



Ministry of Energy & Natural Resources

**Standard Operating Procedures
for
Allocation of Solar PV Projects for Development
(Unsolicited Route)**

Ver. 1

Department of Energy

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Acronyms

Acronym	Full Form
BPC	Bhutan Power Corporation Limited
CA	Concession Agreement
COD	Commercial Operation Date
DoE	Department of Energy
DPR	Detailed Project Report
EoI	Expression of Interest
ERA	Electricity Regulatory Authority
MoENR	Ministry of Energy & Natural Resources
MoF	Ministry of Finance
MW	Megawatt
NLCS	National Land Commission Secretariat
PPA	Power Purchase Agreement
P2S	Permit-to-Survey
SPV	Special Purpose Vehicle
SOP	Standard Operating Procedure

1. Objective

This Standard Operating Procedure (SOP) establishes the procedure for the allocation and development of solar projects under the unsolicited route, whereby Developers identify and propose potential solar project sites.

The key objectives of this SOP are to:

- i) Streamline the solar project allocation and development process to achieve the national target of achieving 5,000MW of solar PV capacity by 2040;
- ii) Establish a transparent, fair and standardized framework for project allocations.
- iii) Attract investment for the development of solar energy by enabling a predictable, stable, and investor-friendly allocation framework.

This SOP is issued pursuant to Section 6.17 of the National Energy Policy 2025.

2. Scope

This SOP shall apply to all domestic and international firms/companies or a consortium with requisite license intending to develop solar projects irrespective of installed capacity, type of technology, geographical location, land ownership category or intended off-taker.

3. Institutional Roles

3.1 Department of Energy (DoE), Ministry of Energy & Natural Resources (MoENR) shall have the following responsibilities under this SOP:

- i) Receive, review and issue EoI Clearances
- ii) Review DPR and issue Technical Clearances
- iii) Execute and enforce Concession Agreement

3.2 Electricity Regulatory Authority (ERA) shall have the following responsibilities under this SOP:

- i) Issue Permit-to-Survey
- ii) Issue license for generation, operation and maintenance of project
- iii) Approve and issue tariff order for the project

3.3 Other relevant Agencies

- i) Bhutan Power Corporation Limited: Power evacuation and grid connectivity
- ii) Department of Environment & Climate Change, MoENR: Issue Environment Clearances
- iii) Department of Forest & Park Services, MoENR – Issue Forestry Clearances
- iv) National Land Commission Secretariat/Dzongkhags – Issue Land approval/clearances
- v) Ministry of Home Affairs – Issue Cultural Clearances, where applicable
- vi) Local Government - Facilitation of Public Clearances, where applicable

4. Procedure

Developers may select solar sites from the inventory list of potential sites maintained and updated regularly by DoE which can be accessed through https://www.moenr.gov.bt/?page_id=16088. Alternatively, developers may independently identify and propose their own suitable solar project sites.

The development of solar projects shall follow the process outlined below:

Step 1: Submission of Expression of Interest (EoI)

1.1 Domestic Developer

- 1.1.1 The Developer shall submit an EoI to DoE as per [*Annex-I*](#) along with following additional information:
- i) Demonstrate technical capability through firm's human resource.
 - ii) Demonstrate financial capacity to fund at least 10% of the project's total equity requirement through bank statement or annual turnover or indicative sanction from a financial institution.
- 1.1.2 Where the Developer is a consortium, the Consortium Members shall designate a 'Lead Member' on behalf of all Consortium Members, and the technical capability may be demonstrated by any of the Consortium Members.

1.2 Foreign Developer

- 1.2.1 The Foreign Developer shall submit EoI to DoE as per [*Annex-I*](#) along with following additional information:
- i) Demonstrate technical capability showing experience of having constructed or owning solar PV project of minimum 50MW.
 - ii) Demonstrate financial capacity to fund the proposed project's equity component through last three years' audited financial statements.
- 1.2.2 Where the Foreign Developer is a consortium, the Consortium Members shall designate a 'Lead Member' on behalf of all Consortium Members, and the technical capability may be demonstrated by any of the Consortium Members.

1.3 Limitation of Project sites allocation

The Developer/s can apply for allocation of solar project sites to a maximum of two (2) sites at a time. The sites may be increased one at a time upon achieving the CODs of the already allotted project/s.

Step 2: Clearance of EoI

- 2.1 The DoE shall review the EoI and issue clearance within five (5) working days, after complete submission of required documents and information by the proponent.
- 2.2 Upon issuance of the EoI Clearance, the Developer shall approach ERA for obtaining P2S to initiate DPR works within five (5) working days from the date of issuance of the clearance.
- 2.3 Upon issuance of EoI clearance, the Foreign Developer/s shall initiate FDI registration with the Invest Bhutan Division, Department of Industry, Ministry of Industry, Commerce & Employment (<https://ibls.systems.gov.bt/page/fdi-registration>).

Step 3: Permit-to-Survey (P2S)

- 3.1 Upon issuance of P2S by ERA, the developer shall comply with the given timelines. The Developer shall ensure satisfactory progress with the DPR studies of the allocated sites and submit quarterly progress reports to DoE.
- 3.2 If DPRs are not initiated within three (3) months of the issuance of P2S, the allotted site becomes automatically null and void and becomes available for allocation to the next developer.
- 3.3 In case the Developer is faced with challenges concerning the allocated site, which is found to be beyond its control, the Developer must submit a written request with valid justifications to the DoE, for allocation of an alternative site, if required.
- 3.4 In case of extension required for P2S, the Developer shall notify DoE with the justifications within one month of the expiry of validity based on which recommendations shall be made to ERA for an appropriate extension or rejection.

Step 4: Detailed Project Report (DPR)

- 4.1 The Developer shall, within the period mentioned in the P2S, prepare and submit the DPR (*one hard copy and soft copy to be submitted via email to reinvest@moenr.gov.bt*) to DoE in accordance with relevant national and international guidelines and best practices. The minimum required DPR content is provided in [*Annex-II*](#).
- 4.2 All risks and costs associated with the preparation of DPR shall be at the sole responsibility of the Developer.
- 4.3 During the DPR preparation, the Developer shall be responsible for obtaining all requisite clearances/no objections from relevant stakeholders/agencies as stipulated in [*Annex-III*](#) of this SOP.

- 4.4 BPC and the Developer shall coordinate for location of solar PV substation for interconnection with the BPC's grid through necessary extensions including signing of Transmission Access Agreement (TAA).

Step 5: Evaluation and Technical Clearance of DPR

- 5.1 The DoE shall review the DPR, within a maximum of thirty (30) working days from the date of submission, in keeping with the Solar DPR Guidelines.
- 5.2 In case of any information/data/clarification required from the Developer while reviewing the DPR, the Developer shall arrange to submit the same to DoE within a week, in which case the time required for issuance of Technical Clearance shall be accordingly extended.
- 5.3 Upon completion of the evaluation, the DoE shall issue Technical Clearance to the Developer subject to the fulfillment of all the required information.

Step 6: Application for Tariff Approval

- 6.1 Upon clearance of the DPR, the Developer shall submit an application to ERA for review and approval of the project tariff.
- 6.2 The above requirement shall apply where the power generated is proposed to be sold to the BPC. Where the Developer intends to sell power directly to any bulk trader or consumer, approval of tariff by ERA is not required. However, applicable wheeling and other related charges shall apply.
- 6.3 Upon approval of the tariff, the Developer may enter into a PPA with BPC or bulk consumer. The model PPA is provided in **Annex-IV** for reference only.

Step 7: Signing of Concession Agreement

A Concession Agreement shall be signed between the DoE and the Developer prior to the project construction. This requirement shall be applicable for utility-scale projects only.

Step 8: Application for Generation, Operation & Maintenance License

Upon approval of the DPR, the Developer shall apply for a generation, operation, and maintenance license in accordance with the Licensing Regulation for Solar Power Plant 2024, in order to enable the commencement of construction activities.

Step 9: Project Construction, Commissioning and Operation

9.1 The Developer shall construct, commission, operate and maintain the project in accordance with Rules and Regulations, License terms & conditions, Concession Agreement, international best practices, Power Purchase Agreement (PPA), etc. as applicable.

9.2 The Developer shall submit quarterly technical reports, during the construction phase, to DoE and ERA for reference.

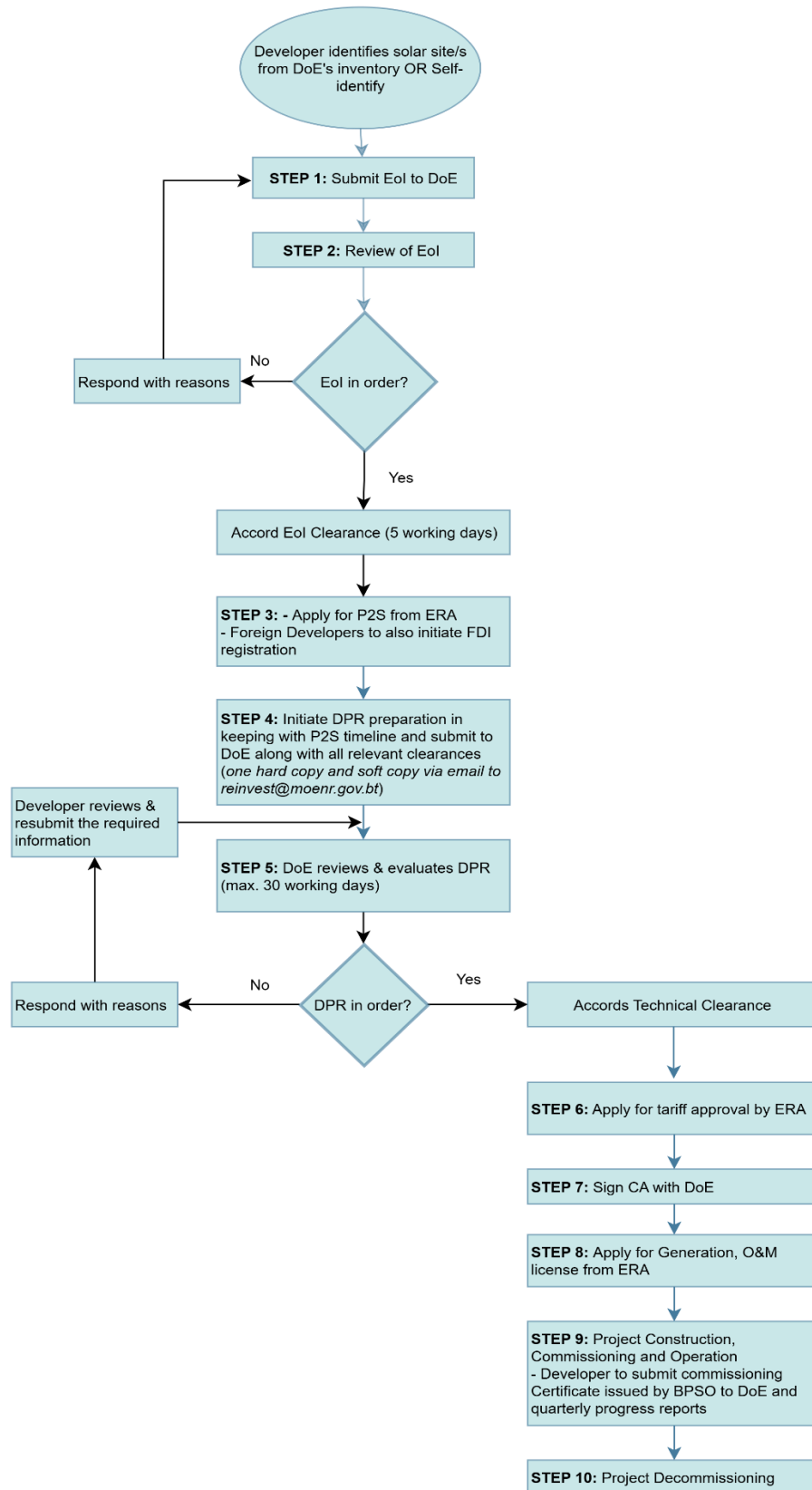
9.3 The Developer shall, in coordination with BPC and BPSO, test and commission the project and submit to the DoE a copy of the commissioning certificate issued by BPSO.

9.4 The Developer shall submit the power generation data and any other information to the DoE on an annual basis or when requested, whichever is earlier.

Step 10: Decommissioning

10.1 Upon expiry of the Concession term, the Developer shall decommission the project in accordance with extant e-waste regulations, Concession Agreement and international best practices.

6. Simplified Flow Chart of Allocating Solar projects



7. Annexures

7.1 Annex-I: EoI submission Template

Company's letter head

Ref. No.

Date:.....

The Director General
Department of Energy
MoENR, Thimphu

Sub: Submission of EoI for development to xx MW solar project.

Dear Sir,

I/We hereby submit this Expression of Interest (EoI) for the development of a solar PV project/s in Bhutan. The preliminary details of the proposed project are as submitted below:

1. **Name of the Developer (Firm/Company/Consortium):** Company Name
2. **Proposed Location:** Dzongkhag/Gewog /Specific Site, if available; attach .kmz file soft copy
3. **Land Status:** Private Land / State Land
4. **Approximate Land Area:** xx acres
5. **Estimated Installed Capacity:** xx MW
6. **Proposed Development Model:** FDI/IPP/PPP/Captive
7. **Estimated Project Cost:** Nu. xx million
8. **Financing source:** Equity/Loan
9. **Proximity to the grid:** Substation, voltage level-11kV/33kV/66kV/132kV/220kV

I/We confirm our interest in developing the above-mentioned solar power project/s in accordance with the policies, rules, and procedures of the RGoB. We kindly request the Department for consideration of this proposal and issuance of EoI clearance for which we are submitting the following documents:

1. Company incorporation certificate/license
2. Company Profile along technical and financial capabilities besides experience

Yours sincerely,

[Name of Representative/Authorized Signatory]
[Designation]
[Contact Number]
[Email Address]

7.2 Annex-II: Typical Contents of DPR for a Solar PV Project

Sl#	Particulars	Page No.
1	Table of Contents List of figures List of tables List of Abbreviations	
2	Executive Summary ● Overview of the project ● Objectives and scope ● Capacity of the solar plant ● Project location and site description	
3	Introduction & Background ● Intent of the project ● Potential for solar power in the selected area ● Potential impact on the local economy and environment	
4	Site Analysis and investigation ● Location details (latitude, longitude, elevation) ● Desktop assessment (solar irradiation, elevation, shading conditions, slope, land orientation, land status, accessibility, proximity to protected areas, nearest substation and social sites) ● Topographical survey and mapping ● Geological and geotechnical investigation	
5	Solar Resource Assessment ● Analysis of solar data ● Ambient temperature and climatic conditions ● Wind speed ● Estimation of energy generation	
6	Technical Feasibility & PV Design ● Solar PV module specifications (types, manufacturer, power output, efficiency, number of panels & etc.) ● Inverter selection and sizing, specifications (manufacturer, capacity, MPPT tracking) ● Mounting structures (fixed tilt vs. tracking system) ● Battery storage system (if applicable) ● Simulation results ● Single-line diagram (SLD) ● Cable sizing and layout ● Protection system (circuit breakers, fuses, lightning arrestors) ● Grid connectivity and Power evacuation plan ● Compliance with grid standards and codes	
7	Project cost Estimation ● Bill of Quantity (BOQ) ● Project cost	
8	Financial and Economic Analysis/viability ● Tariff/LCoE calculations	

	• Financial assumptions • Financial analysis • NPV, IRR, Payback period	
9	Multilateral Financing (ADB, FDI) Environmental & Social Impact Assessment • ESIA report • Stakeholder consultations, as relevant • Mitigation measures in the form of environmental and social management plan • CDM benefits • Decommissioning plan	
10	Private Financing IEE (Initial environmental examination) • Duly filled IEE form • Socio economic survey • Public consultation • Relevant statutory clearances	
11	Implementation Plan • Construction methodology along with sourcing of materials • Project timelines and milestones • Risk mitigation measures	
12	Permits & Approvals • Permit to Survey from ERA • Consent from BPC (grid connectivity, TSA, PPA) • Land Use Certificate from NLCS • Forest and environment clearances • Other clearances as required	
13	Operation & Maintenance Plan • Preventive & corrective maintenance strategy • Monitoring system (SCADA, remote monitoring) • Performance monitoring & report	
14	Decommissioning Plan • E-waste management • Site Restoration Plan	
15	Risk Assessment and Mitigation	
16	Conclusion	
17	List of Annexures	

7.3 Annex-III: Required Sectoral Clearances

The Developer shall be responsible for obtaining necessary clearances/concurrences/no objections from different agencies as stipulated in the table below and to be submitted as part of the DPR:

SN	Agency	Purpose
1	Department of Environment & Climate Change, MoENR	Environmental Clearance (http://www.nec.gov.bt/publications/environmental-clearance)
2	Department of Forest & Park Services, MoENR	Forestry Clearance (https://ofs.dofps.gov.bt/)
3	Department of Culture & Dzongkha Development, MoHA	Cultural clearance, where applicable
4	Respective Local Government including community	No Objection from Public (community) (Minutes of the Meeting of the Public Consultation)
5	Dzongkhag/National Land Commission Secretariat	Land clearance Land lease agreement for State Land (Agreement to be signed after Technical Clearance of DPR)
6	Bhutan Power Corporation/Authorized Agency/Bulk consumer	Grid connectivity approval from BPC (TSA)

The above list is not exhaustive; it should be checked/finalized by the Developer during the DPR preparation stage.

7.4 Annex-IV: Model PPA

To be made available on Ministry's website

Note: This SOP is Ver. 1 and the DoE reserves the right to update or revise this SOP without prior notice to the developer(s).