

Hidi Khola Hydropower Project (6.82MW)

LAMJUNG, NEPAL



Progress Report

Jestha, 2083

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	Approved for Issue by
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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 OVERVIEW

The Hidi Khola Hydropower Project is a 6.82 MW Run-of-River scheme located in Lamjung District, Gandaki Province. The project is designed with a gross head of 726 m and design discharge of 1.14 m³/s, generating approximately 40.78 GWh annually.

The Power Purchase Agreement (PPA) was executed on 18 January 2019 with RCOD dated 31 March 2026.

2. EXECUTIVE SUMMARY

As of Baishakh 2083, the project has achieved **100% overall physical progress**. All Civil, Hydro-Mechanical works, Electromechanical works, Transmission Line works and Interconnection connection substation works have completed. E&M testing, wet commissioning and grid synchronization are also completed and the plant is under trial run operation. Revised RCOD is **26 July 2026**. (Ashadh 12, 2083).

3. PROJECT SALIENT FEATURES

S. N	ITEM	DESCRIPTION	UNIT
I	Project	Hidi Khola Hydropower Project	
I.1	Project Location		
	Province	4 (Gandaki)	
	District	Lamjung	
I.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	726	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	13.34	GWh
	Wet Energy	27.67	GWh
	Annual total Energy	41.01	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	Steel circular pipe	
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	89.9%	
8	Headrace pipe		
	Type	Buried steel circular pipe	
	Internal Diameter	0.9	m
	Length	1162.83 (incl.surge offset pipe)	m
	Steel thickness/ Type of lining	6	mm
	No of anchor blocks	20	
9	Surge tank		
	Type	Simple Surge	
	Effective Depth	9	M
	L x B	4 x 4.5	M
	Up Surge Level	2468.11	masl
	Down Surge Level	2459.81	masl
	Normal Operation Level	2466	masl
10	Penstock Pipe (High Pressure)		

	Type	Steel Pipe	
	Internal Diameter	0.8/ 0.675/0.480	m
	Length	2111.36	m
	Steel Thickness	8 to 18	mm
	Nos. of Anchor Blocks	30	
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	15	m
	Size (W x D)	1 x 1.12	m
	Tailrace outlet level	1737.52	masl
14	Turbine		
	Type	Pelton, Horizontal Axis	
	Number	2	
	Rated Capacity per unit	3534	KW
	Turbine Axis Level	1740	masl
	Net Head	697.50	m
	Discharge per Unit	0.58	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	4012	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	1	
	Rated Capacity	9	MVA
	Voltage Ratio	33/6.6	
	Vector Group	YNd11	
	Efficiency	99%	
	Frequency	50	Hz
18	Transmission Line		
	Voltage Level	33 kV	
	Length	10.176	km
	Conductor Type	ASCR Dog	
	From	Hidi Powerhouse	
	To	Nyadi HPP Switchyard	
19	Project Cost		

	Total Project Cost Including VAT, TAX and contingency	1,198,996,008.98	NRs
	Total Project cost including IDC	1,327,201,145	NRs
20	Construction Period	3 years	

4. KEY DATE

Table 5.1-1: Completed Milestones

S.N	Milestones	Date
1.	Survey License	2073/11/24 (March 7, 2017)
2.	Upgradation of License	2075/01/02 (April 15, 2018)
3.	Grid Connection Agreement	2075/07/15 (Oct 30, 2018)
4.	Power Purchase Agreement (PPA)	2075/10/04 (Jan18,2019)
5.	Generation License	2077/04/14 (July 29, 2020)
6.	Transmission Line Survey Lisenca	2079/06/27 (Oct 13,2022)
7.	Transmission Line Construction Lisenca	2081/11/11 (Feb 23,2025)
8.	Required Commercial Operation Date	2083/03/12 (July 26, 2026)
9.	Financial Closure or Facility Agreement	2078/09/14 (Dec 29, 2021)

5. OVERALL PROGRESS

Component	Weight	Progress	Weighted %
Civil Works	0.27	100%	27
Hydro-Mechanical	0.16	100%	16

Component	Weight	Progress	Weighted %
Electro-Mechanical	0.17	100	17
TL, SY & Substation	0.05	100%	5
Infrastructure	0.125	100%	12.50
Land & CSR	0.025	100%	2.50
Project Mgmt	0.085	100%	8.5
Financial	0.115	100%	11.5
Overall			100%

6. PACKAGE-WISE WORK STATUS

Civil Works: All civil structures, including the headworks, waterway system, surge tank, powerhouse, and switchyard foundations, have been completed in line with design specifications. The overall civil progress stands at **100%**.

Hydro-Mechanical Works: Manufacturing, transportation, and erection of steel pipes, valves, gates, stoplogs, hoisting equipment, trash racks, and associated penstock accessories have been completed.

Electro-Mechanical Works: Turbines, generators, transformers, EOT crane, control room systems, and switchgear equipment have been delivered and installed. All the equipment erection, cabling, protection systems, testing and commissioning have been completed. The final witness testing by NEA is also completed, and the overall package has reached approximately **100%** completion,.

Transmission Line & Substation Works: All pole structures, conductors, and associated accessories for the 33 kV transmission line have been fully erected. Stringing, testing, commissioning, and charging of the transmission line have been successfully completed. All equipment associated with the 33 kV bay, 33/132 kV power transformer, and 132 kV bay has been installed, tested, commissioned, and energized. Grid synchronization has also been successfully completed. In addition, all switchyard and substation equipment have been installed and commissioned. The overall progress of the Transmission Line and Substation Works has reached **100% completion**.

Infrastructure, Land & CSR and Project Management: Access roads, camps, construction power, land acquisition and CSR commitments have been completed. Project management and supervision activities are ongoing, keeping these packages aligned with the overall project progress.

7. SCHEDULE STATUS

Milestone	Planned	Actual
RCOD	2083/03/10	2083/03/12

8. FINANCIAL SUMMARY

Item	Value
Total Project Cost (with IDC) NRs	1.327 Billion

Latest site photos covering headworks, powerhouse, switchyard, transmission line and Substations



Photo 8-1 Overall Headworks



Photo 8-2 Powerhouse, control room and Switchyard



Photo 8-3 EM equipment at Powerhouse



Photo 8-4 33 kV Transmission Line of Hidi Khola HPP



Photo 8-5: Interconnection Substation of Hidi HPP at Nyadi HPP Switchyard



Photo 8-6 Support structure for CT , VT at Khudi Substation



Photo 8-7 Successful Testing and Commissioning by NEA team members