

Environmental Monitoring Report

Final Report
March 2022

Bhutan: South Asia Subregional Economic Cooperation Road Connectivity Project Alay Land Custom Station (Pasakha)

Prepared by the Phuentsholing Thromde for the Government of Bhutan and the Asian Development Bank.

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CURRENCY EQUIVALENTS

(March-2022)

Currency unit	–	Bhutanese Ngultrum
Nu. 1.00	=	\$ 0.0130
\$ 1.00	=	Nu. 76.48

ACRONYMS

ADB	Asian Development Bank
BOD	Biological Oxygen Demand
CFO	Chief Forestry Officer
DO	Dissolved Oxygen
DOR	Department of Roads
DOT	Department of Trade
DOUDES	Department of Urban Development and Engineering Services
ECR	Environmental Conservation Regulations (2002)
EIA	Environmental Impact Assessment
EMP	Environmental Management Plan
ESM	Environmental and Safety Manager
ESC	Environmental and Safety Consultant (PMU)
ESO	Environmental and Safety Officer (PT)
IEE	Initial Environmental Examination
MOWHS	Ministry of Works and Human Settlements
PT	Phuentsholing Thromde
PMU	Project Management Unit
PM10	Particulate Matter
RGOB	Royal Government of Bhutan
ROW	Right of way
SPS	ADB Safeguard Policy Statement (2009)
TOR	Terms of Reference
TSPM	Total suspended Particulate Matter

WEIGHTS AND MEASURES

ha -	Hectare
km -	Kilometer
m -	Meter

NOTES

In this report, "\$" refers to US dollars

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I. EXECUTIVE SUMMARY

The Royal Government of Bhutan (RGOB) has requested the Asian Development Bank (ADB) to provide financing to facilitate investments to support the Pasakha Access Road (PAR) and Land Custom Station (LCS) at Alay. The Department of Roads (DOR) in the Ministry of Works and Human Settlements (MoWHS) has implemented the widening and rehabilitation of PAR, while LCS construction was done by the Phuentsholing Thromde¹(PT).

The Phuentsholing Thromde (PT) is the implementing agency and the development of Land Customs Station (LCS) at Alay and was carried out through PMU that was established as part of the project management. Under Phuentsholing Thromde “PMU”, there was one PIU for LCS construction. The project managers of PIUs were responsible for ensuring the compliance of environmental conditions of the project. There was one Construction Supervision Consultant and its organization and functions were like the one stated in the following section.

Since the LCS construction was completed in March 2022, it was handed over to the Royal Bhutan Police and Immigration Department, Phuentsholing

On the 1 February 2021 the Phuentsholing thromde awarded the construction of the Alay Land Customs Station (LCS) to M/s Chhimi RD Construction Pvt. Ltd. under contract number: PT/Contracts/2020/ALCS/01. The contract price was Nu. 40,409.013.57 (Ngultrum Forty Million Four Hundred Nine Thousand Thirteen and Chetrum Fifty-Seven) and the contract period is 6 months from the date of signing the contract.

The project was classified as Category B for environment following the ADB's Safeguard Policy Statement (2009), as no significant impacts were envisioned and any minor impact could be mitigated by adopting simple mitigation measures

Environmental Clearance was obtained from the National Environment Commission Secretariat (NECS). The Environment clearance for the Alay Land customs was issued on 26 July-2019 and is valid up to 27/07/2024(Refer to **Annex- 1**).

Climate change adaptation measures were considered while undertaking project infrastructure design and safeguard related mitigation measure. The hillside erosion, landslide and debris flow from the upstream catchments of Bhawanihora stream during monsoon impacted agriculture land and downstream aquatic life in the past. Hence, the project carried out catchment area management and slope protection works with civil and bioengineering applications. Also, the project carried out river training and flood protection works along the Bhawanihora stream. The EMP mitigation measures with respect to taking prior government clearances, pollution monitoring, spoil management, labor camp facilities, safety in work, grievance redressal, and monitoring and reporting was carried out by the project satisfactorily.

This is the final environmental safeguard monitoring report prepared for Alay Land Customs (ALCS) after award of the Civil Contract on 1 February 2021. As of March 2022, the project of the ALCS was completed 100%. The environmental management plan of the project was monitored and implemented on a day-to-day basis by their respective Environmental Focal Persons from both Contractor's side and Construction Supervision Consultants.

II. PROJECT DESCRIPTION

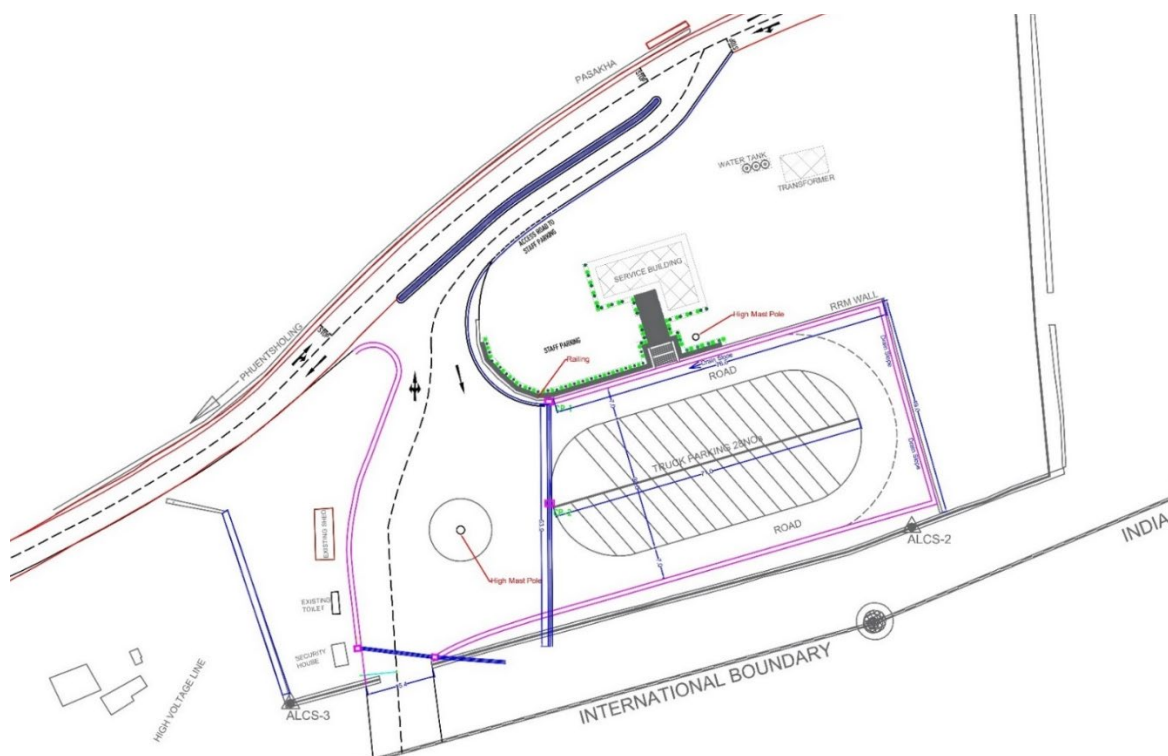


Figure 1: Site Layout of Alay Land Custom Station

A. Alay Land Customs Station

1. Project Scope

The proposed site for Alay Land Custom Station (LCS) is situated on the West Bank of the Bhawanihora River which borders India. Initially, the LCS was proposed to be constructed over the 2.4ha of reclaimed land. During the initial phase of the study no road, site markings and buffers were considered. After taking into consideration all the above mentioned, the LCS as of now was over the 1.82ha of reclaimed land.

Civil works included the construction of prefabricated structures for service building and security house as per the layout plans and embracing traditional Bhutanese features. Works also included the construction of RRM retaining wall around the area to provide protection to the LCS. Other works included drainage works, steel gates, truck parking and footpath, a pavement from international boundary, internal pavement works, water supply and sanitation work, high mast lighting system and a 250 kVA sub-station.

The proposed Land Custom Station (LCS) at Alay is aimed at providing customs import and export clearing services.

The scope of work for ALCS project including contract details are provided in **Table 1**.

Table 1: Work item, contractor's schedule, date of award and completion date

Sl.No	Work item	Name of Contractor	Contract award date/start date	Contract completion date
1.	Prefab Service Building & Security House.	M/s Chhimi RD Construction Pvt. Ltd	1 st February 2021	Original was 31 July-2021. Extended up to 04 December-2021. (Extension-1) 04 February 2022 (Extension-2) 10-March 2022 (Extension-3)
2.	RRM Wall			
3.	Drainage System & Steel Gate			
4.	Truck Parking Area, Pavement Connection from International Border & Internal Pavement Works			
5	Water Supply System			
6	High Mast Lighting system & Electrical Substation			

2. Implementation Arrangement

The Phuentsholing Thromde (PT) under the Ministry of Works and Human Settlement (MOWHS) was the implementing agency for ALCS. Phuentsholing Thromde the Project Implementation Unit (PIU) was administering the projects and was responsible for the day-to-day operation of Northern ALCS.

Project Manager (PM) from the PIU was the environmental focal person for the PT at the PIU level, who was responsible for ensuring the quality of environmental compliance in the project. Construction Supervision Consultant (CSC) supported PIU including in assurance of EMP compliance and submitting routine monitoring report.

Construction Supervision Consultant (CSC) included Team Leader (the Engineer), Quantity Surveyor (QS), Environmental Specialist (ES), Resettlement & Social Specialist (RS), and Resident Engineer (RE) and Survey Engineer (SE).

QS/RE and SE were the main persons who carried out the daily monitoring of construction works; and ensured the implementation of environmental mitigation measures as prescribed in the EMP, by the Construction Contractor (CC). They were oriented on safeguard monitoring by the ES who also provided monitoring checklist and tools, and reporting format.

Environment Specialist (ES) carried out environmental compliance monitoring of the project to ensure the environmental mitigation measures or conditions were adequately addressed. ES was responsible for compiling and submitting the annual environmental monitoring report to the PT through PIU, and to ADB.

A District Environmental Committee (DEC) was formed consisting of Dzongkhag planning officer, Dzongkhag Forest officer, Dzongkhag land record officer, Dzongkhag agriculture officer, Dzongkhag environmental officer, and Dzongkhag Engineer. The District Environmental Officer (DEO) was the district official of NECS. The DEC is mandated for issuing Environmental Clearance to defined type and nature of projects and for checking all the required environmental compliance by the projects during implementation. As part of its regular activities, NECS periodically gives general training and orientation to DEOs before sending them to districts. These orientations focus mainly on Bhutan's environmental requirements. Hence, the presence and contribution of DEC to the project was important in maintaining oversight by the government ensuring required quality of compliance by the projects.

3. Project Implementation Progress

Work completed on 10th March 2022 and handed over to Phuentsholing Thromde on 15th March 2022

Hence, their presence and contribution to the project was important in maintaining required level of quality of compliance by the projects.

4. Construction Approach and Methodology

ALCS construction was carried out in an environment-friendly manner following the principles of balance cut and fill. Excess excavated materials were disposed of in the pre-identified location approved by Phuentsholing Thromde in environmentally appropriate manner. Proper disposal and management was also closely monitored by the safeguard team of the project.

5. Project Cost / Implementation Schedule

The total quoted cost for ALCS is Nu. 40,409.013.57 (Ngultrum Forty Million Four Hundred Nine Thousand Thirteen and Chetrum Fifty-Seven) project started on 1st February 2021, and the initial contract period was 6 months from the date of signing the contract. The contract period was extended up to 10 March 2022 and project was completed in time within the extended period and handed over to the Phuentsholing Thromde.

6. Project Categorization

The Project was classified as category B for environment as per ADB's Safeguard Policy Statement (2009) as no significant impacts were envisioned and any residual minor impacts could be mitigated by applying simple mitigation measures.

III. SAFEGUARDS COMPLIANCE

A. Compliance to Financing Agreement (Special Operations)

The environmental safeguard requirements are indicated in the Financing Agreement (Grant Number 0400-BHU) between ADB, and the Kingdom of Bhutan. These financing agreement provisions and compliance status are provided in **Table 2**.

Table 2: Status of Compliance to Environmental Provisions of the Financing Agreement

Sl. No.	Environmental Provision	Compliance Status
		Alay Land Custom Station
1	Schedule 4. Item 6(a): <u>Conditions for awards of contracts</u> The Beneficiary shall ensure that no Works contract which involves environmental impacts is awarded until: The relevant environmental authority of the Beneficiary has granted the final approval of the EIA and/or IEE; and The Beneficiary has incorporated the relevant provisions from the EMP into the Works contract.	Complied. The EC was accorded as per IEE on 19 July-2019 while the civil works contract commenced on 1 Feb-2021. Complied. The EMP prepared and submitted by the Contractor has been approved for implementation which was monitored from time to time.
Sl. No.	Environmental Provision	

2	<p>Schedule 5. Item 2: <u>Counterpart Funds</u> The Beneficiary shall make available the Loan and Grant proceeds to the Project Executing Agencies under appropriate arrangements acceptable to ADB and shall provide or cause each Project Executing Agency to provide, as necessary, respective counterpart staff, land, facilities, and funding required for timely and effective implementation of the Project, including, without limitation, any funds required (a) to meet any shortfall between cost and revenues for the O&M of Project facilities; (b) to mitigate unforeseen environmental or social impacts; and (c) to meet any additional costs arising from design changes, price escalation in construction costs and/or unforeseen circumstances. The Beneficiary shall cause the relevant Project Executing Agency to make the resources thus required available on an annual basis for each fiscal year.</p>	<p>Complied. The counterpart funding from the RGOB was disbursed timely for compensation to the affected parties. The Project Coordinator and Project Manager were appointed as counterpart staff in the project</p>
3	<p>Schedule 5. Item 5: <u>Environment</u> The Beneficiary shall ensure, or cause the relevant Project Executing Agency to ensure, that the preparation, design, construction, implementation, operation and decommissioning of the Project and all Project facilities comply with (a) all applicable laws and regulations of the Beneficiary relating to environment, health and safety; (b) the Environmental Safeguards; and (c) all measures and requirements set forth in the EIA, the IEE, the EMP, and any corrective or preventative actions set forth in a Safeguards Monitoring Report.</p>	<p>Complied. The compliance requirements regarding social and environmental safeguards, health, and safety and EMP were satisfactorily complied.</p>

Sl. No.	Environmental Provision	
4	<p>Schedule 5. Item 9: <u>Human and Financial Resources to Implement Safeguards Requirements</u> The Beneficiary shall make available, or cause the Project Executing Agencies to make available, necessary budgetary and human resources to fully implement the EMP and the RP.</p>	<p>Complied. The PT timely provided required budget for implement EMP and RP, as needed. The Project Manager and Project Engineer of PT carried out periodic compliance monitoring.</p>
5	<p>Schedule 5. Item 10: <u>Safeguards – Related Provisions in Bidding Documents and Works Contracts</u> The Beneficiary shall ensure, or cause the Project Executing Agencies to ensure, that all bidding documents and contracts for Works contain provisions that require contractors to: Comply with the measures relevant to the contractor set forth in the EIA, the IEE, the EMP, the RP and any indigenous peoples plan (to the extent they concern impacts on affected people during design and/or construction), and any corrective or preventative actions set forth in a Safeguards Monitoring Report. Make available a budget for all such environmental and social measures. Provide the Project Executing Agency with written notice of any unanticipated environmental, resettlement or indigenous peoples risks or impacts that arise during design, construction, implementation, or operation of the Project that was not considered in the EIA, the IEE, the EMP, and the RP. Adequately record the condition of roads, agricultural land, and other infrastructure prior to starting to</p>	<p>No indigenous people were located within project premises.</p> <p>Complied. The required funds for environmental and social measures were disbursed on a need basis, Hence, IP requirement was not applicable to the project. Impacts on indigenous peoples did not occur due to project implementation.</p> <p>The project did not cause any impact on the road and agricultural land.</p> <p>The land was a reclaimed land without infrastructure in the past. All required infrastructure in ALCS were developed under the project.</p>

	transport materials and construction; and Reinstate pathways, other local infrastructure, and agricultural land to at least their pre-project condition upon the completion of construction.	
6	<p>Schedule 5. Item 11: <u>Safeguards Monitoring and Reporting</u></p> <p>The Beneficiary shall do the following or cause the Project Executing Agencies to do the following:</p> <p>a.) Submit annual Safeguards Monitoring Reports to ADB for disclosure on ADB's website and disclose relevant information from such reports to affected persons promptly when requested.</p> <p>b.) If any unanticipated environmental and/or social risks and impacts arise during construction, implementation or operation of the Project that were not considered in the EIA, the IEE, the EMP, and the RP, promptly inform ADB of the occurrence of such risks or impacts, with detailed description of the event and proposed corrective action plan.</p> <p>c.) No later than 3 months from award of the first Works contract, engage or cause to be engaged qualified and experienced external experts or qualified non-governmental organizations under a selection process and terms of reference acceptable to ADB, to verify information produced through the Project monitoring process for environment, resettlement, and indigenous peoples (if any), and facilitate the carrying out of any verification activities by such external experts; and</p>	<p>a) The safeguard monitoring reports were timely submitted by the EA, which were disclosed in ADB web.</p> <p>b) No unanticipated impacts occurred during the project implementation.</p> <p>c) No external environmental expert was mobilized since the project did not cause any significant impacts, and the national environment specialist and PT took responsibility to assure that all minor construction related impacts were duly monitored and mitigation measures applied.</p> <p>d) N/A (there was no breach in compliance during the project period)</p>

	d.) Report any actual or potential breach of compliance with the measures and requirements set forth in the EMP and the RP promptly after becoming aware of the breach.	
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B. Compliance to Project Administration Manual

The Project Administration Manual (PAM) describes how the Phuentsholing Thromde, Department of Roads, and Ministry of Works and Human Settlements will implement the project and deliver the results on time, with quality, within budget, and in accordance with government and Asian Development Bank (ADB) policies and procedures.

The status of implementing the environmental safeguards requirements set out in PAM is provided in **Table 3**.

Table 3: Status of Compliance to Environmental Provisions of the Project Administration Manual

Sl. No.	Environmental Provision	Compliance Status
		Alay Land Custom Station
1	Schedule VIII. Item 31: Categorization The Alay Land Custom Station is category B. Initial Environment Examination (IEE) reports have been prepared.	100% Complied IEE was prepared and disclosed.
2	Schedule VIII. Item 32: Implementation of Environmental Management Plan. PT will ensure that all environment safeguard requirements under the project will be implemented as required by the IEE for ALCS been prepared.	Complied as per the approved IEE and EMP.
3	Schedule VIII. Item 33: The EMP is a plan for implementation and monitoring of environmental mitigation and enhancement measures during project construction and operation. Specific measures with details on the location, time and responsible agency for implementation and monitoring is given in the EMP. Mitigation measures for implementation during the	Complied. Environmental Focal Person (EFP) were appointed from consultant (IOW) and contractor (construction engineer)

	<p>construction stage is implemented by the contractor and during the operation stage by PT through PIU. The Environmental Specialist in the consulting services for both the PT subprojects will support PT to guide and monitor the implementation of EMPs by contractors. An Environmental Focal Person (EFP) will be appointed under PT. Similarly, an EFP will be appointed at the site level under the consulting services for conducting day to day monitoring of EMP implementation. An EFP will also be appointed by the contractor for each contract package to ensure proper implementation of the EMP.</p>	
4	<p>Schedule VIII. Item 34:</p> <p>The EMP includes the collection of baseline data on air and noise quality during the pre-construction stage. The Environmental Specialist in the consulting services will be responsible for procuring the monitoring equipment and organizing training on the operation of the equipment by the supplier for the EFP under the PIUs, consulting services and contractors before the start of construction works. The Environmental Specialist in the consulting services will be responsible for the baseline data collection on air, noise, and water quality before construction works begin, during construction and during early stages of operation as given in the EMP. After the construction works are over, the monitoring equipment will be handed over to PT for use by the EFP for other projects. An initial coordination cum training workshop will be organized by PT with</p>	<p>Complied.</p> <p>The air and noise monitoring equipment were procured, and air and noise monitoring was conducted every few months and duly reported.</p>

	technical support from consulting services and ADB as necessary.	
5	Schedule VIII. Item 35: All required clearances such as the environmental clearance and forestry clearance must be obtained by the PIUs before the start of construction works for all project components.	Complied. All the necessary environmental clearances were obtained by PMU before starting construction works.
6	Schedule VIII. Item 43: <u>Grievance Redress Mechanism</u> A grievance redress mechanism will be established to receive and facilitate the resolution of concerns, complaints and grievances of affected people and relevant agencies on the social and environmental performance of the project in a time-bound and transparent manner. The project-specific GRM is not intended to bypass the government's own redress process, rather it is intended to address project-affected people's concerns and complaints promptly, making it readily accessible to all segments of affected persons and is scaled to the risks and impacts of the project.	GRM was established. The Project Affected People and other concerned stakeholders could approach to PMU and the Dzongkhag Land Committee.
7	Schedule VIII. Item 44: <u>Monitoring and Reporting</u> Implementation of the EMP will be monitored by PIUs with the support of consulting services. For environment safeguards, records on implementation of the mitigation measures on-site will be maintained by the contractor. Based on these records and spot checks of at least once a month by PIUs and consultants, monitoring reports will be compiled by the Environmental Specialists in consulting services on a semi-annual basis. If there are any changes in the design or alignment, the EMP and RP of the respective	Complied. The reporting system was followed by the Contractor and the process followed for compiling the environmental was monitoring report. EMR and SSMRs were timely submitted to ADB for review and public disclosure.

	subproject will be updated to account for any additional or new impacts. Further, the need for revising the IEE reports will also be reviewed and confirmed in discussion with ADB	
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C. Compliance to the Civil Works Contract Agreement

Table 4: Status of Compliance to Environmental Provisions of the Civil Works Contract Agreement

SI . No.	Description	Compliance Status
		Alay Land Custom Station
1	Orientation for Contractors, Workers on environmental and social management	Orientation for contractor and worker on environment and project requirements on environmental safeguards were conducted.
2	Loss of vegetation	No tree was there. Hence no loss of vegetation.
3	Drainage and Hydrological Impacts	Complied
4	Procurement and storage materials	Complied
5	Solid waste management	Complied
6	Noise and Dust pollution	Complied
7	Excavation and disposal	Complied

Table 5: Air Quality Monitoring for ALCS

Sl. No.	Location	Date	In Microgram per cubic meter		Environmental Standards, 2010	
			TSPM	PM 10	TSPM	PM 10
Alay Land Custom Station						
1	Near Staff Parking	15/03/2022	106	62.1	200µg/m³	100µg/m³

2. Result and Interpretation of Air Quality Monitoring

The monitoring of ambient air quality was carried out in one location within the ALCS premises. The location tested was within the NEC's required permissible limits.

- i) The test was within the permissible limits because of the less movement of vehicle and road was all paved reducing the dust around the area. Another reason could be due to the outbreak of COVID-19, the border between India and Bhutan was closed for few months, and opened in containment mode. Due to this reason vehicle movement was dramatically reduced. Most factories were operating at 50% capacity, which was not causing as much pollution in comparison to before the pandemic.

3. Mitigation Measures

The air pollution confirmed the air quality parameters were within the permissible limits.

Even though there was a drastic reduction in construction activities and vehicle movement, but with the ongoing project activities, it was ensured that the contractors continued to sprinkle water around the project area as required, the project vehicles entering or exiting Bhutan with materials were covered in tarpaulin, and light construction materials such as cement and sand were either wet or covered with tarpaulin.

4. Noise Quality Monitoring

Table 6: Noise Level Monitoring (Dba) for ALCS

Sl.No.	Location	Date	Day (dBA)	Night (dBA)	Environmental Standard for Industrial Area	
					Day (dBA)	Night (dBA)
1	Near Staff Parking	15/03/2022	72.1	68.7	75	65

5. Result and Interpretation of Ambient Noise Level Monitoring

Ambient noise measurement was carried out in one location in the ALCS project site. The analysis indicated that noise level for ALCS was within the permissible limits during the daytime, but was slightly high during the night time.

Noise generated around project area could be due to movement of private vehicles and buses on highway from Phuentsholing to Pasakha, vegetable market beside project area or heavy wind. Nevertheless, the slight increment in noise level was temporary.

6. Mitigation Measures

The noise pollution test conducted at the one location along the ALCS premises was within the permissible limit except for the high noise level during evening hour.

RGoB do not allow generating unnecessary noise after work hours, and vehicles are restricted to use horn causing disturbance to neighboring communities.

V. COMPLIANCE TO ENVIRONMENTAL CLEARANCE

The Environmental Compliance of ALCS project is prepared as per terms and conditions of EC and implementation of Environmental Management Plan (EMP) of the project. **Table 6** presents the compliance requirements and the status compliance of ALCS.

Table 5: Alay Land Custom Station's Compliance with the Terms and Conditions of the Environmental Clearance

No.	Compliance Requirement	Status
I. GENERAL		
1	The holder shall comply with provisions of the National Environmental Protection Act 2007, Environmental Assessment Act 2000 and its Regulation 2016, Waste Preservation and Management Act of Bhutan 2009 and its Regulation 2016, and the Water Act of Bhutan 2011 and its Regulation 2014	Construction was done as per the mentioned laws. The site was monitored by the Dzongkhag Environmental Officer, PT as well as the site supervisor from the consultant firm. Total quantity of earth excavation was 16,608 Cum and disposed quantity was 13286 Cum.
2	The holder shall ensure that construction activities are in line with Initial Environmental Examination report submitted for EC	Construction work complied with the IEE and approved EMP requirements and as per the Environmental Clearance issued
3	The holder shall ensure that local communities, properties, and any religious, cultural, historic, and ecologically important sites are not adversely affected by the activities	The project implementation did not affect any sites of religious, culture, historic and ecological importance.

4	The holder shall restore the damage of any public or private properties caused by the activities	No damage was caused to public or private properties. No damage was caused to private properties during project.
5	The holder shall inform NECS and any other relevant authorities of any unanticipated or unforeseen chance-find of any precious metals or minerals or articles, that have economic, cultural, religious, archaeological, and/or ecological importance	Such incident had not occurred. During the project implementation period.
6	The holder shall erect a signboard at the take-off point of the main entry of the activities stating the name of the activities and contact address	Safety signboards were placed strategic locations which needed specific warning to traffic, community or worker.
II. ENVIRONMENTAL STANDARDS		
7	The holder shall comply with the existing Environmental Standards	Complied
III. IMPORT AND USE OF SECONDHAND EQUIPMENT		
8	The holder shall ensure that import and use of second-hand equipment and machineries are strictly prohibited.	No second-hand equipment were used in the project. All required equipment's were purchased and were all found to be in good condition.
IV. WATER USE AND MANAGEMENT		
9	The holder shall ensure that activities does not disrupt the water flow and pollute the water bodies	The ALCS project area is along the Bhawanijhora stream which is not a perennial river. The actual construction site was completely secured with boundary wall to prevent sediment and pollution flowing in the river. Moreover, there were no case of spills with disruptive materials which could pollute the stream.
10	The holder shall ensure that 30 meters or 100 feet buffer is always maintained from the water resources	The ALCS site was more than 50m from the stream.
V. WASTE PREVENTION AND MANAGEMENT		
11	The holder shall manage wastes generated from the activities (activity site, labour camps, offices etc.) with the application of 4R (reduce, reuse, recycle, responsibility) principle and other environmentally friendly methods of waste management	Two pits of 1.5 x1.0x1,0 m were made for organic & non -organic waste. Sufficient refuse bins were kept in the site camps and offices. Tarpaulin was used to cover lightweight materials at site.
12	The holder shall ensure that import and use of hazardous wastes are strictly prohibited	The project did not require any use or import of hazardous materials. Thus, hazardous waste was not generated.

VI. MANAGEMENT OF EXCAVATED MATERIALS AND RUN-OFF		
13	The holder shall dispose off excess excavated materials at the pre-identified approved dumpsite only	Excavated materials around 16,608 cum were disposed at disposal site shown by the Thromde management near Bhawanijhora stream.
14	While doing excavation the holder shall put necessary shoring at side to avoid erosion.	Necessary measure like construction of RRM wall around the construction site along with drains and laying of Hume-pipes are placed to mitigate the erosion and to take care the runoffs.
VII. MONITORING AND REPORTING		
15	The holder shall ensure that the effective day-to-day monitoring of the EC terms and conditions are carried out by the environmental unit or designated environmental focal person	Contractor appointed Safety Officer. From PIU, PM took care of safety issues and from CSC side Environmental Focal Person monitored
VIII. RENEWAL AND MODIFICATION		
18	The holder shall ensure that renewal of this EC is processed at least three (3) months prior to its expiry along with a copy EC and a report on the implementation of its terms and conditions	Yes
19	The holder shall obtain prior approval from NECS for any modification to the existing proposal / application	There was no modification in the proposal.
IX. RESERVATION		
20	The NECS may stop the activity or impose additional terms and conditions, as maybe deemed necessary	N/A
20	The EC shall be subject to periodic review and modifications as per Article 25 of the EA Act 2000, without any liability on the part of the Royal Government	N/A
21	The holder may adopt best practices in executing these terms and conditions to avoid adverse environmental impacts.	Proper mitigation measures were adopted to minimize any potential adverse environmental impacts.

VII. CONCLUSION

1. Findings from undertaking environmental safeguard measures as suggested by EMP indicated that construction impacts were predictable and manageable through the implementation of mitigation measures. Detailed design for ALCS was prepared by the design consultant (procured by PT) and a contractor was engaged for construction. Proper institutional arrangement for undertaking of environmental compliance monitoring was established in the project.
2. The development of the Land Customs Station at Alay is expected to:
 - ease traffic congestion inside Phuentsholing town (currently all vehicles to and from India passes through the only border crossing at Phuentsholing);
 - reduce travel distance for heavy trucks (travelling through Jaigaon bypass road)
 - reduce transportation cost
 - reduce fuel consumption and thereby lower greenhouse gas emission
 - reduce vehicular noise and exhaust pollution
 - allow smooth and faster trading between India and Bhutan, leading to better economic benefit.
3. Further, under the current project, climate change adaptation measures were considered while undertaking project infrastructure design and safeguard related mitigation measure since impact from climate change was considered as one of the major threats to ALCS. The erosion, landslide, and debris flow from the upstream or catchments of Bhawanijhora stream during the monsoon seasons affected hectares of prime land and affected the downstream aquatic life. Hence, the project carried out catchment area management and slope protection works with civil and bioengineering applications. Also, the project carried out river training and flood protection works along the Bhawanijhora stream. All these activities are expected to result in improvement of the downstream aquatic environment and prevent flood damages.
4. The main purpose of developing the alay LCS is to decongest the traffic in Phuentsholing core town area and dovetailing of the import/export customs services for Pasakha bound traffic. The construction of ALCS at alay pasakha would help in providing customs, immigration and cargo handling for goods and people travelling in and out of Bhutan in an environment friendly manner.

PHOTO LOG OF AIR AND NOISE MONITORING EQUIPMENT



Figure 3: Air monitoring equipment



Figure 4: Over all of ALCS

Annex- 1 (Environmental Clearance Certificate)



ཀྲུལ་ཡོངས་མཐའ་འཁོར་གནས་སྤངས་ལྷན་ཆེན་གས།
དཔལ་ལྷན་འབྲུག་གཞུང་།
National Environment Commission
Royal Government of Bhutan



NECS/EACD/Dzo-Chukha/3751/2019/ 1529

July 26, 2019

Environmental Clearance

In accordance with Section 34.1 of the Environmental Assessment Act 2000 and Section 34 of the Water Act 2011, this Environmental Clearance (EC) is hereby issued to **Phuentsholing Thromde** for the construction and operation of **Alay Land Customs Station** at **Alay Domestic Airport** measuring **4.4 acres** under **Phuentsholing Thromde, Chukha Dzongkhag** with the following terms and conditions:

I. General

The holder shall:

1. comply with provisions of the National Environment Protection Act 2007, Environmental Assessment Act 2000 and its Regulation 2016, Waste Prevention & Management Act of Bhutan 2009 and its Regulation 2016, The Water Act of Bhutan 2011 and its Regulation 2014 and Revised Regulation on the Control of Ozone Depleting Substances (ODS) 2008;
2. ensure that construction and operation of station is in line with Initial Environmental Examination report and Environment Management Plan submitted for EC;
3. ensure that local communities, properties and any religious, cultural, historic and ecologically important sites are not adversely affected by the construction and operation of station;
4. restore the damage of any public or private properties caused by the construction and operation of station;
5. inform NECS and any other relevant authorities of any unanticipated or unforeseen chance-find of any precious metals or minerals or articles, that have economic, cultural, religious, archeological, and/or ecological importance; and
6. erect a signboard at the take-off point of the main entry of the station stating the name of the station and contact address.

II. Environmental standards

The holder shall comply with the existing Environmental Standards 2010.

III. Import and use of secondhand equipment and ODS

The holder shall:

1. not import and use secondhand equipment and machineries; and
2. not use ODS are in line with the Revised Regulation on the Control of ODS 2008.

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IV. Protection and management of water resources

The holder shall:

1. ensure that construction and operation of station does not disrupt the water flow and pollute the water bodies; and
2. ensure that 30 meter or 100 feet buffer is maintained from the water resources at all times.

V. Waste prevention and management

The holder shall:

1. manage wastes generated from the construction and operation of station (project site, labour camps, offices etc.) with the application of 4R (Reduce, Reuse, Recycle, Responsibility) principle and other environmentally friendly methods of waste management; and
2. ensure that import and use of hazardous wastes are strictly prohibited.

VI. Management of excavated materials, industrial waste, and run-off

The holder shall:

1. dispose excess excavated materials generated during construction of the station only at the pre-identified approved dumpsite; and
2. put appropriate measures to avoid erosion and landslides.

VII. Management of raw materials and finished products

The holder shall ensure appropriate measures are put in place for handling and storage of raw materials to avoid fugitive emissions.

VIII. Implementation plan

The holder shall prepare a detailed implementation plan focusing on the implementation of terms and conditions of this EC and submit to NECS within three (03) months from the date of issue of this EC.

X. Monitoring and reporting

The holder shall:

1. ensure that the effective day-to-day monitoring of the EC terms and conditions are carried out by the environmental unit or designated environment focal person;

XI. Renewal and modification

The holder shall:

1. ensure that renewal of this EC is processed at least three months prior to its expiry along with a copy EC and a report on the implementation of its terms and conditions; and

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2. obtain prior approval from NECS for any modification to the existing proposal/application.

Reservation

1. The NECS may stop the activity or impose additional terms and conditions, as may be deemed necessary; and
2. The EC shall be subject to periodic review and modifications as per Article 25 of the EA Act 2000, without any liability on the part of the Royal Government.

The holder may adopt best practices in executing these terms and conditions to avoid adverse environmental impacts.

Failure to comply with any of the above terms and conditions shall constitute an offence and the proponent shall be liable in accordance to the Environmental Assessment Act 2000 and/or existing environmental laws.

Validity:

This EC is issued with valid from 26/07/2019 until 25/07/2024 only.


(Phento Tshering)
DIRECTOR

To,
Phuentsholing Thromde
Chukha Dzongkhag

Copy to:

1. Dasho Dzongdag, Dzongkhag Administration, Chukha for kind information.
2. Dasho Thrompoen, Phuentsholing Thromde, for kind information.
3. Dzongkhag Environment Officer, Dzongkhag Administration, Chukha for compliance monitoring.
4. Guard-file, Dzo-Chukha, NECS for record.



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