

THE ENDGAME OF MALAYSIA'S ENERGY TRILEMMA: BANKABILITY SUPREMACY VERSUS EQUITY'S MARGINALISATION IN SOLAR PV LAW AND GOVERNANCE

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ABSTRACT

Malaysia's energy transition, particularly in relation to the deployment of solar photovoltaic ("PV"), is often discussed through policy frameworks, clean energy targets, and regulatory schemes/programmes. Solar PV refers to a technology that converts sunlight into electricity and has become a central component of Malaysia's renewable energy agenda. However, the legal trajectory of solar PV development is shaped not only by policy design, but also by disputes litigated before the courts, especially where energy projects intersect with land rights, property governance, and statutory compliance. The energy trilemma, which requires the balancing of energy security, energy equity, and environmental sustainability, provides the analytical framework for this study. Within that framework, this article examines how Malaysian courts, through their reasoning, influence solar PV development and consider what trilemma-aligned legal reforms should follow. Using qualitative thematic analysis of reported Malaysian solar-related and energy-adjacent case law, this article argues that judicial patterns reveal a tendency for courts to prioritise energy security, renewable energy (RE) project bankability, and system continuity. They do so by treating formal certainty—registered tenure, clear approvals and procedural proof—as overriding threshold requirements for RE development, before meaningfully engaging with issues of equity, potential harms, or decarbonisation aims. The findings identify three controlling legal thresholds: land title/tenure, private governance (strata/covenants), and statutory land-entry/environmental compliance. In view of balancing the energy trilemma, targeted reforms are proposed, including staged land-readiness, enforceable consultation and compliance pathways, streamlined strata/covenant approvals with transparent records, remedies tied to regularisation and fair compensation, and harmonised minimum environmental safeguards across jurisdictions. This research recasts legal principles arising from energy-land disputes as an integral part of energy transition infrastructure, while concurrently extending energy trilemma analysis to judicial reasoning and remedies.

Introduction

Solar photovoltaic (“PV”) refers to the generation of electricity through photovoltaic technology that converts sunlight into electrical energy, whether in utility-scale installations or distributed systems such as rooftop solar (Nwaigwe et al., 2019). At first glance, solar PV development may seem straightforward: solar panels are installed, green electricity is generated, and the country moves closer to its clean energy goals and targets. In practice, however, legal questions shape solar PV projects in ways far more complex than policy targets alone suggest. Before a project can proceed, it must secure lawful access to land or buildings, satisfy all property and regulatory requirements, obtain the necessary approvals, and demonstrate sufficient legal certainty for investors, regulators, and electricity providers. When disputes arise in the energy development context, outcomes often depend not only on energy policy but also on ordinary legal rules governing land, ownership, governance, procedure, and regulatory compliance.

Notwithstanding this, Malaysia’s renewable energy (RE) transition is often framed around green initiatives articulated via policy documents, particularly for solar PV projects (Ministry of Economy, 2023; Energy Commission, 2025). Yet solar PV is essentially a land-governed project, directly intertwined with secure site control, lawful access, bankable long-term tenure aligned with financing horizons, and compliant grid connection (International Renewable Energy Agency (IRENA), 2016). Even distributed solar (rooftop and car-park PV) operates within privately governed property regimes, where common-property rules and collective approvals determine legal permissibility of development. Accordingly, the energy trilemma is shaped not only by policy design but also by judicial enforcement of land rights and procedural compliance in land-energy disputes. Courts therefore become important transition actors not because they set energy targets, but because they decide how land rights, governance rules, and procedural requirements are enforced, reconciled, and/or balanced when disputes occur.

At the outset, this article explains salient core concepts. Firstly, “energy trilemma” refers to balancing security (reliable supply and bankable delivery), equity (fair allocation of burdens and meaningful participation), and sustainability (decarbonisation and environmental protection) (Song et al., 2023; World Energy Council, 2021). Second, the analysis covers both utility-scale PV (land-intensive and finance-dependent) and distributed PV (often embedded in strata- and covenant-governed property). Third, the study distils judicially enforced legal thresholds that determine RE project legality and shape remedial outcomes when disputes arise.

This article argues that Malaysian courts have, perhaps unintentionally, constructed a threshold-based judicial architecture for RE development that privileges energy security, project bankability, and system continuity. Equity and decarbonisation merits are considered only once formal land, governance, and procedural gateways have been fully satisfied. The analysis shows that solar PV development in Malaysia is meaningfully shaped by three judicially enforced legal thresholds: (i) land title/tenure, (ii) private governance, and (iii) statutory land-entry. Finally, this article proposes a rebalancing mechanism aimed at ensuring that legal design continues to protect energy security without systematically marginalising energy equity and decarbonisation. This is particularly relevant in customary land and strata/covenant settings, as illustrated through the case law discussed in this study.

The discussion proceeds in stages. It first outlines the broader literature on the energy trilemma, renewable energy governance, and the land-dependent character of solar PV development. It then explains the study’s doctrinal qualitative methodology and the case-law dataset examined. The article subsequently analyses the case law through three recurring legal thresholds, which are, land title and tenure, private property governance, and statutory land-entry and environmental compliance, before evaluating their implications for energy security, equity, and sustainability, and finally proposing trilemma-aligned legal reforms. Finally, the paper proposes an energy-trilemma-aligned approach to shaping solar PV frameworks in line with current energy policies.

Literature Review

The legal issues surrounding solar PV development, or the energy transition more broadly, do not sit neatly within a single field of literature. Rather, they emerge at the intersection of energy transition studies, land and property law, environmental governance, and energy justice. The literature review that follows therefore does not merely summarise prior writing but organises these strands to demonstrate the present state of knowledge, identify the conceptual and doctrinal gap in existing scholarship, and position this study within that gap.

The literature on energy transition frequently frames the “energy trilemma” as a policy balancing exercise (Shirazi, 2025; Khan, 2025; Wu, 2024; Shirazi et al., 2023; Weiss et al., 2021), arguing that governments must expand clean generation while maintaining reliability and affordability. However, it is comparatively less explicit about how that balance is operationalised through dispute-resolution processes when land issues and conflicts arise (World Energy Council, 2022; Fu et al., 2021).

In practice, RE, including solar PV, is structurally land dependent. Utility-scale PV requires spatially defined sites, long-term control (via compulsory land acquisition, leases, easements, or rights-of-way), and grid corridors. Distributed PV, by contrast, is often embedded in multi-unit, collectively governed buildings, where installation depends on collective approvals and property-governance rules (Rule, 2025; McCarthy, 2025; Charters et al., 2023; Ong et al., 2013; Roberts et al., 2019). Courts therefore become transition “actors” not by setting targets, but by enforcing the legal thresholds that make projects bankable, legally permissible, and enforceable. In a registration-based land system, documentary entitlement and title indefeasibility under Section 340 of the National Land Code 1965 (Act 56) (now revised in the National Land Code - Act 828) can stabilise developments but may disadvantage affected parties whose interests are unregistered or difficult to register, such as native communities (Halid et al., 2024; Teo, 2010).

For distributed PV, especially in stratified developments, strata by-laws and private instruments such as deeds of mutual covenants (DMCs) can create “micro-veto” points that block socially beneficial decarbonisation initiatives, such as rooftop solar PV, unless the legal design provides enabling pathways (Chong, 2020; Roberts et al., 2019). On the grid side, guidance on statutory wayleaves underscores that compliance with lawful land-access procedures and supporting documentation is outcome-determinative (Suruhanjaya Tenaga (Energy Commission), 2014; Sulaiman et al., 2018). Remedial debates over injunctions versus damages, as illustrated in *Tenaga Nasional Bhd v Dolomite Industrial Park Sdn Bhd* (2000) 2 Malayan Law Journal (“MLJ”) 133 by the Court of Appeal, suggest that courts may favour monetary compensation over injunctive relief where the public interest in maintaining energy continuity is considered stronger. In other words, it illustrates that courts may refuse injunctive relief where halting the activity would threaten continuity of electricity supply. As a result, the law may preserve energy continuity while also potentially reducing the deterrent force of procedural compliance requirements.

Finally, in a federation such as Malaysia, segregated jurisdiction can fragment environmental procedures and participation rights across regions, shaping divergence in equity outcomes in transition disputes (Saleem, 2005). This matters because the applicable environmental regime determines the availability and depth of public participation, producing uneven procedural justice across regions and raising legitimacy and delay risks for RE projects, while also allowing uneven control of ecological harms (e.g., habitat and biodiversity disturbance, cumulative effects) (Aman et. al., 2015; Hosenuzzaman et al., 2015; Hernandez, et al., 2014; Tsoutsos et al., 2005).

In relation to the current study, several studies examine Malaysia's legal and policy framework for renewable energy, including general reviews of renewable energy laws in Malaysia and broader assessments of Malaysia's readiness for energy transition and net-zero commitments. Studies such as Abd Aziz et al. (2024), Fernandez et al. (2024), and Harizal et al. (2022) show that local scholarship has already engaged with issues such as regulatory gaps, financial barriers, public participation, and policy effectiveness. For instance, Fernandez et al. (2024) argue that Malaysia has substantial renewable energy potential and a growing policy framework for decarbonisation, but achieving net zero will require stronger grid and storage infrastructure, clearer regulation, greater financing, and broader coordination across government, industry, and society. However, most of these studies remain at the level of review or policy overview; rather, they do not yet rigorously interrogate how the legal and governance structure of solar

PV in Malaysia may systematically privilege bankability over equity concerns, justice and sustainability, particularly as inferred from the line of decided cases.

Overall, the literature collectively shows the energy trilemma cannot be resolved by policy tools *per se* because solar PV is land-dependent and mediated by land title/tenure, private property governance, and grid-access procedures. These settings prioritise project bankability and system continuity (through land title indefeasibility, covenant enforcement, and procedure-driven wayleaves) while sidelining equity and participation, especially where interests are unregistered and protections vary across jurisdictions (Stewart, 2014). However, the literature rarely explains how judicial reasoning turns these legal settings into decisive thresholds for RE development, such as solar. This gap motivates the present study, which reconstructs the jurisprudential architecture of Malaysian solar PV and related energy disputes across the three thresholds and develops targeted, trilemma-aligned reforms to strengthen the near-term solar PV framework.

Methodology

This article adopts a doctrinal, qualitative thematic analysis grounded in case law (Sugow, 2025; Sekandary et al., 2025; Islam et al., 2024; Michalakopoulou et al., 2023; Chaib, 2015; Braun et al., 2006). The method does not re-litigate facts; instead, it extracts legal principles and reconstructs the recurring themes or thresholds courts apply in resolving energy-related disputes. This study does not involve empirical data collection; rather, it constructs a purposive corpus of reported Malaysian judgments as the primary legal dataset for such doctrinal qualitative thematic analysis. The selected Malaysian judgments constitute the primary legal dataset and are analysed through a doctrinal qualitative thematic approach to identify recurring legal thresholds, underlying reasoning, and remedial patterns across solar PV and energy-adjacent disputes.

More specifically, the dataset comprises judgments across three main themes: (1) land title/tenure (including, among others, award termination tied to lease certainty, compulsory acquisition for power infrastructure, proprietary estoppel claims, and extinguishment of customary rights); (2) private property governance (including strict enforcement of restrictive covenants against solar PV installation and disputes hinging on proof of approvals by management corporations); and (3) statutory procedure/environmental compliance (including wayleave and land-entry compliance, the interaction between procedural illegality and public-interest limits on injunctions, and disputes concerning applicable environmental regimes, compliance, and jurisdiction). Guided by the concept of “saturation” and “information power” in qualitative research, the dataset requires fewer units when it contains rich, relevant, and study-specific information. Accordingly, case law was selected purposively (rather than not exhaustively) to build a corpus with sufficient “information power” to capture salient thresholds, principles, and judicial reasoning governing land entitlement, private governance, and statutory procedure, tailored to the context of RE and solar PV development (Malterud et al., 2016).

Within each theme, the analysis identifies the legal threshold imposed by courts, the justificatory reasoning for that threshold, and its effects on energy security, equity, and sustainability. It then triangulates across cases to assess whether the resulting judicial pattern forms a coherent, transition-supportive architecture or instead generates friction and inequity warranting statutory, regulatory, or contractual reform (Pears et al., 2025; Nowell et al., 2017; Hsieh, 2012; Braun et al., 2006). A limitation of this approach is that it relies primarily on reported judgments and may not capture disputes resolved privately (e.g., settlement or arbitration). Its thematic aspects are interpretive and therefore involve researcher judgment (ScienceDirect Topics, n.d.). It also analyses legal standards and remedies rather than technical standards or engineering performance of solar PV development. The study does not test competing causal hypotheses; instead, it reconstructs recurring doctrinal patterns from reported judicial reasoning. The findings are therefore confined to the thematic and legal patterns evident in the selected judgments.

In qualitative research like this study, research rigour is more appropriately assessed through trustworthiness than through conventional notions of internal and external validity (as common in quantitative studies). As Stahl and King (2020), drawing on Lincoln and Guba (1985)'s framework, explain, trustworthiness may be evaluated through credibility, transferability, dependability, and confirmability. In this study, credibility lies in the close alignment between the research question, the purposively selected corpus of reported Malaysian judgments, and the doctrinal qualitative thematic analysis employed. Transferability is supported through sufficiently detailed legal and contextual discussion, allowing readers to assess the relevance of the findings to comparable common-law jurisdictions. Dependability is reflected in the transparent thematic structure, the stated case-selection methodology, and the traceable analytical focus on the three judicial thresholds identified. Confirmability is strengthened by grounding the analysis in the reasoning and outcomes of reported judgments, read together with relevant academic literature, so the article's conclusions emerge from the examined legal materials rather than unsupported assertion. Accordingly, while the study does not claim statistical generalisability, it seeks to demonstrate qualitative trustworthiness within the scope of its doctrinal inquiry (Stahl & King, 2020).

Results and Findings

This section distils doctrinal patterns from ten (10) Malaysian solar or energy-adjacent disputes that could potentially inform RE development more broadly. Across the dataset, courts consistently treat three thresholds as outcome-determinative. If any threshold is not met, the claim often fails, or the remedy is limited, despite the merits of RE or decarbonisation. The summary of results by threshold is as follows:

Table 1. Results Summary by Main Themes/Threshold

	Key Cases Analysed	Operative Legal Principles Applied by Courts & Outcome Patterns
No.	Theme/Threshold 1: Land Title, Ownership Rights, and Tenure	
1.	<i>Wong Fook Thian & Ors v Raub Energy Venture (Re) Sdn Bhd & Anor</i> (2024) MLJU 3002 (HC) (" <i>Wong Fook Thian</i> ")	i. Legal standing and remedies hinge on proven proprietary or possessory rights. Without established entitlement, such claims fail at the outset (<i>Wong Fook Thian</i> 's principle).
2.	<i>Suruhanjaya Tenaga v Strong Elegance Sdn Bhd</i> (2024) 3 MLJ 871 (COA) (" <i>Strong Elegance Sdn Bhd</i> ")	ii. Secure, long-term site control aligned with the project or Power Purchase Agreement (PPA) term is treated as a precondition. Awards can be terminated if tenure certainty is not achieved on time (<i>Strong Elegance Sdn Bhd</i> 's principle).
3.	<i>Chong Chung Moi @ Christine Chong v The Government of the State of Sabah & Ors</i> (2007) 5 MLJ 441 (HC) (" <i>Chong Chung Moi</i> ")	iii. Land acquisition for electricity supply is generally recognised as a valid public purpose, even under privately delivered projects (<i>Chong Chung Moi</i> 's principle).
4.	<i>Sutera Harbour Golf & Country Club Bhd v Omega Brilliance Sdn Bhd & Anor</i> (2019) 7 MLJ 770 (HC) (" <i>Sutera Harbour Golf & Country Club Bhd</i> ")	iv. Equity-based reliance protection for land entitlement is rare and highly fact-specific (<i>Sutera Harbour Golf & Country Club Bhd</i> 's principle).
5.	<i>Anyie Eng & Ors v Minister of Resource Planning and Environment & Anor</i> (2015) MLJU 1201 (HC) (" <i>Anyie Eng</i> ")	v. Native customary rights (NCR) extinguishment is upheld when carried out under clear statutory authority with compensation (<i>Anyie Eng</i> 's and <i>Bato Bagi</i> 's principle).
6.	<i>Bato Bagi & Ors v Kerajaan Negeri Sarawak and Another Appeal</i> (2011) 6 MLJ 297 (FC) (" <i>Bato Bagi</i> ")	

Table 2. Results Summary by Main Themes/Threshold (*continued...*)

	Key Cases Analysed	Operative Legal Principles Applied by Courts & Outcome Patterns
No.	Theme/Threshold 2: Private Property Governance and Limits of “Green” Overrides	
1.	<i>United 1Borneo Hypermall Sdn Bhd v North East Destiny Sdn Bhd</i> (2020) MLJU 1258 (HC) (“ <i>United 1Borneo Hypermall Sdn Bhd</i> ”)	i. In stratified or covenant-governed sites, the legality of solar PV depends on DMCs, by-laws, common-property rules, and documented approvals, rather than solely on sectoral permits for energy development (<i>United 1Borneo Hypermall Sdn Bhd</i> ’s principle).
2.	<i>La Grande Kiara Management Corporation v Global GT (M) Sdn Bhd</i> (2024) MLJU 1206 (HC) (“ <i>La Grande Kiara Management Corporation</i> ”)	ii. Properly evidenced approvals for energy development weaken subsequent trespass claims, whereas defective approvals can justify removal (<i>La Grande Kiara Management Corporation</i> ’s principle).
No.	Theme/Threshold 3: Statutory Procedure, Wayleaves, Remedy Choices, Environmental Compliance	
1.	<i>Tenaga Nasional Bhd v Dolomite Industrial Park Sdn Bhd</i> (2000) 2 MLJ 133 (COA) (“ <i>Dolomite Industrial Park Sdn Bhd</i> ”)	i. Utilities must demonstrate strict compliance with statutory wayleave or land-entry procedures, supported by the required documentation (<i>Dolomite Industrial Park Sdn Bhd</i> ’s principle).
2.	<i>Ketua Pengarah Jabatan Alam Sekitar & Anor v Kajing Tubek & Ors and Other Appeals</i> (1997) 3 MLJ 23 (COA) (“ <i>Kajing Tubek</i> ”)	ii. Even where procedures are unlawful, courts may avoid removal if it risks supply disruption, awarding damages instead. The public interest in preserving uninterrupted electricity supply outweighed private interests (<i>Dolomite Industrial Park Sdn Bhd</i> ’s principle). iii. In a federation, the applicable environmental regime depends on jurisdiction, which determines the procedures and participation routes available (<i>Kajing Tubek</i> ’s principle).

More broadly, these results suggest a threshold-based approach in which courts first require proof of land entitlement, governance-valid approval, and documented statutory compliance before engaging with broader RE policy merits and arguments. This arguably formalistic, procedural pattern shapes the overall legal position, enforceability, and remedies, particularly in solar PV development.

Discussion

Analysis and Triangulation of Findings

Where the previous section extracts principles from the cases, this section explains their significance and effects. It argues that the three thresholds together form an energy-transition-relevant judicial architecture because they determine whether energy developments remain legally enforceable and what remedies are realistically available. The dataset shows that these thresholds are not abstract categories but outcome-determinative reasoning steps, which are analysed and discussed through the lens of the energy trilemma (security, equity, and sustainability) as follows.

Energy Security’s Prevalence: The Overarching Inclination Towards RE Project Bankability and Energy Continuity

This subsection demonstrates that across all three thresholds, courts consistently prioritise formal certainty and documentary traceability, reflecting an implicit commitment to energy security through project bankability and system continuity. Courts tend to reward title proof, tenure alignment, approval records,

and statutory compliance, which function as the core markers of RE project legitimacy and align with financiers' and regulators' requirements.

In *Wong Fook Thian*, tort allegations (trespass, nuisance, negligence) concerning a biomass RE plant did not progress because the plaintiffs failed to prove a legally cognisable proprietary or possessory interest over the lots, illustrating how entitlement proof operates as the first judicial threshold for being heard. Similarly, in *Strong Elegance Sdn Bhd*, land tenure certainty aligned to the project horizon, covering construction, operation and maintenance of the Large-Scale Solar PV Plant, was treated as a decisive enforceability condition. The Court upheld termination when the long-term land lease agreement was not secured within the stipulated contractual timeline, as reflected in the PPA and financier requirements. In rare circumstances, equitable doctrines can secure land access for energy infrastructure where formal tenure is absent or defective, but only on strong proof of reliance. In *Sutera Harbour Golf & Country Club Bhd*, proprietary estoppel prevented eviction of a cogeneration operator who had invested heavily based on the landowner's encouragement and acquiescence. For solar PV, this shows that equity may preserve site access only where clear assurance, reliance, and substantial detriment are proven, reinforcing that bankability should primarily rest on proper tenure and approvals.

The same preference for certainty and traceability appears in private-governance disputes. In *United 1Borneo Hypermall Sdn Bhd*, restrictive DMC terms were treated as controlling, and approvals from SEDA/ST or utilities did not override the covenant's enforceability. Solar PV installed in breach of the DMC and without valid consent remained unauthorised and could be ordered removed. Conversely, in *La Grande Kiara Management Corporation*, contemporaneous documents and governance records were treated as decisive evidence of authorisation for rooftop solar panel installation, effectively insulating the installation from later challenges.

On the grid-infrastructure side, *Dolomite Industrial Park Sdn Bhd* demonstrates that without proof of the required steps, rights and authority are vulnerable. Energy utilities such as Tenaga Nasional Berhad (TNB) cannot rely on general wayleave protections without proving compliance with prescribed procedures and documentation. This judicial posture supports energy security by reducing uncertainty, limiting opportunistic challenges, and preserving grid continuity where removal would be destabilising. In *Dolomite Industrial Park Sdn Bhd*, even after the court rejected informal reliance on statutory wayleave without proof of compliance, it set aside injunctive relief because the structures, specifically the pylon, formed part of the national grid, and removal would have disrupted electricity supply.

The inclination towards energy security is further illustrated in *Chong Chung Moi* where the High Court held that compulsory acquisition for constructing a power plant served a valid public purpose (i.e., electricity supply as a public utility benefiting the community), even though a private concessionaire would also benefit. This case confirms that energy infrastructure, including solar projects, can satisfy the "public purpose" requirement for compulsory acquisition, even where private delivery structures through concessions and PPAs are involved. Notably, the Court of Appeal in *Ahmad bin Saman v Kerajaan Negeri Kedah* (2003) 4 MLJ 705 adopts a common-sense test that "public purpose" serves the community's general interest, consistent with Hashim Yeop A Sani J in *S Kulasingam & Anor v Commissioner of Lands, Federal Territory & Ors* (1982) 1 MLJ 204 at 208, and with *Galstaun & Anor v Attorney-General* (1981) 1 MLJ 9 (OCJ Singapore) following *Wijeyesekera v Festing* (1919) Appeal Cases (AC) 646, which held that what counts as "public purpose" is chiefly for government to determine, with a presumption supporting its public-benefit declaration. In *Chong Chung Moi* (at page 453), the High Court held that acquiring land for a power station under a PPA or concession constituted a "public purpose" under the Sabah Land Acquisition Ordinance (Sabah Cap. 69) because it increased electricity supply for the public and supported Kota Kinabalu's development. Who built it or profited was deemed irrelevant once the public benefit was established.

Taken together, the cases suggest that courts prioritise procedural proof and continuity to stabilise energy infrastructure and accept public-purpose rationales. However, this can entrench a bankability-first bias, where equity and decarbonisation only advance once formal, technical, and procedural thresholds are satisfied. For instance, in *Wong Fook Thian*, fairness concerns arise because affected communities (e.g., those impacted by noise, emissions or nuisance) may be excluded early if they cannot prove a legally cognisable proprietary or possessory interest. Similarly, in *Dolomite Industrial Park Sdn Bhd*, equity is

arguably implicated because remedies designed to protect energy continuity can effectively shift the real costs of illegality onto weaker rights-holders. In such cases, the grid is preserved, but the affected landowner may receive only damages while the encroaching infrastructure remains in place.

Until these formal requirements are met, energy equity or climate arguments rarely become decisive. This is the practical meaning of “bankability supremacy” in adjudication, where commercial and operational priorities are translated into legal pass/fail thresholds (registrable rights, documented approvals, procedural compliance). Only then do broader public-interest claims enter the analysis. A more trilemma-sensitive approach would still demand legality and proof but would concurrently require an express balancing exercise that treats equity and decarbonisation as relevant at each stage, not merely after procedural gateways are cleared. Comparatively, in *Taralga Landscape Guardians Inc v Minister for Planning* (2007) NSWLEC 59 (New South Wales Land and Environment Court), the court upheld a wind farm, finding its overall public benefits outweighed local burdens. It emphasised ecologically sustainable development, particularly intergenerational equity, and accepted that replacing higher-GHG energy sources with lower-emissions generation constitutes a legitimate planning outcome.

Energy Equity’s Challenges: Exclusion by Strict Proof Burdens, Express Statutory Authority, Micro-Vetoes, and Uneven Procedure

This subsection demonstrates how energy equity is structurally constrained by judicial reliance on strict proof of entitlement, express statutory authority, and private governance rules, resulting in the systematic exclusion or dilution of participation and remedial protection for weaker or non-registered interests.

From the analysis, four dimensions of energy equity pressures emerge. First, a strict entitlement-based approach to legal standing can shift cases concerning substantive, widespread harm into preliminary, procedural disputes over capacity and documentary proof. In other words, when courts require proof of title or possession, claims about diffuse construction impacts may be dismissed on documentary grounds rather than assessed on the extent of harm itself. *Wong Fook Thian* illustrates this dynamic, where the plaintiffs’ trespass, nuisance, and negligence claims were dismissed at the outset on a strict evidential basis, primarily because they failed to adduce admissible evidence of proprietary or possessory rights over the affected lots, despite pleading physical impacts linked to RE-related earthworks.

Second, in customary land contexts, energy equity is further constrained when courts treat extinguishment and compensation as sufficient, while participation and prior consultation remain outside enforceable legal rights. Collectively, in *Bato Bagi* and *Anyie Eng*, courts upheld the permissibility of extinguishing native customary rights (NCR) under clear statutory authority with compensation mechanisms in favour of hydroelectric dam development. Where consultation is not legally required absent express statutory text, community participation is treated as desirable but optional. Hence, equity is reduced to post-hoc compensation and procedural compliance, rather than meaningful voice and status in decision-making.

Third, in strata and covenant regimes, strict private governance can create “micro-vetoes” that block policy-supported decarbonisation measures such as rooftop solar. *United 1Borneo Hypermall Sdn Bhd* demonstrates this dynamic, where the restrictive covenant (in this case, clause 3(a)) was outcome-determinative, and the solar PV installation was deemed inconsistent with the parcel’s permitted “car park purposes”, leading to a removal order despite energy-sector approvals. Even apart from outright prohibitions, energy equity issues can arise because governance legitimacy often turns on who controls approvals, records, and processes. *La Grande Kiara Management Corporation* illustrates that those with stronger approval records can entrench rooftop solar PV installations, while those with weaker records may face legal contestation.

Fourth, federalised environmental allocation can produce uneven procedural protections across jurisdictions. *Kajing Tubek* shows that environmental compliance pathways may differ depending on the governing regime in a federation, shaping the participation and procedural entitlements available to affected parties. This matters because procedural justice and participation are not merely ethical preferences; they constitute legal infrastructure for RE projects. Legitimacy failures translate into resistance to RE development and heightened dispute risk (Wood et al., 2016).

Sustainability Consequences: Decarbonisation Becomes Contingent, Not Enabled

This subsection shows that sustainability and decarbonisation objectives are treated as contingent considerations in judicial reasoning, advancing only where they align with existing property, governance, and procedural structures rather than operating as independent public-interest justifications.

These thresholds also produce sustainability consequences. Decarbonisation does not automatically gain considerable weight as a public value in private covenant disputes. Simply because a project is “green” in nature (such as installing solar PV), the court will not automatically treat that as a strong public-interest reason to relax or reinterpret private property rules. *United 1Borneo Hypermall Sdn Bhd* illustrates this point, where covenant legality remained enforceable irrespective of the “green” character of the project, i.e. rooftop solar PV installations. By contrast, in the grid context, energy and system continuity pressures can normalise post-hoc damages rather than *ex ante* compliance. *Dolomite Industrial Park Sdn Bhd* demonstrates the risk that procedural non-compliance (like in this case, with wayleave requirements) may be recognised, yet injunctive relief refused to preserve electricity continuity, leaving damages as the practical outcome. Its sustainability impact is indirect, because it shows how courts may prioritise electricity continuity when choosing remedies. Where an injunction would disrupt supply, the court may lean toward allowing the activity to continue and treating damages as the practical response. This may risk normalising a “comply later, pay later” dynamic and weaken the procedural discipline (planning, approvals, safeguards) that a credible energy transition depends on.

Across both settings, decarbonisation (via solar PV) is not an automatic “yes” (D-Carbonize, 2025). In covenant regimes, such development can be prevented by agreed land-use controls, while in grid disputes courts may preserve infrastructure and award damages even where procedures were breached. As a result, decarbonisation proceeds only when it fits existing consent structures and does not involve continuity-disrupting remedies such as injunctions.

Reforms Implication Derived from the Results

Across the three themes, the cases demonstrate that Malaysian courts are (perhaps unintentionally) constructing a legal architecture that strongly favours energy security by prioritising the certainty and bankability of RE projects. These issues cannot be resolved through adjudication alone, as courts are structurally constrained to apply existing land, governance, and procedural rules rather than redesign them. This is not inherently problematic; rather, it reflects a rational response to the capital-intensive, long-term character of energy infrastructure, including RE projects. However, without supporting statutory and institutional reforms, the same architecture risks creating transition friction by sidelining equity and sustainability (Radtko, 2025; Leal-Arcas, 2025; Nawang et al., 2021); Green & Gambhir, 2020).

It is emphasised that friction in the energy transition is not hypothetical, abstract, or fictional, but a real obstacle in Malaysia, owing to its inadequate RE legal and policy framework. This is evidenced in Harizal et al. (2022), which found that Malaysia's solar energy policy has progressed but remains less comprehensive than China's and, in some respects, the United States', especially in addressing energy justice, rural energy access, and timely policy reform. Further, in Lau et al. (2022), it was found that Malaysia's residential solar adoption is hindered by weak financial support, low public awareness, subsidized electricity tariffs, and limitations in current policy design, and it recommends stronger incentives, awareness programmes, and consumer-protection regulations. This indicated a need to shift the paradigm focusing on energy security (via infrastructure and technological advancement, etc.) *per se*, to a more balanced framework incorporating energy equity and environmental sustainability. Reforms should therefore preserve bankability while strengthening the legal and institutional design around these thresholds, ensuring that certainty does not systematically displace equity and decarbonisation in a more robust solar PV framework (Abram et al., 2022; Schelly et al., 2021; Sovacool et al., 2019).

Firstly, *Title/Tenure Reforms*. Public procurement or licensing (by a regulator such as the Energy Commission) can incorporate staged land-readiness requirements, requiring bidders to prove site control progressively at checkpoints aligned with PPA and financing milestones. Comparative procurement practices suggest that “site control” can be demonstrated along a spectrum—initially through options to

lease or purchase, and later through executed, registrable leases or recorded land rights—supporting staged land-readiness rather than a single cut-off test (Connecticut Department of Energy and Environmental Protection (DEEP), 2023; Sarif & Abdurrahman, 2025). This directly addresses the “all-or-nothing” termination risk observed in *Strong Elegance Sdn Bhd*, while deterring speculative bids or undertakings without credible land access. It is further opined that courts should not treat registered title as the sole decisive gateway in RE and grid disputes but should concurrently extend substantive consideration by examining whether developments are lawful, beneficial, meaningful, and non-encroaching in substance. This would mitigate the exclusionary effect reflected in *Wong Fook Thian*. While the principle of land indefeasibility must never be dispensed with, it is argued that energy transition imperatives, climate commitments, and sustainability agendas should also be given significant weight. Beyond outright removal (like via injunction) or monetary compensation, courts may adopt intermediate or “middle-ground” remedial orders to balance proprietary rights with climate objectives. For instance, they may direct rectification or modification of installations (rather than full removal), grant conditional injunctions to allow time for regularisation (e.g., approvals, negotiated licences), or permit continued presence on equitable terms (e.g., occupation rent and undertakings on safety and maintenance).

Similarly, a regulator-led “RE impact complaint–enforcement” track should allow affected persons to trigger inspections, compliance directions, monitoring, targeted stop-work orders, and mitigation for non-compliance, thereby shifting disputes from title-based standing to practical compliance control. This aligns with environmental best practice, which embeds monitoring and enforceable follow-up on approval conditions in response to impacts and complaints (Wasserman et al., 2023; Organisation for Economic Co-operation and Development (OECD), 2009).

For customary or community land, upstream safeguards should convert “optional” engagement into an institutionalised, structured process entrenched through a strong regulatory basis. This would require regular engagements, traceable benefits or compensation undertakings, and transparent documentation and records to reduce contestation risks highlighted in *Bato Bagi* and *Anyie Eng* (Tang, 2013; Human Rights Commission of Malaysia (SUHAKAM), 2013; Office of the United Nations High Commissioner for Human Rights (OHCHR), 2013; United Nations (UN), 2007). By having these upstream safeguards, it ensures that project assessment accounts for the socio-economic consequences of energy development, including livelihood disruption, cultural attachment to land, community welfare, and distributional effects (Matanzima & Loginova, 2024; Omer, 2010). It demonstrates that public participation and socio-economic concerns can be institutionally embedded upstream rather than treated as matters of discretion or post-hoc mitigation alone. Comparative support may also be drawn from *Northern Territory v Griffiths (Timber Creek)* (2019) High Court of Australia (HCA) 7, where the High Court of Australia recognised that compensation for extinguishment or impairment of native title may extend beyond economic loss to include non-economic cultural or spiritual loss associated with diminished connection to land. Together, this supports a stronger reform direction in which consultation, socio-economic impact, and cultural loss are treated as integral elements of lawful project development rather than peripheral considerations.

In Canada, community engagement has been embedded in federal impact assessment laws (Impact Assessment Act (Statutes of Canada (S.C.) 2019, c. 28), s. 1, ss. 11, 14(1), 22(1)(m)–(n), 27–28 and 51(1)(c); Impact Assessment Agency of Canada (IAAC), 2025). The courts have also treated consultation as a legal duty (not merely good practice) when the Crown knows or ought to know of asserted or established Indigenous rights and contemplates conduct that may affect them (Crown-Indigenous Relations and Northern Affairs Canada (CIRNAC), 2025; Morellato, 2008). For instance, in *Mikisew Cree First Nation v Canada (Minister of Canadian Heritage)* (2005) 3 Supreme Court Reports (“SCR”) 388, (Supreme Court of Canada), the Supreme Court of Canada held that when the Crown proposes to “take up” Treaty No. 8 lands in a way that may adversely affect the Mikisew Cree’s hunting, fishing and trapping rights, the honour of the Crown triggers a duty to consult (and, where appropriate, accommodate). This requires direct notice, information-sharing, and good-faith dialogue. In that case, the Crown breached its duty, and the Minister’s approval was quashed and reconsidered after proper consultation. Thus, in Canada, indigenous participation is framed as part of the assessment process with meaningful participation and capacity support built into the system. This demonstrates that public participation and socio-economic concerns can be institutionally embedded upstream rather than treated as matters of discretion or post-hoc mitigation alone.

Secondly, *Strata and Covenant Reforms*. A statutory pathway could treat solar PV in strata as a regulated form of improvement subject to prescribed safeguards, with clear decision rules and a duty to provide reasons for refusals. For example, in Australia, Queensland's "ban the banners" amendments prevent developers' covenants and body corporate by-laws from blocking solar PV installations, mainly on aesthetic grounds, and tightly limit when consent can be refused, particularly in apartments where common-property roofs are involved. Disputes are routed through the Office of the Commissioner for Body Corporate and Community Management (OCBCCM) process (Queensland Government, 2025). The legislative reform was triggered by *Bettson Properties Pty Ltd & Anor v Tyler* (2019) QCA 176 (Queensland Court of Appeal), which held that a restrictive covenant could still control where solar panels were placed because requiring relocation did not "prevent" installation. This allowed aesthetic enforcement despite sustainability aims and fuelled calls for reform. In Victoria, Section 138B of the Owners Corporation Act 2006 restricts rules that unreasonably prohibit specified "sustainability items" including solar panels on the exterior of a lot.

Strata laws should also include provisions enabling the installation of "sustainability infrastructure," such as solar PV, as in New South Wales (NSW Government, n.d.). Section 139B of the Strata Schemes Management Act 2015 (No. 50) of the New South Wales renders unenforceable any by-laws that prevent the installation of sustainability infrastructure. This directly addresses the "micro-veto" risk revealed in *United I Borneo*, without entirely erasing private governance. In addition, a standardised, transparent approval register (including documentation of solar PV approvals) could reduce litigation driven by missing minutes, contested consent, and governance turnover, reinforcing the documentary significance that proved decisive in *La Grande Kiara*. In New South Wales, the strata law contains a detailed records retention and inspection framework that makes decisions and documents examinable (Strata Schemes Management Act 2015 (NSW), Part 10, Division 2). The private governance gate should be modernised by establishing a statutory solar pathway in strata and covenant-governed properties that treats solar PV as a regulated improvement and requires reasoned decision-making and transparent record-keeping. This would prevent covenants or by-laws from becoming blanket decarbonisation vetoes. In *Laws v The Owners—Strata Plan 97230* (2022) New South Wales Civil and Administrative Tribunal — Consumer and Commercial Division (NSWCATCD) 131, the NSW Civil and Administrative Tribunal (NCAT) found that the Owners Corporation had unreasonably refused to make a by-law and consent for rooftop solar on common property. Opponents had provided no recorded reasons and failed to consider the benefits and material submitted. NCAT ordered approval, noting solar panels generally do not harm visual amenity.

Thirdly, *Balanced Remedy Reforms (Preservation of Energy Continuity Without Moral Hazard)*. While courts have refrained from ordering the removal of grid infrastructures to protect continuity of supply, as in *Dolomite Industrial Park Sdn Bhd*, it is suggested that in cases involving potential encroachment of grid infrastructure, courts (or legislators, if amending or new enactments are contemplated) should balance continuity with mandatory regularisation steps, compensation reflecting the intrusion, and regulator-issued process templates. This ensures that "pro-energy continuity" remedies do not become a predictable "price tag" for non-compliance, a risk structurally illustrated by the remedial reasoning in *Dolomite Industrial Park Sdn Bhd*. Regularisation duties can be inferred from the United Kingdom's Electricity Act 1989 (c. 29), whereby Schedule 4 of the Act allows a licence holder to apply for a necessary wayleave from the Secretary of State, including to retain an existing electric line after landowner termination. If a necessary wayleave is refused, the licence holder must remove the line within a specified period (Electricity Act 1989 (c. 29) (UK), sch. 4). *Bodorgan Properties (CI) Ltd v Southern Electric Power Distribution plc* (2025) England and Wales High Court (EWHC) 1880 is a significant UK High Court (King's Bench Division) case clarifying statutory wayleave rights under the Act. The court struck out a landowner's challenge to an electricity distributor's application for necessary electricity apparatus (a 132kV overhead line and associated infrastructure), emphasising the proper judicial review procedure in such disputes, particularly regarding landowner objections and the role of the Secretary of State.

In the United States, "inverse condemnation" is recognised as a claim for just compensation when the government effectively takes or damages private property for public use without filing eminent domain proceedings, including through regulations that eliminate all beneficial use (Legal Information Institute, 2023). In Canada, *Annapolis Group Inc. v. Halifax Regional Municipality* (2022) 2 SCR 772 (Supreme Court of Canada) established that if government measures both confer a practical benefit or advantage on

the public authority and strip the owner of all reasonable uses of the land (even without transfer of title), a constructive (de facto) taking may be found.

Finally, *Federalism and Environmental Minimum Safeguards (Standardised Equity Across Regions)*. Standardised regulatory and procedural guarantees for major energy projects can be harmonised across jurisdictions through intergovernmental arrangements or baseline statutory standards. This reduces uneven participation rights defined by geographical boundaries, which *Kajing Tubek* illustrates can arise when jurisdictional allocation determines the applicable environmental regime and, by implication, the procedural pathway available to affected communities and RE projects. For instance, in the European Union, the EU EIA Directive sets common minimum standards for assessment and public participation while leaving implementation to national systems (European Parliament & Council of the European Union, 2011). In Australia, under the Environment Protection and Biodiversity Conservation Act 1999 (EPBC Act), assessments may be undertaken by a State under an “assessment bilateral agreement”, while the Commonwealth retains approval responsibility. This represents an established model of standardised baselines combined with intergovernmental coordination (NSW Government, 2024).

In a nutshell, Malaysia’s main lesson is that the solar PV legal framework should not only prioritise project bankability and grid reliability for energy security but must also redesign the surrounding fundamental legal aspects. Projects should progress through staged site control, fair processes and recorded approvals in strata/covenant settings, strong compliance and consultation safeguards, and remedies that protect continuity and social justice without rewarding procedural shortcuts. More specifically, premised upon the foregoing discussions, Malaysia’s solar PV legal framework should be reconstructed as an integrated, trilemma-aligned framework that does not treat energy security and project bankability as ends in themselves, but as objectives to be pursued alongside energy equity and environmental sustainability. Such a framework should generally include the following:

- i. First, it should require staged land-readiness and legally secure site control, so that project bankability is built on credible tenure rather than speculative access.
- ii. Second, it should provide clear and documented pathways for lawful land-entry, wayleave, and grid-access compliance, supported by transparent procedural requirements.
- iii. Third, for customary or community land, it should embed structured consultation, socio-economic impact consideration, transparent records, and fair benefit or compensation mechanisms, rather than treating participation as merely optional.
- iv. Fourth, in strata and covenant-governed settings, it should create a streamlined statutory approval pathway for solar PV, with defined decision-making criteria, reason-giving duties, and transparent approval registers, so that private governance does not operate as a blanket veto against decarbonisation.
- v. Fifth, it should establish harmonised minimum environmental and participation safeguards across jurisdictions, in order to reduce uneven procedural justice and legitimacy deficits.
- vi. Finally, the framework should adopt balanced remedial mechanisms, including regularisation duties, proportionate corrective orders, and fair compensation, so that continuity of electricity supply may be preserved without normalising procedural illegality.

This is substantively consistent and corresponds directly with past studies like Wahlund and Palm (2022), Koerner et al. (2022), McCauley and Heffron (2018), Jenkins et al. (2018), Heffron and McCauley (2017) Kitchen and O'Reilly (2016), and Sovacool et al. (2016), which generally and collectively argued that energy issues should be reframed to include dimensions of justice and ethics beyond merely infrastructures and technological innocations, proposing a robust energy justice framework that reinforces elements of fair distribution of energy’s benefits and burdens, inclusive/ participatory and transparent decision-making, as well as the responsibility to both present and future generations. Borhanazad et al. (2013) argue that renewable energy, especially solar power, has strong potential to reduce energy poverty and support rural electrification in Malaysia, particularly in states such as Sabah and Sarawak, provided that social, institutional, and economic issues are properly addressed.

If these reforms are effectively implemented, the solar PV development framework, and more broadly, the RE development framework, would correspond to a trilemma-sensitive legal infrastructure. Such a framework would support security through project bankability, sustainability through enabling mechanisms such as distributed deployment, and energy equity through procedural justice, particularly in customary land contexts where the current judicial position leaves consultation outside enforceable legal duty.

Conclusion

Malaysia's solar PV transition operates within the energy trilemma of security, equity, and sustainability, and is not delivered merely through policy documents or quantified national targets. It is qualitatively shaped by land–energy disputes, where courts determine whether projects have lawful site control, comply with strata by-laws and land covenants, and access the grid through prescribed land-entry, wayleave, and environmental procedures. Across the cases, three legal thresholds were identified: (i) land title and tenure, (ii) private property governance, and (iii) statutory land-entry and legality.

This study is grounded in one simple research question: does the judicial architecture effectively address the energy trilemma in ways that could inform a robust solar PV legal framework? The answer is mixed. This judicial architecture supports the trilemma by prioritising formal certainty and continuity of supply, thereby strengthening energy security, project bankability, and system reliability. At the same time, it can arguably weaken the trilemma balance because the same title-first, formalistic or proceduralist approach limits comprehensive participation, shifts burdens onto weaker groups, and allows decarbonisation mainly when it does not disturb existing property and procedural hierarchies. Although grounded in Malaysian jurisprudence, the threshold-based model identified here is transferable to other common-law jurisdictions where RE projects intersect with registration-based land systems, private property governance (as in Australia), and statutory grid access regimes (as in the UK). The way forward is to redesign these aspects through clearer legal pathways that protect security while reinforcing equity and sustainability. This includes staged tenure readiness, stronger participation duties for customary and community lands, a safeguarded “solar-by-right” pathway in strata and covenant regimes with reason-giving and approval records, and clearer lawful access and processes with transparent compensation and balanced remedies that protect system continuity without rewarding procedural non-compliance.

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