#### **ASIA CLEAN ENERGY FORUM 2025**

Empowering the Future: Clean Energy Innovations, Regional Cooperation and Integration, and Financing Solutions

2-6 June | ADB Headquarters, Manila





# Public-Private Partnerships for Sustainable Energy Transition

(KOEN's Hydropower Projects With MDBs in South Asia)

June 2025



#### **Contents**

# 1. Gulpur Hydropower Project, 102MW (Pakistan)

- Project Overview
- Environment & Social (E&S) Overview
- CDM (Clean Development Mechanism)
- CSR (Corporate Social Responsibility)

# 2. UT-1 Hydropower Project, 216MW (Nepal)

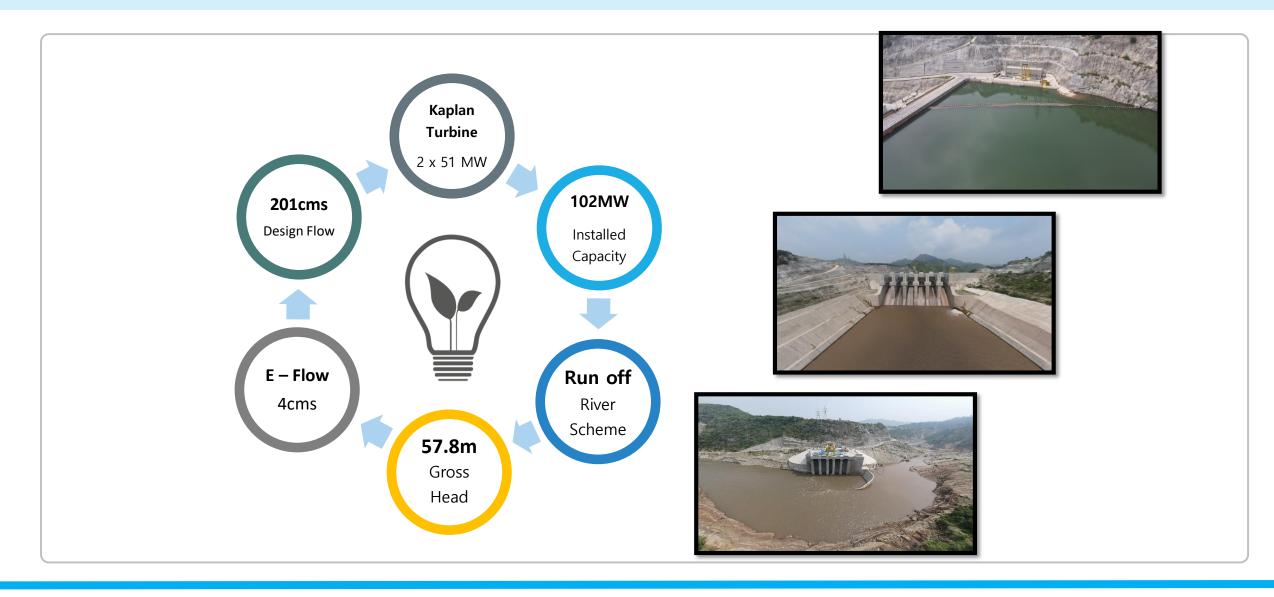
- Project Overview
- Environment & Social (E&S) Overview
- CSR

## Project Overview (Pakistan Gulpur HPP)

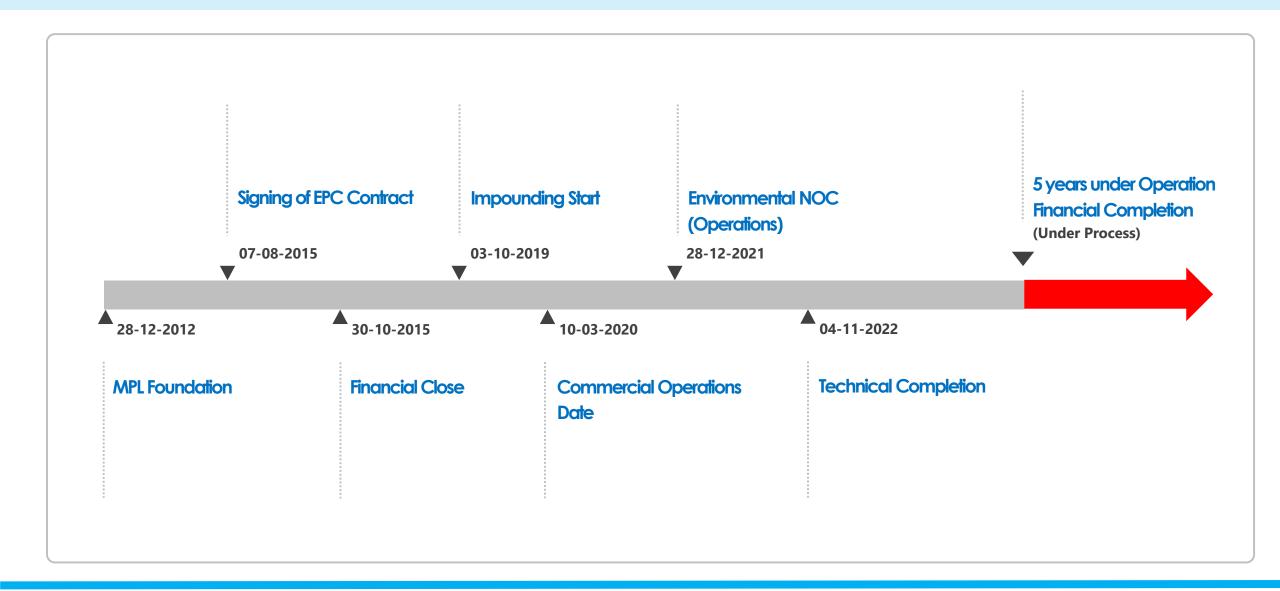
Owner	Mira Power Limited (MPL)	
Capacity	102 MW (51MW X 2Units)	
Location	11 km south of Kotli Town, AJ&K	
Business Type	Run-Of-River / BOOT (Build-Own-Operate-Transfer)	
Off Taker	Central Power Purchasing Agency-Guarantee (CPPA-G)	
Annual Gen.	475 GWh	
Period	Construction (4years) / Operation (30years)	
Project Cost	374 Mil USD [Equity: 109.8MiL / Debt: 264.8 MiL]	
Main Structures		



## **Project Overview**

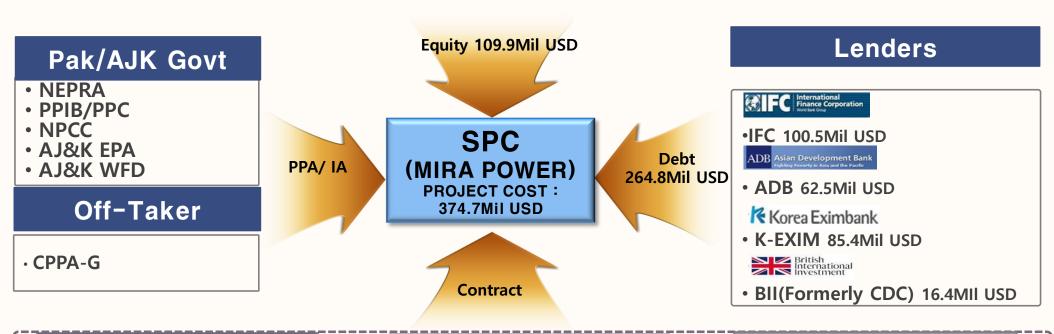


## **Project Timeline**



## **Key Project Shareholders and Partners**





#### **EPC Contractors**

- DL E&C (75%)
- LOTTE E&C (25%)

#### **O&M** Contractor

• KOEN(100%)

#### **O/E Contractors**

- JV1: MWH-NESPAK
- JV2 : KOEN-DOWHA

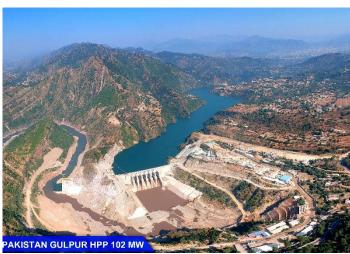
**X** IA: Implementation Agreement

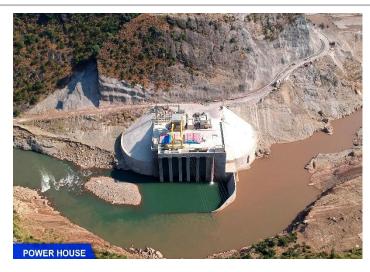
# **Project Layout**



# View of Power Plant (Under Operation)









# **View of Power Plant (Under Operation)**













## Significance of the Project (E&S Aspect)



## 1 National Park

- Execution of Hydropower Project in a Declared National Park

#### Critical Habitat

- Presence of both endangered and critical endangered species

## **3** Design Change

- Design of the project was changed due to Environment and Social

#### **4** Funding Issue

- It was never easy to convince International Financiers to invest in a National Park

## **(5)** Stringent Requirements

- Compliance to International standards and additional requirements which are not required for the normal project (First time in the history of Pakistan)

#### 6 Future Roadmap

- No set example was available in Pakistan/ AJK for Hydropower Construction in National Park.
- Gulpur is roadmap for future Hydropower Projects in the region

#### Mahaseer National Park – Critical Habitat

❖ As per IUCN\* Strategic Environmental Assessment,

Poonch River is Ecologically "Highly Sensitive"

#### Due to;

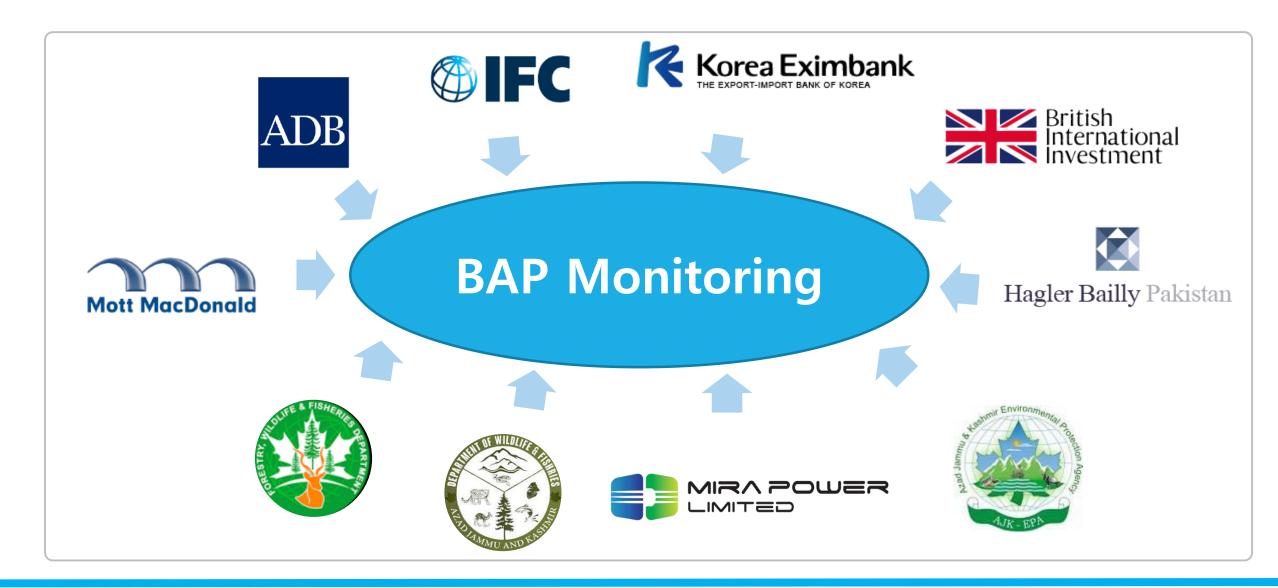
- Regionally important population of <u>Endangered</u> <u>migratory fish, Golden Mahaseer</u> (*Tor putitora*)
- 2) <u>Critically Endangered Kashmir Catfish</u> (Glyptothorax kasmirensis)
- Gulpur HPP is located within the Poonch River
   Mahaseer National Park

\* IUCN: International Union for Conservation of Nature and natural resources





## Biodiversity Action Plan – Stakeholder Monitoring & Evaluation



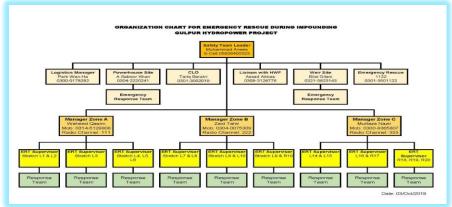
## Biodiversity Action Plan – Adaptive Management

#### Strictly compliance with IFC PS & ADB Safeguard





Reservoir Impounding



**■ River Diversion** 



**■ Fish Hatchery** 



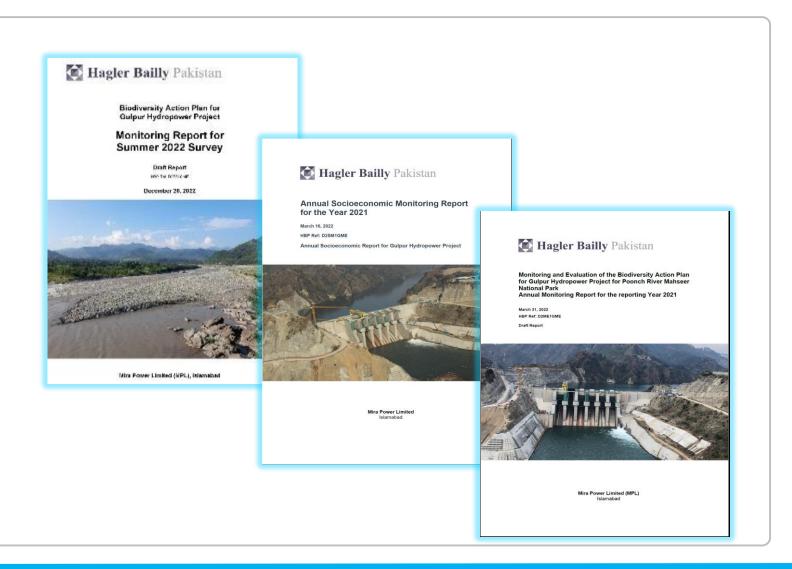
## Biodiversity Action Plan - Monitoring & Evaluation(M&E) Consultant

## Reporting

Quarterly M&E Reports

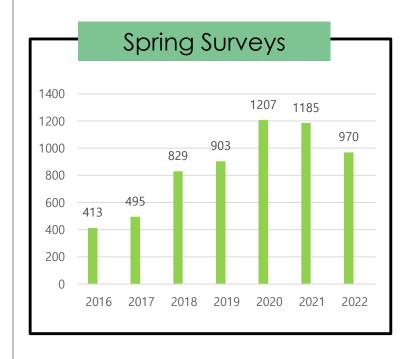
 Annual Socio-economic Report

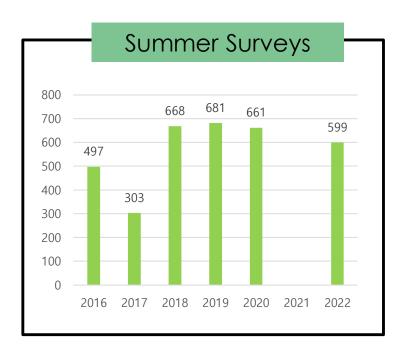
 Annual Biodiversity Monitoring Report

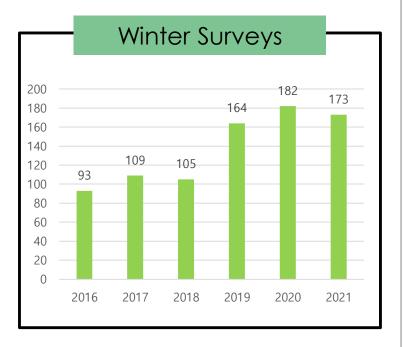


## **Biodiversity Action Plan - Achievements**

o Increasing trend of total fish abundance



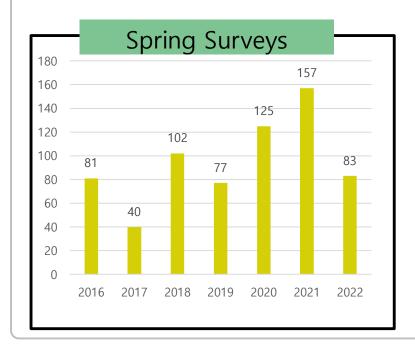


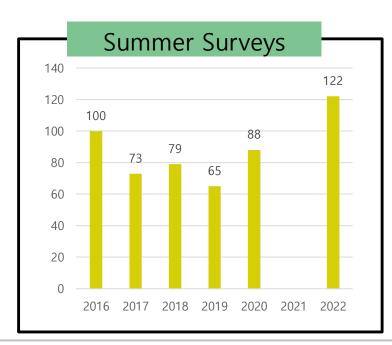


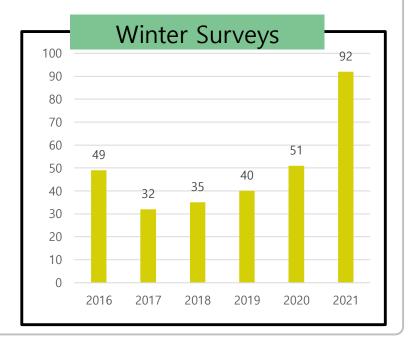
## **Biodiversity Action Plan - Achievements**

Increasing trend of Mahseer fish abundance









#### **Achievements**

© 2016: Asian Power Awards 2016 "Environment Upgrade of the Year"

© 2019: Asian Power Awards 2019 "Environment Upgrade of the Year"



2016 Asian Power Awards



2019 Asian Power Awards

#### **Achievements**

#### Biodiversity Action Plan of 102MW Gulpur project to protect endangered fish

MIRPUR (AJK), Mar 17 (SABAH): Yoon Tae Hak, CEO, Mira Power Limited, has claimed that the 102 MW Gulpur project's biodiversity action plan aims at protecting the endangered Mahaseer fish of river Poonch, along with other flora and fauna of the region, and increase its population overtime.

He revealed this during an agreement signing ceremony in Mirpur (AJK). The agreements were signed for implementation, water use and land lease for the project being built in Kotli district in the presence of AJK Prime Minister Chaudhry Abdul Majid, Senior Minister Chaudhry Muhammad Yasin, Ambassador of South Korea Jong Hwan Song, Shah Jahan Mirza, managing director, Public-Private Investment Board (PPIB) and other dignitaries.

Hak informed that a special feature of the project, which has attracted international interest and attention, is its location in a national park and on a river which is home to endangered species of fish, Consistent with the environmental guidelines of IFC and ADB, the project has been designed to achieve net gain in population of endangered species through implementation of a Biodiversity Action Plan that will be partly financed by electricity revenues from the project. This novel approach to conservation has the support from independent environmental organizations, prominent among which are the Himalayan Wildlife Foundation and WWF-Pakistan, which were actively consulted during the project development.

Ambassador Jong Hwan Song said that the cooperation between his country and Pakistan in the hydropower sector demonstrated that South Koreans were serious investors based on the fact that this is the third big achievement by them in in AJK. The first one was New Bong Escape which is under operation in Mirpur implemented by Sambu Korea, the second is Patrind Hydropower Project developed by K-Water Korea & Daewoo Korea and Gulpur Hydropower project being the third.

MD-PPIB Mirza Shah Jahan, in his speech at the ceremony, also praised the company's environmental preparations for the Gulpur project in compliance with international best practices.

#### Earthly Matters: Saving the mighty Mahasheer

RINA SAEED KHAN - UPDATED Oct 16, 2016 09:04am



Guarding the Poonch River - Photo provided by the writer

River Poonch meanders through Azad Jammu Kashmir (AJK), cutting through the low Himalayan mountains as it passes through one picturesque valley after another. With its shallow gravel beds and rocky shores, it is the ideal breeding ground for the famous

News & Events >> News

COVID-19 Podcasts

#### How Two Fish Are Changing Hydropower in Pakistan

Media Contacts

In project finance, environmental and social risks traditionally have been managed one project at a time. IFC is changing the game, by considering and addressing the impact of projects on an entire region, interconnected ecosystems, and communities. We bring together the private and public sectors, civil society, and local communities to achieve that. In Pakistan, it all started with two fish.

The Jhelum-Poonch Watershed, in South Asia, is home to critically endangered species of fish such as the Golden Mahaseer and the Kashmir Catfish. The basin is also a vast source of hydropower in Pakistan.

More than 50 power plants are located along the two rivers, in various stages of operation and development. Six of them are being financed by IFC. They are expected to bring up to 4,000 megawatts of additional power to Pakistan—where daily blackouts last for up to eight hours. But continued hydropower development in this area can have an irreversible impact on its rich aquatic biodiversity particularly on the two endangered fish species, which are important for local food consumption.

#### fyeepe 전, 파키스탄·네팔에 대규모 수력발전소 서남아시아 전력시장서 에너지 '한류 바



PM Nawaz inaugurates 102MW Gulpur hydropower project in AJK



파키스탄 골푸르 수락발전소 준공식 /남동발전 제공

오늘의 주요뉴스

이 시각 관심정보 로또용지 버리지마 \* 만든 20만원으로 2주



Look for the USP seal of quality.



other flora and fauna of region and increase its population overtime.

March 18, 2015

KARACHI: Mira Power Limited claimed 102 megawatts (MW) Gulpur project's biodiversity action plan was aimed at protecting endangered Mahaseer fish of river Poonch along with

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Shah Jahan praised Company's environmental preparations for Gulpur project in compliance with international best practices.

According to environmental impact assessment of project conducted by an independent firm Hagler Bailey Pakistan and a total of 37 fish species have been recorded from Poonch River. Of the fish species recorded from

Poonch River, 16 species were of special significance, especially Mahaseer because of



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RELATED STORIES Students piedge to help protect biodiversity of

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# **CDM (Salient Features)**

Sr. No.	ltem	Description	
1	Project Title	102 MW Gulpur Hydropower Plant	
2	Project Reference	10690	
3	Host Country	Pakistan	
4	Authorized Participant	Mira Power Limited	
5	Reference Protocol	Kyoto Protocol	
6	Sectoral Scope	Energy Industries (renewable and non-renewable sources)	
7	Activity Scale	Scale Large	
8	Applied Methodology	ACM0002 ver. 20 - Grid-connected electricity generation	
9	GHG Reductions	238,748 tCO <sub>2e</sub> per annum	
10	Registration Date	1 <sup>st</sup> September, 2021 (provisional)	
11	Crediting Period (Renewable)	iting Period (Renewable) 1st September, 2021 – 31st August, 2028	

# **CDM (Timelines)**

Sr. No.	ltem	Description
1	Host Country Approval	5 <sup>th</sup> April, 2017 by DNA for CDM in Pakistan
2	PDD Completion Date	30 <sup>th</sup> June, 2021
3	Project's Designated Operating Entity (DOE)	Bureau Veritas
4	Validation Completion by DOE	5 <sup>th</sup> July, 2021
5	Request for Registration by DOE	1 <sup>st</sup> September, 2021
6	Monitoring Conducted (no.)	1
7	Monitoring Period	1 <sup>st</sup> September, 2021 ~ 28 <sup>th</sup> February, 2022
8	Monitoring Completion Date	22 <sup>nd</sup> June, 2022
9	Verification Completion Date	2 <sup>nd</sup> February, 2023
10	DOE for Verification	Korea Testing and Research Institute / E-0056
11	Emission Reductions	42,792 †CO <sub>2e</sub>
12	Transition Request to UNFCCC	4 <sup>th</sup> October, 2023
13	Acknowledgement by UNFCCC	25 <sup>th</sup> October, 2023
14	Transition Request to Host Country (MoCC)	28 <sup>th</sup> March, 2025

## **CSR** (Health Sector)



Cleft Lip Treatment



Upgradation of Basic Health Unit



■ Ambulance to BHU

## **CSR (Education Sector)**



**■ Education Support** 



■ Renovation of School



**■** Construction of School Building



■ Installation of Solar System

## **CSR (Education Sector)**



**■ Literary Festival** 



■ Renovation of College



Renovation of School



**■** Renovation of School

## **CSR (Environment Sector)**



**■** Construction of Solid Waste Site



Dust Bin



Drinking Water Supply



Distribution of Groceries



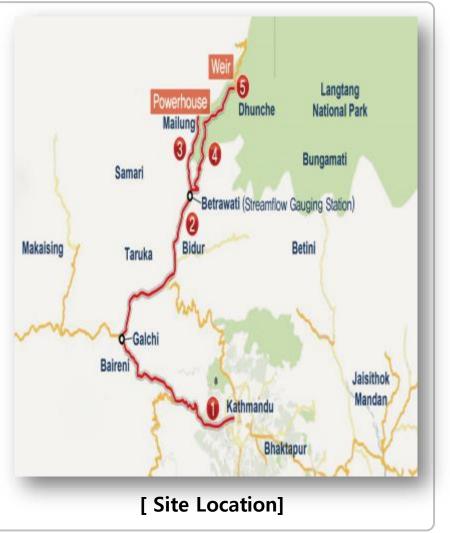
Laptop, Desktop and Printer for Deputy Commissioner Office



Laptop, Desktop and Printer for Deputy Commissioner Office

## Project Overview (Nepal UT-1 HPP)

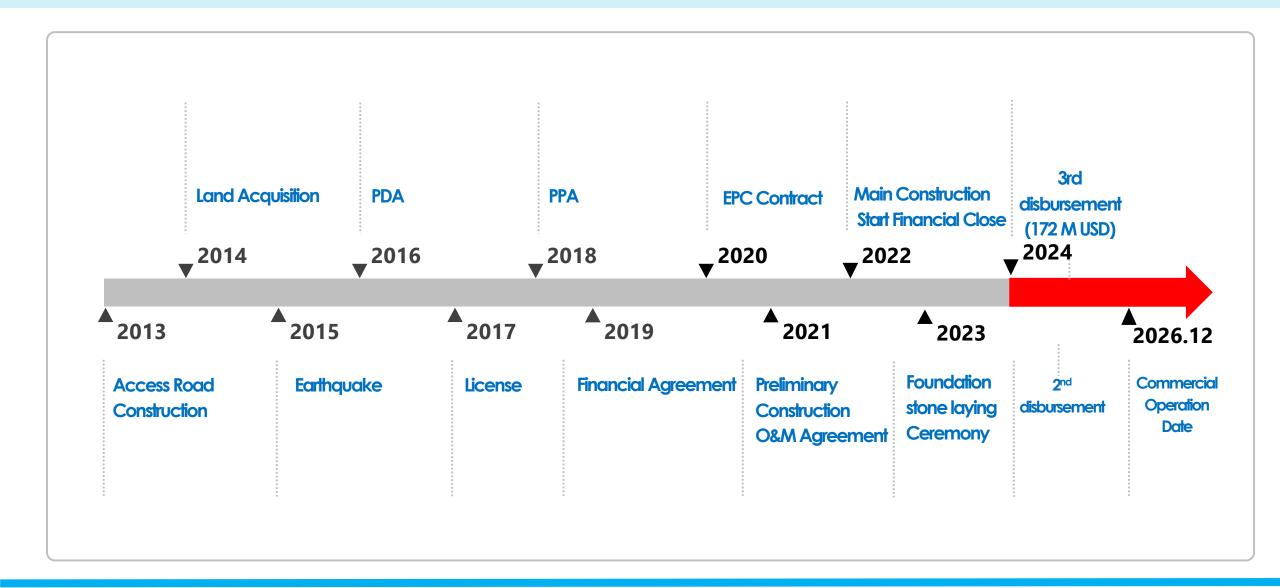
Owner	Nepal Water & Energy Development Co. Pvt. Ltd (NWEDC)		
Capacity	216MW (72MW X 3Units)		
Location	70km North of Kathmandu, Rasuwa		
Business Type	Run-Of-River / BOOT (Build-Own-Operate-Transfer)		
Off Taker	Nepal Electricity Authority (NEA)		
Annual Gen.	1,456.4GWh – 564.36GWh (Dry) / 892.04GWh (Wet)		
Period	Construction (5years) / Operation (30years)		
Budget	USD 647.4 Mil. (Debt. USD 453.2 Mil. / Equity. USD 194.2 Mil.) Largest FDI hydro sector in Nepal, as of now		
Work Packages	Preparation Works, Head Works, Headrace Tunnel, Power House Hydro-Mechanical, Electro-Mechanical, Transmission Line		



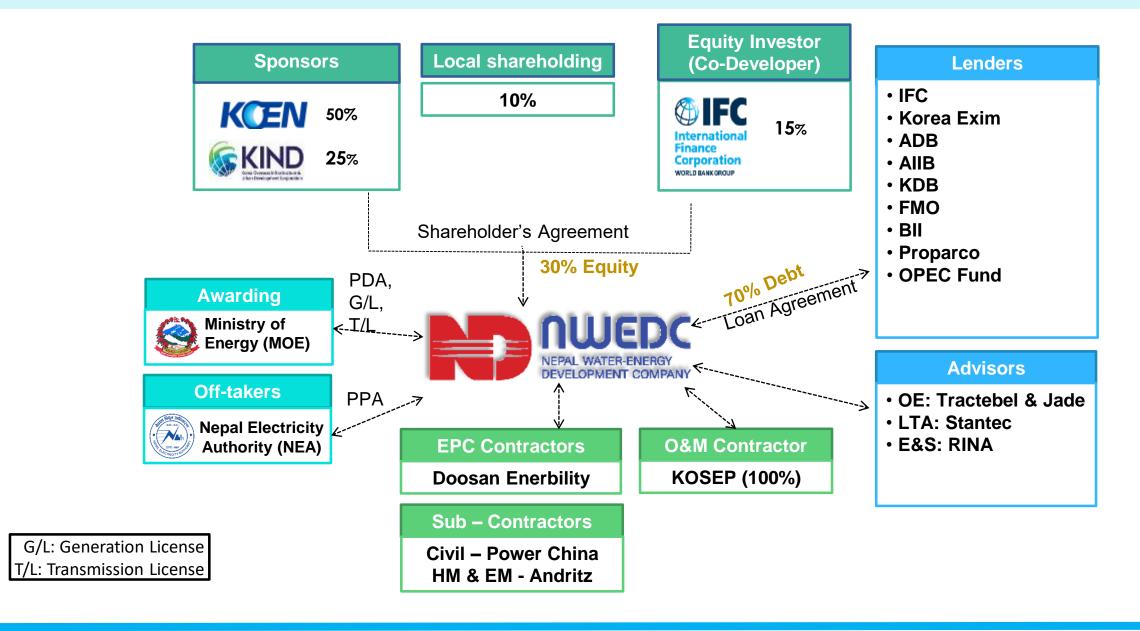
# **Key Project Benefit**

Item	Benefits Benefits		
High Firm Power	<ul><li>105 MW all round the year</li><li>39% Dry Energy</li></ul>		
Low transmission losses	• Near to Load center Kathmandu (72 km)		
Road	UT-1 Access Road can be an alternative highway to Chinese border		
Technology Transfer	<ul> <li>Transfer of experiences and technologies</li> <li>Compliance with International Standards</li> </ul>		
Good precedent	<ul> <li>Successful Project financing model</li> <li>Will attract other large FDIs in Nepal</li> <li>Standard PPA and PDA Templates (PPA: Power Purchase Agreement, PDA: Project Development Agreement)</li> </ul>		
Benefit sharing	<ul> <li>Budget allocated for Indigenous People's Plan implementation – USD 1.125 million</li> <li>Local share – 10% on PAR value</li> <li>Rural Electrification – 20 kWh for project affected households</li> <li>Employment/Training/CSP – 40%/900 pop./0.75% of total project cost</li> <li>Royalties and Taxes/VAT – NPR 85 bn</li> </ul>		
Quality Project to Nepal	<ul> <li>Project will be handed over to Nepal Government after 30 years of operation</li> </ul>		

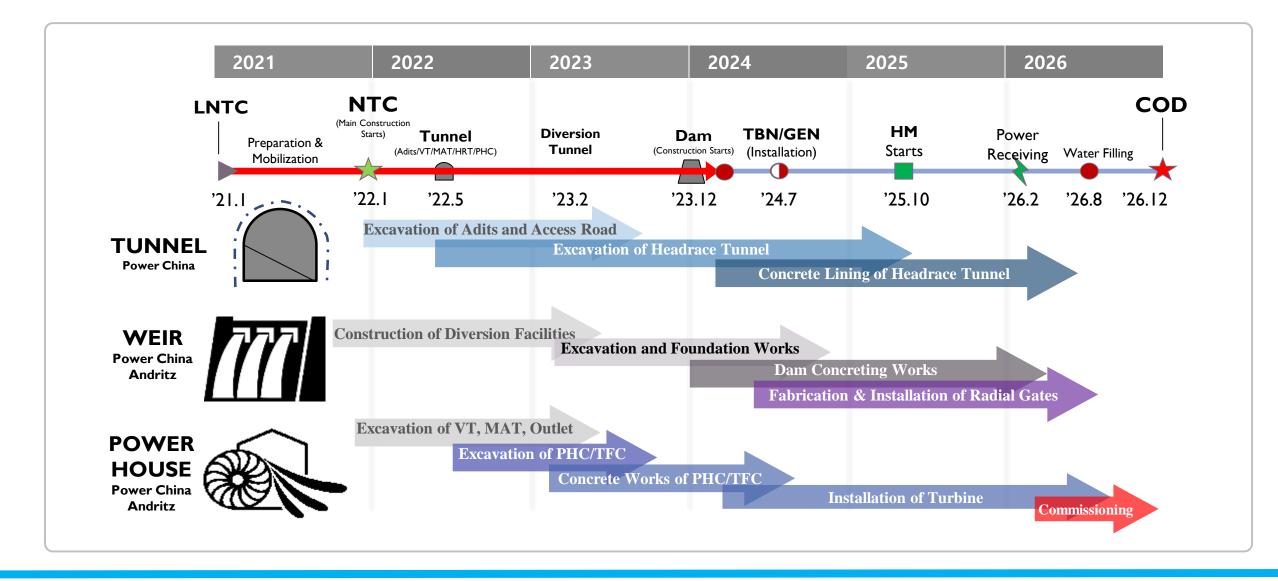
## **Project Timeline**



## **Key Project Shareholders and Partners**



#### **Construction Schedule**



## **Construction Progress (Photographs-Civil)**

Cut-Off Date: NTC to 2025.04.07



**Overview of Construction Progress at Headworks** 

## **Construction Progress (Photographs-Civil)**



Excavation Works at Desander Main Body

Excavation and Support Works at HRT Face 4

**Excavation and Support works at Surge Shaft** 

## **Construction Progress (Photographs-Civil)**



**Current Status of Power House** 

## Construction Progress (Photographs-M&E)



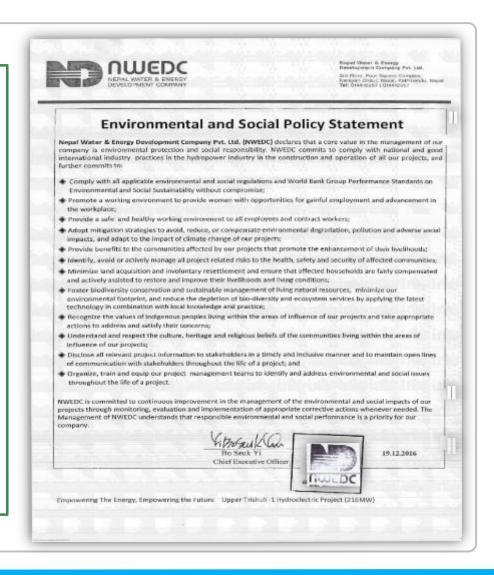
M&E Workshop at Site ready for Penstock Fabrication



Draft Tube and Spiral case components

## NWEDC(SPV) E&S Policy Statement

- Compliance: All applicable National & International Regulations
- Excellent Working Environment: Safe and Healthy Working Environment, Promote Women Opportunities
- Reduce Project Risks: Adapt Mitigation Strategies to Project impacts
- Benefits to Local Communities: Fair compensation, minimized land acquisition and involuntary resettlement land, livelihood options, corporate social responsibility, trainings, development programs
- Value of IPs: value recognition, address IPs concerns
- Conservation: biodiversity, minimize project footprint, sustainability
- Respect: Local culture, heritage and religious beliefs



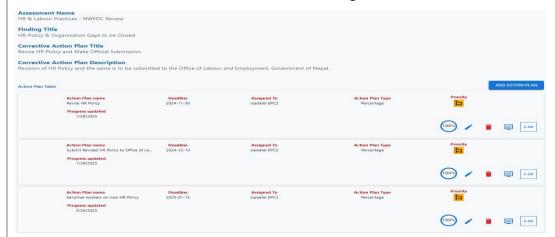


## Digital Environment Social Management System

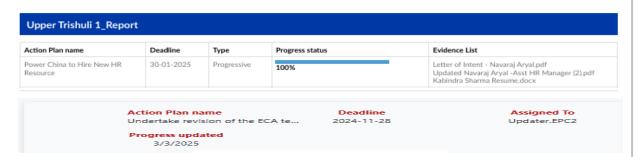
## **E&S** performance monitoring

Assessment Name	Assessors	Period of Assessment
Muck Dump - NWEDC Review	Auditor1	2024-12-09 - 2024-12-10
HR & Labour Practices - NWEDC Review	Auditor2	2024-12-23 - 2024-12-24
Labour Accomodation - Independent Audit	Auditor3	2024-12-11 - 2024-12-12

#### overview of all findings



online system with role based access to points of responsibility



#### Expected completion timeline



**Muck Disposal Status** 



Date: 25th Dec, 2024

Evidence of progress

## **Biodiversity Management and Monitoring**

#### **Aquatic Monitoring**

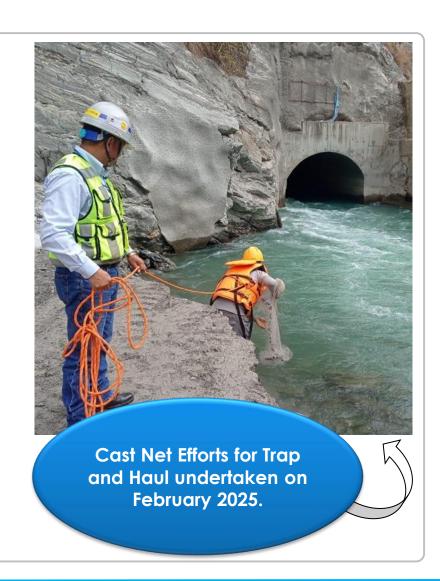
- Conducted twice a year (Spring and Fall/Autumn) involving
  - o Bournemouth University Fish Monitoring Advisor
  - o RDT, Nepal Macroinvertebrate Advisor
  - o Biome and Ecosystem Services National Fish Monitoring Advisor



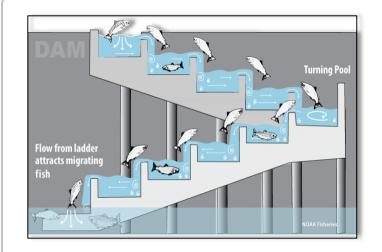
Macroinvertebrate Survey



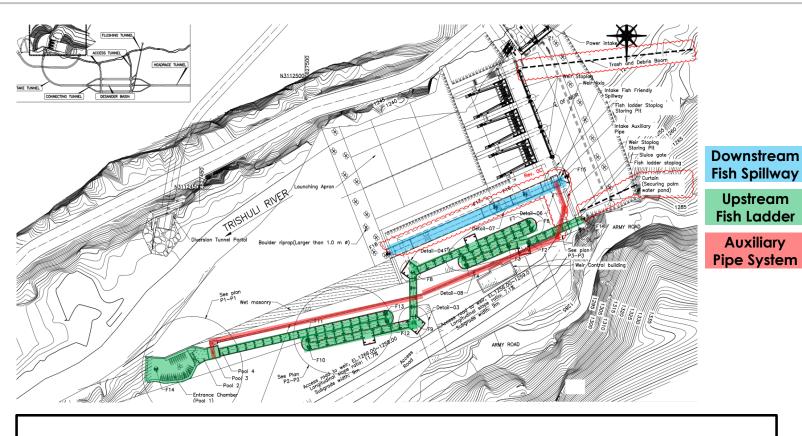
Electrofishing and Pit tagging



# Biodiversity Management and Monitoring – Fish Ladder







- Fish Ladder Design and O&M protocol finalized in consultation with SWECO
- Fish Ladder construction begins from last quarter of 2025

# **Labor Management**

#### **HR** Issues

- NWEDC sensitized the Sub Contractor Workers regarding approved HR Policy.
- Implementation of approved HR policy (weekly off and 72 working hours)
- Entitled Home and Sick leave to be paid on a monthly basis
- The evidences of implementation verified by IFC during construction.
- Monthly HR audit by EPC Quarterly HR audit by Lenders
- Tracking of HR issues though ESMS toolkit
- Labour Audit of NWEDC and OE conducted.

#### **Workers Accommodation**

- Monthly Workers Accommodation Inspection by External Expert
- CAP (Corrective Action Plan) developed and integrated into the ESMS toolkit for monitoring purpose.
- Regular monitoring of workers accommodation ongoing.



# **Accommodation Monitoring**









**Accommodation Monitoring by External Specialist** 





Construction of Additional Toilets

Additional Refrigerators for storing of Green Vegetables



Repairing of Washrooms

#### **Implementation of Corrective Actions**

# **Community Support Programs**

S. N.	Particular	Budget in NPR				
1	Education Support	11,360,176				
2	Road Development	6,469,652				
3	Water Supply	4,105,366				
4	Langtang National Park	5,500,000				
5	Health	4,258,080				
6	Local Organization support	4,106,736				
7	Religious Institution Support	1,300,000				
8	Dhunche Kholdol Road	7,000,000				
9	District police Office	496,955				
10	Haku Besi Bailey Bridge	78,614,100				
11	Skill and Vocational Training	8,143,160				
12	0.16 Ha land to construct Haku Police Post	In Kind				
	Total (NPR)	131,354,225				
Total (USD)						



Bailey Bridge for local connectivity at Hakubesi



Educational material support to local schools



Ambulance Handover to Health Post ACRM Ward no 1



Rehabilitation of community water supply



Landslide Relief Distribution



Handover of rescue material to DAO, Rasuwa

# Land Acquisition and Livelihood Restoration Plan (LALRP) Implementation













**Consultation for Livestock and Agricultural Trainings** 

# IPP(Indigenous People Plan) Implementation



**Goat Farming Support** 



**Bee Farming** 



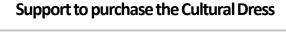
**Education/Stationary Materials Support** 



Cooking Utensil to support Tamang Ceremony



Distribution of Sichuan Pepper for business purpose



# **Local Community Grievance Overcome**

# √ Tools & Procedure

### 2) Establishment of grievance toolkit

Upgraded grievance management system through digitized GRM toolkit for recording, resolution and reporting of the grievance.

Digitized stakeholder engagement toolkit developed to record all stakeholder engagements

rievance Records

Grievance No	Grievance Subject	Grievance Theme	Stakeholder Group	Grievance Status	Grievance Date	Response Days	Grievance Details	Acknowledgement Status	Ac	tions
G132	Blasting Impacts Leading to Building Damage in Charghare, Mailung	Blasting     Damage to Houses	Villages > Mailung		2024-11-07	Response Submitted	Details	ı	•	ì
G133	Flooding of Agricultural land in Gumchet	Community Health & Safety     Waste & Spoil Management	Villages > Gumchet		2024-11-24	Response Submitted	Details	ı	•	î
G134	Blasting Impacts Leading to Building Damage in Gogane, Tiru & Mailung	Blasting     Damage to Houses	<ul> <li>Villages &gt; Gogane, Mailung, Tiru</li> </ul>		2025-01-25	Response Submitted	Details	ı	•	ì
G135	Drying up of Springs in Tiru	Water Resources (springs)	Villages > Tiru	Assigned	2025-01-15	83	Details	ı	-	ì
G136	Blasting Impacts Leading to Building Damage & Drying of Springs	Blasting     Damage to Houses	Villages > Lumbudanda, Nesing, Phoolbari, Sano Haku, Thangu, Thulo Haku	Assign	2025-01-10	88	Details	ı	•	Î
G137	Increase in Landslide Frequency in Lumbu Dara because of Blasting Impact	Blasting     Landslides	Villages > Lumbudanda	Assigned	2025-01-30	68	Details	ı	•	î
G138	Project Affected People, Kaksing (Haku Besi) - Blasting Impact	Blasting     Damage to Houses     Water Resources (springs)	Villages > Haku     Besi/Kaksing	Acknowledge this Grievance to assign	2025-04-30	-22	Details	Acknowledge	•	ì
i139	Non-receipt of Project-Related Entitlements	Livelihoods Restoration	Villages > Khalte	Acknowledge this Grievance to assign	2025-01-30	68	Details	Acknowledge	•	Î

- Centralised repository of all stakeholder grievances received maintained as records
- Enables assignment of grievances to appropriate
   Tier of project management for redressal
- Scope for generation of Grievance Redressal

Reports

Distribution of Sichuan Pepper for business purpose



## **Local Community Grievance Overcome**

# **√** Communications

- 1) Making lots of chance to conversate with Stakeholders
- Enhanced community consultations on multiple basis with affected stakeholders



**Support of Vehicle for Communication** 



**Increment of Business Trip expenses to Staff** 



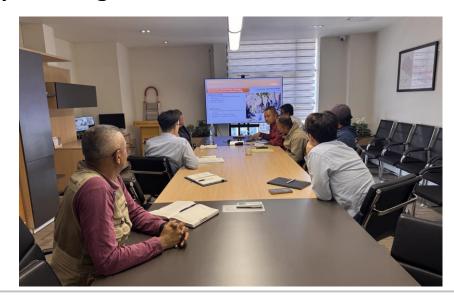
Support of Stakeholder engagement expenses

# **Local Community Grievance Overcome**

# **√** Communications

## 2) Strengthen capacities

- Capacity building and awareness sessions through support from internal/external specialists
  - Capacity Building of CLO\* through the internal session monthly basis \*CLO: Company Liasion Officer
  - Capacity Building on GRM to NWEDC, EPC and Sub-Contractor by Social Advisor





# **√** Regular villages consultation

**√** Bi-monthly(twice per month) Consultation activities including management team















#### Conclusion

 In emerging markets such as Pakistan and Nepal, cooperation with MDB is essential for the development of Clean Energy

ex) Gulpur HPP: joining as Lenders / UT-1 HPP: Joining as a co-investor(IFC) and Lenders(ADB, IFC, AIIB)

 For South Asia's Clean Energy, especially hydro project, it is crucial to mitigate environmental & social impacts during construction and operation

As per IFC PS/ADB Safeguard, CESMMP, Biodiversity, Cumulative impact, Land Acquisition, Resettlement & Livelihood, Grievance Management Action Plan etc. to be strictly implemented

 KOEN's hydropower projects in Pakistan and Nepal, are a result of active cooperation with MDBs and local governments and can be a successful model for emerging market's Green Energy project in the future

Gulpur HPP: Increasing of total and endangered fish abundance

UT-1 HPP: Enhancement of relation with Local people through advanced grievance redressal mechanism





# Thank You!