

# Environmental Monitoring Report

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Project Number: 54355-001  
Semi Annual Report (September 2022 - February 2023)  
April 2023

## Bhutan: Green and Resilient Affordable Housing Sector Project

Prepared by the National Housing Development Corporation Limited, Royal Government of  
Bhutan for the Asian Development Bank.

## CURRENCY EQUIVALENTS

(As of 28 February 2023)

Currency Unit	-	Currency Equivalent
Nu 1.00	=	\$ 0.01
\$1.00	=	Nu 82.66

## ABBREVIATIONS

ADB	-	Asian Development Bank
AIDS	-	Acquired Immunodeficiency Syndrome
BBR	-	Bhutan Building Regulation
BHU	-	Basic Health Unit
BOQ	-	Bill of quantities
BPC	-	Bhutan Power Corporation
CA	-	Competent Authority
CEMP	-	Construction Environmental Management Plan
COVID-19	-	Corona Virus
DoFPS	-	Department of Forests and Park Services
EA	-	Executing Agency
EC	-	Environmental Clearance
EIA	-	Environmental Impact Assessment
EMP	-	Environmental Management Plan
GRAHSP	-	Green and Resilient Affordable Housing Project
GRC	-	Grievance Redress Committee
GRM	-	Grievance Redress Mechanism
HIV	-	Human Immunodeficiency Virus
IEE	-	Initial Environmental Examination
MoAF	-	Ministry of Agriculture and Forest
MoF	-	Ministry of Finance
MoLHR	-	Ministry of Labour and Human Resources
NC19TF	-	National COVID-19 Task Force
NEC	-	National Environment Commission
NGO	-	Non-government Organisation
NHDCL	-	National Housing Development Corporation Limited
NLCS	-	National Land Commission Secretariat
NCWC	-	National Commission for Women and Children
OHS	-	Occupational health and safety
O&M	-	Operation and Maintenance
PIAC	-	Project Implementation Assistance Consultant
PIU	-	Project Implementing Unit
PMU	-	Project Management Unit
PPE	-	Personal Protective Equipment
PSC	-	Project Steering Committee
REA	-	Rapid Environmental Assessment
RGoB	-	Royal Government of Bhutan
SDG	-	Sustainable Development Goal
SEMP	-	Site-specific environmental management Plan
SOP	-	Standard Operating Protocol

- SPS - Safeguard Policy Statement 2009  
WHO - World Health Organization

### **WEIGHTS AND MEASURES**

°C	degree centigrade
dB	Decibels
kg	kilo gram
km	kilometre
ha	hectares
m	meter
m <sup>3</sup>	Cubic meter
km <sup>2</sup>	square kilometer

### **NOTE{S}**

- (i) In this report, "\$" refers to United States dollars.
- (ii) "Nu" refers to Ngultrum (Bhutanese currency pegged at par with Indian Currency Rupee)

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## I. INTRODUCTION

### A. Project Name

1. The project will support the government's national priority to improve livability, safety, and sustainability of human settlements through better access to adequate and affordable housing.<sup>1</sup> The project will increase the supply of green and resilient affordable housing in Nganglam, Phuentsholing, Thimphu, Trashiyangtse, Samdrup Jongkhar, and Samtse, and benefit over 1,000 lower- to middle-income civil servants and non-civil servants including marginalized municipal waste workers. The project will also implement associated infrastructure and facilities, enhance institutional capacity, and strengthen the housing sector strategy and regulatory framework in Bhutan. The project is designed to achieve green building certification, a first of its kind in Bhutan, and a model that has potential for replication by the public and private sector and linked to a broader urban development program. The success of the project will provide lessons for future affordable housing interventions across the Himalayan region.

2. The project is aligned with the following impact: livability, safety, and sustainability of human settlements ensured (footnote 1). The project will have the following outcome: access to green and resilient affordable housing for low-income households improved.

### B. Project Outputs and Outcome

3. The Project outputs are as follows:

- (i) Output 1: Climate- and disaster-resilient, energy-efficient, and affordable housing units and public facilities for low-income households constructed. Output 1 will support the National Housing Development Corporation Limited (NHDCL) in building about 1,000 rental units, three integrated community service centers, and two recycled waste stations connected to services, in support of Sustainable Development Goal (SDG) 1. The government selected high- priority investments as subprojects. The increase in the supply of affordable rental housing is expected to immediately relieve the housing shortage and benefit lower-income civil servants (about 10%) and non-civil servants (about 90%), including marginalized municipal waste workers. The NHDCL will select beneficiaries most in need by applying a beneficiary eligibility and selection criteria, with gender equality considered as part of the eligibility criteria as defined in this manual. The building designs incorporate gender-inclusive features; enhanced safety against earthquake and fire hazards; and resource-efficiency, making greater use of locally available materials. The building structures will employ reinforced-concrete frames and innovative pre- engineered structures. The project design has identified and incorporated climate and disaster resilience features, considering multiple hazards. The project will support green building certification through the International Finance Corporation's Excellence in Design for Greater Efficiencies (EDGE) certification program. The housing designs reflect local cultural heritage values and traditional architecture. Additional subprojects will be selected during project implementation in line with the National Housing Policy using the eligibility criteria set out in this manual.

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<sup>1</sup> Government of Bhutan, Gross National Happiness Commission. 2019. [\*Twelfth Five Year Plan, 2018–2023: Just, Harmonious and Sustainable Society through Enhanced Decentralisation\*](#). Thimphu. Affordable housing is defined as the ability for households to meet housing costs within 30% of their gross monthly income.

- (ii) **Output 2: Institutional capacities, policy, and regulatory framework of the housing sector strengthened.** This output will (i) strengthen the NHDCL’s housing design, construction, and management capacity—informed by climate and disaster risks and affordability considerations; (ii) review the building code and regulations; (iii) develop climate- and disaster- resilient building designs and related solutions to improve safety, resource efficiency, and gender and disability inclusiveness; (iv) conduct awareness training and a capacity building program for key project stakeholders on climate- and disaster-resilient design and the building code; (v) enhance the NHDCL’s business model, strengthening its O&M capacity, and developing partnerships with the private sector; (vi) strengthen the housing management information system of the MOWHS by expanding it to include tenancy data and better understand and prepare evidence-informed policy updates to address demand and supply-side bottlenecks in the sector; (vii) develop a gender and socially inclusive national homeownership strategy, including a rent-to-own mechanism; and (viii) provide project implementation support, including supervision, and set up a safeguard unit in the NHDCL.

4. The impact of the project will be livability, safety, and sustainability of human settlements ensured. The project has the following outcome: access to green and resilient affordable housing for low-income households improved. MOF and NHDCL confirmed that the project impact and outcome remain unchanged.

### **C. Environmental Category**

5. The Green and Resilient Affordable Housing Project (GRAHSP) is classified as Category B according to ADB Safeguard Policy Statement (SPS), 2009.<sup>2</sup> All subprojects in GRAHSP NHDCL are classified as Category B, and the impacts of all subprojects are assessed through Initial Environmental Examination (IEE) as per ADB SPS, 2009.

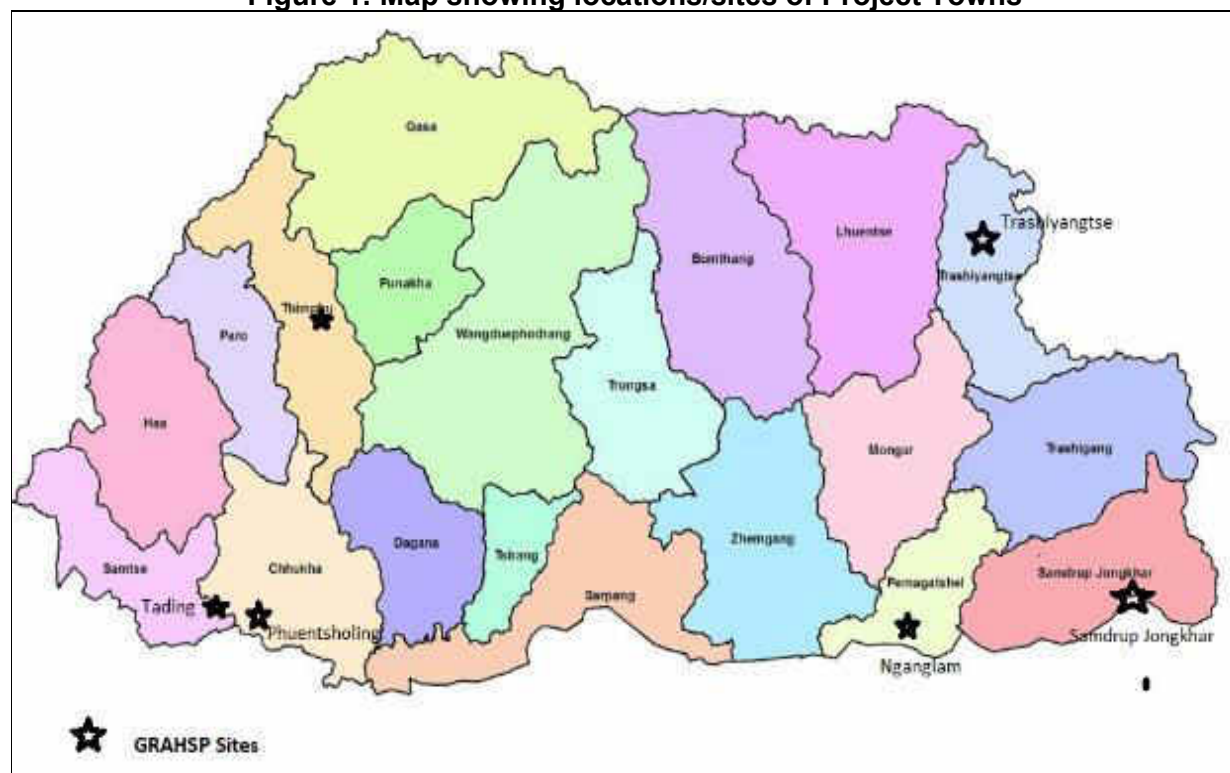
### **D. About this Report**

6. This Semi-annual Environmental Monitoring Report (SEMR) is prepared by NHDCL for the monitoring period of September 2022 – February 2023. This is the 2nd SEMR since the loan effectiveness on 23 February 2022. This SEMR provides the status of project, presents preparation and implementation of environmental management, mitigation and monitoring actions, and reports status of compliance with Environmental Management Plans (EMPs) and loan covenants.

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<sup>2</sup> Project components judged to have some adverse environmental impacts, but of lesser degree and/or significance than those for Category A.

**Figure 1: Map showing locations/sites of Project Towns**



## II. PROJECT IMPLEMENTATION ARRANGEMENTS

7. The Ministry of Finance (MF) is the project executing agency (EA) and NHDCL the implementing agency (IA) with responsibility for project implementation supported by a project management unit (PMU) with qualified senior NHDCL staff and five project implementation units (PIUs) at selected subproject district locations. NHDCL will work in close collaboration with the Project Steering Committee (PSC) and other key stakeholders. The roles and responsibilities of EA, PSC, IA, PMU, PIUs to consultants and contractors are summarized and given in the Table 1 below.

**Table 1: Responsibilities of Project Implementation Organizations**

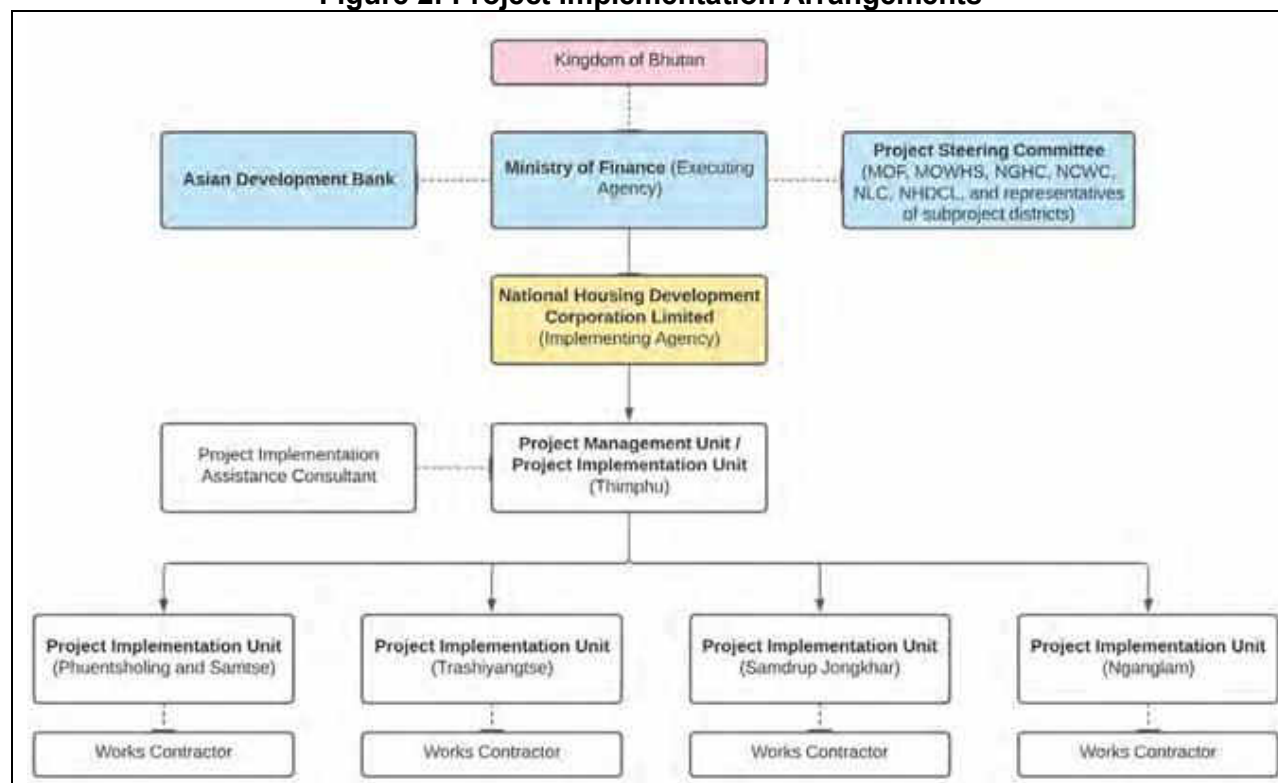
Project Implementation Organizations	Management Roles and Responsibilities
Executing agency (EA), Ministry of Finance (MOF)	Manages the advance accounts each for the Asian Development Bank (ADB) loan and grant proceeds established in Royal Monetary Authority. Primarily responsible for ensuring that the project is implemented in accordance with the loan, grant and project agreements. Acts as Project Steering Committee (PSC) chair.



Project Implementation Organizations	Management Roles and Responsibilities
Project Steering Committee (PSC)	<p>The PSC is comprised of government officials from the Ministry of Works and Human Settlement (MoWHS), the Gross Happiness Commission (GHNC), the National Commission for Women and Children (NCWC), the NHDCL, National Land Commission (NLC), and representatives of selected subproject districts. It is headed by the MoF to oversee the project implementation and provide strategic and policy guidance. The PSC will meet at least biannually and as required.</p> <p>The PSC will provide policy guidance, coordinate among project stakeholders, review and endorse the detailed annual implementation plans, support NHDCL to address and resolve project issues/challenges and to facilitate effective and efficient project implementation.</p>
Implementing agency (IA) National Housing Development Corporation Limited (NHDCL)	<p>Overall responsibility for the project execution and implementation. Ensures monitoring of compliance with loan, grant, and project covenants, including environmental safeguards, and facilitates corrective actions as required.</p> <p>Manages and maintains all project accounts, prepares annual project financial statements and have them audited by an independent auditor.</p>
Project Management Unit (PMU) within NHDCL	<p>The PMU is led by a Project Director who also serves as the focal contact with ADB. The PMU will be fully staffed and supported by an external consulting firm (Project Implementation Assistance Consultant [PIAC]).</p> <p>The PMU is responsible for:</p> <ul style="list-style-type: none"> <li>- the implementation/management of the project.</li> <li>- preparing reports advising the PSC.</li> <li>- maintaining project documents and submissions of reports (quarterly progress reports and project completion report) in a timely manner.</li> <li>- Consolidation of accounts and submissions of draft withdrawal applications for NHDCL to MoF.</li> <li>- Submission of all audited project accounts and financial statements pertaining to the project within six months of the end of each fiscal year.</li> <li>- coordination with government agencies and other involved parties for project implementation</li> <li>- compliance monitoring with environment and social safeguards</li> <li>- for detailed architectural and infrastructure design</li> <li>- ensuring due diligence and compliance with ADB safeguard policies and government requirements on behalf of NHDCL</li> <li>- the establishment of project-specific grievance redress mechanism and ensuring its effective implementation</li> </ul>
Project Implementation Unit (PIU) within NHDCL	<p>Under the PMU, NHDCL will establish a PIU in selected subproject locations (i.e., Phuentsholing, Thimphu, Samdrup Jongkhar, Nganglam, and Trashiyangtse).</p> <p>The PIU will be staffed with NHDCL personnel, led by a Project Manager and supported by PIAC.</p>

Project Implementation Organizations	Management Roles and Responsibilities
Project Implementation Assistance Consultant (PIAC).	To provide project implementation support, technical knowledge and capacity building services to the NHDCL to ensure effective and early project implementation. This will cover following sub-objectives: (i) assurance of compliance of all environmental and social safeguards, including disaster risk management, anti-seismic designs, green building features, gender and resettlement plans as per the subproject designs; (ii) support to the NHDCL in all procurement activities; (iii) on-site supervision of the construction works; (iv) support to the PMU in financial reporting; (v) project performance monitoring and reporting; (vi) capacity building of staff of the MoF, MoWHS, NHDCL and other relevant entities, including personnel of construction companies; and (vii) To ensure support to NHDCL in the realization of project objectives of the AHDSP.
Contractors	Will carry out the construction activities pertaining to the project scope as per the bidding document. Timely delivery with quality works shall be of prime responsibility.

**Figure 2: Project Implementation Arrangements**



### A. Safeguards Implementation Arrangements

8. The PMU is responsible in implementing the environmental safeguards requirements of the project and works closely with the PIUs. The PMU has one (1) safeguards focal officer who looks after environmental safeguards issues. With support from the PIUs and PIAC, the PMU has the following responsibilities: (i) Ensure subprojects comply with the national and local statutory and legal environmental requirements, ADB SPS 2009, EARF and environmental safeguards provisions of the ADB loan covenant; (ii) Ensure subprojects conform to exclusion criteria and

subproject selection guidelines as stipulated in the EARF; (iii) Review and approve the environmental categorization of future subprojects; (iv) Review and approve subproject IEE reports, including EMPs, and ensure that subproject IEEs and EMPs are updated based on final detailed designs and submit to ADB for clearance; (v) Ensure that no civil works commence until updated IEE based on final detailed design is cleared by ADB; (vi) Ensure that the IEEs including EMPs are updated in case of changes in detailed design that may occur during implementation phase; (vii) Ensure that IEEs with EMPs are included in bidding documents and civil works contracts; (viii) Ensure that the requirement for contractors to prepare their respective Health and Safety (H&S) Plans including COVID-19 H&S Plans is included in bidding documents and civil works contracts; (ix) Review and approve site-specific EMPs (SEMPs) of contractors; (x) Provide oversight on environmental management aspects of the project, and ensure EMPs and SEMPs are implemented by contractors; (xi) Establish a system to monitor environmental safeguards of the project including monitoring the indicators set out in the monitoring plan of the IEE; (xii) Facilitate timely and ensure overall compliance with all national and local government rules and regulations regarding site and environmental permits/clearances/approvals as well as any other environmental requirements as relevant; (xiii) Review, monitor and evaluate effectiveness with which the EMPs, SEMPs, and Health and Safety Plans are implemented, and recommend necessary corrective actions to be taken; (xiv) With support from PAIC, consolidate quarterly monitoring reports from the PIU and submit semi-annual environmental monitoring reports (SEMRs) to ADB; (xv) Ensure availability of budget for safeguards activities; (xvi) Ensure adequate awareness campaigns, information disclosure among affected communities and timely disclosure of final IEEs/EMPs and SEMRs, including corrective action plans, if any, in project website and in a form accessible to the public; (xvii) Address any grievances brought through the grievance redress mechanism (GRM) described in this IEE report in a timely manner; (xviii) Undertake regular review of safeguards-related loan covenants, and the compliance during project implementation; and (xix) Organize periodic capacity building and training programs on safeguards for stakeholders, PMU, PIUs and contractors.

9. The PIU is responsible for the day-to-day activities of project implementation in the field. It directly supervises the contractors at subproject sites. The PIU is headed by a Project Engineer who will oversee the overall implementation of the project including safeguards. With support from PIAC (Environmental Safeguards Specialist), the PIU is responsible to: (i) Ensure compliance with government and ADB requirements on environmental safeguards; (ii) Conduct regular site visits, including spot checks, to ensure the EMPs and/or SEMPs are properly implemented; (iii) Review monthly reports from contractors; (iv) Prepare quarterly reports on all aspects concerning environmental assessment, management, and monitoring; (v) Obtain approval of the quarterly reports from the Project Engineer, and submit approved reports to PMU; (vi) Address any grievances brought about through the GRM described in the EARF in a timely manner; and (vii) Support all other environmental safeguards-related activities and tasks of the PMU as may be needed.

10. The PIAC has an Environmental Safeguards Specialist (ESS) who will assist and train PMU and PIUs in implementing the EMPs of subprojects, including the review and updating of all necessary environmental safeguard documentation as required by ADB SPS and national laws, regulations, policies and guidelines applicable to each subproject. The ESS will also train PMU and PIU on how to monitor safeguards compliance during O&M phase. Other specific tasks of the consultant are to assist PMU and PIUs to:

- (i) Conduct consultations/discussions with environmental regulatory agencies and other stakeholders;
- (ii) Identify all applicable and relevant national laws, regulations, policies and guidelines and preparing environmental assessment;

- (iii) Undertake environmental categorization for the proposed future subprojects;
- (iv) Carry out IEE for the proposed future subprojects and formulating environmental management plans (EMPs) for the different components of the civil works in line with ADB and national requirements;
- (v) Undertake assessment of existing safeguards system under the project, identifying areas for improvement, and development of appropriate safeguards implementation arrangement. This assessment will form part of the IEE, and results will be included in the IEE report;
- (vi) Carry out (a) environmental baseline data collection, (b) assessment of project hazards and risks that may be posed to the environment and people, (c) EMP development or formulation, (d) meaningful consultations with project-affected people; and (e) other preparatory activities necessary for finalizing the subprojects' environment safeguard documents;
- (vii) Prepare IEE report, environmental management plans (EMPs) as required by country's environmental legal frameworks and ADB SPS;
- (viii) Ensure that the relevant provisions of EMPs, including costs of implementing the EMPs, are fully included in bid and contract documents, particularly in the bill of quantities (BOQ) and cost line items;
- (ix) Review designs, bidding documents, BOQ, and safeguard documents to ensure health and safety considerations including issues related to COVID 19 pandemic, are adequately covered and costed;
- (x) Calculate and provide the indicative cost estimate to implement EMPs, environmental monitoring programs, awareness programs, etc.;
- (xi) Assist with any capacity building activities for stakeholders;
- (xii) Ensure quality and format of IEE reports, and other environmental safeguard documents following ADB Handbook of Styles and Usage;
- (xiii) Comply with disclosure requirements per ADB SPS;
- (xiv) Implement proposed environmental mitigation measures and ensure the implementation of EMPs during construction phase;
- (xv) Monitor implementation of SEMP;
- (xvi) Monitor required environmental parameters and preparing semi-annual environmental monitoring report (SEMR) per the requirement of ADB; and
- (xvii) Prepare all necessary environmental reports per requirement during implementation of the civil works contracts

11. The Contractors requires to designate an environment, health and safety officer (EHS) or equivalent, to ensure implementation of EMP during civil works. Contractors are to carry out all environmental mitigation and monitoring measures outlined in their contract. The contractor will be required to submit to PMU, for review and approval, a CEMP including (i) proposed sites/locations for construction work camps, storage areas, hauling roads, lay down areas, disposal areas for solid and hazardous wastes; (ii) specific mitigation measures following the approved EMP; (iii) monitoring program per EMP; and (iv) budget for CEMP, EMP and SEMP implementation. No works can commence until SEMP is approved by PMU.

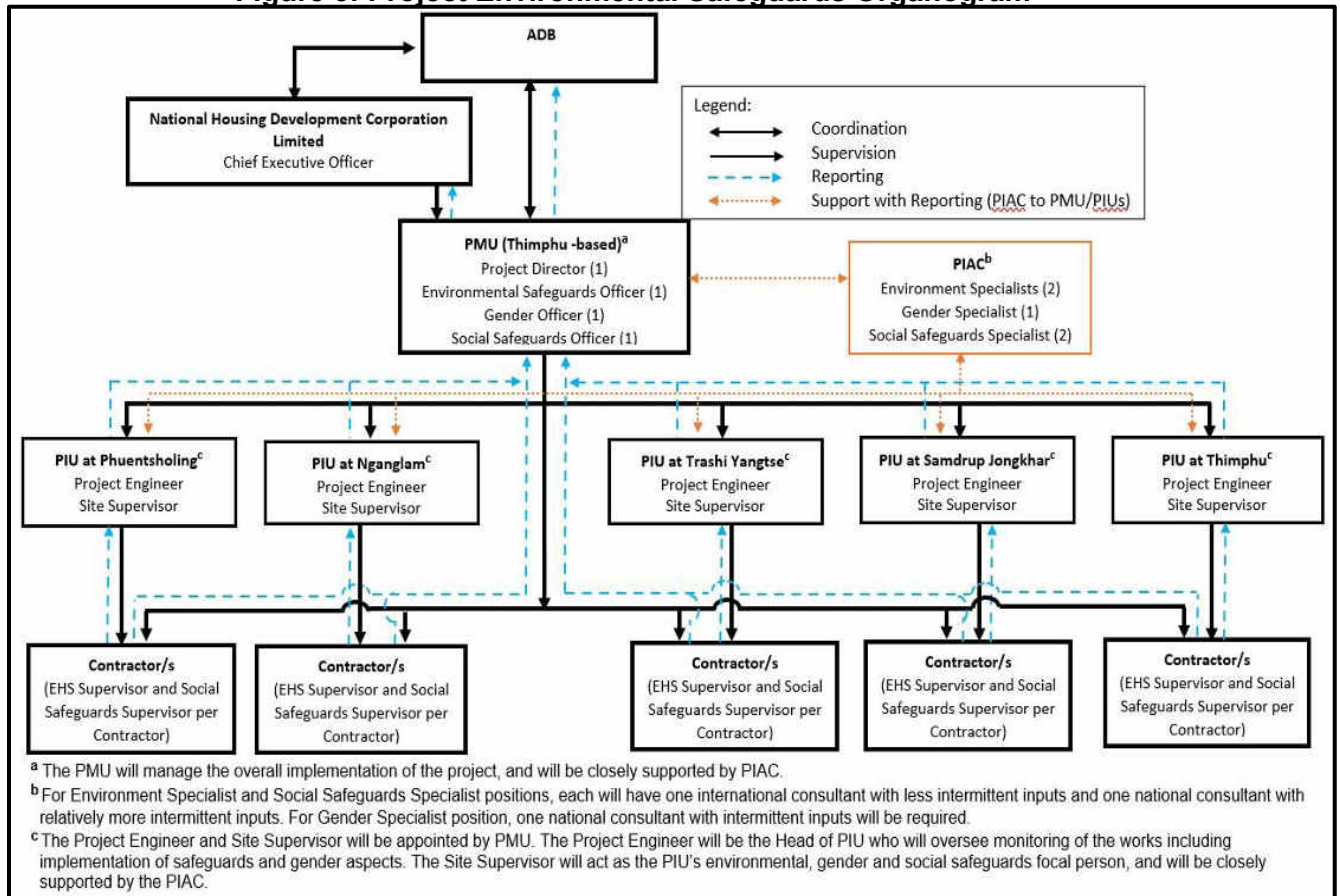
12. The contractor/s has the following specific responsibilities, among others included in the bid and contract documents:

- (i) Ensure that the infrastructure development works are carried out in an environmentally friendly manner, minimizing environmental impacts while ensuring the health and safety of all its workers and the minimizing disturbance to the surrounding environment and communities;

- (ii) Consideration of ADB SPS, national regulations and the EMP during bid preparation and cost estimation;
- (iii) Hire or designate a full time Environment, Health and Safety Officer (or equivalent) responsible for compliance to ADB SPS requirements, national regulations and the EMP. The officer/staff must have a clear terms of reference and responsibilities to ensure that all environmental and social concerns are properly managed;
- (iv) Ensure regular reporting to the PIU on work progress and alert management on any potential issues or delays;
- (v) Strictly follow National COVID 19 protocols and instructions issued by the Ministry of Health and the COVID Task Force, and immediately report to the PIU upon detection of COVID positive cases at the project site;
- (vi) Obtain the necessary permits and clearances as required to implement the project;
- (vii) Ensure that all worker recruitment and OHS requirements are complied;
- (viii) Take necessary corrective action to rectify any non-conformance, including actions related to grievances;
- (ix) Institute an emergency plan for natural calamities/disasters and accidents at the site; and
- (x) Follow chance find procedures to discovery of any physical cultural artifact.

13. The IEEs with EMPs will form part of bidding and contract documents. A copy of the Environmental Clearance (EC) EMP/ SEMP will be kept on-site during the construction period at all times. Non-compliance with, or any deviation from, the conditions set out in the EC, EMP/SEMP constitutes a failure in compliance and will require corrective actions.

**Figure 3: Project Environmental Safeguards Organogram**



**Table 2: Project Environmental Safeguards Team**

Sl. No	Position	Office	Name	Contact number	Email / Remarks
	<b>PMU</b>				
1	Safeguards Focal Person	NHDCL	Pradeep Katwal	17609638	pradeep.katwal@nhdcl.bt
2	Environmental Officer	NHDCL	Dorji Wangmo	17962509	dorjiwangmo@nhdcl.bt
	<b>PIU</b>				
1	(Yet to be nominated)				
2					
	<b>PIAC</b>				
1	Environmental Safeguards Specialist	PIAC	Kamal Dan Chamling	17111541	<a href="mailto:chamlingkd@gmail.com">chamlingkd@gmail.com</a>
2					
	<b>Contractors</b>				
1	Environmental Health and Safety personnel	Contractor	To be nominated once the contract is awarded.	-	
2					

### III. PROJECT IMPLEMENTATION STATUS

14. Except for Trashiyangtse other sub-projects are at various stages of design and bid preparations. For Rinchending and Thimphu alternative new sites are yet to be identified and safeguards studies to be carried out. Details of all subprojects / packages, type of bid/contract and current status of implementation of packages is presented in the Table 3 and detailed implementation progress of each of the awarded packages are given in Table 4.

**Table 3: Status of All Subprojects / Packages**

Package/ Subproject	Subproject / Package components	PIU	Current Status	Bid / contract type
<b>Trashiyangtse</b>	(i) Construction of G+1 storied RCC Residential Building 8 numbers and associated site development works.		Bid Evaluation	Works
<b>Samdrup Jongkhar</b>	(i) Dradulthang: G+3 storied RCC Residential Building 4 numbers (ii) S/J Toed: G+3 storied RCC Residential Building 11 numbers		Preparation of Bid Document.	works
<b>Nganglam</b>	(i) Nganglam: G+1 RCC Residential Building 8 numbers		Preparation of Bid Document.	works
<b>Phuentsholing</b>	(i) Dungpa residence area: G+5 RCC Residential Building 4 numbers (ii) Amochu (Bangay): G+5 RCC Res. Building 5 Nos (iii) Rinchending		Preparation of Bid Document.  Preparation of Bid Document. Geo-Tech studies	works
<b>Samtse</b>	(i) Tading: G+2 RCC building 57 nos.		Initial site analysis and planning.	works
<b>Thimphu</b>	(i) 9 + 1 Sites identified but yet to be finalized after Semtokha site got cancelled.		Feasibility studies	works



**Table 4: Implementation Status of Awarded Subprojects / Packages**

<b>Package</b>	<b>Package status</b> 1. Date of Award 2. Date of mobilization 3. Scheduled completion 4. Duration 5. Contractor	<b>Design progress to date</b>	<b>Construction progress to date</b>	<b>Components completed to date</b>	<b>Works conducted during the reporting period</b>
Trashiyangtse	Not yet awarded. Bidding stage.	100%	0%	• None	• None
Samdrup Jongkhar	Not yet awarded.	100%	0%	• None	• None
Nganglam	Not yet awarded.	100%	0%	• None	• None
Phuentsholing	Not yet awarded.	50%	0%	• None	• None
Samtse	Not yet awarded.	0%	0%	• None	• None
Thimphu	Not yet awarded.	0%	0%	• None	• None

#### IV. COMPLIANCE STATUS WITH STATUTORY ENVIRONMENTAL REQUIREMENTS

##### A. Status of Clearances

15. Environmental Clearance (EC) has been obtained for all sites except for Sonamgang and Thimphu (Semtokha replacement sites). Detailed status of each clearance/permission is provided in Table 5. Copies of clearances attached in Appendix 1.

**Table 5: Status of Statutory Clearances**

Package / Subproject	List of Clearances / permission required	Status	Validity period	Remarks
Trashiyangtse	Environmental Clearance	Obtained	2 March 2022 – 1 March 2027	
S. Jongkhar Toed	Environmental Clearance	Obtained	29 August 2022 – 28 August 2027	
S. Jongkhar Dradulthang	Environmental Clearance	Obtained	29 August 2022 – 28 August 2027	
Nganglam	Environmental Clearance	Obtained	29 August 2022 – 28 August 2027	
Drungpa Residence, P/ling	Environmental Clearance	Obtained	2 March 2022 – 1 March 2027	
Amochu, P/ling	Environmental Clearance	Obtained	2 March 2022 – 1 March 2027	
Sonamgang, P/ling	Environmental Clearance	Application to be submitted.	-	Site identified in replacement of Rinchening.
Tading, Samtse	Environmental Clearance	Application to be submitted	-	Planning stage and initial site analysis is ongoing.
Thimphu	Environmental Clearance	Application to be submitted	-	Sites (9+1) identified in lieu of Semtokha.

##### B. Compliance with Clearance Conditions

16. Following Table 6 provides a summary of clearance / consent conditions specified by statutory agencies that are required to be complied with and/or monitored during implementation and/or operation, and the status of compliance.

**Table 6: Conditions of Clearances**

Package	Clearance / Permission	Conditions of Clearance / Permission	Status of Compliance
Trashiyangtse	EC obtained	<ul style="list-style-type: none"> <li>The EC has 11 chapters (I-XI) with specific clauses/terms and conditions.</li> <li>NEC's Reservation:               <ol style="list-style-type: none"> <li>May stop activity or impose additional terms and conditions as deemed necessary.</li> </ol> </li> </ul>	Sub-project yet to be implemented

Package	Clearance / Permission	Conditions of Clearance / Permission	Status of Compliance
		<p>2. EC shall be subject to periodic review and modification.</p> <p>3. NEC not responsible in the event of inadequate resources.</p> <ul style="list-style-type: none"> <li>• Failure to comply with any of the above terms and conditions shall constitute an offence and liable in accordance with EA Act 2000 and /or existing environmental laws.</li> </ul>	
SJ Toed	Obtained	-----do-----	Sub-project yet to be implemented
SJ Dradulthang	Obtained	-----do-----	Sub-project yet to be implemented
Nganglam	Obtained	-----do-----	Sub-project yet to be implemented
Dungpa Residence, Phuentsholing	Obtained	-----do-----	Sub-project yet to be implemented
Amochu, Phuentsholing	Obtained	-----do-----	Sub-project yet to be implemented
Thimphu (9+1) sites	Application to be submitted	No EC.	IEEs yet to be prepared.
Sonamgang, Phuentsholing	Application to be submitted	-----do-----	-----do-----
Tading, Samtse	Application to be submitted	-----do-----	-----do-----

## V. COMPLIANCE WITH LOAN COVENANTS

### A. Loan Covenants

17. Status of compliance with environmental safeguard related loan covenants is given in the below Table 7. Project will be implemented in compliance with all the covenants.

**Table 7: Status of Compliance with Loan Covenants**

No. (List schedule and paragraph number of Loan Agreement)	Covenant	Status of Compliance	Action Required
Schedule 4, No. 3	<p>The Borrower shall not award any Works contract which involves environmental impacts until NHDCL has:</p> <p>(a) obtained the final approval of the IEE for such Works contract from the Borrower's National Environmental Commission; and</p> <p>(b) incorporated the relevant provisions from the EMP into such Works contract.</p>	<p><i>(During the time of this SEMR preparation, only Trashiyangtse Sub-project was in the final stage for award of contract. Hence the status of compliance pertains mainly to this sub-project.)</i> IEE approved and EC given by the NEC.</p> <p>a) All relevant provisions from the EMP are incorporated in the Bid/Contract document.</p>	<p>Relevant provisions from the EMP shall be incorporated in all the Bid/contract documents for all the sub-projects.</p>
Schedule 4, No. 4	<p>Notwithstanding paragraph 3 above, the Borrower may award a Works contract involving environmental impacts with respective IEE based on preliminary design having been submitted to and cleared by ADB if the contract,</p> <p>(i) is of a "design and build" or "turnkey" type under which the design must be completed for the Works contract before the IEE is updated to reflect the final project design; and</p> <p>(ii) expressly provides that no works shall commence until an IEE for the Works contract reflecting the final project design has been submitted to, and cleared by ADB.</p>	<p>IEE and final designs have been submitted and cleared by ADB for sub-project at Trashiyangtse.</p>	<p>These shall be done for all the upcoming sub-projects prior to implementation.</p>
Schedule 4, No. 8	<p>The Borrower shall ensure, or shall cause NHDCL to ensure, that the preparation, design, construction,</p>	<p>The approved IEEs have all these parameter (a), (b), (c)</p>	<p>These concerns shall also be taken care for the</p>

No. (List schedule and paragraph number of Loan Agreement)	Covenant	Status of Compliance	Action Required
	implementation, operation and decommissioning of each Subproject and all Project facilities comply with (a) all applicable laws and regulations of the Borrower relating to environment, health, and safety; (b) the Environmental Safeguards; (c) the EARF; and (d) all measures and requirements set forth in the respective IEE and EMP, and any corrective or preventative actions set forth in a Safeguards Monitoring Report.	and (d) have been reflected and taken care of in the EMP for respective sub-project IEE.	remaining sub-projects subsequently.  Any corrective or preventative actions set forth in a Safeguards Monitoring Report shall be complied with during project implementation.
Schedule 4, No. 12	The Borrower shall make available, or shall cause NHDCL to make available, necessary budgetary and human resources to fully implement the respective EMPs and RPs.	Adequate budget has been allocated. PMU has been formed in the NHDCL. PIUs have not been formed yet. NHDCL has recruited an environmental officer to oversee the environmental safeguards issues of the project.	Establishment of PIU for Trashiyangtse sub-project is a priority at the moment. Project Manager has been identified and will be posted once the contract is awarded.
Schedule 4, No. 13	<p>The Borrower shall ensure, or shall cause NHDCL to ensure, that all bidding documents and contracts for Works contain provisions that require contractors to:</p> <ul style="list-style-type: none"> <li>(a) comply with the measures and requirements relevant to the contractor set forth in the respective IEEs, EMPs and RPs (to the extent they concern impacts on affected people during construction), and any corrective or preventative actions set out in a Safeguards Monitoring Report;</li> <li>(b) make available a budget. For all such environmental and social measures;</li> <li>(c) provide the Borrower with a written notice of any unanticipated environmental, resettlement or indigenous peoples risks or impacts that arise during</li> </ul>	All relevant measures/provisions are already incorporated in the Bid document of Trashiyangtse sub-project. Since the sub-project is yet to be awarded and implemented these required measures are yet to be implemented.	Once the sub-project is awarded all these measures shall be implemented and monitored during project implementation period.

No. (List schedule and paragraph number of Loan Agreement)	Covenant	Status of Compliance	Action Required
	<p>construction, implementation or operation of the Project that were not considered in the respective IEEs, EMPs and RPs; and</p> <p>(d) adequately record the condition of roads, agricultural land and other infrastructure prior to starting to transport materials and construction, and fully reinstate pathways, other local infrastructure, and agricultural land to at least their pre-project condition upon the completion of construction.</p>		
Schedule 4, No. 14	<p>The Borrower shall, or shall cause NHDCL to, do the following:</p> <p>(a) submit semi-annual Safeguards Monitoring Reports to ADB and disclose relevant information from such reports to affected persons promptly upon submission;</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 respective IEEs, EMPs and RRs, promptly inform ADB of the occurrence of such risks or impacts, with detailed description of the event and proposed corrective action plan; and</p> <p>(c) report any actual or potential breach of compliance with the measures and requirements set forth in the respective EMPs and RPs promptly after becoming aware of the breach.</p>	<p>The project has submitted two SEMRs (February – August 2022 and September 2022 – March 2023).</p> <p>Since no sub-project is awarded yet, unanticipated environmental and social risks and impacts have not been encountered and no corrective measures or action plans prepared.</p>	<p>Any unanticipated environmental and/or social risks and impacts arising during construction, implementation or operation of the Project that were not considered in the respective IEEs, EMPs and RRs, shall be promptly informed to ADB of the occurrence of such risks or impacts, with detailed description of the event and proposed corrective action plan.</p>
Schedule 4, No. 15	The Borrower shall ensure, or cause NHDCL to ensure, that no proceeds of the Loan are used to	Till date no proceeds of the Loan are used to finance any activity	Continue to comply with this clause in the

No. (List schedule and paragraph number of Loan Agreement)	Covenant	Status of Compliance	Action Required
	finance any activity included in the list of prohibited investment activities provided in Appendix 5 of the SPS.	included in the list of prohibited investment activities provided in Appendix 5 of the SPS.	project. No action required.
Schedule 4, No. 16	The Borrower shall ensure, or shall cause NHDCL to ensure, that the core labor standards and the Borrower's applicable laws and regulations are complied with during Project implementation. The Borrower shall include specific provisions in the bidding documents and contracts financed by ADB under the Project requiring that the contractors, among other things: (a) comply with the Borrower's applicable labor law and regulations and incorporate applicable workplace occupational safety norms; (b) do not use child labor; (c) do not discriminate workers in respect of employment and occupation; (d) do not use forced labor; (e) allow freedom of association and effectively recognize the right to collective bargaining; and (f) disseminate, or engage appropriate service providers to disseminate, information on the risks sexually transmitted diseases, including HIV/AIDS, to the employees of contractors engaged under the Project and to members of the local communities surrounding the Project area, particularly women.	The bidding document for sub-project Trashiyangtse has incorporated all the relevant and specific provision according to the existing national standards and regulations for implementation. However, these provisions are yet to be implemented.	All provisions in the bidding documents and contracts shall be implemented and monitored during the project implementation.
Schedule 4, No. 17	The Borrower shall, or shall cause NHDCL to, strictly monitor compliance with the requirements set forth in paragraph 16 above and provide ADB with regular reports.	Compliance monitoring is yet to be carried out as no sub-project is awarded and being implemented.	Compliance monitoring shall be carried out strictly and ADB provided with regular reports.

**B. Preparation and Approval of Environmental Assessment Reports**

18. **Subproject Category.** The GRAHSP has carried out environmental assessments (IEEs) and found that all the sub-projects fall in the Category B. According to ADB’s categorization a project qualifies as Category ‘B’ if, “The project’s potential environmental impacts are less adverse than those in category A. Impacts are site-specific, few of which, if any, are irreversible. Impacts can be readily addressed through mitigation measures. An initial environmental examination, including an EMP, has to be prepared by the borrower/client.”

19. Package-wise status of preparation, submission, and approval of IEE Reports of Category B subprojects, and Due Diligence Reports (DDRs) of Category C subprojects are presented in Table 8 and Table 9.

**Table 8: Status of IEEs**

Package Number	Bid type	Package Status	Draft IEE submitted to ADB	Draft IEE cleared by ADB	Updated IEE submitted to ADB	Updated IEE cleared by ADB	Remarks*
Trashiyangtse	Works	Final stage for award of contract package.	Yes	Yes	Yes	Yes	EC obtained
Toed S. Jongkhar	Works	Detail design	Yes	Draft IEE is under ADB review and is yet to be cleared.	Updated IEE is not yet submitted.	Updated IEE is not yet cleared.	EC obtained
Dradulthang S. Jongkhar	Works	Detail design	Yes	Draft IEE is under ADB review and is yet to be cleared.	Updated IEE is not yet submitted.	Updated IEE is not yet cleared.	EC obtained
Nganglam	Works	Detail design	Yes	Draft IEE is under ADB review and is yet to be cleared.	Updated IEE is not yet submitted/cleared.	Updated IEE is not yet submitted/cleared.	EC obtained
Dungpa Residence, Phuentsholing	Works	Detail design	Yes	Yes	Yes	Yes	EC obtained
Amochu, Phuentsholing	Works	Detail design	Yes	Yes	Yes	Yes	EC obtained
Sonamgang, Phuentsholing	Works	Feasibility	No	No	No	No	IEE to be prepared.
Tading, Samtse	Works	Initial feasibility and planning.	No	No	No	No	IEE to be prepared.
Thimphu (9 sites identified in lieu of Semtokha site and 1 site identified for JFPR**).	Works	Feasibility	No	No	No	No	Sites yet to be identified and prepare IEEs.

\* All subprojects reflected in Table 8 are Category B for environment according to IEEs prepared.

\*\* Japan Fund for Poverty Reduction.

### C. Status of Disclosure of Safeguard Documents

20. Status of disclosure of safeguard documents is presented in the following Table 9. All the documents have been disclosed on ADB and Project/PMU websites (<https://www.adb.org/projects/54355-001/main#> and [www.nhdcl.bt](http://www.nhdcl.bt)).



**Table 9: Status of Disclosure of IEEs / DDRs**

Package Number	Draft Disclosed on ADB website	Draft Disclosed on Project website	Updated / Final Disclosed on ADB website	Updated / Final Disclosed on Project website <sup>1</sup>
IEE Drungpa Residence, Phuentsholing	Yes	Disclosed on NHDCL website*.	Yes	Disclosed on NHDCL website*.
IEE Amochhu, Phuentsholing	Yes	Disclosed on NHDCL website*.	Yes	Disclosed on NHDCL website*.
IEE Rinchending, Phuentsholing	YES	Disclosed on NHDCL website*.	Yes	Disclosed on NHDCL website*.
EARF	Yes	Disclosed on NHDCL website*.	Yes	Disclosed on NHDCL website*.
IEE Trashiyangtse	Yes	Disclosed on NHDCL website*..	Yes	Disclosed on NHDCL website*..
IEE Toed, S. Jongkhar	Yes	Disclosed on NHDCL website*..	Yes	Disclosed on NHDCL website*..
IEE Dradulthang, S. Jongkhar	Yes	Disclosed on NHDCL website*..	Yes	Disclosed on NHDCL website*..
IEE Nganglam	Yes	Disclosed on NHDCL website*..	Yes	Disclosed on NHDCL website*..
IEE Semtokha, Thimphu	YES	Disclosed on NHDCL website*.	Yes	Disclosed on NHDCL website*.
IEE Sonamgang (in lieu of Rinchending)	No. IEE yet to be prepared.	No	No	No
IEE Tading, Samtse	No. IEE yet to be prepared.	No	No	No
IEEs for (9 new sites (replacement of Semtokha site and 1 site under JFPR), Thimphu	No. IEEs yet to be prepared.	No	No	No

\* There is no independent project website and NHDCL intends to use their official website, [www.nhdcl.bt](http://www.nhdcl.bt).

#### D. Safeguards in Bid Documents and Contracts

21. Safeguard provisions are duly included in the bid documents / contracts, and these are followed uniformly across all the bids and contracts. Following Table shows package-wise details.

**Table 10: Inclusion of EHS, Labor Standards, IEE and EMP in Bids/Contracts**

Package Number	Type of Bid / Contract	Bid / Contract Clauses related to environment, health and safety; labour standards	IEE / EMP included in Bid / contract
CW-01 (Trashiyangtse)	Works	<p>The Bid/Contract clauses related to EHS have been included in Part III Conditions of Contract particularly under Section 7- General Conditions of Contract (GCC) &amp; Section 8 - Particular Conditions of Contract (PCC) that require the contractor to:</p> <ol style="list-style-type: none"> <li>1. Submit a Work Health and Safety Plan which needs to be cleared by the Employer and ADB. Mobilisation to site by plant and personnel will only occur after this clearance has been obtained.</li> <li>2. Shall recruit and appoint a Health &amp; Safety Officer at site and made responsible for maintaining safety and protection against accidents.</li> <li>3. Shall submit within 28 working days a detailed Site Specific Environmental Management Plan (SSEMP) outlining the approach to risk identification and management, measures to comply with the EMP/IEE of the project, compliance with the Environmental Clearance (EC) and the relevant laws and policies of Bhutan.</li> <li>4. Prepare and attach a Site Specific Health and Safety Management Plan (SSHSMP) with the SSEMP. The SSHSMP is to be submitted to the Project Manager and a confirmation of no objection of the SSHSMP to be obtained from the Project Manager prior to commence of site work.</li> <li>5. Shall implement the mitigation measures and carry out the monitoring requirements assigned to it as set forth in the initial environmental examination (IEE) and environmental management plan (EMP) and any subsequent update to it issued by the Employer.</li> <li>6. Provide all personnel on site including Employer's Personnel and visitors with personal protective equipment, including protection for feet (safety boots), head, eyes, ears (safety helmets) and hands, etc. in accordance with the Contractor's SSHSMP prepared in accordance with Sub-Clause 4.8 [Safety Procedures]. The Contractor should ensure that his Subcontractors comply with the SSHSMP and provide all such necessary equipment to their personnel.</li> <li>7. Shall not employ Forced Labour or Child labour and follow existing national laws and provisions while employing labour.</li> <li>8. Non-discrimination and Equal Opportunity: The Contractor shall not make employment decisions on the basis of personal characteristics unrelated to inherent job requirements. He shall base the employment relationship on the principle of equal opportunity and fair treatment, and shall not discriminate with respect to aspects of the employment relationship, including recruitment and</li> </ol>	Yes

Package Number	Type of Bid / Contract	Bid / Contract Clauses related to environment, health and safety; labour standards	IEE / EMP included in Bid / contract
		hiring, compensation (including wages and benefits), working conditions and terms of employment, access to training, promotion, termination of employment or retirement, and discipline.	

Type of Bid – Works / DBO / DB etc.,

## VI. STATUS OF EMP IMPLEMENTATION

### A. Preparation of Site Environmental Management Plan

22. Preparation and submission of Site-specific Environmental Management Plan (SEMP) and Health and Safety Plan (HSP) including Health & Safety COVID-19 Plan by contractor and approval of PMU is a requirement prior to commencement of works. Details of awarded packages are presented in the following Table 11.

**Table 11: Status of SEMPs**

Package Number	Contractor	Current Status	Status of SEMPs	Status of HSP	Remarks
Trashiyangtse CW-01	Work not awarded.	Final stage for award of contract package.	Not submitted	Not submitted.	Contract not yet awarded.

Current Status: Design / construction / operation

Status of plans: Not submitted / submitted / approved

### B. EMP Implementation Supervision and Monitoring

23. Since no package is awarded, there are no construction works being conducted at the moment. Package-wise status is presented in the below **Table 12**. No site visits have been conducted by safeguard staff.

**Table 12: Status of EHS Staff, SEMPs Preparation and Monitoring**

Package Number	Current Status	Contractor Supervisor Appointed & Mobilized on Site	EHS &	Monthly implementation reports submitted by contractor	EMP	Site Monitoring / Verification Conducted by PMC	Remarks
None	None	No		No		No	No contract package awarded yet.

### C. Contractors Compliance with Statutory and Contractual Requirements

24. Since no package has been awarded, the compliance with statutory requirements in terms of obtaining licenses, permissions, clearances and insurance coverage etc., required to conduct construction work are not recorded.

**D. Implementation of EMP Measures and Compliance Status**

25. Implementation of measures as per the approved IEE & EMP / SEMP are reviewed for each package and status is presented in the following Tables. **Table 13** presents the implementation and compliance status of design/pre-construction stage mitigation measures. **Table 14** presents the implementation and compliance status of construction stage mitigation measures. This compliance is based on the monthly checklists submitted by Contractors and site verification visits and monitoring conducted by PMC, and periodic visits by PIU/PMU safeguard team. Contractor's Monthly EMP Implementation Reports and PMC Site Verification / Monitoring Reports shall be presented and appended package-wise in future. For each package one sample monthly report (latest of reporting period) of contractor and one site visit report of PMC will be provided in the Appendix once sub-projects are awarded.

**Table 13: Design/Pre-construction Stage Mitigation Measures: Compliance Status**

Impact / field	Impact fields and Mitigation Measures	Responsible for mitigation	Compliance rating for Implementation of EMP Measures											
			1. <b>S / Satisfactory</b> - mitigation measures implemented satisfactorily 2. <b>PS / Partially Satisfactory</b> - mitigation measures implemented but requires improvement 3. <b>US / Unsatisfactory</b> - Mitigation measures not implemented / poorly implemented											
			Package 1 Trashiyangts		Package Samdrup Jongkhar (Toed & Dradulthang)		Package Phuentsholing (Drungpa Res. & Amochu)		Package Nganglam		Package Thimphu (Nine Sites)		Package Tading (Samtse)	
			Rating	Remarks	Rating	Remarks	Rating	Remarks	Rating	Remarks	Rating	Remarks	Rating	Remarks
	Subproject Location		S	Design stage	S	Design stage	S	Design stage	S	Design Stage	S	Design stage	-	Subproject at initial stage of planning / feasibility studies
Impact on protected area, critical habitats, and endangered species	No mitigation required		No contract package has been awarded.											
Impact on endangered species [Mahseer ( <i>Tor putitora</i> )] potentially found in the Amochhu river.	<ul style="list-style-type: none"> <li>Ensure that the housing complex design includes appropriate facilities to keep any wastewater or effluent from flowing into the Amochhu river, such as well-designed and maintained septic tanks and soak pits. (Amochhu subproject)</li> </ul>		Will be complied for Amochhu subproject.											

Impact on Physical cultural Resources (PCR)	No mitigation required	No contract package has been awarded
Risk of natural hazards such as earthquakes and climate change considerations	<ul style="list-style-type: none"> <li>•Design of buildings in line with Bhutan Building Regulations 2018, Bhutan Building Code of Bhutan 2018, Bhutanese Architectural Guidelines, 2014 and the Bhutan Green Building Guidelines, 2013.</li> <li>•Choice of construction materials must be based on climatic conditions and suitable for monsoon rains and winter snow conditions</li> </ul>	Will be complied.
Consents, permits and clearances. Failure to comply with national regulation and procedures can delay project progress	<ul style="list-style-type: none"> <li>•Seek approval for building design and construction approval from the District Regulatory Officer, Dzongkhag Administration/ Development Control Division of the Thromde.</li> <li>•Consult with the Thromde to confirm the level of the highway as planned in the LAP, to keep the ground level of the site in line with the designed level of the</li> </ul>	Will be complied. Environmental clearances have been obtained/to be obtained for the packages. No contract package has been awarded.

	<p>new township. (Amochhu)</p> <ul style="list-style-type: none"> <li>• Seek approval for environmental clearance from NEC.</li> </ul>	
<b>Removal of trees</b>		
Removal of trees	<ul style="list-style-type: none"> <li>• Seek approval for removal of trees from the Trashiyangtse Forest Range Office.</li> <li>• Seek approval removal of trees from the Environment Division, P/ling Thromde. (Drungpa residence)</li> <li>• Replant the area with at least double the number of trees cut during landscaping as compensatory measure.</li> </ul>	Will be complied. No contract package has been awarded.
<b>Aesthetics</b>		
Change in aesthetics at the site due to new infrastructures that could obstruct views.	<ul style="list-style-type: none"> <li>• Consider requisite development controls (such as building height, ground coverage and minimum setbacks from roads and adjacent plots), as per the allowable local area plan.</li> <li>• Comply with the Bhutanese Architecture Guidelines as a reference to ensure that the buildings blend in with the surrounding while maintaining certain elements of traditional</li> </ul>	Will be complied. No contract package has been awarded.

	<p>Bhutanese architectural designs.</p> <ul style="list-style-type: none"> <li>• Undertake landscaping and revegetation will further improve site conditions once activities are completed.</li> </ul>	
Compliance with ADB Loan Agreement and SPS		
Lack of technical capacity on environmental safeguards	<ul style="list-style-type: none"> <li>• Conduct briefing/orientation for designated staff to be aware of ADB safeguard policies and RGOB regulations relevant for the project, including EMP, and compliance monitoring and reporting requirements.</li> </ul>	Complied with.
Lack of awareness by the Contractor on ADB environmental safeguard policies and EMP requirements and therefore mitigation measures not budgeted	<ul style="list-style-type: none"> <li>• Incorporate the cost of OHS and the EMP as well as any specific provisions into the bidding documents requiring contractors to comply with all other conditions required by ADB into the bidding and contract documents</li> <li>• Conduct pre-bid meeting to inform contractors of the need to strictly incorporate OHS and</li> </ul>	Complied/will be complied with for packages under bidding.



	<p>EMP into the contract cost</p> <ul style="list-style-type: none"> <li>• Once contract is selected, conduct awareness for contractors on their responsibilities in EMP implementation, compliance with ADB and RGOB requirements, self - monitoring and reporting procedures.</li> </ul>	
Project disclosure and Community awareness		
Lack of awareness by the Public and Community on project activities or GRM	<ul style="list-style-type: none"> <li>• Disclose project information/brief on NHDCL website, along with GRM mechanism and contact numbers, and one available at the site office</li> <li>• Design and install project signboards as per design standards and specifications of the District and include relevant contact numbers for GRM</li> </ul>	<p>Disclosure of project information is complied with (for packages with approved draft IEEs only).</p> <p>GRM Office Order is disclosed on NHDCL website.</p>

Table 14: Construction Stage Mitigation Measures: Compliance Status

Impact fields and Mitigation Measures	Responsible for mitigation	Compliance rating for implementation of EMP Measures											
		1. S / Satisfactory 2. PS / Partially Satisfactory 3. US / Unsatisfactory											
		Package 1 Trashiyangts		Package Samdrup Jongkhar (Toed & Dradulth ang)		Package P/ing (Drungpa Res. & Amochu)		Package Nganglam		Package Thimphu (Nine Sites)		Package Tading (Samtse)	
Rating	Remarks	Rating	Remarks	Rating	Remarks	Rating	Remarks	Rating	Remarks	Rating	Remarks		
<b>Contractor compliance with regulations</b> (clearances/permits/licenses to conduct work)	Contractor	No contract package is awarded. <i>(This table will be updated during the construction phase.)</i>											
<b>SEMP available at work sites</b>		No contract package is awarded.											
<b>Utilities shifting</b> (avoiding disruption, prior info, contingency arrangements etc.,)		No contract package is awarded.											
<b>Work site organization</b> (designated areas for material / debris /equipment, roads, walkways, facilities, fencing / barricades, rest area, first aid, complaints & accident register, etc.,)		No contract package is awarded.											
<b>Chemical, fuel storage &amp; handling</b> (secured areas with easy identification & caution signs, spill control, MSDS display)		No contract package is awarded.											
<b>Project information &amp; compliant registration</b> (information boards, contact info, complaint register etc.,)		No contract package is awarded.											
<b>Sourcing construction materials / borrow areas</b> (existing approved quarries / avoiding new quarries, documentation)		No contract package is awarded.											
<b>Measures related to works near forest areas</b> (scheduling, confined working, no damage to flora/fauna etc.,)		No contract package is awarded.											
<b>Implementation of chance find protocol</b> (workers/staff awareness, protocol implementation etc.,)		No contract package is awarded.											
<b>Implementation of Asbestos Cement Materials (ACM) measures</b> (avoidance, ACM plan implementation etc.,)		No contract package is awarded.											

<b>Dust control at work sites</b> (site organization, and dust suppression measures, visible dust etc.,)		No contract package is awarded.
<b>Dust control in material / waste transport</b> (covering, cleaning measure, visible dust)		No contract package is awarded.
<b>Air pollution / emission control</b> (pollution control equipment and certificate for machinery, equipment, and vehicles)		No contract package is awarded.
<b>Water pollution control</b> (earthwork schedule, containment of silt/contaminated water in site, erosion control, chemical spill control, etc.,)		No contract package is awarded.
<b>Measures related to works in / near water bodies</b> (scheduling, construction method, spill & silt containment, safe disposal etc.,)		No contract package is awarded.
<b>Noise control</b> (scheduling, prior public info, control measures, PPEs, no high noise near sensitive areas etc.,)		No contract package is awarded.
<b>Traffic management</b> (work site isolation/separation of public areas, traffic diversions, public information, etc.,)		No contract package is awarded.
<b>Access to building &amp; properties</b> (temporary access maintenance over trenches, no blockage of access etc.,)		No contract package is awarded.
<b>Occupational Health &amp; safety</b> (safe work site set-up, eliminated/protected unsafe/risky areas, equipment / machinery / electrical / safety, standard construction methods, PPEs, toolbox talks, trainings & site awareness etc.,)		No contract package is awarded.
<b>Incident management</b> (First aid box, accident / incident registers, review of accident cases, near misses, and training & awareness, fire safety, emergency contacts, health check-ups, tie up with hospital, etc.,)		No contract package is awarded.
<b>Core labour standards</b> (no child labour, no discrimination, no forced labour, equal pay for equal work, etc.,)		No contract package is awarded.
<b>Workers facilities at work site</b> (water, sanitation, rest areas, separate toilets for women, etc.,)		No contract package is awarded.
<b>Implementation of COVID19 H&amp;S Plan at work sites</b> (hygiene, distancing, PPEs, testing, isolation, treatment etc.,)		No contract package is awarded.
<b>Community health &amp; safety</b> (secured work sites, protection measures for public/building/road safety, information, caution and awareness boards, public info etc.)		No contract package is awarded.
<b>Solid waste, debris &amp; soil management</b> (proper stocking/storage at site, reuse, disposal site identification, timely disposal etc.,)		No contract package is awarded.

<b>Workers camps set-up</b> (site approval, camp organization & facilities as per standards)		No contract package is awarded.
<b>Worker camp maintenance</b> (health, hygiene, leisure etc.,)		No contract package is awarded.
<b>COVID measures implementation at camp sites</b>		No contract package is awarded.
<b>Post construction restoration of work and camp sites</b> (sites cleared, restored, documented, and approved by PIU/PMC & closed)		No contract package is awarded.

Please refer respective latest updated IEEs/SEMP for construction stage mitigation measures, include common measures in one table for all packages, and if there any other specific comments in any IEE, provide the compliance in different table.

Include all packages in preconstruction and construction stage.

This table should be prepared based on the contractor's monthly reports, and PMC's verification / monitoring visits to work sites and camps. Attach one sample monthly report of each contractor, and one PMC site visit report of each package in the appendix. Ensure that all issues raised during the visits are reflected in the above table.

## E. Findings on EMP Compliance

26. **Design/Pre-construction stage measures.** Summarize the status of implementation and compliance with EMP measures per the assessment presented in Table 15 in below bullets. Please comment whether overall implementation and compliance is across all packages is very good / good / fair / poor / very poor (see footnote).<sup>3</sup>

27. The compliance status is very good based on design/pre-construction stage EMP.

28. **Construction stage measures.** Summarize the status of implementation and compliance with EMP measures per the assessment presented in Table 15 in below bullets. Please comment whether overall implementation and compliance is across all packages is very good / good / fair / poor / very poor.

29. No contract package awarded till date.

**Table 15: Package-wise Compliance with Construction stage EMP**

S. No	Package	Overall compliance with preconstruction stage EMP	Overall compliance with construction stage EMP
-	No package.	N/A	N/A

Overall compliance should be presented as very good / good / fair / poor / very poor, as defined above

## F. Implementation of Health & Safety Covid-19 Plan

30. **H&S COVID-19 Plan Preparation.** Status of preparation and approval of Health and Safety COVID-19 Plan is provided in the following table.

**Table 16: Status of H&S COVID-19 Plan**

H&S COVID-19 Plan	Preparation	Approval	Update	Remarks
Project level Plan	N/A	N/A	N/A	No contract package has been awarded till date.
Package/contractor plan	N/A	N/A	N/A	
- Package 1	N/A	N/A	N/A	
- Package 2	N/A	N/A	N/A	
- Package 3	N/A	N/A	N/A	
- Package 4	N/A	N/A	N/A	
- Package 5	N/A	N/A	N/A	
- Package 6	N/A	N/A	N/A	

Provide "yes/no / under process" with dates

## G. H&S COVID-19 Plan Implementation.

31. Health and Safety COVID-19 Plan is yet to be implemented.

- 
- (i) Very Good (all measures implemented satisfactorily)
  - (ii) Good (most (>75%) measures implemented satisfactorily & none unsatisfactorily)
  - (iii) Fair (many (50-75%) measures implemented satisfactorily & none unsatisfactorily)
  - (iv) Poor (few (<25%) measures implemented unsatisfactorily)
  - (v) Very Poor (most (>25%) measures implemented unsatisfactorily or not implemented)

**H. Construction Work related Accidents.**

32. No work-related accidents have occurred since construction works have not started.

**I. Best practices / environment improvement activities**

33. Provide details of innovative practices / environmental improvements activities conducted at the sites which are not actually part of EMP (water conservation, waste management, plastic-free sites, tree plantation etc.).

34. Contract not yet awarded. Details shall be provided during implementation, if any.

**VII. ENVIRONMENTAL MONITORING****A. Environmental Quality Monitoring**

35. IEE and EMP / SEMR requires conduct of ambient environmental quality monitoring throughout implementation. These includes monitoring ambient air, water, noise, etc., in and around project sites to assess the quality and changes with respect to baseline conditions. Per the EMP and contract, Contractors are responsible to conduct the monitoring, and following Table 18 shows the status of environmental monitoring conducted by contractors, package-wise for all awarded contracts.

**Table 17: Status Environmental Monitoring of Awarded Packages**

Package No	Baseline Monitoring		Periodic Monitoring in Reporting Period	
	Date/period of monitoring	Environmental parameters	Dates/period of monitoring	Environmental parameters
No package awarded yet.	Not applicable (N/A).	N/A	N/A	N/A

Environmental parameter: indicate air, water, noise, etc for which monitoring was conducted.

36. **Monitoring Frequency.** Monitoring shall be conducted as per the frequency specified in the approved IEE and SEMP.

37. **Monitoring Locations.** Number of locations/sampling points shall be considered as specified in the approved IEE and SEMP. Location of monitoring/sampling points are selected based on parameters such as representative locations, meteorological conditions (wind direction), land use, terrain, natural drainage etc.,

38. **Monitoring (Sampling & Analysis) Methodology.** Sampling and analysis shall be carried out by the contractors via the recognized / approved / accredited laboratories, which adopted acceptable and standard methods for sampling, analysis, and results. Sampling and analysis adopted shall be presented in **Table 18**.

**Table 18: Sampling and Analysis Methods**

Parameter	Sampling and testing method
Ambient air	To be carried out during implementation phase.
Ambient noise	-----do-----

Parameter	Sampling and testing method
Surface water	-----do-----
Ground water	-----do-----
Soil	-----do-----

Where necessary, provide details pollutant parameter-wise (eg particulate matter, CO etc.). If different labs are using different methods, please indicate all.

## B. Monitoring Results

### Ambient air quality.

39. No monitoring carried out as no package is awarded. Laboratory results shall be attached once packages are awarded.

**Table 19: Air Monitoring Results**

	Package / Monitoring Site	Monitoring date	Type	PM <sub>10</sub>	PM <sub>2.5</sub>	SO <sub>2</sub>	NO <sub>2</sub>	CO	xxx
	<b>AAQ Standard (24 hours)</b>								
	<b>IFC/WHO Guideline</b>								
<b>1</b>	<b>Package 1 xxx</b>	<b>Monitoring to be carried out when packages are awarded.</b>							
	Xxx site								
	Xxx site								
<b>2</b>	<b>Package 2 xxx</b>	<b>Monitoring to be carried out when packages are awarded.</b>							
	Xxx site								
	Xxx site								

Type: Use 'B' for baseline monitoring prior to start of construction, and use 'P' for periodic monitoring

### Ambient noise quality.

40. No monitoring carried out as no package is awarded. Laboratory results shall be attached once packages are awarded.

**Table 20: Noise Monitoring Results**

	Package / Town / Monitoring Location	Type	Monitoring date	Land use	Noise Level LA <sub>eq</sub> (dB(A))			
					Day time		Night time	
	<b>National Ambient Noise Standard</b>			Industrial	xx		xx	
				Commercial	xx		xx	
				Residential	xx		xx	
				Sensitive area	xx		xx	
	<b>IFC/WHO Guideline</b>			Xx				
<b>1</b>	<b>Package 1 xxx</b>				<b>Min</b>	<b>Max</b>	<b>Min</b>	<b>Max</b>
	Xxx site							

	Package / Town / Monitoring Location	Type	Monitoring date	Land use	Noise Level LA <sub>eq</sub> (dB(A))	
					Day time	Night time
	<b>National Ambient Noise Standard</b>			Industrial	xx	xx
				Commercial	xx	xx
				Residential	xx	xx
				Sensitive area	xx	xx
	<b>IFC/WHO Guideline</b>			Xx		
	Xxxx site					
	Xxx site					
<b>2</b>	<b>Package 2 xxxxx</b>					
	Xxxxx site					

Type: Use 'B' for baseline monitoring prior to start of construction, and use 'P' for periodic monitoring

### Surface water quality.

41. EMP does not specify surface water quality monitoring.

### Groundwater quality.

42. EMP does not specify Groundwater quality monitoring.

## VIII. TRAINING AND CAPACITY BUILDING ACTIVITES

43. A one-day training on the 28 February 2023 was conducted to the PMU and PIU at the NHDCL Conference Hall, Thimphu. The training focussed on the overall safeguards requirements of the project both from the existing national and ADB's legal and policy requirements. A half-day session each was dedicated for environmental and social safeguards. The session focussed and deliberated on the related environmental safeguards requirements both during project design and implementation phases. The importance of preparation of due diligence report and its prior approval for implementation was deliberated during the training. The preparation and implementation of EMPs for the entire project period were highlighted. Among others the EMPs focussed primarily on the constructional health and safety to ensure that environment, health and safety were not compromised at all costs. EMP format and contents were discussed. However, preparation of EMP was not taken up due to time constraints. The preparation of EMP will be carried out, jointly with the contractor and PIU/PMU personnel, during sub-project site training once the contract is awarded. The project monitoring parameters, frequency and responsibility were also discussed. A total of 28 participants (17 males and 11 females) attended the training. They are all engineers and technicians from NHDCL and have been identified and earmarked for PIUs/PMU in GRAHSP. (A list of Participants and Agenda are annexed in Appendix 3: Training on Capacity Building for PMU/PIU, GRAHSP\_28 February 2023; (a) Training Agenda and (b) List of participants.)

44. Power Point presentation was used during the training and hand-outs were distributed to the participants. There was an active participation during the training. An overall rating and feedback obtained through the training evaluation form rated the training as 95% successful and satisfactory. A 5% rated it as dissatisfactory due to some computer glitches that hindered a smooth presentation/training session. The PD closed the training program at 5.00 p.m. with



closing remarks highlighting the importance of social and environmental safeguards in the implementation of the project. “The training was very important and timely. I hope this training has provided you all an insight to project implementation requirements and I wish you all my “Tashi Delek” in the coming future.”

**Photographs: Training on Environmental and Social Safeguards at NHDCL Conference Hall**



i. ESS making his presentation.



ii. SS making his presentation.

**Group photographs**



iii. Conference Hall, NHDCL Thimphu.



iv. Conference Hall, NHDCL Thimphu (outside).



v. CEO observing participant's query.



vi. PD with Environmental Officer, Dorji Wangmo



vii. Female participants.



viii. Participants



ix. PD making his final closing remarks.

**Table 21: Training / Capacity Building Activities Conducted**

Package No.	Date	Training activity	Venue & duration	Trainer	Target Group	Number of participant (M / F)
	28 February 2023	Environmental safeguards - Acts, policy, rules and regulations, ADB's SPS 2009; - EMPs - Monitoring and reporting parameters etc.	Conference Hall, NHDCL, Thimphu.	ESS, PIAC	PMU/PIU	28 participants (17 males, 11 females)

45. As no contract package is awarded during the reporting period no subproject site specific training has been conducted. Trainings and capacity building programs shall be conducted/carried out once contract packages are awarded.

**Table 22: Training / Capacity Building Purpose, Target group & Participants**

Package No.	Date	Venue	Target group	Number of participants (M/F)	Details (purpose, and main feedback/outcome)
xxx	xxx	xxx	xxx	xxx	• Xxx

46. Package wise training details shall be submitted in a tabular form (in Table 22) once contract packages are awarded.

## IX. PUBLIC CONSULTATION

47. Public consultation activities were not continued during the reporting period. But some consultations were carried out by NHDCL during design phase and by the environmental consultant during IEE preparation.

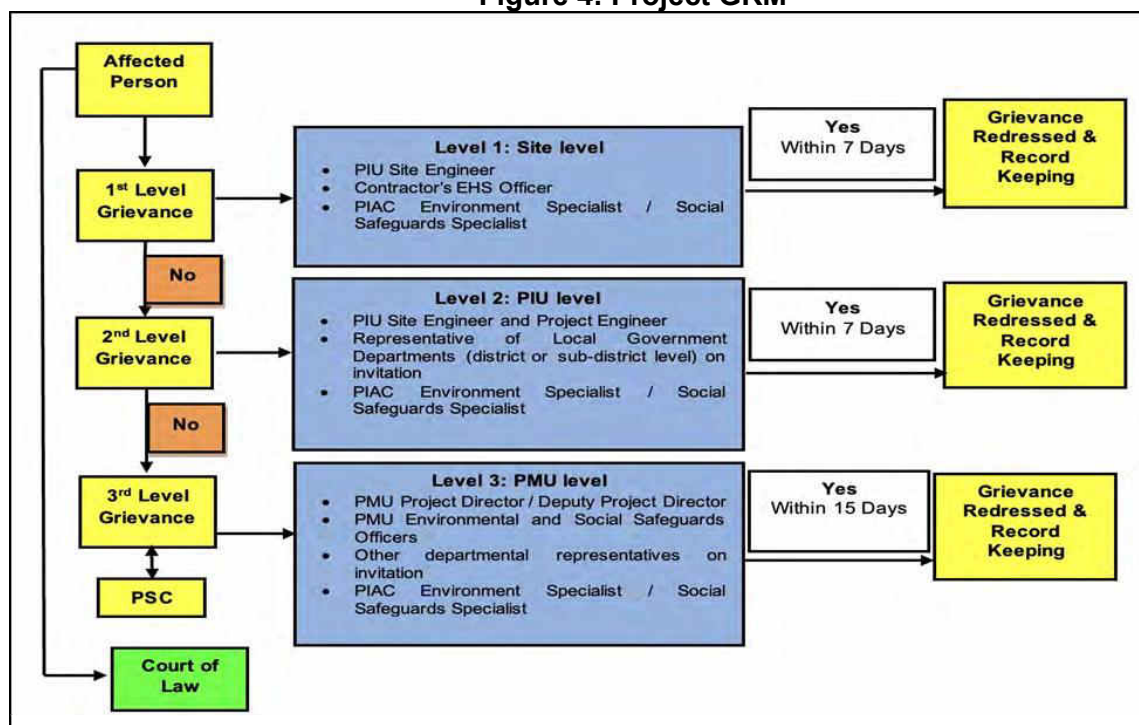
- i) Early 2021: Consultations were carried out by NHDCL with the District Administration, during project design, to ascertain the need for the project, to assess land availability and seek land user certificate prior to the design phase.
- ii) April 2021: Meetings and consultations were carried out with the Dzongda, Forest Ranger and Park Manager on 5, 6 and 7th April, 2021. Public consultation was organized on the 6th, during which 11 local employees or their spouses, current tenants or potential future tenants were present. The NHDCL officer informed the meeting about the primary objectives of the Bhutan Affordable Housing Project and the subproject in Trashiyangtse. The participants were informed on the location, design, price range and allocation of housing. The meeting also aimed at understanding the experience of the current tenants living at the NHDC housing and incorporate their suggestions for future housing design, and also to see the views of the members of the community especially the potential future tenants.

## X. GRIEVANCE REDRESS

### A. Grievance Redress Mechanism

48. Project-specific grievance redress mechanism (GRM) is established to provide a time bound and transparent mechanism to voice and resolve social and environmental concerns linked with the project. GRM is notified by EA/IA/PMU by an Officer Order / Notification and attached as **Appendix-2**. Accordingly, responsibilities are to be allocated to project agencies, consultants and contractors, and grievance redress committee(s) established at subproject/town level or project level.

**Figure 4: Project GRM**



49. Once GRM gets operationalised, the following table shall be used to record the GRM operationalization for the project.

**Table 23: GRM Operationalization**

Package No.	Subproject level GRM Notified	GRM responsibilities assigned	GRM Operational to receive, register & redress complaints	Date of GRC Formation	Public informed of GRM
XXX	XXX	XXX	XXX	XXX	

### B. Complaints Received during Reporting Period

50. No complain has been received till date. However, in future the following Table 24 and Table 25 shall be used to keep track and record of all complaints received and resolved in the project.

**Table 24: Details of Complaints Resolved**

Package No	No. of complaints received			Type of Common and Major Grievances	Time taken for resolution (days)
	In Reporting period	Previously Pending	Cumulative		
No package awarded.	-	-	-	-	-

**Table 25: Details of Complaints Pending / Unresolved Complaints**

Package No.	Date of complaint	Description of grievance	Resolution pending with	Reasons for non-resolution	Proposed Actions
No package is awarded.	-	-	-	-	-

**C. GRC Meetings**

51. No GRC meetings conducted yet. If required or conducted details shall be recorded and presented in a tabular form.

**Table 26: GRC Meetings**

S. No	Package No.	No, of meeting in Reporting Period	Cumulative meetings till date
-	No package awarded.	-	-

## XI. FINDINGS, KEY ISSUES & REMEDIAL MEASURES

### A. Findings

52. This Semi-annual Environmental Monitoring Report (SEMR) for the period of September 2022 to February 2023 is prepared as per the ADB SPS requirements. This SEMR describes progress with the implementation of the subproject-wise EMPs, and compliance status. This is the second SEMR prepared for this Green and Resilient Affordable Housing Sector Project. The Project will include about 9 subprojects/contract packages. At the end of this report period (February 2023), no package is awarded. One package (sub-project Trashiyangtse) is in bidding process and other packages are in preparation stage. Since no package has been awarded there are no field findings to be reported. However, findings in future SEMRs shall be presented in a table format along with key issues and remedial measures.

**Table 27: Findings and Key Issues**

Monitoring aspect	Findings & Key issues	Remedial measures
Availability safeguards personnel (PMU, PIU, Consultants and contractors)	PMU currently has a safeguards focal person who handles both social and environment safeguards. One Environmental Officer has been appointed since February 2023.	
Compliance with statutory requirements (clearance / permissions etc.,)	Environmental clearances have been obtained for 6 subprojects (Trashiyangtse, Dradulthang and Toed in Samdrup Jongkhar, Nganglam, Amochu LAP and Drungpa Resident in Phuentsholing). EC for Sonamgang, Tading and identified new sites (9+1) in Thimphu yet to be applied as IEEs have not been prepared due to delay in designs finalisation.	IEEs need to be prepared and ECs applied once the designs and finalised.
Compliance with ADB loan covenants	Complied	
Compliance with preparation, approval, disclosure of draft IEEs	Complied. Draft IEEs have been prepared and disclosed.	
Compliance with preparation, approval, disclosure of updated/final IEEs	Complied. Updated IEEs have been prepared and disclosed.	
Contractor compliance with preconstruction requirements	No package has been awarded to date.	
EMP implementation, monitoring, reporting	No package has been awarded to date.	
Implementation of COVID19 health and safety measures	No package has been awarded to date.	
Training and capacity building activities	One one-day training conducted by PIAC for PMU/PIU on 28 February 2023. No training of contractors conducted as no contract works awarded yet.	Site training subproject wise shall be conducted upon award of contracts.
Public consultation	Two public consultations were carried out in the early 2021 during design phase and IEE preparation.	



Monitoring aspect	Findings & Key issues	Remedial measures
GRM establishment, operationalization and complaint resolution	GRM has been established and GRC is formed at the PMU level. GRM and GRC at the PIU and Site levels will be established upon designation of PIU staff and contract award.	

## B. Corrective Action Plan

53. Action plan shall be developed to address the issues of concerns raised in SEMR in future. For this reporting period, no corrective action plan is required.

## Appendix 1: Copies of Regulatory Clearances / Approvals

### 1. Environmental Clearance for Trashiyangtse Throm

	<p style="font-size: 1.2em;">ཀླུ་ཡོངས་མཐུན་འཛིན་གནས་སྤངས་ལྷན་ཚོགས།</p> <p style="font-size: 1.2em;">འབྲུག་ལྗུས་སྤྱོད་ལྷན་ཚོགས།</p> <p style="font-weight: bold;">National Environment Commission</p> <p>Royal Government of Bhutan</p>	
NECS/EACD/Dzo-T/Yangtse/4061/2022/308	March 2, 2022	
<b><u>ENVIRONMENTAL CLEARANCE</u></b>		
<p>In accordance with Section 34.1 of the Environmental Assessment Act 2000, this Environmental Clearance (EC) is hereby issued to <b>National Housing Development Corporation Limited (NHDCL)</b> for construction of <b>Affordable Housing Development Sector Project</b> measuring an area of <b>2.48 acres</b> along with the construction of <b>33/0.415 kV, 250kVA pad mounted substation and installation of 0.2km of high-tension line</b> at Trashiyangtse Throm under Trashiyangtse Dzongkhag with the following terms and conditions:</p>		
<b>I. General</b>		
The holder shall:		
<ol style="list-style-type: none"> <li>1. Comply with provisions of the National Environment Protection Act 2007, Environmental Assessment (EA) Act 2000 and Regulation for Environmental Clearance of Projects (RECOP) 2016, Waste Prevention &amp; Management Act of Bhutan 2009 and its Regulation 2012 (Amendment 2016), The Water Act of Bhutan 2011 and its Regulation 2014 and Revised Regulation on the Substances that Deplete the Ozone layer and Hydrofluorocarbons (HFCs) 2021;</li> <li>2. Ensure that the proposed activities are undertaken in line with the Initial Environmental Examination (IEE) report and project documents submitted for EC;</li> <li>3. Ensure that the local communities, properties and any religious, cultural, historic and ecologically important sites are not adversely affected by the proposed activities;</li> <li>4. Restore the damage of any public or private properties caused by the proposed activities;</li> <li>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;</li> <li>6. Ensure that safety sign boards are posted at strategic locations including sign boards indicating areas where specific gadgets are required;</li> <li>7. Erect a signboard at the take-off (entry) point of the proposed activity displaying the name of the project, contact address and details of the implementing agency; and</li> <li>8. Ensure that the copy of the EC is framed and displayed at the site office, and a copy of environmental management plan (EMP) and project documents are available at the site at all times.</li> </ol>		
<b>II. Environmental Standards</b>		
The holder shall comply with the Environmental Standards 2020.		
<b>III. Import and use of Ozone Depleting Substances (ODS)</b>		
The holder shall import and use ODS and the HFCs as per the Revised Regulation on the Substances that Deplete the Ozone layer and HFCs 2021.		
<b>IV. Protection and management of water resources</b>		
The holder shall:		
<ol style="list-style-type: none"> <li>1. Ensure that the proposed activities do not disrupt the water flow and pollute the water bodies; and</li> <li>2. Ensure that 30 meters or 100 feet buffer is maintained from the water resources at all times.</li> </ol>		
<p>NEC, PO Box 466, Thimphu, Bhutan            Tel: (975-2) 323384/325856/324323/326993; Fax: (975-2) 323385  <a href="http://www.nec.gov.bt">www.nec.gov.bt</a></p>		



**V. Waste prevention and management**

The holder shall:

1. Manage wastes generated from the proposed activities (project site, worker camps, site office, etc.) with the application of 4R (Reduce, Reuse, Recycle, Responsibility) principle and other environmentally friendly methods of waste management;
2. Ensure that the construction and demolition wastes from the proposed activity are disposed of as per the EMP submitted for EC;
3. Ensure that septic tanks and soak pits are constructed during project construction phase and post project completion phase for the management of sewage, grey water and kitchen waste water as per the EMP submitted for EC; and
4. Ensure that import and use of hazardous wastes are strictly prohibited.

**VI. Management of raw materials**

The holder shall:

1. Ensure that appropriate measures are put in place for handling and storage of construction materials to avoid fugitive emissions; and
2. Ensure that the construction materials are either stored in a closed shed or covered to avoid fugitive dust emissions in line with the EMP submitted for EC.

**VII. Management of excavated materials and stormwater**

The holder shall:

1. Ensure that the excavated materials from the proposed activities is managed as per the EMP submitted for EC;
2. Put appropriate measures to avoid erosion and landslides; and
3. Ensure that stormwater drains are constructed in line with the EMP submitted for EC.

**VIII. Others**

The holder shall:

1. Ensure that adequate green space is maintained around the project site;
2. Ensure that the project site is cordoned off and barricaded as per the EMP submitted for EC; and
3. Ensure that adequate measures are taken to reduce noise generated from the proposed activity.

**IX. 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;
2. Maintain monthly records on wastes generated including information on its management – stating types, quantities, characteristic and submit to NECS annually; and
3. Maintain monthly records of water used for domestic and sanitation purpose, construction purpose and dust suppression, and submit to NECS annually.

**X. 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 (3) months from the date of issue of this EC as per the reporting format attached herewith.

**XI. Renewal and modification**

The holder shall:

1. Ensure that renewal of this EC is processed at least three (3) months prior to its expiry along with a copy of EC and a report on the implementation of its terms and conditions as per the

format attached, failing which the applicant shall be liable for penalty as per the RECOP 2016; and

2. Obtain prior approval from NECS for any modification to the existing proposal/application including, but not limited to, change in the location of a project, change in ownership, etc.

#### Reservation

1. The NECS may stop the activity or impose additional terms and conditions, as may be deemed necessary;
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; and
3. The NECS shall not be responsible in the event of inadequate supply of raw materials.

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 offense and the proponent shall be liable in accordance with the EA Act 2000 and/or existing environmental laws.**

#### Validity:

This EC is issued with validity from **March 2, 2022** until **March 1, 2027** only for the construction of **Affordable Housing Development Sector Project** along with the construction of **33/0.415 kV, 250kVA pad mounted substation and installation of 0.2km of high-tension line.**

*This EC is issued solely pursuant to the EA Act 2000 and its Regulation, and in no way intends to overrule or alter the provisions of any law or rules in force. The Holder of this EC shall be responsible to adhere to the requirements under other laws and the issuing authority assumes no liability resulting from non-compliance or omission of any laws or rules.*




(Phento Tshering)  
**DIRECTOR**

To  
Chief Executive Officer  
National Housing Development Corporation Limited  
Post box # 1439  
**Thimphu**


#### Copy to:

1. Dasho Dzungdag, Chairman, Dzongkhag Environment Committee, Dzongkhag Administration, Tashi Yangtse for kind information and to instruct the Environment Officer to conduct necessary compliance monitoring.
2. Guard file (NECS/EACD/Dzo-T/Yangtse/4061/2022/) for record.

2. Environmental Clearance for Samdrup Jongkhar Toed



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



**August 29, 2022**

NECS/EACD/SJongkhar-Thromde/4125/2022/1564

### ENVIRONMENTAL CLEARANCE


In accordance with Section 34.1 of the Environmental Assessment Act 2000, this Environmental Clearance (EC) is hereby issued to **National Housing Development Corporation Limited (NHDCL)** for construction of **Affordable Housing Development Sector Project** measuring an area of 2 acres along with the construction of **11/0.415 kV substation and 11 kV powerline measuring 200 meters** at Samdrup Jongkhar Toed under Samdrup Jongkhar Thromde with the following terms and conditions:

**I. General**  
 The holder shall:

1. comply with provisions of the National Environment Protection Act 2007, Environmental Assessment (EA) Act 2000 and Regulation for Environmental Clearance of Projects (RECOP) 2016, Waste Prevention & Management Act of Bhutan 2009 and its Regulation 2012 (Amendment 2016), The Water Act of Bhutan 2011 and its Regulation 2014 and Revised Regulation on the Substances that Deplete the Ozone Layer and HFCs 2021;
2. ensure that the activity is in line with Initial Environmental Examination (IEE) report submitted for EC;
3. ensure that local communities, properties and any religious, cultural, historic and ecologically important sites are not adversely affected by the activity;
4. restore the damage of any public or private properties caused by the activity;
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;
6. erect a signboard at the take-off point of the proposed activity stating the name of the project, contact address, and details of the implementing agency;
7. ensure that safety sign boards are posted at strategic locations including sign boards indicating areas where specific gadgets are required;
8. ensure that general housekeeping, cleanliness and hygiene are maintained at all times in the labour camps and site offices; and
9. ensure that the copy of the environmental clearance is framed and displayed at the site office and a copy of project documents are available at the site at all times.

**II. Environmental standards**  
 The holder shall comply with the Environmental Standards 2020.

NEC, PO Box 466, Thimphu, Bhutan  
 Tel: (975-2) 323384/325856/324323/326993  
 www.nec.gov.bt



Fax: (975-2) 323385

**III. Import and use of ODS**

The holder shall import and use Ozone Depleting Substances and the Hydrofluorocarbons (HFCs) as per the Revised Regulation on the Substances that Deplete the Ozone Layer and HFCs 2021.

**IV. Protection and management of water resources**

The holder shall:

1. ensure that the activity 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 activity (project site, labour camps, offices, etc.) with the application of 4R (Reduce, Reuse, Recycle, Responsibility) principle and other environmentally friendly methods of waste management;
2. ensure that construction wastes from the proposed activity are managed and disposed of as stated in the EMP for EC;
3. ensure that septic tanks and soak pits are constructed during project construction phase and post project completion phase for management of greywater and sewage as stated in the EMP for EC; and
4. ensure that import and use of hazardous wastes are strictly prohibited.

**VI. Management of excavated materials and run-off**

The holder shall:

1. manage and dispose excess excavated materials generated from proposed activity as stated in the EMP for EC;
2. ensure that all vehicles transporting excavated materials are properly covered to avoid spillages and fugitive emissions;
3. ensure that storm water drains and silt traps are constructed as stated in the EMP for EC;
4. ensure that the storm water drains are constructed in accordance with Environmental Codes of Practice (ECOP) for storm water drainage systems 2004; and
5. put appropriate measures to avoid erosion and landslides.

**VII. Management of raw materials**

The holder shall:

1. ensure appropriate measures are put in place for handling and storage of construction materials to avoid fugitive emissions; and

- ensure that all vehicles transporting construction materials are properly covered to avoid spillages and fugitive emissions.

### III. Others

The holder shall:

- a. ensure that adequate green space/area is maintained within the project area;
- b. ensure the project site is barricaded/cordoned off as stated in the EMP for EC;
- c. ensure adequate measures are undertaken to reduce noise generated from the proposed activity;
- d. ensure that the power lines are installed in accordance with Environmental Codes of Practice (ECOP) for installation of underground and overhead utilities 2004; and
- e. ensure that the dust generated during construction is adequately suppressed by spraying water.

### IX. 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;
2. maintain proper records on wastes generated and its management – stating types (hazardous and general wastes), quantities and characteristic and submit to NECS annually; and
3. maintain records of water used in the activity (separately for dust suppression and domestic purposes) and submit it to NECS annually.

### X. 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 as per the reporting format attached herewith.

### XI. Renewal and modification

The holder shall:

1. ensure that renewal of this EC is processed at least three (3) months prior to its expiry along with a copy of EC and a report on the implementation of its terms and conditions as per the format attached and payment of prescribed renewal application fee failing to which the applicant shall be liable for penalty as per the RECOP 2016; and,
2. obtain prior approval from NECS for any modification to the existing proposal/application including, but not limited to, increase in production capacity, change in location of a project, change in ownership, etc.

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.

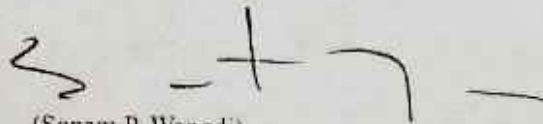
The holder may adopt best practices in executing these terms and conditions to avoid adverse environmental impacts.

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

**Validity:**

This EC is issued with validity from **August 29, 2022** until **August 28, 2027** only for construction of **Affordable Housing Development Sector Project** along with the construction of **11/0.415 kV substation and installation of 11 kV powerline measuring 200 meters.**

*This EC is issued solely pursuant to the EA Act, 2000 and its Regulations and in no way intends to overrule or alter the provisions of any law or rules in force. The Holder of this EC shall be responsible to adhere to the requirements under other laws and the issuing authority assumes no liability resulting from non-compliance or omission of any laws or rules.*

  
(Sonam P. Wangdi)  
**SECRETARY**

To  
Chief Executive Officer  
National Housing Development Corporation Limited  
Post box # 1439  
Thimphu.

**Copy to:**

1. Executive Secretary, Thromde Administration, Samdrup Jongkhar for kind information and to instruct the Environment Officer to conduct necessary compliance monitoring.
2. Guard file (Dzo/SJongkhar-Thromde/4125/2022/), EACD, NECS for record.

3. Environmental Clearance for Dradulthang, Samdrup Jongkhar



ཀྲུལ་ཡོངས་མཐུན་འཁོར་གནས་སྤངས་ལྷན་ཚོགས།  
དཔལ་ལྷན་འབྲུག་གཞུང་།  
**National Environment Commission**  
Royal Government of Bhutan



NECS/EACD/Dzo-S/Jongkhar/4126/2022/1575

August 29, 2022

**ENVIRONMENTAL CLEARANCE**

In accordance with Section 34.1 of the Environmental Assessment Act 2000, this Environmental Clearance (EC) is hereby issued to the **National Housing Development Corporation Limited (NHDCL)** for the **construction of Affordable Housing Development Sector Project at Dradulthang, measuring an area of 0.8 acres**, along with the **construction of 33/0.415 kV pad mounted substation and installation of 0.074 km of low tension power line** under Samdrup Jongkhar Thromde with the following terms and conditions:

**I. General**

The holder shall:

1. Comply with provisions of the National Environment Protection Act 2007, Environmental Assessment (EA) Act 2000 and Regulation for Environmental Clearance of Projects (RECOP) 2016, Waste Prevention & Management Act of Bhutan 2009 and its Regulation 2012 (Amendment 2016), The Water Act of Bhutan 2011 and its Regulation 2014 and Revised Regulation on the Substances that Deplete the Ozone layer and Hydrofluorocarbons (HFCs) 2021;
2. Ensure that the activity are undertaken in line with the Initial Environmental Examination (IEE) report and project document submitted for EC;
3. Ensure that the local communities, properties and any religious, cultural, historic and ecologically important sites are not adversely affected by the activities;
4. Restore the damage of any public or private properties caused by the activity;
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;
6. Erect a signboard at the take-off point of the proposed activity stating the name of the project, contact address, and details of the implementing agency;
7. Ensure that safety sign boards are posted at strategic locations including sign boards indicating areas where specific gadgets are required;
8. Ensure that general housekeeping, cleanliness and hygiene are maintained at all times in the labour camps and site offices; and
9. Ensure that the copy of the EC is framed and displayed at the site office, and a copy of environmental management plan (EMP) and project documents are available at the site at all times.

**II. Environmental Standards**

The holder shall comply with the Environmental Standards 2020.

NEC, PO Box 466, Thimphu, Bhutan  
Tel: (975-2) 323384/325856/324323/326993 Fax: (975-2) 323385  
www.nec.gov.bt

**III. Import and use of Ozone Depleting Substances (ODS)**

The holder shall import and use Ozone Depleting Substances and the Hydrofluorocarbons (HFCs) as per the Revised Regulation on the Substances that Deplete the Ozone Layer and HFCs 2021.

**IV. Protection and management of water resources**

The holder shall:

1. Ensure that the proposed activity do not disrupt the water flow and pollute the water bodies; and
2. Ensure that a 30 meters 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 activity (project site, labour camps, offices, etc.) with the application of 4R (Reduce, Reuse, Recycle, Responsibility) principle and other environmentally friendly methods of waste management;
2. Ensure that the construction wastes from the proposed activity are managed and disposed of as stated in the EMP;
3. Ensure that septic tanks and soak pits are constructed for proper management of graywater and sewage as stated in the EMP; and
4. Ensure that import and use of hazardous wastes are strictly prohibited.

**VI. Management of raw materials**

The holder shall:

1. Ensure appropriate measures are put in place for handling and storage of construction materials to avoid fugitive emissions; and
2. Ensure that all vehicles transporting construction materials are properly covered to avoid spillages and fugitive emissions.

**VII. Management of excavated materials and run-off**

The holder shall:

1. Manage and dispose of excess excavated materials generated from proposed activity as stated in the EMP;
2. Ensure that all vehicles transporting excavated materials are properly covered to avoid spillages and fugitive emissions;
3. Ensure that the dust generated during construction is adequately suppressed by spraying water;
4. Ensure that the storm water drains are constructed in accordance with Environmental Codes of Practice (ECOP) for storm water drainage systems 2004; and
5. Put appropriate measures to avoid erosion and landslides.

**VIII. Others**

The holder shall:



1. Ensure that adequate green space is maintained around the project site;
2. Ensure that the project site is barricaded/cordoned off as per the EMP submitted for EC;
3. Ensure that adequate measures are taken to reduce noise generated from the proposed activity; and
4. Ensure that underground and overhead utilities are installed in accordance with the Environmental Codes of Practice (ECOP) for installation of underground and overhead utilities 2004.

**IX. 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;
2. Maintain monthly records on wastes generated including information on its management – stating types, quantities, characteristic and submit to NECS annually; and
3. Maintain monthly records of water used for domestic and sanitation purpose, construction purpose and dust suppression, and submit to NECS annually.

**X. 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 (3) months from the date of issue of this EC as per the reporting format attached herewith.

**XI. Renewal and modification**

The holder shall:

1. Ensure that renewal of this EC is processed at least three (3) months prior to its expiry along with a copy of EC and a report on the implementation of its terms and conditions as per the format attached and payment of prescribed renewal application fee failing to which the applicant shall be liable for penalty as per the RECOP 2016; and
2. Obtain prior approval from NECS for any modification to the existing proposal/application including, but not limited to, change in the location of a project, change in ownership, etc.

**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 with the EA Act 2000 and/or existing environmental laws.**

**Validity:**

This EC is issued with validity from **August 29, 2022** until **August 28, 2027** only for the construction of the **Affordable Housing Development Sector Project** along with the construction of **33/0.415 kV pad mounted substation** and installation of **0.074 km of low tension power line.**

*This EC is issued solely pursuant to the EA Act 2000 and its Regulation, and in no way intends to overrule or alter the provisions of any law or rules in force. The Holder of this EC shall be responsible to adhere to the requirements under other laws and the issuing authority assumes no liability resulting from non-compliance or omission of any laws or rules.*

  
(Sonam P. Wangdi)  
**SECRETARY**



To  
Chief Executive Officer  
National Housing Development Corporation Limited  
Post box # 1439  
**Thimphu.**

**Copy to:**

1. Executive Secretary, Thromde Administration, Samdrup Jongkhar for kind information and to instruct the Environment Officer to conduct necessary compliance monitoring.
2. Guard file (NECS/EACD/Dzo-S/Jongkhar/4126/2022/) for record.

4. Environmental Clearance for Phuentsholing Thromde



ཚུལ་ཡོངས་མཐའ་ལོོམ་གནས་སྤངས་ལྷན་ཚོགས།  
དཔལ་ལྷན་འབྲུག་གཞུང་།  
**National Environment Commission**  
Royal Government of Bhutan



NECS/EACD/Pling-Thromde/4060/2022/305

March 02, 2022

**ENVIRONMENTAL CLEARANCE**

In accordance with Section 34.1 of the Environmental Assessment Act 2000, this Environmental Clearance (EC) is hereby issued to **National Housing Development Corporation Limited (NHDCL)** for construction of **Affordable Housing Development Sector Project** at Phuentsholing, measuring an area of **0.64 acres** along with construction of **33/0.415 kV pad mounted substation** and installation of **0.09km of low-tension underground cables** under Phuentsholing Thromde with the following terms and conditions:

**I. General**

The holder shall:

1. Comply with provisions of the National Environment Protection Act 2007, Environmental Assessment (EA) Act 2000 and Regulation for Environmental Clearance of Projects (RECOP) 2016, Waste Prevention & Management Act of Bhutan 2009 and its Regulation 2012 (Amendment 2016), The Water Act of Bhutan 2011 and its Regulation 2014 and Revised Regulation on the Substances that Deplete the Ozone layer and Hydrofluorocarbons (HFCs) 2021;
2. Ensure that the proposed activity is undertaken in line with the Initial Environmental Examination (IEE) report and project document submitted for EC;
3. Ensure that the local communities, properties and any religious, cultural, historic and ecologically important sites are not adversely affected by the proposed activities;
4. Restore the damage of any public or private properties caused by the proposed activity;
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;
6. Ensure that safety sign boards are posted at strategic locations including sign boards indicating areas where specific gadgets are required;
7. Erect a signboard at the take-off (entry) point of the proposed activity displaying the name of the project, contact address and details of the implementing agency; and
8. Ensure that the copy of the EC is framed and displayed at the site office, and a copy of environmental management plan (EMP) and project documents are available at the site at all times.

**II. Environmental Standards**

The holder shall comply with the Environmental Standards 2020.

**III. Import and use of Ozone Depleting Substances (ODS)**

The holder shall import and use ODS and the HFCs as per the Revised Regulation on the Substances that Deplete the Ozone layer and HFCs 2021.

**IV. Protection and management of water resources**

The holder shall:

1. Ensure that the proposed activity do not disrupt the water flow and pollute the water bodies;  
and
2. Ensure that 30 meters or 100 feet buffer is maintained from the water resources at all times.

NEC, PO Box 466, Thimphu, Bhutan  
Tel: (975-2) 323364/325856/324323/326993 Fax: (975-2) 323365  
www.nec.gov.bt

#### V. Waste prevention and management

The holder shall:

1. Manage wastes generated from the proposed activity (project site, worker camps, site office, etc.) with the application of 4R (Reduce, Reuse, Recycle, Responsibility) principle and other environmentally friendly methods of waste management;
2. Ensure that the construction and demolition wastes from the proposed activity are disposed of as per the EMP submitted for EC;
3. Ensure that sewage system is constructed and managed as per the EMP submitted for EC; and
4. Ensure that import and use of hazardous wastes are strictly prohibited.

#### VI. Management of raw materials

The holder shall:

1. Ensure that appropriate measures are put in place for handling and storage of construction materials to avoid fugitive emissions; and
2. Ensure that the construction materials are either stored in a closed shed or covered to avoid fugitive dust emissions in line with the EMP submitted for EC.

#### VII. Management of excavated materials and stormwater

The holder shall:

1. Ensure that the excavated materials from the proposed activity is managed as per the EMP submitted for EC;
2. Put appropriate measures to avoid erosion and landslides; and
3. Ensure that stormwater drains are constructed in line with the EMP submitted for EC.

#### VIII. Others

The holder shall:

1. Ensure that adequate green space is maintained around the project site;
2. Ensure that the project site is cordoned off and barricaded as per the EMP submitted for EC; and
3. Ensure that adequate measures are taken to reduce noise generated from the proposed activity.

#### IX. Monitoring and reporting

The holder shall:

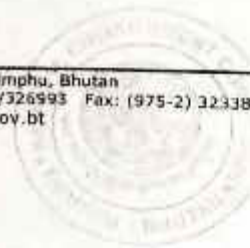
1. Ensure that the effective day-to-day monitoring of the EC terms and conditions are carried out by the environmental unit or designated environment focal person;
2. Maintain monthly records on wastes generated including information on its management – stating types, quantities, characteristic and submit to NECS annually; and
3. Maintain monthly records of water used for domestic and sanitation purpose, construction purpose and dust suppression, and submit to NECS annually.

#### X. 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 (3) months from the date of issue of this EC as per the reporting format attached herewith.

#### XI. Renewal and modification

The holder shall:



*[Handwritten signature]*

1. Ensure that renewal of this EC is processed at least three (3) months prior to its expiry along with a copy of EC and a report on the implementation of its terms and conditions as per the format attached, failing which the applicant shall be liable for penalty as per the RECOP 2016; and
2. Obtain prior approval from NECS for any modification to the existing proposal/application including, but not limited to, change in the location of a project, change in ownership, etc.

**Reservation**

1. The NECS may stop the activity or impose additional terms and conditions, as may be deemed necessary;
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; and
3. The NECS shall not be responsible in the event of inadequate supply of raw materials.

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 with the EA Act 2000 and/or existing environmental laws.**

**Validity:**

This EC is issued with validity from **March 02, 2022** until **March 01, 2027** only for the construction of **Affordable Housing Development Sector Project** along with the construction of **33/0.415 kV pad mounted substation** and installation of **0.09km of low-tension underground cable.**

*This EC is issued solely pursuant to the EA Act 2000 and its Regulation, and in no way intends to overrule or alter the provisions of any law or rules in force. The Holder of this EC shall be responsible to adhere to the requirements under other laws and the issuing authority assumes no liability resulting from non-compliance or omission of any laws or rules.*



(Phento Tshering)  
**DIRECTOR**

To  
Chief Executive Officer  
National Housing Development Corporation Limited  
Post box # 1439  
Thimphu

**Copy to:**

1. Executive Secretary, Thromde Administration, Phuentsholing for kind information and to instruct the Environment Officer to conduct necessary compliance monitoring.
2. Guard file (NECS/EACD/Pling-Thromde/4060/2022/) for record.

NEC, PO Box 466, Thimphu, Bhutan  
Tel: (975-2) 323384/325856/324323/325993 Fax: (975-2) 323383  
www.nec.gov.bt

5. Environmental Clearance for Amochhu (Bangay), Phuentsholing



ཀྲུལ་ཡོངས་མཐུན་འཁོར་གནས་སྤངས་ལྷན་ཚོགས།  
 དཔལ་ལྷན་འབྲུག་གཞུང་།  
**National Environment Commission**  
 Royal Government of Bhutan



NECS/EACD/Pling-Thromde/4059/2022/307

March 2, 2022

**ENVIRONMENTAL CLEARANCE**

In accordance with Section 34.1 of the Environmental Assessment Act 2000, this Environmental Clearance (EC) is hereby issued to **National Housing Development Corporation Limited (NHDCL)** for the construction of **Affordable Housing Development Sector Project** located at **Bangay**, measuring an area of **2.27 acres**, along with the construction of **33/0.415 kV pad mounted substation and installation of 0.25km of low tension underground cable** under **Amochu, Phuentsholing Thromde** with the following terms and conditions:

**I. General**

The holder shall:

1. Comply with provisions of the National Environment Protection Act 2007, Environmental Assessment (EA) Act 2000 and Regulation for Environmental Clearance of Projects (RECOP) 2016, Waste Prevention & Management Act of Bhutan 2009 and its Regulation 2012 (Amendment 2016), The Water Act of Bhutan 2011 and its Regulation 2014 and Revised Regulation on the Substances that Deplete the Ozone layer and Hydrofluorocarbons (HFCs) 2021;
2. Ensure that the proposed activities are undertaken in line with the Initial Environmental Examination (IEE) report and project documents submitted for EC;
3. Ensure that the local communities, properties and any religious, cultural, historic and ecologically important sites are not adversely affected by the proposed activities;
4. Restore the damage of any public or private properties caused by the proposed activities;
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;
6. Ensure that safety sign boards are posted at strategic locations including sign boards indicating areas where specific gadgets are required;
7. Erect a signboard at the take-off (entry) point of the proposed activity displaying the name of the project, contact address and details of the implementing agency; and
8. Ensure that the copy of the EC is framed and displayed at the site office, and a copy of environmental management plan (EMP) and project documents are available at the site at all times.

**II. Environmental Standards**

The holder shall comply with the Environmental Standards 2020.

**III. Import and use of Ozone Depleting Substances (ODS)**

The holder shall import and use ODS and the HFCs as per the Revised Regulation on the Substances that Deplete the Ozone layer and HFCs 2021.

**IV. Protection and management of water resources**

The holder shall:

1. Ensure that the proposed activities do not disrupt the water flow and pollute the water bodies; and
2. Ensure that 30 meters or 100 feet buffer is maintained from the water resources at all times.

NEC, PO Box 466, Thimphu, Bhutan  
 Tel: (975-2) 323384/325856/324323/326993; Fax: (975-2) 323385  
[www.nec.gov.bt](http://www.nec.gov.bt)

**V. Waste prevention and management**

The holder shall:

1. Manage wastes generated from the proposed activities (project site, worker camps, site office, etc.) with the application of 4R (Reduce, Reuse, Recycle, Responsibility) principle and other environmentally friendly methods of waste management;
2. Ensure that the construction and demolition wastes from the proposed activity are disposed of as per the EMP submitted for EC;
3. Ensure that septic tanks and soak pits are constructed during project construction phase and post project completion phase for the management of sewage, grey water and kitchen waste water as per the EMP submitted for EC; and
4. Ensure that import and use of hazardous wastes are strictly prohibited.

**VI. Management of raw materials**

The holder shall:

1. Ensure that appropriate measures are put in place for handling and storage of construction materials to avoid fugitive emissions; and
2. Ensure that the construction materials are either stored in a closed shed or covered to avoid fugitive dust emissions in line with the EMP submitted for EC.

**VII. Management of excavated materials and stormwater**

The holder shall:

1. Ensure that the excavated materials from the proposed activities is managed as per the EMP submitted for EC;
2. Put appropriate measures to avoid erosion and landslides; and
3. Ensure that stormwater drains are constructed in line with the EMP submitted for EC.

**VIII. Others**

The holder shall:

1. Ensure that adequate green space is maintained around the project site;
2. Ensure that the project site is cordoned off and barricaded as per the EMP submitted for EC; and
3. Ensure that adequate measures are taken to reduce noise generated from the proposed activity.

**IX. 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;
2. Maintain monthly records on wastes generated including information on its management – stating types, quantities, characteristic and submit to NECS annually; and
3. Maintain monthly records of water used for domestic and sanitation purpose, construction purpose and dust suppression, and submit to NECS annually.

**X. 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 (3) months from the date of issue of this EC as per the reporting format attached herewith.

**XI. Renewal and modification**

The holder shall:



1. Ensure that renewal of this EC is processed at least three (3) months prior to its expiry along with a copy of EC and a report on the implementation of its terms and conditions as per the format attached, failing which the applicant shall be liable for penalty as per the RECOP 2016; and
2. Obtain prior approval from NECS for any modification to the existing proposal/application including, but not limited to, change in the location of a project, change in ownership, etc.

#### Reservation

1. The NECS may stop the activity or impose additional terms and conditions, as may be deemed necessary;
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; and
3. The NECS shall not be responsible in the event of inadequate supply of raw materials.

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 offense and the proponent shall be liable in accordance with the EA Act 2000 and/or existing environmental laws.**

#### Validity:

This EC is issued with validity from **March 2, 2022** until **March 1, 2027** only for the **construction of Affordable Housing Development Sector Project along with the construction of 33/0.415 kV pad mounted substation and installation of 0.25km of low-tension underground cable.**

*This EC is issued solely pursuant to the EA Act 2000 and its Regulation, and in no way intends to overrule or alter the provisions of any law or rules in force. The Holder of this EC shall be responsible to adhere to the requirements under other laws and the issuing authority assumes no liability resulting from non-compliance or omission of any laws or rules.*



(Phento Tshering)  
DIRECTOR

To  
Chief Executive Officer  
National Housing Development Corporation Limited  
Post box # 1439  
Thimphu.

#### Copy to:

1. Executive Secretary, Thromde Administration, Phuentsholing for kind information and to instruct the Environment Officer to conduct necessary compliance monitoring.
2. Guard file (NECS/EACD/Pling-Thromde/4059/2022/) for record.



6. Environmental Clearance for Nganglam, Pema Gatshel



འབྲུག་རྒྱལ་ཁབ་འཕེལ་གཞི་གཞི་སྤྲོད་སྐབས་ལྷན་ཁྲིམས་ལྷན་ཚོགས།  
འབྲུག་རྒྱལ་ཁབ་འཕེལ་གཞི་གཞི་སྤྲོད་སྐབས་ལྷན་ཁྲིམས་ལྷན་ཚོགས།  
**National Environment Commission**  
Royal Government of Bhutan



NECS/EACD/Dzo-P/GATSHEL/4124/2022/1586

August 29, 2022

**ENVIRONMENTAL CLEARANCE**

In accordance with Section 34.1 of the Environmental Assessment Act 2000, this Environmental Clearance (EC) is hereby issued to **National Housing Development Corporation Limited (NHDCL)** for construction of **Affordable Housing Development Sector Project** at Nganglam under Pemagatshel 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 (EA) Act 2000 and Regulation for Environmental Clearance of Projects (RECOP) 2016, Waste Prevention & Management Act of Bhutan 2009 and its Regulation 2012 (Amendment 2016), The Water Act of Bhutan 2011 and its Regulation 2014 and Revised Regulation on the Substances that Deplete the Ozone Layer and HFCs 2021;
2. ensure that the activity is in line with the Initial Environmental Examination (IEE) report submitted for EC;
3. ensure that local communities, properties and any religious, cultural, historic and ecologically important sites are not adversely affected by the activity;
4. restore the damage of any public or private properties caused by the activity;
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;
6. erect a signboard at the take-off point of the proposed activity stating the name of the project, contact address, and details of the implementing agency;
7. ensure that safety sign boards are posted at strategic locations including sign boards indicating areas where specific gadgets are required;
8. ensure that general housekeeping, cleanliness and hygiene are maintained at all times in the labour camps and site offices; and
9. ensure that the copy of the environmental clearance is framed and displayed at the site office and a copy of project documents is available at the site at all times.

**II. Environmental standards**

The holder shall comply with the Environmental Standards 2020.

**III. Import and use of ODS**

The holder shall import and use Ozone Depleting Substances and the Hydrofluorocarbons (HFCs) as per the Revised Regulation on the Substances that Deplete the Ozone Layer and HFCs 2021.

Handwritten signature/initials

NEC, PO Box 466, Thimphu, Bhutan  
Tel: (975-21) 323384/325956/324323/326999 Fax: (975-2) 323385  
www.nec.gov.bt

**IV. Protection and management of water resources**

The holder shall:

1. ensure that the activity 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 activity (project site, labour camps, offices, etc.) with the application of 4R (Reduce, Reuse, Recycle, Responsibility) principle and other environmentally friendly methods of waste management;
2. ensure that the construction wastes from the proposed activity are managed and disposed of as stated in the EMP;
3. ensure that septic tanks and soak pits are constructed for proper management of graywater and sewage as stated in the EMP; and
4. ensure that import and use of hazardous wastes are strictly prohibited.

**VI. Management of excavated materials and run-off**

The holder shall:

1. manage and dispose of excess excavated materials generated from proposed activity as stated in the EMP;
2. ensure that all vehicles transporting excavated materials are properly covered to avoid spillages and fugitive emissions;
3. ensure that the dust generated during construction is adequately suppressed by spraying water;
4. ensure that the storm water drains are constructed in accordance with Environmental Codes of Practice (ECOP) for storm water drainage systems 2004; and
5. put appropriate measures to avoid erosion and landslides.

**VII. Management of raw materials**

The holder shall:

1. ensure appropriate measures are put in place for handling and storage of construction materials to avoid fugitive emissions; and
2. ensure that all vehicles transporting construction materials are properly covered to avoid spillages and fugitive emissions.

**VIII. Others**

The holder shall:

1. ensure that adequate green space/area is maintained within the project area;
2. ensure the project site is barricaded/cordoned off as stated in the EMP for EC;
3. ensure adequate measures are undertaken to reduce noise generated from the proposed

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- activity; and
- 4. ensure that underground and overhead utilities are installed in accordance with the Environmental Codes of Practice (ECOP) for installation of underground and overhead utilities 2004.

**IX. 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;
- 2. maintain proper records on wastes generated and its management – stating types (hazardous and general wastes), quantities and characteristic and submit to NECS annually; and
- 3. maintain records of water used in the activity (separately for dust suppression and domestic purposes) and submit it to NECS annually.

**X. 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 as per the reporting format attached herewith.

**XI. Renewal and modification**

The holder shall:

- 1. ensure that renewal of this EC is processed at least three (3) months prior to its expiry along with a copy of EC and a report on the implementation of its terms and conditions as per the format attached and payment of prescribed renewal application fee failing to which the applicant shall be liable for penalty as per the RECOP 2016; and
- 2. obtain prior approval from NECS for any modification to the existing proposal/application including, but not limited to, increase in production capacity, change in location of a project, change in ownership, etc.

**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 with the EA Act 2000 and/or existing**

environmental laws.

**Validity:**

This EC is issued with validity from August 29, 2022 until August 28, 2027 only for construction of the Affordable Housing Development Sector Project at Nganglam under Pemagatshel Dzongkhag.

*This EC is issued solely pursuant to the EA Act, 2000 and its Regulations and in no way intends to overrule or alter the provisions of any law or rules in force. The Holder of this EC shall be responsible to adhere to the requirements under other laws and the issuing authority assumes no liability resulting from non-compliance or omission of any laws or rules.*



(Sonam P Wangdi)




SECRETARY

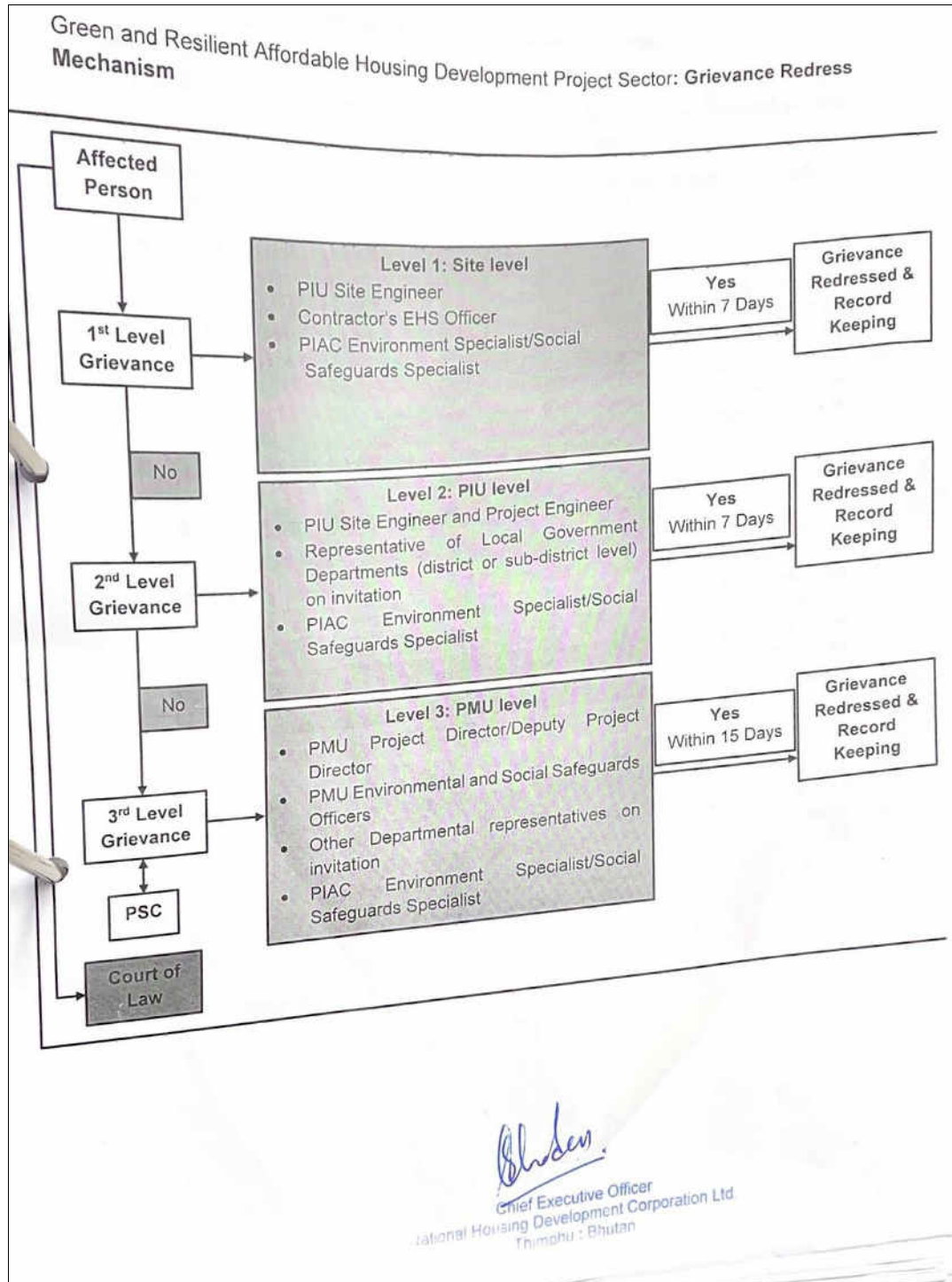
To  
Chief Executive Officer  
National Housing Development Corporation Limited  
Post box # 1439  
Thimphu.

**Copy to:**

1. Dasho Dzongdag, Chairman, Dzongkhag Environment Committee, Dzongkhag Administration, Pemagatshel for kind information and to instruct the Environment Officer to conduct necessary compliance monitoring; and
2. Guard file (Dzo-Pemagatshel/4124/2022), EACD, NECS for record.

**Appendix 2: Office Order (Letter) on Grievance Redress Committee (GRC) formation to address Social, Environmental and other Grievances in GRAHSP, NHDCL.**

	<p>ཕྱི་རྒྱལ་ཡོངས་ཁྱིམ་བཞོན་གོང་འཕེལ་ལས་འཛིན་ཚད། National Housing Development Corporation Limited Thimphu: Bhutan</p> 
NHDCL/ADB Project/2022/676	
May 4, 2022	
<b>OFFICE ORDER</b>	
<p>The Grievance Redress Committee (GRC) is established to address the social, environment and other grievances related to the Green and Resilient Affordable Housing Project during its implementation. The project is executed with fund from Asian Development Bank.</p>	
<p>The GRC is constituted with the members as under:</p>	
<ol style="list-style-type: none"><li>1. Mr. Karchung, Project Director</li><li>2. Mrs. Kuenzang Choden, General Manager, Gender Safeguard Officer/Focal</li><li>3. Mr. Pradeep Katwal, Company Secretary Environment and Social Safeguard Officer/Focal</li><li>4. Legal Officer</li><li>5. Dy. Team leader, PIAC</li><li>6. Other relevant Departmental representative On invitation</li></ol>	<p>Chairman Member Member Member Member Member</p>
<p>Grievances redress process and timeframe involved in Grievance Redress Mechanism (GRM) are attached for implementation.</p>	
 Sonam Choden Officiating Chief Executive Officer	<p>Chief Executive Officer National Housing Development Corporation Ltd. Thimphu : Bhutan</p>
<p>Copy to:</p> <ol style="list-style-type: none"><li>1. Mrs Ngawang Choden, Senior Program/ADB Desk Officer, MoF for information;</li><li>2. Mr. Jude E. Kohlase, Head, Project Administration, ADB for information</li></ol>	
<p>Head office: Post Box No.1439. Tel # (PABX: 00975-2- 323147/332734/332735). Fax: 331703. Website: www.nhdcl.bt</p>	



Grievance Redress Mechanism (GRM)

GRM is established to provide avenue to the people who are affected by the project to submit their grievances and ensure that the project assess, investigates and resolves the grievances through proper mechanism in place.

Four levels grievance redress mechanisms is proposed to be adopted by the project in accordance with the Project Administration Manual.

1. First Level Level)

In case grievances that are immediate and urgent in the perception of the complainant, concerned officer of PIU will direct the contractor to resolve the complaints and ensure that it is resolved. If the grievance is not under the contractor's scope, site Engineer will resolve the issues with support from PIU. Grievance shall be resolved within 07 days from the date receipt of the complaints. Relevant government representatives from the respective districts or sub-districts may be consulted as and when required.

2. Second Level Grievance (PIU )

Grievances that cannot be addressed by first level within 02 days will be brought to the complaint cell at PIU level. The Project Manager (PM)/ Project Engineer (PE) will facilitate the grievance resolution within 07 days of receiving the complaint from the field level. The PIU shall consult the Environment and Social Safeguard Officers in PMI-J. Committee shall comprise of PM/PE, site engineers and relevant site officials. Relevant government representatives from the respective districts or sub-districts may be consulted as and when required.

Any unresolved issue shall be escalated to PMI-J level.

3. Third Level Grievance (PMU)

All grievances that are not addressed at PIU level are brought to third level. The third level will meet once a month and determine the merit of each grievance brought to the committee. Third level redress committee shall resolve the grievance within 15 days of receiving the complaint from PIU. Project Director will resolve in consultation with the Environment and Social Safeguard Officers in PMU. Any critical or unresolved issue shall be submitted to Project Steering Committee (PSC) for resolution.



Chief Executive Officer  
National Housing Development Corporation Ltd  
Thimphu - Bhutan

### Appendix 3: Training on Capacity Building for PMU/PIU, GRAHSP\_ 28 February 2023

#### a) Training Agenda

**Capacity Building Training Programme on Social & Environmental Safeguards for  
PMU/PIUs Staffs of NHDCL**  
(Green and Resilient Affordable Housing Sector Project)  
NHDCL-Project Number: 54355-001

**Date: 28 February 2023**

**Venue: NHDCL Conference Hall**

**Programme Schedule**

Programme	Time
Introductory Speech - CEO/PD NHDCL	9.00 a.m.– 9.10 a.m.
Introduction of participants -	9.10 – 9.30 a.m.
Training Itinerary - Rajesh Pradhan	
Tea Break	9.30 – 9.45 a.m.
Environmental Safeguards – KD Chamling	9.45 – 1.00 p.m.
Lunch Break	1.00 – 2.00 p.m.
Social Safeguards Training – Rajesh Pradhan	2.00 – 3.00 p.m.
Tea Break	3.00 – 3.15 p.m.
Social Safeguards Training (continue)	3.15 – 4.30 p.m.
Training Evaluation & Group Photo	4.30 – 4.50 p.m.
Closing Remarks – PD, NHDCL	4.50 – 5.00 p.m.

Approved and validated by:



**Focal Person Social & Environmental Safeguards, NHDCL**



CEO, NHDCL



## b) List of participants

**Project Number - 54355-001: Bhutan: Green and Resilient Affordable Housing Sector Project (GRAHSP)**  
**(Environment and Social Safeguards Capacity Building Training Program)**  
**For PMU and PIUs, NHDCL Thimphu**

CONDUCTED BY: PROJECT IMPLEMENTATION ASSISTANCE CONSULTANT (PIAC)  
 [DATE]: 28-Feb-2023  
 Venue: NHDCL Conference Hall, Thimphu  
 RESOURCE PERSONS: 1. K.D. CHAMLING, ESS; 2. RAJESH PRADHAN, SGCS

**ATTENDANCE SHEET Page 1/4**

Sl. No	Name	Position	[DATE]		Organization	Mobile No.	Signature
			AM	PM			
1	Chungpa Thamo	carpentry	9:00	5:00	NHDCL	17762671	
2	K.D. Chamling	Env. Spds Specialist (ESS) PIAC	9:00	5:00	PIAC	17111541	
3	Rajesh Pradhan	Social Safeguards Committee	9:00	5:00	PIAC	17603661	
4	Suhas M. Thakurdeani	TL, PIAC	9:00 AM	5:00 PM	PIAC	1777531	
5	AMIT GAWANDE	Project Gardner PIAC	9:00 AM	5:00 PM	PIAC	17928236	
6	O.P. Chowdhury	Finance Officer	9:00 AM	5:00 PM	PIAC	17742622	

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7	Tashi Wangmo	Electrician	9:00 AM	5:00 PM	ADB	77450963	
8	Ugyen Zangmo	Mason	9:00 AM	5:00 PM	ADB	77280445	
9	Tashi Zangmo	Carpentry	9:00 AM	5:00 PM	ADB	17960667	
10	Tshering Yangzom	Carpentry	9:00 AM	5:00 PM	ADB	17611990	
11	Kezang Chamo	Carpentry	9:00 AM	5:00 PM	ADB	17840568	
12	Tenzin Nangyal	Welder	9:00 AM	5:00 PM	ADB	17726078	
13	Dawa Gyandug Lepcha	Welder	9:00 AM	5:00 PM	ADB	7741543	
14	Karma Thuley	Mason	9:00 AM	5:00 PM	ADB	17992728	
15	Pema Wangmo	Plumber	9:00 AM	5:00 PM	ADB	77228920	
16	Yeshey Choden Lepcha	Mason	9:00 AM	5:00 PM	ADB	17567179	

**Project Number - 54355-001: Bhutan: Green and Resilient Affordable Housing Sector Project  
(Environment and Social Safeguards Capacity Building Training Program)  
For PMU and PIUs, NHDCL Thimphu**

[DATE]: 28/2/2023

Venue: NHDCL Conference Hall, Thimphu

## ATTENDANCE SHEET

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Sl. No	Name	Position	[DATE]		Organization	Mobile No.	Signature
			AM	PM			
<del>2</del>							
<del>2</del> 17	Karchung	PD	9:00AM	5:00PM	NHDCL		
<del>3</del>							
<del>4</del> 18	Thinlay Wangdi	CE/CFTG-GM	9:00AM	2:30	NHDCL	17905918	
<del>5</del> 19	Tashi Tobgay	Project Engineer	9:00AM	5:00PM	ADB	12444451	
<del>6</del> 20	Tshewang phuntsho	Junior Engineer	9:00am	5:00pm	CMS	17465090	

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<del>7</del> 21	Tshewang Nidup	Ast. Engineer	9:00		NHDCL	17264457	
<del>8</del> 22	Sherab Nima	Jr. Engineer	9:00		NHDCL	17451540	
<del>9</del> 23	Dziji Wangmo	Environmental Officer	9:00		NHDCL, ADB	17962509	
<del>10</del> 24	Bishnu Maya Gurung	Plumber	9:00		NHDCL	17469154	
<del>11</del> 25	Tshetam Wangmo	Welder	9:00		NHDCL	17947990	
<del>12</del> 26	Purni Maya Rai	carpentry	9:00		NHDCL	17236916	
<del>13</del> 27	Sargay Nima	Carpentry	9:00		NHDCL	77317374	
<del>14</del> 28	H.N. Adhikari	CEO, APECS	9:00		APECS	17600313	
25							
26							