

# **NYADI PHIDI HYDROPOWER PROJECT (21.4 MW)**

## **MONTHLY PROGRESS REPORT**



### **Construction of Nyadi Phidi Hydropower Project (21.4 MW)**

**Prepared By:**

**North Summit Hydro Ltd.**

**Babarmahal, Kathmandu**



**MARCH 2026**

### General Information

<b>Project Name</b>	Nyadi Phidi Hydropower Project (21.4 MW)
<b>Project Number</b>	
<b>Client's Name</b>	North Summit Hydropower Limited
<b>Report</b>	Monthly Progress Report
<b>Remarks</b>	

### Preparation, Review and Authorization

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### Institutional Arrangement

Client	North Summit Hydro Limited
Design Consultant	Hydro-Consult Engineering Limited (HCE) and Innovative Engineering Services Pvt. Ltd (IES) JV
Civil Contractor	Kalika-SAI-Karna JV
HM Contractor	Machchhapuchhre Metals and Machinery Pvt. Ltd.
EM Contractor	Flovel Energy Pvt. Ltd.



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## Executive Summary

The Nyadi-Phidi Hydropower Project, being developed by North Summit Hydro Limited is located in Lamjung District of Gandaki Province. The project will utilize the perennial flow of the Nyadi River for power generation. The project has secured major statutory approvals including the grid connection agreement, power purchase agreement and generation license, and has achieved financial closure. The contracts for the civil works, hydromechanical works and electromechanical works have been awarded to Kalika-SAI-Karna JV, Machhapuchhre Metal and Machinery Works Pvt. Ltd. and Flovel Energy Pvt. Ltd., respectively.

This report presents an overview of the construction activities carried out at the project site. Works across various project components are progressing in line with the planned schedule. At the **Intake Area**, site clearance has been completed and the first-stage river diversion for cofferdam construction has been successfully carried out and the earthwork excavation in undersluice has been completed. In the **Desander Area**, site clearance has been completed and excavation works, including drilling and controlled blasting is on progress.

At the **Headrace Tunnel**, inlet portal excavation has been completed and the necessary labor camp facilities have been established. The tunnel excavation is on progress with drilling blasting. For the **Penstock Tunnel**, excavation works totaling 253 meters, including the required widening for the **vertical shaft**, have been successfully completed. Along the **Penstock Alignment**, excavation from Anchor Block (AB) 8 to AB 12 has been completed and the foundation excavation and PCC for Anchor Block 12 have also been completed.

For the **Hydromechanical Works**, site workshop and camp facility has been completed. Fabrication of steel penstock pipe has been continued at Pokhara Shop. In total, 410 nos of variable sizes (2.5 m each) pipe have been transported to site workshop and welding of 121 nos of variable size (2.5m each) have been completed and welding works are currently in progress at the site.

Regarding the **Ropeway** system, the erection of all three towers have been completed. The main track rope and pulling rope have been shifted from the base station to Top anchor point and rope tensioning is scheduled for the coming week. **Construction Power** has been successfully extended to both the Headworks and Powerhouse area. The **Access Road** leading to the Headworks has been completed and the access road towards the Powerhouse has been constructed up to the top level of the powerhouse area.

For the **Bailey Bridge** structure, the previous alignment was found to be unfeasible due to continuous mass movement from the upslope. Consequently, excavation of the left abutment has been initiated at a new alignment. In addition, the **Army Camp** infrastructure, including the superstructure and bunker facilities has been completed.

Overall, the project construction activities are progressing steadily across multiple fronts, with several key preparatory and structural works already completed and subsequent construction stages being actively pursued.



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## 1 Introduction

### 1.1 Project Description

Nyadi-Phidi Hydropower Project (NPHPP) is located in Lamjung district of Gandaki Province. The project site is located in Marshyangdi Rural Municipality. Geographically, the project area is located in between latitudes 28°24'27" - 28°26'12" N and longitudes 84°30'10" - 84°31'43" E.

The project site can be reached from Kathmandu via a 189 km paved road to Besisahar, the district headquarters of Lamjung. From Besisahar, the site is approximately 52 km further, mostly along an earthen road.

The hydropower scheme includes a 15m length boulder lined weir with a crest elevation of 2950.6 masl. The intake is located on Nyadi River near Jaluchhe village at an elevation of 2950.1 masl, capturing flow from a catchment area of 54.03 km<sup>2</sup>. The project utilizes flow of Nyadi and two downstream Kholsis during dry months and the head created by tunnel and penstock between headworks and powerhouse site to generate power.

### 1.2 Accessibility to Project Site

The Project site is accessible from Kathmandu by a 189 km long asphalt road up to Besisahar, the district headquarters of Lamjung. The site is approximately 52 Km from Besisahar. The access road follows the alignment through Naiche, Kafaldada, and Dahare before reaching the project location. Besisahar is the nearest town to the site, while the closest Indo-Nepal border point is Raxaul.

Kathmandu – Besisahar – Nyadi – Thulibeshi – Naiche- Kafaldanda – Dahare- Project Site

### 1.3 Salient Features of the Project

The salient features of the project are presented in Table 1.

*Table 1: Salient features of the project*

S. N	Description	Detail Design Report
<b>1</b>	<b>Project Location</b>	
	Province	Gandaki Province
	District	Lamjung
	Intake Site	Jaluchhe Village, Marsyangdi Rural Municipality, Ward No-7
	Powerhouse Site	Confluence of Nyadi and Phidi River, Marshyangdi Rural Municipality, Ward no. 7
	Geographical Co-ordinates	
	Latitude	28° 24' 27" N- 28° 26' 12" N
	Longitude	84° 30' 10" E- 84° 31' 43" E
<b>2</b>	<b>General</b>	
	Name of River	Nyadi River



S. N	Description	Detail Design Report
	Nearest Town	Besisahar
	Type of Scheme	Run-of-River
	Gross Head	690.10 m
	Head loss at Design Discharge	10.18 m
	Net Head at Design Discharge	679.92 m
	Installed Capacity	21.40 MW
	Average Annual Energy after Outage	122.94 GWh
<b>3</b>	<b>Hydrology</b>	
	Catchment Area (Nyadi)	54.03 Km <sup>2</sup>
	Mean Annual Discharge (Nyadi)	4.66 m <sup>3</sup> /sec
	Design Discharge	3.60 m <sup>3</sup> /sec
	Riparian Release (Nyadi River)	0.11 m <sup>3</sup> /sec
	Design Flood Discharge (100 years flood)	123.45 m <sup>3</sup> /sec at Intake site
	Design Flood Discharge (100 years flood)	188.42 m <sup>3</sup> /sec at Powerhouse site
	Average Annual Precipitation	3316 mm
<b>4</b>	<b>Diversion Weir &amp; Undersluice</b>	
	Type of Weir	Boulder Lined Weir
	Length of Weir	15 m
	Crest Elevation	2950.60 masl
	Spillway type	Free overflow
	Undersluice Opening (W X H)	2.50 m x 2.50 m
	Undersluice Invert Level	2946.49 masl
<b>5</b>	<b>Trash passage</b>	
	Size of trash passage (W x H)	1.5 m x 2.5 m
	Invert level of opening	2950.10 masl
	Length of trash passage	12.0 m
<b>6</b>	<b>Intake and Gravel Trap</b>	
	Type of Intake	Side Intake-Submerged orifice type
	No. of Openings	2 nos.
	Size of Intake (W x H)	2.0 m x 1.6 m
	Intake Sill Level	El. 2950.10 masl
	Intake Invert Level	El. 2948.50 masl
	Length of Gravel Trap	4.0 m
	Width of Gravel Trap	4.8 m
	Particle size to be trapped	5 mm
	Flushing Orifice size (W x H)	0.8 m x 0.8 m
	Flushing Culvert size (W x H)	0.8 m x 1.0 m

S. N	Description	Detail Design Report
<b>7</b>	<b>Approach Culvert</b>	
	Type	RCC Culvert
	No. of culverts	1 no.
	Length	105.0 m
	Bed slope	1 in 400
	Size (W x H)	1.6 m x 1.5 m
<b>8</b>	<b>Approach Culvert (Diverged)</b>	
	Type	RCC Culvert
	No. of culverts	2
	Length of each culvert	25.0 m
	Bed slope	1 in 600
	Size (W x H)	1.1 m x 1.5 m
<b>9</b>	<b>Settling Basin</b>	
	Type	Concrete, Double Bay Dufour
	Dimension (L x B x H)	35.0 m x 6.5 m x 4.1 m
	Inlet Transition Length	12.70 m
	Particle Size to be settled	0.15 mm
	Trapping Efficiency	80% (Vetter's Method)-100 % (Camp's method)
	Sediment Flushing Orifice size (W x H)	1.0 m x 1.2 m
<b>10</b>	<b>Headrace culvert</b>	
	Type	RCC box
	Culvert size (W x H)	2.2 m x 2.2 m
	Length	59.5 m
<b>11</b>	<b>Headrace Tunnel</b>	
	Type	Inverted D-shaped
	Excavation Size (W x H)	2.5 m x 2.9 m
	Minimum Finished Size (W x H)	2.2 m x 2.5 m
	Length	2020 m
	Type of Lining	Shotcrete/concrete lined as per rock class
<b>12</b>	<b>Surge Shaft</b>	
	Type	Simple Cylindrical
	Total Height	25 m
	Finished Diameter	4.5 m
	Up Surge Level	2956.73 masl
	Down Surge Level	2941.88 masl
	Normal Operation Level	2950.60 masl
<b>13</b>	<b>Drop Shaft</b>	

S. N	Description	Detail Design Report
	Type / Pipe Material	Circular / Steel pipe
	Internal Diameter-Steel Pipe	1.2 m
	Minimum Finished Diameter	2.2 m
	Excavation Diameter	2.4 m
	Backfill Concrete (M15 Self compacting concrete)	50 cm (Varying)
	Length	258 m
<b>14</b>	<b>Penstock Tunnel</b>	
	Type	Inverted D-shaped
	Excavation Size (W x H)	2.9 m x 3.1 m
	Length	253 m
	Type of Lining	Shotcrete/concrete lined as per rock class
<b>15</b>	<b>Steel Penstock Pipe</b>	
	Type	Steel Pipe
	Internal Diameter	1.2 m
	Length (Before bifurcation)	1490 m
	Diameter-Length (After bifurcation)	0.85 m dia. of 15 m each
	Steel Thickness	8 mm to 40 mm (IS 2062 E350B0 or Equivalent)
<b>16</b>	<b>Powerhouse</b>	
	Type	Surface
	Size (L x W)	28.85 m x 19.50 m
	Height	14.65 m
	Powerhouse Machine Floor Level	El. 2259.00 masl
<b>17</b>	<b>17 Tailrace Culvert</b>	
	Type	RCC Box
	Size (W x H)	1.50 m x 1.50 m
	Maximum Tailwater Level (Considering 10% COL)	2256.78 masl
	Minimum Tailwater Level (Considering 20% of design discharge on each unit)	2256.31 masl
	Tailrace Water Level	NA
<b>18</b>	<b>Turbine</b>	
	Type	Pelton-Horizontal Axis
	Number	2 nos.
	Rated Output Capacity per unit	11.05 MW + 10 % COL
	Turbine Axis Level	2260.50 masl
	Net Head	679.92 m
	Discharge per Unit	1.8 m <sup>3</sup> /sec

S. N	Description	Detail Design Report
	Efficiency	91.5%
<b>19</b>	<b>Governor</b>	
	Type	Digital Electronic Governor with PID
	Adjustment for Speed Drop	Up to 10 %
<b>20</b>	<b>Generator</b>	
	Type	Three phases, Synchronous
	Rated Output Capacity per Unit	12.60 MVA + 10 % COL
	Power Factor	0.85
	Voltage	11 kV
	Frequency	50 Hz
	No of Units	2 nos.
	Excitation System	Brushless Excitation
	Efficiency	97.5%
<b>21</b>	<b>Transformer</b>	
	Type	Three phase-Oil Immersed, Outdoor
	Rated Capacity	13.9 MVA
	Voltage Ratio	132/11 kV
	No of Units	2 nos
	Vector Group	YNd11
	Efficiency	99%
<b>22</b>	<b>Transmission Line</b>	
	Voltage level	132 kV
	Length	13.5 Km
	Conductor Type	BEAR
	From	Nyad- Phidi HPP's Switchyard
	To	Nyadi HPP'S Switchyard (Connection Point)
<b>23</b>	<b>Access Road</b>	
	Naiche to Kharka (Zero Point)	15 Km
	Kharka to Powerhouse	11 Km

## 2 Resources and Facilities

The project is supported by essential resources and facilities required for its successful implementation. Key infrastructure including access roads and communication systems is in place. Necessary construction equipment, materials and storage areas are being arranged near the site, with provisions for worker accommodations and site offices. Detailed information regarding the available resources and supporting facilities is presented in the sections below.

### 2.1 Resources from Client

The resources provided by the client under various categories are described below.

#### 2.1.1 Human Resources

Human resources available are listed below.

*Table 2: Human resources of Client*

S. N	Designation	Nos	Remarks
1	Resident Engineer	1	
2	Sr. Mechanical Engineer	1	
3	Project Engineer	1	
4	Civil Engineer	1	
5	Geologist	1	
6	Sub Engineer	1	
7	Site Supervisor	1	
8	Driver	1	
9	Cook	1	

#### 2.1.2 Facilities

The facilities of the client are listed in the table below.

*Table 3: Facilities of Client*

S. N	Description	Nos	Remarks
1	Vehicle	2	
2	Motor bike	1	
3	Total Station	1	
4	Computer set	1	
5	Printer	1	
6	Office building	1	
7	Staff quarter	2	
8	Guest house	1	
9	Kitchen building	1	

## 2.2 Explosive

*Table 4: Stock of Blasting materials*

S. N	Description	Unit	Quantity	Remarks
1	Emulsion	Kg	11123.8	Remaining
2	Electric Detonator	Nos	11169	Remaining
3	Non-Electric Detonator	Nos	13920	
4	Deto- Cord	m	2984	

## 2.3 Resources from Contractor

### 2.3.1 Human Resources

Human resources available are listed below

*Table 5: Human Resources of Civil Contractor*

S. N	Designation	Nos	Remarks
1	Project Manager	0	
2	Site In-charge	1	
3	Engineer	2	
4	Geologist	1	
5	Accountant	1	
6	Surveyor	2	
7	Lab Technician	1	
8	Supervisor	3	
9	Blaster	1	
10	Electrician	3	
11	Welder	1	
12	Drilling Supervisor	1	
13	Driller	1	
14	Driller's helper	2	
15	Driver	6	
16	Operator	5	
17	Helper	4	
18	Cook	2	
19	Vertical Shaft manpower	11	
20	Penstock Alignment manpower	13	
21	HRT Inlet Manpower	13	
22	Ropeway manpower	8	

*Table 6: Human Resources of HM Contractor*

S. N	Designation	Nos	Remarks
1	Site Engineer	1	
2	Supervisor	1	
3	Site Supervisor	1	
4	Excavator Operator	1	
5	Driver	1	
6	Welder	5	
7	Fitter	4	
8	Grinder	2	
9	Helper	2	
10	Store Keeper	1	
11	QC Technician	1	
12	Electrician	1	
13	Sand blasting team	4	
14	Cook	1	

### 2.3.2 Equipment

The equipment of the contractor is listed in the table below.

*Table 7: Equipment of Civil Contractor*

S. N	Description	Nos	Remarks
1	Excavator	4	
2	JCB Backhoe Loader	1	
3	6-Wheeler Tipper	2	
4	4-Wheeler Tipper (Bunker)	0	
5	Tractor	2	
6	Bolero	2	
7	Motorcycle	1	
8	Diesel Generator	5	
9	Petrol Generator	1	
10	Compressor	3	
11	Shotcrete Machine	1	
12	Grouting Machine	1	
13	Water Pump	2	
14	Welding Machine	2	
15	Jack Hammer	8	
16	Chainsaw Machine	2	

17	Muck Loader	1	
18	Batching plant	1	
19	Transit Mixture	1	
20	Loader	1	
21	Monkey Jumper	1	

*Table 8: Equipment of HM Contractor*

S. N	Description	Nos	Remarks
1	Excavator	1	
2	Welding Machine	9	
3	Tractor	1	
4	Compressor	1	

### 2.3.3 Material

*Table 9: Material Stock of Civil Contractor*

S. N	Description	Unit	Quantity	Remarks
1	Diesel	Ltr	24000	
2	Cement	Bag	1800	

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### 3 Activities at Site in March 2025

Activities carried out during this period are briefly described hereunder:

#### 3.1 Infrastructure Development

For the success of the project, most of the required infrastructures are been constructed and few are been ongoing.

##### 3.1.1 Internal Approach Road

###### To Headworks:

Towards the headworks, internal approach road has been completed. 5100m of the road which equals to almost 100 % of the total road is completed and widening and upgrading of the road is also completed.

###### To Powerhouse:

No work was carried out during this month. Up to the date, excavation of the internal approach road to powerhouse is completed up to 0+680 m chainage and about 220 m of the road section is remaining for excavation.

##### 3.1.2 Ropeway Construction

All the equipment for the construction of the ropeway has arrived at the project site. The accessories for tower erection have been shifted to all respective towers from the base location. The construction of the all three towers have been completed and the main track rope and pulling rope have been shifted from base location to the Top anchor. The tensioning of rope is ongoing.

##### 3.1.3 Construction Power

Construction power from NEA has been made available at the project site. Construction power of NEA is being supplied to both headworks and powerhouse areas.

#### 3.2 Civil Works

The civil works of this project involve the construction of key infrastructure components such as the headworks, diversion weir, intake, approach culvert, settling basin, headrace tunnel, surge shaft, penstock alignment and powerhouse. These works are essential for guiding and controlling the flow of water to generate electricity efficiently. Activities under the civil works include excavation, concreting, tunnelling, slope stabilization and construction of hydraulic structures.

##### 3.2.1 Headworks

At the headworks, site clearance in the intake area and the layout of the various structures have been completed. The first-stage river diversion for cofferdam construction has been completed and earthwork excavation in the undersluice has also been completed.

Also, in Desander area, site clearance works have been completed and the excavation work is ongoing.

### **3.2.2 Headrace Tunnel**

Camp construction works for sub-contractor at inlet tunnel portal is completed and portal preparation works have been completed. The excavation work is initiated with rib installation.

### **3.2.3 Penstock Tunnel and Vertical Shaft Construction**

The penstock tunnel is a component that conveys pressurized water through penstock pipe from surge shaft to the powerhouse turbines. The tunnel alignment is carefully selected to minimize hydraulic losses while ensuring structural stability. The penstock tunnel and vertical shaft have a total designed length of 253 meters and 255 meters.

Excavation of the Penstock Tunnel has been completed and the widening of the tunnel for raise climber is also completed. The construction of vertical shaft has been started at end of this month. The excavation is being carried out with a strong emphasis on ensuring safety and maintaining structural integrity throughout the process. The excavation of vertical shaft has been started at end of this month.

### **3.2.4 Penstock Alignment**

The site clearance and excavation for track opening from AB 9 to AB 12 have been completed and excavation for Anchor Block 12 is been completed. The PCC work along with plum infill concrete of AB 12 is also completed.

## **3.3 Hydromechanical Works**

The hydromechanical works for the project are progressing now. A total of 208 steel plates, equivalent to approximately 1,180 tons have been arrived and stored at the mechanical yard in Pokhara for further fabrication and assembly. These materials are a key component for the hydromechanical works, including penstock and associated structures. The construction of three staff camps at the project site to accommodate personnel for the ongoing and upcoming works has been completed.

A team from the hydromechanical contractor has been mobilized to the site, the construction of the workshop is completed. Also, pipe transportation to the site is ongoing and 410 nos. of pipes of variable sizes is been transported which is almost 1025.0 m. Furthermore, welding and testing of pipes is ongoing.

## **3.4 Electromechanical Works**

The electromechanical works for the project are in the preliminary phase. The process for selecting a qualified company for the supply and installation of electromechanical equipment has been completed which includes evaluation of proposals from potential contractors to ensure compliance with technical specifications, quality standards and project timelines. The contract has been awarded to Flovel Energy Pvt. Ltd. The selected company will be responsible for the procurement, delivery, installation, testing and commissioning of key components such as turbines, generators, control systems and auxiliary equipment essential for the successful

operation of the hydropower plant. The contractor is currently preparing the documents for the LC process.

### 3.5 Transmission Line Works

For the transmission line works, the Initial Environmental Examination (IEE) has been completed and the survey license has been obtained. The bidder pre-qualification process has been successfully completed and the tendering process is currently underway.

### 3.6 Other Works

#### 3.6.1 Laboratory Setup

The construction of the on-site laboratory and the installation of the Los Angeles Abrasion testing machine and the Compressive Strength testing machine (CTM) has been completed. The calibration of CTM has been also completed and the mix design process is ongoing.

#### 3.6.2 Health and Safety

Health and safety measures have been implemented to ensure the safe execution of project activities. Personal Protective Equipment (PPE) has been provided to all the staff and workers in road construction and tunnel excavation and its use is strictly enforced on site. Additionally, instruction signboards have been installed at both the construction and project areas to promote awareness and compliance with safety protocols.

#### 3.6.3 Quality Control

Quality control at the project site is being closely monitored to ensure all construction activities meet the required standards. Site engineer and supervisor are observing the quality of work on a regular basis, with particular attention to material handling and workmanship. Material testing is planned to commence as soon as the on-site laboratory setup is completed and the testing machines are properly calibrated. This will enable systematic verification of construction materials, further strengthening the overall quality assurance process.

#### 3.6.4 Regular Meeting

Regular meetings are held once a week following the submission of the weekly progress report. These meetings serve as a platform to review the current status of work, discuss challenges, and plan upcoming activities. Participation from key personnel ensures effective coordination, timely decision-making and smooth progress at the project site.

### 3.7 Project Progress

A summary of the project's progress is presented in the table below.

S. N.	Description	Unit	Total Qty	Till Previous Month	This Month Progress	Completed Till Date	% Completed
A	<b>Infrastructure Development</b>						



S. N.	Description	Unit	Total Qty	Till Previous Month	This Month Progress	Completed Till Date	% Completed
1	Internal Approach Road						
	To Headworks	Km	5.10	5.10	0.00	5.10	100%
	To Powerhouse	Km	0.90	0.68	0.00	0.68	75.56%
2	Ropeway						
	Supply and delivery of equipment and accessories	LS	1	1	0	1	100%
	Shifting of equipment and accessories	LS	1	0.95	0	0.95	95%
	Tower erection, testing and commissioning	LS	1	0.4	0.3	0.7	70%
3	Construction power						
	Up to Powerhouse	LS	1	1.0	0.0	1.0	100%
	Up to Headworks	LS	1	1.0	0.0	1.0	100%
4	Army Camp						
	Foundation work	LS	1	1.0	0.0	1.0	100%
	Superstructure	LS	1	1.0	0.0	1.0	100%
	Plumbing and electrical work	LS	1	1.0	0.0	1.0	100%
	Fencing and finishing work	LS	1	0.4	0.6	1.0	100%
<b>B</b>	<b>Civil Work</b>						
1	Mobilization	%	100%	35%	15%	50%	50%
2	Penstock tunnel	rm	253	215.55	38.20	253.75	100%
3	Vertical Shaft Tunnel	m	255	0	4.35	4.35	1.69%
4	Headrace Tunnel	m	2020	0	4.5	5.5	0.22%
5	Penstock Alignment						
	Excavation CAB-8 to CAB-12	rm	0+560 to 0+800	240	0	240	
<b>C</b>	<b>Hydromechanical Work</b>						
1	Mobilization	%	100%	50%	0%	50%	50%



S. N.	Description	Unit	Total Qty	Till Previous Month					This Month Progress					Completed Till Date	% Completed
2	Steel plate reached at Pokhara shop	Ton	1180	1180					0					1180	100%
3	Fabrication of pipe		Started from 28 <sup>th</sup> Nov 2025 at Pokhara shop												
	Size (mm)	36	32	28	25	22	20	18	16	14	12	10	8		
	Edge Preparation	54	132	93	18	12	12	6	18	6	5	5	49		
	Rolling	54	132	93	18	12	12	6	18	6	5	5	49		
	LS Welding (2.5m)	27	66		11	8	9								
	NDT (2.5m)	27	66		1										
	Site Reached	54	132	93	18	12	12	6	18	6	5	5	49		
<b>D</b>	<b>Electromechanical Work</b>														
1	Bid Submission	LS	1	1		0			1		100%				
2	Contract award	LS	1	0		1			1		100%				
<b>E</b>	<b>Transmission Line Work</b>														
1	PQ process	LS	1	1		0			1		100%				
2	Tender Process	LS		Ongoing											

#### 4 Expected Progress for April 2026

The work throughout the all fronts will be continued and the expected progress for the month of March is hereunder.

##### 4.1 Internal approach to Powerhouse

Track Excavation of the internal access road to top of powerhouse is almost completed. Furthermore, layout of the powerhouse area and excavation is expected to start in the month.

##### 4.2 Ropeway Construction

The tensioning of rope has been started and expected to complete this month and handover within the end of the month.

##### 4.3 Headworks

In Headworks area, excavation of the undersluice have been completed and concrete works will be started in undersluice. Also, in Desander area, excavation of desander will be continued.

##### 4.4 Inlet HRT

Tunnel excavation will be started targeting 60 m for this month.



#### **4.5 Penstock Tunnel Construction**

Construction of penstock tunnel has been completed along with the widening for vertical Shaft. Supports at penstock tunnel have been completed and excavation of Vertical Shaft will continue.

#### **4.6 Hydromechanical works**

Hydromechanical team is transporting the fabricated pipe to site and welding works will be continued. The AB-12 bend will be transported, fabricated and erected in this month.

#### **4.7 Penstock Alignment**

The construction of AB 12 will be started and the excavation in AB 9 and AB 10 will be started.

## 5 Appendices

### 5.1 Appendix 1: Photographs



*Figure 1: Undersluice excavation in Headworks Area*



*Figure 2: Headworks area (Undersluice)*



*Figure 3: Earthwork excavation in Desander and Approach culvert area*



*Figure 4: Earthwork excavation in Desander area*



*Figure 5: Drilling on boulder in Approach culvert area*



*Figure 6: Shotcreting in HRT Inlet Portal*



*Figure 7: Shotcreting in widened part of Penstock Tunnel*



*Figure 8: Rockbolt drilling in Penstock tunnel widened area*



*Figure 9: Raise climber installation*



*Figure 10: Drilling with Raise climber in Vertical shaft*



*Figure 11: Preparation for blasting in Vertical Shaft*



*Figure 12: Ropeway Alignment*



*Figure 13: PCC work in Anchor Block 12 foundation*



*Figure 14: Hydromechanical workshop*



*Figure 15: Surveying and base station development near Powerhouse*



*Figure 16: Excavation in Bridge left abutment foundation in new alignment*



*Figure 17: Army visit*