

Voices from the Ground

People's Perspectives on Large-Scale Renewables

Insights from qualitative research in Rajasthan
2024



About Centre for Energy, Environment & People (CEEP)

CEEP is a Jaipur-based human-centric research and policy advocacy initiative driving critical research and fostering democratic coalitions for low carbon transition and climate justice.

We work at the intersection of energy, environment and people to enable institutional response, investments and political shift towards clean energy and sustainable practices. As an institution, we prioritise addressing socio-economic disparities and vulnerabilities faced by disadvantaged individuals and groups through inclusive and representative policy action.

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Acronyms

AREPL	Adani Renewable Energy Park Rajasthan Limited
CEEP	Centre for Energy, Environment & People
ESG	Environmental, Social, and Governance
ESIA	Environmental and Social Impact Assessment
FY	Financial Year
GW	Gigawatt
INR	Indian Rupee
kV	Kilovolt
MW	Megawatt
PGCIL	Power Grid Corporation of India Limited
RDPRD	Rural Development and Panchayati Raj department
RE	Renewable Energy
RFCTLARR	The Right to Fair Compensation and Transparency in Land Acquisition, Rehabilitation and Resettlement Act, 2013
RRECL	Rajasthan Renewable Energy Corporation Limited

1. Introduction

India's ambitious renewable energy (RE) targets have positioned it as a global leader in clean energy deployment, with large-scale solar and wind projects driving the sector's growth. This rapid expansion has generated significant economic benefits, including investment inflows, job creation, and improved energy security.

The deployment of RE projects also presents socio-economic and environmental challenges, particularly concerning land use, water access, and gender disparities in local employment. It is particularly important to understand that the unprecedented pace and scale of development shall trigger a complex transition intersection of social, cultural, environmental, and political dimensions. Communities and systems are unlikely to respond to any risks posed by such a fast-paced transition. However, it is evident that conflicts are beginning to emerge, and that such risks are a threat to thriving communities, as well as India's renewable energy ambition.

This report is a humble effort to document and present the perspectives of people and communities who are directly entangled in India's renewable energy ambition. The same is based on insights gathered from qualitative research undertaken in four villages of Jaisalmer, Rajasthan, that are situated close to large solar energy projects.

2. Rajasthan's Renewable Energy Journey

Rajasthan, with its vast solar and wind energy potential, is at the forefront of this transition and exemplifies both the opportunities and conflicts arising from large-scale RE deployment. As of September 2024, Rajasthan has deployed over 23 GW of large-scale renewable energy projects, with installed capacity expected to grow four to five times by 2030. The state's solar policies, including a target of 30 GW by 2025 (Rajasthan Solar Energy Policy, 2019), highlight its pivotal role in India's clean energy ambitions.

With this rapid expansion, project sizes have scaled from 5 MW to over 500 MW solar parks, significantly altering local land-use patterns and increasing land requirements. With an estimated solar energy potential of 142 GW¹ and vast tracts of land classified as 'wasteland,' Rajasthan has attracted substantial investments in solar parks and hybrid projects - amounting to approximately INR 1.5 lakh crore as of 2021 (ET Government, 2021).

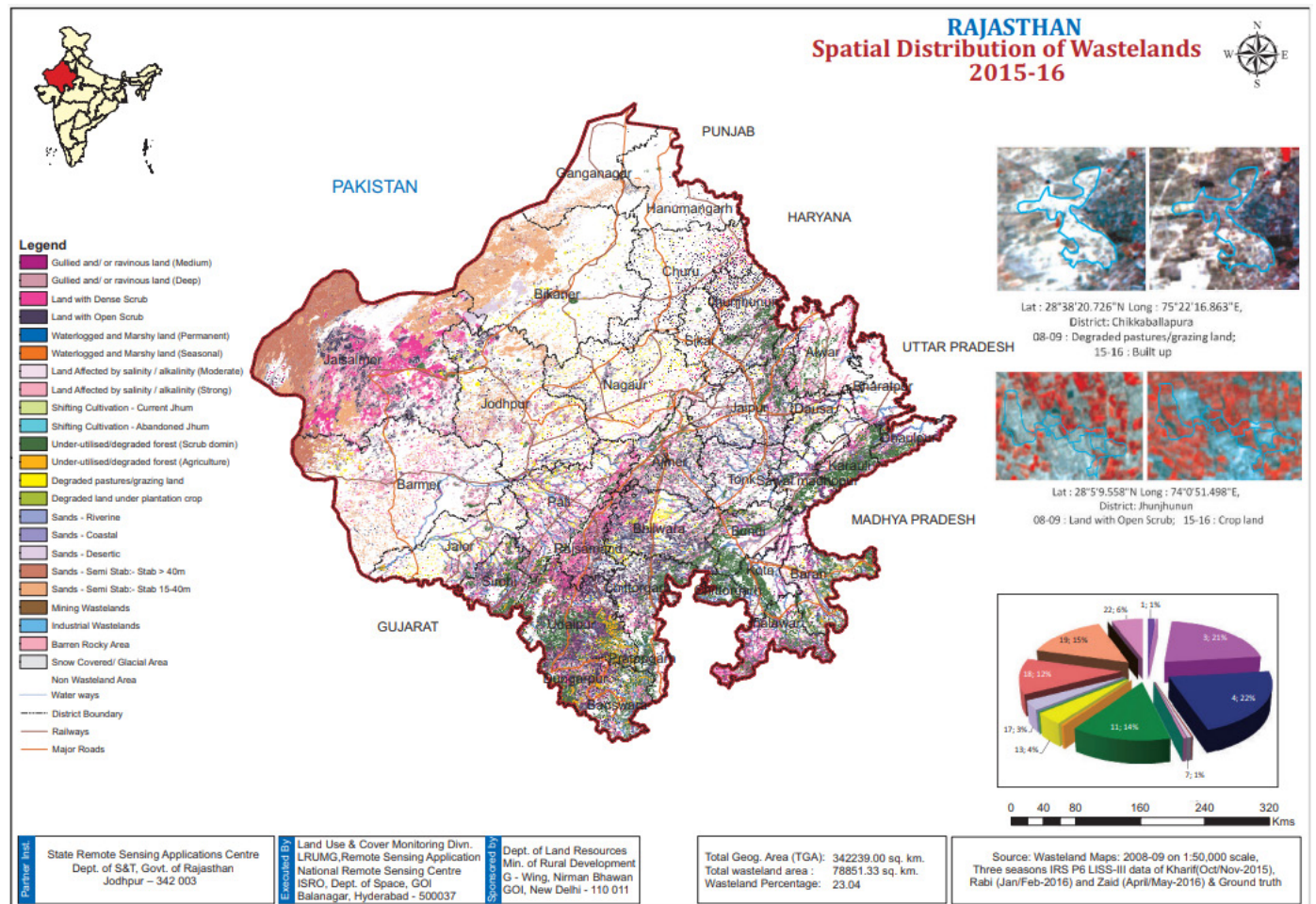
The expansion is largely concentrated in Rajasthan's western region - Barmer, Bikaner, Jaisalmer, and Jodhpur - where it may be argued that sufficient wasteland and agricultural land is available to meet Rajasthan's RE targets. By 2030, an estimated 1,670 sq. km., or 3.4% of the total wasteland in these districts, will be required

¹ <https://pib.gov.in/PressReleaseframePage.aspx?PRID=2003561>



for RE projects. About 14% of this ‘wasteland’ consists of under-utilised or degraded forest (scrub domain), while 4% is degraded pastureland (Figure 1).

Figure 1: 23% of the land was identified as wasteland in Rajasthan (2015-16)



Source: Department of Land Resources, Ministry of Rural Development 2019

Land conflicts and transmission infrastructure planning are among the most pressing challenges associated with RE deployment in Rajasthan. Government records classify significant portions of land as ‘wasteland,’ but these areas often serve crucial functions for local communities, particularly pastoralists who rely on them for grazing. Additionally, sacred groves (Orans) and pasture lands (Gochars) hold religious and cultural significance, yet their diversion for RE projects has disrupted livelihoods and triggered legal disputes. Local unrest has led to interventions by the High Court and Supreme Court regarding discrepancies in land allocation for solar parks in the state (Kalyan Singh v State of Rajasthan, M.K. Ranjitsinh v Union of India, 2021); (Bathla, 2021).

Additionally, water scarcity further exacerbates tensions, as Rajasthan’s arid climate and limited water resources are already under pressure. Most of the solar potential in Rajasthan is concentrated in the semi-arid and arid regions, representing approximately 54% of its total geographical area² (Department of Agriculture, Government of Rajasthan, 2022). The cleaning of solar panels and other project-related activities increase water demand, raising concerns among local residents about declining groundwater levels and the depletion of community-managed water sources. Beyond environmental concerns, the socio-economic impact of RE projects is also evident in employment patterns. Despite promises of economic upliftment, local employment generation from RE projects remains limited. While contractual and ancillary jobs such as transportation and water supply have emerged, technical and long-term employment opportunities for residents remain scarce, contributing to a sense of exclusion from the benefits of RE expansion.

² Classified as ‘dryland’ which includes sub-humid, semi-arid, arid and hyper-arid.

3. Methodology

This study adopts a qualitative research approach to understand the socio-economic and environmental impacts of large-scale renewable energy (RE) projects on local communities. Available reports, news articles, and academic papers were reviewed to identify suitable study regions to understand the concerns emerging around large-scale renewable energy projects. Building on this, we engaged directly with communities residing near project sites to gather their perspectives on the socio-economic and environmental impacts of RE expansion. Secondary data from a review of RE developers' environmental, social, and governance (ESG) report and environmental and social impact assessment (ESIA) report was used.

3.1 Study locations and stakeholders

Fieldwork was conducted in the villages of Chhodia, Rasla, and Sanwta in the Fatehgarh tehsil, and Nedan in the Pokhran tehsil of Jaisalmer district, Rajasthan (Figure 2). Table 1 lists the RE developers operating around these villages.

The research relied on semi-structured interviews and focus group discussions with community members, village leaders, school teachers, and government officials. These discussions provided first-hand insights into the community's experiences, challenges, and perspectives regarding RE expansion in their region.

We interviewed the following stakeholders during the fieldwork: local community members, school teachers³, village heads⁴, RE project developers, state nodal agencies (RRECL), and a revenue officer in Pokhran.

Table 1: RE developers operating in the shortlisted villages of Jaisalmer, Rajasthan

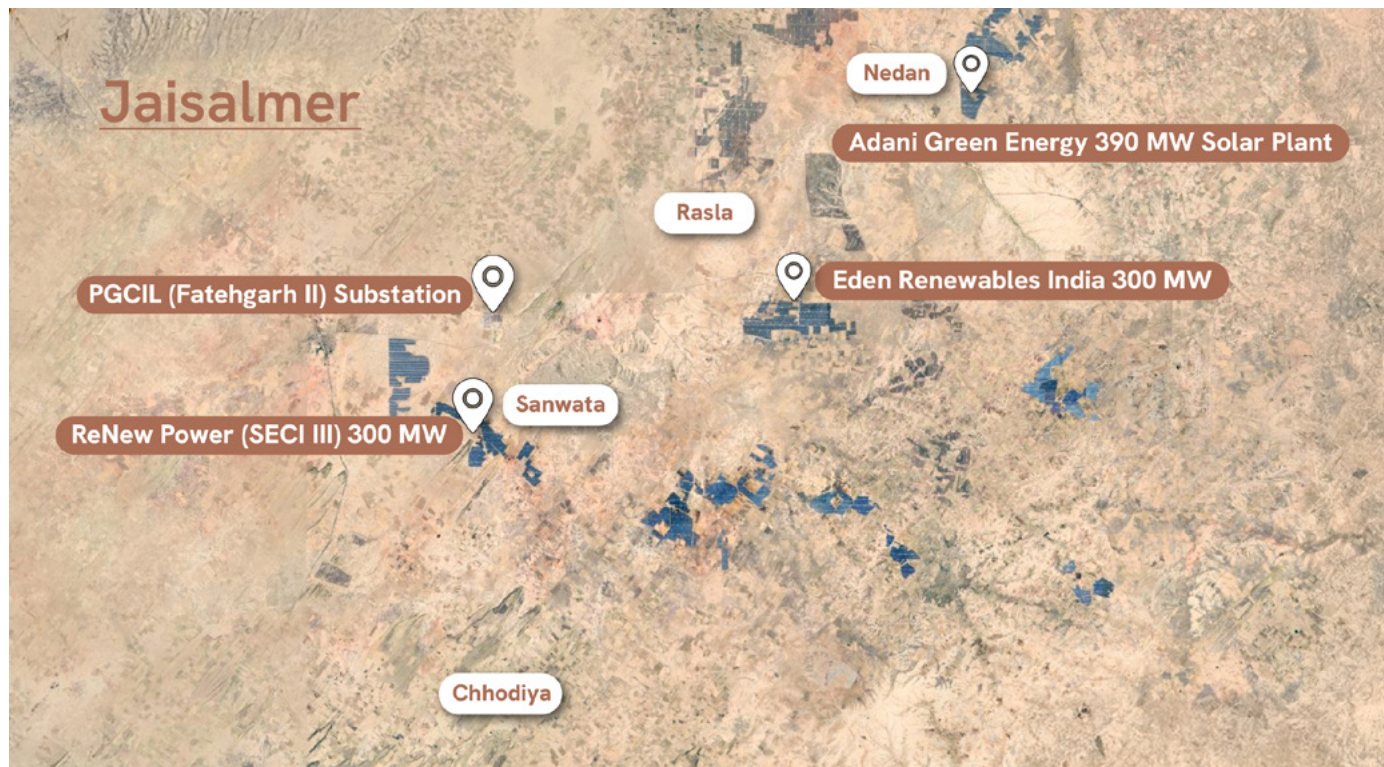
Location	Land area (hectare)	Population	RE projects in the vicinity
Choddiya, Fatehgarh	5254	641	ReNew Power, 300 MW solar park Suzlon Wind Plants (distributed)
Rasla, Fatehgarh	6235	1047	ReNew Power, 300 MW solar park Eden, 300 MW, solar park Adani, 390 MW wind-solar hybrid project
Sanwta, Fatehgarh	6269	702	ReNew Power, 300 MW solar park POWERGRID 765 kV Substation
Nedan, Pokhran	Not available	1501	Adani, 390 MW wind-solar hybrid project Suzlon/Siemens-Gamesa/Adani Wind Plants (distributed)

Source: Authors' compilation from Indian Village Directory 2022, RDPRD 2017

³ Two school teachers in Chhodia and Nedan.

⁴ Rasla village sarpanch.

Figure 2: The shortlisted villages in Jaisalmer are surrounded by multiple solar projects



Source: Google Earth

4. Community Perspectives on Renewable Development

We present the perception of the community in the Fatehgarh and Pokhran tehsils of Jaisalmer district, Rajasthan, on the rapid expansion of solar and wind energy projects around them in this chapter. The focus is on three themes: land (utilisation, ownership, acquisition, compensation), water (availability and utilisation), and local employment (job creation and local economic growth). We also include the views of the representatives from the Revenue Department of Pokhran tehsil and some RE developers. These stakeholders were consulted to understand their awareness and perception towards the issues highlighted by the community.

4.1 Land utilisation and conflicts

As RE projects have a significant land footprint, it is the focus of several conflicts between communities and RE project developers. Conflicts arise from the divergence and contestations on land's cultural significance, land utilisation pattern, ownership, compensation, and access during and after completion of the projects. The following sections discuss these aspects in detail.

4.1.1 Public (government) land utilisation

As a policy mandate, RE projects are developed on land identified as 'wasteland' as per revenue records.⁵ However, such lands often hold cultural or livelihood value for the communities and can be segregated into the following three broad categories:

⁵ Wasteland means degraded land which can be brought under cultivation with reasonable efforts and which is currently lying unutilised and land deteriorating for lack of appropriate soil and water management on account of natural causes, including ravine land.

- a. **'Orans' or sacred groves** are historical tracts of land dedicated to a local deity. These lands act as reserve forests for local villages as traditional cultural practices prohibit their exploitation in any manner. The ownership of 'Orans', a nurturing ecosystem for local flora and fauna, typically lies with the government, although in some cases these lands are registered in the name of the deity itself. A 2018 Supreme Court order classified Orans and de-vans as 'forest land' (T.N. Godavarman Thirumulpad Vs Union of India & Ors, 2018).
- b. **'Gochars' or pastureland** is used for the grazing of the cattle of a village or villages (Rajasthan Government, 1955). Gochars are essential for livestock sustenance (dry wood fuel and use of local shrubs and grass for thatching roofs) and hence a means of livelihood for the local communities.
- c. **Others** refer to the remaining classes of 'wasteland'⁶ deemed to be unfit for cultivation or any such productive use but may hold a considerable productive value for the local community.

Often, wasteland is also used for farming, albeit illegally. Landless farmers have been practising agriculture on government wastelands for generations. Hence, the classification of wasteland as per law undermines its value to the local communities. Access to such resources is essential for the sustenance of landless households and any shift in the land-use pattern of wasteland may have a significant impact on communities' cultural and livelihood practices.

Focus group discussions in Choddiya, Nedan, and Sanwta villages highlighted multiple concerns of the community that stem from the stationing of RE plants in the region. The village communities are concerned about the availability of natural vegetation and enough grazing land for their animals. The community in Nedan claimed that 6,000 bighas⁷ of Gochars and 5,000-6,000 bigha of Orans were allotted to the solar developer. The community in Sanwta reported the desecration of Degrai Oran, where contractors completely uprooted many old and fully matured trees. Communities from both the villagers reported a decline in grazing lands for their livestock.

“ Earlier, people were able to graze their animals in the forest as the availability of grasses and other vegetation used to be there till February or March and didn't need to buy feedstock then. There was a lot of sewan grass available in the region. Today, people don't have enough money to buy feedstock, and the lack of feedstock has affected the yield of animals as well. A decline in feedstock has forced people to sell away their animals like sheep, goats, and cattle. ”

—Voice from Choddiya village

“ Developers Developers cut trees at night when no one was there and they completely uprooted them and cleaned the area with JCBs so that we can't find them.”

“ Khejri is a native tree of the Thar desert. There were old Khejri trees (100 to 200 years old) and their trunks were so broad that if a person wrapped his hands around them, he wouldn't be able to hold them. Developers have cut these trees and thrown them. ”

⁶ Land with scrub, land without scrub, waterlogged and marshy land, different classes of sand etc. (DoLR, 2010).

⁷ Bigha is a traditional unit of measurement of land area used in India. There is no standard size of Bigha and it can vary from 6000 to is roughly equal to 27,000 square feet depending on the state (Chauhan, 2022).

“ Villagers wrapped cloths around the trees to save some trees and protested like the Chipko movement. Some of the villagers made videos from their mobiles and sent them to newspapers and other people. They were able to protect some of the trees through their campaign and by connecting these trees to religious sentiments. ”

—Voices from Sanwta village

4.1.2 Ownership and acquisition of land

Ground research indicated the use of government land by local communities for various common purposes like animal grazing and agriculture for many years. The sudden reallocation of land for RE projects came as a rude shock for many households in the affected villages. In Nedan village, households relying on land of commons comprise around 60% of the total population. These are either landless or marginal farmers. These households were forced to evacuate the lands without any rehabilitation or remuneration to compensate for the loss of livelihood. The communities reported being unaware of the leasing of government land to the RE companies and the absence of public consultation before the government allocated land for development purposes.

“ The GSS (PGCIL 765 kV substation) here has been constructed on 400-500 bighas of land. The poor landless farmers in the village used to farm that land. That was the only source of their livelihood. Now all of them are facing court cases. ”

“ We used to farm on government land but now we have been removed from there. They said it's the government's land, but where are we supposed to go now? We've been farming there for years. There is no other land available where we can farm. ”

—Voices from Sanwta village

The communities also objected to the encroachment of government land and limiting their access to public utilities by companies for project construction, which has created hassles in their daily life.

“ ..about the roads that connect one village to another, like Keraliya village which is around 10-12 km from here, and Dawara around 10-12 km from here. These roads have been blocked entirely. There were local makeshift roads to which companies have restricted their access. How are we going to go to these villages now? These are Gochar lands and we are not allowed to even put one stone there but companies are making makeshift roads for their use. Who gave this right to these companies? ”

—Voices from Nedan village

Many of these claims made by the local community are substantiated by the Rajasthan High Court in its judgement in the Kalyan Singh v State of Rajasthan case (Kalyan Singh v State of Rajasthan, 2021). The villagers contested the allotment of 6,115.06 bighas of land in Nedan village to Adani Renewable Energy Park Rajasthan Limited (AREPL) for the development of a 1,500 MW solar park. The Rajasthan High Court, Jodhpur ruled that land allotted to AREPL included the lands covered by the written petitioners' *dhani* (type of settlement), talab (pond), Oran, school, temple, hospital, and the land falling within the flow of the river, which fall under prohibited categories. Further, the land of Khatedar tenants⁸ and public utilities were locked out on account of the allocation of the entire surrounding land to RE power companies. The state government did not set aside land for approach roads to allow Khatedar tenants to access their *ghanis* and other public utilities.

The Court noted that “before allotting the land this fact [accessibility of private land] was not taken care of that on account of the allotment made the persons residing within the area are not deprived of beneficial use of their land and the public facilities”. It observed that “the State Government was under an obligation to open the new way where there exists no way for access to holding of the Khatedar tenant but in the instant case, the access of the Khatedar tenant to their land was taken away without making provision for the way to their lands, before making the allotment. As a matter of fact, before making the allotment the State Authorities were required to set aside the land for access to the lands of the Khatedar tenants, their *dhani* and the public utilities and the entries thereof were required to be made in the revenue record accordingly.”

4.1.3 Inputs from revenue officer

The revenue officer pointed out the prevalent discrepancy in the measurement and registration of Orans and that the existing records do not reflect the actual extent of Orans in the region. He explained that there are two ways to register an Oran. Either the community has to show evidence of the registration of Oran before the settlement of existing land records or cite the cultural practices of the people in the area by showing evidence for those practices.⁹ Either way, the village panchayat must submit a proposal to the District Collector who asks for a report for verifying the claims. The revenue officer submits the verification report to the tehsildar, who forwards it to the District Collector. Then the claim reaches the government (revenue department), with whom rests the decision of recognising the identified land as Orans. The approval stage is claimed to be politically influenced and often only a selected few can get their land registered while others are rejected. Furthermore, this process is riddled with measurement errors on the part of both parties (community and government).

“ Our revenue department is also responsible for errors in taking measurements. The points of *mustakil* here, called permanent points or reference points are used for measurements. These points do not match very often. ”

—Representative from Revenue Department,
Pokhran District

4.1.4 Acquisition and compensation of private land

The land acquisition and compensation in Rajasthan are governed by the Rajasthan Tenancy Act, 1955 (Board of Revenue, 1955), the Rajasthan Land Revenue Act, 1956 (Board of Revenue, 1956), and the Rajasthan Imposition of Ceiling on Agricultural Holding Act, 1973 (Board of Revenue, 1979). Chapter 5 discusses these legislations in detail. There are two ways to secure private land for constructing RE projects. First, the state government can purchase land from individual owners for general developmental purposes and allocate it to RE developers. Alternatively, RE companies assign a local agent to negotiate with the landowners to sell or lease their land. The compensation rates are either decided by the

⁸ *Khatedar* is the person whose name is registered in the land records; Khatedar tenant is a tenant of the land with certain privileges (Sukhdeo Singh And Ors. vs Sukhdeo Singh And Ors., 1980)

⁹ These religious practices should be active during the registration period.

revenue department or dictated by the prevalent market rates.

The communities highlighted several issues in the acquisition and compensation process. Due to low literacy levels, it is difficult for landowners to wisely choose between a complete sale of land¹⁰ and a lease model.¹¹ Often, the small landowners, who live on daily wages, are tempted by the prospect of getting a lump sum amount and end up selling their land to the companies. They admitted difficulties in adjusting to the new lifestyle without a recurring income. However, the big landowners do not experience any disruption as they sell or lease only a part of their land, and a substantial portion still remains available for practising farming and growing fodder for their livestock.

Understanding the legal documents for selling or leasing land is another challenge for the locals. Even when these documents are prepared in Hindi, making sense of the legal language is challenging for them.

Villagers who did not sell their land are anxious for their future. The construction of the RE project on acquired land (government and private) has cordoned off many small patches of private land. Some of these are small landowners (2-10 bighas) while others are medium landowners (15-40 bighas) who are now surrounded by the project site. They have to spend significantly to reach their land. This diminishes the usability of the land and sometimes leads to an unwilling surrender of the land for paltry compensation.

““ *Yes, they do it forcefully. It does not matter to them. It becomes difficult if they have taken all the land surrounding your land. You can't keep your livestock because they have surrounded you from everywhere. If an outsider wants to visit a person's house surrounded by a project site, there is no way to reach there without proper ID cards. There is no way in or out for people living inside. Even if the government gives them the IDs, it would not be possible for others who want to visit them. A lot of people have left their land because of this. The ones who have not left will have to leave eventually. This has happened in Meghwal community's dhani, which is around 4 km away from here. They will eventually have to leave in one to two years. They are disconnected from everyone. What will they do alone?* ””

—Voices from Sanwta village

““ *Suppose there are 200 bighas of private farmlands and 1,000 bighas of government farmlands. What the plant people [RE project developers] would do is they will surround private land and force them to sell it.* ””

—Voices from Rasla

Owners leasing out their lands to RE companies also expressed concerns about the future of their land once the lease period is over. They claimed absence of any clear conversation with the RE companies on the subject.

¹⁰ Land ownership is transferred from Khatedar to the RE project developer.

¹¹ Land ownership remains with the Khatedar, who leases land to the RE project developer. The lease tenure is same as the power purchase agreement (PPA) duration.

““ They have leased our land for 25-30 years. Do you think after that they will shut everything and go away? The people who have given their land on lease would not be here after these many years. We do not know whether their children will get back their land or not. They are making huge buildings and infrastructure and earning crores of rupees. We do not think they will give back the land. They will keep signing agreements. People of Nedan would not get the land back. ””

—Voices from Nedan village

The community also raised concerns about the issue of compensation. Private landowners received full compensation for their land, but some mentioned delays lasting up to three months. In Nedan, villagers also cited inconsistencies in company's compensation rates that ranged from INR 8,000 to 15,000 per bigha per month.

4.1.5 Water availability and utilisation

Canal, government and private tube wells, and local ponds are some of the primary water sources in the surveyed villages. In Chhodiya, communities rely on tankers to get water as the tube wells are not sufficient and the water extracted from them is used for boosting.¹² They incur expenses of around INR 5,000-6,000 a month for water supply via tankers. The communities reported the use of tube wells and local ponds by solar companies for their projects, in addition to contracting tanker services from local villagers who use private tube wells.

Competing use of water from different sources for RE projects is an alarming issue for the community. They cite a continuous decline in the groundwater levels in the region, which is believed to have further deteriorated with increasing usage of water for cleaning solar panels. The community also reported a decline in the number of permanent ponds in the region.

Water governance is a critical local issue as the contractor typically is from an upper caste background with strong political influence. Hence, challenging or resisting the indiscriminate exploitation of water resources for commercial purposes becomes difficult. This is not only a point of concern for the community but also for the wildlife and livestock population that is dependent on the same resources for drinking water.

““ Our Degrai Oran is huge. There are a lot of wild animals in a radius of 40-50 km. They used to come to the ponds like the ones in Degrai and Rasla. We never had a shortage of water before as these ponds used to fill up every year after the monsoon. Now these companies are also extensively using the ponds for their use. You can see there is not enough water in the pond. For the last 10 days, I have been trying to stop them but it is not happening. Sometimes they come at night to steal water. There are around 30-32 ponds in Degrai Oran among which seven to eight ponds always have water available. We have a pond near Degrai temple, which always has water and a lot of animals come to the pond to drink. We do not use that pond and no one is allowed to use it. ””

—Voices from Rasla village

¹² The water collected in the tank and then supplied through a pump.

4.1.6 Local employment and economic growth

RE projects create direct, indirect, and induced employment opportunities.¹³ The community acknowledged availing various indirect and induced employment opportunities, although there was practically no mention of any direct employment. Contractual water services, in the form of tankers or private tube wells, are a common employment source for communities across the villages. There were also opportunities for contractual transport services for company staff. In Chhodiya, Diploma holders or those qualified from industrial training institutes (ITIs) were hired as helpers or mechanics for maintenance in wind projects. Renting houses for company staff was another income source for communities in Nedan and Chhodiya villages. Some people have exclusively built new houses for renting purposes.

Though RE projects offered many indirect employment opportunities, only a few villagers were employed at the RE project sites. It was ascribed to the low daily wages offered by the RE companies. People who work as contractual labourers in construction activities like building permanent (pucca) houses usually get INR 800–1,000 as daily wages, but people who work at the plant get only INR 300. There was also a mention of mutual distrust between RE companies and villagers that restricted employment in these projects.

““ *The contractors and labour have come from outside. We do not get any information. There should be opportunities for the villagers, even if they are employed on daily wages, for those who are capable and qualified. At least the local people should get the preference before the outsiders. I don't think anyone in Rasla panchayat works at the plant. When we go to them, they say the tender has been taken by the outsider. They have one response against us, to threaten us in the name of the police. They think if they give us jobs, we will bother them every time. But if they give it to others, then can change them later as well without us bothering them.* ””

—Voices from Nedan Village

People also highlighted the caste differences as a barrier to accessing various direct and indirect benefits offered by the RE projects. Rajputs and other upper castes in these villages own most of the land. They can afford to sell or lease some portion of their land and still manage to practice farming. In addition, they also benefit from indirect and direct job opportunities. Lower castes like Meghwals who had marginal landholdings with no alternate source of livelihood could not get any benefit from the opportunities provided by the companies. Landless castes like Jogis are the worst hit. The acquisition of common land deprives them of livelihood activities, and the alternative opportunities from RE deployment are disproportionate to the negative impact of livelihood loss.

““ *Our primary source of livelihood is animal husbandry. People faced many losses. In the future, there will be a lot of financial hardship that we have to go through. For example, the sevan grass used to be there on the land where these plants have come up. Now, it's all gone. There were other kinds of grasses as well which made villagers self-sufficient year-round. We have around 5,000–6,000 camels, around 40,000 sheep and goats. There are other livestock animals like buffalos in Rasla Panchayat. We approached the collector and the SP regarding this, but received no support.* ””

—Voices from Rasla Village

¹³ Direct: employment created through the project construction activities; Indirect: employment created in the allied sectors for the RE projects like manufacturing or financing institutions; Induced: employment created from the earnings of the workers on the RE project site. For example, rent incomes, local grocery shops, or eateries.

5. Land Governance and Renewable Energy Projects in Rajasthan

Considering the prevalent issues surrounding the deployment of utility-scale solar projects in the state, this chapter presents an overview of the governance framework pertaining to land and large-scale renewable energy projects in Rajasthan.

Matters related to land governance, including land rights, tenure, transfer, and alienation of agricultural land, fall within the domain of the legislative powers of the state government as defined in the Seventh Schedule of the Indian Constitution. However, both state and central governments are empowered to make laws to acquire and requisition property. While laws on land governance vary across states, as per Article 254 of the Constitution, state laws concerning the acquisition or requisition of land must comply with relevant central laws (The Constitution of India, 1949).

Land governance in India poses several challenges, such as gaps in the legal framework for categorising land use, the absence of updated records, and resulting discrepancies in land titles (Mishra & Suhag, 2017). Given the complexity of the country's land governance regime and the centrality of land to India's predominantly rural populace, land acquisition has been a notable cause of public discontent against the state (Singh S. , 2016).

To address the various public concerns arising from land acquisition, the Right to Fair Compensation and Transparency in Land Acquisition, Rehabilitation and Resettlement Act, 2013 (hereinafter referred to as RFCTLARR Act, 2013) was enacted by the central government to ensure the inclusive participation of affected persons in development projects (RFCTLARR Act, 2013). Applicable primarily to government acquisition of land for any public purposes, the RFCTLARR Act provides a streamlined mechanism for land acquisition, including compensation, rehabilitation, and resettlement of affected persons. The Act mandates the participation of affected persons prior to the acquisition process through social impact assessment aimed at seeking inputs from locals on the relationship between the public purpose and acquisition of land, the possibility of reducing the extent of acquisition, and the nature and extent of damage caused by the acquisition (Punj, 2017).

Overview of the RFCTLARR Act

The RFCTLARR Act considers the concerns of not only landowners but of any person whose primary source of livelihood is likely to be adversely affected by the acquisition. The safeguards provided by the Act are broadly classified into two main themes: compensation and entitlements related to rehabilitation and resettlement. While lauded for its progressive provisions, the RFCTLARR is critiqued for continuing the colonial distinction between landowners and other displaced persons. Where the former is entitled to compensation, and rehabilitation and resettlement entitlements, the latter is entitled only to rehabilitation and resettlement provisions under the Act.

The compensation mandated by the Act includes the following components:

- The market value of the land.
- The market value of land multiplied by a factor that differs for rural or urban areas.
- The value of assets attached to land and building.
- Solatium equivalent to one hundred per cent of the compensation amount.
- Any other component that may be prescribed by a Court or appropriate authority under the Act.

The rehabilitation and resettlement entitlements provided under the Act include:

- Provision of housing unit in case of displacement.

- Land for land (in case of an irrigation project, land shall be provided for loss of land by affected persons, in lieu of monetary compensation).
- Offer for developed land (in case of acquisition of land for urbanisation, 20% of land to be reserved for land-owning affected families).
- Choice of annuity or employment (provision of employment or continued annual compensation)
- Subsistence grant for displaced families for a period of one year.
- Transportation costs for displaced families.
- Cattle shed/petty shop cost.
- One-time grant to artisan, small traders, and certain others.
- One-time resettlement allowance.
- Stamp duty and registration fees for land or house allotted.

The RFCTLARR Act incorporates inputs and objections from affected persons at various stages of the determination and award of entitlements envisaged under it. It also provides additional compensation in case of multiple displacements and special provisions for Scheduled Castes and Scheduled Tribes. The Act discourages land acquisition in Scheduled Areas and highlights the need to preserve the ethnic, linguistic, and cultural identity of scheduled tribes. Any alienation of land from Scheduled Tribes or Scheduled Castes done in disregard of Scheduled Tribes or Scheduled Castes is null and void as per the Act.

Notably, provisions on rehabilitation and resettlement under the RFCTLARR Act also apply to land procurement by a private entity if such procurement exceeds a specified limit. However, setting up such a limit on private procurement beyond which the Act's provisions will apply is left to the concerned state government. When the state prescribes no such limitation, the Act is rendered inapplicable to private land procurement.

Source: Authors' compilation from RFCTLARR Act 2013

5.1 Land allotment for renewable energy projects in Rajasthan

In Rajasthan, the land is predominantly governed by a combination of state laws—the Rajasthan Tenancy Act, 1955, the Rajasthan Land Revenue Act, 1956, and the Rajasthan Imposition of Ceiling on Agricultural Holding Act, 1973. The RFCTLARR Act, 2013 applies to the government acquisition of land in the state. Rajasthan's renewable energy policies have introduced changes in state laws, superseding the applicability of the RFCTLARR Act for renewable energy projects.

Currently, the allotment of government land to solar parks and solar power projects adheres to the Rajasthan Land Revenue (Allotment of Land for Setting Up of Power Plant based on Renewable Energy Sources) Rules, 2007 (Government of Rajasthan, 2007). In the current framework, project developers submit an application for allotment of government land to the Rajasthan Renewable Energy Corporation, which forwards it to the District Collector after receiving a cash security deposit from the developers. The government land is then leased to power developers without the mandatory requirement of local consultations provided in the RFCTLARR Act. In another critical departure from the Act, the state policies do not have provisions for any resettlement or rehabilitation entitlements for affected persons dependent on government land for their primary sources of livelihood.

In the case of private land, the state policies permit developers to set up solar parks without the requirement of land conversion mandated by the Rajasthan Tenancy Act, 1955, and Rajasthan Land Revenue Act, 1956. Further, solar power projects can also acquire land from a title holder above the ceiling limit prescribed by the state Ceiling Act, 1973. The Ceiling Act was enacted to ensure the equitable distribution of agricultural land for the benefit of landless and other persons among the rural population. Removing the land ceiling limit for renewable energy projects is a significant shift in rural land governance in Rajasthan.

As discussed above, the RFCTLARR Act can apply to private procurement of land if such procurement exceeds a state

government-prescribed limit. However, the Rajasthan government does not prescribe any limit for private procurement of land. Instead, the state government has established several land banks of available government land to attract investments from project developers (RRECL, 2022).

Removal of ceiling limits and easing of land conversion requirements allow project developers to procure private land from title holders through sale or lease agreements. It is crucial to note that the bargaining power of individuals in such contracts is disproportionately low compared to private companies. The state's renewable policies do not provide any guidelines to ensure equity in the terms of agreements between private companies and affected rural persons. In stark contrast to compensation guaranteed by the RFCTLARR Act, the state policies remain silent on the standard parameters to be adhered to in land procurement from individuals in rural areas. In the absence of statutory protection for the interests of local vulnerable groups, the likelihood of land procurement by coercive measures increases under the current policy framework.

While project developers enjoy the relaxation of the usual land procurement procedures in Rajasthan, the impact of these measures on locals is likely to be unfavourable. The exclusion of public participation before land allotment and the absence of compensation or resettlement schemes for affected areas have manifested in significant administrative discrepancies that exacerbate discontent around renewable projects (*Kalyan Singh v State of Rajasthan*, 2021). For a just and inclusive transition to renewable energy, there is a critical need for Rajasthan to provide a participatory and responsive policy framework that addresses the needs of the local vulnerable and marginalised people.

6. Summary

Large-scale RE projects have a significant land and water-footprint that can potentially lead to conflicts between the project developers and local communities. Timely identification and redressal of the community's grievances is critical to a sustained and inclusive clean energy transition. Our study presents the perception of the communities living in selected villages in Rajasthan's Jaisalmer district.

Allocation of common property resources (CPR), also known as commons, for RE projects, is one of the most contested issues. Discrepancy in the definition, utilisation, and ownership of government-recognised 'wastelands' is identified as the central cause of land conflicts. For communities, CPRs have immense economic and cultural value. Furthermore, there are gaps in the recognition of the rights of the local community and users of government land. This deprives the impacted families of fiscal and non-fiscal support to be provided by the government and/or RE companies under the resettlement and rehabilitation (R&R) framework.

Acquisition of private land holdings is relatively easier, but concerns prevail around forced acquisitions. Small landholders, who do not sell or lease their land for projects, often find themselves surrounded by the project site, disconnecting them from the village and commons. Their daily activities are severely impaired, and their land is rendered unviable for use. Policing and other means of threat for the purpose of coerced acquisitions are also reported.

The competing use of water by solar projects is another significant concern. Besides using common property sources, the RE companies hire local tube well services to meet their demands. In a water-scarce region like Jaisalmer, the community fears the additional demand posed by the solar projects may deplete natural water sources and impact groundwater levels. Lastly, while these projects have created some indirect and induced employment (water supply, houses for rent, and transporters), there has been little direct employment creation at the local level. The companies bring along outsourced labourers and do not employ locals.

This report does not offer any prescriptions or recommendations for navigating these conflicts. It simply attempts to present the experience of the impacted individuals in their voice. The authors acknowledge the many limitations of this piece, including a very limited coverage of solar parks and impacted communities.



7. References

- yagi, A., Golchha, A., Rai, D., Poswal, A., Lata, C., Kwatra, S., & Saxena, P. (2022). *India Renewable Energy Employment Handbook*. New Delhi: CEEW, NRDC and SCGJ. Retrieved from <https://www.ceew.in/publications/india-renewable-energy-employment-handbook-2022>
- Tyagi, A., Lata, C., Korsh, J., Nagarwal, A., Rai, D., Kwatra, S., . . . Saxena, P. (2021). *India's Expanding Clean Energy Workforce*. New Delhi: CEEW, NRDC, and SCGJ. Retrieved from <https://www.ceew.in/publications/indias-expanding-clean-energy-workforce>
- Kalyan Singh v State of Rajasthan, M.K. Ranjitsinh v Union of India*. (2021, June, April 29, 19). Retrieved from <https://indiankanoon.org/doc/46141022/>, <https://indiankanoon.org/doc/165550376/>
- Bathla, K. (2021, November 26). *Lack of Registration for Oran Land in Rajasthan Threatens Wildlife Conservation*. Retrieved December 02, 2022, from <https://www.landconflictwatch.org/conflicts/lack-of-registration-for-oran-land-in-rajasthan-threatens-wildlife-conservation>
- MNRE. (2023, April). *Physical Progress*. Retrieved April 26, 2023, from <https://mnre.gov.in/the-ministry/physical-progress>
- ET Government. (2021, April 11). *Rajasthan has attracted investment proposals of over 1.5 lakh crore in renewable: RRECL CMD Subhodh Agarwal*. Retrieved April 26, 2023, from <https://government.economictimes.indiatimes.com/news/psu/with-1-5-lakh-crore-renewable-energy-investment-proposal-in-hand-rajasthan-aims-to-increase-installed-capacity-by-30000-mw-rrecl-cmd-subhodh-agarwal/82014059>
- (2019). *Rajasthan Solar Energy Policy*. Energy Department, Government of Rajasthan. Retrieved from <https://energy.rajasthan.gov.in/content/dam/raj/energy/rrecl/pdf/Home%20Page/Rajasthan%20Solar%20Energy%20Policy2019.pdf>
- Department of Agriculture, Government of Rajasthan. (2022, April 12). *Agro-Climatic Zones*. Retrieved April 12, 2022, from <https://agriculture.rajasthan.gov.in/content/agriculture/en/Agriculture-Department-dep/Departmental-Introduction/Agro-Climatic-Zones.html>
- Barkat Khan vs State Of Rajasthan. (2021, June 29). *Rajasthan High Court - Jodhpur*. Retrieved September 10, 2022, from Indiankanoon: <https://indiankanoon.org/doc/70794498/>
- Rajasthan High Court - Jodhpur. (2021, June 27). *D.B.C. Writ Petition No.825/19*. Retrieved September 11, 2022, from <https://indiankanoon.org/doc/70794498/>
- Lodha, S., & Mehta, D. (2019, January 14). *Suo Moto vs The Principal Secretary on 14 January, 2019*. Retrieved December 02, 2022, from <https://indiankanoon.org/doc/59133573/>
- Gupta, U. (2022, March 3). *Rajasthan to host 1.8GW of new solar parks in Jaisalmer and Bikaner*. Retrieved from PV Magazine: <https://www.pv-magazine-india.com/2022/03/03/rajasthan-to-host-1-8gw-of-new-solar-parks-in-jaisalmer-and-bikaner/>
- T.N. Godavarman Thirumulpad Vs Union of India & Ors. (2018, July 3). *Identification of 'Forest' in the State of Rajasthan*. Retrieved December 2, 2022, from <http://www.indiaenvironmentportal.org.in/files/forest%20identification%20Rajasthan%20Supreme%20Court%20Order.pdf>
- Rajasthan Government. (1955, November). *Rajasthan Tenancy (Government) Rules, 1955*. Retrieved April 22, 2022, from [https://landrevenue.rajasthan.gov.in/content/dam/landrevenue/revenuedepartment/Rules/Rajasthan%20Tenancy%20\(Government\)%20Rules%2C%201955.pdf](https://landrevenue.rajasthan.gov.in/content/dam/landrevenue/revenuedepartment/Rules/Rajasthan%20Tenancy%20(Government)%20Rules%2C%201955.pdf)
- Kalyan Singh v State of Rajasthan*. (2021, June 29). Retrieved from <https://indiankanoon.org/doc/46141022/>
- The Constitution of India. (1949). *The Constitution of India*. Retrieved November 3, 2022, from legislative.gov.in: https://legislative.gov.in/sites/default/files/COL_English.pdf
- Mishra, P., & Suhag, R. (2017). *Land Records and titles in India*.
- Singh, S. (2016). Land Acquisition in India: An Examination of the 2013 Act and Options. *Journal of Land and Rural Studies*, 4(i), 66-78.
- RFCTLARR Act. (2013). *The Right to Fair Compensation and Transparency in Land Acquisition, Rehabilitation and Resettlement Act*. Retrieved November 3, 2022, from legislative.gov.in: <https://legislative.gov.in/sites/default/files/A2013-30.pdf>
- Punj, A. (2017). 'Partners in Development' Under the New Land Acquisition Law. *Journal of the Indian Law Institute*, 153-177.
- Government of Rajasthan. (2007, June 18). *Land Revenue Rajasthan*. Retrieved November 09, 2022, from Rajasthan Government: <https://energy.rajasthan.gov.in/content/dam/raj/energy/rrecl/pdf/Activities/Solar/4.26%20Rajasthan%20Land%20Revenue%20Rules%202007.pdf>

- RRECL. (2022). *Utility Scale Solar*. Retrieved November 4, 2022, from <https://energy.rajasthan.gov.in/content/raj/energy-department/rrecl/en/activities/Solar.html>
- Kalyan Singh v State of Rajasthan. (2021, June 29). Retrieved from <https://indiankanoon.org/doc/46141022/>
- PIB. (2021, November 1). *National Statement by Prime Minister Shri Narendra Modi at COP26 Summit in Glasgow*. Retrieved April 11, 2022, from <https://pib.gov.in/PressReleasePage.aspx?PRID=1768712>
- MNRE. (2021). *Annual Report 2020-21*. New Delhi: MNRE. Retrieved from https://mnre.gov.in/img/documents/uploads/file_f-1618564141288.pdf
- Dutt, A. L. (2020). *Clean Energy Investment Trends: Mapping Project Level Financial Performance Expectations in India*. New Delhi, Paris: CEEW, IEA. Retrieved from <https://cef.ceew.in/solutions-factory/CEEW-CEF-clean-energy-investment-trends-2020.pdf>
- DA&FW, Ministry of Agriculture. (2021). *Annual Report 2020-21*. Retrieved from https://agricoop.nic.in/sites/default/files/Web%20copy%20of%20AR%20%28Eng%29_7.pdf
- Land Conflict Watch. (n.d.). *Agitation against non-payment of compensation for land acquired for Kurnool Solar Park*. Retrieved April 12, 2022, from <https://www.landconflictwatch.org/conflicts/agitation-against-non-payment-of-compensation-for-land-acquired-for-kurnool-solar-park>
- Menon, A. (2022, February 19). *Karnataka's Pavagada solar park busts the myth that renewable energy is inherently good*. Retrieved April 12, 2022, from <https://scroll.in/article/1017520/karnatakas-pavagada-solar-park-busts-the-myth-that-renewable-energy-is-inherently-good>
- Hemalatha, K. (2019, August 06). *'Our livelihood depends on this land': A solar park in Gujarat is hurting a pastoral community*. Retrieved April 12, 2022, from <https://scroll.in/article/932881/our-livelihood-depends-on-this-land-a-solar-park-in-gujarat-is-hurting-a-pastoral-community>
- Government of Gujarat, Revenue Department. (2019, January 25). *Allocation policy of Government waste land for Wind/solar/wind-solar hybrid park*. Retrieved April 12, 2022, from https://indextb.com/files/2021/7/0fe726f9-05c3-4f57-9a57-8337ad73d1ee_Allocation%20policy%20of%20Government%20waste%20land.pdf
- MNRE. (2019, July 22). *Guidelines for Implementation of Pradhan Mantri Kisan Urja Suraksha evam Utthan Mahabhiyan (PM KUSUM) Scheme*. Retrieved April 12, 2022, from <https://mnre.gov.in/img/documents/uploads/8065c8f7b9614c5ab2e-8a7e30dfc29d5.pdf>
- Chaturvedi, V., & Malyan, A. (2021). *Implications of a net-zero target for India's sectoral energy transitions and climate policy*. New Delhi: CEEW. Retrieved from <https://www.ceew.in/publications/implications-of-net-zero-target-for-indias-sectoral-energy-transitions-and-climate-policy>
- MoEFCC. (2006, September 14). *Notification*. Retrieved April 20, 2022, from http://environmentclearance.nic.in/writereaddata/EIA_Notifications/1_SO1533E_14092006.pdf
- MOEFCC. (2017, July 17). *Office Memorandum*. Retrieved April 20, 2022, from Environmental Clearance: http://environmentclearance.nic.in/writereaddata/OMs-2004-2021/182_OM_07_07_2017.pdf
- Equator Principles. (2020, July). *The Equator Principles EP4*. Retrieved April 21, 2022, from https://equator-principles.com/app/uploads/The-Equator-Principles_EP4_July2020.pdf
- IFC. (2012, January 1). *IFC Performance Standards on Environmental and Social Sustainability*. Retrieved April 21, 2022, from https://www.ifc.org/wps/wcm/connect/c02c2e86-e6cd-4b55-95a2-b3395d204279/IFC_Performance_Standards.pdf?MOD=AJPERES&CVID=kTjHBzk
- IFC. (2015, August). *Environment, Health, and Safety Guidelines for Wind Energy*. Retrieved April 21, 2022, from https://www.ifc.org/wps/wcm/connect/b82d0563-b39a-42a7-b94e-0b926b4a82f9/FINAL_Aug%2B2015_Wind%2BEnergy_EHS%2BGuideline.pdf?MOD=AJPERES&CVID=mpusVXy
- IFC. (2007, April 30). *Environmental, Health, and Safety Guidelines for Electric Power Transmission and Distribution*. Retrieved April 21, 2022, from <https://www.ifc.org/wps/wcm/connect/7b65ce6b-129d-4634-99dc-12f85c0674b3/Final%2B-%2BElectric%2BTransmission%2Band%2BDistribution.pdf?MOD=AJPERES&CVID=nPtfp32&id=1323162154847>
- IFC. (2013, August). *Good Practice Handbook on Cumulative Impact Assessment and Management: Guidance for the Private Sector in Emerging Markets*. Retrieved April 21, 2022, from https://www.ifc.org/wps/wcm/connect/58fb524c-3f82-462b-918f-0ca1af135334/IFC_GoodPracticeHandbook_CumulativeImpactAssessment.pdf?MOD=AJPERES&CVID=kbnYgl5
- IFC. (2012). *IFC Sustainability Framework - 2012 Edition*. Retrieved April 21, 2022, from https://www.ifc.org/wps/wcm/connect/topics_ext_content/ifc_external_corporate_site/sustainability-at-ifc/policies-standards/ifcsustainabilityframework_2012

- SEBI. (2021, May 10). *Business responsibility and sustainability reporting by listed entities*. Retrieved April 21, 2022, from https://www.sebi.gov.in/legal/circulars/may-2021/business-responsibility-and-sustainability-reporting-by-listed-entities_50096.html
- MCA. (2019, March 15). *National Guidelines on Responsible Business Conduct*. Retrieved April 21, 2022, from https://www.mca.gov.in/Ministry/pdf/NationalGuideline_15032019.pdf
- IFC. (2006). *Former Environmental and Social Safeguards and Supporting Materials*. Retrieved April 21, 2022, from IFC: https://www.ifc.org/wps/wcm/connect/topics_ext_content/ifc_external_corporate_site/sustainability-at-ifc/policies-standards/safeguards-pre2006#esrp
- MCA. (2013, August 29). *Companies Act*. Retrieved April 22, 2022, from <https://www.mca.gov.in/Ministry/pdf/CompaniesAct2013.pdf>
- Ministry of Rural Development. (2013, September 26). *Right to Fair Compensation and Transparency Land Acquisition, Rehabilitation and Resettlement Act*. Retrieved April 22, 2022, from <https://legislative.gov.in/sites/default/files/A2013-30.pdf>
- Kalyan Singh v State of Rajasthan*. (2021, June 29). Retrieved from <https://indiankanoon.org/doc/46141022/>
- M.K. Ranjitsinh v Union of India*. (2021, April 19). Retrieved from <https://indiankanoon.org/doc/165550376/>
- Singh, N., Nyuur, R., & Richmond, B. (2019). Renewable Energy Development as Driver of Economic Growth: Evidence from Multivariate Panel Data Analysis. *Sustainability*.
- Land Conflict Watch. (2022). *Conflict Database*. Retrieved September 06, 2022, from <https://www.landconflictwatch.org/all-conflicts>
- Land Conflict Watch. (n.d.). *Methodology*. Retrieved September 06, 2022, from About us: https://global-uploads.webflow.com/5d5a7b073f278919f8859373/5e9acf8138205aac75cc61e8_Methodology.pdf
- RRECL. (2022, August 31). Retrieved September 06, 2022, from <https://energy.rajasthan.gov.in/content/raj/energy-department/rre-cl/en/home.html#skip>
- DoLR. (2010). *District - wise distribution of Wastelands - Rajasthan*. Retrieved September 13, 2022, from Wasteland Atlas: https://dolr.gov.in/sites/default/files/rajasthan_0.pdf
- Sukhdeo Singh And Ors. vs Sukhdeo Singh And Ors. (1980, February 05). *Rajasthan High Court*. Retrieved 13 September, 2022, from IndiaKanoon: <https://indiankanoon.org/doc/1854220/?type=print#:~:text=A%20Khatedar%20is%20not%20an,of%20ownership%20in%20immovable%20property.>
- MNRE. (2022, September). *Physical Progress*. Retrieved October 16, 2022, from <https://mnre.gov.in/the-ministry/physical-progress>
- Chauhan, A. S. (2022, 12 30). *Convert 1 Bigha in Square Feet, Acre, Hectare: Bigha in India*. Retrieved 1 3, 2023, from <https://www.magicbricks.com/blog/1-bigha-to-square-feet-acre-hectare-converter/115042.html>
- Department of Land Resources, Ministry of Rural Development. (2019, September). *Annexures*. Retrieved September 06, 2022, from Wastelands Atlas of India 2019: <https://dolr.gov.in/sites/default/files/Annexure-I%20-%20Definitions%20of%20Wastelands%20Classes.pdf>
- Department of Land Resources, Ministry of Rural Development. (2019, September). *Wastelands Atlas of India 2019 - Rajasthan*. Retrieved September 06, 2022, from Wastelands Atlas of India 2019: https://dolr.gov.in/sites/default/files/Rajasthan_0.pdf
- PIB. (2022, August 03). *Cabinet approves India's Updated Nationally Determined Contribution to be communicated to the United Nations Framework Convention on Climate Change*. Retrieved April 26, 2023, from <https://pib.gov.in/PressReleasframePage.aspx?PRID=1847812>
- Department of Industries and NGOBOX. (2019). *Rajasthan CSR Report 2019*. Retrieved from <https://csr.rajasthan.gov.in/media/event/18/rajasthan-csr-report-2019.pdf>
- Adani Green Energy Limited. (2021). *ESG Report 2020-21*. Retrieved from <https://www.adanigreenenergy.com/-/media/Project/GreenEnergy/Sustainability/archives/ESG-Report-2020-21.pdf>
- IRENA and CEM. (2014). *The socio-economic benefits of large-scale solar and wind: an econValue report*. IRENA. Retrieved from https://www.irena.org/-/media/Files/IRENA/Agency/Publication/2014/Socioeconomic_benefits_solar_wind.pdf
- CEA. (2023). *Transmission System for Integration of over 500 GW RE Capacity by 2030*. Retrieved from https://cea.nic.in/wp-content/uploads/notification/2022/12/CEA_Tx_Plan_for_500GW_Non_fossil_capacity_by_2030.pdf
- ETGovernment. (2023, 3 3). *Rajasthan, the RE global capital in the making: Govt, policymakers, industry leaders assert at #ETRenewableEnergy*. Retrieved May 11, 2023, from <https://government.economicstimes.indiatimes.com/news/policy/rajasthan-the-re-global-capital-in-the-making-govt-policymakers-industry-leaders-assert-at-etrenewableenergy/98395026>

