PEOPLES ENERGY LIMITED

KHIMTI-2 HYDROELECTRIC PROJECT

(48.8 MW)

PROGRESS REPORT

May 2023

PEOPLES ENERGY LTD.

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Progress Report

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Contact Details:

Head Office:

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Kathmandu Metropolitan City,
Kathmandu, State No. 3, Nepal.

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Site Office:

Bhimsenthan,
Gokulganga Rural Municipality,
Ramechhap, State No. 3, Nepal.

Table of Contents

LIST OF ABBREVIATIONS

PEL	Peoples Energy Ltd.
PHCL	Peoples Hydro Co-operative Ltd.
PPA	Power Purchase Agreement
NEA	Nepal Electricity Authority
K2HEP	Khimti-2 Hydroelectric Project
HEP	Hydroelectric Project
MW	Mega Watts
RCOD	Required Commercial Operation Date
HCE	Hydro-Consult Engineering Limited
CWTW	Chongqing Water Turbine Works Co. Ltd.
IEE	Initial Environmental Examination
EPC-F	Engineering Procurement Construction-Financing
TOR	Term of Reference
LC	Letter of Credit
FC	Financial Closure
DFO	District Forest Office
KV	Kilo Volt
PH	Power House
MoU	Memorandum of Understanding
BDR	Basic Design Report

CHAPTER – 1 PREAMBLE

1.1 Introduction

Peoples Energy Limited is developing Khimti-2 Hydroelectric Project (48.8 MW) located in the border of Ramechhap and Dolakha districts of Janakpur zone. Khimti River is a tributary of Tamakoshi a major branch of Saptakoshi river system of Nepal. The Khimti River originates at EL. 4500m and converges with the Tamakoshi River at EL. 600m. The total drainage area of the Khimti River is 492.4km^2, and the drainage area in front of the intake and powerhouse is 295.34km^2 and 351.4km^{2}respectively. The river section from the dam site to powerhouse is about 7km long. The ridges on both banks are at EL. 2,300~3,000m; the riverbed at the dam is at EL. 1,627m; the riverbed at the powerhouse tailrace is at EL. 1,278m. The run-of-river development scheme is selected.

The headworks site is located at Rasnalu/Gokulganga Rural Municipality of Ramechhap and Jiri Municipality of Dolakha district whereas the powerhouse site is located at Simlep and Hawa/Tamakoshi Rural Municipality of Dolakha District. The headwork is located about 150m downstream the confluence of Jiri Khola and Khimti Khola with headrace alignment passing along the right bank of Khimti Khola and powerhouse site also located on the right bank.

Geographical Coordinates of Khimti-2 Hydroelectric Project

Coordinates	From	To
Latitude	27°33'07"N	27°35'13"N
Longitude	86°09'26"E	86°14'18"E

1.2 Objective of this report

Objective of this report is;

- To update the status of various development activities completed and being undertaken in implementation of 48.8 MW Khimti-2 Hydroelectric Project.
- To update the status of schedules and planning
- To bring forward the difficulties & issues being faced / envisaged at site to the notice of concern authorities and stakeholders

1.3 Key Dates and Milestones

S/N	Activity	Date	Remarks
1.	Survey License Issuance (27.2 MW)	2069 Kartik 15	Closed
2.	Feasibility Study Completed (48.8 MW)	2070 Falgun	Closed
3.	Updated Survey License Issuance (48.8 MW)	2070 Chaitra 7	Closed
4.	IEE ToR Approval	2071 Bhadra 28	Closed
5.	Grid Connection Agreement	2071 Kartik 13	Closed
6.	IEE Report Approval	2072 Kartik 22	Closed
7.	Power Purchase Agreement (PPA) with NEA	2072 Ashwin 14	Closed
8.	Application for Generation License	2072 Kartik 11	Closed
9.	Public Notice of Generation License	2073 Kartik 9-10	Closed
10.	Generation License Issuance	2073 Paush 25	Closed
11.	Generation License Transfer from PHCL to PEL	2073 Falgun 5	Closed
12.	Land Ownership Transfer from PHCL to PEL	2074 Jestha 11	Closed
13.	IEE Report Approval transfer from PHCL to PEL	2074 Ashoj 2	Closed
14.	PPA Transfer from Peoples Hydro to Peoples Energy Limited	2074 Ashad 22	Closed
15.	Financial Closure	2074 Ashoj 8	Closed
16.	Updated IEE Report	2076 Poush	Closed
17.	Civil work contract signing with High Himalaya Hydro Construction Pvt. Ltd.	2077 Mangsir 15	Closed
18.	Design Consultant Contract signing with Hydro Tunneling and Research Pvt. Ltd.	2077 Mangsir 25	Closed
19.	Civil Contractor mobilization to site	2077 Poush 14	Closed
20.	Civil Construction work	2077 Chaitra	Ongoing
21.	Shifting of Grid Connection for Power Evacuation (loop-in, loop-out with 132 kV line near PH site)	2078 Bhadra	Approved
22.	Forest and Government Land Approval/Cabinet approval	2078 Jestha	Approved
23.	Explosive License	2078 Ashard	Approved
24.	Required Commercial Operation Date (RCOD)	31st Ashadh, 2080 BS	Fixed Date

1.4 Bank Consortium

Financial closure (FC) for the development of Khimti-2 HEP was concluded with the bank consortium of erstwhile ten Class 'A' Commercial Banks of Nepal with Sanima Bank as the lead bank, on September 24th, 2017.

1.5 The Employer

Peoples Energy Ltd. (PEL), previously Peoples Hydro Co-operative Ltd. (PHCL), is the developer of Khimti-2 Hydroelectric Project, situated at Dolakha and Ramechhap districts. PEL obtained the survey license for the project on 2012/10/31. After, feasibility level investigation was concluded and the Power Purchase Agreement (PPA) was signed with Nepal Electricity Authority (NEA) on 2015/10/01. Generation license was obtained for the project on 2017/01/06 by PHCL, and later transferred to PEL on 2017//02/16.

1.6 Local Contractors for Site Infrastructures

PEL has engaged several local contractors for the construction of site infrastructures as pre-construction activities such as access track opening and slope protection works for Access Road, drainage and stone soling for improvement of Access Road, Project Camp, Boundary wall construction and construction of three motorable bailey bridges etc. To execute the mentioned works PEL has engaged some of the local contractors employed at site are:

- **For Bridge Construction (Three bridges over Khimti Khola)**
  - S.K. Construction (for Dharapani Bridge at Dam Site)- Bridge I
  - Likhu Nirman Sewa (for Hodampa Bridge for HRT adit site)- Bridge II
  - Him Sagarmatha Construction (for Palate Bridge/PH site)-Bridge III

- **For Road Access and Gabion Works**
  - Bhimeshwor Nirman Sewa
  - Chandrama Nirman Sewa
  - Dangdunge Nirman Sewa
  - Dharmasthali Suppliers
  - Dipshree Construction
  - Greenland Construction
  - Khani Nirman Sewa
  - Kritim Nirman Sewa
  - Likhu Nirman Sewa
  - Moti Construction Pvt. Ltd.
  - New Jagriti Nirman Sewa
  - Peoples Nirman Sewa
  - Prakriti Nirman Sewa
  - Rambole Construction Pvt. Ltd.
  - Serakali Builders Pvt. Ltd.

- Seti Bhumi Nirman Sewa
- Sunuwar Nirman Sewa
- Jiri Nirman Sewa
- Mama Bhanja Construction

➢ **For Camp Construction**

- Edgemark Consultancy Pvt. Ltd.
- Jyoti Shree Interior Pvt. Ltd.

➢ **Transmission Line-Construction Power**

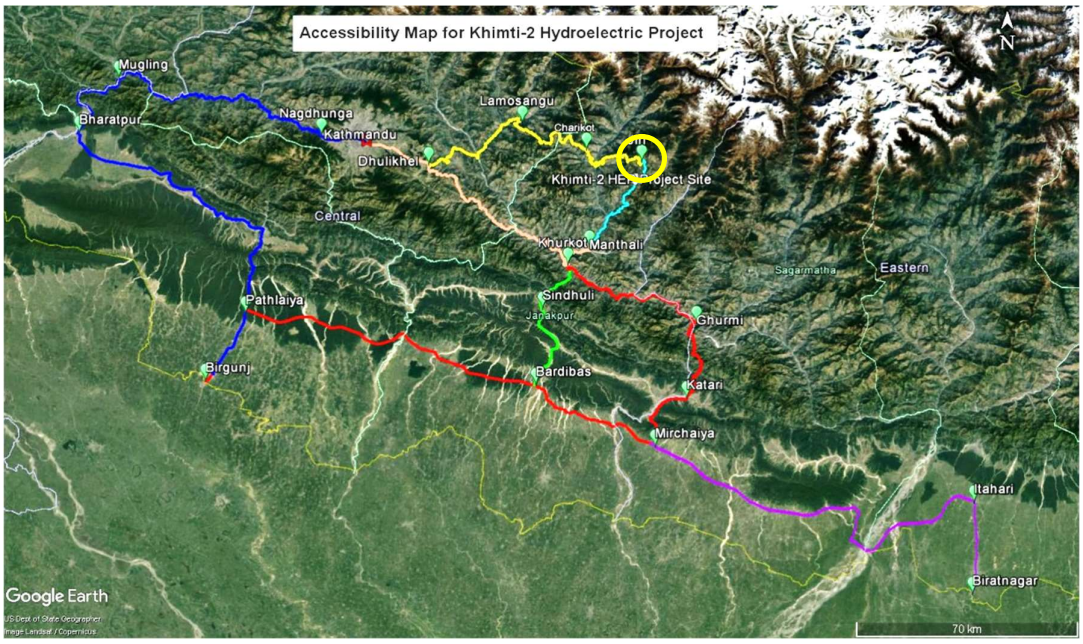
- New Satakri Khimti Construction Pvt. Ltd.

1.7 Access to the Site

The project site is accessible from Kathmandu by the following roads:

i. Kathmandu – Dhulikhel - Dolalghat – Lamosangu - Charikot - Jiri – Headworks site (198 km length)

ii. Kathmandu – Dhulikhel – Nepalthok – Khurkot – Manthali – Khimti – Betali – Bhimsenthan – Powerhouse site (174 km length)



CHAPTER – 2 TECHNICAL FEATURES OF THE PROJECT

2.1 Salient Features of the Project

Name of Project: **Khimti -2 Hydroelectric Project**
Installed Capacity: 48.8 MW
Type of Project: Run of River (ROR)
Location: Jiri Municipality and Tamakoshi Rural Municipality of Dolkha District (Previous Jiri, Thulopatal and Hawa VDC) of Dolkha District)
Gokulganga Rural Municipality of Ramechhap District (Previous Rasnalu VDC of Ramechhap District)

Comparative Salient Features of the Project:

Project Features	Features Details	Remarks
General		
Project Boundary	27°33'07"N to 27°35'13"N 86°09'26"E to 86°14'28"E	
Gross Head	351.5m	
Rated Head	341.643m	
FSL	1633.00 masl	
Normal TWL	1275.96 masl	
Minimum TWL	1275.25 masl	
Hydrology		
Turbine Centre Line	1279.3 masl	
Catchment area at Intake site	317.94 km^2	
Catchment area at Powerhouse	351.4 km^2	
Average Flow	27.36 m^3/sec	
Minimum Monthly flow	4.45m^3/sec	
Design Discharge(Q_{40})	16.11 m^3/sec	
Design flood at intake site (Q_{100})	1165 m^3/sec	
Design flood at intake site (Q_{1000})	1439 m^3/sec	
Diversion Structure		
Type of diversion structure	Ogee weir with U/ S vertical face and under sluice gates	
D/S Slope	1:0.7	
Weir crest level	1633.00masl	
Crest length of Ogee section	7.50 m	

Total Crest Length of Weir	7.50 m	
Width of Weir	7.50 m	
River bed Level	1627.00 masl	
Undersluice		
Length of undersluice base	53m	
Width of undersluice	7.2m	
Dimension of undersluice (L x B)	2 Nos. 5m x 6m	
Undersluice crest level of gate	1628 masl	
Undersluice Gate	Radial gate, 2nos. 3m x 3m	
Stilling Basin		
Stilling Basin for Ogee Weir (L x B)	41.50 m X 38.20 m	
Stilling basin for Undersluice (L x B)	15.7 m*7.20	
Floor level of stilling basin	1623.00 masl	
End level of stilling basin	1623.00 masl	
Intake		
Side Intake orifice	4 nos. 2.3(H) x 3.0(B)	
Invert Level	1630.0 masl	
No. of openings	4	
Intake Discharge	16.11m3/s	
Settling Basin		
Location	**Surface**	
Type	Intermittent conventional flushing	
Number of compartments	2	
Effective length	72.0m	
Total width of basin	19.0 m	
Width of one compartment	8.0 m	
Height in rectangular section	8.0 m	
Side slope of the compartment	1:1	
Flushing system	Intermittent	
Longitudinal slope of flushing channel	1:50	
Invert level at the beginning of flushing channel	1621.10 masl	
Invert level at the end of flushing channel	1620.85 masl	

Width of the flushing channel	1.20 m	
Flushing Culvert (L x H)	2m x 2.5m	
Invert level at the beginning of flushing culvert	1621 masl	
Size	72m (L) x 8.0m (W) x 8.0m (H) 3.4m hopper depth	
Flushing	Gated Box Culvert 1.2m (W) x 1.2m (H) x 60m (L)	
Primary Gravel Trap		
Size (B x H)	8.60m x 8.50m	
Length	20.5m	
Flushing Culvert		
Size (B x H)	1.5m x 1.8m	
Length	21.5m	
Number of culverts	1	
Flushing Gate	Two, 2.1m x 1.8m	
Invert level of Opening	1627.10 masl	
Level at beginning of culvert	1627.10 masl	
Level at Flushing end	1626.67 masl	
Secondary Gravel Trap		
Size (B x H)	8.0m x 8.30m	
Length	18.10m	
Flushing Culvert		
Size (B x H)	1.5m x 1.8m	
Length	28.0m	
Number of culverts	1	
Flushing Gate	Two, 2.1m x 1.8m	
Invert level of Opening	1626.26 masl	
Level at beginning of culvert	1626.26 masl	
Level at Flushing end	1625.14 masl	
Water Conveyance System (Headrace Tunnel)		
Shape of Tunnel	Inverted D type	
Length	6.321 km	
Finish Diameter	3.50m	
Finish Height	3.90m	
Gradient of HRT	1:500	
Tunnel Portal Level	1621.80 masl	

Surge shaft bottom	1599.80 masl	
No. of bends in HRT	7	
Support	Shotcrete and Concrete lining	
Adit Tunnels		
No. of Adit Tunnels	3	
Total Length of Adit Tunnel	522.67 m	
Diameter	4.40m (W) x 4.55m (H)	
Shape	Inverted D type	
Phulping Adit		
Adit -1 Length	284.6m	
Adit -1 HRT junction chainage	3+383.25m	
Adit -1 Portal level	1615.00 masl	
Hawa Adit		
Adit -2 Length	198.07m	
Adit -2 HRT junction chainage	6+784.6m	
Adit -2 Portal level	1580.00 masl	
Adit -3 Powerhouse Area		
Adit -3 Length	40m	
Adit -3 HRT junction chainage	7+473.55m	
Adit -3 Portal level	1278.52 masl	
Pressure Shaft/Tunnel		
Diameter	2.3m	
Total Length (with bends)	954.23m	
Length up to Manifold	917m	
Valve house to VIP-1	53.95m	
Vertical section (VS-1)	69.00m	
VIP-2 to Upper pressure tunnel portal (AB1)	391.70m	
Surface Penstock Length	207m	
Vertical section (VS-2)	61.40m	
Pressure shaft up-to Manifold (From VS-2)	110.65m	
Diameter of pressure after manifold	1.3m	
Lining	Shotcrete wire mesh and bolts lining	
Surge Shaft		
Diameter	6 m	
Shape	Circular	

Height	64.67m	
Surge Tunnel –HRT junction chainage	6+719.05m	
Invert level of surge tunnel junction	1599.80 masl	
Invert level of ventilation tunnel portal	1667 masl	
Powerhouse		
Type of Power house	**Surface**	
Powerhouse cavern dimension (l x B x H)	44.4m (L) x 16.4m (W) x 30.7m (H)	
Turbine Axis Level	EL. 1279.30 masl	
Machine floor level	EL. 1283.42 masl	
Tailrace		
Type	Free Flow Box Culvert	
Length	209.26m	
Shape	Rectangular	
Size	Culvert: 4.00m (B) x 2.5m (H)	
Outlet Level	1275.25 masl	
Turbine		
Type of turbine	Pelton	
Shaft configuration	Vertical Axis	
No. of turbine	3	
Turbine Output	16.267 MW per unit	
No of nozzle	6	
Rated speed	600 rpm	
Rated Efficiency	91.0%	
Generator		
Type	Synchronous 3 Phase	
Rated Power	19.176 MVA	
Rated output capacity per unit	16.267 MW	
Power Factor	0.85	
Voltage	11kV	
Frequency	50 Hz	
No. of Units	3	
Efficiency	97.5%	
Transformer		
No. of Transformer	3 Nos., three-phase	

Capacity	16/21.33MVA ONAN/ONAF	
Voltage ratio	11/132 kV	
Efficiency	99.5%	
Transmission line		
Length	Approx. 2 km to Garjyang Hydro 132 TL	
Connection	New Khimti S/S	
Type	132 kV, Single circuit	
Cable	ASCR, Bear	
Power and Energy Generation		
Wet Energy	219.5 GWh	
Dry Energy	40.8 GWh	
Total Energy	260.3 GWh	
Firm Energy	107 GWh	
Financial		
Total Project cost	NRs. 8.646 billion	
Revenue	NRs. 1.4 billion	
B/C Ratio	1 .41	
IRR	16.01 %	
Access to the site		
Kathmandu- Charikot – Jiri	198 km (188 km blacktopped)	
Jiri to Dam site	11 km Gravel Road	
Dam Site to Powerhouse site	16 km Gravel Road	
Birgunj-Bardibas-Khurkot-Manthali-Kirnetar/Khimti	290 km	
Khimti to Powerhouse site	27 km Gravel Road	

Progress CHAPTER – 3 PROGRESS DETAILS

3.1 Summary on Construction of Site Infrastructures

S/N	Project Activity	Description	Status/Progress
	CONTRACTOR/CONSULTANT'S PROGRESS		

1.	Civil Construction work	• **High Himalaya Hydro Construction (3HC)**	• Contract Signing on 30th November 2020 with High Himalaya Hydro Construction (3HC)
			• Contractor Mobilized to site on 29th December 2020
			• Army mobilized to site.
			• HRT Inlet portal, Adit-1 Portal, Adit-2 Portal work completed.
			• Excavation at intake (1626.5m), gravel trap (1632m), approach culvert (1633m) and settling basin going on with breaker and blasting and shotcrete/rock bolting going on.
			• Tunnel face chainage
			  • Adit-1: 0+284 m (Completed)
			  • HRT Inlet F1: 1+148.8 m
			  • Adit 1 Junction U/S F2: 0+671.68m
			  • Adit 1 Junction D/S F3: 0+761.7m
			  • Adit-2: 0+196 m (Completed)
			  • Adit-2 U/S F4: 0+704.3m
			  • Adit-2 D/S F5: 0+035.40m (Completed)
			  • Adit-2 VS1: 0+003.1m
			  • Adit-2, Bifurcation Tunnel 0+056m (Completed)
			  • Adit-2, VS1-VC (HRT) F6: 0+080.70 m (Completed).
			  • Adit-2, Ventilation Tunnel (Surge Shaft Dome): 0+113.10m, Tunnel section is completed. HRT to Surge Shaft connecting tunnel excavation work is completed on (0+043.25m).
			  • Upper Pressure Tunnel: 0+519m (Completed).

			• Lower Vertical Shaft(VS2): 0+067m (Completed). • Powerhouse area site clearance and excavation (1273m) completed & concreting work is going on. • Pressure tunnel from Powerhouse to Lower Vertical Shaft: 0+180m (Completed). • Adit-3: 0+039.60m (Completed). • Manifold Tunnel-1: 0+023.380m • Manifold Tunnel-2: 0+016.020m • Manifold Tunnel-3: 0+036.708m
2.	Design Consultant	• **Hydro Tunneling and Research**	• Contract Signing on 10th December 2020 with Hydro Tunneling and Research • IFC drawings of Headworks, Approach Channel, Settling Basin, HRT Inlet portal & Tunnel, Adit-1 portal & Tunnel, Adit-2 portal & Tunnel, Upper Pressure Tunnel and Powerhouse has been received from Consultant and same are issued to Contractor. • Balance design work along with structural design is ongoing.
	ACCESS ROAD		
3.	Dharapani to Dam site (Ramechhap side)	• **1.0 km**	• **1.0 km** of Track opening works – Completed. • **Road Handed Over to the contractor**
4.	Intake-Dharapani Road (Dolakha Side)	• **0.5 km**	• **200 m** of Track Opening towards intake – completed. • **250 m** of access road to Inlet portal completed.
5.	Burke – Hodampa/Phulping (Ramechhap side)	• **2.5 km**	• **2.5 km** track opening completed Gabion works and Maintenance of Burke-Bhage road- Completed.
6.	Thulopatal – Hodampa/Phulping - Gaighat (Dolakha side)	• **2.0 km**	• **2.0 km** Track opening - Completed. • **Road Handed Over to the contractor**
7.	Hanwa - Palate (Dolakha side)	• **5.5 km**	• **5.5 Km** Track opening – Completed. • Protection work going on
8.	Bhimsenthan – Palate/Powerhouse site new track (Ramechhap side)	• **0.5 km**	• **0.5 km** of Track opening – Completed. • **Road Handed Over to the contractor**

9.	Bhimsenthan – Palate/Powerhouse site Old track to be upgraded (Ramechhap side)	• **3.0 km**	• **Road Handed Over to the contractor**
	PROJECT CAMP		
10.	Camp Building Construction works	• **Total 12 Buildings**	• Construction work completed. • Furnishing works completed.
11.	Water Supply System	• **Drinking water to Project Camp**	• Construction of water supply system completed and is in operation.
		• **Drinking water to Locals**	• 9 no of Public Tap stand constructed. • Reservoir tank construction is completed. • Water supply to locals is in operation.
	33KV TRANSMISSION LINE FOR CONSTRUCTION POWER		
12.	Transmission Line for Construction power	• **9 km 33 kV sub-transmission line**	• Contract awarded to New Satakri Khimti Construction • Transmission line work for construction power completed • Electricity connection at all site is in operation.
	BAILEY BRIDGE		
13.	Dharapani Bridge (Bridge I)	• **42.672m**	• Civil works Completed. • Erection work Completed. • **Bridge Handed Over to the contractor**
14.	Hodampa Bridge (Bridge II)	• **33.528m**	• Civil works Completed. • Erection work Completed. • **Bridge Handed Over to the contractor**
15.	Hawa-Palate Bridge (Bridge III)	• **51.816m**	• Civil works Completed. • Erection work Completed. • **Bridge Handed Over to the contractor**
	OTHER ACTIVITIES		
16.	Hydrology and Sediment Study	• **Hydrology and Sediment Study**	• Sediment collection & Analysis by HydroLab-Completed. • Discharge Measurement & Hydrological Analysis by Recham Consult -Completed.

3.2 Administrative Works

17.	**ADMINISTRATIVE WORKS**	• **Various administrative issues**	• Forest Land Approval-Completed • Land acquisition: about 95% completed • Survey License for Transmission Line (Power Evacuation): Documents being compiled.
		• **Shifting grid Connection for Power Evacuation**	• Approval received for loop in loop out connection shifting grid connection.
		• **Updated IEE Report**	• Final approval received.
		• **Electromechanical works**	• Contract agreement with Global Hydro Energy GmbH has been completed
		• **Hydro Mechanical Works**	• Evaluation and Selection of Contractor finalized and signing of contract is going soon.
18.	**LOCAL STAKEHOLDERS ENGAGAMENT**	• **Local issues**	• Local Stakeholders Engagement through various discussion addressing the project related environmental and social issues are continued • Implementing various social and local infrastructural development works

3.3 Design and Physical Model Study

19.	**PHYSICAL HYDRAULIC MODEL STUDY**	• **Model of Revised Headworks**	• Consulting contract award to Hydrolab • Provided required documents • completed model construction of structures. • All the details of the model are finalized and model run successfully completed. • waiting for the final report of the hydraulic model design.

3.4 Progress Work in Detail

3.4.1 Civil Construction work

With the onset of Covid-19, condition was unfavorable for CWTW to carry out their contractual obligations, so the EPCF contract for construction of Khimti-2 Hydroelectric Project was terminated amicably on 19th November 2020. After multiple negotiations and discussions, the civil construction work was awarded to High Himalaya Hydro Construction on 30th November, 2020. The Employer issued Notice to proceed to the contractor on 1st December 2020.

Major Activities by the Civil contractors at different sites are listed below:

Headworks Site:

- Concrete work in Under sluice is going on
- Boulder riprap, drilling holes for anchor, grouting and inserting anchor and concrete infill works is completed in settling basin flood wall.
- Excavation, rock bolting and Shotcrete for settling basin area is completed and rebar work, excavation and concrete work at flood wall is going on
- Steel Lining works is going on and Bellmouth installation of Bed sluice pipe has been completed.

Concrete work at Headworks

Intake area

HRT Inlet site:

- Access to HRT inlet tunnel portal is completed.
- Slope support work at the inlet portal completed.
- Tunnel Excavation work: **1+148.8 m face chainage reached** (**39.7 m** length achieved this month).
- Rock class of V was encountered.

Inlet Tunnel

Adit-1 site:

- Portal slope support work is completed.
- Rock crusher installation is completed and is successfully producing materials.
- Adit Tunnel Excavation work: **0+284 m** face chainage reached and completed
- Tunnel excavation work at U/S HRT from Adit 1 junction: **0+671.68 m face chainage reached** (**43.7 m** length achieved in this month)
- Tunnel excavation work at D/S HRT from Adit 1 junction: **0+761.7m face chainage reached** (**31.2m** length achieved in this month).
- Rock class of IV, V'A' & V'B' were encountered.

Adit-1 Tunnel

Adit-2 Portal (Surge Tunnel/HRT Outlet) site:

- Portal slope support work is completed.
- Adit Tunnel excavation work: **0+196 m face chainage reached** and completed.
- Excavation work at U/S HRT from Adit 2 junction: **0+704.3 m face chainage reached** (**65.7 m** length achieved in this month)
- Excavation work at Vertical Shaft (VS1): **0+019m face chainage reached** (**15.9 m** length achieved in this month)
- Excavation work at D/S HRT from Adit 2 junction: **0+035.4 m face chainage reached** and completed.
- Excavation work at bifurcation to vertical shaft from Adit 2 completed. : **0+056 m face chainage reached** and completed.
- Excavation work at Ventilation Tunnel: **0+113.10 m face chainage reached** and completed.
- Excavation work at HRT VS1-VC: **0+080.7 m face chainage reached** and completed.
- Dome construction work is completed in Surge Shaft Dome. RRS and beam installation work is completed. Shotcrete work and chipping for winch setting is completed and pilot hole from top to bottom for Surge Shaft: **0+043m chainage reached** and completed. Excavation work in HRT to Surge Shaft connecting tunnel is completed **(0+043.25m)**

Adit-2 Tunnel

Army Barrack and Explosive Bunker Camp:

- *Officer/Junior officer building:* Construction of 2 officer buildings is completed.
- *Cadre Building:* 2 nos. Cadre building is completed.
- *Weapon House:* Completed.
- *Gelatin House:* Completed.
- *Detonator House:* Completed.
- Army Mobilization: completed.

Army Barrack and Explosive Bunker

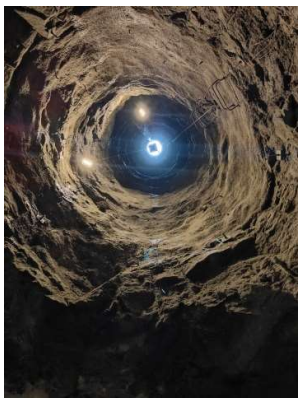
Powerhouse Site:

- Excavation work is completed.
- Shotcrete work is completed for slope protection
- SDA and Rockbolt insertion work is completed.
- Excavation and slope protection work reached to the level of 1273 m and completed.
- Pressure tunnel from powerhouse to lower vertical shaft: **0+0180m face chainage reached** and completed.
- Adit 3 tunnel: **0+039.60m face chainage reached** and completed.
- Manifold tunnel 1: **0+022.380m chainage reached** and completed.
- Manifold tunnel 2: **0+016.020m chainage reached** and completed.
- Manifold tunnel 3: **0+036.708m chainage reached** and completed.
- Excavation work in tailrace is ongoing. Concrete work is going on.

Powerhouse site

Upper Pressure Tunnel site:

- Portal slope support work is completed.
- Excavation work at Upper Pressure Tunnel: **0+519 m face chainage reached** and completed(**2m** length achieved in this month)
- Excavation work at Vertical Shaft-2: **0+067 m face chainage reached** and (Completed).



Upper Pressure Tunnel and Vertical Shaft-2 site

3.4.2 Hydro-Mechanical Works Progress

- Steel Lining works by HM Contractor Cream-KHS JV is ongoing at Under sluice portion of Headwork area.
- Steel lining at under sluice Radial gate and stoplog gate area is ongoing.
- Around 47% of steel lining work is completed up to this month.
- Sand Blasting set up has been installed at Workshop of HM.
- Rolling and tagging of Bend 07 (14m) has been completed.
- Total Pipe rolled – 18nos. of 30mm thickness

Steel lining works at Bellmouth area- Intake site

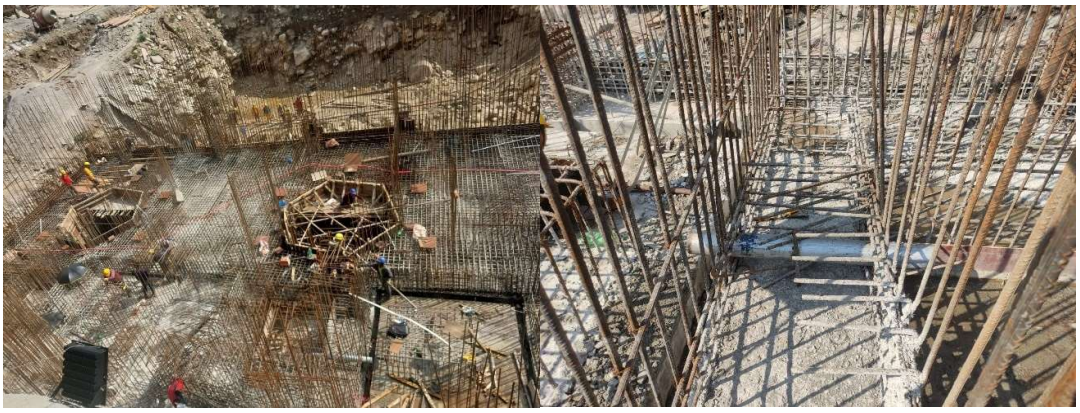
MS- Pipe Rolling operation for Penstock at HM Workshop

3.4.3 Electro-Mechanical Works

- First stage embedded anchor plates of all three units has been installed and ready for the concreting.
- Submission of the revised (revision no. 2) CLD of Powerhouse by the global Hydro, EM Contractor.
- Installation of stainless-steel piping for sump pump and access for penstock drainage pipe has been completed.
- Review/comments on submitted outdoor Lighting arrestor, Current Transformer, Potential transformer and Circuit breaker documents.

Transmission Line

- Submission of draft final IEE report of 132kV Transmission line of Khimti-2 Hydroelectric Project at DOED.
- Presentation at DOED regarding the IEE of 132Kv transmission line of Khimti-2 HEP from K2HEP Powerhouse to LILO station at Bhimsensthan.
- Land acquisition of transmission tower is going on



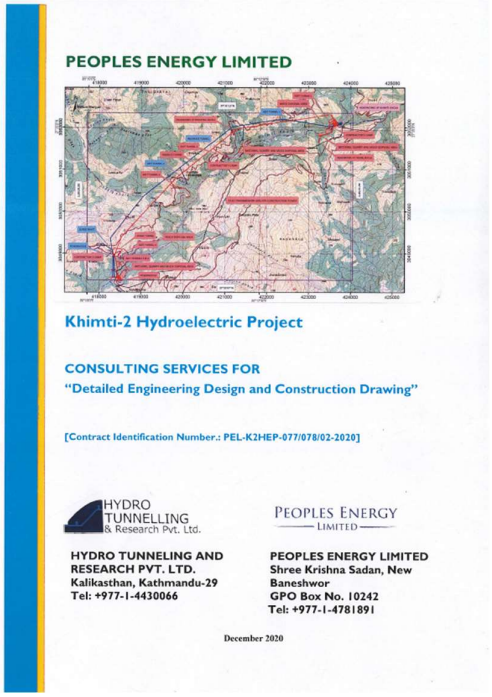
Embedded Parts installation and Stainless-steel pipe for sump pump at Powerhouse

3.4.4 Design Consultant's Progress

For the consulting services for detailed engineering design and construction drawing Hydro Tunneling and Research Pvt. Ltd. was awarded the contract on 10th December 2020.

Major Activities by the Design Consultant are listed below:

- IFC Drawings of Surge Shaft and RC Details
- IFC Drawing of Flood Wall d/s Panel 1,2 and 3
- IFC Drawing of Tailrace culvert and Pool Details
- IFC Drawing of Tailrace Protection Wall
- IFC Drawing of VS-1 Bottom Cavern
- IFC Drawing of VS-1 Support Drawings
- IFC Drawing of Adit-3 Lower pressure Tunnel Junction

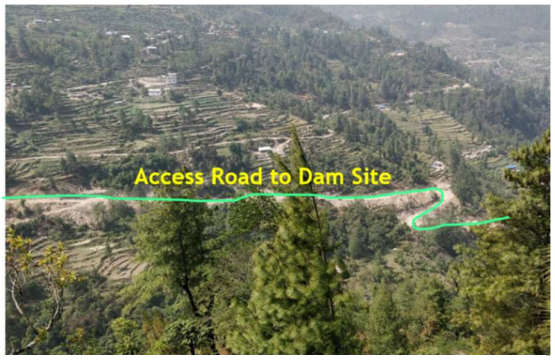


3.4.5 Handover of Internal Access Roads and Bridges

Completed handover of following internal access roads and bridges to the contractor:

Access Road

- Access road to headworks (Dharapani to headworks - 0.920 Km)
- Access road to HRT Adit-1 (Phulping - Gaighat - 1.978 Km)
- Access road to HRT Adit-2 (Hawa – Tuspe - 3.900 Km)
- Access road to powerhouse (Bhimsenthan – Palate - 3.010 Km)



Dharapani Access Road

Phulping-Gaighat Access Road

Bhimsenthan-Palate Access Road

Bailey Bridge

- Dharapani bridge to headworks (42.672 m, 24-ton capacity)
- Phulping Bridge (33.528m, 16-ton capacity)
- Palate bridge to powerhouse site (51.816m, 30-ton capacity)

Bailey Bridge I: Dharapani Bridge

Bailey Bridge II: Hodampa Bridge

Bailey Bridge III: Hawa-Palate Bridge

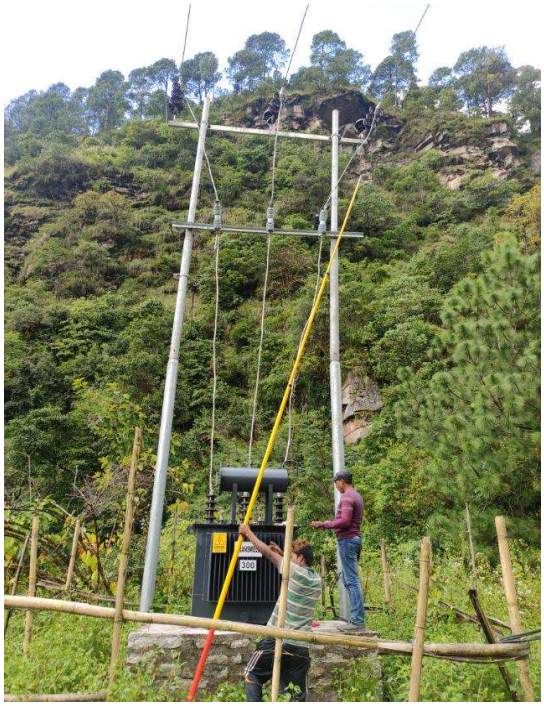
3.4.4 33 KV Transmission line for Construction Power

About 9 Km sub-transmission line from headworks area of Khimti-2 HEP, Dharapani to powerhouse site of Khimti-2 hydroelectric project is required to supply power to different sites during the construction phase.

Major Activities

- Pole erection, cable installation along with all necessary accessories from headworks to powerhouse site in Ramechhap and Dolakha side is completed.
- Pole erection, cable installation of 11kV transmission line at Hawa for construction power at Adit-2 is completed.
- 11 kV Electricity connection at Hawa has been completed and is in operational.
- 33 kV Electricity connection at Headworks, Adit-1, Powerhouse has been completed and is in operational

11kv connection



33kv connection

3.4.5 Administrative Works

Progress on Civil Construction Contract

- Amicable termination of EPC contract with CWTW.
- Negotiation and discussion with different parties on the quotation for civil work
- Preparation of contract document was completed.
- Awarding of the contract to Lowest responsive bidder was completed.
- Contract was awarded to High Himalaya Hydro Construction
- IPS-13 received from contractor and verification from the site team has been completed and technical verification is ongoing.
- IPS- 14 received from contractor. Site verification is ongoing.

Progress on Design Consultant Contract

- Preparation of RFP for the interested bidders
- Negotiation and selection among lowest responsive bidder were completed
- Preparation of contract document was completed
- Contract was awarded to Hydro Tunneling and Research
- Design consultant is issuing drawings as per the requirement of the site.

Progress on Electromechanical Contract

- Preparation of RFP for the interested bidders
- Evaluation of the submitted bids has been completed.
- Contract has been signed with Global Hydro Energy GmbH.

Progress on Hydromechanical Contract

- Preparation of RFP for the interested bidders
- Evaluation and finalization of contractor is completed.
- Contract has been signed with Cream-KHS J.V.

Progress on Survey License for Loop in Loop out

- Discussion was done with NEA for shifting the connection agreement
- A study for the technical and economical assessment has been done and submitted to NEA.
- Application for Grid Impact System is completed.
- Loop in loop out connection approval received.
- 132kV single circuit transmission line from khimti-2 power house to LILO switching station route survey completed by consultant team. Survey report is awaited.

Progress on Other Administrative works

- Technical Verification of works till date-Completed.
- Loop in loop out connection approval received.
- Forest Clearance Approval is received.

3.5 Force Majeure/Difficulties & issues faced

- Force majeure condition of COVID-19 Pandemic has affected the project and delayed the works by 2 years.
- Delay to open the access to surge shaft due to forest land approval.
- Forest clearance approval has been pending and hampering the progress of the project for last 3 years.
- Floods during the monsoon season has disrupted the access and slowed down the progress.
- Locals' various demands like infrastructure development, contracts as well as employment has been hindering the smooth pick up of the progress.

3.6 Site Progress Photographs



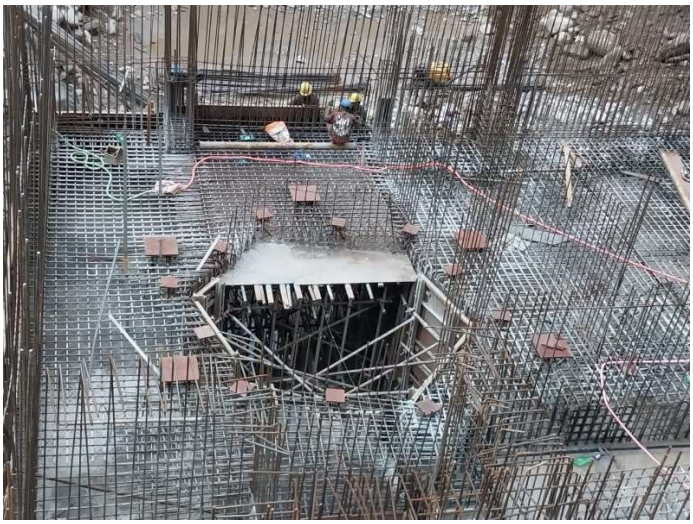

Headworks


HRT Inlet Tunnel


Adit-1 Tunnel Excavation


Adit-2 Tunnel Excavation


Upper Pressure Tunnel and Vertical Shaft-2 site



Powerhouse site