

Approach and methodology for developing the framework for responsible renewable energy deployment

This document provides an overview of our approach to developing the framework for responsible renewable energy (RE) deployment.

The approach can be divided into three stages: understanding the on-ground challenges in deployment and impacts of large-scale RE from multiple stakeholders' perspectives, reviewing the landscape of existing literature on similar frameworks, and co-developing the framework via discussions with the community, civil society, and industry.

These stages were further divided into sub-stages as discussed below.

1. **Understanding the on-ground challenges in deployment and impacts of large-scale RE from multiple stakeholders' perspectives:** This stage was a combination of literature review, primary research, and key informant interviews (KIIs) with communities, local government, and RE developers.

1.1. Community perspectives: This stage included a detailed **literature review**¹ of news reports, reported conflicts, case studies on impacts on the community and environment, expectations of the co-benefits from the energy transition, and **structured discussions** with organisations with expertise on the subject matter. It was complemented by **primary research** in 18 villages, situated around RE projects, across four districts in the state of Karnataka. Discussions were held with community members such as landholders, landless labourers, teachers, the local administration, and project officers in the shortlisted districts (and villages therein). Local administration, and RE developers operating in these villages were also consulted to triangulate the community perspectives. Annexure 1 presents the sampling strategy, list of districts and villages covered, stakeholders interviewed, and the data collection tools.

1.2. RE developers' perspectives: The challenges of deployment large-scale RE was collected via **key informant interviews** (KIIs) with the RE developers², representing 62 GW of installed and pipeline RE capacity as of 2024, and primary research in the Karnataka. The participants were from business development teams, land teams, legal teams, ESG³ teams, local project teams, among others. Further, business partners and contractors such as land aggregators, EPC⁴ firms, and impact assessment specialist firms, were also consulted since they exert immense influence on the company's interactions with the local community and ecology.

¹ Google search engine, databases such as those of Land Conflict Watch and Mongabay were utilised to collate the information, 30+ peer-reviewed case studies, reports and qualitative analyses in reputed journals such as Elsevier and Oxford Development Studies were studied

² Names available on request

³ Environmental, Social and Governance (ESG)

⁴ EPC: engineering, procurement, and construction

1.3. Policymakers' perspectives: These engagements were at various tiers of the governance. First, during the primary research in Karnataka, we engaged with district collectors, officers in revenue department, district administration, gram panchayat, etc. to understand their perspectives on impacts of large-scale RE and challenges for their timely implementation. Second, we actively engaged with state-level agencies such as Karnataka Renewable Energy Development Limited (KREDL), Karnataka Power Transmission Corporation (KPTCL) and Karnataka Solar Power Development Corporation Limited (KSPDCL), and Energy Department, Government of Karnataka. These engagements spanned for the entire duration of developing this framework, and enabled us to receive insights on governance, challenges on the ground and means of effective implementation.

1.4. Research community perspectives: A key stakeholder group⁵ consulted was the national and international civil society community, think tanks, and other research organisations to discuss the insights and ideate the likely solutions. The group specialised in implementing the framework's tenets, such as responsible land procurement, consensus-building principles and methodology, ecological restoration, etc.

2. Understanding the principles and practices of responsible deployment, policies and processes governing RE projects, and corporate practices – After a thorough understanding of the on-ground challenges, impacts and expectations from multiple stakeholders' perspectives, we reviewed the existing frameworks, standards and guidelines available to the RE companies⁶ that inform their deployment practices. Further, we reviewed India-specific policies and regulations for deployment of large-scale renewable energy to identify any gaps that lead to any unintended socio-environmental impacts, as well as mismatch in community expectations and actions of RE developers. The following methods were used to generate a holistic understanding of the RE landscape in India and the existing frameworks:

2.1. Review of current state and national level policies and regulations to understand use of common resources for renewable energy such as land and water, land procurement processes, guidelines on local area development, project development guidelines, etc. We developed a framework for policy review to understand commonalities, uniqueness, and deviations across states and sectors (solar and wind). We used the framework to review 23 states' solar, wind or renewable energy policies. These states represent 99.7% of India's installed solar and wind capacity as of 31 January 2024. s 4, Annexure 2 presents the framework.

After reviewing the renewable energy policies of the 23 states, the top six states by capacity were further studied in detail. To study policy and process gaps, case studies of RE projects were considered wherein some form of community concerns/ challenges were recorded. Here, the land and water use statutes and rules, regulations and

⁵ Names available on request

⁶ Developers, EPC firms, and investors

clearances issued by state regulators, state panchayati raj acts, state industrial policies, and CAG⁷ audits were used to understand the context of the concerns of the communities. The top six states represent 82 per cent share of India's installed solar and wind capacity as of 31st January 2024.

Beyond the state-level policies, there are several national-level guidelines and standard operating procedures, that govern the deployment of RE projects. Overall, we examined the process for developing wind and solar projects by SECI⁸, the SECI tender documents and land-related clauses, environment guidelines such as MoEFCC's⁹ 'Guidelines for diversion of forest land for non-forest purposes under the Forest (Conservation) Act, 1980 – for projects utilising Wind Energy thereof', and guidelines under the 'Scheme for Development of Solar Parks and Ultra Mega Solar power projects', 2014 by the Government of India.

2.2. Review of national and international frameworks, standards, guidelines and compliances such as IFC's Performance Standards on Environmental and Social Sustainability, Business Responsibility and Sustainability Reporting, EO100™ Standard for Responsible Energy Development, and others. This enabled us to understand the current reporting practices, identify gaps around implementation in scope and timelines in these existing frameworks, and establish the need and demand for an India-specific framework for responsible RE deployment. Table 5, Annexure 2 contains the list of frameworks reviewed.

2.3. Review of corporate social responsibility (CSR) practices¹⁰, corporate reporting, current procedures followed for key processes such as grievance redressal, community development, stakeholder management, etc.

The analysis of CSR spending and community development efforts of leading renewable energy companies were conducted to understand compliance, use of funds, best practices of investment and generate learnings for the sector. Additionally, a detailed review of ESG reporting done by different RE companies structured under the key requirements as per the various responsibility parameters was undertaken. The different responsibility parameters are as follows:

- Stakeholder engagement - areas of engagement, stakeholder considered, and approach to engagement and internal company policies

⁷ CAG: Comptroller and Auditor General of India

⁸ SECI: Solar Energy Corporation of India Limited

⁹ MoEFCC: Ministry of Environment, Forest and Climate Change

¹⁰ The Companies Act of 2013, under section 135(5), mandates companies with a net worth of 500 crores, or turnover of over 1000 crores, or net profits of 5 crores or more to spend 2% of their average net profits in the past three financial years towards corporate social responsibility (CSR) initiatives. Eligible companies must also formulate a CSR policy that directs their CSR spending.

- Land acquisition and procurement - company land policy on identification of land, type of land use, model of procurement, guidance on compensation, and public consultation process
- Standards and principles reported and followed
- Grievance redressal mechanism and procedures

2.4. Review of international best practices available in the literature on responsible renewable energy deployment and regulations was conducted to inform the framework principles and levels. The review, limited to large-scale solar and wind, focused on four crucial regulatory areas of land siting and procurement, community development, local employment, and environmental protection. Additionally, 65 case studies across 21 countries were collated to understand the best practices of responsible deployment undertaken by companies globally.

Further, for regulatory best practices, we initially focused on the top 10 countries with the highest installed renewable energy capacity. This was then scoped down to the United States of America, Brazil, Germany, and Japan for an in-depth analysis, based on their high installed renewable energy capacities and deployment experiences. A comprehensive collection of secondary sources, including research articles, industry reports, government documents, and case studies was gathered. These sources were selected based on their relevance to large-scale solar and wind energy projects, and for the following themes:

- responsible siting and due diligence
- inclusive stakeholder engagement, and effective grievance management
- capacity building & local employment generation
- benefit sharing and economic development of communities
- environmental sustainability, biodiversity, and climate resilience
- infrastructure development and end-of-life management
- business integrity

3. Co-developing the responsible RE deployment framework: This comprised of two stages; first is corroborating the findings from research and second, testing of solutions and guidance that would be provided in the framework.

3.1. Following the landscape analysis, we corroborated our findings with various stakeholders across the RE industry, including RE developers, financiers and procurers to understand the market fitment of our framework, its value addition in current practices and garner insights on the appetite for responsible practices.

3.2. Finally, after preparation of the first draft of the framework, we conducted a rigorous review process with key stakeholders to test the guidance and build consensus on the principles and levels of responsible deployment. These discussions led to an India-centric framework for responsible deployment of RE. The stakeholders included RE developers



and other business partners, RE financiers, civil society organizations, think tanks and research organisations, and legal institutions.

Annexure 1

Sampling strategy for primary research (fieldwork)

We shortlisted our fieldwork sites in three stages. In the **first stage**, we developed a purposive sampling framework (Table 1) to shortlist the sites and villages in Karnataka. This framework was based on the secondary literature review and state-level data on commissioned and allotted RE projects. The **second stage** involved presenting this sample to the Karnataka Renewable Energy Development Limited (KREDL), the state RE nodal agency, and updating it based on the input received. The **final stage** included villages selected through snowball sampling based on inputs from gram panchayats, local administrators, project staff, community representatives and village leaders of the region. The final sample after the process followed above included projects that were both allotted and commissioned across wind, solar and hybrid deployment technologies, previous reported issues and those among the highest commissioned capacities. Table 2 shows the list of districts and villages covered in the fieldwork.

Table 1 Framework for purposive sampling of villages

Theme	Sub-themes
Land-use change/Acquisition	Inclusion of community/reserved lands in RE projects
	Acquisition of private lands
	Acquisition of common lands
	Inclusion of cultivable land
	Inclusion of potentially cultivable lands
	Change in land-use classification after project approvals
Community Consultations	Prior transparent communication with local community
	Post-project grievances
Local site-employment	Any jobs offered/prioritized to local community members
	Any assurances on employment made
Judicial/Executive intervention	Site-specific litigation
Common Resources related	Competitive water use
	Access routes and cordoning of areas
	Discharge of toxic and other effluents in the habitat which deteriorates or poses risk to air/water/soil.

Table 2 List of districts and villages visited during fieldwork in Karnataka

District	Village
Chamrajanagar	Bandali
Chamrajanagar	Madhuvanahalli

Chamrajanagar	Hanur
Chitradurga	Turuvanur
Chitradurga	Neralagunte
Chitradurga	Bangaradevarahatti
Chitradurga	Balenahalli
Chitradurga	Jagalur
Chitradurga	Nayakanahatti
Koppal	Talakal and Kawaloor
Koppal	Kawaloor and Advihalli
Koppal	Tumarguddi
Koppal	Chikkopa
Gadag	Harlapur
Gadag	Lakhundi
Gadag	Kurthakothi
Gadag	Kalaspura

Stakeholder selection

We leveraged literature review and discussions with subject experts to select the stakeholders for our consultations. Figure 1 presents the final set of stakeholders consulted in the primary research, Table 3 presents the field of inquiries with each stakeholder and data collection tools.

Figure 1 List of stakeholders consulted in the primary research

Local community members	Local & district Administration	Developers and others
Land owners - Small (below 2 ha), medium (2 – 10 ha) and large (above 10 ha)	Local Gram Panchayat members – President, Vice President, other members	Locally employed project staff – security guards, technicians, etc
Landless dependents – Agricultural labourers, herders on land, local labourers	District Administration – District Commissioner, Additional District Commissioner, case workers	External project heads – O&M engineers, construction head, etc
Women and members of SC/ST across the categories above	Forest Department – Deputy Conservator of Forest, case workers	Substation management staff, members of QHSE team, etc
General village residents and those indirectly impacted by the plant	Revenue Department – Office of Tahsildar, case workers, etc	Land aggregators – A vital part of the entire land procurement process

Table 3 Areas of inquiry and tools used during fieldwork

Stakeholder	Tool used ¹¹	Area of inquiry
District Collector/ Magistrate/ District Chief Executive Officer	Key informant interviews (KII)	Vision for RE in the district, process related queries, community sentiment, best practices or recommendations
Revenue officer	KII	Role of revenue department in deployment processes of RE projects, land records in district, forest right act and claims under it
Forest officer/ Deputy conservator of forest	KII	Role of forest department in deployment processes of RE projects, process related queries, past experience with communities dependent of forest land, role of various acts, role of Corporate Social Responsibility
Village Head / Panchayat head / Panchayat officials	KII	Key Village data points, role of Gram Panchayat in deployment processes of RE projects, community sentiments, and recommendations
Landowners	Focused group discussions (FGD)	Impact of RE project on village and village economy, development undertaken, compensation, financial literacy, process of leasing/procurement, awareness on laws and use of legal support, communication about the project, concerns, communication of concerns,

¹¹ KII: key informant interview; FGD: focused group discussion

		employment and skills training, impact on land and environment, best practices and recommendations
Locally employed people or other beneficiaries of the project	FGD	Impact of RE project on village and village economy, development undertaken, skills training, nature of job, employment and skills training, impact on land and environment, concerns, best practices and recommendations
Landless dependents	FGD	Impact of RE project on village and village economy, development undertaken, concerns, communication of concerns, employment and skills training, impact on land and environment, knowledge of anyone working in the project, best practices and recommendations
Teachers	FGD	Impact of RE project on village and village economy, development undertaken, migrations patterns, cultural shifts if any, concerns, awareness, knowledge of anyone working in the project, best practices and recommendations
Women	FGD	Impact of RE project on village and village economy, development undertaken, skills training, nature of job, employment and skills training, impact on land and environment, concerns, best practices and recommendations
Local village community	FGD	Impact of RE project on the village and the village economy, cultural impacts, impact on land and environment, best practices and recommendations

Note: Separate set of questionnaires were prepared for each stakeholder and are available on request.

Annexure 2

Table 4 Framework for policy review used across 23 states

Theme	Dimension
Land procurement processes	Responsibility for selecting and acquiring land
	Process of procuring government and private land
	Notification of land policies for RE projects
Community involvement	Provisions for job preference for locals

	Community consultations at various stages
	Provisions for local development or support for dependents
Facilitative measures	Fiscal provisions: Stamp duty, fee for land use change
	Procedural: Agricultural land conversion, single window clearances
	Exemptions: Clearances from state pollution control board and other agencies

Table 5 List of frameworks/standards/guidelines reviewed

Framework/Standard/Guideline	Organisation
IFC's Performance Standards on Environmental and Social Sustainability	International Finance Corporation
National Guidelines on Responsible Business Conduct	Ministry of Corporate Affairs, Government of India
Beyond the Megawatt toolkit	Clean Energy Buyer's Institute (CEBI)
Equator Principles	Asian Development Bank
EO100™ Standard for Responsible Energy Development	Equitable Origin
Business Responsibility and Sustainability Reporting	Securities Exchange Board of India
ISEAL Code of good practice for sustainability systems	ISEAL Alliance
Environment, Social and Governance Policy for Sustainable Development or Responsible Financing	Export-Import Bank of India
Policy on responsible investing	British International Investment
Principles for Financing a Just and Urgent Energy Transition	World Economic Forum
Guiding Principles on Business and Human Rights	United Nations

The parameters used for gap assessment of guidelines and standards were as follows:

- Type of document (framework, standard, guideline, etc)
- Publisher, enforcer and key actors
- Enforcement mechanism
- The sector of influence (energy, infrastructure, etc)
- Sphere of influence (company/project)
- Key themes covered
- Reporting structure



- Scoring system
- Implications of scoring and follow-ups
- Measurement, Reporting and Verification (MRV) framework
- Timelines
- The financial burden of implementation
- Best practices