UPPER CHAMELIYA HYDROPOWER PROJECT

SALIENT FEATURES

SN	FEATURES	CHARACTERISTICS
	GENERAL	
1	Name of Project	Upper Chameliya Hydropower Project
2	Type of the Scheme	Run of River
3	Catchment Area	656.3 Km2 (approx..)
4	Net head	194.48 m
5	Design Discharge	23.47 m3/s(@Q42% PoE)
6	Install Capacity	40 MW
	PROJECT LOCATION	
1	Latitude	29044'20" N to 29046'57" N
2	Longitude	80046'50" E to 80049'12" E
3	Project Area	Guljar, Tapoban & Latinath VDCs of Darchula District, Far Western Province
	TECHNICAL INFORMATION	
1	**Diversion/ Weir Type**	Concrete Gravity Weir with Undersluice
	Length Of Weir	56 m
	Crest Elevation	EL 1249.80 msl
	Spillway type	Free Fall Ogee
	Undersluice opening	9m*7m
	Undersluice Crest Level	EL 1242 msl
2	**Intake Structure cum Gravel Trap**	
	Type of Intake	Side intake with 2 for each basin
	Nos of opening	4
	Size of Intake (W*H)	6*2.5 m
	Intake Sill Level	EL 1246.5 msl

SN	FEATURES	CHARACTERISTICS
3	**Approach Canal**	
	Type	Rectangular Cut and Cover
	No. of canal	2
	Length	32 m
	Size (W*H)	6m*4m
4	**Desander basin**	
	Type	Four Dufour Chambers (2 each basin)
	Dimension (L*B*H)	60m*13m*7-93m
	Inlet transition length	13m
	Particle size to be settled	0.2 mm
	Trapping efficiency	90%
5	**Headrace pipe/Tunnel**	
	Type	MS-pipe Buried section
	Internal Diameter	3.20 m
	Length	5719 m
	Steel thickness/Type of lining	12mm to 32 mm E 350 grade
	Nos. of Anchor Blocks	71
6	**Surgetank/Forebay**	
	Type	Surface, Concrete Circular Cylinder
	Effective Depth	30m
	Diameter	20m
	Up Surge Level	1260.2 masl
	Down Surge Level	1232.50 masl
	Normal Operation Level	1249.50 masl
7	**Steel Penstock Pipe**	
	Type	MS-Pipe Open/Buried section
	Internal Diameter	3.20-2.26m
	Length	832m
	Steel Thickness	32-25mm
	Nos. of anchor blocks	18
	Nos. of saddle support	51
8	**Powerhouse**	
	Type	Surface
	Size (L*W)	42m*20.4m
	Height	21.2 from runner CL
	Turbine Axis level	EL 1046.00m
9	**Tailrace**	
	Type	Closed Rectangular RCC Canal
	Tailrace Length	70m
	Size(W*D)	4m*3m
	Tailrace Water Level	EL 1045m

SN	FEATURES	CHARACTERISTICS
10	**Turbine**	
	Type	Francis, Horizontal Axis
	Number	2
	Rated Output Capacity per unit	21 MW
	Turbine Axis Level	1046.00m
	Net Head	194.48m
	Discharge Per Unit	11.735 m3/s
	Efficiency	92%
11	**Governor**	
	Type	Electronic with PID control
	Adjustment for Speed Droop	Between 0 and 10% with accuracy 0.5%
12	**Generator**	
	Type	Synchronous Brushless, 3 phase
	Rated Output Capacity per unit	23.53 MVA
	Power Factor	0.85
	Generation Voltage	11 kV
	Frequency	50 Hz
	No of units	2
	Excitation System	Brushless Excitation System
	Efficiency	97%
13	**Transformer**	
	Type	Step up Power Transformer
	Rated Capacity	25 MVA
	Voltage Ratio	11/132 kV
	No of units	2
	Vector Group	YNd11
	Frequency	50 Hz
	Efficiency	99%
14	**Transmission line & grid connection**	
	Voltage Level	132 kV
	Length	16 km
	Conductor type	ACSR “Wolf” 195 mm2
	From	Switchyard
	To	NEA’s Balanch 132 kV Substation
15	**Construction Period**	3 Years
16	**Access Road Connection**	All season motorable road is available

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CURRENT STATUS OF THE PROJECT		
1	Feasibility Study	Completed
2	Detailed Project Report	Completed
3	EIA/IEE	Forwarded to Ministry of Environment and Population for approval
4	PPA and PPA Rate	Completed
5	Land Acquisition	A team will be mobilized soon
DEVELOPMENT MODALITY		
1	Development modality	Public Private Partnership/looking foreign partner
2	Role of Foreign Partner	Arrange Debt/Equity for the project
3	Role of Local Developer	Facilitation and investment in agreed capital structure
4	Development Period	
	a. Pre-Construction Period	Ready to go for construction
	b. Financial Closure	1 Year
	c. Construction Period	30 months
	d. Concession Period	30 years
INDICATIVE FINANCIALS		
1	Total Project Cost (including Interest During Construction)	~USD 70 Mn.
2	Project IRR	16.76%
3	Equity IRR	26.40%
4	Project Benefit-Cost Ratio	1.67

CONTACT DETAILS

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