ଗ୍ରିଡ୍‌କୋ ଲିମିଟେଡ୍
GRIDCO Limited
(A Govt. of Odisha Undertaking)
Regd. Office: Janpath, Bhubaneswar-751022, ODISHA
Phone: 0674-2540098/2540877 Fax: 2541904/2543031; Web: www.gridco.co.in
CIN: U40109OR1995SGC003960

No. GRIDCO/RENA/2023/68/1426 **Date: 30.05.2026**

Corrigendum–01

This corrigendum-01 is issued with reference to RFP No. GRIDCO/RE NODAL AGENCY/ E-TENDER/02/2026-27, dated 29/04/2026, for inviting online bids for the Consultancy services for Environmental and Social Impact Assessment (ESIA) for 225 MW Upper Indravati Floating Solar Project including evacuation infrastructure and associated transmission lines in the state of Odisha, India.

Please find attached revised RFP:

Sd/-

Chief Project Manager

Renewable Nodal Agency-GRIDCO

Request for Proposal

For

Consultancy services for Environmental and Social Impact Assessment (ESIA) for 225 MW Upper Indravati Floating Solar Project including evacuation infrastructure and associated transmission lines in the state of Odisha, India

by

GRIDCO Limited

GRIDCO/RE NODAL AGENCY/ E-TENDER/02/2026-27	**Issue date: 29.04.2026**

GRIDCO LIMITED
Regd. Office: Janpath,
Bhubaneswar, 751022

E-Tender Notice

E-Tender Notice No. GRIDCO/RE NODAL AGENCY/ E-TENDER/02/2026-27 Dated 29.04.02026

Odisha is fast becoming the destination of choice for major investments in the areas of renewable energy. The state is having a vast potential of renewable energy in grid connected renewable energy technologies – Floating Solar, wind, PSP and small hydro. GRIDCO is the nodal agency responsible for implementing and promoting renewable energy development in Odisha as mandated under the Odisha Renewable Energy Policy, 2022. GRIDCO is desirous of engaging consultant for Environmental and Social Impact Assessment (ESIA) of the proposed 225 MW Floating Solar Project at Upper Indravati.

GRIDCO now invites proposals from eligible and interested consultants in the prescribed format.

Detailed description is provided in the Request for Proposal (RFP) document. Complete set of bidding documents are available at the tender portal, https://www.bharat-electronictender.com or GRIDCO website: www.gridco.co.in or www.greenenergyinvest.odisha.gov.in for downloading the project scope and terms and conditions in detail.

Start date of the bid- **29/04/2026**

Date of pre bid meeting`- **06/05/2026 at 11:00, GRIDCO conference hall / VC**

Last date for Online submission of bid – **20/06/2026, at 15:00**

The due date & time of opening of techno-commercial bid – **20/06/2026, at 17:00**

N.B: - All subsequent addendum(s)/corrigendum to the tender shall be hosted on GRIDCO's official website **https://www.gridco.co.in** www.greenenergyinvest.odisha.gov.in and https://www.bharat-electronictender.com only. The Authority reserves the right to accept or reject any or all offers without assigning any reason thereof.

Chief Project Manager

RE Nodal Agency, GRIDCO

Table of Contents

DISCLAIMER

The information contained in this Request for Proposals document ("**RFP**") or subsequently provided to Applicants, whether verbally or in documentary or any other form by or on behalf of the Authority or any of its employees or advisers, is provided to Applicants on the terms and conditions set out in this RFP and such other terms and conditions subject to which such information is provided.

This RFP is not an agreement or an offer by the Authority to the prospective Applicants or any other person. The purpose of this RFP is to provide interested parties with information that may be useful to them in the formulation of their Proposals pursuant to this RFP. This RFP includes statements, which reflect various assumptions and assessments arrived at by the Authority in relation to the Consultancy. Such assumptions, assessments and statements do not purport to contain all the information that each Applicant may require. This RFP may not be appropriate for all persons, and it is not possible for the Authority, its employees or advisers to consider the objectives, technical expertise and particular needs of each party who reads or uses this RFP. The assumptions, assessments, statements and information contained in this RFP, may not be complete, accurate, adequate or correct. Each Applicant should, therefore, conduct its own investigations and analysis and should check the accuracy, adequacy, correctness, reliability and completeness of the assumptions, assessments and information contained in this RFP and obtain independent advice from appropriate sources.

Information provided in this RFP to the Applicants may be on a wide range of matters, some of which may depend upon interpretation of law. The information given is not intended to be an exhaustive account of statutory requirements and should not be regarded as a complete or authoritative statement of law. The Authority accepts no responsibility for the accuracy or otherwise for any interpretation or opinion on the law expressed herein.

The Authority, its employees and advisers make no representation or warranty and shall have no liability to any person including any Applicant under any law, statute, rules or regulations or tort, principles of restitution or unjust enrichment or otherwise for any loss, damages, cost or expense which may arise from or be incurred or suffered on account of anything contained in this RFP or otherwise, including the accuracy, adequacy, correctness, reliability or completeness of the RFP and any assessment, assumption, statement or information contained therein or deemed to form part of this RFP or arising in any way in this Selection Process.

The Authority also accepts no liability of any nature whether resulting from negligence or otherwise, howsoever caused, arising from reliance of any Applicant upon the statements contained in this RFP.

The Authority may in its absolute discretion, but without being under any obligation to do so, update, amend or supplement the information, assessment or assumption contained in this RFP.

The issue of this RFP does not imply that the Authority is bound to select an Applicant or to appoint the Selected Applicant, as the case may be, for the Consultancy and the Authority reserves the right to reject all or any of the Proposals without assigning any reasons whatsoever.

The Applicant shall bear all its costs associated with or relating to the preparation and submission of its Proposal including but not limited to preparation, copying, postage, delivery fees, expenses associated with any demonstrations or presentations which may be required by the Authority or any other costs incurred in connection with or relating to its Proposal. All such costs and expenses will remain with the Applicant and the Authority shall not be liable in any manner whatsoever for the same or for any other costs or other expenses incurred by an Applicant in preparation or submission of the Proposal, regardless of the conduct or outcome of the Selection Process.

"Consultancy services for Environmental and Social Impact Assessment (ESIA) for 225 MW Upper Indravati Floating Solar Project including evacuation infrastructure and associated transmission lines in the state of Odisha, India"

1. Background

1.1 GRIDCO Limited, a company incorporated on 20 April 1995 under the Companies Act, 1956 as a wholly owned subsidiary of the GoO, has been designated as the nodal agency for the development of floating solar energy projects in Odisha under the Odisha RE Policy. GRIDCO intends to act as the solar power park developer for the purposes of developing a solar park over the Upper Indravati reservoir (**Upper Indravati Solar Park**). GRIDCO is issuing this RFP for selecting Solar Power Developer(s) to develop, operate and maintain 3 (three) units of 75 (seventy-five) MW each of grid-connected floating solar photovoltaic projects at the Upper Indravati Solar Park for supply of an aggregate of 225 (two hundred and twenty-five) MW solar power to GRIDCO.

1.2 This assignment is designed to assess the environmental and social impact of the proposed Upper Indravati 225 MW Floating Solar Project, including evacuation and associated transmission lines of the Floating Solar park, as per the requirements of the Government of Odisha, Government of India and IFC, as applicable for the proposed Floating Solar Project in the state of Odisha to be executed by GRIDCO.

1.3 Selected Consultant shall be required to study as per the Scope of Work.

2. Rationale and Objective

The objectives of the ESIA are to:

- Describe the project, including the associated facilities and the Project Area of Influence (AoI).
- Undertake a gap analysis of the applicable national/state environment and social regulations against IFC PSs, where the most stringent requirement shall be applied by the project.
- Analyse the project design and develop alternatives to align with the E&S risk management hierarchy of avoid, reduce, mitigate and manage.

- Determine the environmental and social (E&S) baseline conditions at the project's direct and indirect Areas of Influence (AOI) and associated facilities as relevant and to identify any significant environmental & social issues due to proposed project activities including cumulative impacts, impacts from associated facilities and third-party actions.
- Effectively and representatively consult key stakeholders through the impact assessment process, in relation to potential project benefits and negative E&S impacts and demonstrate that stakeholder views have been incorporated into the project's E&S design and also ensure that all key stakeholders are aware of the objectives, impacts and mitigation measures of the proposed Project; Develop and implement a Stakeholder Engagement Plan (SEP) and a Grievance Mechanism (GM) using national guidelines and the applicable PSs.
- Identify, predict and assess potential environmental and social impacts (direct; indirect; cumulative; and impacts on vulnerable project affected persons/groups, impacts on aquatic and terrestrial biodiversity) of the Project components and associated facilities during pre-construction, construction, operations and decommissioning phases within the project's primary and secondary AOI.
- Prepare an Environmental and Social Management Plan (ESMP) supported as required by additional management plans to identify appropriate / effective / practical mitigation measures with a clearly articulated mitigation hierarchy. ESMP to include the proposed budget for implementation and monitoring of the mitigation measures.

2.1 Scope of ESIA

- The scope of the assignment comprises preparation of the E&S documents aligned with IFC's Environmental and Social Performance Standards (2012). The deliverables include the Environmental and Social Impact Assessment (ESIA), Environmental and Social Management Plan (ESMP), and associated management instruments including the Livelihood Restoration Plan (LRP), Indigenous Peoples Development Plan (IPDP), Stakeholder Engagement Plan (SEP), and Grievance Mechanism (GM). A Livelihood Restoration Framework (LRF) and Stakeholder Engagement Framework (SEF) have been prepared at the scoping stage. The ESIA Consultant shall, based on detailed impact assessment and identification of affected persons, prepare a Livelihood Restoration Plan (LRP) as part of the ESIA/ESMP documentation in accordance with the LRF

The list of tasks is provided in detail under Section 9.

3. Definition

3.1 "**Bidder**" shall mean bidding Company/ Limited Liability Partnership firm/ Partnership Firm or Consortium of Company and/or Limited Liability Partnership firm and/or Partnership Firm. Any reference to the Bidder includes its successors, executors and permitted assigns as the context may require;

3.2 "**Bidding Consortium"** or "**Consortium**" shall refer to a group of Organizations that have collectively submitted the response in accordance with the provisions of this RFP under a Consortium Agreement;

3.3 "**Company**" shall mean a body corporate incorporated in India under the Companies Act, 1956 or the Companies Act, 2013, as applicable;

3.4 "**ESIA of Solar Park and Transmission Lines"** means details assessment of Environmental and Social Impact Assessment of (i) solar park and evacuation infrastructure till 33/220 kV PSS (ii) 220 kV line from 33/220 kV PSS to Mukhiguda Grid Substation.

3.5 **"Selected Bidder"** shall mean the firm or company or agency, selected for providing consultancy services for "Consultancy services for Environmental and Social Impact Assessment (ESIA) for 225 MW Upper Indravati Floating Solar Project including evacuation infrastructure and associated transmission lines in the state of Odisha, India"

3.6 **"Limited Liability Partnership Firm"** shall mean a company registered under Limited Liability Partnership Act 2008 or as amended.

3.7 **"Month"** shall mean calendar month;

3.8 **"Partnership Firm"** shall mean a company registered under the Partnership Act, 1932or as amended;

3.9 "**Performance Security**" it is a financial security provided by a bank on behalf of a Selected bidder to GRIDCO to ensure the satisfactorily fulfilment of their contractual obligations;

3.10 **"RFP"** shall mean the Request for Proposal document issued by GRIDCO including all amendments/ clarifications/ minutes of pre-bid meetings for selecting the Consultant to undertake work as specified in Clause 9;

3.11 **"Week"** shall mean calendar week of seven days, starting from Monday and ending on subsequent Sunday.

3.12 **"Work Order"** shall mean a work order issued by GRIDCO to the Selected Bidder notifying to undertake the work of "Consultancy services for Environmental and Social Impact Assessment (ESIA) for 225 MW Upper Indravati Floating Solar Project including evacuation infrastructure and associated transmission lines in the state of Odisha", India at contract value and within time duration specified therein.

4. Conditions of Eligibility of Bidder

4.1 Bidders must carefully read the minimum conditions of eligibility (the "**Conditions of Eligibility**") provided herein. Proposals of only those Bidders who satisfy the Conditions of Eligibility will be considered for evaluation.

4.2 **Eligibility Criteria:** To be eligible for evaluation of its Proposal, the Bidder shall fulfil the following Minimum Criteria

5. Bid Security

5.1 The Bidder shall furnish, as part of its Proposal, a Bid Security of **INR 1,00,000 (Indian Rupee One Lakh)** in the form of Bank Guarantee of any nationalized/scheduled bank in favour of the GRIDCO Limited, payable at Bhubaneswar or in form of Insurance Surety Bond as mentioned in the format 16 or through online mode or through Demand Draft.

For Demand Draft: in favour of "RE NODAL AGENCY ACCOUNT" payable at "Bhubaneswar".

For Online: Bank details are provided as below:

A/C Name: RE NODAL AGENCY ACCOUNT
Bank Name- HDFC Bank
Branch Name: CHANDRASEKHARPUR,
BHUBANESWAR Account No. 50200079352520
IFSC Code: HDFC0001252

5.2 Any Proposal, not accompanied by the Bid Security, shall be treated as non-responsive and summarily rejected;

5.3 The Bid Security instrument should be initially valid for 120 Days from the date of opening of the proposal;

5.4 The Bidder, by submitting its proposal pursuant to this RFP, shall be deemed to have acknowledged that, without prejudice to any other right of the GRIDCO or remedy hereunder or in law or otherwise, the Bid Security shall be forfeited and appropriated by GRIDCO under the following conditions:

- If a Bidder withdraws its Proposal during the period of its validity and as extended by the Bidder from time to time; or
- In the case of a Bidder being selected, the Selected Consultant fails to sign the Agreement/Work Order or commence the assignment on time.
- The Bid Security will be returned to the unsuccessful Bidders within thirty (30) Days from the issuance of Work Order to the Selected Consultant.
- The Bid Security will be returned to the Selected Consultant within thirty (30) Days from the date of receipt of acceptance on Work Order along with submission of Performance Security of required amount.

6. Performance Security

6.1 The Selected Consultant has to submit acceptance of work order along with the Performance Security valid for twelve (12) Months with a claim period of six (6) Months within twenty (20) Days from the issuance of Work Order. The Performance Security shall be of **INR 2,50,000** (Indian Rupee Two Lakhs Fifty Thousand) in the form of Bank Guarantee issued by any nationalized/scheduled bank in favour of Chief Project Manager, GRIDCO Limited, payable at Bhubaneswar. The Performance Security will be returned within ninety (90) Days from the expiry of the consultancy engagement considering the extended time period, on satisfactory completion.

7. Eligibility Criteria

7.1 General

- The Consultant can be a single bidding Company/ Limited Liability Partnership Firm / Partnership Firm, or a consortium of Company/ Limited Liability Partnership

Firm / Partnership Firm. Consortium should not be of more than two members excluding individual hired technical consultant.

- Any entity, which has either been directly barred by the Central/State Government in India, or any entity controlled by them or by World Bank or IFC, from participating in any project, and the bar subsists as on the date of Proposal, would not be eligible to submit the Proposal; and
- A Bidder should have, during the last three (3) years, neither failed to perform on any agreement (as evidenced by imposition of a penalty by an arbitral or judicial or regulatory authority or a judicial pronouncement or arbitration award against the Bidder) nor been expelled from any project or agreement nor have had any agreement terminated for breach of Work Order by such Bidder.

7.2 **Technical**

- The Consultant in last 5 years (the Lead Consultant, in case of a Consortium) must have undertaken and completed:
  - At least 3 (three) Environment and Social Impact Assessment (ESIA), OR 3 (three) Environment Impact Assessment (EIA) and 3 (three) Social Impact Assessment (SIA) studies in the Renewable Energy sector including associated transmission infrastructure in India.
  - Prepared at least one (1) Indigenous Peoples Plan / Indigenous Peoples Development Plan in India as per applicable framework.
  - Conducted at least one (1) assignment involving Free Prior and Informed Consent (FPIC) processes in India as per applicable framework.

The Bidder shall deploy suitably qualified experts with demonstrable assignment-relevant experience. Relevant project experience, role performed, and assignment responsibilities shall be clearly substantiated through CVs and project references. Generic ESG advisory, due diligence, sustainability reporting, or corporate ESG assignments without substantive ESIA/EIA scope shall not be considered equivalent to the required ESIA experience.

Team Composition with Required Qualification:

Expertise Area	Key Qualifications	Minimum Experience (Years) Post Academic Qualification	Core Competencies
ESIA Team Leader / Project Manager	Master's in Environmental Science/Engineering or related discipline	15	ESIA coordination, QA/QC, IFC PS / World Bank ESS compliance, renewable energy projects, transmission infrastructure,
Environmental Specialist	Master's in Environmental Science/Engineering;	10	Baseline assessment, impact analysis, preparation of environmental management plans
Ecologist-Terrestrial Biodiversity Expert	M.Sc./Master's in Ecology/Wildlife Science or related discipline	10	Habitat/species surveys, CHA, NNL/NPI strategies; preparation of biodiversity management plan
Ecologist-Freshwater Biologist	M.Sc./Master's in Ecology/Wildlife Science or related discipline	10	Aquatic ecology, fisheries assessment, limnology, biodiversity management plans
Social Specialist	Master's in Sociology/Anthropology	10	Socio-economic surveys, preparation of social management plans preferably for floating solar and associated facility; experience of working in Odisha and conversant in Odiya language,
Resettlement and Livelihood Restoration Specialist	Master's in Social Work/Sociology/Anthropology	10	Experience in census/socio-economic surveys, conversant in Stakeholder engagement & consultation, preparation of Resettlement Action Plans (RAPs) and Livelihood Restoration Plans (LRPs), experience of working in Odisha and conversant in Odiya language,
Indigenous People Specialist	Master's in social work/Sociology/Anthropology/Tribal Studies	10	Experience in FPIC Process, Understanding of Customary laws,

Expertise Area	Key Qualifications	Minimum Experience (Years) Post Academic Qualification	Core Competencies
			traditional institutions, and land rights, experience in development of Indigenous Peoples Development Plans, culturally appropriate livelihood strategies.
Fishery Expert	Master in Fisheries Science/ Zoology, Aquaculture	8	Experience in fishery assessment, development of fishery-based livelihood
OHS Specialist	Engineering/Safety degree;	8	• OHS risk assessment, Emergency preparedness plans preparation • Occupational health planning and safety auditing
Hydrologist / Hydrogeologist	Master's in Hydrology/Geology/Water Resources;	8	• Hydrological and hydrogeological baseline • Watershed assessments and water balance modelling • Aquifer impact and pollution risk assessment
GIS & Remote Sensing Expert	M.Sc./Master's in Geoinformatics, Geomatics, GIS, Remote Sensing, Geography, Environmental Science, Civil Engineering, or related disciplin;	5	•Spatial analysis & mapping • Land use/land cover classification • Impact zoning and buffer analysis
Water Modelling Specialist	M.Sc./Master's in Hydrodynamics, Hydraulic Engineering, Water Resources Engineering, Environmental Engineering, Civil Engineering, Ocean Engineering, or related discipline	8	• Thermal and water quality simulations development (eg. ELCOM-CAEDYM/CORMIX) • Scenario-based impact prediction
Oil Spill Modelling Specialist	Master's in Engineering or related discipline	8	• Oil spill modelling, scenario-based impact prediction etc.

Expertise Area	Key Qualifications	Minimum Experience (Years) Post Academic Qualification	Core Competencies
			• Scenario-based impact prediction
Climate Change Specialist	Master's in Environmental Science/Engineering;	8	Physical climate risk analyses; development of climate resilient management plans

The proposed ESIA Team shall include suitably qualified key experts with demonstrable experience relevant to the scope of the assignment, including environmental assessment, biodiversity and aquatic ecology assessment, social impact assessment, livelihood restoration, Indigenous Peoples planning, occupational health and safety, hydrology/water modelling, and climate risk assessment, as applicable.

The proposed key experts shall collectively demonstrate experience in completed ESIA/EIA assignments involving renewable energy, hydropower, reservoir-based infrastructure, transmission infrastructure, or other comparable large infrastructure / energy projects.

The ESIA Team Leader / Project Manager, Environmental Specialist, Social Specialist, OHS Specialist, and Biodiversity Specialist shall be full-time employees of the bidding firm and/or consortium member(s).

The proposed experts shall have demonstrable experience in ESIA studies aligned with IFC Performance Standards, including relevant experience in environmental and social baseline assessment, stakeholder engagement, biodiversity assessment, livelihood restoration, Indigenous Peoples planning, and environmental and social management planning, as applicable to their proposed role under the assignment.

GRIDCO reserves the right to assess the relevance and adequacy of the proposed qualifications and assignment experience based on the scope of work and supporting project references submitted as part of the Proposal.

7.3 **Financial**

- Average turnover from Consultancy Services of not less than Rs. 20 Crore in three preceding financial years. The documentary evidence in the form of certificate from the Statutory Auditor of the Consultant (Lead Consultant, in case of a Consortium), certifying the revenues from the consultancy services during each of the last three (3) financial years shall need to be provided. Additionally, annual audited accounts for the last three financial years shall be submitted

8. Schedule of Selection Process

8.1. Schedule for selection process shall be as per Table below:

Table:2

Sl No	Particular	Date
A	Issue of RFP Document	29/04/2026
B	Pred-Bid Meeting	06/05/2026
C	Response to Queries & publication of Corrigendum	30/05/2026
D	Submission of Proposal (Online only)	20/06/2026 15:00 hrs
E	Technical Proposal Evaluation and Declaration of Technical Qualified bidders	30/06/2026
F	Price Bid Declaration	06/07/2026
G	Issuance of LoA	10/07/2026
H	Signing of Contract Agreement	17/07/2026
F	Validity of Proposal	Minimum 180 Days from the last date for submission of proposal.

9. Scope of Services for Selected Bidders

9.1 The scope of the assignment comprises preparation of a project-specific Environmental and Social Impact Assessment (ESIA) and associated specialized studies and management plans, informed by the findings of the E&S Scoping Study. The ESIA shall identify, assess, and evaluate the environmental and social risks and impacts associated with the Project components and associated facilities and shall define appropriate mitigation, management, and monitoring measures.

9.2 The ESIA shall be prepared in accordance with applicable national regulatory requirements, IFC- Performance Standards, WBG General and Sector specific EHS

Guideline and relevant good international industry practice. Where multiple standards or requirements apply to the same issue, the ESIA Consultant shall clearly identify the applicable requirements, explain the rationale for the approach adopted, and demonstrate how compliance will be achieved.

9.3 The ESIA shall build upon the findings of the E&S Scoping Study and undertake a comprehensive assessment of environmental and social risks and impacts based on detailed primary surveys, field investigations, monitoring, and stakeholder consultations. The assessment shall not be limited to impacts identified at the scoping stage and shall consider any additional impacts arising from project design development, site conditions, or regulatory requirements. The ESIA may refine, modify or update the preliminary findings and conclusions of the Scoping Report and shall present revised mitigation and management measures, as necessary. For preparation of the ESIA, the ESIA Consultant will adhere to the following sections as mentioned below:

- For the purpose of this TOR, the scope of the ESIA is presented through an indicative report structure, with each section below outlining the principal topics, analyses, and outputs to be addressed by the ESIA Consultant. The headings describe both the expected content of the ESIA report and the corresponding analytical tasks to be undertaken. The structure is intended as guidance and does not limit the assessment; the ESIA Consultant may refine the scope and findings of the ESIA based on project design development, field investigations, regulatory requirements and stakeholder consultations.
- Project boundary, transmission line, access roads, launching pad and labour camps and associated facilities of the proposed Project are being finalized through studies commissioned by the GRIDCO and its technical consultants. Accordingly, the project description provided in the E&S Scoping Study needs to be updated, along the following topics.
- Location of the project site within administrative jurisdiction (State, District, Sub-Districts/ Block/ Tehsil, Village. etc.) should be presented with a map.
- Accessibility of the project site in terms of roadway, railway and waterway should be presented in detail. Widening and strengthening of access road from

Khatiguda and new approach road construction to connect the project shall also be described.

- Description of the Project layout (including project layout maps), clearly distinguishing between the core project components including the floating solar PV arrays, internal 33 kV power collection system, and inverter barges with associated electrical equipment and the associated facilities and temporary facilities and access infrastructure, such as the pooling substation, 220 kV transmission line, launching pads, temporary storage areas, access and approach roads and labour camps to be included. The locations and activities associated with each of these elements shall be described for all project phases (pre-construction, construction, operation, and decommissioning).

- **Pre-construction**

  Activities to be performed during pre-construction phase of the project, which is anticipated to include the following listed below, shall be discussed in detail:

  - Detailed engineering design of floating solar arrays, mooring and anchoring systems
  - Design of inverter barges and internal 33 kV power collection system
  - Design of pooling substation (PSS) and 220 kV transmission line
  - Finalisation of access roads, launching pads, and temporary facilities
  - Procurement of solar modules, floating platforms, electrical equipment, and balance of system components
  - Site surveys and investigations (topographic, bathymetric and geotechnical) and obtaining applicable statutory approvals and permits

- **Construction**

  Activities to be performed during construction phase of the project, which is anticipated to include the following listed below, shall be discussed in detail:

  - Levelling and land preparation (any cutting and backfilling requirements with source of back filling material as relevant) for land-based facilities;
  - Construction of internal 33 kV collection system and installation of interconnection infrastructure; associated transmission facilities to be considered in the ESIA as applicable;
  - Civil construction and installation of floating solar array, which includes pontoon/ floating system, mooring/ anchoring system, floating cabling, transformers etc.
  - Establishment and operation of temporary construction facilities and labour camps;
  - Material transport, equipment installation and construction waste management.

- **Operation**

  Activities to be performed during operation phase of the solar plant should be discussed here in detail. Some of the activities to be carried out in operation phase of the project are given below:

  - Operation and maintenance of solar plant, sub-station, transmission lines,
  - Cleaning of solar panels
  - Inspection and maintenance of floating structures, anchoring systems and electrical equipment, including periodic access by maintenance boats;
  - Handling of wastes generated from maintenance activities.

- **Decommissioning**

  Activities to be performed during the decommissioning phase of the floating solar plant shall be discussed in detail.:

  - Dismantling of floating solar arrays, inverter barges, internal cabling, and associated electrical equipment at the end of the project life.
  - Removal of mooring and anchoring systems from the reservoir.
  - Decommissioning of onshore facilities, including launching pad and restoration of sites to pre-construction or agreed post-project conditions.
  - Decommissioning of project-owned electrical infrastructure and coordination with OPTCL for associated facilities;
  - Collection, segregation, recycling, and disposal of solar modules, cables, oils, and other materials through authorised recyclers or disposal facilities.

- **Resource Requirement**

  - **Land**

    - The Project Description shall present permanent and temporary land requirements for all Project components and associated facilities, including the pooling substation interface, launching pads, temporary storage and laydown areas, transmission line right-of-way and tower locations, access roads, and any additional areas required during construction or operation. Land requirements shall be presented with village/settlement-wise segregation.

    - For each component, it should provide details of land categories in terms of ownership and use including private land/ government land/ *patta* land, and forest land/grazing area/agricultural land, including encroached land, cultural/religious sites, etc. as applicable.

    - Land information shall be presented at the village level and, where relevant, disaggregated by social group (SC/ST/OBC/others). Any

areas/ pockets/ land parcels to be avoided (private land, residential structures, cultural sites, religious shrines, rainwater harvesting structure) shall be clearly identified together with access routes and shown on Project maps.

- The land procurement/allotment process for the Project (solar park and other components, the TL RoW, access road) and associated facilities shall be described.
- The assessment shall also identify informal, customary, and community land tenure systems, including unrecorded land use rights, seasonal access, and livelihood dependence on common property resources. All categories of land users including titleholders, tenants, sharecroppers, encroachers, squatters, forest-dependent households, and other non-titleholders shall be identified and mapped in accordance with IFC Performance Standard 5.

- **Water Requirement**
  - The Project Description shall present quantity and quality of water required both for construction and operation phases of the project. Potential water sources for each phase and any treatment required to make the water suitable for use shall be identified and described. For the operational phase, a water balance diagram shall be prepared showing estimated water demand (including panel cleaning and domestic use), supply sources and reuse, if any.
- **Wastewater Treatment**
  - The Project Description shall describe source of wastewater generation and scheme for treatment of wastewater for construction and operations phase of the project. The treatment system shall be designed to meet applicable national regulatory standards and relevant international good practice. A process flow diagram of the treatment mechanism of the proposed treatment system shall be provided.
- **Power Requirement**
  - The Project Description shall present the estimated electricity demand during construction and operation phases and identify the proposed sources of power supply.
- **Human Resource**
  - The Project Description shall describe the anticipated workforce requirements for construction and operation phases, including skilled, semi-skilled and unskilled workers, technicians, engineers, managers and other staff, and indicate whether labour will be sourced locally or from outside the project area.

- **Project Schedule**
  - The ESIA shall include a project implementation schedule covering the pre-construction, construction and operation phases of all proposed activities, presented in bar chart (Gantt chart) format. The anticipated operational life of the Project shall be clearly indicated. Where the decommissioning phase is not shown in the bar chart, the expected project life and an indicative decommissioning timeframe shall be described

- **Regulatory Review and Gap Assessment**

9.4 The ESIA Consultant will review the administrative and regulatory framework applicable to the Project, including relevant national and state environmental and social requirements, applicable international treaties and conventions, the IFC Performance Standards (PSs), and the World Bank Group Environmental, Health and Safety (EHS) Guidelines. The review shall identify the permits and clearances required for the Project and evaluate the Project's compliance obligations at all stages. The review shall define the applicable regulatory and performance requirements for all stages of the Project. As part of this review, the ESIA Consultant shall undertake a gap analysis comparing applicable national and state environmental and social regulations with the IFC Performance Standards. Where differences or gaps are identified, the Project shall apply the more stringent requirement, and the ESIA shall define the actions and measures necessary to achieve compliance with the applicable standards. The ESIA shall describe the applicable policy, legal and administrative framework, including but not limited to the following national, state and local planning instruments, applicable laws, regulations and policies.

- Relevant national, state and local planning instruments, applicable laws, regulations and policies:
  - Forest Conservation Act, 1980
  - Wildlife Protection Act 1972 and amendments 2022
  - Environmental Protection Act, 1986
  - Wetlands (Conservation and Management Rules) 2017
  - Scheduled Tribes and Other Traditional Forest Dwellers (Recognition of Forest Rights) Act, 2006
  - The Right to Fair Compensation and Transparency in Land Acquisition, Rehabilitation and Resettlement (RFCTLARR) Act, 2013.
  - Orissa Scheduled Areas Transfer of Immovable Property (by Scheduled Tribes) Regulation, 1956.
  - Odisha Fisheries Policy, 2015
  - State Reservoir Fishery Policy, 2005- Odisha

- The Panchayats (Extension to Scheduled Areas) Act, 1996 (PESA) – Odisha Implementation
- The Electricity Act & Rules,2003
- The Indian Telegraph Act, 1885
- Building and Other Construction Workers (Regulation of Employment and Conditions of Service) Act, 1996
- The Contract Labour (Regulation & Abolition) Act, 1970
- Workmen's Compensation Act, 1923
- The Interstate Migrant Workers Act, 1979
- The Child Labour (Prohibition and Regulation) Act, 1986
- The Bonded Labour System (Abolition) Act 1976
- Equal Remuneration Act 1976.

- Applicable international standards and Good International Industry Practice (GIIP), including:
  - World Bank Group Environmental, Health and Safety General Guidelines (the "WBG EHS", 2007) and relevant sector specific WBG EHS Guidelines
  - IFC, Stakeholder Engagement: A Good Practice Handbook for Companies Doing Business in Emerging Markets (2007)
  - IFC, Good Practice Note on Addressing Grievances from Project Affected Communities (2009)
  - IFC and EBRD, Good Practice Note on Workers Accommodation (2009)
  - IFC, Good Practice Handbook: Use of Security Forces (2017)
  - IFC, Good Practice Handbook for Land Acquisition and Involuntary Resettlement (2023)
  - World Bank, Where Sun Meets Water. Floating Solar Handbook for Practitioners (2019)
  - IFC, Addressing Project Impacts on Fishing-Based Livelihoods A Good Practice Handbook: Baseline Assessment and Development of a Fisheries Livelihood Restoration Plan (2015)
  - IFC, Addressing Gender-Based Violence and Harassment Emerging Good Practice or the Private Sector (2020).

9.5 Approach & Methodology:

Determine the Area of Influence

The ESIA shall define and justify the Area of Influence (AoI), representing the spatial extent within which environmental and social baseline data collection, impact assessment and mitigation planning will be undertaken. The AoI shall build upon, but not be limited to, the preliminary boundaries identified in the E&S Scoping Report. The AoI comprises the following components

1. Project Components Footprint

The core AOI includes all areas directly occupied or physically disturbed by the Project components and associated facilities:

- Floating Solar Photovoltaic (FSPV) installation over the Indravati Reservoir (~6.5 sq. km)
- 33 kV transmission line and associated buffer
- Launching pad, temporary storage areas
- Power Substation (PSS),

- Right of Way (RoW) for the 220 kV transmission line up to Mukhiguda Grid Substation
- Reservoir area within FSPV area, where direct aquatic ecological impacts are anticipated

These areas are anticipated to experience direct environmental and social interactions associated with the Project. Project footprint included within the following villages:

- FSPV location-Padepadar, Gaura Kurumuli and Paraja Kurumuli.
- Transmission Line- Padepadar, Uparchobari, Podapadar, Tikilipadar, Mahulpatna, Kamaridhiti

2. Buffer Area (Secondary AOI)

The buffer AOI covers surrounding areas where indirect, induced, or attenuated impacts may occur:

Terrestrial Environment

- Air Quality & Noise: Up to 1 km from construction and operational areas
- Flora and Fauna (Terrestrial): Up to 1 km from the project footprint, accounting for dust, human movement, transportation, and temporary disturbances

Aquatic Environment

- Reservoir Area: Entire FSPV project area, plus up to 1 km from the FSPV core area, considering potential sediment resuspension, turbidity, and underwater noise during anchoring or pile driving. The ESIA shall assess potential aquatic impacts, including sediment disturbance, turbidity and underwater noise. This assessment shall be supported by site-specific analysis and sediment dispersion modelling, as appropriate to the proposed anchoring, mooring and installation activities.

Transmission Line AOI

- 220 kV Transmission Line: an initial 500 m buffer on either side of the transmission line alignment subject to refinement based on field conditions and assessment findings

The buffer zone is not expected to experience direct physical disturbance but is included to capture extended impacts related to air emissions, noise propagation, and water quality changes

Buffer area included within the following villages:

- In Nabarangpur district: Ambatapas (west bank), Gauda Deopalli (west bank) and Paraja Deopalli (west bank), Nagi (west bank)
- In Kalahandi district: Benakhamar (west bank), Kanasukali (east bank) and Ghutrukhal (east bank)

Defining the study methodology

The ESIA shall describe the detailed methodology to be applied. The methodology shall be consistent with Good International Industry Practice (GIIP) and applicable IFC Performance Standards. This will include, but not limited to: (i) detailed methodology of baseline data collection (secondary and primary); (ii) physical environmental monitoring – location, frequency, parameters, QA&QC; (iii) Ecology and biodiversity- data collection and survey for habitat, flora, fauna for

terrestrial and aquatic ecosystems, identification of sensitive habitats, IUCN threatened protected species in the AOI; (iv) socio-economic survey methodology-collection of secondary and primary data/ information, survey and consultation; (v) Impact assessment methods including modelling techniques.

9.6 Assessment of Alternatives: The ESIA shall present a summary of the alternatives analysis undertaken during the E&S Scoping Study. This shall include a comparison of reasonable alternatives to the proposed solar plant, transmission line, access roads, contractor facilities, labour camps, and other associated facilities, initially identified during scoping and further evaluated, as necessary. The analysis shall describe the avoidance criteria applied, technology and design considerations, potential environmental and social impacts, feasibility of mitigation measures, indicative costs, suitability under local conditions, and institutional and monitoring requirements. The "no-action" or "no-go" alternative shall also be described.

9.7 ENVIRONMENTAL AND SOCIAL BASELINE: The ESIA Consultant will collect/generate the necessary baseline data from primary and secondary sources within the project AOI. This includes- (i) physical environment –geomorphology (physiography, topography), geology, land use, soil quality, hydrology, surface water quality, sediment quality, hydro-geology, ground water quality, natural hazards, meteorology, air and noise quality, traffic; (ii) biological environment- habitat including sensitive ecological habitat; terrestrial and aquatic flora- fauna; protected species, migratory species; (iii) socio-economic environment – demography, economy and livelihood, social amenities and infrastructure, vulnerability, cultural heritage, etc. The assessment shall also identify informal, customary, and community land tenure systems, including unrecorded land use rights, seasonal access, and livelihood dependence on common property resources. All categories of land users *viz*. titleholders, tenants, sharecroppers, encroachers, squatters, forest-dependent households, and other non-titleholders shall be identified and mapped.

A project-specific household census/enumeration will be undertaken within the project footprint i.e. FSPV components areas and TL corridor area identified during the ESIA to identify all categories of land users in accordance with IFC Performance Standard 5. This will be complemented by sample-based socio-economic surveys, key informant interviews, focus group discussions, and participatory mapping to capture informal, customary, and seasonal land use, livelihood dependence on common property resources,

and vulnerability aspects. Physical and biological baseline data will be generated through field measurements, ecological surveys, GIS/remote sensing, and review of relevant secondary data. Together, these methods will ensure a comprehensive, representative baseline for the Project Area of Influence.

The description of the existing environmental conditions based on secondary data will be further elaborated, focusing on the AOI, based on primary and additional secondary data to establish a representative baseline against which project impacts can be assessed. Wherever applicable, primary and secondary data will also be compared with the applicable environmental standards as prescribed by the CPCB and/or IFC/WB/ WHO standard. The baseline conditions description will be supported by maps, tables and figures.

9.8 Stakeholder Consultation: The ESIA Consultant shall undertake stakeholder consultations with relevant groups/ communities/ stakeholders to obtain their views and suggestions on actions and measures for inclusion in the ESIA/ESMP. The consultation process shall ensure meaningful participation of potential project-affected persons, vulnerable and marginalized groups, and Indigenous Peoples/ Scheduled Tribe communities, including women and other at-risk segments. Information obtained through consultations shall be reflected in the ESIA and coordinated with the Stakeholder Engagement Plan (SEP) to ensure consistency of engagement activities and avoid duplication. Stakeholder consultations already undertaken during the E&S Scoping process shall be reviewed and used to inform the detailed engagement during the ESIA. The outcomes of consultations shall contribute to the socio-economic baseline and impact assessment.

The broad objectives of stakeholder engagement and consultations are to:

- Improve information flow between project proponent and various stakeholders, thereby improving understanding of the project;
- Identify important environmental and socio-economic characteristics or mitigation opportunities;
- Validate that the magnitude and significance of potential impacts have been assessed properly; and

- Improve the acceptability and quality of the mitigation and monitoring process

Stakeholder consultations shall follow a structured engagement protocol. The consultation process will follow three steps, as follows:

- Step-I: To explain the purpose of the consultation and to share relevant Project information;
- Step-II: Implement question protocol and record the responses;
- Step-III: Seek issues or concerns/apprehensions of the stakeholders relevant to the Project and /or context.

The Consultant shall document all consultation activities using a structured documentation protocol. The documentation shall include:

- the basic details of the consultation such as the project title, stakeholder name, names of the stakeholders attending the consultations, date, place of consultation and purpose of consultation etc.
- includes the questions asked and responses of the stakeholders, any concern or issues raised by the stakeholder and any response provided, and
- lists of documents or recommendations for further sources of information suggested by the stakeholder.

In areas with Scheduled Tribe populations, consultations shall be conducted in a culturally appropriate manner consistent with IFC Performance Standard 7, including processes appropriate to obtain Free, Prior and Informed Consent (FPIC), where applicable.

The ESIA will review existing grievance-handling practices and define the requirements for a Project-level Grievance Mechanism that is accessible, transparent, gender-responsive, and culturally appropriate. The mechanism will enable community members and other stakeholders to raise concerns or complaints throughout the project lifecycle, consistent with IFC Performance Standards and GIIP.

9.9 IMPACT ASSESSMENT AND MITIGATION MEASURES: The ESIA Consultant will identify and assess the potential impacts that the various elements of the proposed Project may have on aspects of the physical, biological, and socio-economic environment and shall propose mitigation measures for the identified potential impacts. Impact assessment and mitigation shall follow the mitigation hierarchy (avoidance, minimization, restoration and offset/compensation).In addition to the impacts identified in the E&S scoping report, description in the impacts assessment section shall also include impact sources throughout the project lifecycle, assessment of anticipated impacts, embedded control measures to be considered, impact significance post embedded control measures, mitigation measures to be adopted and residual impact, if any. The entire impact assessment section shall be prepared based on updated AOI considering revised Project boundary, TL route, access roads and Pooling substation (PSS), and associated facilities.

A. Impact on Physical Environment

Soil Quality

The ESIA shall assess the potential generation of hazardous waste during the construction and operation, phases of the project, in the form of used oils, lubricants, damaged batteries, and other chemical residues resulting from equipment maintenance. The ESIA shall evaluate potential generation of e-waste, including damaged or end-of-life solar modules. Construction and demolition waste will be generated during the construction phase. The ESIA shall assess the risk of soil contamination due to spillage or leakage of oil and lubricant, hazardous material and waste on bare soil during different phases of the Project (site development, construction and operation and maintenance).

In addition, the ESIA shall include an analysis of the expected solid and hazardous waste streams, including identification of waste types, estimated quantities during construction, operation, and decommissioning phases, and proposed storage, handling, recycling, treatment, and disposal arrangements in accordance with applicable regulations.

Impact on Air Quality

Operation of D.G. sets, vehicular movement, movement of small, motorised vessels and construction activities can cause fugitive and point source emissions during construction phase. Impact of the project on ambient air quality needs to be assessed in detail for construction phase of the project. The assessment should consider aspects like area sources (depending on where cut and fill operations are planned on site), standard emission factors for particulate matter (PM) emissions, local meteorology (wind speed and direction) during the construction, number

of construction/heavy vehicles in operation at site with estimate of their tail-pipe emissions and predict any incremental increase of PM/gaseous pollutant concentrations at neighbouring rural receptors/communities and describe the measures to mitigate the impacts. Where relevant, air dispersion modelling shall be undertaken to estimate incremental pollutant concentrations at sensitive receptors.

Impact on Water Quality

During the construction phase there is a risk of generation of wastewater from concrete work, and temporary labour camp. There could be some spills from chemicals, fuel etc. that may be carried through runoff. Movement of small, motorized vessels on the reservoir might impact the surface water quality.

During the operation phase, there is a potential risk of oil leakage from oil-containing equipment, including floating transformers or associated electrical components, which could lead to localised contamination of reservoir water if not properly contained and managed.

The ESIA shall assess potential changes to water temperature stratification and dissolved oxygen levels due to shading and localized heat generation, potentially impacting overall water quality. A Water quality modelling exercise is to be conducted to understand the extent of impact due to thermal stratification caused by the installation of floating solar panels. The ESIA shall also assess potential effects of shading on primary productivity, aquatic vegetation and dissolved oxygen regimes. Impact of the project on surface water quality of Upper Indravati reservoir needs to be assessed in detail in ESIA study based on the result of the modelling study.

In addition, the ESIA shall assess the potential adverse risks and impacts related to discharge of untreated wastewater and surface runoff from construction site and accidental spillage area into reservoir will be assessed in detail during the ESIA process with proposed mitigation measures including through Oil-Spill Modelling study (described in Section 3.3.3).

Terrestrial and Underwater Noise Impact

The ESIA shall assess potential noise and vibration impacts during the construction and operation phases of the Project. This shall include:

- Terrestrial noise and vibration from construction equipment, transportation activities, and operation of electrical equipment at onshore facilities such as the pooling substation and launching pads.
- Underwater noise and vibration associated with installation of anchoring or mooring systems, movement of vessels etc.

Traffic and Transport

Impact of the proposed project on existing traffic on site access road and ferry boat routes through the reservoir should be assessed in detail and accordingly mitigation measures should be proposed in the ESIA report.

Impacts of Natural Hazards

Impacts of the emergency situations such as natural disasters, environmental incidents, on the FSPV , transmission lines, storage areas, launch pads, transmission lines and roads. Based on

the preliminary assessment of natural hazard susceptibility of the Project Site and study area, necessary mitigation measures shall be suggested as part of the impact assessment section. The ESIA Consultant shall also carry out a climate change risk assessment, based on which the ESIA report shall recommend preventive, adaptation and mitigation measures, as may be found applicable.

B. Impacts on biological environment

The construction (diversion of forest land, vegetation clearance for land based facility) phase impacts; impact on surface water quality and sediment quality, underwater construction noise and vibration) and operation (limnological changes of reservoir, changes in the ecological productivity of the reservoir, operation of transmission line) of the project could result in impacts to the biodiversity receptors such as (a) natural and modified habitats; (b) IUCN threatened species; (c) migratory and congregatory species; (d) restricted range terrestrial and aquatic species. The ecological impacts to be assessed and mitigation measures to be included to mitigate the impacts.

The project is located within a landscape that supports a diverse assemblage of aquatic, semi-aquatic and terrestrial species, which are recognized as priority biodiversity values under PS 6 due to their threatened status, being migratory or congregatory and restricted range. The construction and operation of floating solar arrays along with associated facilities such as launching pads, access and approach routes and transmission line in different phases of the project could interact with sensitive aquatic birds, waders, fish, aquatic mammals, reptiles, raptors and terrestrial grassland-dependent species that utilize the project area. E&S scoping exercise screened in 25 IUCN threatened species (v2025-2) [Vulnerable, Endangered & Critically Endangered species] and 56 migratory/congregatory species of aquatic avifauna and fishes in the project site.

The ESIA Consultant shall conduct a Critical Habitat Assessment (CHA), following the criteria and thresholds provided in 2019 Guidance Note of PS6. Species that are screened in as part of Critical Habitat Screening should be assessed against the criteria and thresholds of Critical Habitat Assessment IFC PS6 (2019) and the impact on the priority biodiversity values in the project area. The feasibility and approach for achieving no net loss for natural habitats that are present within the Project's AoI should be clearly presented (refer Appendix D of E&S Scoping report). No Net Loss shall apply to natural habitat and Net Gain shall apply where Critical Habitat is confirmed, and the corresponding strategy shall be defined in a Biodiversity Action Plan.

<u>Impact on native species</u>

- The project could have impact on native floral species in the project area, project activities specially during the construction phase could impact the native species by proliferation of invasive species (both terrestrial and aquatic). The ESIA shall assess invasive species risks and identify potential introduction pathways, including construction materials, equipment and vessels.
- In addition to the that, ESIA Consultant needs to monitor changes to aquatic species composition of the reservoir and impact to native aquatic species with respect to possibility of introduction of non-native species to the reservoir.

- ESIA shall recommend preventive, adaptation and management measures, as may be found applicable.

Impact on ecosystem services

The project should identify ecosystem services the project may impact and/or on which the project depends. Such ecosystem services could include provisioning services (e.g. rivers and streams for irrigation and watering livestock, forest patches providing fuelwood, medicinal plants), regulating services (e.g. natural vegetation to curb soil run off from the local communities), supporting services (eg. nutrient cycling, photosynthesis, primary production etc.).

The construction and operation phases of the solar arrays and external transmission line could have impact on provisional, regulating and supporting ecosystem services due to the presence of fishing activities in the Upper Indravati Reservoir, dependency of local people on locally important flora like Teak, Sal, etc.

Prioritizing of relevant ecosystem services will be done by identifying those services for which project activities would most likely result in adverse impacts. Ecosystem services will be prioritized according to a priority matrix, which ranks two criteria:

- Importance of the Ecosystem Service to the beneficiary which considers the intensity of use, degree of dependence and the importance expressed by the Project Affected Communities; and
- Irreplaceability of the Ecosystem Service, which refers to the availability of alternatives, the accessibility, cost and appetite for those alternatives.

Impact Assessment

ESIA Consultant needs to assess the impact on biodiversity and develop the mitigation measures; which includes:

- Impacts should be identified and assessed on habitats and species including critical habitat trigger species;
- Impacts should be identified and assessed on priority ecosystem services.
  - Identifying indicators for the impacts and dependence assessments to clarify priority ecosystem services.
  - Evaluate the condition of priority ecosystem services in the absence of the project.
- Impacts should be identified and assessed keeping in mind the magnitude of the impacts and the sensitivity of the receptors.
- Impact significances should be assessed for each identified impact and mitigation recommended for impacts where impact significance is not negligible. Mitigation should be recommended in accordance with the mitigation hierarchy.
- Consequent to recommendation of mitigation the impact significance of residual impacts should be inferred.
- Detailed mitigation measures should be presented to mitigate the identified impacts.
- Prevention and management of spread of invasive species.

No Net Loss/Net Gain Assessment

- Based on the identified residual habitat or non-habitat impacts of medium to high magnitude to the receptors, assess the residual impacts to achieve no-net-loss/net gain.
- Provide a summary of the required offset compensation requirements for biodiversity values if offsets are deemed necessary for achieving no net loss/net gain.

Biodiversity offset feasibility assessment If Residual Impacts need to be offset

- Undertake an analysis of available mechanisms to implement a suitable biodiversity compensation/offset mechanism for significant biodiversity values, including desktop and interviews with relevant stakeholders (Government, NGOs and species experts). The analysis should recommend a relevant biodiversity offset management period.
- Summarize the various offset options available based on the analysis, including relevant size, location, implementation, governance, management, and implementation requirements.
- Estimate the capital and ongoing costs for offset implementation of the various option identified
- Determine the strengths and weaknesses of various options and recommend a preferred option.

C. Socio-economic Impact

Community Health, Safety and Security Impacts

The influx of migrant workers during the construction phase may increase interaction between the workforce and local communities, potentially leading to public health risks, including the spread of communicable and infectious diseases. These risks may be exacerbated in nearby villages with limited health infrastructure. The ESIA shall assess such risks and require contractors to implement all applicable government-prescribed public health and safety measures, updated to the most recent standards and enforced throughout the project lifecycle.

The presence of a large workforce and associated project activities may also give rise to security-related risks affecting both workers and local communities. As part of the ESIA, a Security Risk Assessment shall be undertaken. Based on its findings, a Security Management Plan shall be developed to manage potential conflicts, ensure proportional use of security personnel, and safeguard community well-being.

Labour and Working Condition Risks

The ESIA shall assess labour-related risks and define required management measures. Strict prohibition and monitoring mechanisms should be in place to prevent any form of child labour or forced/bonded labour. Working conditions must comply with national labour laws and IFC Performance Standard 2, ensuring fair wages, safe working environments, and protection for contract and inter-state migrant workers. Additionally, worker accommodation should meet health, safety, and hygiene standards to provide decent living conditions.

The Project shall also establish and implement a comprehensive Occupational Health and Safety (OHS) management system consistent with national regulations and IFC Performance Standard 2, including hazard identification, risk assessment, provision of appropriate personal protective equipment, training, emergency preparedness, and incident reporting. In addition, a Workers' Grievance Mechanism shall be developed and operationalized to enable all direct, contracted, and migrant workers to raise workplace concerns confidentially and without fear of retaliation, with clearly defined procedures for receipt, review, resolution, and documentation of grievances.

Gender-Based Impacts (SEA/SH)

Gender-related risks, including Sexual Exploitation and Abuse (SEA) and Sexual Harassment (SH), require proactive measures. These include adopting gender-sensitive policies and codes of conduct for workers, conducting awareness and training programs for both workers and local communities, and establishing confidential reporting and grievance mechanisms. The SEA/SH prevention measures should be integrated into the Labour Management Plan, Community H&S management plan and Security Management Plan to ensure a comprehensive approach to gender-based risk management. The SEP and the GM should also include gender related issues. The ESIA shall include a SEA/SH risk assessment consistent with GIIP and identify appropriate prevention and response measures.

Economic and Livelihood Impacts

The ESIA shall identify and assess potential economic and livelihood impacts arising from the Project components and associated facilities across the project lifecycle. These may include temporary or permanent impacts related to land use change, access restriction, loss of or disruption to livelihood activities, and impacts on common property resources. Particular attention shall be given to reservoir-based livelihoods (including fishing and fish trade), seasonal agriculture, grazing, and other resource-dependent activities, as well as impacts associated with construction activities, transmission line corridors, and access and approach roads.

The assessment shall distinguish between direct and indirect economic impacts, identify affected and vulnerable groups, and evaluate the magnitude, duration, and significance of such impacts. Mitigation and livelihood restoration measures shall be identified in accordance with the mitigation hierarchy. The ESIA shall identify the nature of impacts, affected groups, and mitigation principles, while detailed entitlement matrices, livelihood restoration measures, budgets, and implementation arrangements shall be defined in the LRP.

A Livelihood Restoration Framework (LRF) has been prepared at the scoping stage to provide overarching principles, eligibility criteria, and implementation guidance consistent with IFC Performance Standard 5. Building on the LRF and informed by the findings of the ESIA, a project-specific Livelihood Restoration Plan (LRP) shall be prepared as part of the ESIA package where economic displacement / livelihood impacts are identified. The LRP shall define impact-specific entitlements, livelihood restoration measures, institutional arrangements, budgets, timelines, and monitoring indicators. The ESIA shall include clear cross-references to the LRP.

The ESIA shall assess existing vulnerabilities, with particular attention to legacy impacts from past land acquisition and resettlement for the reservoir and evaluate how these vulnerabilities may be compounded by the Project's activities and impacts. Legacy impacts shall be assessed through a structured review of historical land acquisition and resettlement processes associated with the reservoir, combined with current socio-economic field verification in previously affected communities. This shall include a review of available documentation (e.g., compensation records, past resettlement plans, grievance registers, and government records) to establish the scope of historical impacts and commitments made. Targeted household surveys,

key informant interviews, and focus group discussions shall be undertaken to determine the current socio-economic status of previously affected households, assess whether livelihoods were fully restored, and identify any residual or unresolved impacts. The assessment shall evaluate how pre-existing vulnerabilities such as reduced landholdings, loss of access to common property resources, or long-term income decline may be compounded by the Project's activities, including cumulative or sequential livelihood and access restrictions. The findings shall inform impact significance determination and the design of targeted livelihood restoration and vulnerability-specific measures within the Livelihood Restoration Plan (LRP), in line with IFC Performance Standard 5.

Impacts on reservoir-based fishing livelihoods including access restriction and navigational safety implications for fishing activities shall be assessed through a dedicated fisheries and fishing livelihoods study, will be undertaken as part of the overall ESIA process. This study shall assess fishing practices, seasonal patterns, dependency levels, value chains, and potential project-related impacts, and shall inform the design of appropriate mitigation and livelihood restoration measures, which shall be incorporated into the LRP.

Impacts on Indigenous Peoples

In line with the presence of Scheduled Tribe populations and partial overlap with Schedule-V areas within the Area of Influence, the ESIA shall identify and assess potential project-related impacts on Indigenous Peoples. This shall include impacts on customary land and natural resource use, traditional livelihoods, social and governance institutions, cultural practices, and community cohesion. The assessment shall consider both direct and indirect impacts arising from land use change, access restrictions, labour influx, benefit-sharing arrangements, and interactions with associated facilities.

The ESIA shall document the nature, magnitude, and significance of these impacts at an assessment level. Detailed mitigation measures, culturally appropriate development and benefit-sharing measures, and any consent-related processes, including Free, Prior and Informed Consent (FPIC) where applicable, shall be addressed through the Indigenous Peoples Development Plan (IPDP). Clear cross-referencing between the ESIA and the IPDP shall be maintained to ensure consistency and avoid duplication

The ESIA shall include clear cross-references to the LRP, IPDP, and SEP to ensure coherence across assessment findings and subsequent management and implementation instruments.

9.10 RISK ASSESSMENT: The ESIA Consultant shall undertake a consolidated risk assessment to identify and evaluate risks to the Project, Project personnel, communities, and the environment arising from accidental events and natural hazards. This shall include hazard identification, likelihood and consequence analysis, risk characterisation, and identification of prevention and control measures. The assessment shall inform the Emergency Preparedness and Response Plan and avoid duplication with climate change risk, OHS, security, and community health and safety assessments.

9.11 ENVIRONMENT AND SOCIAL MANAGEMENT PLAN (ESMP):

The results of the ESIA study including the impacts and the proposed mitigation measures will form the basis of delineation of the Environmental and Social Management Plan (ESMP). The ESMP acts as a comprehensive framework summarizing all environmental and social measures required by the ESIA and translating them into actionable management steps for the project, becoming part of contractual agreements with the developers and the contractors (EPC, O&M and Decommissioning).

The primary objective of an ESMP is to safeguard the environment, site staff and the local population from project activity which may cause harm or nuisance. The ESMP shall be intended to provide a framework to ensure transparent and effective monitoring, prevention, minimization, and mitigation and enhancement measures to address the environmental and social impacts associated with the Project. The Consultant will indicate in the ESMP the various mitigation measures as identified through the ESIA process for pre-construction, construction, operation and decommissioning phases and for each mitigation measure: the relevant standards; the monitoring measures and indicators; responsibilities and timeline for implementation; implementation procedures or specific plan needed; and indicative budget. The monitoring and reporting requirements shall include a "management of change" capacity to the ESMP reflecting that it is intended to be a living document subject to regular review and update as the Project evolves.

The ESMP will also outline the organizational arrangement to be put in place for its implementation and E&S procedures and plans.

The ESMP will also include the overall budget estimate for the execution of the ESMP itself. For each plan and procedure needed, the ESMP will indicate a detailed outline including a description of the level of content sufficient to allow the plans/procedures to be developed and implemented, thus, to ensure the effectiveness of the mitigation measures identified in the ESIA process and its compliance with the requirements of the applicable law and IFC PSs.

In particular for each identified impact, the ESIA Consultant will establish a set of monitoring requirements that ensure that the identified mitigation measures are taken into account, implemented properly and are sufficient measures for protecting the environment and environment resources, local communities, and workers.

The ESMP will be consistent with good international industry practices and describes the following elements:

- A breakdown of the scope and purpose of the ESMP;
- An outline of the framework for compliance and regulatory requirements (Mitigation Plan, Monitoring Plan, Monitoring Indicators);
- ESMP management responsibilities in the context of the overall Project management structure;
- An overview for auditing and review;
- Environmental Implementation Budget and source of fund.

The ESIA shall include the ESMP framework and an outline of the management plans/procedures required to implement the ESMP. Developer should develop site specific SOPs, code of conducts, monitoring plan to implement the ESMPs. The following specific environment management plans have been identified for preparation during the ESIA:

- Construction EHS Management Plan
- Air Emissions and Noise Management Plan
- Water Quality Management Plan
- Waste Management Plan
- Traffic Management Plan
- Emergency Preparedness and Response Plan
- Biodiversity Management Plan
- Livelihood Restoration Plan
- Indigenous Peoples Development Plan
- Labour Management Plan
- Occupational Health & Safety Plan/Procedure
- Contractor / Subcontractor Management Plan
- Gender Action Plan (GAP)
- Grievance Mechanism
- Security Management Plan
- Community H&S Management Plan
- Stakeholder Engagement Plan (SEP)
- Supply Chain Management Plan

9.12 CRITICAL HABITAT ASSESSMENT

A desk-based Critical Habitat Assessment screened the FSPV project area using IBAT data, global databases, literature, and expert inputs, confirming no Protected Areas or IBAs within 20 km (nearest PA: Karlapat WLS at ~29 km). The screening identified 76 potential Critical Habitat candidate species under IFC PS6 Criteria 1 and 3, with no triggers under Criteria 2, 4 and 5. Priority biodiversity values include several threatened aquatic, terrestrial, avifaunal,

fish, reptile and mammal species that may be affected by the FSPV, associated facilities and the transmission line. Detailed CHA will be undertaken through primary surveys, community/NGO/forest department consultations to define EAAA boundaries, assess species occurrence against IFC thresholds, and map critical, natural and modified habitats. A detailed CHA methodology, including EAAA delineation, species specific surveys, habitat mapping and expert consultations has been outlined in Annexure 2.

9.13 WATER QUALITY MODELLING

During operation of the FSPV systems changes to ambient temperature stratification and dissolved oxygen levels can result from the shading of water and/or increased heat generated from the FSPV installations, creation of stagnant water pockets with effects on aquatic life (fishes, plankton) and water quality. Water quality modelling is expected to predict these changes under different scenarios, assess risks such as algal blooms or oxygen depletion, and design mitigation measures.

The purpose of the water quality modelling is to assess and predict the potential impacts of floating solar PV installation on reservoir water quality using advanced hydrodynamic and water quality modelling tools. The Water quality modelling requirement to establish the impact on water quality due to the development of FSPV has been referred to the document, Where Sun Meets Water: Floating Solar Handbook for Practitioners (2019) .

Approach of modelling

Hydrological and Meteorological Data: Collect data on currents, rainfall, evaporation, wind speed, solar radiation and temperature, cloud cover relative humidity.

Bathymetry and Geometry: Map depth of the FSPV area, geometry of the substratum

Water Quality Baseline: Measure existing baseline conditions for DO, pH, nutrients (particularly phosphate and nitrate), BOD, COD, TSS, chlorophyll-a and turbidity, water temperature, algal concentrations.

Model Selection & Set Up:For Upper Indravati reservoir, several advanced three-dimensional hydrodynamic and water quality modelling tools such as ELCOM-CAEDYM/CORMIX can be used to assess the impact of Floating Photovoltaic (FPV) systems on water quality. Configure and calibrate one or more of the above recognized models to simulate hydrodynamics and water quality under pre- and post-installation scenarios.

Scenario Analysis & Impact Assessment: Model multiple scenarios considering PV coverage ratios, seasonal variations, and operational conditions to predict changes in thermal regime and water quality. Evaluate risks to aquatic ecosystems, fisheries etc. and identify mitigation measures if significant changes are predicted.

Reporting :The deliverable will include a report presenting the baseline water quality assessment of the reservoir, calibrated and validated model files using recognized models mentioned above, scenario simulation results with impact analysis, and actionable recommendations for design and operational measures to mitigate potential water quality risks associated with the floating solar PV installation.

9.14 Oil Spill Modelling

Oil spill modelling is important for floating solar PV projects where floating transformers use cooling systems filled with biodegradable synthetic oil as in the case of the proposed project. According to the Floating Solar Handbook for Practitioners (World Bank), any accidental leakage or spill can affect water quality, aquatic ecosystems, and downstream users. Modelling will help to predict the dispersion, dilution, and potential ecological impact of oil under various scenarios, including wind, current, and temperature conditions.

Objective: To assess potential environmental impacts of synthetic oil spills from floating transformers on the reservoir ecosystem and water quality, using advanced modelling tools. The study will inform risk mitigation, emergency preparedness, and compliance with IFC/WB guidelines.

Modelling Approach

Baseline Assessment: Collect reservoir data: bathymetry, hydrology, meteorology, water quality, and ecological sensitivity.

Model Selection & Setup: Configure and calibrate oil spill dispersion models using recognized software viz. (e.g., OILMAP/ GNOME with lake-specific parameters).

Simulation Scenarios: Model worst-case and credible spill scenarios considering oil properties (biodegradable synthetic oil), wind, currents, and seasonal variations.

Impact Analysis: Predict oil spread, dilution, and potential ecological and water quality impacts. Assess risks to aquatic life, users, and project operations.

Mitigation & Emergency Planning: Recommend containment strategies (booms, absorbents), monitoring protocols, and emergency response measures.

Reporting

This deliverable will be a project level oil spill risk assessment report comprising of the baseline reservoir assessment, calibrated and validated oil spill model files, scenario simulation results with impact analysis, and detailed design and operational recommendations for spill prevention and emergency response. The risk assessment modelling will be supported by detailed maps, spill trajectory simulations, and impact zones including scenario summaries and response recommendations.

9.15 Climate Change Risk Assessment

A comprehensive Climate Change Risk Assessment (CCRA) for the proposed Project will be undertaken in full alignment with the IPCC Fifth Assessment Report (AR5) and Sixth Assessment Report (AR6) frameworks. The assessment shall follow the IPCC's risk concept, which considers hazard–exposure–vulnerability interactions to evaluate current and future climate-related risks, and shall cover the full spectrum of climate hazards relevant to the project geography.

Objective of the Study

The objectives of the CCRA are to:

- Identify, model, and assess climate risks relevant to the proposed floating solar project including:

    1. Extreme heat and heatwaves
    2. Cyclones, storms, and high-wind events
    3. Intense rainfall and monsoon variability
    4. Flooding, reservoir level fluctuations, upstream hydrological variability
    5. Other chronic climate stressors affecting structural or operational performance

- Apply the IPCC risk concept (hazard–exposure–vulnerability) to determine current and future physical climate risks under multiple RCP/SSP scenarios.

- Recommend engineering, operational, and management-level climate adaptation and resilience measures for incorporation into project design and operational protocols.

- Develop a comprehensive Climate Resilience Plan for the project.

Scope of the Study

Information Review and Baseline Development:Review all existing project information and establish a comprehensive baseline for climate and hydrological conditions. This includes an initial narrative review of all available documents and datasets to understand the project context, technical design considerations, and reservoir-dam operating environment. The following key documents and datasets will be collected and reviewed.

- Project design reports and layout plans
- Bathymetry data, reservoir characteristics, and dam technical information
- Regional hydro-meteorological datasets
- Hydrological studies prepared as part of the project's technical design
- Dam operation rules, including Full Reservoir Level, Minimum Drawdown Level, flood routing procedures, spillway operation and release protocols

Based on this review, develop a baseline climate and hydrological profile, capturing trends and conditions related to:

- Temperature fluctuations and long-term warming patterns
- Rainfall distribution, monsoon seasonality and variability
- Historical cyclonic activity in the region
- Reservoir behaviour, including water levels, inflow regimes and sedimentation patterns
- Records of past extreme weather events and climate-driven anomalies

Climate Hazard Assessment

Conduct a comprehensive climate hazard analysis in accordance with IPCC AR5/AR6 risk concepts, focusing on the identification and modelling of all relevant acute and chronic climate hazards that may affect the proposed project. The assessment will utilise authoritative climate datasets and projection scenarios to understand how climate variables will evolve over the project lifetime.

The climate hazards will be assessed by:

- Selecting appropriate IPCC-aligned climate scenarios (RCPs/SSPs) and time horizons (e.g., 2030, 2050, 2080)
- Analysing extreme heat, temperature rise and heatwave trends
- Evaluating storm intensity and high-wind events
- Reviewing heavy rainfall patterns, monsoon variability and cloudburst potential
- Assessing hydrological hazards, including extreme inflows, reservoir surges and wave action
- Examining drought conditions, reduced inflows and related reservoir stress

Building on these analyses, synthesise climate projections into a structured hazard profile that quantifies hazard probability, magnitude, and relevance for floating solar design and operations.

Detailed Flood & Hydrological Impact Assessment

The assessment will be undertaken using hydrodynamic and hydrological modelling methodologies consistent with reservoir engineering practice. The flood assessment will be expanded by reviewing and modelling:

- Dam operation rules including Full Reservoir Level, Minimum Drawdown Level, gate operation schedules, spillway protocols and flood routing rules
- Climate-induced changes in monsoon precipitation, upstream runoff and catchment hydrology
- Future flood behaviour using return period analysis (1:50, 1:100, 1:500) and Probable Maximum Flood (PMF) scenarios
- Reservoir-water level fluctuations under extreme rainfall and inflow conditions
- Wave dynamics, hydrodynamic loading and debris movement under flood scenarios

The analysis will highlight implications for floating array stability, mooring tension, anchoring integrity, electrical system safety and overall operational resilience during extreme hydrological events.

Exposure and Vulnerability Assessment

Using the IPCC vulnerability framework, assess the sensitivity and adaptive capacity of all relevant components of the proposed project. Evaluate exposure and vulnerability by examining:

Physical exposure of floating platforms, PV modules, inverters, mooring lines and underwater cabling

Sensitivity of critical infrastructure to thermal stress, wind loading, wave action and fluctuating reservoir levels

Vulnerability of O&M facilities, workforce safety arrangements and power evacuation infrastructure

Interdependencies such as reliance on dam operations, early warning systems and regional grid stability

Existing coping mechanisms and resilience gaps within the project's design and operational model

Risk Evaluation & Prioritization

This analysis will follow the IPCC risk framework, integrating hazard probability, exposure level, and vulnerability characteristics into a structured risk matrix. This section will involve evaluating and prioritising the climate risks by:

Analysing the interaction of hazards (extreme heat, flooding, cyclones, wind events) with exposed project components

Applying an IPCC-aligned risk scoring system to determine the magnitude and priority of each identified risk

Assessing risks across multiple climate scenarios and time horizons (short-term, mid-term, long-term)

Ranking risks into categories (e.g., low, medium, high, very high) and defining triggers for adaptation actions

Stakeholder Consultations

Engage with relevant stakeholders to gather operational, hydrological, regulatory and disaster-management insights to validate modelling assumptions and strengthen alignment between technical assessments and ground realities. Consultations will be undertaken with the following stakeholders at a minimum:

Dam and reservoir operating authorities viz Water Resource Department (WRD) to understand operational rules, emergency procedures and historical flood behaviour

Hydrological and technical design consultants to review baseline hydrological assessments, modelling inputs and reservoir dynamics

State and District Disaster Management Authorities to gather information on cyclone preparedness, flood response systems, and early-warning mechanisms

Preparation of Climate Resilience and Adaptation Plan

Prepare a Climate Resilience Plan with recommendations covering:

- Engineering and Design Adaptations, including enhanced mooring/anchoring systems, modifications to withstand higher wind loads, upgrades for extreme heat tolerance and reinforced electrical infrastructure

- Operational Adaptation Measures, such as revised O&M protocols during extreme weather, improved reservoir monitoring, heat-stress management for workers and storm-response procedures

Emergency Preparedness and Disaster Risk Reduction, incorporating cyclone preparedness SOPs, flood contingencies, early-warning triggers and coordination mechanisms with dam authorities

Monitoring and Review Framework, outlining key climate indicators to track, trigger thresholds for action, and periodic review requirements.

10. Deliverables

The following outputs are expected during the course of the assignment:

Table:4

Deliverable / Report Title	Timeline	Payment as % of Fee
Inception Report & Team Mobilization	T0 + 2 weeks	5%
Completion of Primary Baseline Surveys (social, fisheries, ecology, environment) and Report Submission	T0 + 8 weeks	10%
Draft Climate Risk Assessment	T0 + 12 weeks	15%
Draft Water Modelling Report	T0 + 12 weeks	
Draft Oil Spill Modelling Report	T0 + 12 weeks	
Interim Environmental & Social Design Advisory (for DPR inputs)	T0 + 13 weeks	10%
Draft Livelihood Restoration Plan	T0 + 14 weeks	10%
Draft Critical Habitat / Biodiversity Assessment		
Draft ESIA Report (including ESMP)		
Final Climate Risk Assessment	T0+15 weeks	10%
Final Water Modelling Report		
Final Oil Spill Modelling Report		
Final Livelihood Restoration Plan		
Final Critical Habitat / Biodiversity Assessment	T0+16 weeks	

Deliverable / Report Title	Timeline	Payment as % of Fee
Final ESIA Report (including ESMP) for DPR integration		
Total (A)		**60%**
Transmission Line Component		
Corridor Baseline Surveys (ecology, habitation, avifauna)	T0+ 4 weeks	5%
Socio-economic Surveys & Access Restriction Assessment		
Draft Transmission Line ESIA	To+8Weeks	15%
Draft LRP (RoW / livelihood impacts)	To+8Weeks	
Draft FPIC Documentation (if triggered)	T0+10 Weeks	
Total (B)		**20%**
Final Documents		
Final LRP	T0+16 weeks	20%
Final FPIC Documentation		
Final Transmission Line ESIA		
Total (C)		**20%**
Total (A+B+C)		**100%**

Reference Dates

- T0 – Date of Contract Signing with ESIA Consultant

Note:

- **Parallel Assessment:** The FSPV ESIA and the Transmission Line ESIA shall proceed in parallel. The FSPV assessment is linked to project design and DPR preparation, while the Transmission Line assessment is linked to alignment confirmation by OPTCL. No construction of any Project component or Associated Facility shall commence until the relevant ESIA, ESMP, LRP and, where applicable, FPIC requirements have been completed and approved by Independent Engineer or Independent E&S Consultant (not involved in preparation of ESIA)
- **Nature of Interim Advisory:** The Interim Environmental and Social Design Advisory is intended to guide DPR refinement based on baseline findings. It shall not constitute environmental approval, ESIA completion, or compliance certification and shall be superseded by the final ESIA and ESMP.

In addition, the Selected Consultant should have their team ready to make presentations to the GRIDCO team regarding the progress of the assignment, and significant findings. These are expected to be in advance of submission of the Draft and Final reports, as well as finalization of inputs to bidding documents for selection of solar project developers.

11. Work Order Duration and Submission of Deliverables

- Initial Work Order duration shall be six months from the issuance of Work Order. However, GRIDCO may extend the Work Order Duration up to selection of Floating Solar project developers for development of Floating Solar projects in the Upper Indravati.
- Selected Consultant must request GRIDCO, at least seven (7) Days prior to the deadline of submission of Deliverables, with the reason and justification, behind such requirement for the time of extension in submission of aforementioned Deliverables in Clause 10. The decision regarding the extension of time for the submission of deliverables will solely depend up on the GRIDCO.

12. Criteria for Evaluation

- Evaluation of Technical Proposals

In the first stage, the Technical Proposal shall be evaluated based on the Bidder's demonstrated experience and the qualifications of the proposed team.

For evaluation purposes:

- Only completed assignments shall be considered;
- For all criteria based on number of assignments, a maximum of five (5) assignments shall be considered;
- The same assignment shall not be counted under multiple criteria, unless clearly justified for distinct scope;
- Evidence (completion certificates / client references / contract extracts) shall be provided for each cited assignment;
- Generic ESG advisory, sustainability reporting, compliance audits, or corporate ESG assignments without substantive ESIA/EIA scope shall not be considered equivalent to the required ESIA experience;
- Separate CVs shall be provided for separate expertise areas and evaluation criteria. The same individual shall not be proposed against multiple key expert positions;
- GRIDCO reserves the right to seek additional supporting documentation to verify the claimed assignment experience and role of the proposed experts.

Technical Proposal Evaluation Criteria

##	Technical Proposal Evaluation Parameter	Detailed description	Maximum Score
1	ESIA Experience in Renewable Energy / Infrastructure Projects	a. Years of relevant ESIA/EIA experience in renewable energy, hydropower, reservoir-based infrastructure, transmission infrastructure, or other energy/infrastructure projects involving significant environmental and social assessment scope:≥10 yrs = 10; 7–9 yrs = 7; 5–6 yrs = 5; (Max 10 Marks) b. Completed assignments (max 5): 4 marks per completed ESIA/EIA assignment involving ≥50 MW renewable energy generation and/or associated transmission infrastructure and/or reservoir-based infrastructure (max 20).	30
2	Experience in International Standards – IFC Performance Standards	Count of completed ESIA assignments (max 5) undertaken in alignment with IFC Performance Standards for renewable energy, hydropower, transmission infrastructure, reservoir-based infrastructure, or other energy/infrastructure projects 2 marks per completed assignment aligned with IFC Performance Standards (max 10).	10
3	Experience in IFC Performance Standard 7 (PS7), including FPIC and Indigenous Peoples Planning	Count of assignments (maximum five) involving facilitation of Free, Prior and Informed Consent (FPIC) processes and preparation of Indigenous Peoples Plans (IPP/IPDP) in India: 4 marks per assignment where the consultant has demonstrated both facilitation of FPIC processes and preparation of IPP/IPDP 2 marks per assignment where the consultant has demonstrated either FPIC	20

##	Technical Proposal Evaluation Parameter	Detailed description	Maximum Score
		facilitation or IPP preparation (but not both) Evidence shall include documentation demonstrating the consultant's role in supporting culturally appropriate engagement, consultation processes, and preparation of IPP deliverables.	
4	Reservoir / Fisheries / Aquatic ESIA Experience	Count of assignments (max 5) involving reservoir/river systems with fisheries assessment, aquatic ecology assessment, limnology, or aquatic biodiversity assessment: 2 marks per assignment (maximum 10 marks); Additional 1 mark per assignment involving fishery-based livelihood assessment within the same assignment (maximum total score: 15)	15
5	Strength and Qualification of Proposed Team (Section 7.1.8)	Scored per sub-criteria below (all evidence via CVs, certifications, project references).	25
5.1	ESIA Team Leader / Project Manager	≥15 years ESIA/EIA experience AND ≥3 completed ESIA assignments in relevant renewable energy/infrastructure sectors AND ≥2 assignments aligned with IFC Performance Standards. If all met = 5; if any two met = 3; else = 0.	5
5.2	Environmental Specialist	≥10 years relevant experience AND ≥3 completed ESIA/EIA assignments in relevant sectors AND ≥2 assignments involving environmental baseline assessment, impact assessment, and ESMP preparation aligned with IFC Performance	4

##	Technical Proposal Evaluation Parameter	Detailed description	Maximum Score
		Standards. If all met = 4; if any two met = 2; else = 0.	
5.3	Social / LRP / IP Specialist (PS7)	≥10 years relevant experience AND ≥3 assignments involving land acquisition/livelihood restoration/Indigenous Peoples AND ≥2 assignments involving FPIC and Indigenous Peoples Planning aligned with IFC PS5/PS7. If all met = 4; if any two met = 2; else = 0	4
5.4	biodiversity Expert (Terrestrial/Freshwater)	≥10 years relevant experience AND ≥3 assignments involving biodiversity assessment/ecological surveys/CHA AND ≥1 assignment aligned with IFC PS6. If all met = 4; if any two met = 2; else = 0.	4
5.5	Hydrology / Reservoir / Water Modelling Specialist	≥2 assignments involving reservoir assessment, hydrology, limnology, hydrodynamic modelling, or water quality modelling. If ≥2 = 3; if 1 = 1; else = 0.	3
5.6	Fisheries Expert	≥2 assignments involving fisheries assessment and fishery-based livelihood analysis in reservoir, wetland, or river systems. If ≥2 = 3; if 1 = 1; else = 0.	3
5.7	Supporting Specialists Coverage	Presence of ≥3 among: OHS, GIS/Remote Sensing, Climate Change, Water Modelling, Oil Spill / Water Quality Modelling. If ≥3 = 2; if 2 = 1; else = 0.	2

- **Short Listing of Bidders**

  Only those bidders whose Technical Proposals secure a minimum score of 70 marks out of 100 shall be eligible for further evaluation and will be designated as Technically Qualified Bidders. In the event that only one bidder achieves the minimum qualifying score of 70 marks, the Financial Proposal of that bidder shall also be opened and may be considered for award.

- **Evaluation of Financial Proposal**

  In the second stage, the financial evaluation will be carried out as per RFP. GRIDCO will determine whether the Financial Proposals are complete, unqualified, and unconditional.

- **Least Cost Bid (L1 basis)**

  The Technically Qualified Bidder with lowest financial quote shall be the declared as a Selected Consultant Bidder under this RFP.

13. Conflict of Interest

Neither the Selected Consultant nor any of the personnel engaged by the Selected Consultant shall engage in any personal, business or professional activity, which conflicts or could conflict with any of their obligations in relation to this consultancy engagement.

The Selected Consultant and the personnel shall notify GRIDCO immediately of any actual or potential conflict, together with recommendations as to how the conflict can be avoided or mitigated.

The Selected Consultant shall observe, in competing for and acceptance of Work Order, the laws against fraud and corruption (including bribery). The Selected Consultant shall also furnish information on commissions, gratuities and fees, if any, paid or to be paid to agents or any other party relating to this Proposal and, if awarded, acceptance of Work Order.

In case of failure to comply with any of the above, the office reserves the right to terminate the Work Order immediately, without any financial obligations or liabilities and may also forfeit the Bid Security/Performance Guarantee provided by the Selected Consultant.

14. Rights of GRIDCO

GRIDCO reserves the right to cancel this notice, and not to proceed in the matter, at any stage accept or reject any or all Proposal, without giving any explanations, whatsoever.

15. Termination of Work Order

- GRIDCO may, by way of written notice, terminate the Work Order under the following conditions:
- The Selected Consultant is unable to address the assigned works;
- Quality of the assigned works is not to the satisfaction of the GRIDCO;
- The Selected Consultant fails to meet the prescribed timelines assigned under the prescribed time period; and
- The Selected Consultant commits any material or persistent breach of its obligations under the Work Order.

16. Proposal Submission

- The Technical Proposal is to be submitted online. The Technical Envelope shall contain the following documents:
    - Technical proposal
    - All the format and documents
    - All the supporting documents like Financial Statements of three Financial Year, Work Order/ Contract and Completion certificate for supporting experiences shown against the technical eligibility, etc,.
- Financial Proposal should be submitted online as per the format given in e-tender portal only and no details related to financial quote should be part of Technical Proposal.

17. Validity

The proposal shall remain valid for the period of 180 Days from the last date of submission of the proposal as specified in this RFP. The proposal with validity of less than 180 Days may be rejected as non-responsive.

18. Amendments to the RFP and Work Order

- At any time prior to the deadline for submission of the proposal, GRIDCO may for any reason, modify the RFP. The prospective respondents having received the RFP shall be

notified of the amendments through website and such amendments shall be binding upon them.

- During the execution of Work Order, GRIDCO may make modification, as per requirement of the engagement with the prior consent from the Consultant.

19. Fee

The financial proposal by the Consultant shall be exclusive of the applicable taxes shall be termed as Fee for the purpose of execution of engagement. This financial proposal shall cover remuneration for all the Personnel (Expatriate and Resident, in the field, office etc.), accommodation, travel costs etc. All the applicable taxes shall be payable additional to Selected Consultant based on prevailing tax guidelines/policies.

20. Payment Milestones

The payment shall be made as per Deliverable milestones provided in Clause 10.

21. Liability of the Consultant

Except where there is proven misconduct, gross negligence, dishonesty or fraud on behalf of the Selected Consultant of the personnel deployed by the Selected Consultant, the Consultant's liability under the Work Order shall be limited to the amount of the Fee.

22. Penalty on Delay in Completion

- If the milestones are not completed within the scheduled completion dates as per this RFP due to delay not attributable to Selected Consultant's default, GRIDCO shall extend the completion timelines for milestones which are affected due to delay without levying penalty on consultant.
- In case milestones are not completed within the scheduled completion dates as per this RFP due to delay(s) attributable to Selected Consultant's default, GRIDCO shall extend the completion timelines for all milestones cumulative up to maximum 10 Weeks and levy a penalty of 1% of Fee per week on consultant.
- Penalty amount shall be deducted from the balanced payment under the remaining milestones.

Annexure 1[1]

Tentative Transmission Line Details

From	To	Corridor (row in meters)	Voltage Level (kV)	Tentative Transmission line Length (km)

[1] The details given in the Annexure 1 may vary based on the project development and on the location of evacuation sub-station and project structuring.

Formats for Response to RFP

The following formats are required to be included in the Applicant's Response to RFP.

1. Format for the Covering Letter
2. Format for Details of Applicant
3. Format for Statement of Legal Capacity
4. Format for Experience of the Firm
5. Format for Team Composition
6. Format for Curriculum Vitae
7. Format for Financial proposal
8. Format for Power of Attorney
9. Format for Affidavit for not being blacklisted
10. Format for details of Consortium / Company
11. Format for Format for Count of Assignments performed for Technical Evaluation
12. Format for Bid Security
13. Format for Performance Security
14. Certificate from the Statutory Auditor of the Consultant (Lead Consultant, in case of a Consortium), certifying the turnover from the consultancy services during each of the last three (3) financial years

Applicant may use additional sheets to submit the information for its detailed Response.

1. Format for Covering Letter

(To be printed on letterhead of Applicant)

Date: *(dd-mm-yyyy)*

Letter Ref. No.:

To

Chief Project Manager

Renewable Energy Nodal Agency (RENA)

GRIDCO, Bhubaneswar, 751022

Sub: Proposal in response to the Consultancy services for Environmental and Social Impact Assessment (ESIA) for 225 MW Upper Indravati Floating Solar Project including evacuation infrastructure and associated transmission lines in the state of Odisha, India

.

Ref: *RFP No. _____, Dated: _____*

Kind Attention: Chief Project Manager, GRIDCO

Dear Sir,

Having reviewed and fully understood in detail all the information provided in the RFP document, hereby submit Proposal in full compliance with the provisions specified in the RFP document for consultancy services for Environmental and Social Impact Assessment (ESIA) of the proposed 225 MW Upper Indravati FSPV project.

We are enclosing herewith the following information with duly signed formats as desired by you for your consideration:

#	**Documents as required under RFP document**	**Enclosed (Yes/No)**
1	Applicant Details Checklist of supporting documents	*(Yes/No)*

	- _____ - _____	
2	- Price Bid	*(Yes/No)*

We understand that the selection shall be as per the details mentioned in the RFP document. We agree to abide by the provisions laid down under the RFP document issued by the GRIDCO Limited, Bhubaneswar.

We, declare that the information as submitted in this Proposal is true to the best of my knowledge. In case any information given in this Proposal or attached documents are found to be incorrect at any point of time, we understand that the GRIDCO may reject my response to RFP, and/or cancel the order, if issued.

Yours truly

(Signature)

(Address)

(Contact details: telephone no. , fax no.)

2. Format for Details of Applicant

#	**Description**	**Details**
1.	Name of the Applicant Registered office address: Telephone no.: Fax no.: e-mail: Correspondence address: Telephone no: Fax no: e-mail id:	
2.	Name of the chief executive officer/ Managing Director	
3.	Type of the Applicant *(Individual/Hindu Undivided Family/Partnership/Pvt. Ltd. Co./Public Ltd. Co./)**	
4.	Name of directors of the organization *(if applicable)*	
5.	Name and address for correspondence with Authorized Representative[#] of Applicant. Telephone no.: Fax no.: Email:	
8.	Whether the Applicant or any of its promoter(s)/director(s)/ associates is blacklisted by any central government or	

	state government/ department/ agency/World Bank/IFC in India? *(yes/no)*	
9.	Any other information (use separate sheet)	

3. Format for Statement of Legal Capacity

(To be forwarded on the letterhead of the Applicant/ Lead Member of Consortium)

Date: *(dd-mm-yyyy)*

To

Chief Project Manager

Renewable Energy Nodal Agency (RENA)

GRIDCO, Bhubaneswar, 751022

Dear Sir,

We hereby confirm that we/ our members in the Consortium (constitution of which has been described in the Proposal) satisfy the terms and conditions laid out in the RFP document.

We have agreed that …… (insert member's name) will act as the Lead Member of our consortium. *

We have agreed that ……. (insert individual's name) will act as our representative and has been duly authorized to submit the Proposal in response to the RFP. Further, the authorised signatory is vested with requisite powers to furnish such letter and authenticate the same.

Thanking you,

Yours faithfully,

(Signature, name and designation of the authorised signatory)

***Please strike out if this sentence is not applicable.**

4. Format for Experience of the Firm

Sr.No	Particular	Details
1.	Energy/Renewable Energy/ Solar/ Includes transmission element	
2.	Client	
3.	Location of the Project	
4.	Duration of Assignment	
5.	Contract Value (INR)	
6.	Brief Description of Project include scope of work and deliverable	
7.	ESIA Experience (Years)	
8.	ESIA Completed Assignment (Nos)	
9.	Experience in International Standards – IFC PS, ADB SPS or WB ESF (Nos)	
10.	Experience in IFC Performance Standard 7 (PS7), Including FPIC and Indigenous Peopoles Planning (Nos)	
11.	Reservoirs/Fisheries/Aquatic ESIA Experience (Nos)	

Note: All claimed experience must be supported by relevant documentary evidence.

5. Format for Team Composition and detailed Curriculum Vitae

Sr. No	Name	Position	Educational Qualification	Count of Projects	Years of Experience
1					
2					
3					
4					
5					
...					
...					

6. Format of Curriculum Vitae (to be provided for all the Team Members including Team Leader)

1. **Name of Staff**: _____
2. **Proposed Position**

   _____
3. **Employer**: _____
4. **Date of Birth**: _____ **Nationality**: _____
5. **Education**

School, college and/or University Attended	Degree/certificate or other specialized education obtained	Date Obtained

6. **Countries of Work Experience**: _____
7. **Languages:** _____
8. **Employment Record**

   From [*Year*]: _____ To[*Year*]: _____

   Employer: _____

   Positions held: _____

9. **Work Undertaken that Best Illustrates Capability to Handle the Tasks defined in the scope of work**

   Name of assignment or project: _____

   Year: _____

   Location: _____

   Client: _____

   Main project features: _____

   Positions held: _____

   Activities performed: _____

7. Format for Financial Proposal

(Name of the Bidder)

(Address of the bidder)

To

Chief Project Manager

Renewable Energy Nodal Agency (RENA)

GRIDCO, Bhubaneswar, 751022

Subject: Proposal in response to the Consultancy services for Environmental and Social Impact Assessment (ESIA) for 225 MW Upper Indravati Floating Solar Project including evacuation infrastructure and associated transmission lines in the state of Odisha, India

Dear Sir,

We, the undersigned, offer to provide the services as consultant for Environmental and Social Impact Assessment (ESIA) of 225 MW Upper Indravati FSPV project including evacuation infrastructure and associated transmission lines in the state of Odisha, India.

1. Our Financial Proposal shall be binding upon us subject to any modifications resulting from Work Order negotiations, up to the expiration of the validity period of the Proposal, i.e. _____ *(date)*.
2. This financial proposal covers remuneration for all the Personnel (Expatriate and Resident, in the field, office etc.), accommodation, travel costs, equipment, printing of documents, etc. The Financial Proposal is without any condition.
3. We undertake that in competing for and, if the award is made to us, in executing the above consultancy services, we will strongly observe the laws against fraud and corruption in force in India namely "Prevention of Corruption Act 1988". We understand that you are not bound to accept any Proposal you receive.

Yours sincerely_____

Authorized Signatory

(Name and Title of Signatory)

(Name of Firm)

(Address)

8. Format for Power of Attorney

POWER OF ATTORNEY

Know all men by these presents, We……*(name and address of the registered office)* do hereby constitute, appoint and authorise Mr / Ms……*(name and residential address)* who is presently employed with us and holding the position of ……. as our attorney, to do in our name and on our behalf, all such acts, deeds and things necessary in connection with or incidental for the project including signing of all documents in our Response to Proposal for consultancy services for Environmental and Social Impact Assessment (ESIA) for 225 MW Upper Indravati FSPV project including evacuation infrastructure and associated transmission lines in the state of Odisha, India, including submission of all documents and providing information / Responses to GRIDCO, Bhubaneswar, representing us in all matters before GRIDCO, and generally dealing with GRIDCO in all matters in connection for the said Project.

We hereby agree to ratify all acts, deeds and things lawfully done by our said attorney pursuant to this Power of Attorney and that all acts, deeds and things done by our aforesaid attorney shall and shall always be deemed to have been done by us.

For (Insert name of the Applicant/ bidder on whose behalf PoA is executed)

_____

(Signature)

(Name)

(Designation)

(Accepted)

Specimen signatures of attorney attested

_____

(Signature of Notary Public)

(Name)

(Designation)

(Address of the Attorney)

*Place:*_____

Date: _____

Note:

1. *The mode of execution of the Power of Attorney should be in accordance with the procedure, if any, laid down by the applicable law and the charter documents of the executants(s) and when it is so required the same should be under common seal affixed in accordance with the required procedure.*

In case the applicant is individual then separate declaration to this effect shall be required to be submitted

9. Format for Affidavit for not being blacklisted

Affidavit

We <provide Name of the Firm/Company/Organization/ Consortium> having its registered office at < Office Address> represented by its director Mr. <Name of the Director> do hereby solemnly and sincerely affirm and state as follows that :

a. We <provide Name of the Firm/Company/Organization/ Consortium> or our directors are not blacklisted by any Central/ State Government/ agency of Central/ State Government of India / Public Sector Undertaking/ any Regulatory Authorities in India or any entity controlled by them or by World Bank or IFC, from participating in any project as on date.

b. We <provide Name of the Firm/Company/Organization/ Consortium> or our Directors during the last three (3) years, neither failed to perform on any agreement (as evidenced by imposition of a penalty by an arbitral or judicial or regulatory authority or a judicial pronouncement or arbitration award against the Bidder) nor expelled from any project or agreement nor we have had any agreement terminated for breach of Contract/Work Order.

[BIDDERS NAME] (Signature of Notary Public)

Name: Place:

Designation: Date:

Signature:

10. Format for details of Project Consortium / Company

Particulars	Status Yes / No	Count of project / No. of Years
Bid Security		
Nature of company Consortium/ Single Company		
No. of ESIA (in last 3 financial Years)		
No. of EIA (in last 3 financial Years)		
No. of SIA (in last 3 financial Years)		
No. of ESIA (in last 3 financial Years) (Renewable Energy Sector)		
No. of EIA (in last 3 financial Years) (Renewable Energy Sector)		
No. of SIA (in last 3 financial Years) (Renewable Energy Sector)		
No. of ESIA (in last 3 financial Years) (Pertaining to Transmission Sector for conventional or Renewable)		
No. of EIA (in last 3 financial Years) (Pertaining to Transmission Sector for conventional or Renewable)		
No. of SIA (in last 3 financial Years) (Pertaining to Transmission Sector for conventional or Renewable)		
Average Turnover (20 crore) (in previous three preceding financial years) FY 2022-23 FY 2023-24 FY 2024-25	Yes / No	
certificate from the Statutory Auditor of the Consultant (Lead Consultant, in case of a Consortium), certifying the revenues from the consultancy services during each of the last three financial years	Yes / No	

Environmental and Social advisory experience		
Whether proposed team are employees of the bidding firm/members of the consortium, except for the Technical Consultant	Yes /No	
Whether barred by central government or state government/ department/ agency in India	Yes/ No	

11. Format for Count of Assignments performed for Technical Evaluation

Particulars	Count / Experience	Remarks
ESIA Experience in Renewable Energy / Infrastructure Projects (Years of Experience)		
ESIA Experience in Renewable Energy / Infrastructure Projects (Nos. of Completed Assignments)		
Experience in ESIA Assignments aligned with IFC Performance Standards		
Experience in IFC Performance Standard 7 (PS7), including FPIC and Indigenous Peoples Planning		
Reservoir / Fisheries / Aquatic ESIA Experience		

12. Format for Bid Security

(To be on Non-judicial stamp paper of appropriate value as per Stamp Act relevant to place of execution.)

In consideration of (Insert name of the Bidder) submitting the Bid *inter alia* for ESIA Study. During the period {Insert Period}, in response to Tender (Ref no----------) issued by **GRIDCO Ltd.** and {Insert Name of the bidder} (Hereinafter called bidder) being a bidder is required to deposit EMD as per terms of Tender, having agreed for submission of an irrevocable bank guarantee for **Rupees Figures------- [Rupees words----- Only],** towards security / guarantee for compliance of his obligations in accordance with the terms and conditions of the Tender.

{Name of Bank} ("Guarantor Bank")

Address:- BHUBANESWAR Branch

BANK GURANTEE NO: { }

DATE: { Date of creation}

Amount: { }

We {**Name & Address of Bank** (here in after referred to as "Guarantor Bank") hereby agree unequivocally, irrevocably and unconditionally to pay **GRIDCO Ltd.** an amount not exceeding **Rupees {figures--- }/- [Rupees { words------}**on demand by the GRIDCO Ltd. .

The Guarantor Bank do hereby undertake to pay the amounts due and payable under this guarantee without any demure, merely on a demand from **GRIDCO Ltd.** or any representative authorized by it. Any such demand made on the bank shall be conclusive as regards the amount due and payable by the bank under this guarantee However, our liability under this guarantee shall be restricted to an amount not exceeding **Rupees {figures --- } - [Rupees {words ----- }**

The Guarantor Bank do hereby expressly agree that it shall not require any proof in addition to the written demand from **GRIDCO Ltd.** or its authorized representative, made in any format, raised at the above mentioned address of the Guarantor Bank, in order to make the said payment to **GRIDCO Ltd.** or its authorized representative.

We, the said bank further undertake to pay to **GRIDCO Ltd.** any money so demanded notwithstanding any disputes raised by the bidder in any suit or proceeding pending before any court or Tribunal relating thereto, our liability under this present being absolute and unequivocal.

The Guarantor Bank further agree that the guarantee herein contained shall remain in full force and effect until **{One month after expiry of the transaction}. GRIDCO Ltd.** shall be entitled to invoke this Guarantee until **{the date in the preceding sentence}**.

The Guarantor Bank further agree that **GRIDCO Ltd.** shall have the fullest liberty without our consent and without affecting in any manner our obligations hereunder to vary any of the terms and conditions of the said Tender. We shall not be relieved from our liability by reason of any such variation.

This BANK GUARANTEE shall be interpreted in accordance with the laws of India and the courts at BHUBANESWAR shall have exclusive jurisdiction.

The Guarantor Bank represent that this BANK GUARANTEE has been established in such form and with such content that it is fully enforceable in accordance with its terms as against the Guarantor Bank in the manner provided herein.

This BANK GUARANTEE shall not be affected in any manner by reason of merger, amalgamation, restructuring, liquidation, winding up, dissolution or any other change in the constitution of the Guarantor Bank.

This BANK GUARANTEE shall be a primary obligation of the Guarantor Bank and accordingly **GRIDCO Ltd.** or its authorized representative shall not be obliged before enforcing this BANK GUARANTEE to take any action in any court or arbitral proceedings against the Bidder, to take any claim against or any demand on Bidder or to give any notice to the Bidder to enforce any security held by **GRIDCO Ltd.** or its authorized representative or to exercise, levy or enforce any distress, diligence or other process against the Bidder.

The Guarantor Bank hereby agree and acknowledge that **GRIDCO Ltd.** shall have a right to invoke this BANK GUARANTEE in part or in full, as it may deem fit. The bank guarantee amount will be remitted to the account of **GRIDCO Ltd.** as mentioned in written demand from **GRIDCO Ltd.**

We {Name of Bank} lastly undertake not to revoke this guarantee except with the previous consent of GRIDCO Ltd. in writing.

Notwithstanding anything contained herein,

(i) Our liability under this guarantee shall not exceed **Rupees {figures----} [Rupees words-------]**

(ii) This bank guarantee shall be valid up to **{One month after expiry of the transaction}. GRIDCO Ltd.** shall be entitled to invoke this Guarantee until **{the date in the preceding sentence}.**

(iii) We are liable to pay guarantee amount or any part thereof under this guarantee only if you serve us a written claim or demand at our office, **{Name and Address of Bank BHUBANESWAR Branch}** within the validity period of this Bank Guarantee**.** After which the bank shall be discharged from all the liabilities.

Dated :

Place : BHUBANESWAR

13. Format for Performance Security

(To be executed on non-judicial stamp paper as per Stamp Act.)

Date:

Contract Name and No.:

To:

_____ **WHEREAS** _____ (hereinafter "the Consultant") has undertaken, pursuant to Contract No. _____ dated _____, _____ to take up the assignment for **"Consultancy Services for Environmental and Social Impact Assessment (ESIA) for 225 MW Upper Indravati Floating Solar Project Including evacuation infrastructure and associated transmission lines in the State of Odisha, India"** for GRIDCO (hereinafter "the Contract").

AND WHEREAS it has been stipulated by you in the aforementioned Contract that the Consultant shall furnish you with a security _____ issued by a reputable guarantor for the sum specified therein as security for compliance with the Consultant's performance obligations in accordance with the Contract.

AND WHEREAS the undersigned _____, legally domiciled in _____, (hereinafter "the Guarantor"*)*, have agreed to give the Consultant a security:

THEREFORE WE hereby affirm that we are Guarantors and responsible to you, on behalf of the Consultant, up to a total of _____ and we undertake to pay you, upon your first written demand declaring the Consultant to be in default under the Contract, without cavil or argument, any sum or sums within the limits of _____ as aforesaid, without your needing to prove or to show grounds or reasons for your demand or the sum specified therein. ***The guarantee can be presented by GRIDCO at any of our branches at Bhubaneswar who will pay the claim amount to GRIDCO immediately.***

In case of any delay by the Guarantor, in remitting the amounts under the present Guarantee, within 15 days from the date of receipt of notice of demand from GRIDCO, the Guarantor agrees to pay interest at the rate of 18% per annum compounded on quarterly rests from the date of demand, until the date of payment.

The Guarantor also agrees that GRIDCO at its option shall be entitled to enforce this Guarantee against the Guarantor as a principal debtor, without proceeding against the Bidder and notwithstanding any security or other guarantee GRIDCO may have in relation to the Bidder's liabilities.

Provided that the liability of the Guarantor under this Guarantee shall not exceed the said amount of Rs. (_____/ - / Indian Rupees _____ only) exclusive of interest payable on the amount demanded in the notice till the date of payment to GRIDCO and interest thereon. Any disputes concerning or under this Guarantee shall be subject to the jurisdiction of courts located in …….

This security is valid until the_____ day of _____. Name _____In the capacity of _____Signed _____Duly authorized to sign the security for and on behalf of _____Date _____

Notwithstanding anything contained herein above.

i) Our liability under this Bank Guarantee shall not exceed Rs_____ (Rupees_____) only.
ii) The Bank Guarantee shall be valid up to _____ only.

iii) We or our Bank at Bhubaneswar (Name & Address of the Local Bank) are liable to pay the guaranteed amount depending on the filing of claim and any part thereof under this Bank Guarantee only and only if you serve upon us or our local Bank at Bhubaneswar a written claim or demand and received by us or by Local Branch at Bhubaneswar on or before Dt._____ otherwise bank shall be discharged of all liabilities under this guarantee thereafter. **For_____ (indicate the name of the Bank)**

N.B.:

(1) Name of the Consultant:

(2) No. &Date of the Letter of Award / Contract:

(3) Amount of the Bank Guarantee: Rs……

(4) Validity period or date up to which the Contract is valid:

(5) Signature of the Constituent Authority of the Bank with seal:

(6) Name &Addresses of the Witnesses with signature:

(7) The Bank Guarantee shall be accepted only after getting confirmation from the respective Bank(s).

In the presence of

1. **Name & Address _____**

   Witness _____

1. **Name & Address _____**

   Witness _____

14. Instructions for submitting tender online

General

The information set out in this Schedule 2 regarding e-bidding supplements the information provided in Section II of the RFP. For participating in the Bid Process online, it is recommended that Bidders should carefully read the instructions set out in this Schedule 2.

For conducting e-bidding (or electronic tendering), GRIDCO has decided to use the portal https://www.bharat-electronictender.com, through ISN-ETS. This portal is based on a 'secure' and 'user friendly' software from Electronic Tender®, also referred to as Electronic Tender System® (**ETS**).

The instructions in this Schedule 2 are supplemented with more detailed guidelines on the relevant screens of the ETS.

1. E-Bidding Methodology

Sealed Bid System: Single-Stage Two Envelope

Auction: The sealed bid system would be followed by an 'e-Reverse Auction'

3. Broad Outline of Activities from Bidder's Perspective:

(a) Procure a Class- III Digital Signing Certificate (DSC).

(b) Register on Electronic Tender System® (ETS) (i.e., https://www.bharat-electronictender.com).

(c) Create Marketing Authorities (MAs), Users and assign roles on ETS. It is mandatory to create at least one MA.

(d) View Notice Inviting Tender (NIT) on ETS.

(e) For this tender - assign Tender Search Code (TSC) to a MA.

(f) Download official copy of Bid Documents from ETS. Note: Official copy of Bid Documents is distinct from downloading 'Free Copy of Bid Documents'. To participate in a tender, it is mandatory to procure official copy of Bid Documents for that tender.

(g) Clarification to Bid Documents on ETS. Query to GRIDCO (Optional);

View response to queries posted by GRIDCO.

(h) Bid-Submission on ETS.

Attend Public Online Tender Opening Event (TOE) on ETS - Opening of relevant Bid-Part (Qualification/ Technical-Part).

Post-TOE (i.e., Post Qualification/ Technical-Part) Clarification on ETS (Optional) - Respond to GRIDCO Post-TOE queries.

Attend Public Online Tender Opening Event (TOE) on ETS - Opening of relevant Bid-Part (i.e., Financial-Part).

Post-TOE (i.e., Post Financial-Part) Clarification on ETS (Optional) - Respond to GRIDCO Post-TOE queries.

Participate in e-ReverseAuction on ETS if determined to be 'Eligible' in accordance with the provisions of the RFP.

Digital Certificates

For integrity of data and authenticity/ non-repudiation of electronic records, and to be compliant with IT Act 2000, it is necessary for each user to have a Digital Certificate (DC), also referred to as Digital Signature Certificate (DSC), of Class - III, issued by a Certifying Authority (CA) licensed by Controller of Certifying Authorities (CCA). Please also refer to CCA's website (http://www.cca.gov.in) for further information in this regard.

1. Registration

To use the ElectronicTender® portal https://www.bharat-electronictender.com, vendors need to register on the portal. If the Bidder already has a valid registration from his prior use of ETS, then the Bidder does not need to make any further tender specific registration. Registration of each organization is to be done by one of its senior persons who will be the main person coordinating for the e-tendering activities. In ETS terminology, this person will be referred to as the Super User (SU) of that organization. For further details, please visit the E-Bidding website/portal, and click on the 'Supplier Organization/Bidder' link under 'Registration' (on the Home Page), and follow further instructions as given on the E-bidding Portal. Bidders are also required to pay the requisite annual registration fee to ISN-ETS for registering on the E-bidding Portal (in this regard, please see Clause 2.2 of the RFP).

After successful submission of registration details and Annual Registration Fee, please contact ETI/ ETS Helpdesk (as given below), to get your registration accepted/activated.

6. Important Note

(a) Suppliers/ Bidders interested in participating in the Bid Process must download the official copy of the RFP and other Bid Documents after login into the E-bidding Portal by using the login ID and password created during the registration process.

(b) An authorised user of the Lead Member of a Consortium should register on the E-bidding Portal and the concerned authorised user of the Lead Member should download the Official Copy of the RFP (i.e., Tender Documents). It is important to note that only an authorized user of the Lead Member should submit the Bids. If it is required by the Lead Member to involve a user of one of the Consortium Members for any the activities on the E-bidding Portal, then the concerned user of the Lead Member can create a User

Profile of such user of the Consortium Member. For any help in this regard kindly contact ISN-ETS /ETS Helpdesk. Only if the Bidder is not satisfied with the response from ISN-ETS, the Bidder may contact GRIDCO.

ISN-ETS/ETS Helpdesk

Telephone/ Mobile	Customer Support: +91-124-4229071/ 72 From Monday to Friday from 10 AM to 6 PM (except Government Holiday) Emergency Contact Number: +91-8287663763
E-mail ID	support@isn-ets.com

To minimize teething problems during the use of ETS (including the registration process), it is recommended that the Bidder should review the instructions given under 'ETS User-Guidance Center' located on the ETS Home Page, including instructions for timely registration on ETS. The instructions relating to 'Essential Computer Security Settings for Use of ETS' and 'Important Functionality Checks' should be especially taken into cognizance.

Please note that even after acceptance of Bidder's registration by ISN-ETS, to respond to a tender you will also require time to complete activities related to Bidder's organization, such as creation of users, assigning roles to them, etc.

Some bidding related information for this tender (Sealed Bid)

The entire bid-submission would be online on ETS. Broad outline of submissions are as follows:

Submission of Bid-Parts/ Envelopes: Envelope I Technical Part [Qualification Proposal as mentioned in Clause 16.1(a)];

Envelope II Financial Part [Financial Proposal as mentioned in Clause 16.1 (b)];

Submission of digitally signed copy of Bid Documents/ Addendum.

General Help for Bid-Preparation and Bid-Submission

Bid Submission in ETS has comprehensive facilities which allow duly authorized users of a Bidder organization to prepare and submit bids in a highly secure manner.

Depending upon the instructions of the Buyer organization, Bid Submission would typically consist of submissions as outlined below.

Digitally Signed and Encrypted Bid-Parts (or Bid-Envelopes, viz, Qualification/ Technical-Part, Financial-Part). Each Bid-Part would consist of the following: ElectronicForms: For each Bid-Part, the Bidder would be required to submit bid-summary of the tender in innovatively built, tender-specific 'ElectronicForms'. The Bidder should fill in various sections of the ElectronicForms, encrypt the data with ElectronicEncrypter™ in a highly secure manner, and submit it to ETS. After all sections are filled, the Bidder should preview the filled ElectronicForm, digitally sign the content, and submit the ElectronicForm.

Main-Bid (Mandatory): Once the ElectronicForm for a Bid-Part is digitally signed and submitted, the bidder can encrypt the corresponding 'Main-Bid' (i.e., a single file containing 'sensitive details' of that Bid-Part) with ElectronicEncrypter™ in a highly secure manner, digitally sign and upload the encrypted 'Main-Bid' to ETS. Maximum file size of 'Main-Bid' on this e-procurement portal is 10 MB. File formats allowed for 'Main-Bid' are -- .ZIP, .DOC, .DOCX, .XLS, .XLSX, .PDF, .DWF.

Bid-Annexures (Optional): Multiple digitally signed 'Bid-Annexures' ('Certificates', and other 'non-sensitive' information, et al) can be uploaded for each Bid-Part, as required. Maximum file size of 'Bid-Annexure' on this e-procurement portal is 10 MB. File formats allowed for 'Bid-Annexure' are --.DOC, .DOCX, .XLS, .XLSX, .PDF, .DWF.

NOTE: If multiple documents are to be submitted as part of 'Main-Bid', then these documents should be zipped into a single file (one method of doing this would be to keep all required documents in a folder and zipping the folder). This single zip file will then constitute the 'Main-Bid'.

IMPORTANT: All Bid-Annexures of a Bid-Part should be uploaded prior to submission of Main Bid of that Bid-Part.

- Digitally signed copy of Tender Documents & Addenda

Once all the mandatory steps of Bid Submissions on ETS are completed the system shows the Overall Status of Bid Submission as 'Complete'.

Furthermore, after submission of the 'Original' Bids, ETS has a unique facility of allowing submission of 'Supplementary Bids' (e.g., Modification, Substitution). The process would be similar to the corresponding 'Original Bid' submission. In addition, facility is also provided in ETS to 'Withdraw a Bid'.

IMPORTANT: It is the responsibility of each Bidder to remember and securely store the Pass-Phrase for each Bid-Part submitted by that Bidder. In the event of a Bidder forgetting the Pass-Phrase before the expiry of deadline for Bid-Submission, facility is provided to the Bidder to 'Annul Previous Submission' from the Bid-Submission Overview page and start afresh with new Pass-Phrase(s).

Special Note on Security and Transparency of Bids

Security related functionality has been rigorously implemented in ETS in a multi-dimensional manner. Starting with 'Acceptance of Registration' by ISN-ETS, provision for security has been made at various stages in ElectronicTender's software. Specifically, for Bid Submission, some security related aspects are outlined below:

As part of the ElectronicEncrypter™ functionality, the contents of both the 'ElectronicForms' and the 'Main-Bid' are securely encrypted using a Pass-Phrase created by the Bidder himself. Unlike a 'password', a Pass-Phrase can be a multi-word sentence with spaces between words (e.g., I love this World). A Pass-Phrase is easier to remember, and more difficult to break. It is mandatory that a separate Pass-Phrase be created for each Bid-Part. This method of bid-encryption does not have the security and data-integrity related vulnerabilities which are inherent in e-tendering systems which use Public-Key of the specified officer of a Buyer organization for bid-encryption. Bid-encryption in ETS is such that the Bids (Qualification Proposal or Financial Proposal) cannot be decrypted before the Public Online Tender Opening Event (TOE), even if there is connivance between the concerned tender-opening officers of the Buyer organization and the personnel of E-bidding Portal.

CAUTION: All Bidders must fill ElectronicForms for each bid-part sincerely and carefully and avoid any discrepancy between information given in the ElectronicForms and the corresponding Main-Bid. For transparency, the information submitted by a Bidder in the ElectronicForms is made available to other Bidders during the Online Public TOE. If it is found during the Online Public TOE that a Bidder has not filled in the complete information in the ElectronicForms, the relevant official responsible for online Public TOE (i.e., TOE officer) may make available for downloading the corresponding Main-Bid of that Bidder at the risk of the Bidder. Subject to Clause 16.1(b), if variation is noted between the information contained in the ElectronicForms and the 'Main-Bid', the contents of the ElectronicForms shall prevail. In case of any discrepancy between the values mentioned in figures and in words, the value mentioned in words will prevail.

Additionally, the Bidder shall make sure that each Pass-Phrase to decrypt the relevant Bid-Part is submitted in accordance with Clause 16.

There is an additional protection with SSL/TLS Encryption during transit from the client-end computer of a Bidder organization to the E-bidding portal.

1. Public Online Tender Opening Event (TOE)

ETS offers a unique facility for ‘Public Online Tender Opening Event (TOE)’. Tender Opening Officers, as well as authorized representatives of Bidders can simultaneously attend the Public Online Tender Opening Event (TOE) from the comfort of their offices. Alternatively, one/ two duly authorized representative(s) of Bidders (i.e., Supplier organization) are requested to carry a Laptop with Wireless Internet Connectivity, if they wish to come to GRIDCO's office for the Public Online TOE.

Every legal requirement for a transparent and secure ‘Public Online Tender Opening Event (TOE)’, including digital counter-signing of each opened bid by the authorized TOE-officer(s) in the simultaneous online presence of the participating Bidders’ representatives, has been implemented on ETS.

15. Project location, Map

ANNEXURE-2: BASELINE DATA MONITORING

S. No	Environmental and Socioeconomic Attributes	No. of Location	Frequency	Location
1.	***Physical Environmental Monitoring and Surveys***			
A. 1	**Micro meteorology** Ambient temperature, barometric pressures, wind direction, wind speed, relative humidity, cloud cover and rainfall	1	Secondary data for 1 year from nearest meteorological station should be collected	
A. 2	**Ambient Air Quality:** Particulate Matter (PM_{10} & $PM_{2.5}$), Oxides of Nitrogen (NOx), Sulphur Dioxide (SO_2), and Carbon Monoxide (CO)	4	Twice a week for 4 weeks	One upwind, one near project site and two downwind locations within AOI
A. 3	**Surface Water Quality:** pH, Total dissolved solids (TDS), total suspended solids (TSS), Total Hardness, Total Alkalinity, temperature, dissolved oxygen, EC, SAR, Dissolved phosphorus, chlorides, sulphates, free chlorine, sodium, potassium, Nitrate, Ammoniacal nitrogen, Fluoride, Sulfide, Total Kjeldahl Nitrogen, phenolic compounds, Cyanide , BOD, COD, faecal coliform, total coliform, Metals (As, Fe, Zn, Cu, Ni, Mn, Se, V, Hg, Co, total Cr, hexavalent Cr, Pb), Oil & grease, Temperature, Turbidity, Algal concentration, Chlorophyll-a	6 locations at reservoir near the FSPV area on all sides; 1 location near PSS 2 locations near launch pad areas 1 location from upstream and 1 location from downstream of the project area At each location at different depths (surface, mid-depth, bottom) = 33 samples	Three times during study period	• Different locations at various depth of reservoir • Upstream and downstream (outside of project area)
A. 4	**Ground Water Quality:** Aluminium, Ammonia, Arsenic, Barium, Benzene, BOD, Boron, Cadmium, Calcium, Chloride, Chlorinated alkanes, Chlorinated phenols, Chlorine (residual), Chloroform, Chromium (hexavalent), Chromium (total), COD, Coliform (faecal), Coliform (total), Colour, Copper, Cyanide, Detergents, DO, Fluoride, Hardness (as $CaCO_3$), Iron, Kjeldahl Nitrogen (total), Lead, Magnesium, Manganese, Mercury, Nickel, Nitrate, Nitrite, Odor, Oil and grease, pH, Phenolic compounds, Phosphate, Phosphorus, Potassium, Selenium, Silver, Sodium, Suspended particulate matters, Sulfide, Sulfate, Total dissolved solids, Temperature, Tin, Turbidity, Zinc	5	Once during study period	• One at near PSS, one near launching pad and material laydown areas, one at up-flow, and two at down-flow location considering flow of ground water
A. 5	**Soil Quality:** Physical Parameters: Particle Size Distribution, Texture, pH, Salinity, SAR, Electrical Conductivity, Organic Carbon, organic matter, NPK, TDS, Na, Mg, Ca, Cl, F, Zn, Cu, Pb, Hg, Cd, As, Bulk Density,	5	Once during non-monsoon season	• One at PSS, two at launching pad/material laydown area

S. No	Environmental and Socioeconomic Attributes	No. of Location	Frequency	Location
	SAR, moisture content, Water Holding capacity, Permeability, Porosity, Cation Exchange Capacity, infiltration Rate.			and two samples in AOI based on land use
A. 6	**Sediment quality:** Fe, Zn, Cu, Ni, Hg, Total Cr, As, Pb, Particle size distribution; texture, Total Organic Carbon, pH, carbonate, Bi-carbonate, sulphate, Chloride, Total sulfur	6	Once during study period	At surface water quality monitoring locations
A. 7	**Ambient Noise Quality:** Leq, Ldn, Ln	5	Twice 24 hourly; during weekdays and twice 24 hourly during weekends	At sensitive receptors (schools, settlements, health centres, etc.)
A. 8	**Traffic Volume** Heavy vehicle, Medium vehicle, Light Vehicle, three- wheeler, two- wheeler, non-motorized vehicle	3	Twice 24 hourly during weekdays and twice 24 hourly during weekends	One at site access road near PSS and one at main road linked with Site access road. One at newly developed approach road
B.	***Ecological Monitoring and Surveys***			
B. 1	**Biodiversity and Ecology (Terrestrial)** The following ecological component will be surveyed: • Survey of threatened and/or migratory and congregatory terrestrial bird species like *Aquila nipalensis* Steppe Eagle (EN), *Clanga clanga* Greater Spotted Eagle (VU), *Falco amurensis* Amur Falcon (Least Concern, IUCN v.2025-2), *Schoenicola striatus* Bristled Grassbird (VU), *Amandava formosa* Green Avadavat (VU), refer to Annexure C- CH trigger species for full list of screened in species. • Survey of threatened terrestrial mammals and reptiles like *Manis crassicaudata* Indian Pangolin (EN), *Ophiophagus hannah* King Cobra (VU), *Cuon alpinus* Dhole (EN), *Bos gaurus* Gaur (VU). • Biodiversity baseline section will also be expanded to include any additional species identified during the full CHA process, including stakeholder-identified species of concern. • Habitat mapping including sensitive ecological habitats; • Floral diversity including endemic and threatened species;	2-3 locations in each habitat	One-time during ESIA period; seasonal survey for 1 year to be conducted*	Representative habitats in AOI
B. 2	**Aquatic Ecology** • Survey for fish species within the reservoir • Threatened and/or migratory and congregatory aquatic and wader species like *Aythya ferina* Common Pochard (VU), *Sterna acuticauda* Black-bellied Tern (EN), *Sterna aurantia* River Tern	At 10 locations within the project area	One-time during ESIA period; seasonal survey for 1 year to be conducted*	10 locations

S. No	Environmental and Socioeconomic Attributes	No. of Location	Frequency	Location
	(VU), *Spatula clypeata* Northern Shoveler (LC), *Larus ichthyaetus* Pallas's Gull (LC), *Phoenicopterus roseus* Greater Flamingo (LC), *Anarhynchus alexandrines* Kentish Plover (LC), *Recurvirostra avosetta* Pied Avocet (LC), etc. • Survey of threatened aquatic mammals and reptiles like *Lutrogale perspicillata* Smooth-coated Otter (VU), *Crocodylus palustris* Mugger (VU), *Nilssonia leithii* Leith's Softshell Turtle (CR). • Planktonic and benthos diversity • Habitat including sensitive ecological habitat.			
B. 3	**Survey of invasive species** Stratified habitat sampling across different habitat categories within the study area for- • Identifying the invasives (both flora and fauna), assessment of their infestation level and density. • Identifying vectors and pathways of spread.		One-time during ESIA period; seasonal survey for 1 year to be conducted*	
C.	***Socio-economic Survey***			
C. 1	Socio economic and livelihood status: The focus of this study will be as follows: • Demographic information including population size, migration rate, age, gender, religion, ethnicity, education, nationality, etc. • Administrative structure including traditional, informal and formal administrative structures. Description of the political environment (local government and administration, government policies, local Non-Governmental Organizations (NGOs) and community-based organizations (CBOs), social organization and leadership • Public health profile and disease pattern; • Occupation and livelihood pattern of the local people: population migration over the last few years, main and subsidiary occupations, income sources, employment trends, major industries and enterprises, agricultural and non-agricultural livelihoods (including information on fishing livelihoods, if any) and key products or services produced in the area. • Agricultural and Natural Resource Use: Landholding patterns, cropping and irrigation practices, seasonal variations, water usage, major crops and plantation species, and dependence on natural resources. • Livestock and Allied Activities: Cattle ownership, grazing patterns, fodder availability, dairy and animal husbandry practices, and population dependent on these activities. • Dependence on Forest and Common Property Resources: Utilization of minor forest produce, fuelwood collection, grazing rights, and other forest-based livelihoods.	Total of 15 villages (8 Project villages and 7 AoI villages)	One-time HH survey	5% sample HHs for the AoI villages, and 10% sample HHs for the Project affected villages

S. No	Environmental and Socioeconomic Attributes	No. of Location	Frequency	Location
	• Identification of grazing lands, including extent of land required, location, size, quality of grazing land, access, pattern of grazing and seasonality, extent of dependence on grazing etc. • Social and Cultural Features: Sites or sensitive habitat having social, cultural, historical, religious and/or ecological importance, including heritage sites, religious structures, festivals, traditional practices, and local customs of social and/or ecological importance. • A socio-economic survey of about 200 Households (HHs) spread across 15 villages will be conducted to understand the socioeconomic and livelihood profile within AOI. • In addition, a household census survey and detailed asset inventory will be required for all economically displaced Project Affected Persons (PAPs) to support the preparation of the Livelihood Restoration Plan (LRP) in line with IFC PS5 • Fish catch and fisheries dependency assessment, including baseline fish catch monitoring to establish pre-project conditions. Monitoring shall commence during the ESIA and cover at least one representative seasonal cycle (minimum 6 months), with continuation during early construction if required to complete seasonal coverage. Additional Focus Areas • Baseline Information on Scheduled Tribes / Indigenous Peoples (as per IFC PS7): The social baseline will include specific, disaggregated information on Scheduled Tribes (STs) / Indigenous Peoples (IPs) present within the AOI. This will cover demographic characteristics, customary institutions, traditional livelihood systems (including natural resource dependence), community governance structures, cultural practices, and any collective attachment to land or natural resources. The baseline will also assess their vulnerability profile and potential differentiated impacts consistent with IFC PS7 requirements. • Past Land Acquisition and Resettlement (LAR) for the Reservoir The ESIA will include a concise description of the historical land acquisition and resettlement process associated with the creation of the Indravati Reservoir, including: • scale and nature of past displacement; • compensation and resettlement measures adopted; • community relocation patterns; and • any residual or ongoing vulnerabilities that may still persist among previously displaced households or their descendants.			

S. No	Environmental and Socioeconomic Attributes	No. of Location	Frequency	Location
	This information is essential to understand legacy issues, cumulative effects, and the socio-economic context shaping current community sensitivities, as required under IFC PS5 for projects involving legacy displacement.			

ANNEX 03:INDIGENOUS PEOPLES DEVELOPMENT PLAN

An Indigenous Peoples Development Plan (IPDP) is a specialized management plan prepared when a project is likely to affect Indigenous Peoples/Scheduled Tribes (STs) who have distinct cultural identities, collective attachment to land or natural resources, and socio-economic systems that may be different from the mainstream population. The purpose of the IPDP is to ensure that project impacts on these groups are avoided, minimized, or mitigated, and that culturally appropriate development benefits are provided in accordance with IFC Performance Standard 7 (PS7).

The IPDP should include: (i) a summary of the Indigenous Peoples present in the project area, including their demographic, cultural, social, and economic characteristics; (ii) an assessment of potential project impacts both adverse and beneficial on these communities; (iii) an outline of measures to ensure meaningful consultation, inclusive engagement, and where applicable, processes for Free, Prior, and Informed Consent (FPIC); (iv) a set of mitigation, enhancement, and development activities tailored to the needs and priorities of the communities; (v) an implementation schedule, budget, and institutional arrangements; and (vi) a monitoring and grievance management mechanism that is culturally appropriate.

The objective of this assignment is to prepare an Indigenous Peoples Development Plan (IPDP) that:

- Identifies Indigenous Peoples present in, or having collective attachment to, the Project AoI;
- Assesses project-related risks and opportunities specific to Indigenous Peoples;
- Ensures meaningful consultation with IPs in general and Free, Prior, and Informed Consent (FPIC) for those living along the TL corridor; and
- Defines culturally appropriate mitigation, development, and benefit-sharing measures exclusively for Indigenous Peoples, without duplication of LRP entitlements.

The ESIA Consultant shall undertake the following tasks:

Task 1: Identification and Screening of Indigenous Peoples

- Identify Indigenous Peoples communities and households within the Project Area of Influence, including those with collective attachment to project-affected land or resources.
- Establish criteria for identification consistent with applicable safeguard policies and national legislation.
- Map Indigenous Peoples' settlements/hamlets/clusters, customary institutions, and resource-use patterns relevant to the Project.

Task 2: Social Assessment of Indigenous Peoples

- Conduct a focused Indigenous Peoples Social Assessment, including socio-economic profile; traditional governance and decision-making institutions; cultural practices and livelihood systems; use of customary land and natural resources; and vulnerabilities specific to Indigenous Peoples.
- The assessment and description of the pre-project socio-cultural baseline for IP communities to be carried out by covering following attributes:

Socio-Cultural Attributes	No. of Location	Method	Target Group
The assessment shall include: • Preparation of a brief ethnographic profile of Scheduled Tribe communities in the Area of Influence, including social organisation, kinship systems, customary institutions, language, belief systems, and cultural practices relevant to land, livelihoods, and natural resource use. • Assessment of customary land tenure systems and traditional use of land and natural resources, including community forests, common property resources, forest-based livelihoods, seasonal use areas, and unrecorded or customary access rights. • Analysis of Indigenous livelihoods and subsistence practices, including dependence on agriculture, forest and non-timber forest products, fishing (where applicable), wage	Total of 15 villages (8 Project villages and 7 AoI villages) Total ST HHs at TL corridor villages are given below; Padepadar- 73, Uparchobari- 71, Tikilipadar- 38, Podapadar- 29, Kamaridhuti- 27, Mahulpatna- 55	FGDs, KIIs and Participatory Mapping & rapid ethnography	Traditional leaders, Gram Sabha members, ST community members

Socio-Cultural Attributes	No. of Location	Method	Target Group
labour, and seasonal or migratory activities, with identification of vulnerable sub-groups. • Identification of any existing or potential inter-community tensions or conflict risks that may be exacerbated by project-related land acquisition, labour influx, or benefit-sharing arrangements.			

Task 3: Participatory Impact Assessment and Identification of Mitigation or Benefit Sharing Measures

- Carry out participatory impact assessment and identify culturally appropriate development and benefit-sharing measures tailored to Indigenous Peoples, which may include:
    - Livelihood enhancement aligned with traditional skills;
    - Community infrastructure reflecting cultural preferences;
    - Capacity building of Indigenous institutions;
    - Measures for protection and promotion of cultural heritage.

Note: Ensure that proposed measures supplement and do not duplicate entitlements or assistance provided under the LRP.

Assessment of how project benefits and adverse impacts may differ between Scheduled Tribe and non-Scheduled Tribe households, including an examination of potential risks such as unequal benefit sharing, exclusion from project opportunities, elite capture, or further marginalisation of vulnerable groups.

Task 4: Culturally Appropriate Informed Consultation and FPIC

- Design and conduct meaningful consultations with Indigenous Peoples using culturally appropriate methods and local languages.
- Design disclosure material on Project Information, potential impacts and risks through info-graphs and describe in non-technical language for easy understanding.
- Document consultation processes, outcomes, and community feedback.
- Facilitate Free, Prior, and Informed Consent (FPIC) process[2], required for the TL corridor, and document evidence of consent or broad community support.
- Identify community representatives and institutions for ongoing engagement during pre-construction, construction, operation and decommissioning phases.

Given that the Transmission Line (TL) corridor requires a formal FPIC process as per the FPIC Framework, a distinct FPIC workstream will be implemented in parallel with the ESIA and led by a FPIC Facilitation Organization (FFO).

The FPIC process will run concurrently with ESIA activities, particularly during baseline studies, identification of Indigenous communities, and assessment of potential Project-related impacts.

The ESIA Consultant must coordinate closely with the FFO to ensure consistency in disclosures, alignment of messages, and culturally appropriate engagement with Scheduled Tribe (ST) communities.

2 The outline of the FPIC process is provided in FPIC Framework and Decision Making Process Note which was prepared based on the understanding during the scoping stage.

The ESIA Consultant will prepare the Indigenous Peoples Plan (IPP) based on baseline data, assessed impacts, proposed mitigation, and recommended benefit-sharing measures. The FFO will use the draft IPP as a communication and negotiation tool during FPIC consultations with affected Indigenous communities.

Task 5: Grievance Mechanism

- Design or adapt a grievance mechanism (GM) that is accessible and culturally appropriate for Indigenous Peoples.

Task 6: Institutional Arrangements

- Define institutional responsibilities for implementation, monitoring, and community engagement specific to the IPDP.
- Establish coordination mechanisms with the LRP implementation team without overlapping roles or budgets.

Task 7: Monitoring, Evaluation, and Reporting Framework

- Develop IP-specific monitoring indicators, disaggregated by gender and vulnerability.
- Define participatory monitoring mechanisms involving IP institutions.
- Propose reporting formats and timelines aligned with overall project monitoring systems.

Task 8: Budget and Implementation Schedule

- Prepare a separate, itemized budget for TDP/IPDP implementation.
- Ensure clear distinction from LRP budgets and financial provisions.
- Develop a phased implementation schedule aligned with the project lifecycle.

The ESIA Consultant will conduct ESIA-related consultations on the Draft IPDP/IPP. All FPIC consultations and negotiations will be carried out solely by the FFO. The ESIA Consultant will join meetings only when technical clarifications are required and requested by the FFO.

A desk-based assessment of the FSVP was carried out to understand the Protected Areas (PAs) and Important Bird Areas (IBAs) in the proximity of the Project site. Desktop assessment revealed no PAs are located within 20 km radius of the Project area as well as no IBAs. Nearest protected area from the site is Karlapat Wildlife Sanctuary located at an aerial distance of approximately 29 km.

An IBAT checklist was generated for the species found in the region, which was used for Critical habitat screening using online databases like ebird, IUCN, FishBase, GBIF, etc. secondary published literature as well as in consultation with local authorities, experts, etc.

Based on IBAT report, The Critical Habitat Screening exercise has identified a total of 76 species as possible Critical Habitat candidates from Criteria-1 & 3. As per the screening exercise no possible critical habitat triggers from Criteria 2, 4 & 5 are envisaged.

Species that were screened in for Critical Habitat Assessment during the E&S Scoping Study under Criteria 1 to 3 represented in **Table B**

Table A POTENTIAL CH TRIGGER SPECIES SCREENED IN DURING SCOPING STUDY

Class	Scientific Name	Common Name	IUCN Status (v.2025-2)	CH Criteria
Reptilia	*Nilssonia leithii*	Leith's Softshell Turtle	CR	I
Aves	*Sterna acuticauda*	Black-bellied Tern	EN	I
Aves	*Aquila nipalensis*	Steppe Eagle	EN	I, III
Mammalia	*Cuon alpinus*	Dhole	EN	I
Mammalia	*Manis crassicaudata*	Indian Pangolin	EN	I
Aves	*Aythya ferina*	Common Pochard	VU	I
Aves	*Sterna aurantia*	River Tern	VU	I
Mammalia	*Lutrogale perspicillata*	Smooth-coated Otter	VU	I
Reptilia	*Crocodylus palustris*	Mugger	VU	I
Actinopterygii	*Wallago attu*		VU	I
Magnoliopsida	*Polypleurum filifolium*		VU	I
Aves	*Clanga clanga*	Greater Spotted Eagle	VU	I, III

Class	Scientific Name	Common Name	IUCN Status (v.2025-2)	CH Criteria
Aves	*Aquila rapax*	Tawny Eagle	VU	I, III
Aves	*Schoenicola striatus*	Bristled Grassbird	VU	I
Aves	*Amandava formosa*	Green Avadavat	VU	I
Reptilia	*Lissemys punctata*	Indian Flapshell Turtle	VU	I
Actinopterygii	*Bagarius bagarius*		VU	I
Actinopterygii	*Tor putitora*	Golden Mahseer	EN	I, III
Actinopterygii	*Tor tor*	Mahseer	DD	III
Mammalia	*Bos gaurus*	Gaur	VU	I
Mammalia	*Tetracerus quadricornis*	Four-horned Antelope	VU	I
Mammalia	*Rusa unicolor*	Sambar	VU	I
Reptilia	*Ophiophagus hannah*	King Cobra	VU	I
Aves	*Columba punicea*	Pale-capped Pigeon	VU	I
Aves	*Clanga hastata*	Indian Spotted Eagle	VU	I, III
Aves	*Aythya Ferina*	Common Pochard	VU	III
Aves	*Aythya nyroca*	Ferruginous Duck	NT	III
Aves	*Limosa limosa*	Black-tailed godwit	NT	III
Aves	*Pelecanus philippensis*	Spot-billed pelican	NT	III
Aves	*Spatula clypeata*	Northern Shoveler	LC	III
Aves	*Spatula querquedula*	Garganey	LC	III

Class	Scientific Name	Common Name	IUCN Status (v.2025-2)	CH Criteria
Aves	*Aythya fuligula*	Tufted Duck	LC	III
Aves	*Tringa erythropus*	Spotted Redshank	LC	III
Aves	*Tringa totanus*	Common Redshank	LC	III
Aves	*Tringa nebularia*	Common Greenshank	LC	III
Aves	*Actitis hypoleucos*	Common Sandpiper	LC	III
Aves	*Calidris temminckii*	Temminck's Stint	LC	III
Aves	*Pluvialis squatarola*	Grey Plover	LC	III
Aves	*Larus ichthyaetus*	Pallas's Gull	LC	III
Aves	*Chlidonias hybrida*	Whiskered Tern	LC	III
Aves	*Podiceps cristatus*	Great Crested Grebe	LC	III
Aves	*Phoenicopterus roseus*	Greater Flamingo	LC	III
Aves	*Plegadis falcinellus*	Glossy Ibis	LC	III
Aves	*Alauda gulgula*	Oriental Skylark	LC	III
Aves	*Motacilla citreola*	Citrine Wagtail	LC	III
Aves	*Anarhynchus alexandrinus*	Kentish Plover	LC	III
Aves	*Himantopus himantopus*	Black-winged Stilt	LC	III
Actinopterygii	*Ompok bimaculatus*		NT	III
Aves	*Circus macrourus*	Pallid Harrier	NT	III
Actinopterygii	*Channa gachua*	Dwarf Snakehead	LC	III

Class	Scientific Name	Common Name	IUCN Status (v.2025-2)	CH Criteria
Actinopterygii	*Rasbora daniconius*	Slender Barb	LC	III
Aves	*Tadorna ferruginea*	Ruddy Shelduck	LC	III
Aves	*Mareca strepera*	Gadwall	LC	III
Aves	*Anas crecca*	Common Teal	LC	III
Aves	*Merops philippinus*	Blue-Tailed Bee-Eater	LC	III
Aves	*Anthropoides virgo*	Demoiselle Crane	LC	III
Aves	*Gallinago stenura*	Pin-Tailed Snipe	LC	III
Aves	*Tringa ochropus*	Green Sandpiper	LC	III
Aves	*Tringa glareola*	Wood Sandpiper	LC	III
Aves	*Circus melanoleucos*	Pied Harrier	LC	III
Aves	*Circus pygargus*	Montagu's Harrier	LC	III
Aves	*Falco amurensis*	Amur Falcon	LC	III
Aves	*Hirundo rustica*	Barn Swallow	LC	III
Aves	*Delichon dasypus*	Asian House Martin	LC	III
Aves	*Motacilla alba*	White Wagtail	LC	III
Aves	*Motacilla cinerea*	Grey Wagtail	LC	III
Aves	*Anthus godlewskii*	Blyth's Pipit	LC	III
Aves	*Cecropis daurica*	Red-rumped Swallow	LC	III
Aves	*Motacilla flava*	Western Yellow Wagtail	LC	III

Class	Scientific Name	Common Name	IUCN Status (v.2025-2)	CH Criteria
Aves	*Pericrocotus roseus*	Rosy Minivet	LC	III
Aves	*Pericrocotus ethologus*	Long-tailed Minivet	LC	III
Aves	*Anthus trivialis*	Tree Pipit	LC	III
Aves	*Calandrella dukhunensis*	Mongolian short-toed Lark	LC	III
Aves	*Anthus richardi*	Richard's Pipit	LC	III
Aves	*Recurvirostra avosetta*	Pied Avocet	LC	III
Aves	*Charadrius alexandrinus*	Kentish Plover	LC	III

EAAA will be determined for terrestrial and aquatic species that are screened in. CHA to be conducted based on appropriately detailed primary surveys (as mentioned in **Table A**) detailed consultations with subject matter experts regarding individual species or groups to understand occurrence of any global or regionally significant resident population or periodic congregation of screened in species occurs within EAAA. Mapping and quantification of natural and modified habitats to be conducted. The CHA will involve evaluation of the list of critical habitat candidates by estimating the population of the species likely to be present within the to be determined EAAAs in comparison to the quantitative thresholds defined by IFC PS 6 in their Guidance Note (2019). Habitat mapping of critical, natural and modified habitats will also be conducted.

Priority Biodiversity Values in the project area

The construction and operation of the solar arrays on the Upper Indravati River and the associated facilities like the launching pad areas could have impacts on threatened and/or congregatory aquatic and wader (shorebird) bird species like *Aythya ferina* Common Pochard (Vulnerable, IUCN v.2025-2), *Sterna acuticauda* Black-bellied Tern (Endangered, IUCN v.2025-2), *Sterna aurantia* River Tern (Vulnerable, IUCN v.2025-2), *Aythya nyroca* Ferruginous Duck (Near Threatened, IUCN v.2025-2), *Limosa limosa* Black-tailed Godwit (Near Threatened, IUCN v.2025-2), *Pelecanus philippensis* Spot-billed pelican (Near Threatened, IUCN v.2025-2), *Spatula clypeata* Northern Shoveler (Least Concern, IUCN v.2025-2), *Larus ichthyaetus* Pallas's Gull (Least Concern, IUCN v.2025-2), *Phoenicopterus roseus* Greater Flamingo (Least Concern, IUCN v.2025-2), *Anarhynchus alexandrines* Kentish Plover (Least Concern, IUCN v.2025-2), *Recurvirostra avosetta* Pied Avocet (Least Concern, IUCN v.2025-2), etc.

The construction and operation phase of solar arrays could have impact on threatened and/or migratory and congregatory fish species like *Wallago attu* (Vulnerable, IUCN v.2025-2), *Bagarius bagarius* (Vulnerable, IUCN v.2025-2), *Tor putitora* Golden Mahseer (Endangered, IUCN v.2025-2), *Tor tor* Mahseer (Data Deficient, IUCN v.2025-2), *Ompok bimaculatus* (Near Threatened, IUCN v.2025-2), etc. The solar arrays and associated facilities could also have impact on threatened aquatic mammals and reptiles like *Lutrogale perspicillata* Smooth-coated Otter (Vulnerable, IUCN v.2025-2), *Crocodylus palustris* Mugger (Vulnerable, IUCN v.2025-2), *Nilssonia leithii* Leith's Softshell Turtle (Critically Endangered, IUCN v.2025-2).

The construction and operation phase of the external Transmission Line could have impacts on threatened and/or migratory and congregatory raptor species birds like *Aquila nipalensis* Steppe Eagle (Endangered, IUCN v.2025-2), *Clanga clanga* Greater Spotted Eagle (Vulnerable, IUCN v.2025-2), *Aquila rapax* Tawny Eagle (Vulnerable, IUCN v.2025-2), *Falco amurensis* Amur Falcon (Least Concern, IUCN v.2025-2), *Circus macrourus* Pallid Harrier (Near Threatened, IUCN v.2025-2), etc. and other associated facilities like the launching pad areas and approach and access roads can have impact on threatened terrestrial grassland and/or reed/marshland dwelling birds like *Schoenicola striatus* Bristled Grassbird (Vulnerable, IUCN v.2025-2), *Amandava formosa* Green Avadavat (Vulnerable, IUCN v.2025-2).

The construction phase of the external Transmission Line could have impact on threatened terrestrial mammals and reptiles like *Manis crassicaudata* Indian Pangolin (Endangered, IUCN v.2025-2), *Ophiophagus hannah* King Cobra (Vulnerable, IUCN v.2025-2), *Cuon alpinus* Dhole (Endangered, IUCN v.2025-2), *Bos gaurus* Gaur (Vulnerable, IUCN v.2025-2).

TABLE B PRIMARY SURVEYS TO BE CONDUCTED AS PART OF CHA

Survey	Survey technique	Survey Method	Focused Survey Area	Frequency
Migratory and congregatory aquatic avifaunal species survey	Observation survey	• Point counts to be conducted along the shores of Upper Indravati Reservoir for migratory and/or congregatory avifauna. • Bird species to be recorded at each point during peak migratory season.	FSPV area, PSS, temporary storage areas and TL routes	Once every month for the migratory season November-February
Mammal survey	Camera Trap-based survey for threatened terrestrial mammals and semi-aquatic mammals like Smooth Coated Otter	Camera traps to be deployed along the shores of Upper Indravati Reservoir and EAAA.	Within the EAAA	Once during dry seasons
	Sign Survey for threatened terrestrial mammals like Gaur, Dhole, Pangolin etc. Consultation with local stakeholders	• Grid based sampling to be conducted, in which different transects will be walked along terrestrial EAAA. • Opportunistic sign recordings will also be done. • Survey around waterholes in the EAAA that can be used by the mammals. • Search for pangolin den/burrows. • Interviews with fishermen. • Interviews with workers and local people within EAAA. • Interviews with local NGOs, forest department.	Within the EAAA	Once during dry seasons (April-May or November-December)
Fish survey for threatened and migratory and congregatory fishes	Fishermen interviews	• Interviews with fishermen • Interviews with local NGOs, experts and institutes. • Fish market survey	Upper Indravati Reservoir	Once during fishing season

Survey	Survey technique	Survey Method	Focused Survey Area	Frequency
	Cast netting, gill netting and fyke netting (traps).	• Cast netting/gill netting , traps with the help of local fishermen and boat support during active fish activity hours. • Catch-per-unit-effort (CPUE) and CPUE for each priority species to be determined.	Upper Indravati Reservoir	Once during dry seasons (pre-monsoon or during winter season)
Survey for threatened reptiles	Consultation with local people	• Consultation with fishermen, boatmen, local people for the presence of threatened Snakes, Mugger, turtles, etc. • Interviews with local NGOs, experts and institutes. • Interviews with forest department.	Upper Indravati Reservoir	Once
	Visual encounter survey for aquatic reptiles	• Visual encounter surveys for threatened turtle species. • Boat transects • Survey of nesting, roosting, basking habitats along the shores, logs, etc. • Spotlight surveys for threatened Mugger species during night-time from the shore.	Upper Indravati Reservoir	Once during pre-monsoon or winter when the visibility of basking species like turtles and mugger are high
Interview	Semi-structured interview	Rapid interview surveys to be carried out in local communities within the Project area and its vicinity, to collect data on the occurrence of conservation significant species	Villages within the EAAA	