



Guidelines on Right-of- Way for Transmission Infrastructure (66kV and Above)

**Department of Energy
Ministry of Energy and Natural Resources**

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Table of Content

Title and Commencement.....	2
Scope.....	2
Objective.....	2
Definitions.....	2
INSTITUTIONAL ROLES AND GENERAL PRINCIPLES.....	3
Department of Energy, Ministry of Energy and Natural Resources (MoENR).....	3
National Land Commission Secretariat.....	3
Electricity Regulatory Authority.....	4
Bhutan Power Corporation Limited.....	4
RIGHT-OF-WAY PLANNING AND DESIGN.....	4
General Requirements.....	4
Route Planning and Selection.....	5
Corridor Width Determination.....	5
ELECTRICAL SAFETY AND CORRIDOR MANAGEMENT.....	5
Electrical Safety Clearance.....	5
Vegetation Management.....	6
Environmentally Sensitive and Populated Areas.....	6
Corridor Maintenance and Inspection Technology.....	6
LAND-USES WITHIN THE RIGHT-OF-WAY CORRIDOR.....	6
Prohibited Structures and Encroachments.....	6
Restriction Activities.....	6
Compatible Land Uses.....	7
Non-Compliance and Remediation.....	7
LAND ACQUISITION AND RIGHT-OF-WAY RIGHTS.....	7
Permanent Land Acquisition.....	7
Right-of-Way Easements.....	7
Stakeholder Consultation and Engagement.....	8
RIGHT-OF-WAY LAND COMPENSATION FRAMEWORK.....	8
General Principles.....	8
Compensation Mechanisms.....	8
Valuation and Payment.....	9
DISPUTE RESOLUTION.....	9
MISCELLANEOUS.....	9
Amendment.....	9



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Ministry of Energy and Natural Resources
Royal Government of Bhutan
Thimphu

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PREFACE

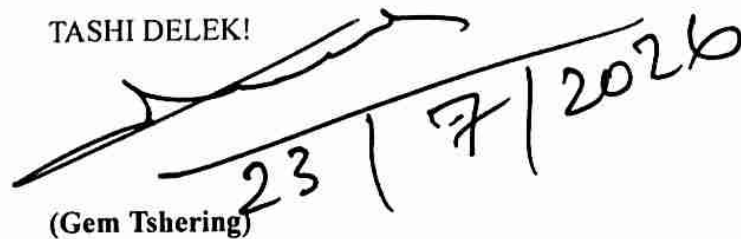
The country possesses significant renewable energy resources, with an estimated hydropower potential of about 33,000MW, complemented by growing solar and wind energy potentials of approximately 12,000MW and 800MW, respectively within 2040. However, only about 3,576 MW of generation capacity has been developed and is currently in operation. As the country advances its long-term energy objectives, the expansion of transmission infrastructure is essential to evacuate power from generation sources, ensure reliable domestic electricity supply, and support energy trade and exports.

The development of transmission infrastructure has increasingly faced challenges associated with Right-of-Way requirements. A considerable portion of transmission lines traverse privately registered land, resulting in land-use restrictions within designated safety corridors and concerns among affected landowners regarding the adequacy of compensation for the long-term limitations imposed on their land. A recent assessment conducted in November 2025 by the Department of Energy highlighted the magnitude of these challenges, revealing that 1,049 of the 5,050 transmission towers installed nationwide by Bhutan Power Corporation Limited are located on private registered land and that approximately 9,382 plots are affected by the transmission line RoW corridors.

In response to these challenges, and in pursuance of the directives of the Lhengye Zhungtshog and the provisions of the National Energy Policy 2025, these RoW Guidelines for High Voltage Transmission Infrastructure have been formulated to establish the minimum corridor requirement based on statutory clearances and internationally accepted practices.

The Guidelines provide a uniform framework for planning, acquisition, management, and utilization of RoW corridors, while defining the roles and responsibilities of the relevant government agencies and stakeholders. They promote efficient corridor utilization, adoption of advanced technologies, meaningful stakeholder engagement and consultation, and minimize land-use impacts on landowners and the environment to ensure the safe, reliable, and sustainable development and operation of transmission infrastructure.

TASHI DELEK!


23/7/2026
(Gem Tshering)

Title and Commencement

1. This guideline shall be called the “**RoW Guidelines for Transmission Infrastructure (66kV and above) 2026**”.
2. These guidelines shall come into force on 1 July 2026.

Scope

3. These guidelines shall govern the acquisition, occupation, use, management, and protection of Right-of-Way corridors required for transmission infrastructure.

Objective

4. These guidelines are intended to:
 - (i) provide a transparent, equitable, and consistent framework for Right-of-Way planning, acquisition, use, management, and compensation;
 - (ii) minimize adverse social, environmental, and economic impacts associated with transmission infrastructure;
 - (iii) promote efficient land utilization and optimization of existing transmission corridors;
 - (iv) provide for compatible land-uses within Right-of-Way corridors while safeguarding public safety and the operational requirements of transmission infrastructure; and
 - (v) establish principles for stakeholder engagement, compensation, and dispute resolution for Right-of-Way.

Definitions

5. For these guidelines, the following definitions apply:
 - (i) **Affected Landowner** means any person having ownership or other legally recognized rights over land that is affected, wholly or partially, by the Right-of-Way for transmission infrastructure.
 - (ii) **Acquisition of Land** means taking over of registered land by the Government for interests after providing compensation in accordance with the Land Act;
 - (iii) **Clearance** means the minimum permissible distance, measured vertically, horizontally, or radially, between the nearest energized conductor of a transmission line and ground, structures, vegetation, or any other object, ensuring safe operation of the transmission facility in accordance with the Electricity Act, applicable regulations, safety codes, standards, and these Guidelines.

- (iv) **Compatible Land Use** means any lawful activity or use within a Right-of-Way corridor that does not adversely affect the safety, operation, inspection, maintenance, accessibility, or future development of transmission infrastructure.
- (v) **Easement Agreement** means an agreement granting BPC, as the licensed entity, specified rights over an affected land within the Right-of-Way, in accordance with the provisions of the Land Act and relevant Rules and Procedures.
- (vi) **Person** means any individual, firm, company, association, partnership or body of persons, whether incorporated or not;
- (vii) **Right-of-Way** means a defined strip or area of land associated with existing or proposed transmission infrastructure where prescribed clearances and land-use restrictions are maintained to ensure the safety and reliability of the transmission infrastructure, and safety of person and property.
- (viii) **Transmission Infrastructure** means transmission lines, substations, switchyards, towers, conductors, communication systems, protection and control systems used for the transmission of electricity operating at 66kV and above, either overhead or underground.
- (ix) **Valuation Committee** means committee comprising representatives from the Dzongkhag Land Record Office, local government authorities, and other stakeholders, responsible for assessing, determining, and recommending the value of land, crops, structures, and other assets affected by the Right-of-Way.

INSTITUTIONAL ROLES AND GENERAL PRINCIPLES

Department of Energy, Ministry of Energy and Natural Resources (MoENR)

- 6. The Department of Energy shall
 - (i) provide policy directives for Right-of-Way planning, acquisition, and management;
 - (ii) facilitate inter-agency coordination for Right-of-Way planning and implementation;
 - (iii) facilitate allocation of State Reserve Forest Land (SRFL) and other government land for transmission infrastructure in coordination with relevant agencies;

National Land Commission Secretariat

- 7. The National Land Commission Secretariat (NLCS) shall:
 - (i) carry out land administration matters related to Right-of-Way;
 - (ii) Provide technical support to Dzongkhags, local governments, and BPC or project developer as and when required;
 - (iii) maintenance of land records, including RoW easement entries in the Thram system.

Electricity Regulatory Authority

8. The Electricity Regulatory Authority (ERA) shall be responsible for regulation and oversight of electrical safety and technical compliance associated with RoW, including:
 - (i) monitoring compliance with electrical safety requirements for transmission infrastructures;
 - (ii) disputes related to electrical safety and RoW implementation, in accordance with applicable law and procedures.

Bhutan Power Corporation Limited

9. The Bhutan Power Corporation Limited (BPC), as a licensed entity, shall be responsible for:
 - (i) identifying, planning, and managing transmission Right-of-Way;
 - (ii) undertake acquisition, administration, maintenance, and management of transmission RoW, including the implementation of easements and other land-use arrangements necessary for transmission infrastructure;
 - (iii) conducting stakeholder consultations and coordination with affected landowners, local governments, and relevant agencies for the planning, acquisition, and implementation;
 - (iv) ensuring compliance with all applicable laws, regulations, standards, codes, and policy directives relating to land acquisition, RoW management, environmental and social safeguards, and transmission infrastructure development;
 - (v) administering and implementing compensation and easement agreements;
 - (vii) maintaining records and databases related to Right-of-Way and compensation payments.

RIGHT-OF-WAY PLANNING AND DESIGN

General Requirements

Transmission infrastructure is a critical national infrastructure executed in the public interest.

10. BPC shall plan and implement Right-of-Way in a manner that ensures safe, reliable, and economical development and operation of transmission infrastructure while minimizing adverse social, environmental, and land-use impacts
11. Right-of-Way planning shall be as per the National Transmission Grid Master Plan and take into consideration the opportunities for RoW optimization.

Route Planning and Selection

12. BPC shall undertake route planning studies to identify technically feasible and economically viable transmission corridors. Route selection shall, to the extent practicable:
 - (i) minimize the need for privately registered land acquisition;
 - (ii) minimize the clearing of forests and environmental impacts;
 - (iv) utilize existing transmission, road, or utility corridors where technically feasible.

Corridor Width Determination

13. The specific width of a Right-of-Way shall be determined through project-specific engineering studies, considering voltage level, design, terrain, conductor swing areas, and electrical safety clearances.
14. The standard indicative Right-of-Way widths for transmission lines corresponding to voltage levels are specified in Table 1.

Table 1: Minimum Right-of-Way (RoW) Width for Overhead Transmission Lines

Voltage Level	RoW (m)
66kV	18
132kV	27
220kV	35
400kV	46

15. In areas with constraints, specific modern technologies shall be used to reduce the RoW corridor.

ELECTRICAL SAFETY AND CORRIDOR MANAGEMENT

Electrical Safety Clearance

16. All transmission infrastructure shall maintain minimum horizontal and vertical electrical safety clearances from ground, roads, highways, buildings, structures, and vegetation in accordance with the Safety Code issued by the Regulator.

Vegetation Management

17. BPC shall ensure vegetation management practices within the Right-of-Way in collaboration with relevant agencies and in accordance with applicable forestry laws, environmental regulations, and transmission maintenance best practices.

Environmentally Sensitive and Populated Areas

18. Where transmission infrastructure passes through protected areas, biological corridors, wildlife corridors, wetlands, or cultural/religious sites, BPC shall implement appropriate routing, design, and mitigation measures to minimize impacts.
19. When traversing environmentally sensitive, urbanized, or peri-urban areas where conventional Right-of-Way footprints cause high social and environmental impact, BPC must adopt innovative technologies and designs to minimize the Right-of-Way.

Corridor Maintenance and Inspection Technology

20. BPC shall ensure periodic inspection and maintenance of transmission infrastructure and Right-of-Way to ensure continued compliance with structural integrity and safety requirements.

LAND-USES WITHIN THE RIGHT-OF-WAY CORRIDOR

Prohibited Structures and Encroachments

21. Building, building extension or other permanent or temporary structure directly beneath the transmission lines will not be permitted.
22. Construction within the Right-of-Way may be permitted by the Regulator subject to mandatory safety clearances to ensure compliance with operational and regulatory requirements. BPC will conduct assessment for construction in accordance with applicable rules and regulation, and codes.

Restriction Activities

23. The following activities shall not be undertaken within the Right-of-Way corridor without prior approval of BPC:
 - (i) excavation, grading, quarrying, landscaping, earthworks, or other site development;
 - (ii) storage of materials or operation of heavy construction equipment associated with adjacent developments;
 - (iii) installation, modification, relocation, or maintenance of thirty-party utilities, pipelines, telecommunication facilities, or other services;
24. The storage, manufacturing, handling, processing, or disposal of flammable, explosive, corrosive, toxic, or hazardous substances within the Right-of-Way corridor shall not be permitted.
25. Open burning of crops, vegetation, waste, or any other materials within the Right-of-Way corridor is prohibited.

Compatible Land Uses

26. The following activities may be permitted within the Right-of-Way subject to compliance with Safety Code:
 - (i) cultivation of low-growing crops, fruits, and fodder;
 - (ii) livestock grazing and other low-impact agricultural activities;
 - (iii) installation of underground utilities, including telecommunications cables, water pipes, and sewer lines;
27. Allowed compatible activities must not restrict operational access to the transmission infrastructure or compromise safety and system reliability.

Non-Compliance and Remediation

28. Where any activity, structure, or encroachment is found to be inconsistent with these Guidelines, BPC shall issue a legal notice requiring the responsible party to cease the activity and remove or remedy the non-compliant works within a specified period.
29. Any person responsible for such non-compliance shall bear all financial costs associated with the removal, remediation, and restoration of the affected Right-of-Way corridor, without prejudice to any legal or enforcement actions available under applicable laws, regulations, or licensee conditions.

LAND ACQUISITION AND RIGHT-OF-WAY RIGHTS

Permanent Land Acquisition

30. BPC shall acquire the land required for permanent installation of substations, switchyards, tower foundations and associated facilities.
31. For tower foundations, permanent acquisition shall encompass the footprint of the structure plus an operational safety offset of 1.5 meters measured outward from the edge of the foundation. In addition, the area covered by retained walls for the tower protection shall also be acquired. All permanent acquisitions shall be executed in accordance with the provisions of the Land Act.

Right-of-Way Easements

32. Where permanent acquisition of land within the Right-of-Way corridor is not required, BPC may lease the land through an Easement Agreement, where the affected landowner has continued ownership and limited use of their land for transmission infrastructure purposes.

33. The Easement Agreement shall define the rights and obligations of both parties, including entry access rights and specific land-use restrictions. Title and ownership remain vested in the private landowner.
34. An Easement Agreement shall remain valid, running with the land, notwithstanding any subsequent transfer, inheritance, subdivision, or change in ownership of the underlying property. BPC shall file a copy of the executed Easement Agreement with the NLCS for formal recording within the Thram system and associated geodatabase

Stakeholder Consultation and Engagement

35. BPC shall conduct timely public consultation with affected landowners, local communities in coordination with local governments, dzongkhag and relevant agencies for Right-of-Way.
36. Consultations shall ensure clear dissemination of project alignment details, public safety awareness, and applicable compensation mechanisms, and complete records shall be maintained by BPC.

RIGHT-OF-WAY LAND COMPENSATION FRAMEWORK

General Principles

37. Compensation for land acquisition, Right-of-Way restrictions, temporary occupation, and asset damages shall be as per the following general principles:
 - (i) Any person with lawful ownership or recognized rights recorded in the Thram for land, structures, crops, or trees within the affected zone shall be eligible for compensation.
 - (ii) Affected landowners whose land utility is restricted by the corridor may seek compensation (cash or land-based adjustments) by formally notifying BPC as per the procedure shown in Annexure-I.

Compensation Mechanisms

38. A Valuation Committee may be constituted to validate compensation values in accordance with the Land Compensation Rate (LCR) issued by the Property Assessment and Valuation Agency.
39. For land required for tower foundations, BPC shall provide compensation as per the Land Act and relevant rules and procedures.
40. Where private land falls within the Right-of-Way and remains under private ownership but is subject to statutory land-use restrictions, the landowner shall be entitled to compensation equivalent to thirty percent (30%) of the assessed land value (LCR). This compensation shall be disbursed in annual installments apportioned across the 30-year lifecycle of the transmission project, and renewable thereafter.

41. BPC shall, to the extent practicable, prioritize land-based compensation mechanisms over cash payouts, particularly where the corridor results in severe plot fragmentation. Subject to technical feasibility and mutual consent, land-based measures may include land realignment, adjustment of plot boundaries, value-based adjustments, or land pooling. Cash compensation shall be utilized only when land-based adjustments are unfeasible or mutually declined, and shall be borne by BPC. The procedure in Annexure-I should be followed by the affected landowner for the compensation mechanism.

Valuation and Payment

42. Valuation and payment of compensation shall be carried out in accordance with the Land Act, these guidelines, applicable regulations, and procedure by the relevant agencies. Compensation shall be paid in a timely and transparent manner, and appropriate records shall be maintained by BPC.

DISPUTE RESOLUTION

43. Any dispute relating to compensation, valuation, and the terms of an Easement Agreement shall, in the first instance, be resolved through formal consultation and mutual negotiation between the parties.
44. Where disputes remain unresolved through negotiation, the matter may be settled as per the dispute resolution process established by the Regulator.

MISCELLANEOUS

Amendment

45. The Department of Energy may amend these Guidelines as and when required.

ANNEXURE-I (Compensation and Easement Flow Chart)

