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The Replicating Risk: A Socio-Legal Analysis of Land, Forest, and Livelihood Conflicts in India's Renewable Energy Transition

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ABSTRACT

India is pursuing one of the most ambitious and fastest energy transitions ever. The ambition to install 500 GW of non-fossil fuel capacity by 2030, one of the cornerstones of its NDCs under the Paris Agreement, is a project of global consequence. The nation has already demonstrated considerable political resolve by surpassing, with five years to spare, the first milestone of reaching 50% percent non-fossil fuel capacity, originally proposed for the year 2030, with the RE capacity reaching 50.07% of the total installed capacity of 484.82 GW, set for 2025. This notable scale of deployment hides a burgeoning and foundational crisis. The primary discourse regarding India's RE transition continues to be conventional and primarily focused on techno- financial risk due to grid integration and distribution companies' financial viability. In contradiction to this dominant discourse, the paper insists on a different thesis: that the leading, unmitigated, and most material risk to the transition to 500 GW is, in fact, socio-legal. The core stance of this examination is that India, in undertaking its renewable energy transition, is purposefully duplicating and ultimately scaling land and livelihood conflicts, by almost exclusively emphasizing the pace of deployment rather than socio-legal integration. Such a model operates in a governance void and collides with some of the most important legal frameworks; namely, The Right to Fair Compensation and Transparency in Land Acquisition, Rehabilitation and Resettlement Act (LARR), 2013 and The Scheduled Tribes and Other Traditional Forest Dwellers (Recognition of Forest Rights) Act (FRA), 2006.

***Keywords**: NDCs, Renewable Energy, FRA, LARR, Non-Fossil Fuel.*

Introduction

The absence of connection has created a serious structural contradiction at the heart of India's energy policy. Even though governmental actors such as NITI Aayog are envisioning and developing the contours of a "Just Transition" initiative in their 2024-2025 reports, recognizing the need to address socio-economic impacts and regional disparities, this discourse already implicates financial regulators, with proposals in 2025 for example that SEBI create a "just transition disclosures" requirement. Contradicting this, state implementation policy has procedurally undermined this unequivocal declarative goal. To "support renewable energy development," India has exempted solar and wind projects from the binding requirements of preparing a SIA and an EIA. A procedural "Just Transition" framework is hollow without the very assessment tools—SIAs and EIAs—meant to discover, mitigate, and provide a venue for redress of social and environmental harms prior to project commencement. By removing these mandatory safeguards, the state has legally disabled the primary tools for ensuring justice, creating a governance vacuum where conflict is not an accidental byproduct but a *structurally guaranteed outcome*.

This socio-legal friction is not a "soft" or peripheral concern. It is the direct, quantifiable cause of the "implementation challenges"—specifically "right-of-way (RoW) issues, land acquisition, litigation, and

securing forest, wildlife and tree-cutting approvals"—that are crippling the infrastructure needed to support the transition.[8] The material consequence is a multi-billion- dollar crisis. A September 2025 report from the Institute for Energy Economics and Financial Analysis (IEEFA) and JMK Research revealed that over **50 GW of renewable energy capacity is currently "stranded"** nationwide—assets that are built but unable to transmit power precisely because of this socio-legal bottleneck.

This report will demonstrate that this failed model of dispossession is not being corrected. Instead, this "replicating risk" is now visibly emerging in the next-generation frontiers of India's energy policy: offshore wind, which is generating conflict with fishing communities, and green hydrogen, which is being planned around the same flawed "hub" model of state-led land acquisition.

This paper will first, analyze the terrestrial solar conflict model to establish the baseline of dispossession. Second, it will conduct a deep dive into the foundational legal collisions over land and forest rights. Third, it will investigate how this risk is replicating in new marine and industrial frontiers. Fourth, it will quantify the systemic consequences, linking social conflict directly to the "stranded asset" crisis. Finally, it will conclude by proposing a set of actionable, rights-based recommendations to re-ground India's 500 GW ambition in a framework of socio- legal sustainability.

The Terrestrial Conflict Landscape: A Cartography of Dispossession in Utility-Scale Solar

The dominant model for India's solar expansion has been the "Ultra Mega Solar Park." This "plug-and-play" model, hailed by policymakers and investors as a way to de-risk investment, is meant to leave the complex and contentious processes of land acquisition and infrastructure development to state agencies. A close look at the most prominent solar parks shows that far from taking away the social risk, the model institutionalizes social inequality and transfers the real cost of development to India's most marginalized communities.

The Pavagada Model: Systematizing Social Inequality

The 2,000 MW Pavagada Solar Park in Karnataka, spread across 13,000 acres, serves as the archetype for this model. The socio-economic impacts have not been uniform; they have been disproportionately borne by the most vulnerable: Dalit farmers, women, and landless agricultural laborers.

The model for this is the 2,000 MW Pavagada Solar Park in Karnataka, spread over 13,000 acres. The socio-economic impacts have not been uniformly distributed; they have been disproportionately borne by the most vulnerable-Dalit farmers, women, and landless agricultural laborers.

The gains in jobs, which had been the chief local benefit claimed to justify the project, for most ended up being little more than a "ticket to a better life" that never materialized. Of course, some jobs were created, but the gain accrual was captured by those already possessing social and educational capital: technical jobs, when available, went to engineering graduates, who were mostly migrants. Local villagers, especially those from Scheduled Caste communities, were left with the same "menial jobs" they had performed in the past, such as grass cutting and panel cleaning.27 This indeed is a case of "elite capture": rather than challenging or even overcoming traditional structures of inequality, the new green economy reinforces them.

This process of "risk-shifting" is most apparent in the impact that the project has had on pastoralist livelihoods. The 13,000 acres acquired for the park were classified by the Centre as "wastelands". In reality, this land was essential community grazing land and was at the heart of the local pastoral economy. Development of the project meant the eradication of this livelihood. Reports detail the specific case of Lakshmi Narayan, a 65-year-old herder who, having lost his grazing sites to the park, was forced to sell 150 of his 200 cattle. This economic dislocation has had severe second-order social impacts, with villagers reporting a rise in alcoholism and a corresponding decline in traditional religious and community events.

The legal mechanism that facilitated this is crucial. The LARR Act of 2013 is a law that demands better compensation, rehabilitation, and a due Social Impact Assessment, and was "side- stepped". Instead of acquisition, the state used a lease model where landowners were paid a rent on a per annum basis. While such a model left the nominal "ownership" intact for those with land titles, it extinguished the "livelihood" rights of the landless totally. Farm workers, shepherds, and others who had no deed but their lives depended on the same piece of land had no legal standing in the "lease" negotiation process and received no compensation.

The solar park model thus works as a tool of risk transfer. The state "de-risks" the project for the private developer by laundering the complex social landscape, using its power to transfer the risk from the

developer's balance sheet - such as the risk of project delay - onto the livelihoods of the community's most vulnerable, such as the risk of extinction.

The Pattern Replicated: Failed Promises at Rewa and Kurnool

The Pavagada case represents a larger pattern; it is not a standalone failure. The same pattern of broken commitments and social dispossession is also seen in India's other flagship solar parks. At the 750 MW Rewa Ultra Mega Solar Power Plant in Madhya Pradesh, families whose lands were taken were assured "a job for one member from each of these families." That was the heart of the social contract. Nevertheless, local communities assert, "none of them got a permanent job," but had simply received "some odd labour work." The Rewa example presents an unflattering, physical metaphor of dispossession. The "boundary wall" constructed around the project did not merely enclose the acquired land, it cut off access to the community's other land. Villagers and pastoralists remarked that the trip to their remaining agriculture and grazing land increased from 2-3 kilometers away to 14-15 kilometers away, effectively rendering it unusable. The boundary wall, while a method to secure a financial asset, served to depict in physical form severed ties between community and livelihood. The example of the 1,000 MW Kurnool Ultra Mega Solar Park, located in Andhra Pradesh, is consistent with the prior example. Residents from nearby Gani village were promised "24 hours of free electricity" and "jobs." Instead, according to residents, they received "more electricity cuts" and, as usual, no jobs. In addition, land lost which had been an important communal resource for collecting dry wood and for free movement; the cluster has received zero compensation.

The table below summarizes the systemic quality of these socio-economic failures.

Table 1: Comparative Analysis of Socio-Economic Impacts at Major Solar Parks

Solar Park (State)	Size (MW) / Area	Promised Local Benefit	Actual Outcome	Primary Impacted Groups	Nature of Livelihood Loss
Pavagada (Karnataka)	2,000 MW / 13,000 acres	"Jobs," "economic opportunities," "ticket to a better life"	"Menial jobs" only for locals; "elite capture" by migrants and dominant castes; no jobs for most.	Dalit farmers, women, landless laborers, pastoralists.	Extinction of pastoralism (loss of grazing "wasteland"); loss of agricultural labor.
Rewa (Madhya Pradesh)	750 MW	"A job for one member from each" family whose land was acquired.	"None... have received a permanent job"; "some odd labour work" only.	Farmers, pastoralists.	Loss of grazing land; blocked access to *other* agricultural fields due to boundary wall, extending travel from 2-3 km to 14-15 km.
Kurnool (Andhra Pradesh)	1,000 MW / 5,932 acres	"Jobs," "24-hour electricity for free" for Gani village.	"Frequent electricity cuts"; unfulfilled job expectations.	Farmers, local villagers.	Loss of community land previously used for "firewood," "collecting firewood," and "free movement."

The Legal Impasse of 'Fair Compensation'

The systemic failures documented in Table 1 are enabled by a deeper, systemic failure in India's legal framework for land acquisition. The LARR Act of 2013 was enacted precisely to remedy the historical injustices of state-led acquisition, mandating a "humane, participative, informed and transparent process" that includes just compensation and comprehensive rehabilitation and resettlement.

The case studies show this law is being systemically avoided, often through the "side-step" of the lease model. This is not a historical issue. The legal framework for fair compensation in India is *currently* and *systemically* failing. This is evidenced by ongoing, widespread farmer protests in 2024 and 2025 across the country. Farmers in Dindigul, Tamil Nadu , Indore, Madhya Pradesh , and Greater Noida, Uttar Pradesh , are all engaged in active protests demanding "fair compensation" and fulfillment of promises for land acquired for *other* large infrastructure projects.

This demonstrates that the RE sector is not an innocent bystander but is an active beneficiary of a broken legal system. It is leveraging state-mediated mechanisms, such as the lease model and the "wasteland" classification, to bypass the LARR Act's few, but crucial, protections for landowners and livelihood-holders alike.

The Legal Conflict Landscape: Forest Rights, 'Wastelands', and Administrative Misrecognition

The solar park model operates under a basic legal fiction: the "wasteland." This administrative designation is the state's principal instrument for acquiring expansive parcels of land without the challenge of legal and social obligations. This section analyzes the deep, structural tensions between renewable energy policy and base Indian environmental and social law through new legal analysis and official government data from 2025.

The 'Wasteland' Fallacy and the Oran Conflict

Renewable energy policy explicitly identifies "wasteland" as a low-cost, low-conflict land-use type for development. The Pavagada instance illustrates that the "wasteland" referred to in the profile of Pavagada was critical to the community for grazing. This concept of "waste" land is even stronger in the case of Orans (sacred groves) in states such as Rajasthan. An important case study in 2025 published in the Business and Human Rights Journal, by the Cambridge University Press., offers a stark legal and ethical analysis of conflict regarding Oran land in the Thar Desert. The Orans are not "waste" land; they are old, community-protect lands in which an ancestral and ongoing relationship between pastoralists and biodiversity is met. The 2025 study explicitly articulates even siting renewable energy projects on these lands as amounting to "human rights violations." To succinctly examine the failure of governance the academic analysis illustrates - the development "exacerbated social exclusion" and violated the rights of Indigenous people.

However, this study noted that "these marginalised Indigenous communities had "failed to raise the question of human rights abuses" in the courts. The study attributes this failure to "lack of awareness" of human rights violations and a "lack of access to legal services."

The study concludes that the government, in its rush to meet net-zero targets, has "failed to learn from the mistakes" of the coal sector and is relegating human rights due diligence, remaining "silent on concerns of human rights violations".

This is the core of the problem: "wasteland" is a tool of *administrative misrecognition*. RE projects require vast, cheap land. Acquiring private agricultural land is expensive and legally complex under LARR. Acquiring forest land with recognized community rights is legally complex under the FRA. The "solution" is to find land that is administratively *invisible*. By labeling a community *Oran* or *Gochar* (pasture) as "government wasteland," the state *legally erases* its pre-existing, non-codified community use. This act of misrecognition removes the land from the protective frameworks of FRA and LARR, making it "available" for development. The widespread social conflict, therefore, is not a "bug" in the system; it is the direct, predictable, and inevitable consequence of this initial, foundational act of legal and administrative erasure.

The Great Legal Collision: Forest Rights Act (FRA) vs. Forest (Conservation) Act (FCA)

The legal ambiguity deepens when RE projects target "forest land." This creates a direct collision between two landmark, and contradictory, pieces of legislation.

- **The Scheduled Tribes and Other Traditional Forest Dwellers (Recognition of Forest Rights) Act (FRA), 2006:** This law was enacted to correct the "historical injustice" against forest communities by *vesting* in them the rights to their traditional lands and resources, including the right to manage and protect Community Forest Resources (CFR).
- **The Forest (Conservation) Act (FCA), 1980:** This law regulates the *diversion* of any forest land for "non-forest purposes" (which includes solar parks and wind farms), requiring prior approval from the Central Government.

This collision is not theoretical. It is the subject of an ongoing 2025 Supreme Court case, *Sugra Adiwasi & Ors. v. Pathranand & Ors.* The Court is examining the central conflict: how can a forest dweller exercise their FRA right to build a *pucca* (permanent) house when the FCA prohibits all "non-forest" construction without Central approval?.

The implications of this case are very significant for the RE sector. Frequently RE projects are situated on "forest land," in relation to which, FRA claims of Adivasi and other communities have yet to be resolved. This legal grey zone is clearly being exploited. A decision in favor of the FCA would enhance

the ability of the Central government to "divert" forest lands for corporate RE projects and extinguish unresolved community claims. A decision in favor of the FRA would recognize the veto of the Gram Sabhas (village assemblies) to any such project on their traditional land. This case is being played out against the backdrop of allegations that the government's actions undermine the FRA in the name of "corporate interests" with reports in early 2025 stating that almost 5.3 million Adivasi families are experiencing delays or denial of their rights.

A Governance Failure Quantified: The FRA Implementation Deficit

The scale of this legal ambiguity—and thus the scale of the *risk*—is quantifiable. Official 2024-2025 data from the Ministry of Tribal Affairs (MoTA), as reported to Parliament, provides the definitive evidence.

As of May 31, 2025, nearly two decades after the FRA was passed, the national implementation status is as follows:

- **Total Claims Filed:** 5,123,104
- **Total Titles Distributed:** 2,511,375 (representing **49.02%** of claims filed)
- **Total Claims Rejected:** 1,862,056 (representing **36.35%** of claims filed)
- **Total Claims Pending:** 749,673 (representing **14.63%** of claims filed).

These official government statistics are the "smoking gun." They prove that **over half (50.98%) of all forest rights claims remain unresolved**. This has created a vast, continental-scale landscape of contested, tenure-insecure land. It is upon this legally volatile foundation—where the pre-existing rights of millions of India's most marginalized citizens are either pending or rejected—that the state is attempting to build its "clean" energy future.

Table 2: Ministry of Tribal Affairs - Forest Rights Act (FRA) Implementation Status (Cumulative as of May 31, 2025)

Claim Status	Number of Claims	Percentage of Total Filed
Total Claims Filed	**5,123,104**	**100.0%**
Titles Distributed	2,511,375	49.02%
Claims Rejected	1,862,056	36.35%
Claims Pending	749,673	14.63%
Total Unresolved Claims (Rejected + Pending)	**2,611,729**	**50.98%**

Source: Compiled from Ministry of Tribal Affairs (MoTA) data reported to Parliament, 2025.

New Frontiers of Conflict: Replicating Risk in Marine and Industrial Ecosystems

The unresolved socio-legal conflicts of the terrestrial solar model are not being solved. Instead, the analysis of 2024-2025 project data for India's next-generation energy frontiers—offshore wind and green hydrogen—reveals that the state and developers are applying the exact same flawed development model to new, and in some cases even more sensitive, socio-ecological systems.

Marine Dispossession: Offshore Wind vs. Fishing Communities

Offshore wind is a key pillar of the 500 GW target, with the government actively promoting its development. However, this nascent industry is already in direct conflict with the fishing communities in the two states with the highest potential: Tamil Nadu and Gujarat.

- **Case 1: Tamil Nadu - Gulf of Mannar:** This region is a protected Marine Biosphere Reserve, home to sensitive ecology and rare species. Local fishing communities are "anxious" about the planned projects. Their fears are specific and existential: the installation of turbines and the laying of deep-sea cables threaten to destroy sensitive fish breeding grounds and the "world-renowned pearl oyster banks," which are the foundation of their multi-generational livelihood.
- **Case 2: Tamil Nadu - Dhanushkodi (November 2025):** The conflict here is even more clearly defined. A 50 MW demonstration wind farm is proposed near the **Greater Flamingo Sanctuary**. In response, both local fishing community representatives and, critically, **district forest officials** have filed formal objections. Their reports, submitted in 2024-2025, state that the project site overlaps with: 1) vital fish breeding areas, 2) *notified* turtle nesting grounds, and 3) wetlands frequented by migratory flamingos.
- **Case 3: Gujarat:** Reports confirm similar conflicts emerging with fisherfolk along the Gujarat coast, where the Bhadbhut barrage project is already cited as a source of livelihood destruction.

This is a direct and alarming parallel to the *Oran* and "wasteland" conflicts. A vital, community-dependent, and ecologically sensitive resource is being administratively re-defined as an "energy site" without resolving prior-use conflicts. Worse, the governance vacuum is being replicated: there is currently **no comprehensive, mandatory EIA** for offshore wind in India, despite it being a "first of its kind" technology with massive and poorly understood impacts on marine ecosystems.

This replication is, in fact, an *escalation in scale and complexity*. A solar park conflict, while devastating, is spatially defined by its boundary wall. An offshore wind farm in the Gulf of Mannar does not just affect one village; its acoustic and physical footprint can impact the fish breeding and migratory patterns that *all* fishing communities along that coastline depend on. The "barrier" is no longer a physical wall but an invisible *exclusion from traditional fishing grounds* and a potential *ecological collapse* of the fishery. The conflict is moving from well-understood (if ignored) terrestrial law (LARR, FRA) to more ambiguous marine and coastal law, where community fishing rights are even less defined and harder to defend.

Industrial Land-Use: The Green Hydrogen Challenge

The same pattern is repeating in India's push for industrial decarbonization via the National Green Hydrogen Mission (NGHM).Policy and investment reports from 2024-2025 *already* identify the "cost of acquiring large land parcels" as a "high barrier to entry" for green hydrogen production, which requires vast "solar/wind parks" to power its electrolysers.

The government's solution is a direct copy of the solar park model: the "Green Hydrogen Hub". States like Maharashtra, Gujarat, and Rajasthan are actively "facilitating land acquisition" to create these hubs, de-risking the projects for private capital. These hubs are being established in coastal areas and ports, including Kakinada (Andhra Pradesh), Paradip (Odisha), Visakhapatnam (Andhra Pradesh), and V.O. Chidambaranar (Tamil Nadu).

Given the systemic, unresolved failures of land acquisition detailed in Sections II and III, it is analytically predictable that these Green Hydrogen Hubs will replicate the *exact same* conflicts over land, compensation, and livelihoods. Independent research from Land Conflict Watch already identifies 31 green energy disputes affecting nearly 44,000 people, a number set to grow as these new industrial frontiers expand.

Table 3: Emerging Conflict Matrix for New Renewable Energy Technologies (2024-2025)

Technology	Key Locations	Primary Stakeholder in Conflict	Key Livelihood/Ecological Asset at Risk	Stated Government Model / Governance Gap
Offshore Wind	Gulf of Mannar (TN); Dhanushkodi (TN); Gujarat Coast	Fishing Communities ; District Forest Officials	Fish breeding grounds; "World- renowned pearl oyster banks"; *Notified* turtle nesting grounds; Migratory bird sanctuaries (flamingos).	"First of its kind" project with **no mandatory, comprehensive EIA** requirement.
Green Hydrogen	Kakinada (AP); Paradip (Odisha); Visakhapatna m (AP); Gujarat; Rajasthan	Farmers; Pastoralists; Coastal Communities	"Large land parcels" (for associated RE); Water resources.	**"Green Hydrogen Hub" model**; "Facilitating land acquisition" by state governments (replicating the

Systemic Consequences: Stranded Assets and the 'Just Transition' Imperative

The final stage of this analysis connects the preceding socio-legal failures—the "cause"—to their material, financial, and infrastructural consequences—the "effect." This section will demonstrate that social justice is not a "soft" ethical goal but an *engineering prerequisite* for a functional and financially viable energy system.

The Stranded Asset Crisis: Linking Conflict to Curtailment

The socio-legal conflicts detailed in this paper are not externalities; they are the primary source of "hard" financial risk in India's RE transition. The mechanism is *transmission*.

Renewable energy generation assets, such as solar and wind farms, are by nature located in remote, sparsely populated areas (e.g., the Thar Desert, Pavagada). They are *useless* unless the power

they generate can be evacuated to urban and industrial demand centers via a massive new network of high-voltage transmission lines. These crucial transmission lines, however, must also cross hundreds of kilometers of land, traversing the *same* farms, community commons, and forests whose populations are already in conflict with the state.

The result is a predictable and catastrophic bottleneck. According to the Central Electricity Authority (CEA) in 2025, transmission projects are facing catastrophic delays, with timelines stretched from **"24 months to over five years"**. The CEA and other government ministers have explicitly identified the causes of these delays: **"right-of-way (RoW) issues, land acquisition, litigation, and securing forest, wildlife and tree-cutting approvals"**.

This is the analytical lynchpin of the report. The *exact same* socio-legal conflicts (LARR compensation protests, FRA forest clearance) that plague the generation parks are *also* blocking the transmission lines. The farmer in Greater Noida protesting for fair compensation , the Adivasi community whose FRA claim is pending , and the pastoralist defending their *Oran* are the human faces behind the "RoW issues" and "litigation" that are paralyzing the grid.

The quantified financial result of this generation-transmission mismatch, as revealed by the September 2025 IEEFA and JMK Research report, is the creation of over **50 GW of "stranded" RE capacity** nationwide as of June 2025.

"Stranded assets" is a financial euphemism for *unresolved social conflict*. The 50 GW figure is not an engineering failure; it is a *social and legal failure* that has been converted into a multi- billion-dollar financial liability. An investor builds a 1 GW solar park in Rajasthan, but the transmission line to connect it is stalled by litigation. That litigation *is* the community conflict. Because the line is stalled, the 1 GW park cannot sell its power, and its asset value collapses. The 50 GW figure is the cumulative, national balance-sheet cost of ignoring, bypassing, and side- stepping the community-level rights detailed in this paper.

The government's response is telling. It has not been a proactive social or legal fix, but a *reactive financial* one. On March 21, 2025, the government, acknowledging the RoW "issues," massively increased the compensation paid for land used for transmission lines (e.g., tower area compensation was raised from 85% to 200% of the land value).[8] This is a de facto admission that the *cost* of social conflict was systemically mispriced and that the state is now attempting to buy its way out of a crisis it created.

The Governance Response (2024-2025): Acknowledging the Gap

This material crisis is, belatedly, forcing a change in the national discourse. Government bodies are now openly acknowledging the governance gap. NITI Aayog's 2024-2025 annual reports and policy documents are now replete with "Just Transition" language, recognizing the need to address social equity, manage revenue losses in legacy-energy states, and avoid worsening regional inequities.

This awareness is trickling into the financial sector. Recognizing this new, material risk, there are active proposals in 2025 for SEBI to *mandate* "just transition disclosures" under the Business Responsibility and Sustainability Reporting (BRSR) framework, and for the Reserve Bank of India (RBI) to recognize "just transition" projects under its priority sector lending guidelines. This indicates that financial regulators are, for the first time, beginning to see social risk as a quantifiable, systemic financial risk.

This, however, returns the analysis to the central contradiction of India's RE policy. While NITI Aayog, SEBI, and the RBI are beginning to *discuss* social risk, the *procedural* reality remains the **EIA/SIA exemption for RE projects**. This creates an irreconcilable chasm between the state's *aspirations* for justice and its *procedures*, which continue to guarantee conflict.

Conclusion and Recommendations: From Speed-Centric to Rights-Centric Deployment

This analysis has demonstrated that India's 500 GW energy transition is jeopardized not by a lack of capital, technology, or political will, but by a flawed development model that prioritizes deployment speed over foundational socio-legal integration. This "speed-centric" model is built on legal fictions—primarily the administrative "wasteland"—that erase pre-existing community livelihoods.

This has created systemic, replicating conflicts, first documented in the terrestrial solar parks of Pavagada, Rewa, and Kurnool, where promises of jobs and benefits were systemically broken, and foundational laws like LARR 2013 were "side-stepped". This report has shown this same flawed model is now being replicated in the new frontiers of offshore wind, creating conflict with fishing communities in the Gulf of Mannar and Dhanushkodi, and in green hydrogen, through the creation of state-led "hubs" on contested land.[21]

This social and legal failure is not an externality. It has a direct, material, and catastrophic financial cost, quantified by the over **50 GW of "stranded" RE assets**. These assets are stranded because their essential transmission lines are delayed by "24 months to over five years" due to the *exact same* unresolved "land acquisition, litigation, and forest" rights conflicts.

The solution is not to simply offer more money after the conflict has begun, as seen in the reactive March 2025 transmission compensation hike. The solution is to *earn* a social license to operate *before* the project begins. The transition must shift from being "speed-centric" to "rights- centric." Based on the 2024-2025 data analyzed in this report, the following actionable policy recommendations are proposed:

- **Repeal the EIA/SIA Exemption for Renewable Energy:** The single most critical procedural failure is the exemption of solar and wind projects from mandatory Social and Environmental Impact Assessments.[5] This exemption must be immediately revoked. Reinstating mandatory, independent, and transparent SIAs and EIAs is the only way to align the state's implementation procedures with its declarative "Just Transition" rhetoric.
- **Mandate "Socio-Legal Pre-Clearance" for All Projects:** Project financing (public or private) and Stage-1 (Forest/Environmental) approval must be prohibited for any project— both generation *and* transmission—until all pre-existing land and resource claims are statutorily settled. This includes:
  - The resolution (not just filing) of all **Forest Rights Act (FRA) 2006** claims, addressing the 51% of claims that remain unresolved nationally.
  - The completion of a transparent, non-coercive **LARR 2013** process, ending the "side-stepping" lease models that dispossess landless livelihood holders.
- **Move from "Benefit Sharing" to Community Co-Ownership:** The current "benefit sharing" model, based on CSR and vague promises of "jobs," has been a proven failure at Pavagada, Rewa, and Kurnool.This must be replaced with mandatory community co- ownership models, such as granting equity stakes to Gram Sabhas or community trusts, to create a vested, long-term financial interest in project success.
- **Enforce "Just Transition" in Financial Regulation:** The 2025 proposals from NITI Aayog and SEBI must be acted upon.[14] SEBI should mandate that all listed companies and RE-focused financial instruments (e.g., InvITs) disclose their portfolio's exposure to *socio- legal risk*. This could include metrics such as: "percentage of assets sited on land with
- >50% FRA claim rejection/pendency rate" or "pending litigation related to LARR compensation."
- **Stop the Replication of Risk:** To prevent the escalation of conflict into new frontiers, the state must immediately commission mandatory, independent, and comprehensive EIAs for the offshore wind and green hydrogen sectors. The terms of reference for these assessments must include a specific mandate to create new land and marine use frameworks that *do not* replicate the "wasteland," "sacred grove," and "lease model" fallacies of the solar park model.

References

1. (2025, February 21). India: Green energy expansion sparks land disputes, threatens livelihoods and exposes regulatory challenges complicating efforts for renewable energy development. *Business & Human Rights Resource Centre*.
2. (2025, February 28). India: Farmers in Indore protest land acquisition for outer ring road, demand fair compensation. *Business & Human Rights Resource Centre*.
3. (2025, July 18). Amaravati will emerge as green hydrogen valley, says Chandrababu Naidu. *The Hindu*.
4. (2025, October 12). Supreme Court Conflict: Tribal Rights and Forest Conservation. *Legally Present*.
5. (2025, November 12). Concern raised over proposed 50-MW wind farm near Greater Flamingo Sanctuary in Dhanushkodi. *The Hindu*.
6. (2025, November 13). Implementation of Forest Rights Act, 2006. *Press Information Bureau, Government of India*.
7. Agora Energiewende. (2025, July). *Report on India Renewable Electricity Roadmap 2030*. NITI Aayog.

8. Alam, S. (2025, March 19). 3 months on, govt 'silent' on higher compensation, farmers resume protest. *The Times of India*.
9. Bharadwaj, S. (2024, October 30). AM Green, John Cockerill partner for green ammonia project in AP. *The Times of India*.
10. Bhatt and Joshi Associates. (2024). Renewable Energy Land Policy: Solar Parks, Wind Farms, and Grid Infrastructure.
11. Bureau of Energy Efficiency (BEE). (2024). *India Energy Scenario: For the year 2023–24 (2nd Edition)*. Ministry of Power, Government of India.
12. Centre for Financial Accountability (CFA). (2021, May). *Solar Power in India: A report on Rewa Ultra Mega Solar Power Project*.
13. Chaliawala, J. (2025, April). Cast aside: Small-scale fishers demand a framework for fair fisheries. *Mongabay-India*.
14. Das, A. (2025, October). Unlocking India's Green Hydrogen Production Potential. *Hydrogen Central*.
15. EY. (2024). *Investment opportunities in India's green hydrogen sector*.
16. EY. (2024). *The India energy sector: At a crossroads*.
17. Human Rights Watch. (2024, February 29). *India: Protect Farmers' Right to Peaceful Protest*.
18. IEEFA & JMK Research. (2025, September 24). Transmission expansion trails renewable energy growth in India. *Institute for Energy Economics and Financial Analysis*.
19. *India's Use of Public-Private Partnerships to Scale-Up Solar Power*. (2022). Florida Journal of International Law, 33(2).
20. K. S. (2024, November 20). World Fisheries Day 2024: Fish suffering, fisherfolks struggling, threats growing. *South Asia Network on Dams, Rivers and People (SANDRP)*.
21. Land Conflict Watch. (2022, February 17). *Given land for power, Pavagada residents now powerless*. Mongabay-India.
22. Land Conflict Watch. (2023, September 18). *The balance between expanding renewable projects and feeding India's population*. Mongabay-India.
23. Land Conflict Watch. (n.d.). *Pavagada solar park set up in Karnataka, communities still await jobs promised to them*.
24. Land Conflict Watch. (n.d.). *Rewa Ultra Mega Solar project fails to create employment for locals*.
25. M. V. R. (2022, March 23). Potential offshore wind project in the Gulf of Mannar leaves fishers anxious. *Mongabay-India*.

Works cited

26. The balance between expanding renewable projects and feeding India's population, accessed November 14, 2025, https://india.mongabay.com/2023/09/the-balance-between- expanding-renewable-projects-and-feeding-indias-population/
27. India: Energy sector at crossroads - EY, accessed November 14, 2025, https://www.ey.com/content/dam/ey-unified-site/ey-com/en-in/insights/energy-resources/documents/2024/ey-india-energy-sector-at-cross-roads.pdf
28. The Solar Surge: India's Bold Leap Toward a Net Zero Future - PIB, accessed November 14, 2025,
29. https://www.pib.gov.in/PressNoteDetails.aspx?id=155063&NoteId=155063&ModuleId=3
30. Beyond Tripling: India needs $101bn additional financing for the net-zero pathway - Ember, accessed November 14, 2025, https://ember-energy.org/latest-insights/beyond- tripling-india/
31. Addressing Land Issues for Utility Scale Renewable Energy Deployment in India, accessed November 14, 2025, https://shaktifoundation.in/wp- content/uploads/2018/01/Study-Report-Addressing-Land-Issues-for-Utility-Scale- Renewable-Energy-Deployment-in-India.pdf
32. Ground Realities: Making land work for renewable energy | IDR, accessed November 14, 2025, https://idronline.org/article/climate-emergency/ground-realities-making-land-work- for-renewable-energy/
33. Right to Fair Compensation and Transparency in Land Acquisition, Rehabilitation and Resettlement Act, 2013, accessed November 14, 2025, https://bhoomirashi.gov.in/auth/revamp/la_act.pdf

34. Forest Rights Act: Lessons from the Field - National Institute of Rural Development, accessed November 14, 2025, http://nirdpr.org.in/nird_docs/srsc/srsc230217-14.pdf
35. How the Forest Rights Act Can Shape India's Climate Action - The ..., accessed November 14, 2025, https://m.thewire.in/article/environment/how-the-forest-rights-act-can-shape- indias-climate-action
36. Supreme Court Flags Conflict Between Forest Rights Act and Forest ..., accessed November 14, 2025, https://legallypresent.in/supreme-court-conflict-tribal-rights-and- forest/
37. Annual Report 2024-25 - NITI Aayog, accessed November 14, 2025,
38. https://www.niti.gov.in/sites/default/files/2025-02/Annual%20Report%202024-25%20English_FINAL_LOW%20RES_0.pdf
39. REPORT OF THE INTER-MINISTERIAL COMMITTEE ON JUST TRANSITION
40. FROM COAL - NITI Aayog, accessed November 14, 2025, https://www.niti.gov.in/sites/default/files/2022-11/Report_Just-Transition- Committee_compressed.pdf
41. Scaling climate adaptation technology for a just transition - India - ReliefWeb, accessed November 14, 2025, https://reliefweb.int/report/india/scaling-climate-adaptation- technology-just-transition
42. Financing India's just transition for an inclusive future - The World Economic Forum, accessed November 14, 2025, https://www.weforum.org/stories/2025/08/india-just- transition-ecosystem-finance-inclusive-future/
43. Mapping Human Rights Violations Connected to Renewable Energy ..., accessed November 14, 2025, https://www.cambridge.org/core/journals/business-and-human-rights- journal/article/mapping-human-rights-violations-connected-to-renewable-energy- development-in-india-a-case-study-of-the-oran-land-at-thar-desert-and-energy- transition/F7FD3B640440AF35A3402F418E0750EF
44. India Plans ₹530 Billion Ultra-High Voltage AC Transmission ..., accessed November 14, 2025, https://www.mercomindia.com/india-plans-530-billion-ultra-high-voltage-ac- transmission-system-by-2034
45. Transmission expansion trails renewable energy growth in India ..., accessed November 14, 2025, https://ieefa.org/articles/transmission-expansion-trails-renewable-energy- growth-india
46. Winds of Change: Learnings for the Indian Offshore Wind Energy Sector - NIIF, accessed November 14, 2025, https://niifindia.in/wp-content/uploads/2022/06/2206-NIIF-WRI- Offshore-Wind-in-India-report.pdf
47. Powering ahead with caution: Tamil Nadu's offshore wind plan and its ripple effect on fishermen, ETEnergyworld, accessed November 14, 2025, https://energy.economictimes.indiatimes.com/news/renewable/powering-ahead-with- caution-tamil-nadus-offshore-wind-plan-and-its-ripple-effect-on-fishermen/106713841
48. The 2024 scheme: the advent of Green Hydrogen Hubs in India, accessed November 14, 2025, https://www.ibanet.org/The-advent-of-green-hydrogen-hubs-in-India.