100%	Erection all completed
Total Progress					100%	

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Headrace Alignment

<i>S/N</i>	<i>HM WORK</i>	<i>Total Nos</i>	<i>Fabrication Status (Nos)</i>	<i>Erection Status (Nos)</i>	<i>% Completion</i>	<i>REMARK</i>
1	Stiffner Ring		850	850	100	100% completed
3	Pipe Length (m)	3057.9	3057.9	30257.9	100	100% completed
4	NDT works (DPT)				100	
6	Bends	61	61	61	100	
			Total Progress %		100%	

SURGE

<i>S/N</i>	<i>HM WORK</i>	<i>Total Nos</i>	<i>Fabrication Status (Nos)</i>	<i>Erection Status (Nos)</i>	<i>% Completion</i>	<i>REMARK</i>
1	Pipe Length (m)	107.97	107.97	107.97	100	completed

PENSTOCK

<i>S/N</i>	<i>HM WORK</i>	<i>Total Nos</i>	<i>Fabrication Status (Nos)</i>	<i>Erection Status (Nos)</i>	<i>% Completion</i>	<i>REMARK</i>
1	Pipe Length (m)	550.07	550.07	550.07	100	Completed
2	Bend	8	8	8	100	completed
3	NDT Works (DPT & UT)		100%	100%	100%	completed

progress % 100%

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6. Transmission Line and Electromechanical Works.

a. Transmission line work progress detail:

33KV transmission line from Rudi-B powerhouse to Mugri substation had already completed. Total length is about 9 Km long, out of this 5 Km line from Rudi B to Rudi A PH is 33KV single and remaining 3.8 Km is through double circuit.

So total progress on transmission line is 100 %.

Table 6 Summary of work progress in sequence

Electromechanical Work Progress				
Updated date: 2020/02/05				
1	Power house:			
S.N.	Sequence of Work	Status	Progress in %	Remarks
A	Manufacturing both unit of Generator and related equipment and it's factory test	Completed	100%	
B	Manufacturing both unit of turbine, runner and all water ways system and related equipment, theirs factory assembly and test	Completed	100%	
C	Electrical equipment(Control panel and related material) fabrication and factory test	Completed	100%	
D	Manufacturing of switchyard structure, equipment and other materials and their factory test	Completed	100%	
E	Manufacturing of Remote substation structure, equipment and other materials and their factory test	Completed	100%	
F	Transportation of all EM equipment and material unto site	Completed	100%	
G	Installation of EOT Crane & Testing/Commissioning	Completed	100%	
H1	Unit-1 Turbine and generator assembly		100%	
1	Setting of Bench Mark	Completed	100%	
2	Installation pedestal and support preparation with cotter.	Completed	100%	
3	Preparation work for erection of Housing	Completed	100%	
4	Installation of Housing	Completed	100%	
5	Centering of Housing	Completed	100%	
6	Use turnbuckle during Centering work	Completed	100%	
7	Assembly of Front Cover with housing	Completed	100%	
8	Centering of Front cover with housing	Completed	100%	
9	Fixing of pipe jack around Housing and Front cover.	Completed	100%	
10	Installation of Lower Nozzle Pipe.	Completed	100%	
11	Fixing of Runner centering device	Completed	100%	
12	Centering of Lower Nozzle Pipe.	Completed	100%	
13	Installation of Branch Pipe pedestal	Completed	100%	
14	Lowering of Branch Pipe and centering	Completed	100%	

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15	Assembly of Lower nozzle pipe.	Completed	100%	
16	Centering of Upper nozzle pipe.	Completed	100%	
17	Assembly of Upper Nozzle pipe – 2	Completed	100%	
18	Measurement of Distance Piece.	Completed	100%	
19	Assembly Deflector mechanism	Completed	100%	
20	Gap measurement of Deflector mechanism with servomotor.	Completed	100%	
21	Civil Concreting around Housing and branch pipe base.	Completed	100%	
22	Shifting of MIV from service bay to MIV hall.	Completed	100%	
23	Base setting of MIV	Completed	100%	
24	Temporary lowering of MIV.	Completed	100%	
25	Civil concreting of MIV base.	Completed	100%	
26	Generator sole plate setting	Completed	100%	
27	Grouting of Generator Sole Plate.	Completed	100%	
28	Measurement of distance piece	Completed	100%	
29	Machining of Distance piece.	Completed	100%	
30	Assembly of Upstream pipe (extra length cutting and welding)	Completed	100%	
31	Assembly of bypass pipe line and extra length cutting and welding	Completed	100%	
32	Dismantling of MIV, Branch Pipe, Lower Nozzle Pipe and Upper Nozzle Pipe.	Completed	100%	
33	Assembly of Needle servomotor with Lower and Upper nozzle.	Completed	100%	
34	Assembly of Lower Nozzle pipe with Distance piece.	Completed	100%	
35	Assembly of Centering device.	Completed	100%	
36	Assembly of Branch Pipe with distance piece.	Completed	100%	
37	Assembly of Upper nozzle pipe with distance piece.	Completed	100%	
38	Assembly of upper nozzle pipe - 2 with distance piece.	Completed	100%	
39	Nozzle gap check with centering device.	Completed	100%	
40	Deflector mechanism assembly with servomotor.	Completed	100%	
41	Measurement of Needle and deflector opening and closing.	Completed	100%	
42	MIV Final Installation along with servo motor	Completed	100%	
43	Expansion joint installation	Completed	100%	
44	Assembly of Generator	Completed	100%	
45	Coupling of runner with Generator shaft.	Completed	100%	
46	Combine alignment	Completed	100%	
47	Assembly of Drainage box, top cover and Shaft seal.	Completed	100%	
48	Drilling and dwelling .	Completed	100%	
H2	Unit # 2 Turbine and generator assembly		100%	
1	Setting of Bench Mark	Completed	100%	
2	Installation pedestal and support preparation with cotter.	Completed	100%	
3	Preparation work for erection of Housing	Completed	100%	
4	Installation of Housing	Completed	100%	

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5	Centering of Housing	Completed	100%	
6	Use turnbuckle during Centering work	Completed	100%	
7	Assembly of Front Cover with housing	Completed	100%	
8	Centering of Front cover with housing	Completed	100%	
9	Fixing of pipe jack around Housing and Front cover.	Completed	100%	
10	Installation of Lower Nozzle Pipe.	Completed	100%	
11	Fixing of Runner centering device	Completed	100%	
12	Centering of Lower Nozzle Pipe.	Completed	100%	
13	Installation of Branch Pipe pedestal	Completed	100%	
14	Lowering of Branch Pipe and centering	Completed	100%	
15	Assembly of Lower nozzle pipe.	Completed	100%	
16	Centering of Upper nozzle pipe.	Completed	100%	
17	Assembly of Upper Nozzle pipe – 2	Completed	100%	
18	Measurement of Distance Piece.	Completed	100%	
19	Assembly Deflector mechanism	Completed	100%	
20	Gap measurement of Deflector mechanism with servomotor.	Completed	100%	
21	Civil Concreting around Housing and branch pipe base.	Completed	100%	
22	Shifting of MIV from service bay to MIV hall.	Completed	100%	
23	Base setting of MIV	Completed	100%	
24	Temporary lowering of MIV.	Completed	100%	
25	Civil concreting of MIV base.	Completed	100%	
26	Generator sole plate setting	Completed	100%	
27	Grouting of Generator Sole Plate.	Completed	100%	
28	Measurement of distance piece	Completed	100%	
29	Machining of Distance piece.	Completed	100%	
30	Assembly of Upstream pipe (extra length cutting and welding)	Completed	100%	
31	Assembly of by pass pipe line and extra length cutting and welding	Completed	100%	
32	Dismantling of MIV, Branch Pipe, Lower Nozzle Pipe and Upper Nozzle Pipe.	Completed	100%	
33	Assembly of Needle servomotor with Lower and Upper nozzle.	Completed	100%	
34	Assembly of Lower Nozzle pipe with Distance piece.	Completed	100%	
35	Assembly of Centering device.	Completed	100%	
36	Assembly of Branch Pipe with distance piece.	Completed	100%	
37	Assembly of Upper nozzle pipe with distance piece.	Completed	100%	
38	Assembly of upper nozzle pipe - 2 with distance piece.	Completed	100%	
39	Nozzle gap check with centering device.	Completed	100%	
40	Deflector mechanism assembly with servomotor.	Completed	100%	
41	Measurement of Needle and deflector opening and closing.	Completed	100%	
42	Expansion joint installation	Completed	100%	
43	MIV Final Installation along with servo motor	Completed	100%	

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44	Assembly of Generator	Completed	100%	
45	Coupling of runner with Generator shaft.	Completed	100%	
46	Combine alignment	Completed	100%	
47	Assembly of Drainage box and Shaft seal.	Completed	100%	
48	Drilling and dwelling.	Completed	100%	
I	Mechanical BOP		100%	
1	Drainage & De Watering System	Completed	100%	
2	Assembly of Pressure Oil System& Piping Unit-1&2	Completed	100%	
3	Other Piping	Completed	100%	
J	Electrical BOP		100%	
1	33KV Outdoor Switchyard equipment	Completed	100%	
2	33KV Remote Substation	Completed	100%	
3	Main Transformer Installation	Completed	100%	
4	Station Auxiliary Transformer	Completed	100%	
5	DC Battery Bank and DC System	Completed	100%	
6	DG System	Completed	100%	
7	Installation of Control Panels	Completed	100%	
8	Cable tray laying	Completed	100%	
9	Cable Laying	Completed	100%	
10	Cable dressing and termination	Completed	100%	
11	Testing of Common System	Completed	100%	
K	Pre Commissioning& Commissioning	Completed	100%	
1	Transformer testing and oil filtration	Completed	100%	
2	Pre commissioning of Unit-1	Completed	100%	
2	Commissioning of Unit-1	Completed	0%	
3	Pre commissioning Check of Unit-2	Completed	100%	
4	Commissioning of Unit-2	Completed	0%	

Total % progress 100.0%

Key Works:

1. All erection and installation activities inside powerhouse and switchyard at powerhouse is completed.
2. Pre commissioning works is 100% Completed.
3. Commissioning is 100% Completed

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Gallery:

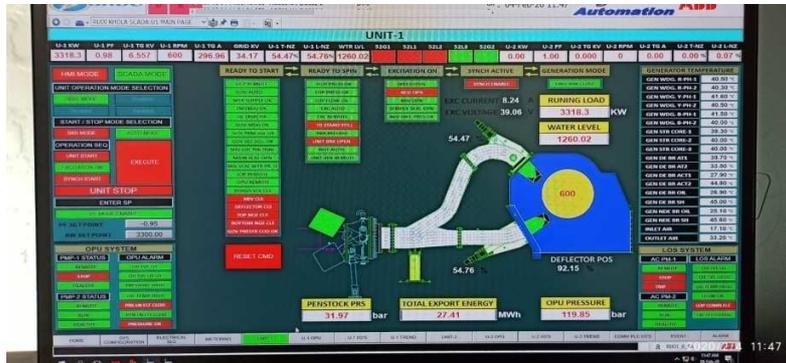


Figure 1 Scarda Monitor to control the Operation



Figure 2 Unit-1 after completion of installation



Figure 4 GCP and excitation panel



Figure 3 Commissioning works