Initial Environmental Examination (IEE) Form for Road Projects -2017

Note 1:	In accordance with section 47 of the Regulation for Environmental Clearance of Projects 2016, consent must be obtained from individual or juristic person if activity has direct impact on a property.
Note 2:	The completed IEE form shall be submitted to the relevant Competent Authority.
Note 3:	The completed IEE form shall be the basis to determine the requirement of Environmental Impact Assessment (EIA). If EIA is required, applicant will be notified to submit Terms of Reference for the project.
Note 4:	The application shall be subjected to Fee Schedules to cover the cost of administering the Environmental Assessment Act, 2000.

1. General Information:

a) Name of the project, tick as appropriate: **Kilikhar Substation Project**

I. ☐Highway/Feeder Road
II. ☐Farm Road
III. ☐Private Road
IV. ☐Forest Road
V. ☑Access Road
VI. ☐Tunnel Road
VII. ☐Others

b) Project Type (Tick as appropriate): **New**

c) Applicant Details:

I. Name of the applicant: **Bhutan Power Corporation Limited**
II. Address: **Chubachu (BPC Corporate Office), Thimphu, Bhutan**
III. Post Box No.: **580**
IV. Contact No.: **02-325095 (906)**
V. Fax No.: **02-337213**
VI. Email:……

VII. Name and contact details of Environmental Focal Person: **Jigme Sonam, Assistant Environment Officer, CMS, BPC**

2. Project Location:

I. Dzongkhag/Thromde: **Mongar**

II. Gewog: **Mongar**

III. Village: **Kilikhar**

IV. Name of the project site: **Kilikhar**

3. Project Cost (Nu.): **Nu. 0.4 Million**

4. Project area, tick as appropriate:

a) ☑State Reserve Forest:

S.N	**Line**		
	From	**To**	**Area (acre)**
1	**Latitude-27°16'1.63"N and Longitude-91°15'49.39"E**	**Latitude-27°16'3.13"N and Longitude-91°15'52.56"E**	**0.10 acres (406 sq. m)**

b) ☐Private…….acres

c) ☐Others…….acres

d) Total area required: **0.10 acres**

5. Presence of any of the following within and 50 meters buffer of the project area. If yes tick and mention name, wherever applicable:

a) ☐River/spring/stream…….

b) ☐Protected Area……

c) ☐Catchment area……..

d) ☐Wetland…….

e) ☐Community forest…….

f) ☐Private forest…….

g) ☐Tsamdro……..

h) ☐Sokshing……..

i) ☐Agriculture land……..

j) ☐Heritage site……..

k) ☐Hospital……

l) ☐School/institution……

m) ☐Roads…….

n) ☐Industries……..

o) ☐Settlements……..

p) ☐Presence of religious site……..

q) ☐Archaeological site……..

r) ☐Others

6. Project Details (attached in a separate sheet):

a) Project objective: **The realignment of the existing 132kV S/C Kilikhar-Kanglung and 132kV S/C Kilikhar-Lhuntse Line is being carried out to accommodate the power evacuation from the upcoming Yungichu HPP to the 132/33kV Kilikhar Substation, Mongar. Thus, to assist in the smooth completion of this project, the access road would be needed.**

b) Length of road in km: **0.104 km**

I. Starting point: **Latitude- 27°16'1.63"N and Longitude- 91°15'49.39"E**

II. Termination point: **Latitude- 27°16'3.13"N and Longitude- 91°15'52.56"E**

c) Right of Way in meters: **3 m**

d) Type of drain: **Subgrade Drain**

e) Blasting requirement: **No**

- If yes, mention type of blasting:

f) Methods of storing materials:

S.N	Store Yard	GPS Coordinates		Land Ownership
		Easting	Northing	
1.	132/33kV Kilikhar Substation	328334.48	3016568.46	BPC owned Land

g) Does the proposed road passes through:

I. Terrestrial fauna migratory routes **No**

II. Heritage or religious site **No**

III. Wetland and catchment area **No**

IV. If yes for any of the above, provide alternatives.

h) Briefly describe the terrain characteristics along the proposed road alignment focusing on geotechnical and geomorphology information.

Geotechnical Information	
1. Soil Composition	The soil along the road alignment consists of a mix of clay, silt, and weathered rock. The clayey soil is present towards the starting sections, while the end sections comprise of weathered rock and sandy soil.
2. Stability Analysis	After examining the start and termination points of the access road, the maximum and minimum elevation was found to be 1729 and 1721 meters respectively. Thus, the slope stability analysis can be inferred as relatively minimal or none.
3. Foundation Conditions	The geotechnical investigation determined that the foundation conditions are generally favorable. The underlying soil and rock formations provide good bearing capacity for structures, allowing for straightforward foundation design and construction.
Geomorphology Information	
1. Topography	The terrain along the road alignment is characterized by an almost even elevation with an average difference of only 5 to 10 meters at most. It includes plain surfaces at the beginning and end while there is a gradual slope of 5 meters from the middle section of the road.
2. Drainage Patterns	Natural drainage patterns consist of a slight slope for the rain and water to runoff along the road alignment. Proper drainage structures, such as culverts and ditches, will be designed and implemented to manage surface water runoff and prevent water accumulation on the road.
3. Geological Features	The road section did not feature much differences in geological aspects but the ground was found to be rocky just below the surface. These features will be considered during construction to ensure proper excavation and rock stabilization measures are employed as necessary.

4. Erosion and Sedimentation	The road section does not have any steep slopes or hilly terrain thus, erosion and sedimentation should be minimal at worst. Still, the project will ensure that proper mitigation measures are followed and Erosion control measures, such as slope re-vegetation, erosion blankets, and sediment traps, will be implemented to minimize sedimentation on the road.

7. Ancillary activities, tick as appropriate:

a) ☐Bridge

b) ☐Crushing plant

c) ☐Asphalt plant

d) ☐ Concrete batching plant

e) ☐Others

Note: For ancillary activities, fill up relevant IEE forms and submit along with these IEE forms.

8. List type of solid wastes and its quantity:

Types Of Solid Waste Materials	**Expected Quantity to be Generated per day (kg)**	**Remarks**	**Management Method**
Food waste, plastics/packaging materials, cardboard, & common trash (HOUSEHOLD WASTES)	Minimal as the project would only take a few days with the access road being only 104 meters in length.	As per National Waste Management Strategy 2019, an average of 0.253 kg/capita/day for approximately solid waste will be generated.	Disposed-off to Municipal Solid Waste landfill sites. The waste that can be recycled will be sent to Recycling Facility, if such facility is available in the locality
Wood (timber, slash, stumps, etc.) *	Only a few trees and poles as the distance is short and the buffer zone is just 3 meters.	As per data estimates using Google Earth Pro.	The trees cut from the RoW clearing will be handed over to the respective community forest management and NRDCL for extraction and disposal as per the prevailing rule.

Excavated Spoils	Excavated spoils from the access road.		Loose excavated soil shall be covered and more than 90% of the excavated soil shall be reused for levelling of the access road.

9. Environmental Management Plan (attached in a separate sheet):

   Briefly describe mitigation measures to address impacts including sections 9 and 10

10. List of documents to be attached with this IEE form:

1	Public consultation records verified by the concerned local authority
2	Layout plan and KMZ file depicting entire layout plan
3	Map specifying critical catchment and drainage area for Feeder road and National Highways

Name and signature of the project proponent:

Jigme Sonam, Assistant Environment Officer

Address: **Contract Management Section, Construction Division, C&PD, BPC, Thimphu**

Date: **22/05/2024**