# NUPCHE LIKHU HYDROPOWER PROJECT (57.5 MW)

**Ramechhap, Nepal**

# Project Progress Report

## Shrawan to Ashwin, 2082


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# Executive Summary

This Progress Report has been prepared to provide an update on the progress of the Nupche Likhu Hydropower Project (NLHP), Ramechhap (57.5 MW). It includes details about project activities and progress made from **Shrawan to Ashwin, 2082.** The key achievements during this period are as follows:

## A. Forest and EIA/IEE Related Works

1. Completion of tree cutting and stamping in Transmission line alignment along ROW. Also, tree plantation has been initiated.
2. Agreement between the land owner along the Transmission Line alignment has been 98.69% completed.
3. Frequent Site visit from GCAP representative and providing training for Army personals and the Contractors representative at site for the protection of wildlife as well as the safety related trainings.
4. Implementation and follow-up of environmental and social management plan throughout the construction phase to achieve good environment.
5. Construction of Chakarma Agriculture and Poultry Farm group building.
6. Construction of Mud House for teachers' residence at Shree Himalay basic School Lahachhewar has been completed.
7. Construction of Dharma Sala for Lhundrup Choling Monastary has been completed.

## B. Preliminary/Preparatory Works

1. The road strengthening and routine maintenance of project's access road has been accomplished for this season.

## C. Civil Works

1. **93.18%** of physical progress in Civil Works has been achieved.
2. Progress in Excavation of HRT (Headrace Tunnel) are demonstrated each front wise below:

| SN | Description of Site | Tunnel Length(m) | Actual Tunnel Excavated (m) | Remaining | Progress |
|---|---|---|---|---|---|
| 1.0 | **Vertical Shaft** | 294.37 | 294.37 | 0 | 100.00% |
| 2.0 | **Penstock Tunnel** | | | | |
| 2.1 | First Unit Bifurcation | 56.28 | 56.28 | 0 | 100.00% |
| 2.2 | Second Unit Bifurcation | 45.814 | 45.814 | 0 | 100.00% |

| | | | | | |
|---|---|---|---|---|---|
| 2.3 | Third Unit Bifurcation | 32.28 | 32.28 | 0 | 100.00% |
| 2.4 | Penstock Tunnel | 631.2 | 631.2 | 0 | 100.00% |
| | **Total (1+2)** | **1060** | **1060** | **0** | 100.00% |
| **3.0** | **Headrace Tunnel** | | | | |
| 3.1 | **Outlet Portal-Adit Junction** | 1563.45 | 1563.45 | 0 | 100.00% |
| 3.2 | **Adit Junction-Outlet Portal** | 1164.55 | 1164.55 | 0 | 100.00% |
| 3.3 | **Likhu Inlet- Nupche Likhu Junction** | 1426.254 | 1426.254 | 0 | 100.00% |
| 3.4 | **Nupche Inlet -Nupche Likhu Junction** | 1598.915 | 1598.915 | 0 | 100.00% |
| 3.5 | **Adit Portal-Adit Junction** | 346.121 | 346.121 | 0 | 100.00% |
| 3.6 | **Adit Junction-Nupche Likhu Junction** | 227.978 | 227.978 | 0 | 100.00% |
| | **Total (3)** | **6327.268** | **6327.268** | **0** | **100%** |
| **4.0** | **Surge Shaft and Connecting Tunnel** | | | | |
| 4.1 | **Surge Shaft Connecting Tunnel** | 20.03 | 20.03 | 0 | 100.00% |
| 4.2 | **Surge Shaft** | 42.83 | 42.83 | 0 | 100.00% |
| 4.3 | **Adit 2 (Additional Bypass Tunnel)** | 155.9 | 155.9 | 0 | 100.00% |
| | **Total (4)** | **218.76** | **218.76** | 0 | 100.00% |
| **Total (1+2+3+4)** | | **7605** | **7605** | **0** | **100.00%** |

3. All the Excavation work of tunnel is completed with final break through on 2082/05/14 (2025/08/30)
4. 3378.98m (61.16%) of tunnel finishing works out of 5979.92m has been completed.
5. Installation of Rock bolting and Ribs work inside tunnel are all completed.
6. Shotcrete for power house protection and Gabin protection work for knife Gate valve in Likhu HRP are both complete.
7. Concreting of Valve house along penstock alignment is completed and finishing with doors and windows are ongoing.
8. Tail race canal 2 concreting is about completed.
9. Likhu Head work is completed with 99.52% progress.
10. Upstream Floodwall, Approach Culvert concreting at Nupche headworks area has been completed.
11. Concreting works in Intake and Settling Basin Transition Part is completed.
12. 89% of RCC works of Settling Basin/ Flushing at Nupche HWs has been completed.
13. Along the Nupche Headrace pipe alignment, 8 nos. of Anchor Blocks AB0 to AB8 including Kholsi Crossing concrete works at D/S of AB8 has been completed along with RCC retaining wall in RHS of HRP.
14. Backfilling work for the Nupche headrace pipe Anchor Blocks is currently in progress.

15. Major Structure of Control Building at both the Headwork are completed and some finishing work both HWs control building design in progress.
16. Along the penstock alignment, excavation and construction of 25nos of Anchor Blocks out of 27 has been completed with only 2 Anchor Block (AB-1 and AB-27) remains under progress

**The details of Anchor Blocks are as follows.**

| S. N | Particulars | Quantity |
|---|---|---|
| **A** | **Penstock Alignment** | |
| 1 | Total numbers of Anchor Blocks along Penstock Alignment. | 27 |
| 2 | Total numbers of Completed Anchor Blocks (AB-02,AB-03, AB-04, AB-05, AB-06 AB-07, AB-08, AB09, AB-10, AB-11, AB-12, AB-13, AB-14, AB-15, AB-16, AB-17, AB-18, AB-19, AB-20, AB-21, AB-22, AB-23, AB-24 ,AB-25, AB-26). | 25 |
| 3 | Total Remaining Anchor Blocks (AB-01, AB-27). | 2 |
| 4 | Total Completed Percentage of Anchor Block. | 92.59% |
| **B** | **Likhu Headrace Pipe** | |
| 1 | Total numbers of Anchor Blocks along Likhu HRP Alignment. | 20 |
| 2 | Total numbers of Completed Anchor Blocks (AB-01, AB-02, AB-03, AB-04, AB-05, AB06, AB-07, AB-08, AB-09, (AB-10, Casing at AB-11), AB-12, AB-13, AB-14, AB-15, AB-16, AB-17, AB-18, AB-19, AB-20). | 20 |
| 3 | Total Remaining Anchor Block. | |
| 4 | Total Completed Percentage of Anchor Block. | 100% |
| **C** | **Nupche Headrace Pipe** | |
| 1 | Total numbers of Anchor Blocks along Likhu HRP Alignment. | 9 |
| 2 | Total numbers of Completed Anchor Blocks (AB-01, AB-02, AB-03, AB-04, AB-05, AB06, AB-07, AB-08). | 8 |
| 3 | Total Remaining Anchor Block (AB-09). | 1 |
| 4 | Total Completed Percentage of Anchor Block. | 88.89% |

17. Concreting at the Vertical shaft up to 168m from the bend (VS2) has been completed.
18. Concreting works at Penstock Tunnel up to 434m from the bend (VS2) has been completed.

## D. Electromechanical (EM) Work

1. Approvals of all design memorandum, drawing and calculation completed with progress of **91.53%.**
2. Procurement and manufacturing of all requirements is 98% complete with only 1 set of turbine housing assembly remaining
3. Factory inspection, testing and Transportation is 94% delivered to the site while only 2 sets of turbine housing assembly and firefighting system are remained to be dispatched.

4. Overall site installation works with BoP of Electrical is **76%** and BoP of mechanical is **60%**

**E. Hydro mechanical (HM) Works**

1. **91.88%** of Hydromechanical works has been completed.
2. 85% of installation of embedded parts and gate frames in Nupche HWs components is completed and 100% gate frames are installed at Likhu HWs.
3. 82.70% of works has been completed along Nupche HRP and 99% of works has been completed along Likhu HRP.
4. 84.84% of erection of pipe along penstock alignment are completed.
5. 86.11% of Pipes erection has been completed.

**The details are as follows:**

| Erection of PIPES | Total Length (m) | Erected Length (m) | Remaining Length(m) | % Completed |
|---|---|---|---|---|
| Penstock | 1527.54 | 1290.4 | 237.14 | 84.48% |
| Vertical Shaft | 298.76 | 176 | 122.76 | 58.91% |
| Horizontal Shaft | 569 | 499.2 | 69.8 | 87.73% |
| Bifurcation and Manifolds (Branch pipe) | 182 | 125.99 | 56.01 | 69.23% |
| Likhu HRP | 1053.12 | 1049.12 | 4 | 99.62% |
| Nupche HRP | 421.35 | 348.447 | 72.902 | 82.70% |
| **Total** | **4051.77** | **3489.16** | **562.61** | **86.11%** |

**F. Transmission Line**

1. **86.54%** of Transmission Line works has been completed.
2. Approx 98% of tower material has been delivered to site.
3. 97.44% excavation of tower foundation has been completed.
4. 96.15% of Tower foundation concreting has been completed.
5. 95.51% of Tower foundation has been completed with back filling of Pit.
6. 76.92% of Tower Erection work has been completed.
7. 12.83% of Stringing work has been completed.

**The details of Progress for this Quarter is Illustrated below: -**

| SN | Activities/Description of Works | Unit | Total Activities/Works of the Project | Work Completion till Reporting Period | Item wise Overall Progress |
|---|---|---|---|---|---|
| | | | Quantity | Quantity | % |
| **1.0** | **Foundation Works** | | | | **96.37%** |
| 1.1 | Excavation | Nos. | 78 | 76 | 97.44% |
| 1.2 | Concreting | Nos. | 78 | 75 | 96.15% |
| 1.3 | BackFilling | Nos. | 78 | 74.50 | 95.51% |
| **2.0** | **Erection Works** | | | | **76.92%** |
| 2.1 | Erection Works | Nos. | 78 | 60 | 76.92% |
| **3.0** | **Stringing Works** | km | 24 | 3.08 | 12.83% |

## G. Planning, Governance and Other Works

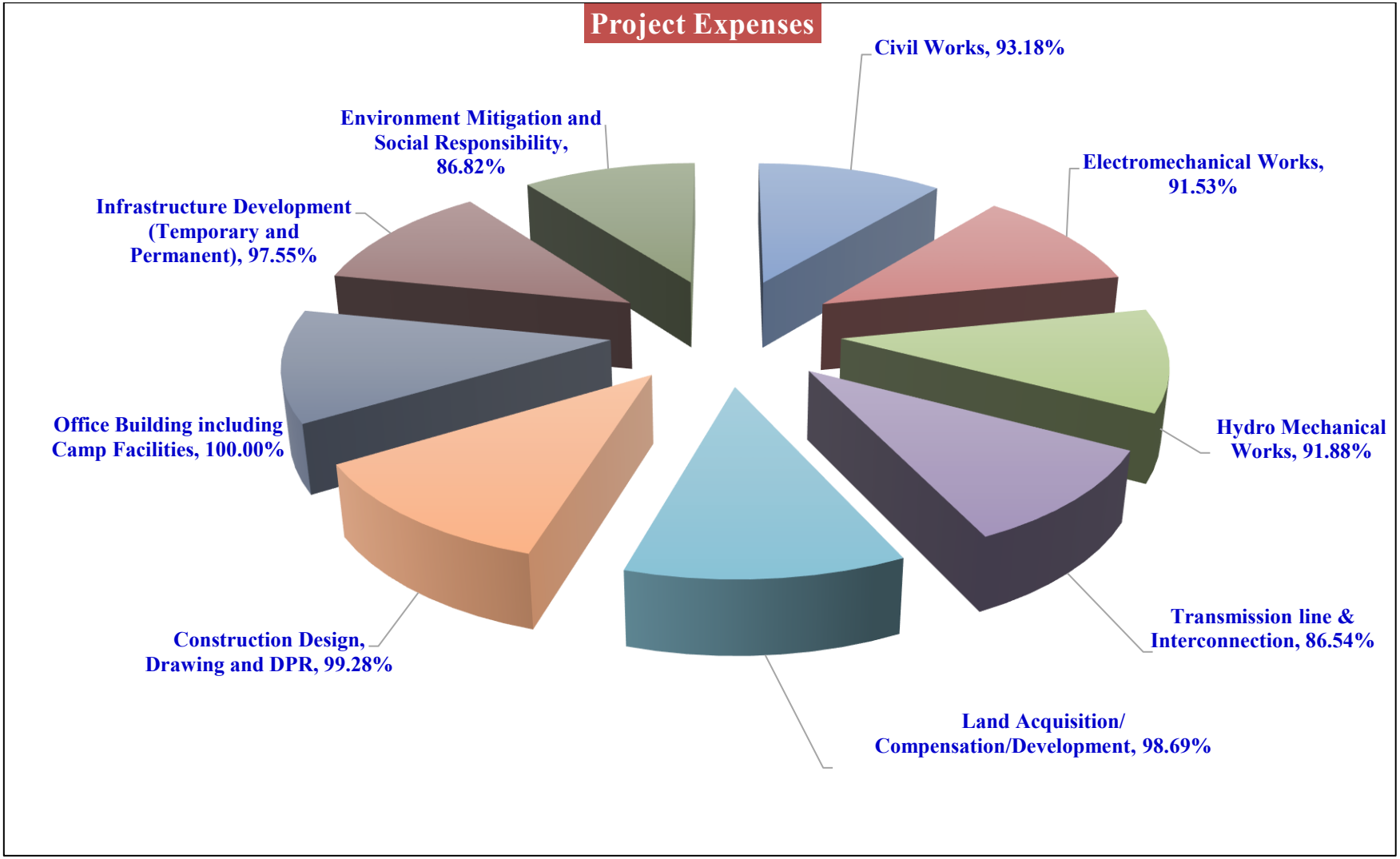
1. Investment in nearby small and other large projects has been completed and the review of the application is ongoing from the Government Officials.
2. Development and Implementation of Strategy to increase Productivity has been effectively done.
3. Release of IPO for the public is in final stage.
4. Optimum productivity plan for four-month Magh, Falgun, Chaitra and Baiskah-2082 along with demobilization plan and Cost Optimization has been finalized with the civil Contractor.

## H. Any Bottlenecks

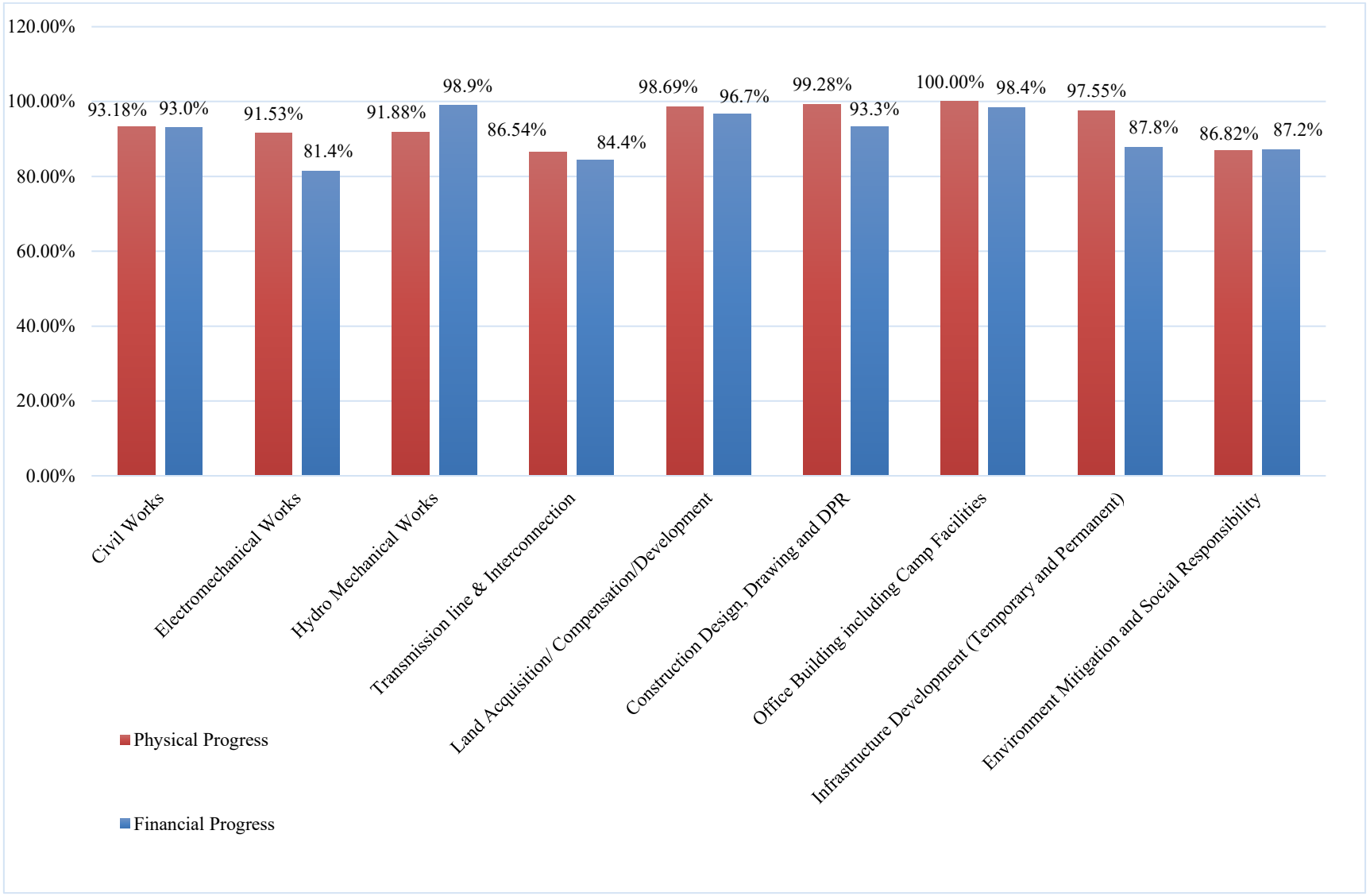
1. Finishing Work of Tunnel.
2. Transportation of Major EM- Equipment along with their erection.
3. Completion of VT/PT Pipe Erection.
4. Completion of Transmission Line Works.

## I. Financial and Physical Progress

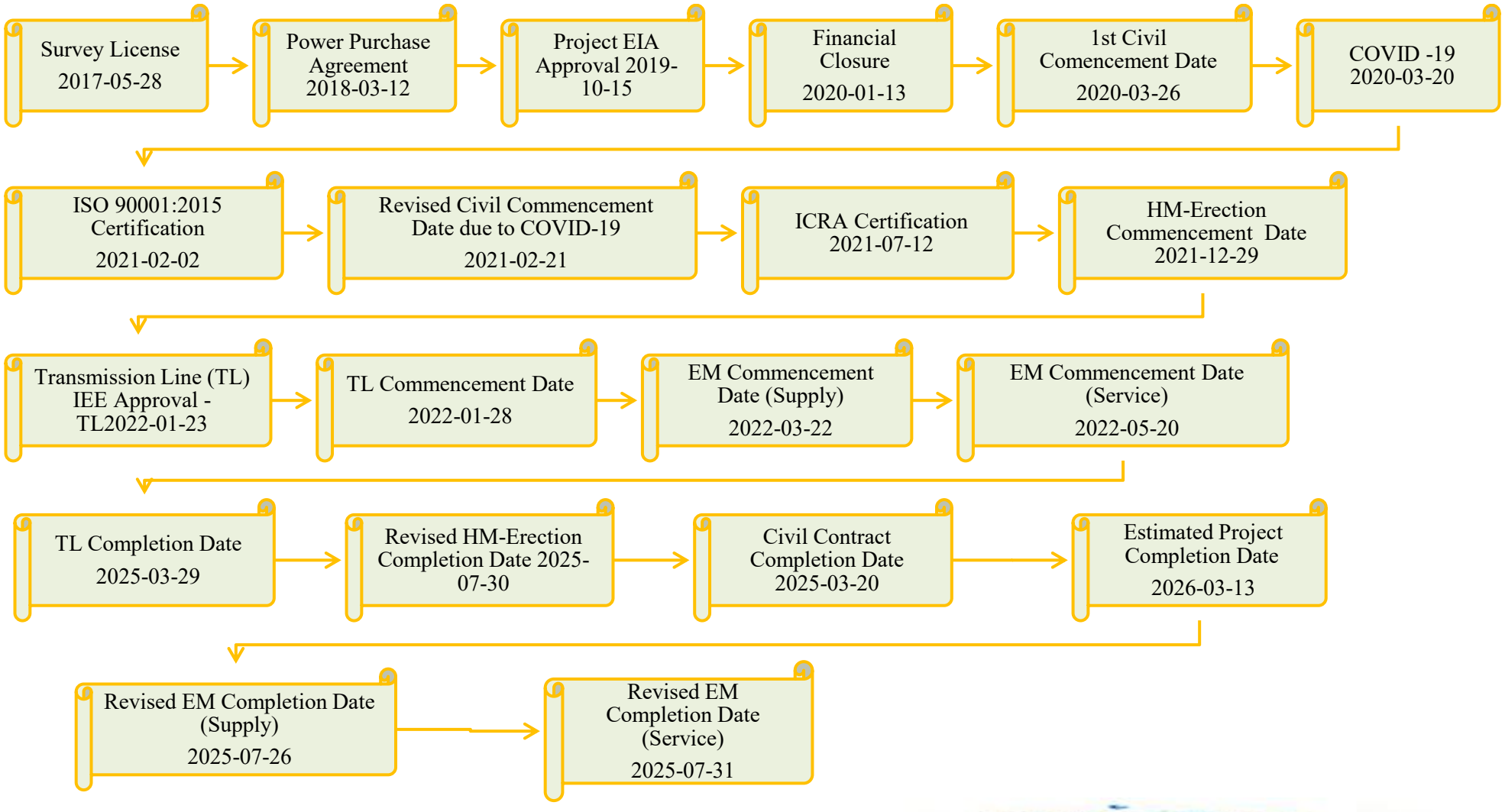
1. Till the date **90.00%** of the budget has been utilized and about **92.89%** of the overall physical progress has been achieved;


Project Expenses
Civil Works, 93.18%
Electromechanical Works, 91.53%
Hydro Mechanical Works, 91.88%
Transmission line & Interconnection, 86.54%
Land Acquisition/ Compensation/Development, 98.69%
Construction Design, Drawing and DPR, 99.28%
Office Building including Camp Facilities, 100.00%
Infrastructure Development (Temporary and Permanent), 97.55%
Environment Mitigation and Social Responsibility, 86.82%

# Physical Vs Financial Progress.



**J. Revised NLHP Project's Major Timeline**



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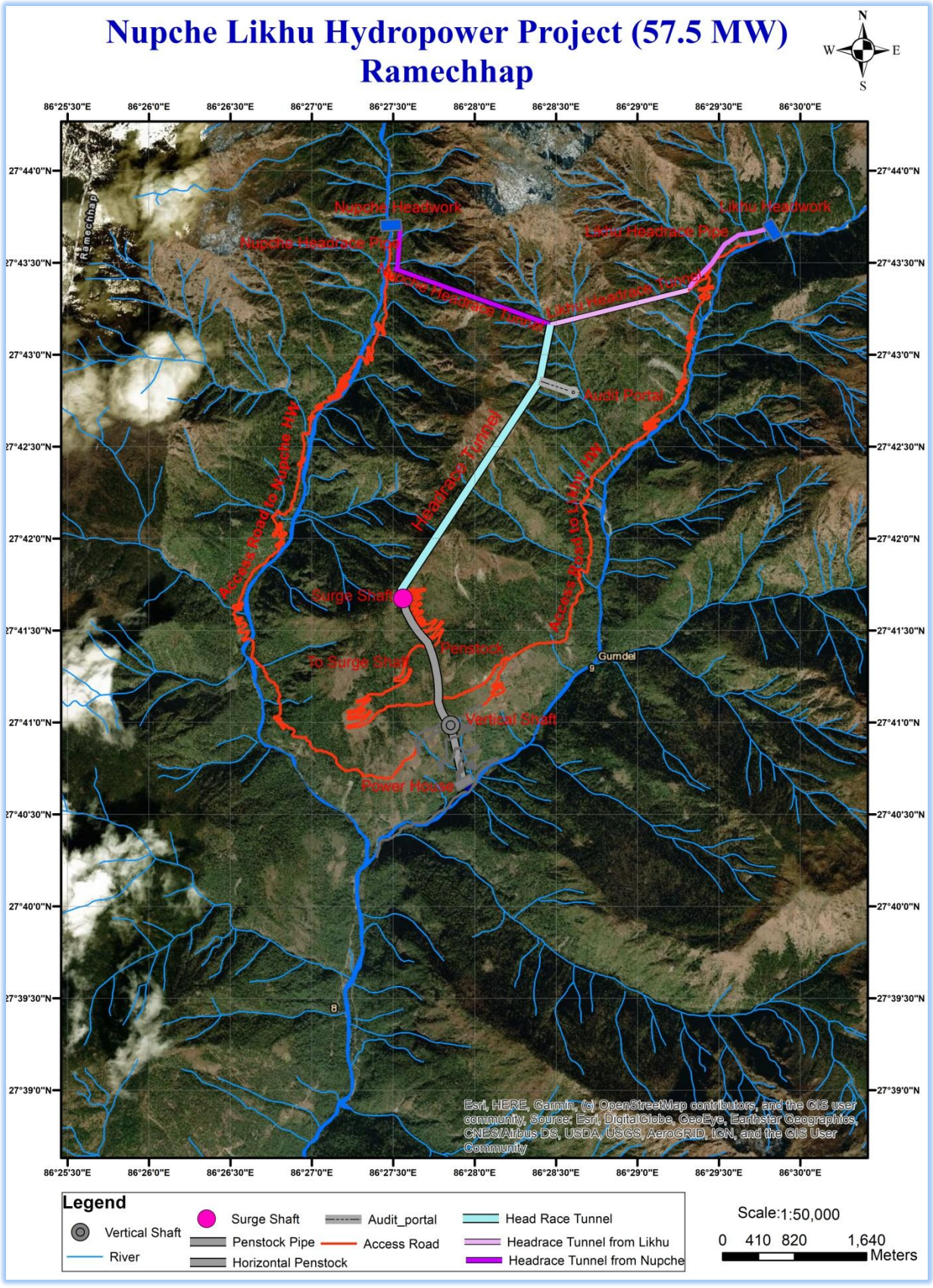
# Section A: About the Project



# 1. Introduction

## 1.1 Background

Vision Energy & Power Ltd (VEPL) is committed to developing the 57.5 MW Nupche Likhu Hydropower Project in the Ramechhap District by utilizing local technical, managerial, and financial expertise. The company is dedicated to supplying power to the National Grid to meet domestic energy demands. This project is designed as a run-of-river (RoR) hydropower initiative.

## 1.2 About the Project

The proposed Nupche Likhu Hydropower Project is situated in Umakunda Rural Municipality of Ramechhap District, Nepal. The project utilizes water sourced from the snow-fed Nupche and Likhu rivers, originating in the high mountainous and hilly regions. The intake for the project is positioned north of Lahachhewar Village on the left bank of the Nupche Khola, with a weir crest elevation of 3338 m above mean sea level (amsl), and on the right bank of the Likhu Khola, also with a weir crest elevation of 3338 m amsl. The powerhouse is located on the right bank of the Likhu Khola, with the turbine centerline at 2332.35 m amsl. The project has an estimated gross head of 1005.65 meters and a design discharge of 7.11 $m^3$/sec.

## 1.3 Location & Access:

The project can be access from Kathmandu through an existing all-weather road up to Manthali (131 km) or 94 km road from Bardibas. After Manthali, following about 125 km partly stone paved earthen road reaches up to Kyama, Gumdel VDC. Furthermore, from Kyama an access road has been reached near to Kongematar village, the proposed Powerhouse site, Lahachhewar village which is also the residential area for the project employees, Outlet/Surge Shaft, Adit Tunnel, Likhu Headworks and Nupche Headworks.

## 1.4 Main Financial Features of the Project

a) Total project cost of the project: NRs. 11,303,002,196 and total cost per MW = NRs. 196,573 thousand.
b) Internal Rate of Return (IRR): 16.69 %, Equity Internal Rate of Return (EIRR): 23.83%
c) Simple Payback Period: 5.11 Years; Discounted Payback Period: 8.35 years.
d) High Energy per MW (6.63 GWh p.a.), Dry Energy 36.61% and Wet Energy 63.29%
e) Income Per MW: is NPR 4.07 Crore.
f) The Project has high head. It ensures cost efficiency and high energy.
g) Professional, Transparent and Responsible Management.
h) Aims to benefit Small and medium Investors too.

i) Focused on high Return on Investment and high value in secondary market.

## 1.5 Salient Features of the Project

| S.N. | Particulars | Remarks |
|---|---|---|
| 1. | **General** | |
| | Name of the Project | Nupche Likhu Hydropower Project |
| | Type of the Project | Snow fed Run-off River Hydropower Project |
| 2. | **Location** | |
| | Zone/ Development Region | Janakpur Zone/Central Development Region |
| | **District** | Ramechhap |
| | Project Location | Umakunda Rural Municipality, (Gumdel VDC) |
| | River | Nupche Khola and Likhu Khola |
| | **License Boundary** | |
| | Longitude | 86°26'30" E - 86°30'30" E |
| | Latitude | 27°40'37" N - 27°43'43" N |
| 3. | **Hydrology** | |
| | Catchment Area at Headworks | 150 $Km^2$ (Nupche 82$km^2$&Likhu 68 $km^2$) |
| | Design Discharge (Q 45 %) | 3.89 $m^3/s$+ 3.22 $m^3/s$ (Nupche & Likhu) = 7.11$m^3/s$ |
| 4. | **Nupche & Likhu- Headworks** | |
| | **Weir** | |
| | Type | Boulder line weir |
| | **Bed Load Sluice** | |
| | Type | Bed Load |
| | **Intake** | |
| | Type | Orifice, Side Intake |
| | **Gravel Trap** | |
| | Type | Single, Dufour |
| | **Settling Basin** | |
| | Type | Double Bay Dufour Type |
| 5. | **Headrace Pipe** | |
| | Headrace Pipe | 421.35m & 1053.12m (Nupche & Likhu) |
| 6. | **Tunnel Length** | |
| | Total Length | 7450.201 m |
| | Tunnel Size | 3.2 m x 3.8m (Excavation Size) |
| 7. | **Surge Tank** | |
| | Type | Surface, Circular |
| 8. | **Penstock Pipe Length** | |
| | Total Steel Penstock Pipe | 2639.5 m |
| 9. | **Power House** | |
| | Type | Surface |
| 10. | **Turbine** | |
| | Type | Horizontal Pelton |
| | Number of units | 3 |
| | Rated Output Capacity per unit | 20.26 MW |
| 11. | **Generator** | |
| | Type | Solid State, PID Governor |
| | Number of units | 3 |

| | | |
|---|---|---|
| | Rated Output Capacity | 22.55 MVA |
| | Excitation System | Brushless Type |
| 12. | **Transformer** | |
| | Type | Outdoor, Oil immersed, Three Phase |
| | Rated Capacity | 23 MVA |
| | Number of Units | 3 |
| 13. | **Tail-Race Canal** | |
| | Type | Box Culvert |
| 14. | **Transmission Line & Grid** | 24 km 132 kV Double circuit line up to National grid at 132 kV switchyard of Proposed NEA Hub at Garjyang Substation, Ramechhap district. |
| 15. | **Power and Energy** | |
| | Gross Head | 1005.65m |
| | Net Head at Full Flow | 968.33 m |
| | Installed Capacity | 57.5 MW |
| | Generated Energy per Annum | 139.757 GWh, 36.61% (Dry) and 241.978 GWh, 63.39% (Wet) **Total: 381.735 GWh** |
| 16. | **Project Road to HW & PH** | 38.90 km |
| 17. | **Approximate Cost of Project** | 11,303 million (Revised as per lending Bank Technical Consultant) |
| 18. | **Estimated Project Completion Date** | 2082/12/30 BS<br>2026/03/13 AD |

### 1.6 Investment Module

The investment in Promoters Share has been closed from Ashwin End 2075.

# 2. Human Resources and Good Governance

### 2.1 Organization Chart

The organization structure of Nupche Likhu Hydropower Project has been prepared considering Construction, Operation & Maintenance phases of the Project. The detained organization chart is presented in the official website of the company i.e. www.veplinfo.com.

### 2.2 Good Governance

Nupche-Likhu Hydropower Project has proposed Performance Based Incentive program for its employee. The key performance area (KPA) and Key performance index (KPI) is developed for whole project period. Based on the developed KPI the performance evaluation mechanism is developed. Further,

1. Various manuals such as Finance Manual, Human Resource Manual, Investment Manual, Corporate Governance Guidelines, Performance Evaluation Guidelines, Project Management Guidelines, Branding Guidelines, etc. are in practice.

2. Formation of various committees such as High-level coordination sub-committee, Audit Committee, Local Area Co-ordination Sub-Committee and International Co-ordination Sub-Committee.
3. Recruitment of highly professional Consultants.
4. Work plan assigned to each executive level and working level personnel.
5. Updates on performance evaluation format for each personnel which is conducted on quarterly basis.
6. Compliance officer appointed for legal and internal guidelines compliance.
7. Regular meeting of Board of Directors and Various Committees.
8. Unique investment module and mechanism to select quality investors.
9. Integrity, transparency, legal compliance, team work, higher return, responsibility, safe investment, accountability are the core values of the Company.

# 3. Project Implementation

## 3.1 General

The company has obtained the Generation Liscence. It has planned to generate electricity within the period of 4 years from the commencement of construction work. The Environmental Impact Assessment (EIA) for the project and Initial Environmental Examination (IEE) for the Transmission Line has been approved. The Supervision & Management Consultants, Civil Contractor, Explosives Suppliers, Electromechanical Contractor, Hydromechanical Contractor and Transmission Line Contractor are actively involve in the construction of the project. Detailed progress of the project is also presented in the official website of the company i.e., www.veplinfo.com.

## 3.2 Completed Works of the Project

### 3.2.1 Forest, EIA & IEE Related

1. **Environmental Impact Assessment (EIA)** study of Project has been approved.
2. The application for approval of **'Tree Cutting and use of Government Land'** has been approved from the Council of Ministers.
3. Procurement of Land for the replacement of the government land used by the Project has been completed.
4. The agreement between Department of National Parks and Wildlife Conservation, Department of Forests and Soil Conservation and Vision Energy & Power Ltd. for use of **'Tree Cutting and use of Government Land'** has been signed on 30th Chaitra, 2077.
5. Field Work for Tree Counting and Stamping for the project is completed in pursuant to EIA.
6. IEE for the Transmission Line has been approved on 2076-10-09 and Tree cutting and government land use for Transmission Line from cabinet of government of Nepal has been

approved on 2080-04-23, also agreement with Department of National Parks and Wildlife Conservation has been concluded.

7. Submission of self EHS Audit Report to ministry of Forest and Environment.
8. Land acquisition and Agreement with the NPWC has been completed and Tree stamping completed and cutting is in progress.

### 3.2.2 Preliminary/Preparatory Works

1. **Survey License** of the project was obtained for 57.5 MW on 2074/06/29 (15/10/2017).
2. **Power Purchasing Agreement (PPA)** has been done with Nepal Electricity Authority (NEA) on 2074/11/28 (12/03/2018).
3. **Financial Closure** has been completed with Machhapuchchhre Bank Ltd. (Lead Bank), Himalayan Bank Ltd. (Co-Lead Bank), Citizens Bank International Ltd., NCC Bank Ltd., Kumari Bank Ltd., Agriculture Development Bank Ltd., Rastriya Banijya Bank Ltd., Global IME Bank Ltd.., Kamana Sewa Bikash Bank Ltd.
4. **Generation License** has been obtained on 2076/10/12.
5. The License for Transmission Line has been obtained on 2078/12/30.
6. **Automatic Gauge Station** has been installed at Nupche & Likhu Intake site.
7. **Hydroelectricity Investment and Development Company** (HIDCL) has approved to invest in equity share capital of Vision Energy & Power Ltd (VEPL).
8. **Detailed Engineering Design** of the Project & Transmission Line has been completed.
9. The **Construction of main Camp House and associated facilities** has been completed.
10. **Bank's consultants** for the project have been selected.
11. The Company's Senior Management team including the Chairman, Board of Directors, General Manager, Project Director **launched blasting process** for the Penstock Tunnel and Vertical Shaft construction work on *12th Ashwin 2078*.
12. The **Supervision & Management Consultants, Civil Contractor, Explosives Suppliers, Electromechanical Contractor, Hydromechanical Contractor and Transmission Line Contractor** has been selected and agreement has been signed.
13. Land acquisition for the Project has been completed.
14. Completion of Construction Power Line.

### 3.2.3 Civil Works

1. **93.18%** of physical progress in Civil Works has been achieved.
2. Finishing works such as installation of Doors and Windows and painting works in Control Building and Concreting of foundation bolts of Switchyard area has been completed.

3. Protection walls and retaining walls has been completed in powerhouse and Switchyard area respectively.
4. Concreting works of tailrace panel has been completed.
5. Powerhouse and Control Building has been handed over to EM Contractor.
6. Excavation work of tunnel is completed with final break through on **2082/05/14 (2025/08/30)**
7. 61.16% of shotcrete lining work of tunnel has been completed.
8. Final concreting works at the Surge Shaft have commenced and are currently at the midway point.
9. The total Tunnel of **7605** has been completed.
10. Completion of 168 m Concreting at the Vertical Shaft and 434 m of concreting at Penstock Tunnel.
11. Likhu Headworks is on the verge of completion, with approximately 99.38% of civil works and 99% of the second-stage concreting finished.
12. Completion of concreting all Anchor Block from to 20 has been completed and backfilling works of Anchor Block from AB1 to AB20 for Likhu Headrace pipe has been completed.
13. Along the penstock alignment, 25 Anchor Blocks out of 27 has completed.
14. Excavation along penstock Alignment for remaining 2 nos. of Anchor Block are in progress.
15. Retaining wall from Switchyard to main gate is in progress.
16. Road crossing for cable Trench from SY to Control Room is completed.
17. Fire Fighting Tank Construction has been completed.
18. Rockfall barrier works has been 100 % completed for Powerhouse area.

### 3.2.4 Electromechanical Works

1. **91.53%** of physical progress in Electromechanical Works has been achieved.
2. Completion of powerhouse station.
3. Installation of protection Pannel completed at Powerhouse.
4. Receiving end substation earth mat completed.
5. Main transformer assembly completed.
6. AC and ventilation work in Powerhouse completed.

### 3.2.5 Hydro mechanical Works

1. **91.88%** of Hydromechanical works has been completed.
2. 85% of installation of embedded parts and gate frames in Nupche HWs components is completed and 100% gate frames are installed at Likhu HWs.

3. 82.70% of works has been completed along Nupche HRP and 99% of works has been completed along Likhu HRP.
4. 84.84% of erection of pipe along penstock alignment are completed.
5. 86.11% of Pipes erection has been completed.

### 3.2.6 Transmission Line

1. **86.54%** of Hydromechanical works has been completed.
2. Approx 98% of tower material has been delivered to site.
3. 97.44% excavation of tower foundation has been completed.
4. 96.15% of Tower foundation concreting has been completed.
5. 95.51% of Tower foundation has been completed with back filling of Pit.
6. 76.92% of Tower Erection work has been completed.
7. 12.83% of Stringing work has been completed.

**K. Planning, Governance and Other Works**

### 3.2.7 Governance

1. The Company has received ISO 9001:2015 Certificate on 2021-02-02.

## 3.3 Ongoing Works of the Project

### 3.3.1 Quality and Good Governance

1. ICRA rating revision is in progress.
2. Monitoring of ISO certification has been completed.

### 3.3.2 Forest and EIA Related Works

1. Implementation and follow-up of environmental and social management plan throughout the construction phase to achieve good environmental outcomes as per approved EIA

### 3.3.3 Preliminary/Preparatory Works

1. Road strengthening and routine maintenance of access road.

### 3.3.4 Civil Works

1. Kholsi Protection Work for the Nupche Desander, Penstock Pipe, and Powerhouse area is ongoing.
2. RCC works at Tail race canal 2 are ongoing.
3. Construction of control building is in progress.

4. Infill Concreting at VT and PT
5. M25 concrete works at Surge Shaft.
6. Finishing works at Headrace Tunnel.

### 3.3.5 EM (Electromechanical) Works

1. Control and Instrumentation cable termination works completed.
2. Cooling water system pipelines welding works.
3. Installation of hydraulic pressure unit (HPU) piping.
4. Manufacturing and Inspection for auxiliary equipment is in progress.
5. MV power cable laying, dressing, glanding and termination works.

### 3.3.6 HM (Hydro-mechanical) Works

1. Installation of Gates Leaf's at Nupche/Likhu Hws and Hoisting.
2. Fabrication, supply and installation of Knife Gate Valve of Likhu in progress.
3. Installation of Man Hole between AB-21 to AB-22.
4. Testing and Rectification of the HM pipes and accessories along with Nondestructive testing in Penstock Pipe.

### 3.3.7 Transmission Line

1. Tower protection work of different tower footing is in progress.
2. Erection of Tower.
3. Installation works of Stringing in Towers.

### 3.3.8 Planning and Other Works

1. Investment in nearby small and other large projects is ongoing;

## 3.4 Challenges Faced:

Though the company is committed to complete the work in stipulated time and schedule, company struggles to tackle the project management challenges and issues related to the processes and directions of government, local community, site condition etc. The major challenges we have faced are.

1. Delay in transportation of Electro-mechanical equipment by the EM Contractor.
2. Local issues such as excessive demands for construction equipment's/upgradation of roads and support for monastery construction etc.

3. Topographical challenges and unexpected ground conditions at TL alignment than anticipated in geotechnical investigation.
4. Prolonged Monsoon season with Heavy rain on 2082/05/18 to 2082/05/20 disturbed work flow.
5. Political change during Gen-Z protest cause delay in material supply chain.
6. Damaged road section in various location of access road to Nupche-Likhu Hydropower project.

**Management Plan for the Mitigation of Challenge:**

1. Co-ordination with local authority and local people about the issue.
2. Beside the topographical challenges the resources such as equipment and manpower with advance working methodology have been adopted.
3. Work to be Expedite which were lagged due to monsoon.
4. Storage of enough material to upheld any disturbance in supply chain.
5. Road maintenance work in progress and regularly being done.
6. Optimum planning for the progress and demobilization of contractor for cost optimization.

## 3.5 Physical Progress

Vision Energy & Power Ltd records physical progress data on every construction work of the Nupche Likhu Hydropower Project. The evaluation of project physical progress has been prepared by weighted method which is highlighted as the best and realistic technique to determine the percentage complete of the overall project. Below is the physical progress data as of **Ashwin, 2082**.

### Physical Progress

| SN | Activities | Physical Progress |
|---|---|---|
| 1 | Civil Works | 93.18% |
| 2 | Electromechanical Works | 91.53% |
| 3 | Hydro Mechanical Works | 91.88% |
| 4 | Transmission line & Interconnection | 86.54% |
| 5 | Land Acquisition/ Compensation/Development | 98.69% |
| 6 | Construction Design, Drawing and DPR | 99.28% |
| 7 | Office Building including Camp Facilities | 100.00% |
| 8 | Infrastructure Development (Temporary and Permanent) | 97.55% |
| 9 | Environment Mitigation and Social Responsibility | 86.82% |
| | **Total** | **92.89%** |

**OVERALL PHYSICAL PROGRESS ACHIEVED: 92.89%**

## 3.6 Financial Progress

Vision Energy & Power Ltd. records all important financial data on every aspect of a business's activities. Below is the financial progress data to manage the operations of our business and also to provide reporting transparency to our stakeholders.

**Allocated Budget Vs. Actual Utilization Up to 31st Ashwin, 2082**

**Financial Progress.**

| SN | Particulars | Revised Amount | Total Utilization Including Advance | Utilization % |
|---|---|---|---|---|
| 1 | Preliminary Works | 246,969,000 | 246,051,846 | 99.63% |
| 2 | Civil Works | 4,297,121,504 | 3,995,637,332 | 92.98% |
| 3 | Electromechanical Works | 1,393,112,270 | 1,134,395,389 | 81.43% |
| 4 | Hydro Mechanical Works | 1,277,016,246 | 1,263,171,367 | 98.92% |
| 5 | Transmission line & Switchyard | 616,207,595 | 519,876,251 | 84.37% |
| 6 | Land Acquisition/ Compensation/Development | 97,473,125 | 94,278,125 | 96.72% |
| 7 | Project Supervision/Management and Engineering | 559,548,771 | 505,088,450 | 90.27% |
| 8 | Construction Design, Drawing and DPR | 30,386,932 | 28,361,524 | 93.33% |
| 9 | Office Building including Camp Facilities | 94,355,241 | 92,855,241 | 98.41% |
| 10 | Office Equipment | 16,157,340 | 13,139,814 | 81.32% |
| 11 | Vehicle | 22,866,898 | 21,784,185 | 95.27% |
| 12 | Infrastructure Development (Temporary and Permanent) | 868,827,844 | 762,509,145 | 87.76% |
| 13 | Environment Mitigation and Social Responsibility | 197,040,608 | 171,773,237 | 87.18% |
| 14 | Loan Documentation Fee | 75,954,920.88 | 75,954,921 | 100.00% |
| 15 | Interest During Construction | 1,509,963,900 | 1,247,904,400 | 82.64% |
| | **Total** | **11,303,002,196** | **10,172,781,226** | **90.00%** |

***Total Share Capital as on 31st Ashwin, 2082: - NPR 3,320,000,000***

## 3.7 Loan Details

**Total loan from Consortium Banks is 7 Arab 93 Crores. Loan disbursement till this period is NPR 7,026,508,335.00**

## 3.8 Planning for the next quarter

a) Finishing Work for Entire Tunnel
b) Installation of All Generators
c) Transportation and Installation of Turbines
d) Complete Erection of All Pipes in Vertical Shaft and Penstock Tunnel, Including Concrete Infill
e) 100% Completion of Nupche Waterway HRP
f) 100% Completion of Penstock Pipe Works
g) 100% Completion of Nupche Headworks
h) Installation of Gates at Likhu Headworks, Nupche Headworks, and Tailrace
i) Complete Excavation and Backfilling for All 78 Towers Along Transmission Line
j) Erection of All 78 Towers Along Transmission Line
k) Completion of Stringing Works for 24 km Transmission Line
l) Completion of All Tower Protection Works

## ANNEX – 1: SOME PHOTOGRAPHS OF WORK PROGRESS

Work Progress in Switchyard

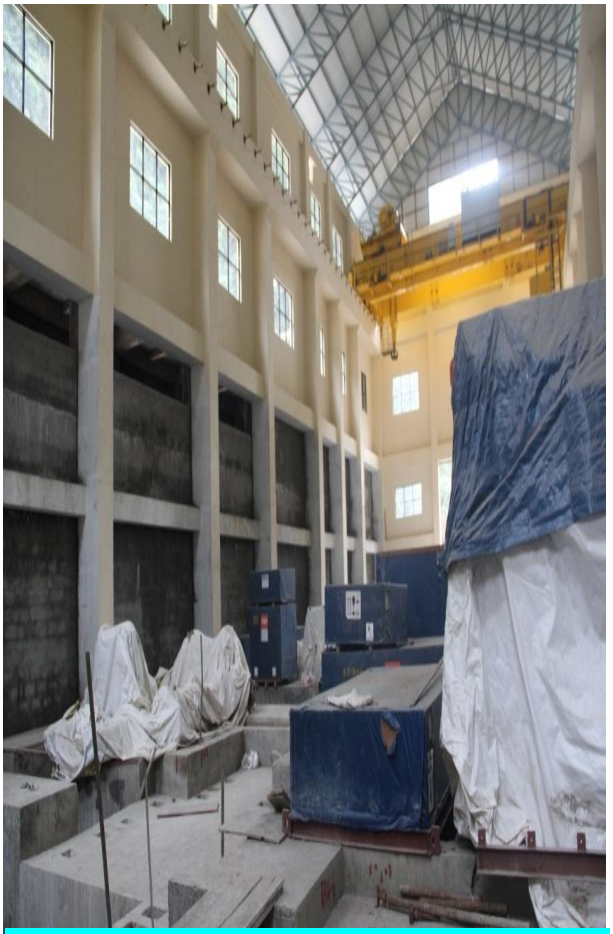
Powerhouse and Control Building

Structural Works for Valve House at Outlet

Nupche Headworks Spillway

Rebar Works for Foundation at Valve House

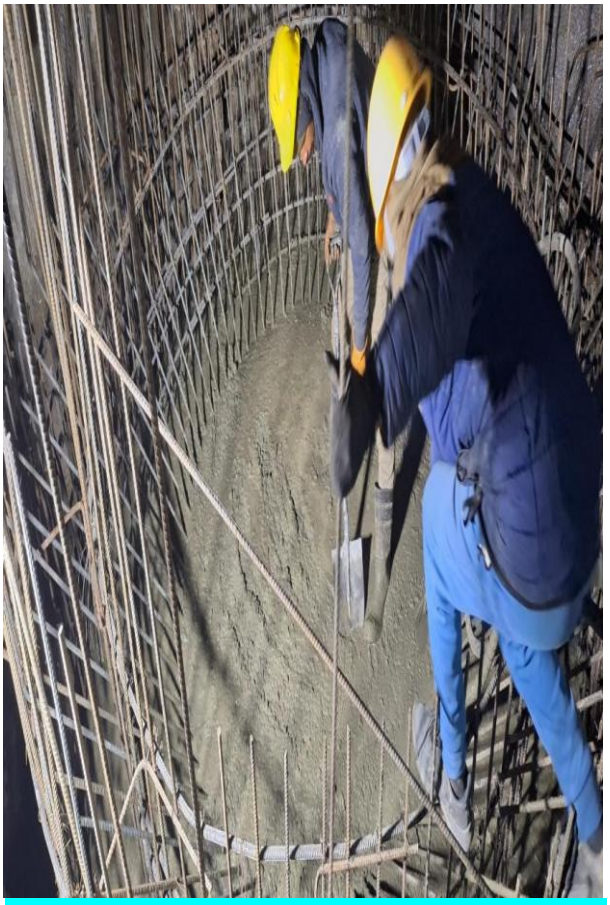
Concreting Works at Anchor Block



Inside View of Powerhouse

Base Preparation for Invert Concreting

Concreting at AB-1 d/s at Penstock Alignment.



Concreting Works at Surge Shaft

Stone Masonry Works at Control Building, Likhu Headworks

Control Building at Likhu Headworks

Concreting at Settling Basin

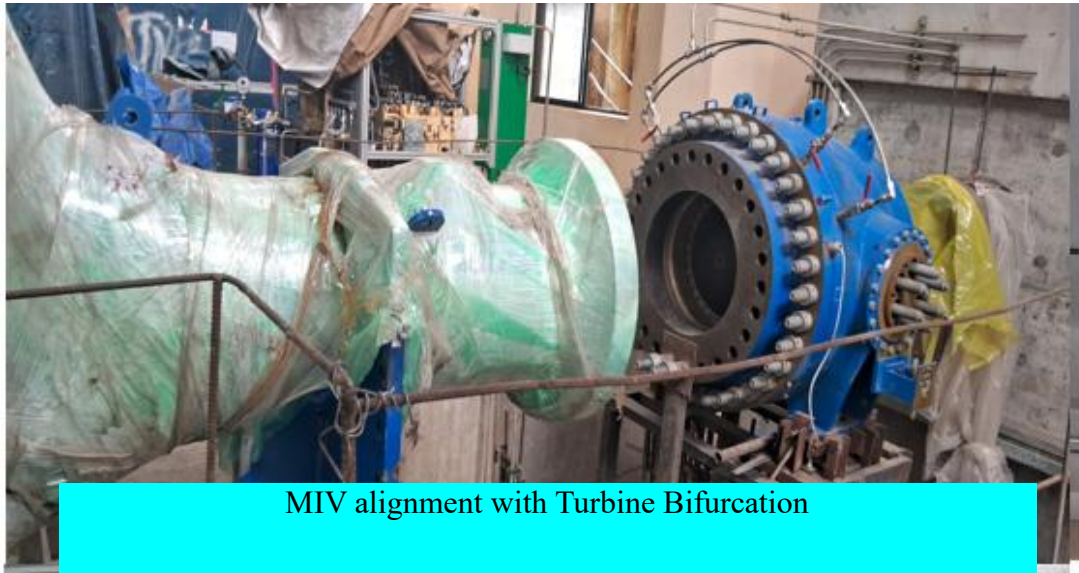
Gabion wall protection work along the river channel

Overall, View of Likhu Headworks

Nupche Headworks

Nupche Headworks - Intake

Nupche Headworks settling Basin



MIV alignment with Turbine Bifurcation

Generator Base frame Erection

Control Pannel in Control Room

Cable Laying works powerhouse to Switchyard.

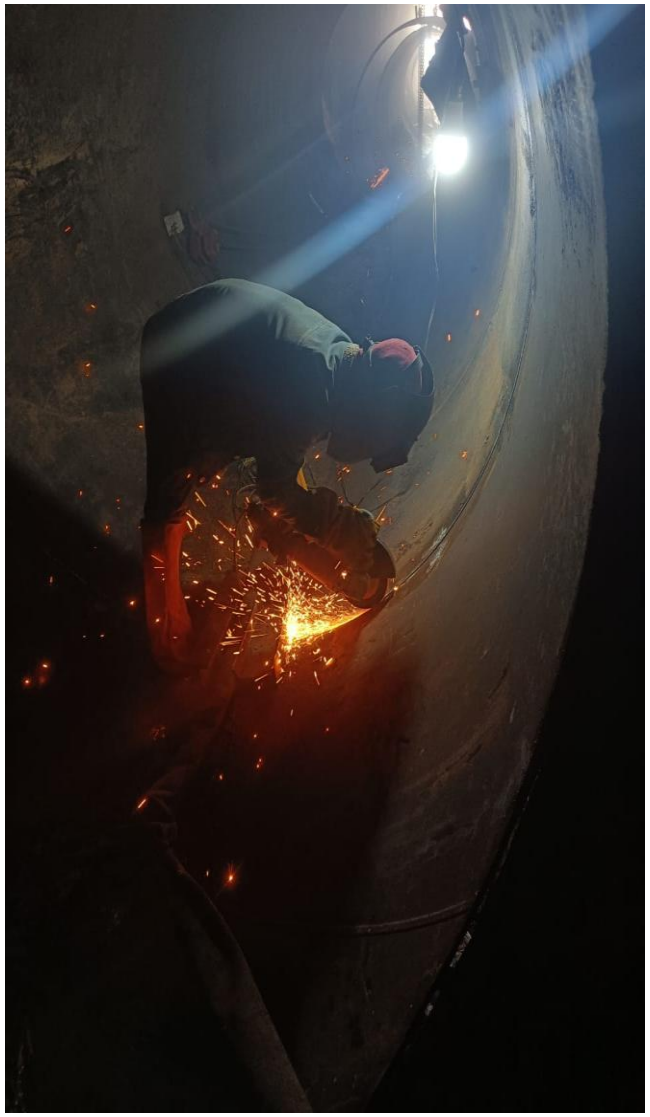
Main Transformer Installation

Earthing Works at Garjang Substation

Power Illumination Works

Powerhouse Switchyard Cable Works at Bay Marshaling Box


Pipe Works for Cooling Water System

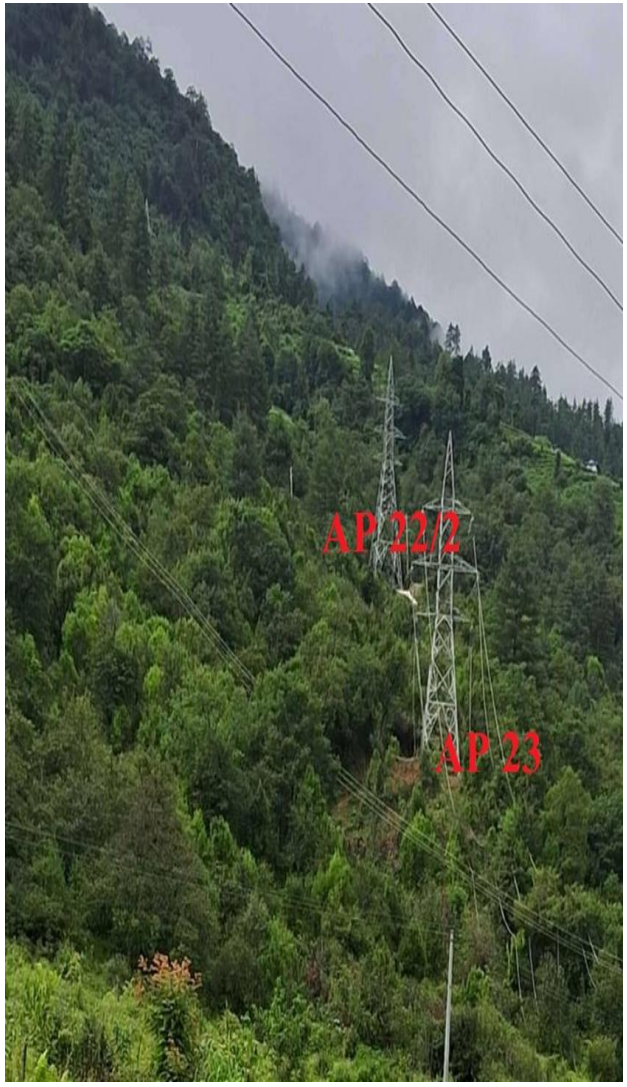


Penstock Erection Work

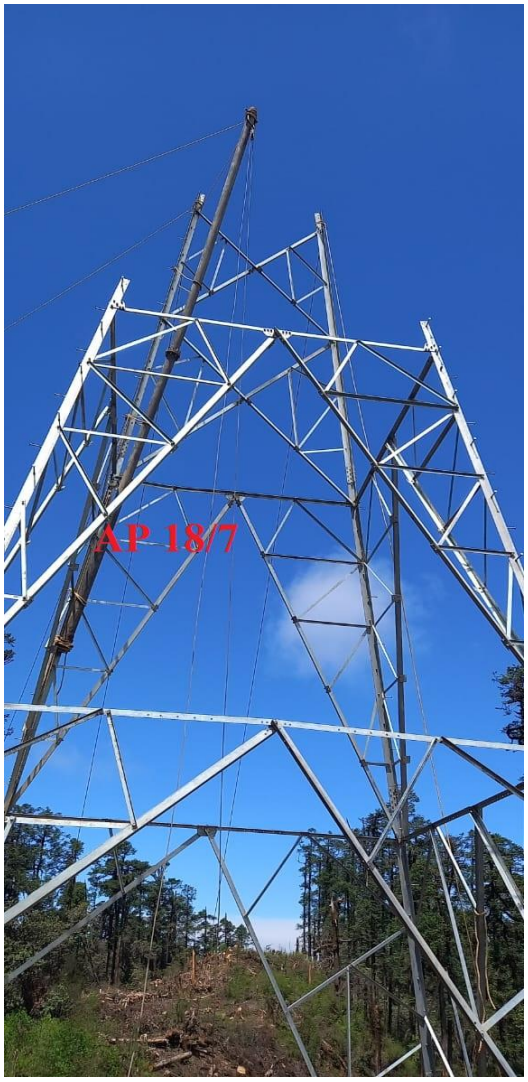
Manhole installation

Gate Hoisting System Base

Penstock Pipe Alignment








Status of NLHP Tower Foundation and Erection Works


Status of NLHP Tower Foundation and Erection Works.

# THANK YOU!