Pak Lay Hydroelectric Power Project

Regional Stakeholder Forums

12th June 2024

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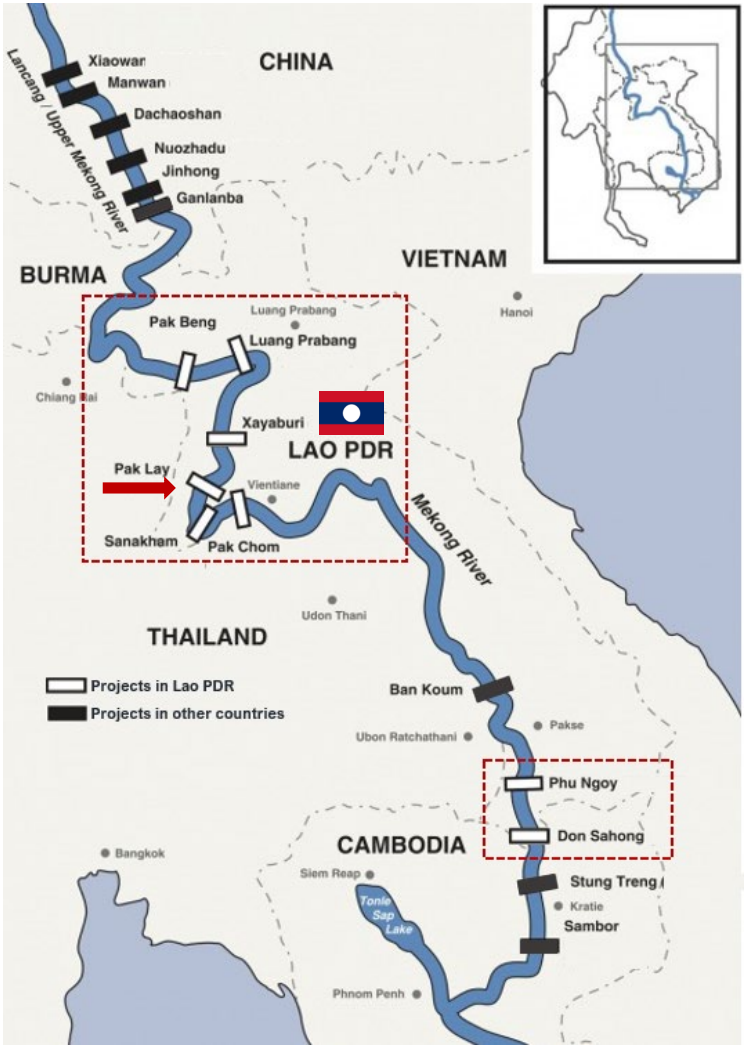
1. Project Overview and Current Status

Project Overview



PROJECT COMPANY
Pak Lay Power Company Limited, established under Lao PDR Law in Feb 2023 for the purpose to develop 770-MW hydroelectric power in Lao PDR.

LOCATION
The 4th of 11 planned cascades (upstream to downstream) on Mekong River, Pak Lay District, Xayaburi Province, Lao PDR

TYPE
Run-of-River

INSTALLED CAPACITY
770 MW

PPA CONTRACTED CAPACITY
763 MW at delivery point

OFFTAKER
100% EGAT

CA TERM
29 Years

PPA TERM
29 Years

PROJECT KEY MILESTONE

Feasibility approved	25 Aug 2017
PDA executed	15 Dec 2017
PNPCA completed	04 Apr 2019
ESIA certificate approved	31 Mar 2020
Pre-construction approved	14 May 2021
Basic Design approved	29 Dec 2021
Tariff MOU executed	24 Jan 2022
Investment License issued	09 Jan 2023
CA executed	16 Feb 2023
PPA executed	20 Mar 2023
SCOD	20 Mar 2032

Construction period is approx. 8 years

Project Current Status

I. Preliminary Construction Activities

○ Construction of access road 10.3 km	100.00% – Completed
○ Construction of Mekong bridge	40.07% – Ongoing
○ Construction of Operation Village	55.93% – Ongoing
○ Construction works of 22 kV transmission line	100.00% – Completed

II. Design and ESIA Activities

○ Update design after PNPCA	Completed
○ Back Water Effect study	Completed
○ Dam break analysis / emergency action plan study	Completed
○ Update ESIA reports to MONRE	Submitted
○ Transmission Line ESIA	In Progress
○ ESMMP-CP	In Progress
○ Sediment Monitoring Station Construction	In Progress

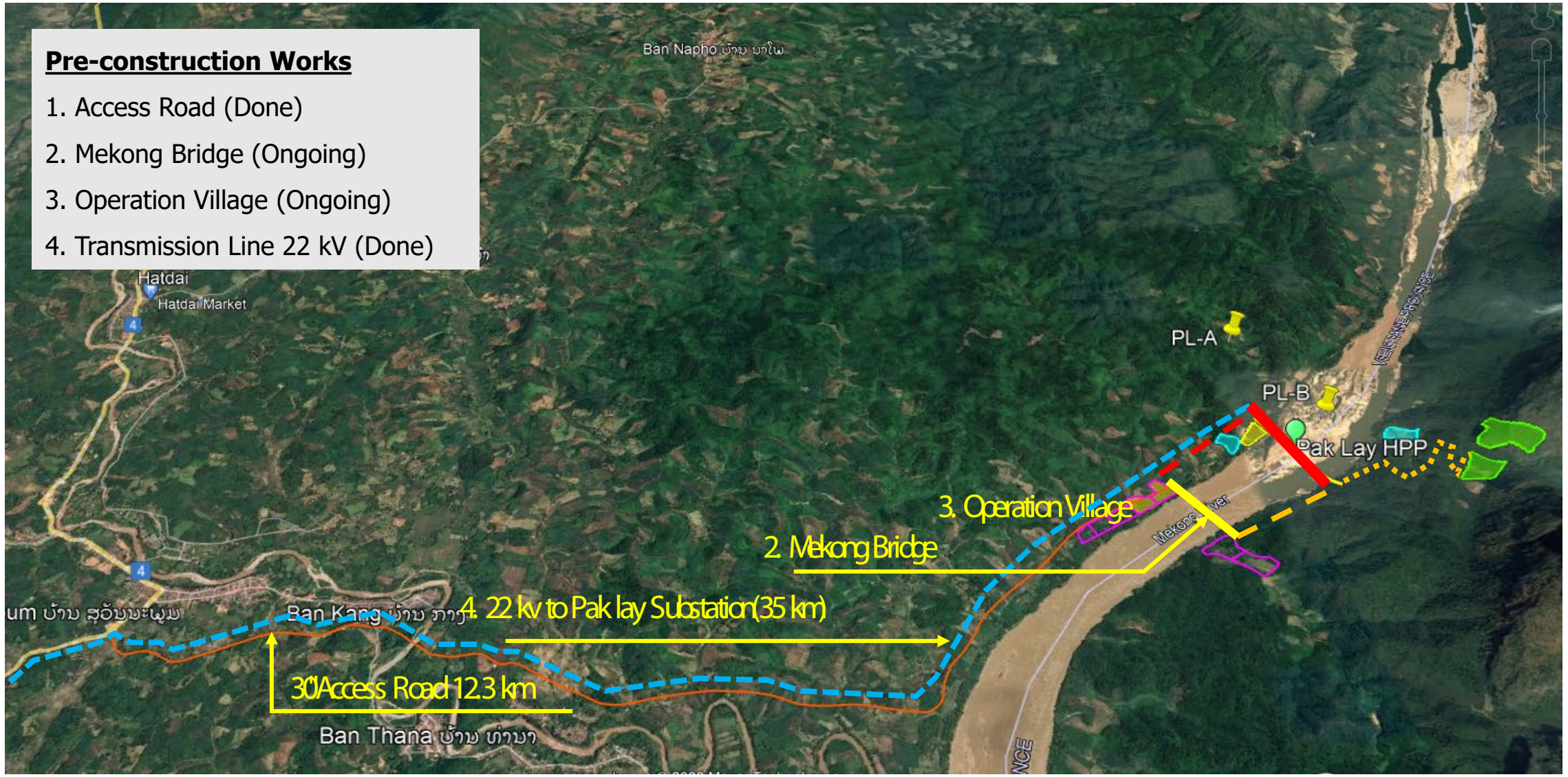
III. Project Financing

○ Selection of Lender's Advisors	Completed
○ Selection of Owner's Advisors	In Progress
○ Lender's due diligence	In Progress
○ Lender negotiation for Loan Agreement	In Progress

IV. Others

○ Preparing Pak Lay Project website	Ongoing

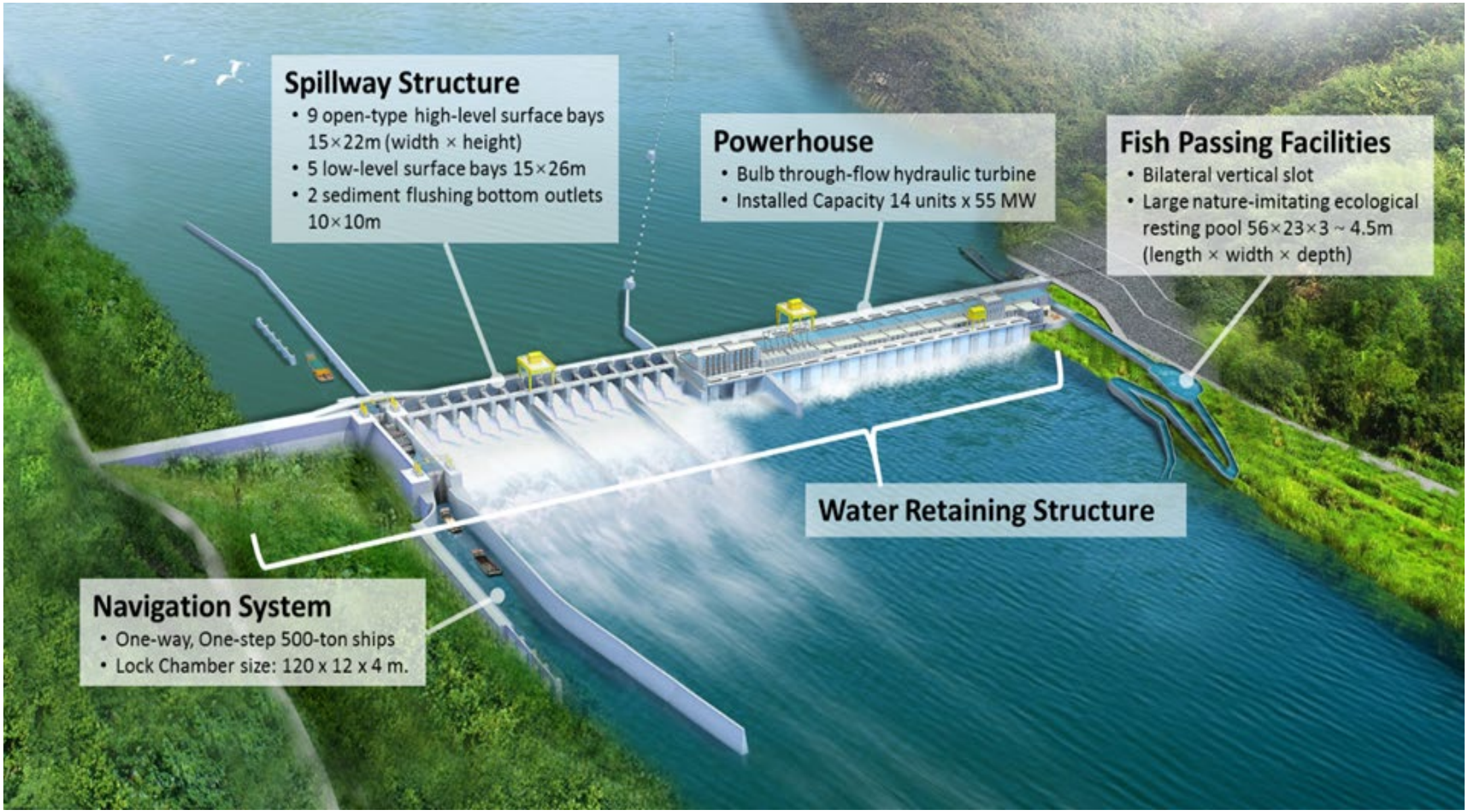
Pre-construction Activities



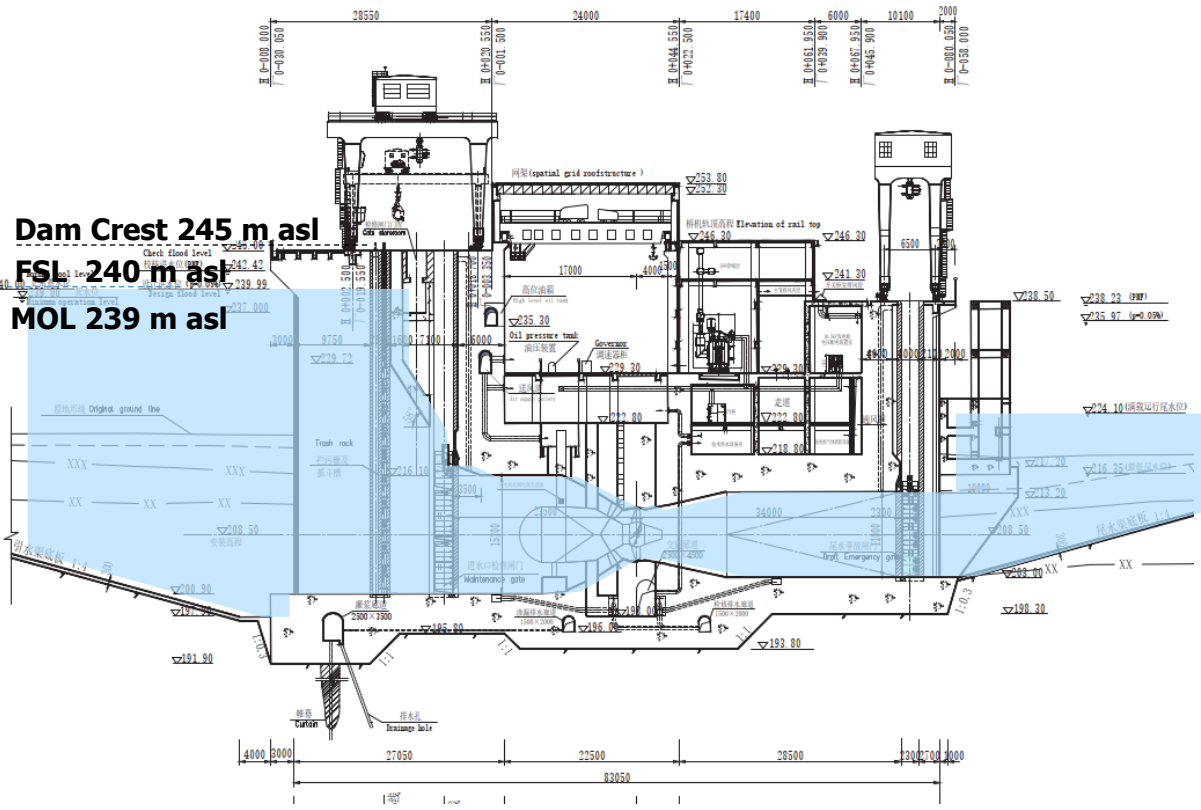
Pre-Construction of Access Road, Bridge, and Operation Village

2. Basic Design

Project Overview



Project Features



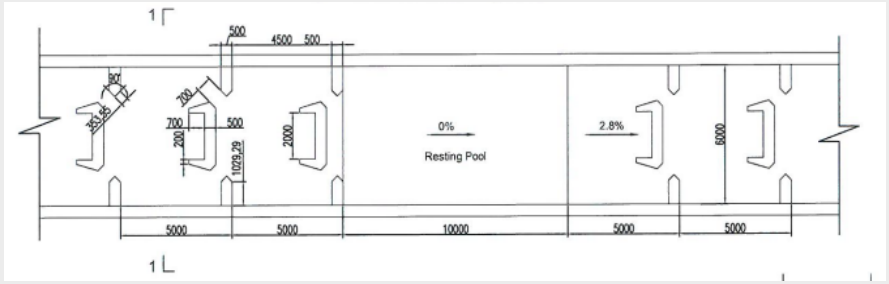
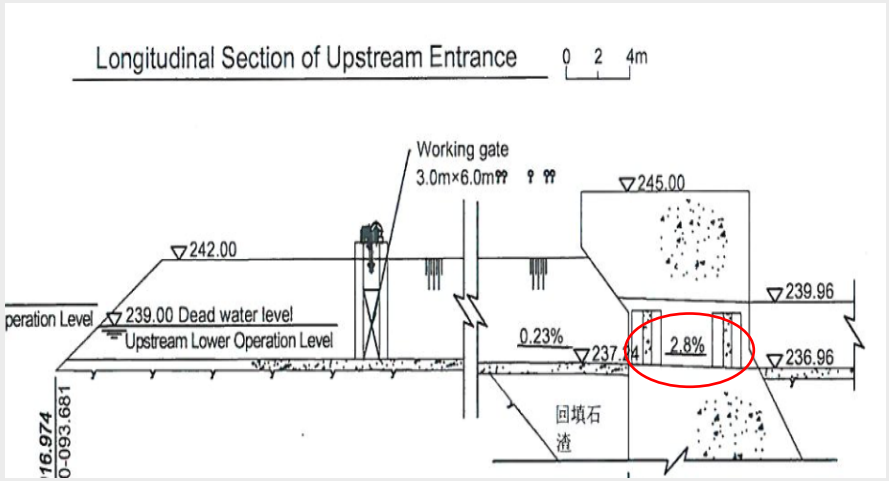
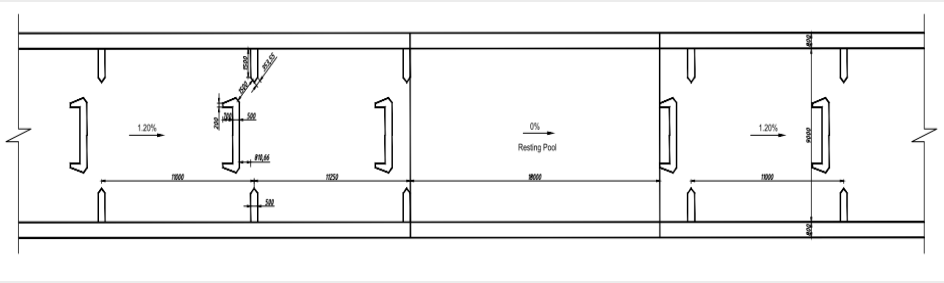
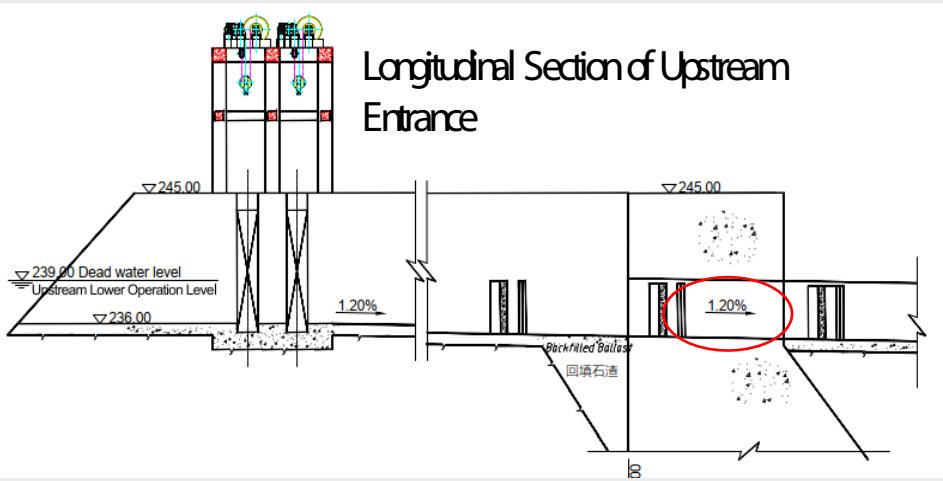
Cross Section

Characteristics	Unit	Value
Hydrological data		
Catchment area	km^2	278,400
Annual mean discharge	m^3/s	4,060
Main Dam		
Type	-	Concrete gravity dam
Dam crest elevation	m asl	245
Normal water level	m asl	240
Minimum operation level	m asl	239
Powerhouse		
Turbine Type	-	Bulb turbine
Quantity	unit	14
Unit Rated Power	MW	55
Spillway (Radial Gate)		
Total Number	No	16
Shallow Crest		
- Size (W x H)	m	15.0 x 22.0
- Number	No	9
Deep Crest		
- Size (W x H)	m	15.0 x 26.0
- Number	No	5
Bottom Outlet		
- Size (W x H)	m	10.0 x 10.0
- Number	No	2

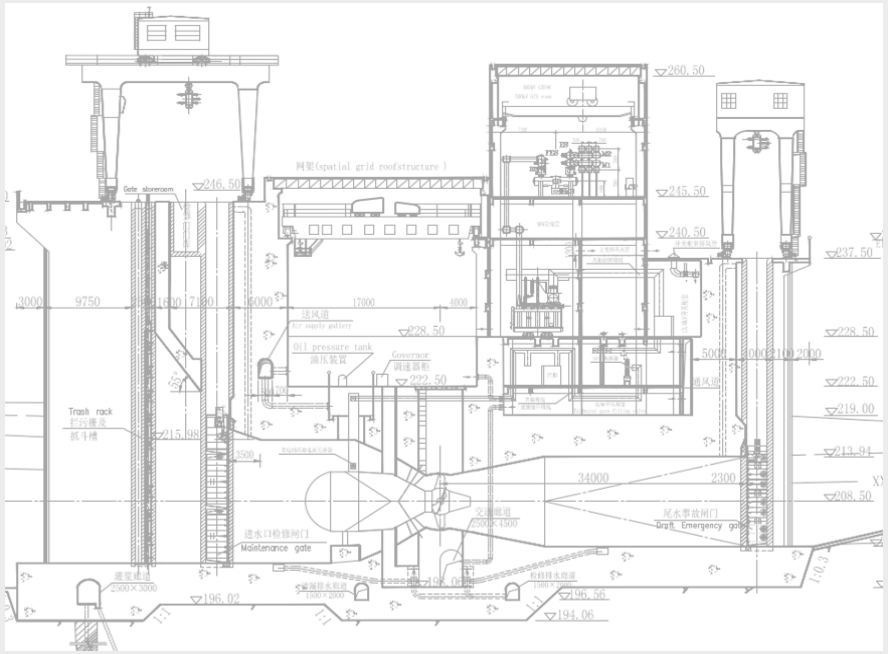
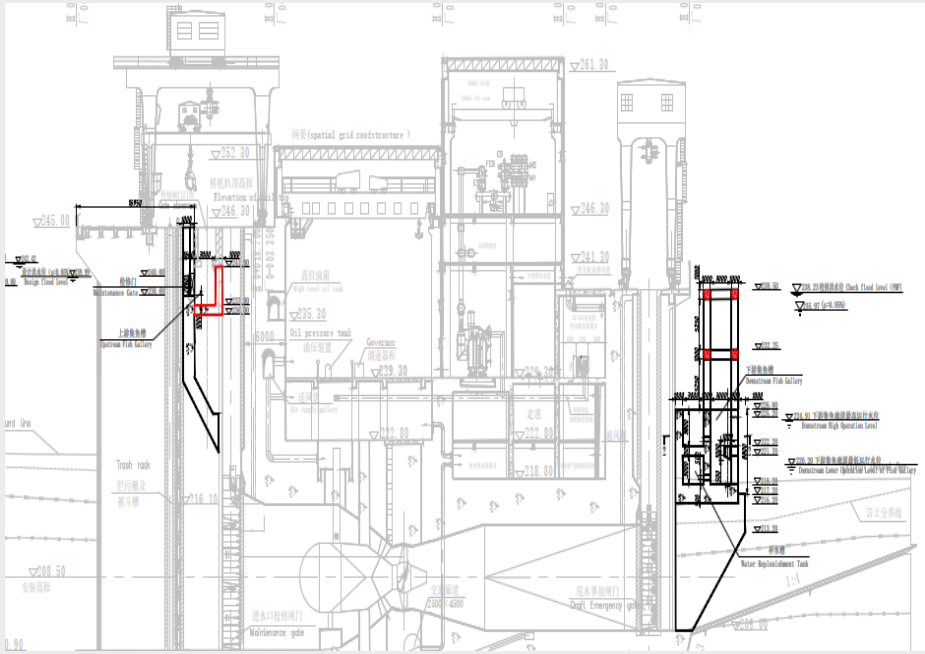
Basic Design – Recap from 6th Oct 2023 Meeting

	Topic	Highlight	Result
1.	Fish Passage	• Reduce fishway slope • Add upstream and downstream fish galleries.	Improve fish migration. Meet Preliminary Design Guideline (PDG) 2023.
2.	Turbine Type	• Bulb type (fish-friendly). • Redesign with 5 blades-turbine.	Optimize operation and maintenance. Improve fish migration.
3.	Inflow Design Flood Criteria	• Design flood = 2,000-yr return period and Check flood = PMF.	Comply with LEPTS 2018.
4.	Sediment Management System	• Increase the number of Deep Crest Spillway Outlets from 3 to 5.	Increase sediment management efficiency.
5.	Navigation Lock	• Change the design to “Open Bridge”. • Change guide wall configuration.	Meet Preliminary Design Guideline (PDG) 2023. Improve safety.

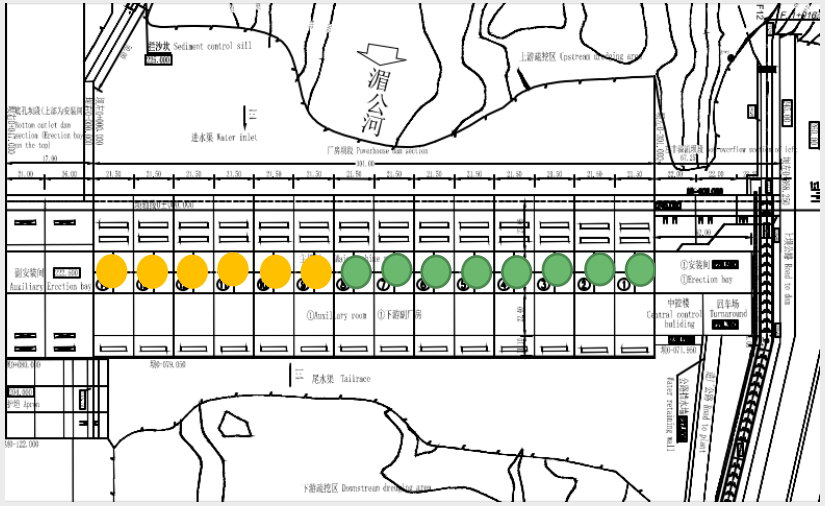
Updated Key Feature – Fish Passing Facilities

FS-Design	Updated Design	Key update
 	  (Revised Basic Design)	Redesign of the fishway layout to reduce its slope from 2.8% to 1.20%. To meet the PDG 2023 on flow velocity and minimum water depth in fishway.

Updated Key Feature – Fish Passing Facilities

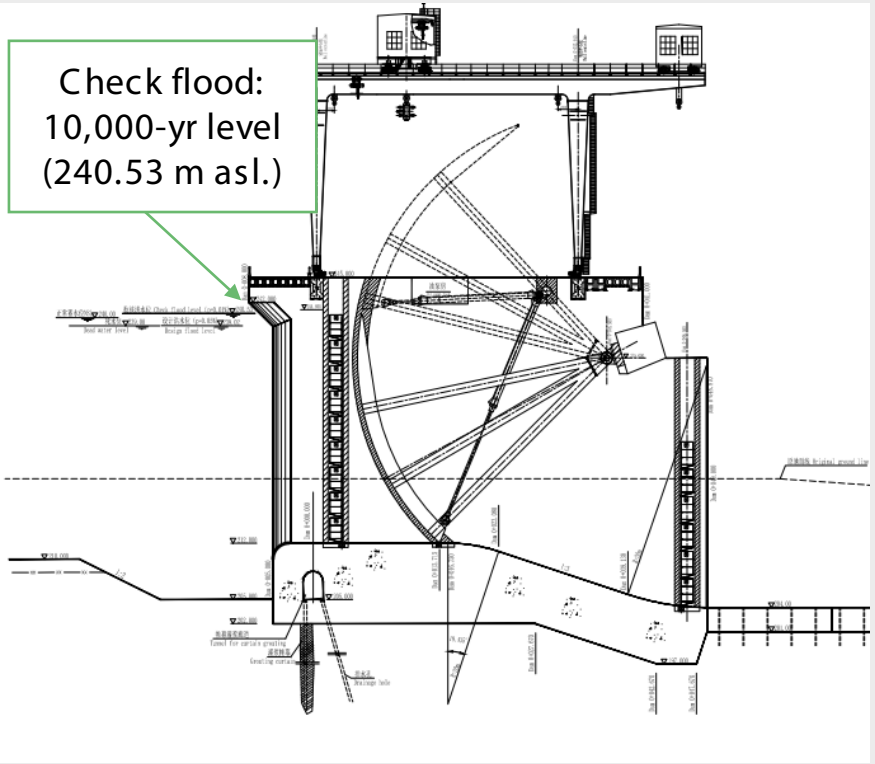
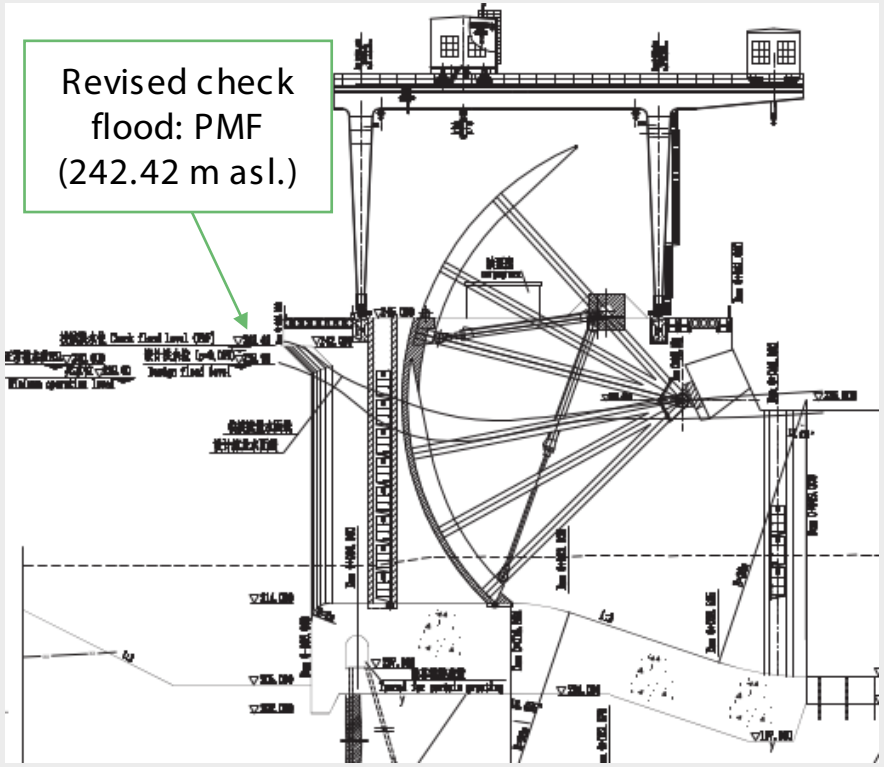
FS-Design	Updated Design	Key update
		Update the design of the Powerhouse Fish Passing Facilities by adding Upstream and Downstream Fish Galleries. To improve the system which fish can migrate on Powerhouse Section
The Layout Structure of the Powerhouse-Fish Passing Facilities (FS)	The Layout Structure of the Powerhouse-Fish Passing Facilities (Revised Basic Design)	

Updated Key Feature – Turbine Type

FS-Design	Updated Design	Key update
		Redesign of the turbine 5 Blades @ 14 Units To optimize the operation and maintenance The selected Bulb Type design is “fish-friendly”.
5Blades@8Units +4Blades@6Units	5Blades@14Units	

- 4 Blades
- 5 Blades

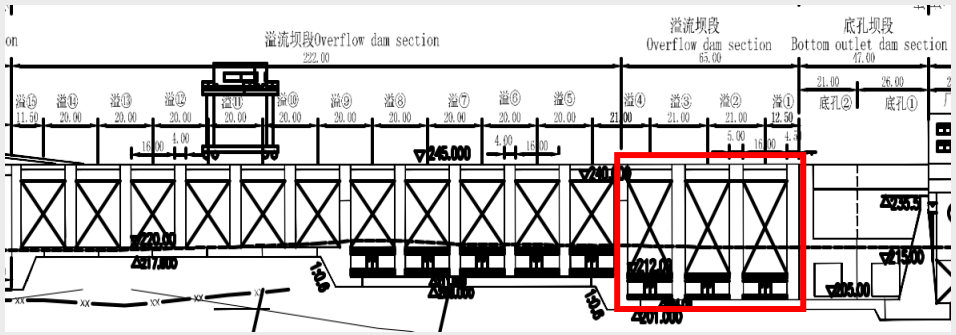
Updated Key Feature – Inflow Design Flood Criteria

FS-Design	Updated Design	Key update
 Typical section (FS)	 Typical section (Revised Basic Design Report)	**1. The Design Flood level** - Design flood level was kept at 2,000-yr return period. **2. The Check Flood level** - Check flood level was raised from 10,000-yr return period to the PMF To comply with LEPTS2018 which still have freeboard around 2.58 m.

Updated Key Feature – Sediment Management System

FS-Design	Updated Design	Key update

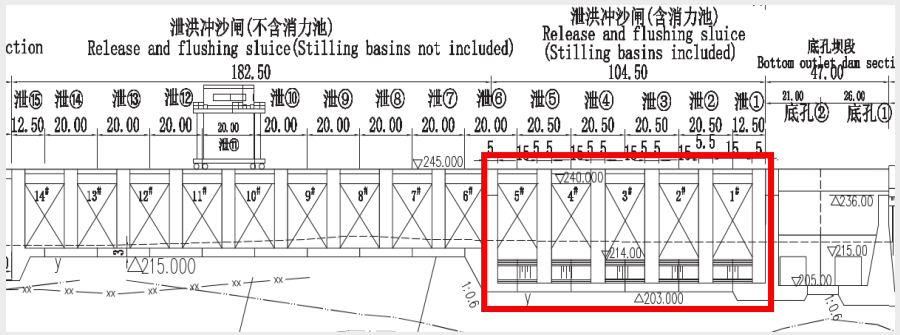
Release and flushing sluice



Shallow Crest Spillway Outlets	Dimension (W x H, Outlet Number)	16 m x 20 m, 11
	Total Outlet Area	3520 m^2
Deep Crest Spillway Outlets	Dimension (W x H, Outlet Number)	16 m x 28 m, 3
	Total Outlet Area	1344 m^2

Typical section (FS)

Release and flushing sluice



Shallow Crest Spillway Outlets	Dimension (W x H, Outlet Number)	15 m x 22 m, 9
	Total Outlet Area	2970 m^2
Deep Crest Spillway Outlets	Dimension (W x H, Outlet Number)	15 m x 26 m, 5
	Total Outlet Area	1950 m^2

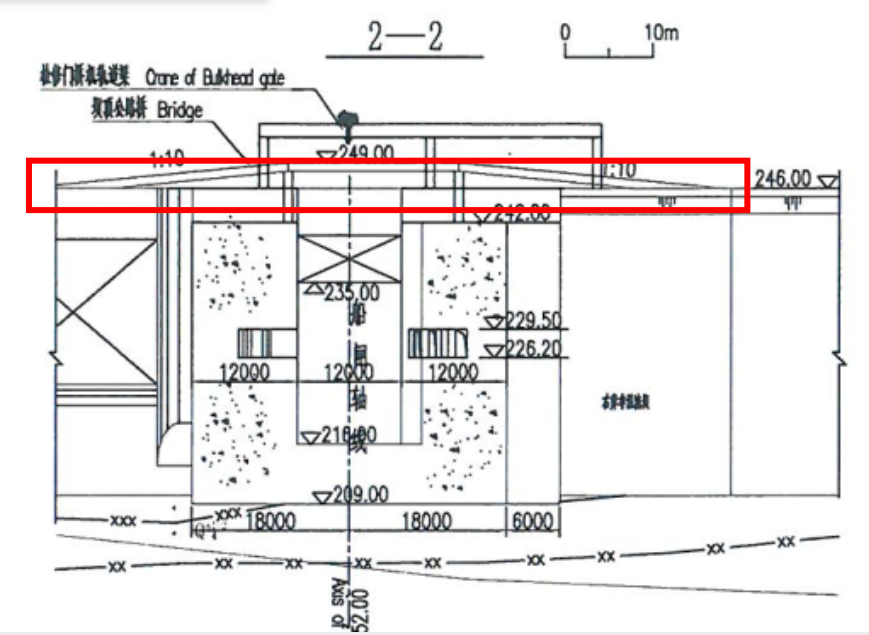
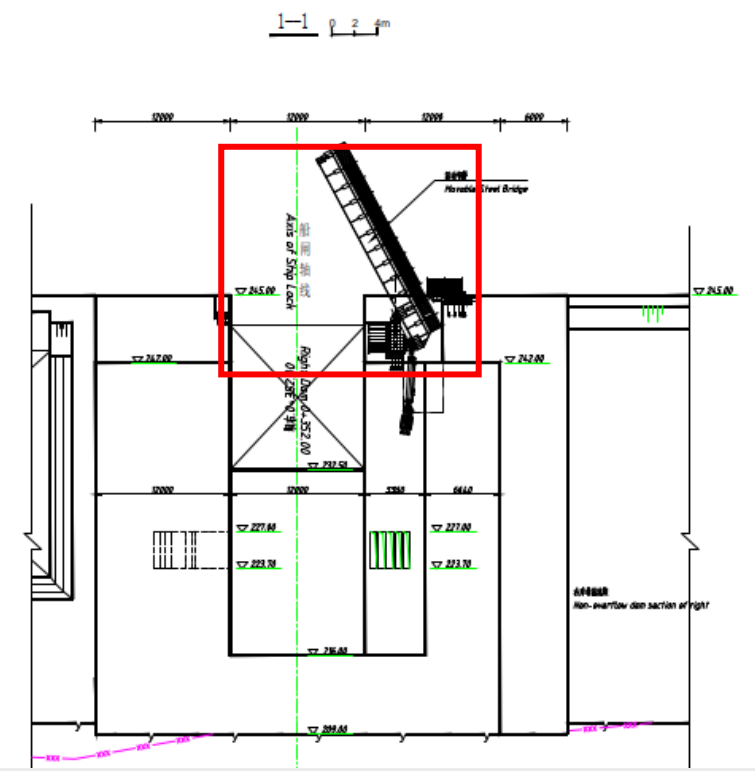
Typical section
(Revised Basic Design Report)

Release and flushing sluice :

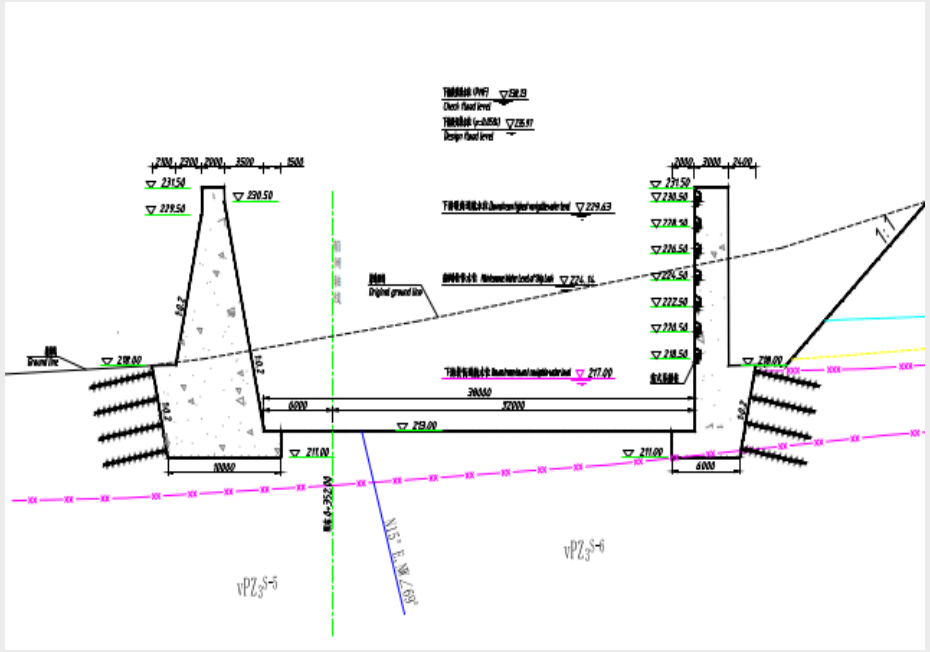
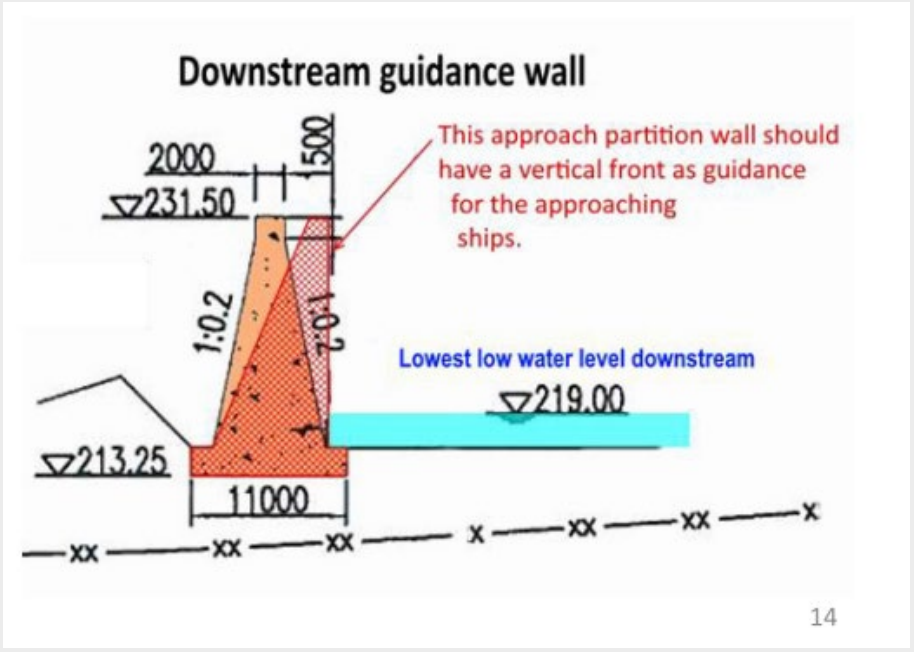
1. The updated design increase the number of Deep Crest Spillway Outlets from 3 to 5 outlets
2. The bottom outlet dam section was kept as the same design

To increase the capacity for sediment management and release

Updated Key Feature – Navigation Lock

FS-Design	Updated Design	Key update
Overhead Clearance: Upper lockhead	**Overhead Clearance: Upper lockhead**	Update design to open bridge
		Meet PDG 2023.
FS: Only 8.00 m in air clearance between the upper lockhead and low bridge deck level.	Basic Design: Update design to open bridge	

Updated Key Feature – Navigation Lock

FS-Design	Updated Design	Key update
<u>Overhead Clearance: Downstream guide wall</u>	<u>Overhead Clearance: Downstream guide wall</u>	Noted and will update according the recommendation in Detailed Design
		For safety issue, project company will update the design next stage.
Typical section (FS)	Typical section (Revised Basic Design Report)	

Updated Key Feature – Hydrology

FS-Design	Updated Design	Key update
1. Duration Hydrological data, discharges and water levels used: - Historic flows and water levels of Luang Prabang **(1960-2015)** and Chiang Khan (196-2015) stations.	**1. Duration** Hydrological data, discharges and water levels used: - The historical flows and water level data have been updated to the latest available information year **2022.**	Final updated hydrology data for further detailed design will be according to data in 2022.

3. Addressing JAP Recommendation

Addressing JAP Recommendation : Pak Lay Response 6th Oct 2023

PAK LAY POWER

1. Addressing the impacts of the changed hydrology by:	
Issue	**Pak Lay Response**
a. Introducing the operating rules curve to accommodate requirements of flow management as required by Article 6 of the 1995 Mekong Agreement, and which provides for aligning with the Xayaburi HPP, and other potential mainstream HPPs to improve sediment flushing and downstream larval drift.	<u>Sediment Monitoring & Flushing</u> • Updated sediment monitoring and flushing plan in Basic Design Report. • By Considering the sediment deposition in reservoir area up to Xayaburi. • Plan to install sediment gauging station up/down stream. • Continuous monitoring to improve the efficiency of sediment management system. <u>Downstream Larval Drift</u> • Set up flap gate in deep surface outlet of flood discharge. • Overshot the flow through the gate when the flow is low to meet requirement of larval drift.

Addressing JAP Recommendation : Pak Lay Response 6th Oct 2023

PAK LAY POWER

1. Addressing the impacts of the changed hydrology by:	
Issue	**Pak Lay Response**

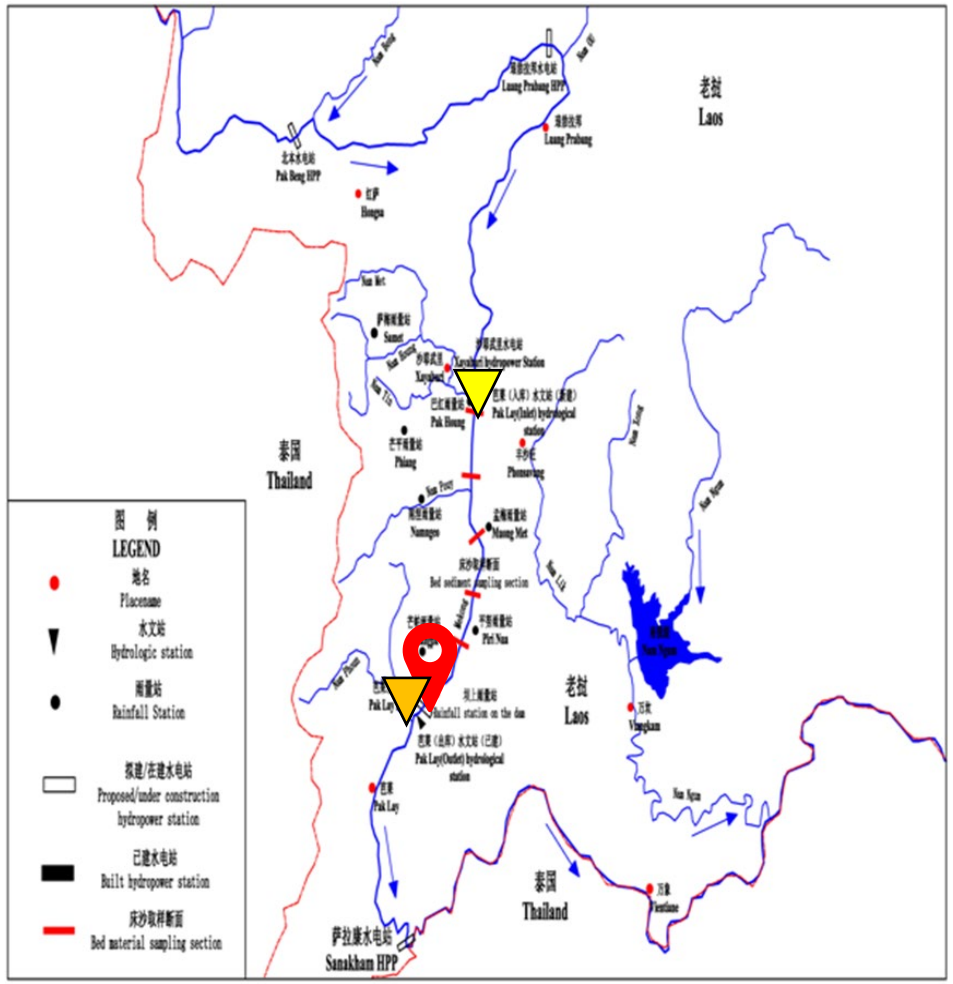
b. Ensuring environmental flows for the area immediately downstream of the dam site, if hydropeaking operations are implemented.	• Run-of-river type principal is flow-in would be equal to flow-out
	• The environmental flow (447.21 m3/s)has been studied and approved by Department of Water Resources, GOL
	• The Concession Agreement of Pak Lay project has already specified that
	  • "The Full Supply Level during operation of the HPP shall be at 240+/-0.5 meters above MSL"
	  • "The operation of an upstream project should strictly comply with the MRC's guidelines so as not to change the downstream tailwater level by more or less than fifty (50) centimeters within any twenty-four (24) hour period".

1. Addressing the impacts of the changed hydrology

Flow Management and Sediment Monitoring:

PAK LAY POWER

Monitor the change in hydrology.



No.	Type of Station	Qty of Station	Observation Item	Station situation	Station position
▼	Pak Lay inflow hydrologic station	1	Water level, discharge, rainfall and sediment (online monitoring of suspended load, bed load and sediment concentration)	New, permanent	The downstream flow of the Sayaburi Hydropower Project is smooth, and it is not affected by the backwater of the Pak Lay Hydropower Project as much as possible.
▼	Pak Lay outflow hydrologic station	1	Water level, discharge, rainfall and sediment (online monitoring of suspended load, bed load and sediment concentration)	built, permanent	1,250m downstream of dam site
●	Rainfall station	8	Rainfall	New, permanent	The basin between dam of the Sayaburi Hydropower Project and dam site of the Pak Lay Hydropower Project
▬	Sampling section of bed sediment	6	Sampling and particle grading of bed sediment	Fixed sampling section	In the reservoir area of the Pak Lay Hydropower Project, six sampling sections of Bed material are uniformly arranged along the main river channel, and one sampling point of Bed material is taken at the left, middle and right of each section.

1. Addressing the impacts of the changed hydrology

Construct Hydrology and Sediment Monitoring Stations

PAK LAY POWER

Routinely collect water sample to analyze hydrology.

Water Quality Test

Hydrology Monitoring

Sediment Monitoring

Addressing JAP Recommendation : Pak Lay Response 6th Oct 2023

PAK LAY POWER

2. Increasing the transport of sediment through the head pond by considering:	
Issue	**Pak Lay Response**
a. **Optimizing sediment-related design to improve the sediment delivery efficiency of the PLHPP, including effective flushing gates and mechanical delivery methods.**	• Set up flood discharge deep surface outlet and flushing bottom outlet. • Sediment monitoring to be enhanced during construction and operation period. • Optimize flushing management based on monitoring data. • Current design for sediment flushing system are 5 low level spillways size 15 x 26 meters, 2 bottom outlets size 10 x 10 meters • Spillways will be operated to release the flow including depositing sediment when river flow is more than 6,100 cu.m/sec • Plan to monitor the sediment continuously to improve the sediment management system

Addressing JAP Recommendation : Pak Lay Response 6th Oct 2023

PLPC PAK LAY POWER

2. Increasing the transport of sediment through the head pond by considering:	
Issue	**Pak Lay Response**
b. Considering measures to minimize and mitigate the potential impacts of sediment deposition in the head pond/in-channel storage.	• Consider for up/down stream sediment monitoring station • Consider sediment behavior during construction. • Manual survey of suspended sediment, bed load, bed material and gradation. • A hydrological station had been set up at the dam site to carry out sediment monitoring since 2016. • Generate mitigation procedures to be implemented at various operation schemes.
c. Reviewing the sediment management strategy to pass sediment more frequently, such as on a seasonal or annual basis.	Propose sediment dispatching mode and management measure **1. Inflow > 16,700m³ /s (During flood season)** • Flood releasing facilities shall be opened cascade by cascade until all of them are opened fully. **Note:** The water level of riverway under natural conditions shall be realized as much as possible, to facilitate reservoir scouring.

Addressing JAP Recommendation : Pak Lay Response 6th Oct 2023

PAK LAY POWER

2. Increasing the transport of sediment through the head pond by considering:	
Issue	**Pak Lay Response**
c. Reviewing the sediment management strategy to pass sediment more frequently, such as on a seasonal or annual basis. (Cont')	**2. Large Sediment Concentration and Discharge** • 6100 m^3 /s < inflow < 16,700m^3 /s • Sediment can be discharged by opening the sluice gate or lowering the reservoir water level as appropriate. **3. Discharge Coarse Bed Material Deposited in Reservoir** • The reservoir water level be lowered to the lowest level for ecologically friendly sediment scouring every 2~5 years • The specific frequency can be determined as per the monitoring results of hydrology and sediment. • The sediment discharge should synchronize with the up/downstream cascade HPPs.

Addressing JAP Recommendation : Pak Lay Response 6th Oct 2023

PAK LAY POWER

2. Increasing the transport of sediment through the head pond by considering:	
Issue	**Pak Lay Response**
c. Reviewing the sediment management strategy to pass sediment more frequently, such as on a seasonal or annual basis. (Cont')	**4. Sediment Releasing Bottom Outlet** • Irregular opening/closing operations as appropriate. • To prevent direct deposit of sediments behind the gate of such outlet, posing threats to the stability of structure. **5. Effect of Scouring and Discharge on Unfavorable Area** • The sediment in unfavorable area can be removed through sand basin and mechanical dredging. **6. Concerning Inflow and Sediment Operation** • Carry out observation and monitoring • Tests on water and sediment in and out from the reservoir • Observation on fixed sections, water level, sampling on sedimentation in the reservoir area. • Tests on grain gradation

Addressing JAP Recommendation : Pak Lay Response 6th Oct 2023

2. Increasing the transport of sediment through the head pond by considering:	
Issue	**Pak Lay Response**
c. Reviewing the sediment management strategy to pass sediment more frequently, such as on a seasonal or annual basis. (Cont')	<u>7. Data Collection</u> • Regular data collection • Analyze in combination with the operation and dispatching features of the reservoir • Sediment dispatching mode of reservoir shall be optimized and adjusted as per the analysis results. <u>8. Sediment Scouring, Concentration Outflow Control</u> • To prevent adverse impact on the ecology at the downstream • The maximum allowable downstream sediment concentration shall be proposed to serve as the controlling index for ecological regulation.

Addressing JAP Recommendation : Pak Lay Response 6th Oct 2023

2. Increasing the transport of sediment through the head pond by considering:	
Issue	**Pak Lay Response**
d. Coordinating water management and sediment management operations at the PLHPP with other hydropower projects of the cascade to minimize adverse impacts.	GOL will coordinate with other hydropower projects for; • Information sharing of watershed • Dispatch mechanism

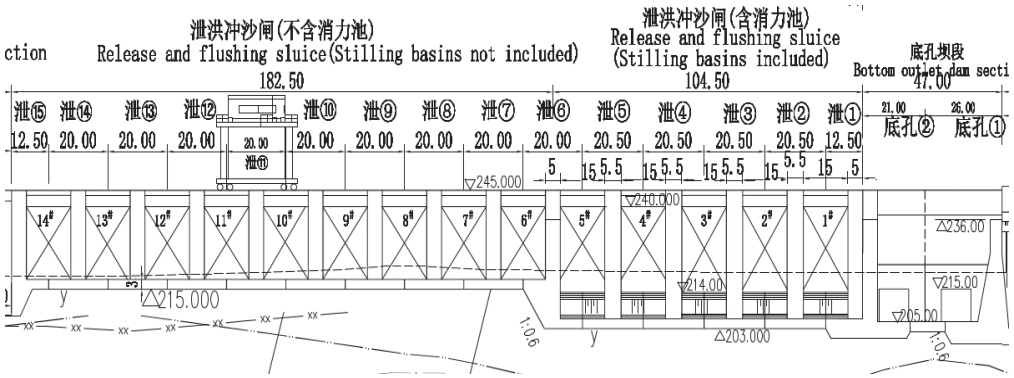
2. Increasing the transport of the sediment through the head pond

Sediment management strategy

PAK LAY POWER

Optimizing sediment-related design to improve the sediment delivery efficiency.

1. Design increase deep crest spillway outlet to 5.



Shallow Crest Spillway Outlets	Dimension (W x H, Outlet Number)	15 m x 22 m, 9 unit
	Total Outlet Area	2970 m^2
Deep Crest Spillway Outlets	Dimension (W x H, Outlet Number)	15 m x 26 m, 5 unit
	Total Outlet Area	1950 m^2

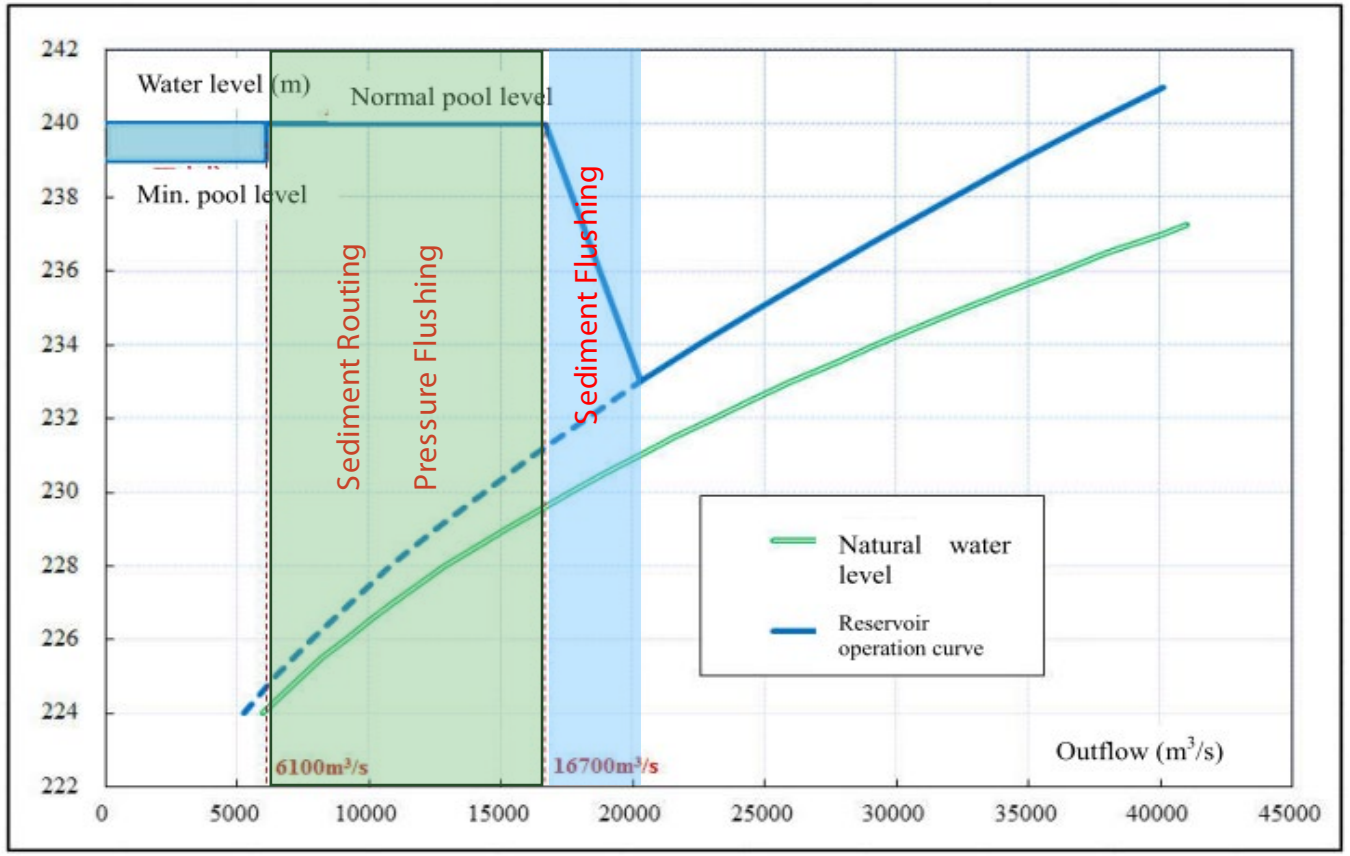
2. Increasing the transport of the sediment through the head pond

Sediment management strategy

Generate mitigation procedures to be implemented at various operation schemes.

2. Mitigation Procedure

Mitigation Procedure
• Sediment Routing
• Pressure Flushing
• Sediment Flushing
• Dredging (Mechanical)



Addressing JAP Recommendation : Pak Lay Response 6th Oct 2023

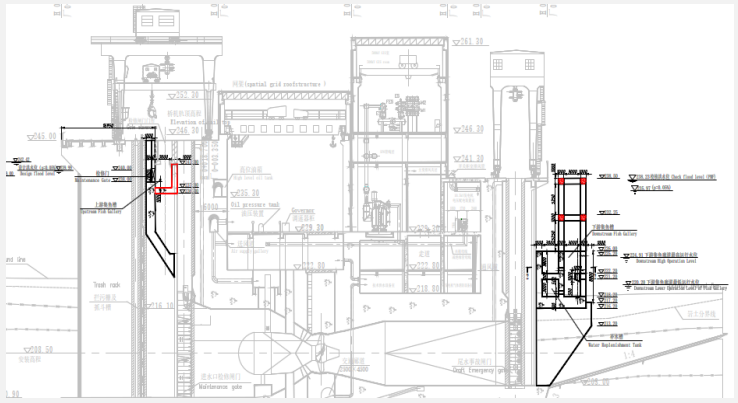
PAK LAY POWER

3. Improving the fish passage facilities by:	
Issue	**Pak Lay Response**
a. Examining the design and effectiveness of the fish pass facilities at the Xayaburi HPP when designing and constructing the fish pass for the PLHPP.	• Compare with fish pass facilities design of Xayaburi HPP and engage consultant to support to optimize the design before constructing the fish pass facilities of PLHPP.
b. Demonstrating the most effective designs in terms of entrances and exits, slope of the fish pass, flow velocity and capacity of fishpass, drifting fish egg and larvae and operation of spillway gates and turbines and installing fish screens to divert larger fish from the turbines.	• Plan to engage the fish experts who have experience and familiar with Hydropower Projects located in Mekong River. • Mathematical model tests will be carried out to further optimize the inlet and outlet locations, flow field, velocity, flow and other indicators, and proper monomer physical models • The route of fish through the bulb tubular unit is short and straight, which is very friendly to the passing fish. • A trash rack at the water inlet of the powerhouse, which can effectively prevent large fish from entering the turbine.

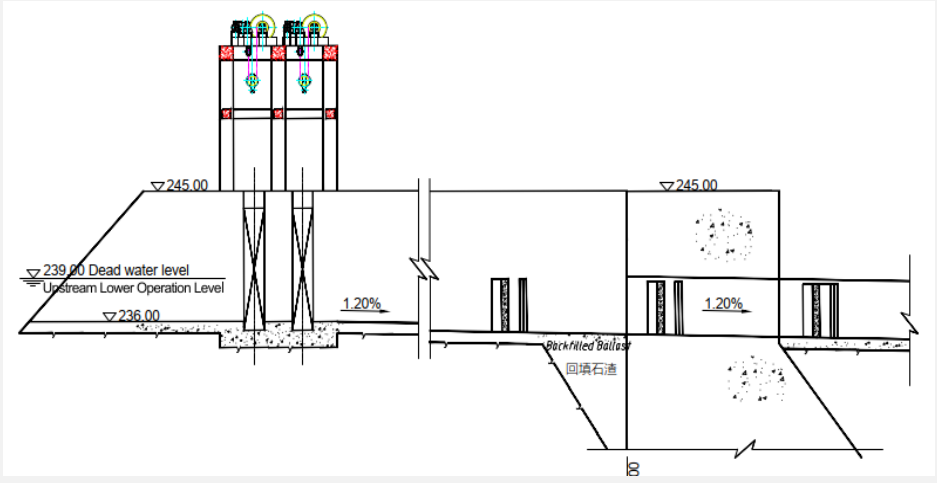
3. Improving the fish passage facilities

Examining the design and effectiveness of the fish pass

Ensure the optimum of fish pass design by fish expert.



The Layout Structure of the Powerhouse-Fish Passing Facilities



Layout of Fishway Structure

FISHTEK CONSULTING

Current Design: Vertical Slot Fish Pass

Key recommendation to improve performance:

- The upstream fish passage facilities
  - Reconfigure the downstream end to bring the entrance to the fish pass closer to the powerhouse tailrace.
  - Modify the collection gallery outlets.
- The downstream fish passage facilities
  - Reconfigure a number of deeper elevation inlets to increase opportunity for passage of midwater and benthic fish species.
  - Refigure the bottom end of the downstream fish pass to reduce the velocity at which fish enter the downstream river channel.
  - Reconfigure the fish pass at the upstream end to bring the exit nearer to the dam.

Alternative Design: Fish Lift-Lock

Vertical Slot Fish Pass

- Xayaburi fish pass provides high passage efficiency for a wide range of fish species.
- Requires verification and proven record on effectiveness of Xayaburi fish pass facilities.

Addressing JAP Recommendation : Pak Lay Response 6th Oct 2023

4. Gaining a better understanding of potential transboundary socioeconomic impacts by :	
Issue	**Pak Lay Response**
Considering the results from the socio-economic impact assessment of the related MRC studies and undertaking further assessment if needed on the consequences of the PLHPP on livelihoods and food security.	• Plan to include the results from the socio-economic impact assessment related to MRC studies in updated TBESIA report.

4. Gaining a better understanding of potential transboundary socio-economic impact

Assessment on the consequences of the PLHPP on livelihoods and food security

PLPC has a strong commitment with help from world-class experts to assess the socio-economic impact.

ESIA 2024 — TEAM GROUP → ERM, AFRY

Collaboration MRC x Project Developers

PLPC Statement:

"To establish the commitment for CIA mitigation collaboration with the MRC, Mekong River Basin governments, and other hydropower project operators to share information and work together to resolve cumulative impacts."

Fish

- Share lesson learn
- Fish migration data
- Efficiency of fish pass

Livelihood and Food Security

- Conduct survey and gather the result from the MRC study.
- Improve Livelihood restoration plan (LRP)
- Share the result from ESIA study
- Gather experience from other project developers and share lesson learn form Pak Lay project.

Addressing JAP Recommendation : Pak Lay Response 6th Oct 2023

5. Improving the design of the dam safety features by:	
Issue	**Pak Lay Response**
a. Undertaking a dam break analysis including possible failures, at the start of the detailed design stage to identify any weaknesses in the design and allow mitigation measures to be incorporated at an early design stage.	• Already engaged the consultant to perform Dam Break Analysis • To get approval by GOL following the Dam Safety Guideline of Lao PDR and International Standard such as ICOLD.
b. Carrying out dam break modelling to determine the consequences of the theoretical dam break flood wave, and to select the design standards accordingly.	• Already engaged the consultant to perform Emergency Action Plan • To get approval by GOL following the Dam Safety Guideline of Lao PDR and International Standard such as ICOLD.

5. Improving the design of dam safety features

Carrying out dam break modelling to determine the consequences of the theoretical dam break flood wave

Enhance understanding of the downstream affect caused by dam break.

- Perform various scenario analysis taking into account the existing of Xayaburi and Sanakham at different modes.
- Forecast the downstream affected area when a dam failure occurs.
- Conduct the assessment as per LEPTS 2018.
- Dam Break Analysis and Emergency Action Plan reviewed and approved by GoL.

Addressing JAP Recommendation : Pak Lay Response 6th Oct 2023

6. Increasing the safety of the navigation facilities by:	
Issue	**Pak Lay Response**
a. Increasing the air clearance over the upper lockhead to align with the standard practice on the Mekong.	• The design has been revised as required and updated in the Basic Design Report 2022.
b. Providing a vertical front for the downstream guidance wall, as is the case with the upstream guidance wall.	• The design has been revised as required and updated in the Basic Design Report 2022.
c. Improving the safety of the upstream and downstream approaches to the lock system by considering appropriate design changes.	• The calculation results show that the overall stability of the upper and lower approach channel pier and navigation wall meet the requirements • The relevant design parameters of the upper and lower approach channel of the lock meet the relevant provisions of the Mekong River Commission's guidelines. • The research results show that the flow conditions of the upstream and downstream approach channels meet the requirements of ship navigation safety

Addressing JAP Recommendation : Pak Lay Response 6th Oct 2023

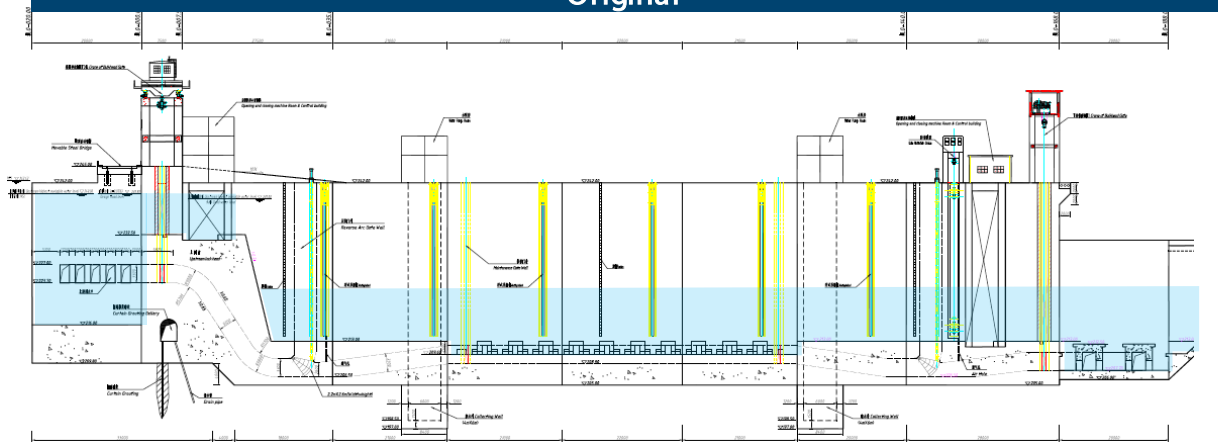
6. Increasing the safety of the navigation facilities by:	
Issue	**Pak Lay Response**
d. Using the lock system to facilitate fish migration during construction, drawing upon the Xayaburi system as an example.	• To optimize the design based on the advice of fish experts. • To engage the consultant to conduct fish monitoring and work together with GOL and MRC during construction period.

6. Increasing the safety of the navigation facilities

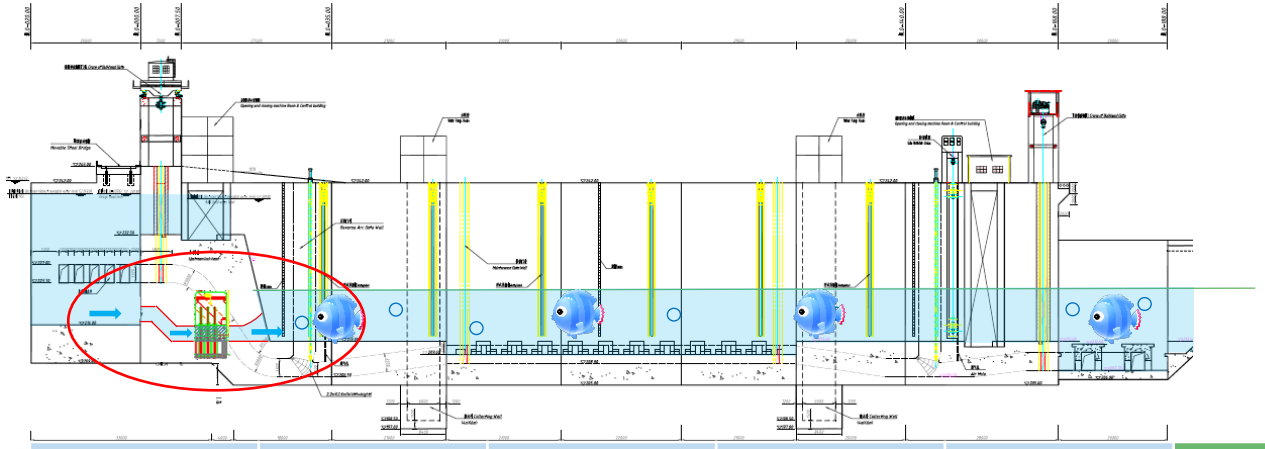
Using the lock system to facilitate fish migration during construction

Additional flow to attract fish migration through the lock system during construction.

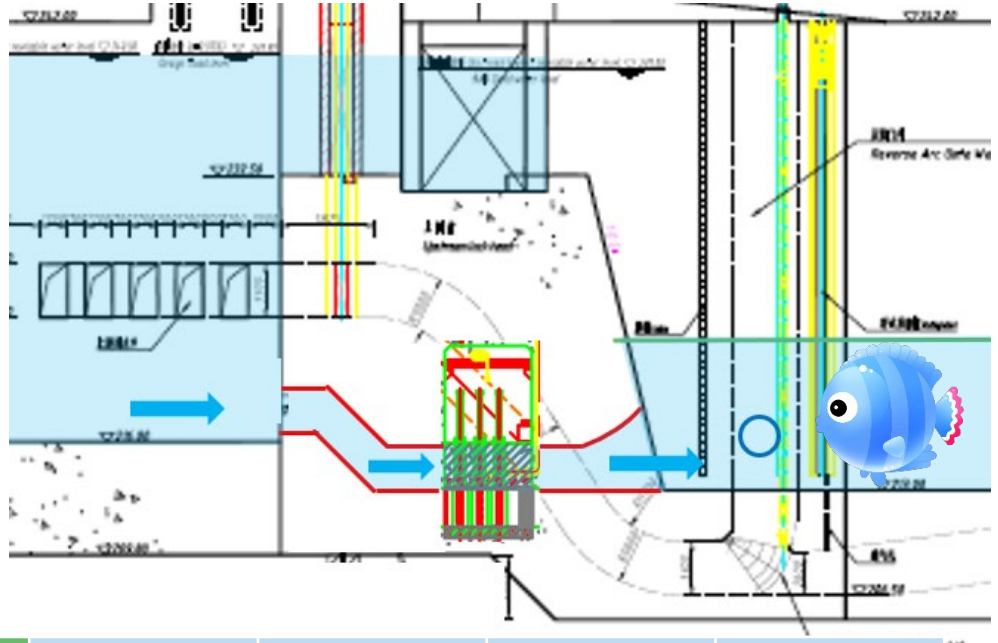
Original



Evaluate to modify Fish migration system



Under assessment to modify the lock system to facilitate fish migration during construction, drawing upon the Xayaburi system as an example.



Addressing JAP Recommendation : Pak Lay Response 6th Oct 2023

7. Maintaining a communication channel to get inputs into the ongoing design and development of the PLHPP together with MRC's support, including at a minimum the following expertise:

Issue	Pak Lay Response
a. **Dam safety**	Acknowledged • Design criteria of Pak Lay Project is following LEPTS 2018, Dam Safety Guideline, Lao PDR, International Standard. • Basic design standards of the Pak Lay project follow LEPTS 2018 and Chinese standards. • Basic design criteria and basic design report have been approved by GOL engineers.

b. **Flow regulation**	Acknowledged
	• The historical hydrological and hydraulic data for 60 years period have been considered for the effect of
	  • Upstream projects' operating
	  • Climate change
	  • Drought events
	For project risk during the concession period

Addressing JAP Recommendation : Pak Lay Response 6th Oct 2023

PAK LAY POWER

7. Maintaining a communication channel to get inputs into the ongoing design and development of the PLHPP together with MRC's support, including at a minimum the following expertise:	
Issue	**Pak Lay Response**
c. Sediment flushing infrastructure	Acknowledged • **The current design** for sediment flushing system are 5 low level spillways size 15 x 26 meters, 2 bottom outlets size 10 x 10 meters • **The operating scheme,** the spillways will be operated to release the flow including depositing sediment when river flow is more than 6,100 cu.m/sec
d. Fish passage infrastructure	Acknowledged • Optimize the design based on the advice of fish experts hired by the PLPC.
e. Navigation lock infrastructure	Acknowledged • Model tests of lock water delivery were carried out during the feasibility study period. The design follows MRC guidelines.
f. Socio-economic assessment	Acknowledged • The assessment results can be referred to approved ESIA by MONRE in 2020 and completed the updating of the report in 2023.

7. Maintaining a communication channel to get inputs into the ongoing design and development of the PLHPP together with MRC's support

PAK LAY POWER

Keep MRC informed with the key progress. Open for recommendation by MRC experts.

Issue	Progress Update from Previous Meeting
• Dam Safety	• Approved by MEM (Feb 2024).
• Flow Regulation	• Request to extend the permission of minimum water flow (Mar 2024). • Wait for approval from MONRE.
• Sediment Flushing Infrastructure	• Submitted sediment management plan to EGAT. • Review comments from EGAT.
• Fish Passage Infrastructure	• Fishtek recommends modification to the current design. • Under evaluation by PLPC.
• Navigation Lock Infrastructure	• Assess to modify lock system to enable fish migration during construction.
• Socio Economic Assessment	• Submitted updated ESIA report (2023) to MONRE for review. • Wait for approval.

Addressing JAP Recommendation : Pak Lay Response 6th Oct 2023

PAK LAY POWER

8. Gaining a better understanding of potential impacts by :	
Issue	**Pak Lay Response**

a. Collecting additional data to better support local and transboundary impacts assessment and identification of appropriate mitigation measures.	• Project has collected related additional data such as
	  • Socio-economic
	  • Surface water quality,
	  • Fish,
	  • Etc.
	Already included in the updated ESIA report.

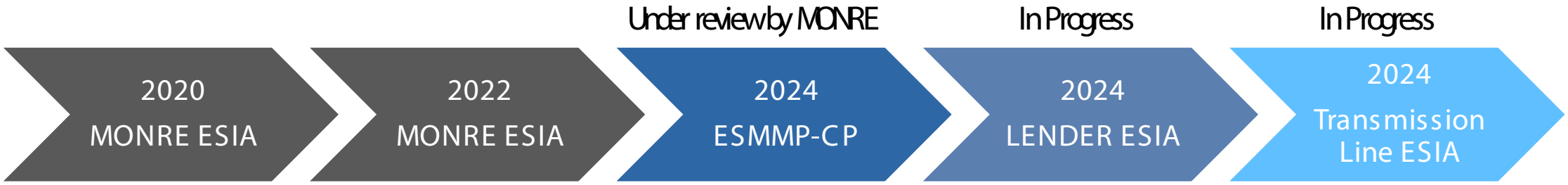
b. Taking into account the impact assessments at both local and transboundary levels including changes in flow regimes, sediment transport, fisheries, water quality, and ecological health as recommended by the Technical Review Report.	• The transboundary impact has been considered and assessed at both local and transboundary levels including
	  • Changes in flow regimes
	  • Sediment transport
	  • Fisheries
	  • Water quality
	  • Ecological health
	as recommended by the Technical Review Report
	
	• The TBESIA as a sub-report of ESIA reports has been approved by MONRE in 2020
	• Updated in 2023. Under review by MONRE.

Addressing JAP Recommendation : Pak Lay Response 6th Oct 2023

8. Gaining a better understanding of potential transboundary socioeconomic impacts by :	
Issue	**Pak Lay Response**
c. Cooperating with MRC Secretariat to consider the impacts of the PLHPP in the context of cumulative impacts of other existing and planned mainstream dams including the dams in the Upper Mekong River.	• The CIA as a sub-report of ESIA reports has been approved by MONRE in 2020. Updated in 2023 and under review by MONRE. • PLPC will cooperate with MRC to assess and study further potential cumulative impact • And work together with other existing and planned mainstream dams • To use effective measures to reduce the impact and risk.

8. Gaining a better understanding of the potential impact of PLHPP

Maintain two-way communication between PLPC and MRC.
MRC, as a focal point, to get a holistic view of all hydropower projects in the mainstream.



PLPC Statement:

" To establish the commitment for CIA mitigation collaboration with the MRC, Mekong River Basin governments, and other hydropower project operators to share information and work together to resolve cumulative impacts".

Addressing JAP Recommendation : Pak Lay Response 6th Oct 2023

9. Monitoring :	
Issue	**Pak Lay Response**
Expanding the MRC Joint Environment Monitoring of the mainstream development projects to cover the impacts assessment of the PLHPP on the hydrology, sediment, water quality, aquatic ecology and fisheries in construction and operation stages	• Once MRC Joint Environment Monitoring has initiated, project will review and cooperate with the program under appropriate condition. • PLPC will engage the consultant of different majors to support to conduct the monitoring work during construction period and operation period.

Addressing JAP Recommendation : Pak Lay Response 6th Oct 2023

10. Information Sharing:	
Issue	**Pak Lay Response**
Periodically share the monitoring data, the updated detailed design and operating rules with the MRC for comment and reference.	• PLPC will keep close cooperation with MRC and LNMC to enhance communication and information sharing. • Periodically monitoring data and special information as requested will be shared on PLPC website.

9. Monitoring & 10. Information Sharing

Share monitoring result with MRC.

"Accountability" and "Openness" are the key to collaboration.

- Once MRC Joint Environment Monitoring of the mainstream development projects is initiated, PLPC will cooperate in all required area; the impacts assessment of the PLHPP on the hydrology, sediment, water quality, aquatic ecology and fisheries in construction and operation stages.

- PLPC commit to periodically share the monitoring data, the updated detailed design and operating rules with the MRC.

4. Q&A

PAK LAY POWER

Thank You