# Hidi Khola Hydropower Project (6.82MW)

## LAMJUNG, NEPAL

## Progress Report

**Ashadh, 2082**

**Independent Power Producer (IPP):**

White Lotus Power Limited

Minbhawan-31, Kathmandu, Nepal,

| | |
|---|---|
| Project Name: | Hidi Khola Hydropower Project |
| Report for: | White Lotus Power Limited. |

**Preparation Review and Authorization**

| Prepared by | Reviewed by | Approved for Issue by |
|---|---|---|
| Er. Rajendra Bom<br>Er.Keshab Pandey<br>Er.Om Prakash Thakur | Eng. Prem P. Pandey | Ms. Suman Kumari Joshi |

**COMPANY DETAILS**

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**Project Site Office:**

**Hidikhola Hydropower Project- 6.82MW**
Jaluche, Lamjung

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## ABBREVIATIONS

| | |
|---|---|
| BOQ | Bill of Quantity |
| Covid-19 | Corona Virus Disease-2019 |
| Cum/Sec. | Cubic meter per second |
| DED | Detail Engineering Design |
| DoED | Department of Electricity Development |
| DPR | Detail Project Report |
| E | East |
| FSR | Feasibility Study Report |
| GWh | Giga Watt Hour |
| HCE | Hydro-Consult Engineering Limited |
| HKHPP | Hidi Khola Hydropower Project |
| IDC | Interest During Construction |
| Km | Kilometer |
| KV | Kilo Volt |
| M | Meter |
| MS-IW | Milestone of Infrastructures Works |
| MW | Mega Watt |
| N | North |
| PDB | Plant & Design Build |
| RoR | Run of River |
| Sqm | Square meter |

# 1. PROJECT DESCRIPTION

Hidi Khola Hydropower Project (HKHPP) is located in Lamjung district of Gandaki Zone/Province (04) of Nepal. The project components of HKHPP are located in Marsyandi Rural Municipality, Juluchhe Ward no. 7. The project lies between 28° 22' 22"N to 28° 23' 04"N and 84° 29' 12"E to 84° 31' 05"E. The headworks is located at left bank of Hidi Khola approximately 100m downstream of confluence Hidi Khola and a major kholsi. The powerhouse is located at the left bank of Nyadi River approximately 1 km downstream of the confluence of Nyadi River and Hidi Khola

Hidi Khola Hydropower Project (HKHPP) is a run-off river project located in hilly terrain of Lamjung district between the elevations of 2466 masl to 1740 masl. For the power generation of the project, the river is diverted by constructing a free flow sloping glacis weir and guided to the powerhouse through 1147.377 m long headrace pipe and 2082.452 m long penstock pipe comprising gravel trap, approach canal, settling basin and headpond. The installed capacity of the project is 6.82MW. The gross head of the project is 724 meters and the design discharge is 1.14 cubic meters per second.

The project is accessible via a motorable black topped road of around 189 km from Kathmandu to the Besisahar; district headquarter of Lamjung via Prithivi Highway and Dumre-Besisahar Highway. The earthen road of around 20km from Besisahar will then reach to a village called Thulibesi. The project access road of Nyadi HPP will then be used to get further upto Naiche village. This project has contributed in construction of access road of Super Nyadi HEP upto the Dahare Adit from there around 4 km of access road will be constructed by the project to reach upto HKHPP powerhouse area.

## 2. PROJECT SALIENT FEATURES

| S. N | ITEM | DESCRIPTION | UNIT |
|---|---|---|---|
| **1** | **Project** | Hidi Khola Hydropower Project | |
| **1.1** | **Project Location** | | |
| | Province | 4 (Gandaki) | |
| | District | Lamjung | |
| **1.2** | **Project boundary** | | |
| | Latitude | 28°22'22" N to 28°23'04" N | |
| | Longitude | 84°29'12" E to 84°31'05" E | |
| | | | |
| **2** | **General** | | |
| | Name of River | Hidi River | |
| | Nearest Town | Besisahar | |
| | Type of Scheme | Run-of-River (RoR) | |
| | Gross Head | 724 | m |
| | Rated Net Head | 697.50 | m |
| | | | |
| **3** | **Hydrology** | | |
| | Catchment Area (HKHPP Intake) | 21.8 | $km^2$ |
| | Design Discharge | 1.14 | $m^3/s$ |
| | Design flood (1 in 100 Years) | 90 | $m^3/s$ |
| | Average Annual Precipitation | 2450 | mm |
| | | | |
| **4** | **Power and Energy** | | |
| | Design discharge | 1.14 | $m^3/s$ |
| | Rated net head | 697.50 | m |
| | Capacity | 6.82 | MW |
| | Dry Energy | 13.13 | GWh |
| | Wet Energy | 27.65 | GWh |

| | | | |
|---|---|---|---|
| | Annual total Energy | 40.78 | GWh |
| | | | |
| **5** | **Diversion Weir** | | |
| | Type of weir | Permanent Concrete Weir | |
| | Length of weir | 9.0m | |
| | Crest Elevation | 2466 | masl |
| | Spillway type | Free overflow | |
| | Undersluice Opening (W X H) | 2 X 2 | m |
| | Undersluice Crest Level | 2464.50 | masl |
| | | | |
| **6** | **Intake Structure and Gravel trap** | | |
| | Type of Intake | Orifice type side intake | |
| | No of Openings | 2 | |
| | Size of Intake (W x H) | 1 m x 0.85 m | m |
| | Intake Sill Level | 2464.65 | masl |
| | Length of Gravel Trap | 3.5 | m |
| | Width of Gravel Trap (Avg.) | 3.00 | m |
| | Overall depth | 6 | m |
| | Particle size to be trapped | 5 | mm |
| | Flushing Channel | RCC Box | |
| | | | |
| **7** | **Settling Basin** | | |
| | Type | Concrete, Double Bay | |
| | Dimension (L x B x H) | 30.6 x 3.5 x 3.72 | m |
| | Inlet transition length | 12 | m |
| | Particle Size to be settled | 0.15 | mm |
| | Trapping Efficiency | 89.85% | |
| | | | |
| **8** | **Headrace pipe** | | |
| | Type | Buried steel circular pipe | |

| | | | |
|---|---|---|---|
| | Internal Diameter | 0.85 | m |
| | Length | 1147.377 | m |
| | Steel thickness/ Type of lining | 6 | mm |
| | No of anchor blocks | 19 | |
| | | | |
| **9** | **Surge tank** | | |
| | Type | Simple Surge | |
| | Effective Depth | 9 | M |
| | L x B | 4 x 4.5 | M |
| | Up Surge Level | 2467.59 | masl |
| | Down Surge Level | 2456.26 | masl |
| | Normal Operation Level | 2466 | masl |
| | | | |
| **10** | **Surge Offset Pipe** | | |
| | Offset Pipe Internal Diameter | 0.9 | m |
| | Pipe Length | 46.82 | m |
| | Steel thickness | 8 | mm |
| | No of Anchor Blocks | 1 | |
| | | | |
| **11** | **Penstock Pipe (High Pressure)** | | |
| | Type | Steel Pipe | |
| | Internal Diameter | 0.8/ 0.675 | m |
| | Length | 2082.45m (1063.86/1018.59) | m |
| | Steel Thickness | 8 to 18 | mm |
| | Nos. of Anchor Blocks | 25 | |
| | | | |
| **12** | **Powerhouse** | | |
| | Type | Surface | |
| | Size (L x W) | 25.5 x 17.3 | m |

| | | | |
|---|---|---|---|
| | Height | 21.32 | m |
| | Turbine Centerline | El. 1740 | masl |
| | | | |
| **13** | **Tailrace** | | |
| | Type | Box Culvert | |
| | Tailrace Length | 12.77 | m |
| | Size (W x D) | 1 x 1.12 | m |
| | Tailrace outlet level | 1737.23 | masl |
| | | | |
| **14** | **Turbine** | | |
| | Type | Pelton, Horizontal Axis | |
| | Number | 2 | |
| | Rated Capacity per unit | 3442.71 | KW |
| | Turbine Axis Level | 1740 | masl |
| | Net Head | 697.50 | m |
| | Discharge per Unit | 0.57 | $m^3/s$ |
| | Efficiency | 91% | |
| | | | |
| **15** | **Governor** | | |
| | Type | Digital Electronic Governor with PID | |
| | Adjustment for Speed Drop | Up to 10 % | |
| | | | |
| **16** | **Generator** | | |
| | Type | Three phase, Synchronous | |
| | Rated Output Capacity per Unit | 4050.24 | KVA |
| | Power Factor | 0.85 | |
| | Voltage | 6.6 | kV |
| | Frequency | 50 | Hz |
| | No of Units | 2 | |

| | | | |
|---|---|---|---|
| | Excitation System | Brushless Excitation | |
| | Efficiency | 97% | |
| | | | |
| **17** | **Transformer** | | |
| | Type | Three Phase, Outdoor | |
| | Number | 2 | |
| | Rated Capacity | 4.5 | MVA |
| | Voltage Ratio | 33/6.6 | |
| | Vector Group | Dyn 11 | |
| | Efficiency | 99% | |
| | Frequency | 50 | Hz |
| | | | |
| **18** | **Transmission Line** | | |
| | Voltage Level | 33 kV | |
| | Length | 16 | km |
| | Conductor Type | ASCR Dog | |
| | From | Hidi Powerhouse | |
| | To | Khudi Substation | |
| | | | |
| **19** | **Project Cost** | | |
| | Total Project Cost Including VAT, TAX and contingency | 1,179,125,081 | NRs |
| | Total Project cost including IDC | 1,327,201,145 | NRs |
| | | | |
| **20** | **Construction Period** | 3 years | |

## 3. KEY DATE

**Table 5.1-1: Completed Milestones**

| S.N | Milestones | Date |
|---|---|---|
| 1. | Survey License | 2073/12/02 (March 15, 2017) |
| 2. | Upgradation of License | 2075/02/01 (May 15, 2018) |
| 3. | Grid Connection Agreement | 2075/07/13 (Oct 30, 2018) |
| 4. | Power Purchase Agreement (PPA) | 2075/10/04 (Jan18,2019) |
| 5. | Generation License | 2077/04/19 (Aug 03, 2020) |
| 6. | Required Commercial Operation Date | 2082/05/13 (Aug 29, 2025) |
| 7. | Expression of Interest (EoI) | 2078/07/29 (Nov15, 2021) |
| 8. | Financial Closure or Facility Agreement | 2078/09/14 (Dec 29, 2021) |
| 9 | Transmission Line Survey License | 2079/06/27 (Oct 13, 2022) |
| 10 | Transmission Line License | 2081/11/11 (Feb 23, 2025) |

## 4. CONTRACT PACKAGES

The construction work of this project has been divided as followings.

**Table 5.1-1: Contract Packages**

| | | |
|---|---|---|
| Lot No. 1 | Infrastructures work | BOQ Model |
| Lot No. 2 | Civil work | BOQ Model |
| Lot No. 3 | Hydro mechanical work | Plant and Design Built (PDB)Construction Model |
| Lot No. 4 | Electromechanical work | Plant and Design Built (PDB) Construction Model |
| Lot No. 5 | Transmission line work | Plant and Design Built (PDB) Construction Model |

# 5. INSTITUTIONAL ARRANGEMENT`

## *5.1. Board of Directors*

The company currently has the following four-member of board of directors.

**Table 5.1-1: Board of Directors**

| | | | |
|---|---|---|---|
| 1. | Nominated by Shikhar Insurance Company Limited | Dip Prakash Panday | 1 Person |
| 2 | Nominated by Kriti Venture Fund | Bikash Chandra Bhandari | 1 Person |
| 3. | Nominated by White Lotus Management Pvt. Ltd. | Suman Kumari Joshi | 1 Person |
| 4. | Independent Director | Manolack Bouphasiri Shrestha | 1 Person |

## *5.2. Technical/Construction Institutions*

Following entities constitute the whole institution arrangement of Hidi Khola Hydropower Project

**Table 5.2-1: Technical/ Construction Institutional Arrangement**

| Institution Purpose | Name of the Institution | Agreement Signed Date |
|---|---|---|
| Design Consultant | Hydro Consult Engineering Limited | 2075/12/28 (April 11, 2019) |
| Hydromechanical Design Consultant | TAC Hydro Consultancy Pvt. Ltd. | 2077/06/16 (Oct 2, 2020) |
| Due Diligence Analysis/Review Consultant | Technoquarry Consult Private Limited | 2078/03/07(June 21, 2021) |
| Engineering Study and IEE of 33 KV Transmission Line | Technoquarry Consults Private Limited | 2079/05/23 (Sep 8, 2022) |
| Lot 1 Contractors (Infrastructures works) | M/S High Himalaya –Dhaulagiri JV, | 2077/12/05 (March 18, 2021) |
| | M/S Millennium Construction and Supplier P. Ltd. | 2078/10/20 (Feb 3, 2022) |

| | | |
|---|---|---|
| | M/S Hari Om Niraman Sewa | 2079/12/03 (March 17,2023) |
| | M/S Galaxy Engineering Works | 2079/12/03 (March 17,2023) |
| | M/S Paradise Builders P. Ltd. | 2080/03/20 (July 5, 2023) |
| | M/S Transweld Nepal P. Ltd. | 2080/06/16 (Oct 3, 2023) |
| Lot 2 Contractor ( Civil Construction Works) | M/S Pagoda Infra Construction P.Ltd. | 2080/03/07 (June 22,2023) |
| Lot 3 Contractor ( Hydro-mechanical Works | M/S Cangzhou Spiral Steel Pipes Group Co. Ltd. | 2080/03/06 (June 21,2023) |
| | M/S Golden BridgeWelding Electrode | 2080/05/25 (Sep 11, 2023) |
| | M/S Bigness Shipping Broker Company Limited | 2080/05/15 (Aug 30,2023) |
| | M/S Seacom Cargo Private Limited | 2080/06/15 (Oct 2, 2023) |
| | M/S Shara Construction and Engineering Works P.Ltd. | 2080/05/32 (Aug 17,2023) |
| Lot 4 Contractor ( EM works) | Flovel Energy Private Limited | 2080/08/28 (Dec 14, 2023) |
| Lot 5 Contractor ( TL Works) | M/S Hulas Industries | 2081/01/31 (May 13, 2024) |
| | M/S Annapurna Cables Industries P. Ltd | 2081/11/19 (March 03, 2025) |
| | M/S Machinery And Electric Pvt.Ltd, | 2081/11/15 (Feb 27,2025) |
| | M/S Hari Om Nirman Sewa | 2081/06/09 (Sep 25,2024) |
| Lot 6 Contractor Substation Works | M/S Delta Hydro Solutions P.Ltd. | 2081/10/02 (Jan 15,2025) |
| | M/S Hari Om Nirman Sewa | 2082/1/31(May 14,2025) |
| Technical Consultant | Technoquarry Consults Pvt. Ltd. | 2079/01/28 (May 11, 2022) |
| Financial Consultant | Prashank & Associates | 2079/02/17 (May 31, 2022) |

## *5.3. Financing Institution*

The project is financing in 70:30 debt equity ratio.

**The existing promoters paid up capital is NRs. 40.81 crore as per Share Lagat dated 21/12/2081.**

**Table 5.3-1: Shareholding arrangements**

| S.N. | Name of Shareholders | Existing Paidup Capital | | |
|---|---|---|---|---|
| | | Existing Number of Share | Total value of Share NPR | % of Ownership |
| 1 | Kriti Venture Fund Ltd. | 1,340,000.00 | 134,000,000.00 | 32.84% |
| 2 | Shikhar Insurance Ltd. | 670,000.00 | 67,000,000.00 | 16.42% |
| 3 | White Lotus Management P. Ltd | 445,000.00 | 44,500,000.00 | 10.90% |
| 4 | Citizen Life Insurance Ltd. | 420,000.00 | 42,000,000.00 | 10.29% |
| 5 | Pratap Jung Pandey | 330,000.00 | 33,000,000.00 | 8.09% |
| 6 | Ramesh Kumar Pandit | 110,000.00 | 11,000,000.00 | 2.70% |
| 7 | Prasanna Bahadur K.C | 110,000.00 | 11,000,000.00 | 2.70% |
| 8 | Sunil Shrestha | 75,000.00 | 7,500,000.00 | 1.84% |
| 9 | Suman Kumari Joshi | 55,000.00 | 5,500,000.00 | 1.35% |
| 10 | Credible Investment Pvt. Ltd. | 50,000.00 | 5,000,000.00 | 1.23% |
| 11 | High Vision Energy Pvt. Ltd. | 50,000.00 | 5,000,000.00 | 1.23% |
| 12 | Team Ventures Pvt. Ltd. | 50,000.00 | 5,000,000.00 | 1.23% |
| 13 | Others | 376,000.00 | 37,600,000.00 | 9.21% |
| | **Total** | **4,081,000.00** | **408,100,000.00** | **100%** |

a. Initial Public Offering (IPO)

IPO process has been initiated. Total 12,19,000 number of shares shall be issued to public including staff, project affected people, Nepalese on foreign employment and mutual fund.

IPO Issuer Rating agreement has already been made with ICRA Nepal Limited and is on process. Similary, Company prospects which is required to be filed with the Securities Board of Nepal is in final process which is made by Nepal SBI Merchant Banking Limited.

b. Debt:

Debt is arranged from Consortium of Nepalese Banks. The syndicated loan agreement was signed in 28th December 2021 with Nepal SBI Bank Limited as a lead bank and Nepal Bangladesh Bank Limited (Nabil bank after merger) as a participating bank.

## 6. UPDATED COST ESTIMATE

As per final DPR, total project cost with IDC is NRs.1.32 billion 25 thousand. However, it may be updated in case of variation.

## 7. SITE MOBILIZATION

The Access Road Excavation was mobilized to open the road track from Dahare to Hidi Khola HPP Powerhouse area on Falgun 06, 2078. The status of equipment, materials and personnel are as in the following tables.

**Table 5.3-1: Employer's Mobilized Equipment List at Project Site**

| S.N | Name | Nos. | S.N | Name | Nos. |
|---|---|---|---|---|---|
| 1. | Excavator DOOSAN DX 225 | 1 | 5. | Mahindra Bolero DC4WD | 1 |
| 2. | Breaker BLTB135A | 1 | 6. | Auto Level AT-B4A | 1 set |
| 3. | Total Station-Topcon GM 105 | 1 set | 7. | Motorcycle-Bazaz Pulsur 150 | 1 |
| 4. | Motorcycle-Hero XPULSE 200 DDS | 1 | | | |

**Table 5.3-2: Employer's Mobilized Materials stock at Project Site**

| S.N | Materials | Quantity | S.N | Materials | Quantity |
|---|---|---|---|---|---|

| | | | | | |
|---|---|---|---|---|---|
| 1. | Diesel | 1400 ltrs | 3 | Engine Oil | 1 drum |
| 2. | Lubricating Oil | 5 drum | 4. | Fuel Barrel | 20 nos. |

**Table 5.3-3: Employer's Mobilized Personnel**

| S.N. | Position | Nos. | S.N. | Position | Nos. |
|---|---|---|---|---|---|
| 1. | Project Manager | 1 | 8. | Excavator Operator | 1 |
| 2. | Civil Engineer | 1 | 9. | Excavator Helper | 1 |
| 3. | Surveyor | 1 | 10. | Store Incharge | 1 |
| 4. | Mechanical Engineer | 1 | 11. | Cook | 1 |
| 5. | Electrical Engineer | 1 | 12. | Site supervisor | 1 |
| 6. | Electrical Technician | 1 | 13. | Driver | 1 |
| 7. | Survey Helper | 1 | | Total Personnel =13 | |

**8. Civil works mobilization**

The civil contractor was mobilized on Asar 07, 2080, after signing the agreement .The list of mobilized personnel and equipment is as follows

**Table 5.3-4: Civil Contractor's Mobilized Personnel**

| S.N. | Position | Nos. | S.N. | Position | Nos. |
|---|---|---|---|---|---|
| 1. | Managing Director | 1 | 8. | Excavator Operator | 3 |
| 2. | Assistant Project Manager | 1 | 9. | Tractor Driver | 3 |
| 3. | Surveyor | 2 | 10. | Tripper Driver | 2 |
| 4. | Survey Helper | 2 | 11. | Bolero Driver | 1 |
| 5. | Crusher Incharge | 1 | 12 | Backhoe Driver | 1 |
| 6 | Crusher Helper | 2 | 13 | Civil worker | 50 |
| 7. | Store Incharge | 1 | | Total Personnel=70 | |

**Table 5.3-5: Civil Contractor's Mobilized Equipment List at Project Site**

| S.N | Name | Nos. | S.N | Name | Nos. |
|---|---|---|---|---|---|
| 1. | Crusher | 1 Lot | 15. | Water Pump scwp80 3 inch | 1 |
| 2. | DG -125 kVA | 1 | 16. | Submersible Pump 2 inch | 2 |
| 3. | DG-32 kVA | 1 | 17. | Submersible Pump 3 inch | 1 |
| 4. | Excavators | 3 | 18. | Submersible Pump 4 inch | 7 |
| 5. | Total Station | 2 set | 19. | Air Compressor 23kw 3HP | 1 |
| 6. | Level Machine | 1 | 20. | Angle Grinder 710 w | 1 |
| 7. | Tractor | 3 | 21. | Angle Grinder 1300 w | 2 |
| 8. | Sand Blasting Machine | 1 | 22. | Welding Machine Single Phase | 3 |
| 9. | Hil- Te Machine | 1 | 23. | Welding Machine Three Phase | 1 |
| 10. | Hil- Te Drill Big | 1 | 24. | Cut off machine 2350w | 2 |
| 11. | Magnetic Drill BJ-28 2080w | 1 | 25. | Petrol Vibrator 3HP | 3 |
| 12. | Rotatory Machine+Hill Te small | 2 | 26. | Electrical Vibrator | 3 |
| 13. | Chain Pulley- 5Ton | 1 | 27. | Exhaust Fan – Big | 2 |
| 14. | Chain Pulley 3 Ton | 1 | 28. | Circular Saw machine1350W | 2 |

**Table 5.3-6:Civil Contractor's Mobilized Materials Stock at Project Site**

| S.N | Materials | Quantity | S.N | Materials | Quantity |
|---|---|---|---|---|---|
| 1. | Diesel | 1486 ltrs | 4. | Fuel Barrel | 20 nos. |
| 2. | Lubricating Oil | 5 drum | 5. | Cement | 641 bag |
| 3 | Engine Oil | 40 drum | | | |

**Table 5.3-7: Projects Major Progress till this Month**

| PROGRESS SUMMARY SHEET OF CIVIL WORKS | | |
|---|---|---|
| **Item NO.** | **Item Description** | **%Progress** |

| | | |
|---|---|---|
| **CW.01** | Coffer Dam and River Diversion During Construction | **99%** |
| **CW.02** | Weir, Stilling basin and Undersluice including floodwall and protection works | **99%** |
| **CW.03** | Intake, Gravel Trap, Flushing Pipe and Gate | **98%** |
| **CW.04** | Approach Culvert | **100%** |
| **CW.05** | Settling Basin | **80%** |
| **CW.06** | Headpond and Emergency Spillway | **80%** |
| **CW.07** | Upstream Protection Works | **85%** |
| **CWM1** | Misc. Headworks | **90%** |
| | **Total of Headworks** | **91%** |
| **CW.08A** | Headrace Pipe civil works | **90%** |
| **CW.08B** | Penstock Pipe civil works | **90%** |
| **CW.09** | Siphon Flushing | **98%** |
| **CW.10** | Surge Tank and its Components | **99%** |
| **CW.11** | Kholsi Training | **80%** |
| **CW.12** | Concrete Casing in Buried Pipe | **90%** |
| **CW.13** | Saddle Support | **80%** |
| **CWM2** | Misc. Waterway | **92%** |
| | **Total of Water Conveyance System** | **90%** |
| **CW.14** | Powerhouse | **80%** |
| **CW.15** | Switchyard and Substation | **50%** |
| **CWM3** | Misc. Powerhouse | **70%** |
| | **Total of Powerhouse, tailrace and Switchyard** | **75%** |
| | **Total of Civil works** | **85%** |

| | | |
|---|---|---|
| **CW.16** | General Items | **90%** |
| **A** | **Total Amount of Item No. CW.01 to CW.16** | **88%** |

| **PROGRESS SUMMARY SHEET- HM WORKS** | | |
|---|---|---|
| **S.N** | **Particulars** | **% Progress** |
| 1 | Pipes Procurement from China | 100% |
| 2 | Freight/ Custom/Transportation Till site | 100% |
| 3 | Erection of Pipes and Procurment and Erection of Accessories | 90% |
| 4 | Procurement and Erection of Hydraulic Steel struture (HSS) | 85% |
| 5 | Estimated contract to be done | 0% |
| | **Total Progress value for HM Works** | **93%** |

| **PROGRESS SUMMARY SHEET- GENERAL WORKS** | | |
|---|---|---|
| **S.N** | **Particulars** | **Physical Progress** |
| **1** | **Infrastructure works** | 98% |
| | Road | |
| | Nyadi River Crossing | |
| | Access Road from Dahare to Hidi Powerhouse | |
| | Project Access Road | |
| | Site office and Camp facilities | |
| | Computers, printers, furnitures etc | |
| | General Equipment and office set up | |
| | Construction Power | |
| **2** | **General Works** | 100% |

| | | |
|---|---|---|
| | Land Acquisition | 98% |
| | Socio-environmental mitigation cost | 98% |
| **3** | **Construction project Management** | 90% |
| **4** | **Financial** | 90% |

| **OVERALL PROGRESS SUMMARY** | | | | |
|---|---|---|---|---|
| **S.N** | **Particulars** | **Assigned Weigth** | **Approx. Progress** | **Component Progress** |
| 1 | **Civil works** | 0.27 | 88% | 24% |
| 2 | **Hydromechanical works** | 0.16 | 93% | 15% |
| 3 | **Electromechanical works** | 0.17 | 70% | 12% |
| 4 | **Transmission line works** | 0.05 | 85% | 4% |
| 5 | **Infrastructure works** | 0.125 | 98% | 12% |
| 6 | **Land Acquisition and CSR** | 0.025 | 100% | 2% |
| 7 | **Construction project Management** | 0.085 | 90% | 3% |
| 8 | **Financial** | 0.115 | 90% | 8% |
| | **Overall Progress** | | | **88%** |

**The total physical progress is 88%**

## 9. WORK PROGRESS

### *9.1. Lot No.1: Infrastructure works*

This includes construction of access road up to powerhouse Site, construction of access road from powerhouse site to headworks, construction power, construction of camp facilities and drinking water supply system etc.

### 9.1.1. Access road

- The opening of the access road track from Naiche to Dahare is now 100% complete.
- Construction access road from Dahare to HKHPP Powerhouse area was started on 2078/11/06. A total of 7.4 km of road has been excavated, spanning from Dahare to the Powerhouse and from the Powerhouse to the Intake of the Project. Additionally, 2 km feeder road has been excavated to facilitate access to the penstock alignment.
- A Composite Steel Girder Bridge with an RCC Deck, measuring 15.5 m in length and 4 m in width, has been successfully constructed at Nyadi River. This bridge serves the purpose of providing access to the project
- One excavator with breakers has been mobilized By Employer at site for regular maintenance and of access road and facilitating of site works

**Photo 9-1** Dahare to Powerhouse Road

**Photo 9-2** Powerhouse to Intake Road

**Photo 9-3** Composite steel girder with RCC deck bridge

**Photo 9-4** Internet facility setup at site

## 9.1.2. Camp Construction

- A temporary camp had been constructed near Nyadi Khola crossing for use as site office and accommodation.
- A main camp has been constructed at Alaichibaari

**Photo 9-5** Construction of Temporary camp

**Photo 9-6** Employers Main Camp at Alaichibaari

### *8.1.3 Construction Power*

- The installation, testing, and commissioning of construction power from Naiche to Dahare are complete. This process was carried out in collaboration with a neighboring project.
- The erection of poles and accessories, stringing of conductors, and the charging and testing of the 11 kV HT and 400V LT construction power line from the Powerhouse to the intake has been completed
- A 125 kVA distribution transformer has been installed at the intake site.

**Photo 9-7** Construction Power (Electric Pole Installation at Dahare Village)

**Photo 9-8** Electric Pole and accessories erection for construction power


**Photo 9-9** Transformer Installation at Intake

**Photo 9-10** Crusher setup and aggregate production

## *9.2. Lot No. 2: Civil Work*

The contract agreement for the civil construction works of the project was signed on 2080/03/07.The completed work to date are as follows:

### A. Headworks

| Item description | Completed work | Remaining works |
|---|---|---|
| Weir, Stilling basin and Undersluice including floodwall and protection works | Excavation, PCC, reinforcement works, formworks, and plum concreting and RCC have been completed at the weir. | |
| | Concreting at the weir downstream apron,downstream cutoffs, downstream and upstream flood walls is completed | |
| | Rebar placing ,formworks and concreting upto operating slab level of undersluice is completed. | The remaining works include the Super structure works of the undersluice gate and the stoplog hoist operating slab |
| | Boulder Riprap works are completed at upstream and downstream of weir and undersluice. | Boulder lining from upstream left side flood wall to myarche khola need to complete |
| Intake, Gravel Trap, Flushing Pipe and Gate | Stone masonry, rebar, formworks and RCC at base of intake gravel trap,gravel flushing valve chamber are completed, shear wall construction is also completed, gate operating platform is also completed | The columns and hoist operating slabs are reamaing |
| Approach Culvert | Rebar placing, formworks and concreting at approach culvert is completed | |
| Settling Basin | The stone masonry works, rebar works, formworks and | The works for the |

| | | |
|---|---|---|
| | concreting at the desander main chamber is completed. | desander inlet transition, spillway, and its channel are in progress |
| Headpond and Emergency Spillway | Excavation and stone masonry work, rebar fixing and formowork of headpond base are completed | The civil works at sand headpond walls and emergency spillway are in process. |

## B. Water conveyance system

| Item description | Completed work | Remaining works |
|---|---|---|
| Headrace Pipe civil works | Excavation and pipe placement from Bellmouth to CAB 1 to CAB 2 to HAB 1,HAB 2 to CAB 3, CAB 4, CAB 5, CAB 6, to HAB 3, HAB 4, HAB 5, HAB 6, HAB 7, HAB 8, HAB 9, HAB 10, to HAB 11 have been completed | Remaining excavation lengths are as follows:<br>a. HAB 1 to HAB2: 50m<br>b. From HAB11 to T Block: 70m<br>Overall, 10% of the excavation work remains. |
| | PCC, Rebar placement, formworks and concreting of Anchor Blocks CAB 4, CAB 5, Siphon crossing, CAB 6, HAB 4, HAB 5, HAB 6, HAB7, HAB 8, HAB 9, HAB 10, and HAB 11 and T have been completed | Remaining anchor blocks include CAB 1, CAB 2, HAB 1,and HAB 2, 10% of the work still pending. |
| | Backfilling from HAB 2 to CAB 3, CAB4, CAB5,CAB 6,HAB 3, HAB4, HAB5,HAB 6,HAB 7, HAB 8, HAB 9, HAB 10 to HAB 11 is completed | The remaining backfilling length is 120m, with 10% of the work still pending. |
| Penstock Pipe Civil Works | Excavation and pipe placement from T to CAB 8, CAB 10 to VAB 1 to CAB 11 to CAB 12 to VAB2 to CAB 13 to CAB 14, VAB 3, VAB 4 to VAB 5 to CAB15, CAB16, CAB17, CAB18, CAB19,CAB20, CAB21,VAB6, CAB22, | Remaining excavation and pipe placement lengths are as follows:<br>From CAB 8 to CAB 9: |

| | | |
|---|---|---|
| | VAB7, VAB8, VAB9, VAB10, CAB23, VAB 11, VAB 12 to CAB 24 have been completed | 118m, From VAB 11 to CAB 24:202m<br>Overall, 10% of the excavation work and 10% pipe laying work are remaining. |
| | PCC, Rebar placement, formworks and concreting of Anchor blocks CAB8, CAB 10, VAB1, CAB11, CAB 12, VAB 2, CAB 13, CAB 14, VAB 3, VAB 4, VAB 5 CAB15, CAB16, CAB17, CAB 18, CAB 19, CAB20, CAB21,VAB6, CAB22, VAB7, VAB8, VAB9, VAB10, CAB23, VAB 11 have been completed. | Remaining Anchor Blocks: CAB9, VAB11-A, VAB 11-B,Road crossing CAB24 . i.e. 10% is remaining |
| | Backfilling from CAB12 to CAB 13 to VAB 2to CAB 14 to VAB 3 to VAB 4 to VAB 5 to CAB 15 to and CAB 16 to CAB 17 to CAB 18 to CAB 19 to CAB20 to CAB21 to VAB6 to CAB22 to VAB7 to VAB8 to VAB9 to VAB10 and CAB23 is completed. | Remaining Backfilling: CAB 8 to CAB 9 to CAB: 118m, and other 100m<br>i.e. 10% remaining. |
| Surge Tank and its Components | Excavation from T block to surge tank is completed. Excavation, PCC, rebar placing, formwork, and RCC in the surge tank have been completed | |
| Saddle Supports | Saddle support construction from CAB 23 to VAB11 is completed | Saddle support from VAB11 to CAB24 are in progress |

## C. Powerhouse, Tailrace, and Switchyard

| **Item description** | **Completed work** | **Remaining works** |
|---|---|---|
| Powerhouse control room | The excavation of the powerhouse is completed . | control room work are |

| | | |
|---|---|---|
| and tailrace | Excavation of flood wall foundation is completed.<br>Concreting of machine foundation is completed<br>Superstructe of Powerhouse is completed upto Crane beam level | in progress |
| Switchyard and Substation | Excavation up to switchyard level is completed | The structural works for the switchyard are in plan |

## *9.3. Lot No.3: Hydro-mechanical Work*

- The contract agreement for the procurement of pipes was signed on 2080/03/07. All the pipes have been manufactured, tested, painted, and transported up to Site
- The contract agreement for the unloading of pipes at Naiche, transportation of pipes from Naiche to the site, and the erection of pipes and their accessories was signed on 2080/04/22 (17th Aug 2023)
- The contract agreement for Supply and erection of Gates, Trashracks and Stoplogs was signed on 2080/10/03 ( 17th January 2024)
- The contractor has completed the transportation of all the pipes to the site and is currently engaged in erecting pipes and bends, installing stiffeners, installing silt flushing pipes, performing steel lining works, etc. Additionally, the contractor has supplied and installed the bottom seal beams, frames, and top seal beam and leaf of the undersluice gate, undersluice stoplogs, intake gates, approach canal gates, desander outlet gate and tailrace gates
- The penstock accessories (Bellmouth,manholes,expansion joints, saddle plates, bifurcation, reducers etc.) fabrication and dispatch is completed
- The gravel flushing valves, sand flushing valves, silt flushing valve,air release valve and penstock inlet valve installation is in progress
- The hoisting items are arrived at site

- The remaining works include approximately 450 meters of pipe erection, gate leaf installation, gate hoisting installation, complete installation of valves, and installation of bell mouth and bifurcation.

**Photo 9-11** Work progress in weir, undersluice, Intake, Gravel Trap, and Approach canal

**Photo 9-12** Connecting Canal and Desander main chamber

**Photo 9-13:** Headrace Pipe from Bellmouth to CAB 1 to CAB 2

**Photo 9-14** Headrace Pipe erection near HAB 02

**Photo 9-15** Headrace Anchor Block CAB3, CAB4, CAB5 and CAB6 including Siphon crossing

**Photo 9-16** Headrace Anchor Block HAB 03 and Road crossing

**Photo 9-17** Headrace Anchor Block HAB 04

**Photo 9-18** Headrace Anchor Block HAB 05

**Photo 9-19** Headrace Anchor Block HAB 06


**Photo 9-20** Headrace Anchor Block HAB07

**Photo 9-21** Headrace Anchor Block HAB08

Photo 9-22 Headrace Pipe erection in between HAB09 and HAB08

**Photo 9-23** Headrace Pipe anchor block HAB 10


**Photo 9-24** Headrace Pipe Anchor Block HAB 11

**Photo 9-25:** T Block

**Photo 9-26:**Surge Anchor Block

**Photo 9-27** Surge Tank

**Photo 9-28 :** Penstock Anchor Block CAB8

**Photo 9-29:** Penstock Anchor Block CAB 10

**Photo 9-30:** Penstock Anchor Block VAB 1

**Photo 9-31** Penstock anchor block CAB 12

**Photo 9-32** Penstock Anchor block VAB2

**Photo 9-33** Penstock Anchor Block CAB 13

**Photo 9-34** Penstock Pipe Anchor Block CAB 14

**Photo 9-35** Penstock Pipe Anchor Block VAB 03

**Photo 9-36** Penstock Pipe Anchor Block VAB 04

**Photo 9-37** Penstock Anchor Block VAB 5

**Photo 9-38:** Penstock anchor Block CAB 15

**Photo 9-39** Penstock Anchor Block CAB 18

**Photo 9-40** Penstock Anchor Block CAB19

**Photo 9-41** Penstock Pipe Anchor Block CAB20

**Photo 9-42** Penstock Pipe Anchor Block CAB 21

**Photo 9-43** Penstock Pipe Anchor Block VAB 06

**Photo 9-44** Penstock Pipe Anchor Block CAB 22

**Photo 9-45** Penstock Pipe Anchor Block VAB 07

**Photo 9-46** Penstock Pipe Anchor Block VAB 09

**Photo 9-47** Penstock Pipe Anchor Block VAB10


**Photo 9-48** Rebar work of bellmouth completed.

**Photo 9-49** Saddle support works from CAB 23 to VAB11

**Photo 9-50** Powerhouse superstructure WIP

## *9.4. Lot No.4: Electro-mechanical Work (E/M)*

- The agreement for electromechanical works was signed on 14th December 2023 with Flovel Energy Private Limited India for the design, manufacturing, supply, transportation to the project site, erection, testing, and commissioning of electromechanical equipment. The contractor has already supplied the powerhouse layout, first stage layout, second stage layout, power transformer general arrangement and foundation details, generator drawings, data sheets, curves, QAP, and control room layout drawings.
- All the powerhouse, control room, and powerhouse switchyard equipment have arrived at the site. The installation of embedded parts for the EOT crane has been completed, and the erection of other equipment is planned to begin next week

**Photo 9-51** Ypiece, branch pipes and turbine housings


**Photo 9-52-** Generator setup for testing


**Photo 9-53-** MIV at suppliers Yard

**Photo 9-54-**EOT crane parts transportation

**Photo 9-55: Installation of LT rail by EM contractor**

## *9.5. Transmission Line Work*

- The Transmission Line Survey license and Electricity Transmission license has been obtained from the Department of Electricity Development (DoED)
- The presentation of the Terms of Reference for the Brief Environmental Study (BES) at DoED has been successfully completed.Brief IEE has been already approved by DoED, Ministry of Energy , Water Resources and Irrigation.

- The 33 kV Transmission line from Hidikhola HPP will be connected to the Nyadi HPP 132 kV Switchyard, utilizing the 132 kV Transmission line on a sharing basis to connect to the Khudi Substation.
- The public hearing was already conducted.
- The poles and their accessories for the 33 kV transmission line work have been procured, transported and erection of Poles, Conductors and other electrical accessories is in progress.
- The remaining works involve the completion of stringing, testing, and commissioning.

**Photo 9-56** Discussion with locals for Transmission line route selection


**Photo 9-57** Public hearing for BES of 33 KV TL

**Photo 9-58:** 33 kV Transmissiin Line conductor stringing WIP

**Photo 9-59:** Transition Switchyard work of Hidi HPP at Nyadi HPP Switchyard

## *9.6. Land Acquisition*

- The land required for exchange with government land has already been purchased and handed over. Private land acquisition work is also completed.

## *9.7. Work related to Corporate Social Responsibility*

- The company has carried out the works on Corporate Social Responsibility in the affected areas of the project with the mutual understanding with locals. Company has conducted following CSR works;

**Table 9.7-1: Work Related to CSR**

| S.N. | CSR Program | No of locals benefited | Location | Expenses in NPR | Status |
|---|---|---|---|---|---|
| **Till FY 2077/078** | | | | | |
| 1. | Private Teacher Management at Shree Naya Jyaoti Primary School | 58 | MRM-6, Naiche | 54,000 | Completed |
| **FY 2078/079** | | | | | |
| 1 | Facilitate the drinking water and Shed for Sheep and shepherd at the sheep farm.(Kesh Bahadur Gurung) | 58 | MRM-6, Naiche | 2,73,000 | Completed |
| 2 | To Ram Chandra Gurung ( For fuel to maintain access road from BPC Powerhouse to Naiche | 58 | MRM-6, Naiche | 39,710 | Completed |
| **FY 2079/080** | | | | | |
| 1 | Kaalika Primary School (Assistance Provided to Manage After Fire Incident) | 50 | MRM-6, Bhirpustun | 15,000 | Completed |
| 2 | Shree Naya Jyaoti Primary School ( assistance for temple construction) | 50 | MRM-6,Naiche | 25,000 | Completed |
| 3 | Marsyangdi Rural Municipality ( to purchase furniture and electrical items) | 500 | MRM-6, Dahare | 100,000 | Completed |
| **FY 2080/081** | | | | | |
| 1 | Road construction at Diyikuna | 108 | MRM-6, Naiche,Dahare | 240,000 | Provided |
| 2 | Bahundanda Police Station (to purchase computer & Printer) | 10 | MRM-6, Bahundanda | 48,351 | Provided |
| **FY 2081/082** | | | | | |

| | | | | | |
|---|---|---|---|---|---|
| 1 | Jwai Jethan Construction ( to maintain Bhirpustun Road) | 100 | MRM-6, Bhirpustun | 95191 | Provided |
| 2 | Marsyangdi Rural Municipality (for computer, printer, Laptop, other goods | 10 | MRM-6, Ward office | 88,500 | Provided |
| 3 | Marsyangdi Rural Municipality for Agriculture tour | 34 | MRM-6 | 2,00,000 | Provided |
| 4. | Jwai Jethan Construction (to reconstruct playground due to landslide) | 30 | MRM-6 | 99001.56 | Provided |
| 5. | Bada Devi Construction and Suppliers (For Madhav Ghimire Park Construction) | 80 | MRM-6 | 406,800 | Provided |
| 6. | Bada Devi Construction and Suppliers (for Dihi Kura Road Construction) | 100 | MRM-6 | 383670.12 | Provided |
| 7. | Yuba Sanjal Upabhokta Samiti (for Sport Program) | 30 | MRM-6 | 50,000 | Provided |

## *9.8. Visitors/ Supervision/Inspection*

- Team Developer, Design Consultant and Due Diligence Consultant has regular visit to the site to monitor the work of the project.

# 10. NEXT PLANS

- Continue Civil and Hydromechanical works
- Erection of Electromechanical items
- Transmission Line cable stringing works
- Receving end substation works

## 11. STAFF AND ORGANIZATIONAL STRUCTURE

Details of employees working in the company and project office are given in the following table

**Table 9.8-1 Staff employed in the corporate office**

| S.N. | Designation | Nos. | S.N | Designation | Nos. |
|---|---|---|---|---|---|
| 1. | Executive Director | 1 | 5. | Admin and HR Officer | 1 |
| 2. | Project Manager | 1 | 6. | Driver | 1 |
| 3. | Finance Manager | 1 | 7. | Cook | 1 |
| 4. | Account and Finance Officer | 1 | | | |
| Total Personnel=7 | | | | | |

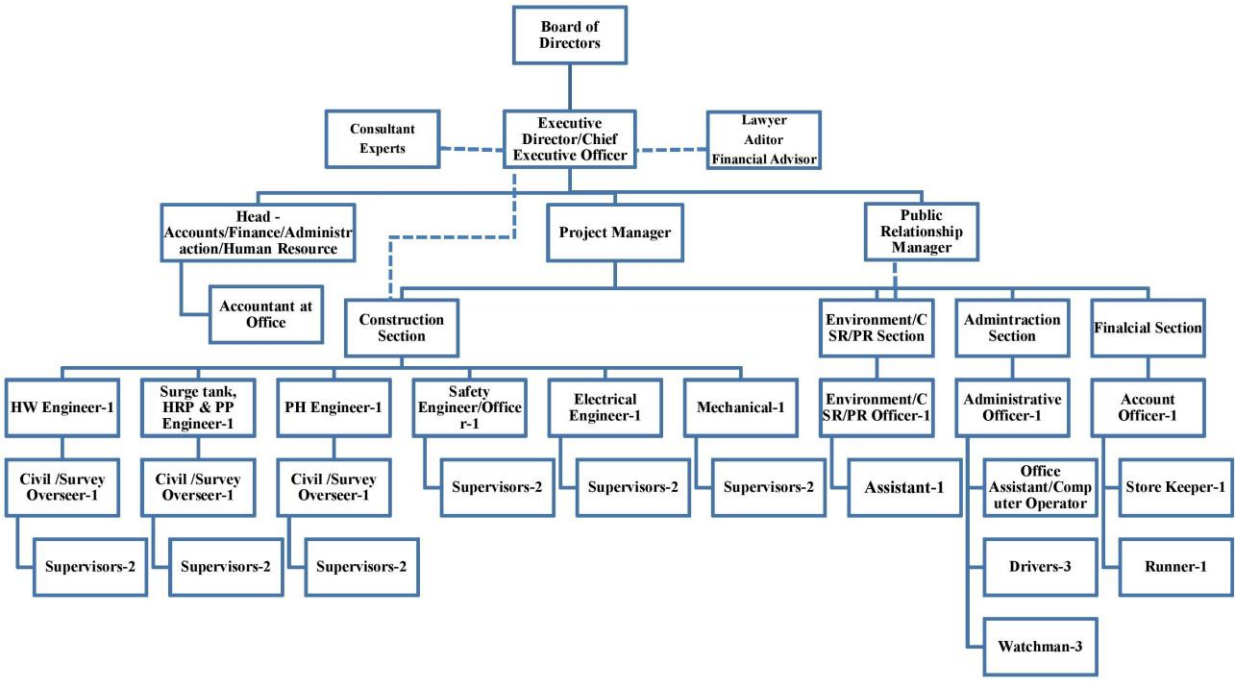
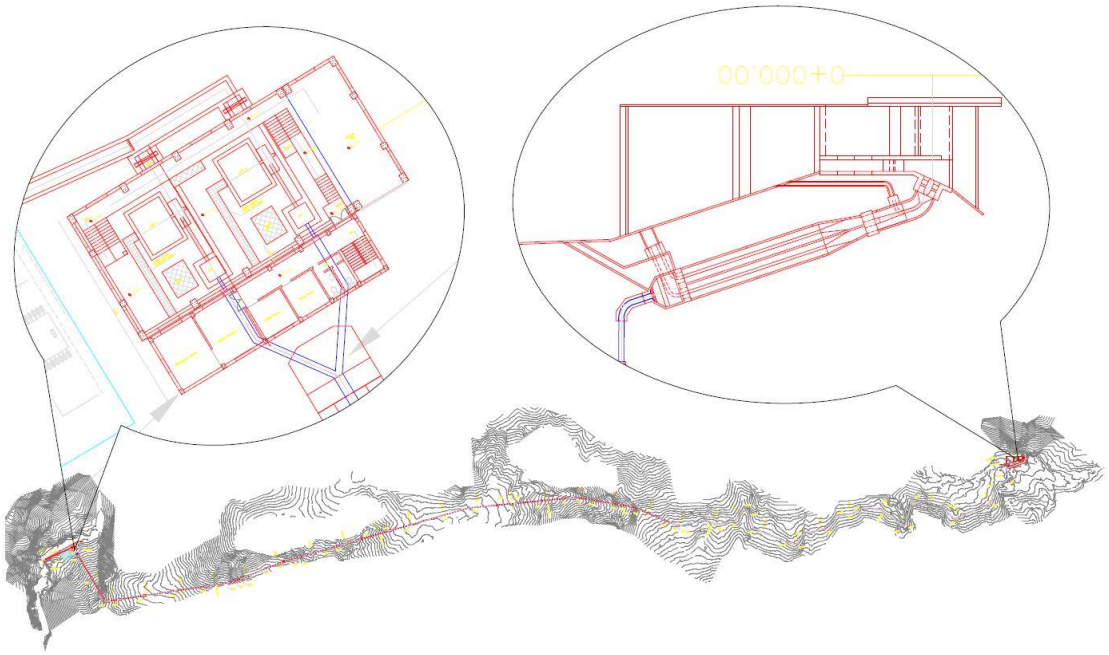



**Photo 11-1 Organizational Structure**

## 12. OVERALL PROJECT LAYOUT



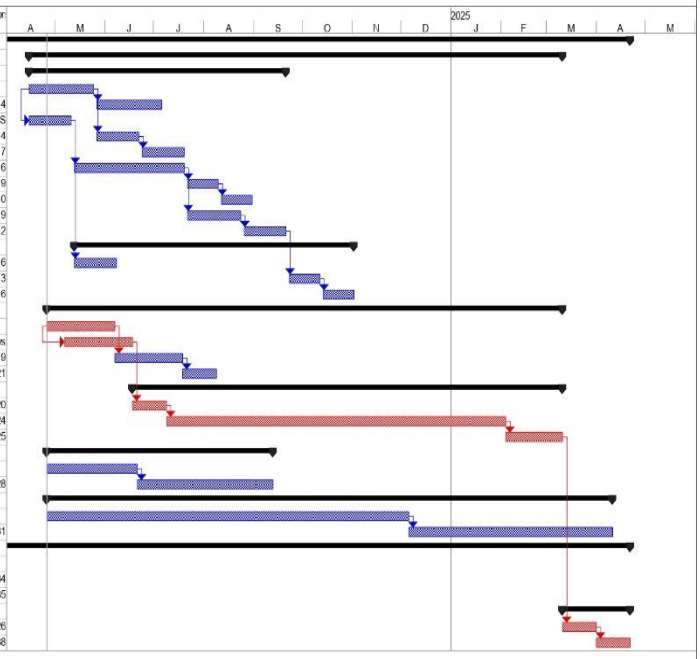

**Picture 9.8-2: Project Layout**

# 13. REVISED WORK SCHEDULE

**Hidi Khola Hydropower Project (6.82MW)**

**PROJECT CONSTRUCTION SCHEDULE**

| ID | Task Name | Duration | Start | Finish | Predecessors |
|---|---|---|---|---|---|
| 1 | **HKHHP Work Schedule for remaining works** | **296.6 wks** | **Thu 8/15/19** | **Mon 4/21/25** | |
| 2 | **Civil works** | **47.2 wks** | **Mon 4/15/24** | **Mon 3/10/25** | |
| 3 | **Headworks** | **23 wks** | **Mon 4/15/24** | **Fri 9/20/24** | |
| 4 | Construction of Undersluice | 30 days | Mon 4/15/24 | Fri 5/24/24 | |
| 5 | Construction of Flood Walls | 30 days | Mon 5/27/24 | Fri 7/5/24 | 4 |
| 6 | Downstream cutoff and boulder riprap | 20 days | Mon 4/15/24 | Fri 5/10/24 | 4SS |
| 7 | Construction of Intake | 20 days | Mon 5/27/24 | Fri 6/21/24 | 4 |
| 8 | Construction of Gravel trap and flushing canal | 20 days | Mon 6/24/24 | Fri 7/19/24 | 7 |
| 9 | Construction of desander main chamber | 50 days | Mon 5/13/24 | Fri 7/19/24 | 6 |
| 10 | Construction of flushing channel | 15 days | Mon 7/22/24 | Fri 8/9/24 | 9 |
| 11 | Construction of headpond | 15 days | Mon 8/12/24 | Fri 8/30/24 | 10 |
| 12 | Construction of desander inlet and spillways | 25 days | Mon 7/22/24 | Fri 8/23/24 | 9 |
| 13 | Construction of connecting canal | 20 days | Mon 8/26/24 | Fri 9/20/24 | 12 |
| 14 | **Headrace Pipe and Surge Tank** | **25 wks** | **Mon 5/13/24** | **Fri 11/1/24** | |
| 15 | Civil works near T and Surge tank to T Block | 20 days | Mon 5/13/24 | Fri 6/7/24 | 6 |
| 16 | Civil works from headpond to HAB 2 | 15 days | Mon 9/23/24 | Fri 10/11/24 | 13 |
| 17 | Installation and backfilling of MS pipe | 15 days | Mon 10/14/24 | Fri 11/1/24 | 16 |
| 18 | **Penstock pipe** | **45.4 wks** | **Fri 4/26/24** | **Mon 3/10/25** | |
| 19 | Excavation and civil works from VAB 4 to VAB 7 | 30 days | Fri 4/26/24 | Thu 6/6/24 | |
| 20 | Excavation and civil works from CAB 23 to Bifurcation | 30 days | Tue 5/7/24 | Mon 6/17/24 | 9SS+7 days |
| 21 | Excavation and Civil works from T block to CAB 13 | 30 days | Fri 6/7/24 | Thu 7/18/24 | 19 |
| 22 | Laying and backfilling of MS pipe | 15 days | Fri 7/19/24 | Thu 8/8/24 | 21 |
| 23 | **Powerhouse and Tailrace** | **38 wks** | **Tue 6/18/24** | **Mon 3/10/25** | |
| 24 | Powerhouse and Tarirace Excavation | 15 days | Tue 6/18/24 | Mon 7/8/24 | 20 |
| 25 | Powerhouse and Tailrace Construction | 150 days | Tue 7/9/24 | Mon 2/3/25 | 24 |
| 26 | Switchyard Civil works | 25 days | Tue 2/4/25 | Mon 3/10/25 | 25 |
| 27 | **Hydraulic steel structure (Gates, Trashrack & Stoplogs)** | **20 wks** | **Fri 4/26/24** | **Thu 9/12/24** | |
| 28 | Manufacturing & transpotation | 40 days | Fri 4/26/24 | Thu 6/20/24 | |
| 29 | Installation | 60 days | Fri 6/21/24 | Thu 9/12/24 | 28 |
| 30 | **Electro-mechanical** | **50 wks** | **Fri 4/26/24** | **Thu 4/10/25** | |
| 31 | manufacturing & delivery | 160 days | Fri 4/26/24 | Thu 12/5/24 | |
| 32 | Intallation EM | 90 days | Fri 12/6/24 | Thu 4/10/25 | 31 |
| 33 | **Transmission line** | **296.6 wks** | **Thu 8/15/19** | **Mon 4/21/25** | |
| 34 | Manufracturing | 90 days | Thu 8/15/19 | Wed 12/18/19 | |
| 35 | Transpotation & installation | 180 days | Thu 12/19/19 | Wed 8/26/20 | 34 |
| 36 | Testing & commissioning | 15 days | Thu 8/27/20 | Wed 9/16/20 | 35 |
| 37 | **Testing** | **6 wks** | **Tue 3/11/25** | **Mon 4/21/25** | |
| 38 | Initial commissioning | 15 days | Tue 3/11/25 | Mon 3/31/25 | 26 |
| 39 | Commercial Operation | 15 days | Tue 4/1/25 | Mon 4/21/25 | 38 |




Task | Summary | Split | Inactive Summary | Start-only
Task Progress | Rolled Up Task | External Tasks | Manual Task | Finish-only
Critical Task | Rolled Up Critical Task | PTask | Duration-only | External Tasks
Critical Task Progress | Rolled Up Milestone | Task Progress | Manual Summary Rollup | External Milestone
Milestone | Rolled Up Progress | Inactive Milestone | Manual Summary | Critical Task