REPORT

FINAL REPORT AND IMPLEMENTATION ROADMAP

DECEMBER - 2025

Prepared by:

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We also extend our thanks to all stakeholders, experts, and contributors whose insights and feedback have greatly enriched this report. Particularly, this report has incorporated insights and discussions from the consultation workshops and field surveys held in Hanoi, Long An, Quang Ninh, Ninh Thuan, Quang Binh, and Can Tho provinces.

EXECUTIVE SUMMARY

Vietnam's ability to meet its energy security needs and deliver on its net-zero commitment by 2050 now depends on how quickly it can mobilise large volumes of private capital on sustainable terms. Adjusted Power Development Plan VIII (PDP VIII) estimates that generation and transmission will require about USD 136.3 billion in investment in 2026–2030, equal to roughly one third of GDP, with 56 percent earmarked for sustainable energy. State-owned enterprises and public budgets are expected to contribute only about 31 percent of this total, leaving a financing gap of more than USD 90 billion that must be filled mainly by private and foreign investors.

Recognising this challenge, ETP–UNOPS and the Ministry of Finance's Department of Finance and Economics launched the joint initiative ***"Facilitating Private Sector's Access to and Engagement in Vietnam's Energy Sector."*** This programme supports the implementation of Politburo Resolution 55-NQ/TW on the Orientation of Vietnam's National Energy Development Strategy to 2030, with a Vision to 2045 and the Ministry of Planning and Investment (now Ministry of Finance)'s mandates to diversify investment models, scale up private-sector participation in power generation and grid infrastructure and accelerate the application of PPPs and innovative financing mechanisms, as further highlighted in the Resolution 140/NQ-CP providing the implementation plan for the Resolution 55-NQ/TW.

This Final Report is the programme's last output. Drawing on the seven preceding deliverables, extensive consultation workshops and field surveys in Long An, Quang Ninh, Ninh Thuan, Can Tho, and Quang Tri provinces, along with bilateral meetings with ministries , and dedicated private-sector surveys with 30 domestic and foreign investors, the report synthesises international experience and presents a comprehensive diagnostic of Vietnam's current policy, legal and financial frameworks for private-capital mobilisation in the energy sector. It proposes a suite of financial structures, PPP and blended-finance models and legislative reforms aligned with PDP VIII, the National Green Growth Strategy, Resolutions 68-NQ/TW on Private Economic Development, and Resolution 70-NQ/TW on Ensuring National Energy Security to 2030, with a Vision to 2045. The report sets out a sequenced package of actionable measures for the Ministry of Finance to strengthen private participation in clean-energy investment and advance Vietnam's long-term transition objectives, with particular emphasis on enhancing the PPP framework and expanding innovative financing mechanisms under MOF's mandate.

VIETNAM'S FINANCING CHALLENGE AND BINDING CONSTRAINTS ON PRIVATE CAPITAL

Over the past decade Vietnam has shifted from a predominantly public-investment model to a more market-oriented structure in which domestic private capital and FDI finance 80–85 percent of new power generation capacity. The feed-in tariff regime between 2017 and 2021

showed that when contracts, risk allocation and revenue certainty reach international standards, private investment can deliver more than 25 GW of new renewable capacity in only four years. The sharp slowdown since 2021 reflects structural constraints rather than waning investor appetite. Pricing vacuums after FIT expiry, fragmented regulations, weak PPAs, limited risk sharing and a shallow domestic capital market now constrain bankability, particularly for grid, storage, offshore wind and utility-scale renewables. This gap is notable given that PPP is formally identified in the PPP Law 2020 (Law No. 64/2020/QH14), Resolution 55-NQ/TW, and Power Development Plan VIII as a key mechanism for mobilising private investment and delivering energy infrastructure critical to Viet Nam's long-term energy transition and green growth objectives.

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Nineteen BOT power projects with about 27,000 MW of capacity were largely developed before the PPP Law was issued, under earlier BOT/IPP arrangements and with investment concentrated mainly in coal.

Against this legacy baseline, no new clean-energy PPPs have reached signing under the current PPP Law framework and all existing projects are transitional. The inherited coal BOT portfolio now faces tightening climate policies and rising ESG scrutiny, increasing the risk of stranded assets. At the same time, the PPP framework has not yet been fully adapted to renewable energy, grid modernisation and storage, nor fully aligned with the rapidly maturing energy-transition and green-finance architecture. Recent reforms have started to improve enabling conditions, including Law No. 57/2024/QH15 (effective 15 January 2025) amending provisions across planning, investment, PPP, and tendering to streamline project preparation and procurement, and Law No. 90/2025/QH15 (effective 1 July 2025) further updating key rules across tendering and investment to reduce implementation frictions. In parallel, Decision No. 21/2025/QĐ-TTg (effective 22 August 2025) operationalises Viet Nam's National Green Taxonomy by setting environmental criteria and a verification pathway for projects to access green credit and green bonds, while Resolution No. 70-NQ/TW (dated 20 August 2025) reinforces high-level direction on national energy security and sector reform consistent with the energy-transition agenda.

The report identifies three interrelated sets of structural factors that continue to influence project bankability and the mobilisation of long-term private capital. First, legal, institutional and contractual challenges arise from the interaction of provisions across the PPP Law, Electricity Law, Investment Law, Land Law and Environmental Protection Law, which can result in procedural complexity, overlapping responsibilities, and areas where mandates and risk-management arrangements would benefit from further clarification. PPP processes remain relatively time-consuming, and existing PPA structures provide limited certainty on take-or-pay

obligations, payment security, and compensation mechanisms, which may leave investors exposed to curtailment and counterparty-related risks..

INTERNATIONAL LESSONS AND STRATEGIC REFORM PRIORITIES FOR MOF

Against this backdrop, international experience provides clear lessons. Leading emerging markets that have deployed many gigawatts of renewables while upgrading their grids have used three complementary channels: market-based private investment instruments such as biddings and green bonds, classic project-finance structures involving domestic and international lenders and targeted PPP models for strategic infrastructure such as transmission, large-scale storage and offshore grid connection. In India, Chile, Brazil, South Africa, Morocco, Indonesia and others, PPPs for backbone grid and storage assets have been central rather than peripheral. They have provided availability or capacity payments, indexed tariffs, credible guarantee and risk-sharing schemes and a single creditworthy public counterparty, which together reduced the cost of capital by 150–300 basis points and extended tenors to 20–30 years. The bulk of emerging-market green bonds and sustainability-linked loans issued since 2023 has flowed to projects with PPP-like revenue structures, confirming that climate finance follows credible PPP signals.

The report concludes that Vietnam is already moving toward this hybrid model. The 2020 Investment Law[1] pathway offers a fast and flexible route for generation investment. Recent PPP amendments, including higher State-capital ceilings for strategic projects, availability-payment mechanisms and more flexible investor-initiated proposals, create a framework for PPPs in transmission, storage and offshore wind. The central question for the next five years is whether the PPP and green-finance pillars can be made predictable and internationally bankable quickly enough to mobilise the private investment required by 2030.

To that end, the report proposes a coherent and fiscally disciplined package of reforms centred on four pillars where MOF plays a leading role.

Pillar 1 – Modernising the PPP Framework and Risk Allocation

This includes harmonising the PPP Law with the Investment, Bidding, Electricity and Land Laws, revising Decree 28/2021/ND-CP on Financial Management Mechanism of Public-Private Partnership (PPP) Projects to reflect the new ceiling of up to 70 percent State-capital contributions for high-risk strategic projects, expanding Article 82 so that revenue-risk sharing covers defined market risks such as curtailment and demand volatility, increasing FX-guarantee ceilings for priority clean-energy PPPs, piloting availability-payment BLT and DBLT

[1] The National Assembly approved amendments to the Investment Law on 11 December 2025. The amendments further streamline investment procedures, clarify the treatment of strategic and priority sectors, strengthen coordination with tendering legislation, and are expected to improve legal certainty for large-scale infrastructure projects.

models for transmission and developing sector-specific PPP contract templates for offshore wind, BESS and grid projects.

Pillar 2 – Enabling Transmission and Storage Investment Through PPP and Blended Finance

The second pillar is enabling transmission and storage investment through PPP and blended-finance solutions that are compatible with fiscal-sustainability constraints. The report recommends that MOF work with MOIT and EVN to design availability-based payment schemes for 220–500 kV lines and substations, develop cost-reflective remuneration frameworks for BESS and pumped-storage hydropower that separate fixed capacity and operating components and consider central support mechanisms for land clearance in national-priority grid projects. Early transmission and storage PPPs should combine State contributions with concessional and climate-finance windows to lower the overall cost of capital and establish replicable models.

Pillar 3 – Building a Credible Green-Finance Ecosystem Anchored in a Quantitative National Green Taxonomy

The third pillar is building a credible green-finance ecosystem anchored in a quantitative National Green Taxonomy. The report proposes that MOF, in coordination with the State Bank of Vietnam, and relevant ministries, move from qualitative to quantitative screening criteria aligned with international benchmarks, integrate taxonomy criteria into sovereign, municipal and corporate green-bond regulations and strengthen requirements for external verification, impact reporting and disclosure. Targeted tax incentives and fee reductions for taxonomy-aligned green instruments, combined with credit-enhancement facilities, can deepen domestic green-capital markets, extend tenors to 10–20 years and support the shift away from short-term bank financing. At the same time, MOF should refine government guarantee and on-lending frameworks, scale up carefully targeted viability gap funding and support development of FX-hedging and curtailment-compensation mechanisms that convert technical risks into manageable financial risks.

Pillar 4 – Institutional Coordination, Capacity and Data

The fourth pillar is institutional coordination, capacity and data. As the ministry responsible for public finance, capital markets, guarantees and PPP financial regulations, MOF is well placed to act as the central architect of the energy-transition financing framework. The report recommends strengthening MOF's internal PPP and green-finance functions, enhancing coordination with MOIT, SBV and provincial authorities through permanent working groups and upgrading systems such as the Vietnam National Electronic Procurement System to include PPP modules that allow real-time monitoring of project pipelines, risk exposures and fiscal commitments. Improved data on green-classified projects, guarantees and contingent liabilities, combined with clear communication of a medium-term green fiscal and financing strategy, will help anchor investor expectations and credit-rating assessments.

PHASED IMPLEMENTATION ROADMAP

These reform directions are translated into a phased implementation roadmap. In the short term, priority actions focus on revising Decree 28/2021/ND-CP and related PPP decrees (including Decree 35/2021/ND-CP as amended by Decree 71/2025/ND-CP), issuing model contracts for renewable energy and transmission, defining BESS and pumped-storage pricing frameworks and quantifying the Green Taxonomy. Over the medium term, reforms would extend revenue-risk sharing to market risks, strengthen FX protection, roll out pilot transmission PPPs, introduce tax incentives and credit-enhancement tools for green bonds and standardise financial metrics such as IRR, NPV and benefit-cost ratios in project appraisal. In the longer term, the objective is a mature, competitive power market where PPPs and green-finance instruments anchor a diversified mix of public, private and blended capital and where Vietnam can rely less on direct sovereign guarantees while maintaining fiscal discipline.

The report closes by highlighting areas where further quantitative work is needed to support detailed policy design, including FX-risk and tenor mismatch modelling, curtailment-compensation design, quantitative Green Taxonomy thresholds and fiscal-impact assessment of PPP and BLT structures for transmission and storage. Timely and disciplined implementation of the proposed measures would allow Vietnam to meet PDP VIII capacity and renewable targets, maintain reliable and affordable electricity for high-quality growth and consolidate its position as a regional leader in clean-energy investment. For the Ministry of Finance, the agenda laid out in this report offers a practical pathway to use public resources more strategically, manage risks transparently and unlock the private capital needed to drive a just and sustainable energy transition.

Looking ahead, the report is intended to serve as a practical reference for the next phase of implementation, helping to translate recent legal reforms and policy commitments into a bankable project pipeline. Its findings can inform the prioritisation and sequencing of PPP pilots in transmission, storage, and offshore wind, the design of risk-sharing and payment mechanisms under MOF's mandate, and the integration of green-finance tools into medium-term fiscal and capital-market strategies. As Viet Nam moves toward the 2030 PDP VIII milestones, continued analytical work, clean energy infrastructure PPP pilots, inter-ministerial coordination, and targeted technical assistance will be essential to operationalise these recommendations, build investor confidence, and progressively scale private capital mobilisation in support of the country's long-term energy transition and net-zero objectives.

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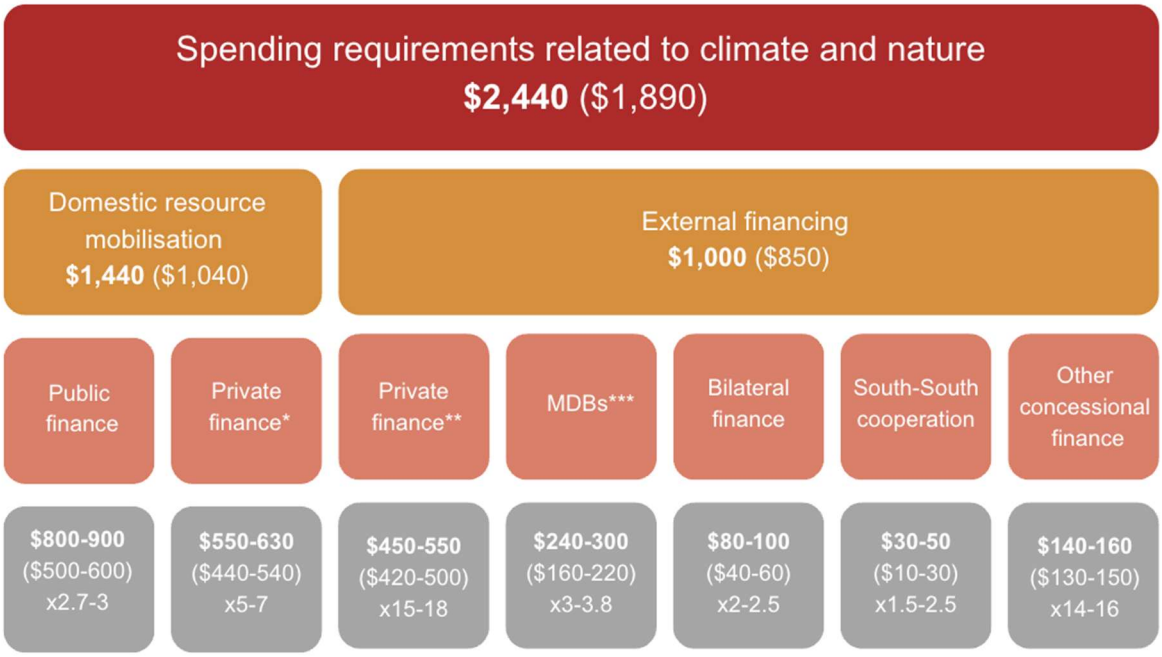
1. INTRODUCTION AND PROJECT BACKGROUND

1.1. GLOBAL AND NATIONAL INVESTMENT NEEDS FOR THE ENERGY TRANSITION

Vietnam's ambitious energy transition, driven by the national commitment to achieving net-zero greenhouse gas emissions by 2050, requires **unprecedented capital investment estimated at USD 136.3–153.7 billion by 2030 (rising to USD 786.7 billion through 2050), or approximately 33% of national GDP**. This aligns with global projections for emerging markets and developing countries (EMDCs), where clean energy investments must reach USD 1.6 trillion annually by 2030 to meet Paris Agreement goals, with EMDCs (excluding China) accounting for nearly 50% of the required increase.

To meet these investment needs**, all available pools of finance - domestic, external, public, and private - must be leveraged.** Domestic resources currently provide about 70% of total climate finance, with public and private sources expected to contribute $1.4 trillion of the $2.4 trillion needed annually by 2030, and $1.9 trillion of the $3.2 trillion required by 2035 ***(Figure 1).*** As investment responsibility shifts further toward the private sector, domestic private finance and local development finance institutions (DFIs) will become pivotal, but only if financial systems expand rapidly: public finance must triple, and private finance must grow seven- to eight-fold by 2030.

Figure 1. Mobilizing the necessary financing for EMDCs other than China (US$ per year by 2030, increment from current in parentheses with x indicating growth rate in times from current)



Source: *Adapted from Bhattacharya, Songwe, Soubeyran, and Stern (2024).*

Notes: **Includes household savings. **A significant proportion of this private finance would be directly and indirectly catalyzed by MDBs, other development finance institutions and bilateral finance. ***Includes multilateral climate funds.*

In Vietnam, traditional channels such as the state budget and official development assistance (ODA) face mounting constraints due to declining concessional resources, fiscal pressures (fiscal deficit of -2.4% of GDP in 2024), slow disbursement, and high private debt levels (128.6% of GDP). **Diversifying financing sources and expanding private sector participation, expected to cover 80% of renewable investment, is therefore essential** to bridging the funding gap and ensuring national energy security.

1.2. Role of Public-Private Partnerships and Innovative Financing in Vietnam

Public-Private Partnerships (PPPs) offer a transformative approach to mobilizing private capital for green energy infrastructure, addressing rising energy demand (projected at 10.3–12.5% annual growth) while advancing Vietnam's climate targets. As defined by the World Bank (2017), a PPP is "a long-term contract between a private party and a government entity for the provision of a public asset or service, in which the private party bears significant risk and management responsibility, and remuneration is linked to performance." This concept is reflected in Viet Nam's legal framework, where investment in the form of a PPP is defined as a time-bound cooperation between the State and private investors through the signing and implementation of a PPP project contract, with the objective of attracting private-sector participation in PPP projects, as stipulated in the Law on PPP (Article 3). Taken together, these definitions position PPPs as a blended-finance instrument through which public resources are used strategically to crowd in private investment, strengthen risk sharing, and deploy de-risking tools—such as guarantees, subordinated capital, and concessional finance—in support of sustainable development..

In the Vietnamese context, **PPPs are recognized as one of the core mechanism for energy development, as articulated in the Politburo's Resolution 55-NQ/TW (2020) on the National Energy Development Strategy to 2030, and reinforced by the newly issued Resolution 70-NQ/TW** (dated August 20, 2025) on ensuring national energy security to 2030 with a vision to 2045. Both resolutions emphasize renovating financial policies to maximize private capital mobilization, including through PPPs and independent investor models, while prioritizing private sector involvement as a key driver alongside state-led initiatives. It calls for breakthrough policies in credit, taxation, green bonds, and green credit to attract non-state investment in clean energy, with explicit support for PPPs in transmission infrastructure, large-scale projects, and grid modernization to integrate renewables. Beyond mobilizing private capital, PPPs are expected to contribute to broader policy objectives such as reducing greenhouse gas emissions by 15-35% (compared to business-as-usual scenarios), peaking power sector emissions at 170 Mt CO2eq by 2030, increasing the share of renewable energy

to 25-30% in primary energy supply (and 47–50% in electricity generation) by 2030, and enhancing energy security in line with Vietnam's net-zero commitments under the Just Energy Transition Partnership (JETP) and updated Nationally Determined Contributions (NDCs).

PPPs can be effectively applied across the renewable energy (RE), energy efficiency (EE), and demand-side management (DSM) sectors to accelerate the clean energy transition, aligning with Resolution 70's directives to prioritize RE exploitation, promote energy-saving technologies mandating 8-10% savings on final consumption, and develop smart systems. In RE, PPPs facilitate private investment in solar, wind (including offshore, with dedicated breakthrough mechanisms) through BOT, BOO, or BLT models, leveraging Vietnam's abundant resources (e.g., 21.4 GW of solar/wind added since 2018) and incentives such as renewable energy certificates (RECs), direct power purchase agreements (DPAs) under Decree 57/2025/ND-CP, rooftop solar self-production schemes, and JETP's USD 15.5 billion pledge (USD 7.5 billion private). For EE, PPPs support retrofitting public buildings, industrial facilities, and lighting systems via energy performance contracts that share verified savings—bolstered by national programs, tax incentives for efficient equipment, and mandates for large users to build energy recovery systems. In DSM, PPPs enable deployment of smart metering, load-shifting technologies, and grid optimization tools, allowing private firms to reduce peak demand, integrate variable RE sources (addressing the 12.8% generation share despite 26% capacity), and enhance system reliability through incentives for battery storage and multi-sovereign guarantees. Resolution 70 further mandates PPPs for modernizing transmission grids (e.g., 500 kV lines, regional interconnections with ASEAN) to handle high RE penetration, with private investment in storage (e.g., large-scale batteries, pumped hydro) and South-South cooperation via China's Belt and Road Initiative for low-cost tech transfer.

To realize this vision, **a strong PPP framework is required, anchored in clear policies, harmonized legislation, streamlined, and transparent fiscal governance**. The Law on Investment in the Public-Private Partnership Model (Law No. 64/2020/QH14) institutionalizes this approach and enables contract modalities such as Build-Operate-Transfer (BOT), Build-Own-Operate (BOO), and Build-Lease-Transfer (BLT). These structures are essential for attracting private investment in critical infrastructure while providing clarity on risk allocation, revenue mechanisms (e.g., market-based pricing without cross-subsidies), and regulatory oversight. A well-designed PPP framework strengthens investor confidence and public trust by ensuring predictable risk-sharing arrangements and regulatory clarity, with Resolution 70 directing urgent reforms to remove institutional bottlenecks, introduce special mechanisms for national-priority projects (e.g., offshore wind), and expand green finance markets (e.g., GSSS bonds, carbon markets).

PPPs enable synergistic collaboration between the public and private sectors to finance, develop, and operate clean energy projects. The private sector brings innovation, operational expertise, and financial resources (e.g., FDI, institutional investors), while the public sector provides strategic oversight and mitigates risks through guarantees, policy support, green credit packages from the State Bank of Vietnam, and blended finance under JETP. For capital-intensive projects, such as offshore wind, PPPs allow the government to defer substantial upfront costs while maintaining control over long-term strategic outcomes. Meanwhile, private investors gain market access, policy stability (e.g., resolving PPA bankability issues like take-or-pay clauses and currency hedging), and tailored risk-sharing mechanisms that improve investment security, including government guarantees for key projects and access to MDB/DFI catalytic capital. When underpinned by strong governance, PPPs can deliver high-quality infrastructure aligned with both public interest and environmental goals, advancing Vietnam's low-carbon development pathway amid vulnerabilities costing 3.2% of GDP annually from climate impacts.

1.3. Challenges and Bottlenecks in Private Capital Mobilization

Despite these opportunities, PPPs in Vietnam's energy sector continue to face significant constraints. High upfront costs, coupled with capital mobilization challenges (e.g., limited long-term credit, underdeveloped green bonds), limit the viability of many projects. Energy PPPs are subject to elevated risks, including fluctuating fuel prices, non-transparent electricity pricing mechanisms (below ASEAN averages), restricted access to sovereign guarantees, and cumbersome permitting delays. Notably, a significant share of existing PPP investments remains concentrated in fossil fuel-based generation. As of 2024, Vietnam has 19 BOT power plants, the majority of which are coal-fired (peaking at 30.2 GW by 2030). These projects collectively contribute around 27,000 MW and have mobilized approximately USD 200 billion, largely financed through international loans. However, **increased global scrutiny and policy shifts towards decarbonization, accelerated by Resolution 70's roadmap to phase down coal post-2035, tighten future capital flows for carbon-intensive infrastructure**, underscoring the urgent need to pivot via enhanced PPP incentives and fossil fuel subsidy reforms.

In addition, regulatory inconsistencies continue to affect implementation. Although recent reforms have improved the legislative landscape, gaps remain, notably between the PPP Law and guiding instruments such as Decree 28/2021/ND-CP, alongside expired feed-in tariffs and unclear replacements. These inconsistencies create procedural delays and reduce legal certainty for investors. The revenue-sharing mechanism places disproportionate financial risks on the private sector, without adequately addressing market risks such as tariff volatility or currency fluctuations. Furthermore, financial bottlenecks persist, including limited availability

of long-term credit, an underdeveloped domestic green bond market, and data asymmetries in taxonomies.

1.4. STRUCTURE OF THE REPORT

This final report, prepared under the "***Facilitating Private Sector's Access to and Engagement in Vietnam's Energy Sector"*** initiative by the Southeast Asia Energy Transition Partnership (ETP) - UNOPS and the Ministry of Finance, analyses PPPs and innovative financing mechanisms to strengthen private-sector mobilization for clean energy. It identifies regulatory, financial, and institutional barriers, and proposes strategies to enhance bankability, risk allocation, and investment traction. This aligns with MOF's assigned task in the Resolution 55-NQ/TW and Resolution 140/NQ-CP implementing the Resolution 55.

This final report builds on the following deliverables under the initiative:

- Report: International experiences in mobilizing private capital to support energy transition and finance structures for the energy sector
- Report: Current state of Vietnam's finance structure, financial instruments, and private capital mobilization for energy transition
- Report: Recommendations for the Implementation of PPP in Vietnam
- Report: Study and recommendations for finance structures, innovative financing instruments, platforms, and systems to mobilize finance from private sectors to clean energy projects
- Four consultation workshops held in Hanoi, Long An, and Quang Ninh provinces
- Field visits to four renewable energy projects, including Trung Nam – Ninh Thuan Solar Power Project, Dohwa Le Thuy Solar Power Project, Lotus Wind Power Project, and Lac Hoa Wind Project Phase 1.
- Survey with responses from 30 major renewable energy investors.

This final report consolidates the analytical findings, policy insights, and implementation strategies developed through previous deliverables. It provides a coherent synthesis of all outputs and defines a clear roadmap for translating recommendations into actionable measures. Overall, it aims to provide recommendations that can enhance the effectiveness and bankability of clean energy PPP projects, attract greater private investment, and ensure alignment with Vietnam's energy transition goals, with particular emphasis on supporting the Ministry of Finance's efforts to revise and strengthen the PPP framework and innovative financing mechanisms.

The report is organized into seven chapters as follows:

1. **Introduction and Project Background** – This section introduces the context and objectives of the project. It outlines Vietnam's energy transition goals, private-sector role, and rationale for strengthening enabling frameworks for private capital mobilization.
2. **Assessment of the Current Landscape of Private Capital Mobilization** – This section provides a comprehensive analysis of international lessons on financing energy transitions and of private-sector participation in Vietnam's clean energy sector. It reviews financial instruments (green bonds, blended finance, PPPs), institutional readiness, and investment barriers to highlight applications to Vietnam.
3. **Policy and Institutional Framework for Private Capital Mobilization** – This section presents recommendations to strengthen Vietnam's enabling environment through regulatory reform, institutional coordination, and investor protection. It integrates PPP governance, fiscal incentives, financial tools, and risk-sharing mechanisms into a coherent framework.
4. **Implementation Strategy and Roadmap** – This section outlines a phased plan for operationalizing proposed mechanisms and reforms. It specifies key actions, responsible institutions, timelines, and monitoring indicators to guide implementation.
5. **Conclusion** – This section summarizes the report's strategic messages and underscores the importance of sustained policy coordination and private-sector engagement. It provides a forward-looking perspective for continued reform and partnership.

2. ASSESSMENT OF THE CURRENT LANDSCAPE OF PRIVATE CAPITAL MOBILISATION

2.1. INTERNATIONAL LESSONS AND COMPARATIVE INSIGHTS ON PRIVATE CAPITAL MOBILISATION

International experience shows that the central challenge for emerging economies is not the availability of capital, but the ability to mobilise it at the level, tenor, and cost required for large-scale energy transitions. Countries that have succeeded in deploying many gigawatts of renewables while upgrading their grid have relied on three complementary channels that reinforce one another over time:

1. **Market-based private investment instruments** such as competitive auctions, corporate DPPAs, green bonds, and institutional equity.
2. **Classic project-finance structures** combining domestic banks, international commercial lenders, and development finance institutions.
3. **Targeted public-private partnership models** for strategic infrastructure, particularly transmission, large-scale storage, and offshore wind grid connection, where state participation is essential to achieve bankability.

Across markets, these channels form a financing ecosystem, not competing pathways. PPPs stabilise system-critical assets and reduce structural risks; private investment drives cost efficiency, innovation, and rapid scaling; project finance provides discipline, credit enhancement, and long-tenor liquidity. When well designed, PPP mechanisms have amplified, not substituted, private investment, often unlocking five to ten times the initial public commitment.

The following comparative evidence illustrates this dynamic.

Table 1: Proven Private-Capital Mobilisation Channels and the Central Role of PPPs (2020–2025)

Country / Programme	Primary Channels Used	Scale Mobilised (2020–2025)	Role of PPPs	Key Insight for Vietnam
India	Auctions + VGF + Sovereign Green	USD 85 bn private (12 GW/yr)	PPPs delivered 100 % of new	VGF + transmission PPPs were the

	Bonds + PPPs for transmission		transmission + 30 % of storage	prerequisite for auction success
Chile	Corporate PPAs + Availability-payment PPPs + Green Bonds	USD 25 bn (70 % private) for 12 GW + grid	100 % of new inter-regional transmission built as PPPs with 95 % availability payments	PPPs for backbone grid enabled corporate PPA market to explode
Brazil	Auctions + BNDES long-tenor debt + PPPs for offshore grid connection	50 GW pipeline, 15 GW awarded	Offshore wind law (2025) mandates PPP for grid connection	Without PPP for grid, even the best auctions fail to reach FID
Egypt – Benban	Green Project Bonds + MIGA/EBRD wrappers + PPP for transmission	USD 4 bn (2.7 GW)	Transmission built as PPP; solar plants under Investment Law	Hybrid model: PPP for grid, pure private for generation
Morocco – MASEN	Blended finance + Green bonds + State-backed PPPs	USD 8 bn (4 GW)	MASEN acts as state PPP counterparty for all large projects	Single, creditworthy state entity as PPP off-taker is the #1 bankability factor
South Africa – REIPPPP	Auctions + Preferential debt + PPPs for grid/socialisation	USD 20 bn (8 GW)	Transmission socialisation via PPPs unlocked full pipeline	PPPs solved the “chicken-and-egg” grid-renewables problem
Indonesia	Guarantees (IIGF) + Blended finance + PPPs for floating solar & transmission	USD 6 bn	80 % of new transmission + all floating solar via PPP	Guarantee fund + PPP = 7× leverage on public money

The experience of the leading emerging markets demonstrates several consistent lessons that are directly relevant for Vietnam.

- **PPPs are central to achieving scale, not a peripheral instrument**
  Every country that mobilised more than USD 10 billion per year of private capital relied on PPPs for at least one third of total energy-transition investment. The reason is structural. Grid expansion, storage, and offshore wind connection assets require long-term revenue certainty, availability or capacity payments, and transparent risk allocation. These conditions can only be created through a credible public counterparty. Once established, they unlock the commercial and institutional liquidity that no public budget could supply on its own.
- **The most effective model is hybrid and sequenced:**
  International evidence consistently shows a two-track approach:
  - **Generation assets** are developed under flexible investment laws using auctions, DPPA structures, and negotiated PPAs.
  - **Grid and storage assets** are financed through PPPs with predictable payments and long tenor.

  This hybrid structure allowed India, Chile, the UK, Brazil, and Morocco to accelerate deployment without compromising system stability. Early projects focused on generation, while transmission and storage PPPs followed to remove bottlenecks and enable further scaling.
- **Four PPP features consistently attract the lowest cost of capital**
  The countries that achieved the fastest deployment all adopted four design elements:
  - Availability or capacity payments that provide stable revenue regardless of dispatch.
  - Indexed tariff structures that track inflation or partially track foreign exchange exposure.
  - A central guarantee or first-loss mechanism to reassure lenders and institutional investors.
  - A single, creditworthy public counterparty that standardises contracts and reduces transaction costs.

  Where these features were missing, investment slowed or shifted to shorter-tenor domestic financing. Where they were present, the cost of capital declined by 150 to 300 basis points and project finance tenor lengthened to 20 to 30 years.

- **Green and climate finance responds to PPP signals**
  More than 80 percent of green bonds, sustainability-linked loans, and blended-finance instruments in emerging markets since 2023 flowed to projects with predictable PPP-like revenue structures. Investors favour these structures because they combine

environmental integrity with strong creditworthiness and transparent risk allocation. This trend indicates that PPP frameworks are becoming the preferred platform for mobilising international climate capital. For Vietnam, this means the maturity of PPP instruments will directly influence the country's ability to tap large pools of global climate capital.

Vietnam is already moving toward the hybrid model that characterises the world's highest-performing emerging markets. The Investment Law pathway, combined with DPPA reforms under the Electricity Law 2024, provides the basis for rapid, market-led growth in generation. Concurrently, recent PPP amendments, including higher state-capital ceilings, availability-payment mechanisms, and modernised contracting rules, establish the framework needed to finance transmission, storage, and offshore wind connection.

Box 1. Model from the United Kingdom: Mature PPP and Offshore Wind Leadership

The United Kingdom offers particularly relevant insights for Vietnam as it developed one of the world's most successful renewable-energy financing ecosystems, anchored by predictable revenue mechanisms and robust PPP structures.

- **Contract-for-Difference (CfD) model**: The UK's CfD regime provides a predictable, rules-based revenue framework that has significantly lowered the cost of offshore wind and enabled deep participation from institutional investors. Allocation Round 7 (launched August 2025) extended contract length to 20 years, streamlined consenting requirements, and introduced a £20.1 million/GW Clean Industry Bonus to strengthen domestic supply chains. AR7 is expected to award between 15 and 23 GW, with results due in Q1 2026 (DESNZ 2025). Since 2014, the CfD programme has contracted roughly 39 GW of capacity, enough to supply around 13 million homes in 2025. Yet the CfD model is not without limitations. Outcomes are highly sensitive to auction design, supply-chain inflation and the regulator's ability to set realistic strike-price caps. When caps are set too low, participation collapses; when inflation indexation is insufficient, awarded projects may become unviable before financial close. For Vietnam, the CfD model demonstrates the benefits of stability and predictability, but also warns that strong regulatory discipline and comprehensive grid-planning capacity are prerequisites for successful adoption.

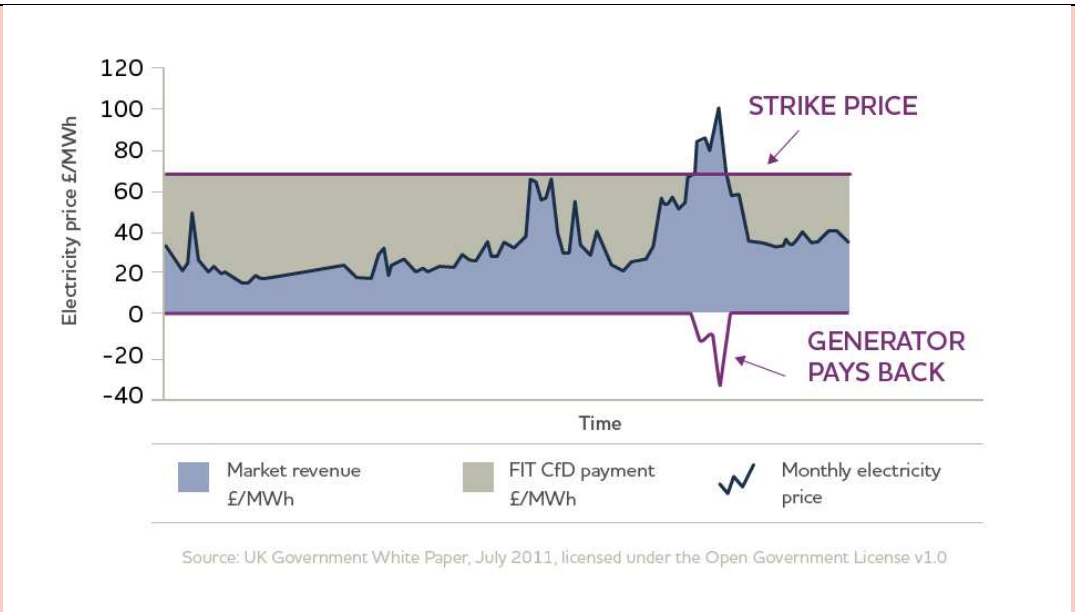


Figure 2: Contract for Difference (CfD) Model

- **Regulated Asset Base (RAB) model for transmission**: The UK's use of Regulated Asset Base (RAB) models in its electricity-network price-control system offers a clear example of how long-lived grid infrastructure can be financed at low cost while maintaining strong performance incentives and consumer protection. By guaranteeing stable, inflation-linked revenues on an approved asset base, the RAB framework reduces market-exposure risk and enables debt tenors of 20–40 years, making it particularly attractive to pension funds and other long-term investors. RAB-style mechanisms applied to offshore transmission, through competitively appointed transmission owners, and cap-and-floor regimes for interconnectors show how regulatory tools can encourage private investment in both monopoly and quasi-competitive network assets. However, RAB models rely heavily on regulator credibility, transparent price-review processes and public trust in tariff setting. They also require sophisticated institutional capacity to manage performance incentives, dispute resolution and cost-pass-through mechanisms. Moreover, because revenues ultimately derive from consumer tariffs or regulated charges, public scrutiny can be intense during periods of rising electricity prices. For Vietnam, the RAB model illustrates how predictable revenue regulation can mobilise capital for essential transmission investments under PDP VIII, but stresses that regulatory independence and clarity must be strengthened before such models can achieve similar results.

- **Green Investment Bank (now UK Green Investment Group)**: The UK's Green Investment Bank, later the UK Green Investment Group (GIG), demonstrates how a national green-finance platform can de-risk early projects, create bankable pipelines,

and crowd in private capital at scale. GIG participated in approximately 60 percent of the UK's offshore wind investments during its formative years (over 15 GW), helping establish the UK as the world's leading offshore wind market. In 2025, GIG's partnership with TotalEnergies and RIDG for the 1.5 GW West of Orkney floating wind project mobilised £240 million in supply-chain investments (GIG 2025). Yet the GIB model also carries inherent trade-offs: public capital must be deployed with strict governance to avoid market distortion or excessive risk-taking, and the institution must be disciplined enough to exit markets once commercial viability is established. The experience underscores that a green-investment platform can be an effective catalyst, but only when combined with transparent investment mandates, strong risk-management systems and clear expectations about when public support should taper off. For Vietnam, a GIB-style institution could help de-risk offshore wind, BESS and transmission pilots, but it must be structured to complement, not replace, private capital.

- **UK Guarantees Scheme**: The UK Guarantees Scheme demonstrates how targeted and time-bound government guarantees can materially reduce financing costs for complex renewable and transmission projects without imposing excessive long-term fiscal burdens. By backing select projects with sovereign-grade credit support, the scheme reduced offshore-wind financing costs by an estimated 150 basis points and enabled projects requiring significant up-front capital to secure long-tenor debt from institutional investors. The scheme's flexibility, supporting guarantees of up to 20 years and aligning closely with PPP-style revenue frameworks, has made it particularly effective for grid and transmission projects that face high early-stage risk. However, guarantees introduce potential contingent liabilities that must be carefully monitored, and poorly targeted guarantees can inadvertently create moral hazard, weakening incentives to manage costs or risks efficiently. They are most effective as transitional tools rather than permanent features of a financing ecosystem. For Vietnam, the UK experience highlights that a carefully governed, fiscally disciplined guarantee mechanism could help unlock investment in offshore wind connections, BESS, and high-voltage transmission under PDP VIII, but only if paired with robust screening, transparent fiscal-risk management and a clear phase-out strategy.

- **Offshore wind permitting and seabed leasing by The Crown Estate**: The Crown Estate's centralised and rules-based regime for seabed leasing has been fundamental to the UK's rise as the world's leading offshore-wind market. By controlling leasing, spatial planning and early-stage environmental screening, it creates a predictable pipeline of investable sites with clear development timelines, thereby reducing early-stage uncertainty and lowering the cost of capital. The

consistency of leasing rounds, such as Round 5's award of 4.5 GW of floating-wind capacity and the subsequent 4.7-GW Capacity Increase Programme, provides developers with bankable expectations about access to the seabed, grid-connection coordination and long-term project rights. Yet this model also has limitations: its effectiveness depends on a high level of institutional capacity, the ability to coordinate with grid operators and maritime authorities and the careful management of environmental and social impacts. Furthermore, competition for limited seabed areas can drive up bid prices, ultimately increasing project costs. For Vietnam, the UK system demonstrates that transparent, centralised leasing paired with coordinated grid planning is essential to building a viable offshore-wind market, but also that substantial institutional strengthening is required before such a model can be applied effectively at scale.

The UK's experience shows that renewable-energy deployment accelerates when four elements align:

1. **predictable revenue frameworks** (e.g., CfDs),
2. **regulated-asset models for grid infrastructure**,
3. **targeted government de-risking tools**, and
4. **a dedicated green-finance institution** capable of crowding in private capital.

Many of these principles resonate with Vietnam's ongoing PPP reforms and the urgent need to scale investment in offshore wind, transmission, and energy storage under PDP VIII. At the same time, the UK experience underscores that strong regulators, coherent legal frameworks, and transparent permitting processes are indispensable prerequisites before adopting RAB- or CfD-style models at scale.

However, international evidence makes clear that Vietnam's next challenge is not conceptual but **financial and structural**. Mobilising private capital at the levels required under PDP8 will depend on whether Vietnam's PPP instruments mature quickly enough to provide the payment security, risk-sharing arrangements, and long-tenor financing conditions that global investors expect.

This leads directly to the next question: **how large is the capital mobilisation challenge facing Vietnam between 2026 and 2030, and how must private, public, and blended finance evolve to meet it?** Section 2.2 examines this in detail, showing how Vietnam's financing landscape has changed since 2015 and why the shift toward a more market-based, PPP-enabled system is now essential to sustain investment at the required scale.

2.2. Overview of Capital Needs for Vietnam's Energy Transition (2026–2030)

Between 2015 and 2025, Vietnam executed one of the fastest and most profound energy-finance transitions among emerging markets. Before 2015, more than 65–70 % of total power-sector investment originated from public sources (state budget, state-owned enterprises, and government-guaranteed ODA). By 2024–2025, private capital, both domestic and foreign, finances 80–85 % of all new generation capacity, particularly renewables. This paradigm shift from a "capital allocation" model to a "financial marketisation" model has been driven by feed-in tariffs (2017–2021), the progressive withdrawal of sovereign guarantees, the introduction of standardised (albeit still imperfect) power purchase agreements, PDP8's market-oriented orientation, and Vietnam's integration into global green supply chains and climate-finance flows.

Table 2: Summary of investment and construction implementation in the entire electricity industry in the period 2011-2020.

	Directory	Total (billion VND)	Ratio (%)
I	**Power source**	**1,412,142**	**81.3%**
1	EVN + Genco 1,2,3	350,228	20.2%
2	TVN + PVN + BOT + Private	1,061,914	61.2%
II	**Power grid**	**324,187**	**18.7%**
1	Transmission	115,837	6.7%
2	Distribution	208,350	12.0%
	Total source and grid	**1,736,329**	**100.0%**

Source: *Power Planning VIII*

Of Vietnam's total installed capacity of 82,387 MW in 2024:

- Private investors (domestic and foreign) own 53 % or 43,664 MW.
- Domestic private investors hold 33 % (26,914 MW).
- Foreign private investors hold 20 % (16,750 MW).
- State-owned enterprises (primarily EVN, PVN, and Vinacomin) retain 47 % (38,723 MW).

Private ownership is overwhelmingly dominant in variable renewables (solar ≈90 %, wind ≈85 %), whereas large hydropower, thermal generation, and transmission assets remain largely under SOE control. EVN continues to exercise monopoly over transmission and the majority of distribution, constituting the single largest structural bottleneck for further renewable integration and project bankability.

Despite these achievements, the system now faces structural ceilings: domestic debt tenors remain short, the single-buyer model centred on EVN continues to concentrate offtake risk, and the domestic long-term capital market is still shallow. These constraints threaten the USD

12–15 billion annual investment required through 2030 and the far larger USD 136.3 billion needed over the 2026 – 2030 period under the revised PDP8 and Net Zero 2050 pathway.

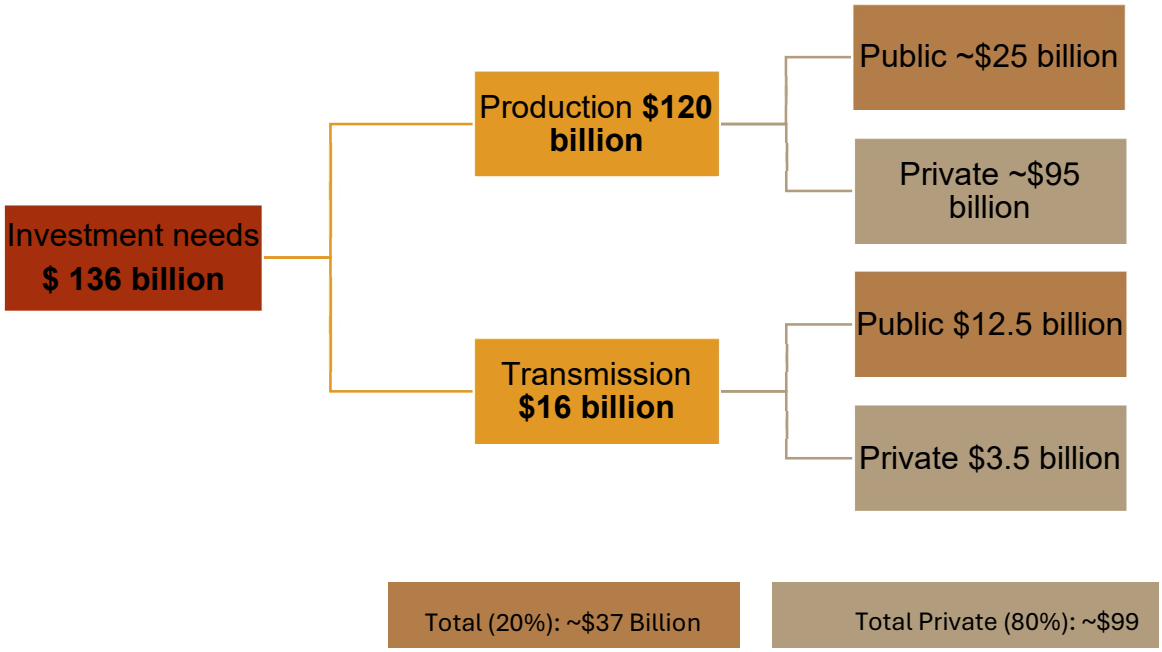


Figure 3. Investment Needs of the Electricity Industry until 2030 (Expected Figures, Rounded)

Of this total, USD 118.2 billion, equivalent to 87 percent, is needed for power generation, including coal-to-gas conversion, expansion of renewable capacity, and deployment of energy storage to support the targeted 47 percent share of renewable electricity by 2030. The remaining USD 18.1 billion is required for transmission and distribution upgrades, which are essential to reduce renewable curtailment, currently estimated at 8–12 percent in parts of Central Vietnam, and to safely integrate growing solar and wind capacity.

The required level of capital translates to USD 27.3 billion annually, equivalent to approximately 5.7 percent of Vietnam's 2024 GDP. Investment needs escalate substantially beyond 2030: from 2031 to 2050, total requirements rise to USD 699.1 billion, with USD 655.3 billion for power generation and USD 43.8 billion for grid reinforcement and expansion.

Public sources of financing, including state budget, SOE equity, and official development assistance (ODA), cannot meet this scale of demand. ODA disbursements have decreased from around USD 4.5 billion annually during 2016–2020 to under USD 2.8 billion in 2024 due to Vietnam's shift to lower-middle-income status and reprioritization of donor budgets. Fiscal space remains constrained by the public debt cap of 60 percent of GDP and rising social expenditures, while SOEs face tightening balance sheet conditions. As a result, public finance can realistically supply less than 20 percent of required energy investment in 2026–2030.

This leaves a minimum **private capital requirement of approximately USD 109 billion over five years, which represents a 3.6-fold increase over current annual private investment flows**. Mobilizing this volume of private capital will require deep financial market reforms, stronger de-risking mechanisms, and a more bankable policy and regulatory environment for clean energy.

2.3. Current Financial Structure of Vietnam's Power Sector

Vietnam's power sector financing today rests on three distinct but increasingly interlinked pillars:

Table 3: Three-Pillar Financial Structure of Vietnam's Power Sector

Pillar	Role	Approximate share of new capacity financing (2015–2025)	Typical instruments & tenor
State capital	Anchor for transmission, rural grids, strategic projects	15–20 %	ODA 20–40 yrs, SOE equity
Private capital	Dominant driver of new generation (solar, wind, gas-to-power)	80–85 %	Bank debt 7–12 yrs, international project finance 15–18 yrs
Mixed / hybrid capital	Emerging bridge for system-critical infrastructure	5–10 % today → 30–40 % expected by 2035	Blended finance, green PPPs, guarantees

2.3.1. State Capital – The Enduring Anchor for Essential and Strategic Infrastructure

Although its relative share has declined sharply in generation, **state capital retains a pivotal and guiding role in segments where private appetite is limited or non-existent: transmission backbone, rural and island electrification, pumped-storage hydropower, and large inter-regional grid projects.**

Key components and scale (2024–2025):

- Consolidated equity of the three major energy SOEs (EVN, PVN, TKV) stands at approximately VND 1.2–1.4 quadrillion.
- Annual public investment in the energy sector represents 8–10 % of total national social investment capital, channelled through the medium-term public investment plan.
- ODA and preferential/concessional loans continue to mobilise tens of billions of USD cumulatively, primarily from the World Bank, ADB, JICA, AFD, KfW, EU, and bilateral partners. In 2025, a landmark EUR 430 million blended ODA-climate facility (AFD, JICA, KfW, EIB) was committed to the 1,200 MW Bac Ai pumped-storage project under the JETP framework.
- State budget allocations also supplement charter capital of EVN, PVN, and TKV, improving debt-to-equity ratios and enabling counterpart funding for ODA projects.

State capital functions as "lead capital" and risk-sharing instrument, catalysing private entry in adjacent generation projects and ensuring national energy security objectives are met.

2.3.2. Private Capital – Dominant Driver of New Generation Capacity

Private investors now own 53 % of total installed capacity and finance the overwhelming majority of new solar and wind projects.

2.3.2.1. Domestic Private Investors and Independent Power Purchase Producers (IPPs)

Domestic private investors and independent power producers (IPPs) have become the most dynamic source of capital in Vietnam's energy sector over the past decade. By the end of 2024, the IPP segment had developed approximately 25 GW of installed capacity, equivalent to around 40 percent of the national power system. Key domestic developers such as Trung Nam Group, BCG Energy, T&T Group, Xuan Thien, Thanh Thanh Cong (TTC), and AMI AC Energy have emerged as major players, bringing forward large solar, onshore wind, and hybrid renewable projects.

The IPP model enables private enterprises to mobilize a mix of equity and commercial credit, develop generation assets, and sell electricity to EVN under long-term power purchase agreements. This model has been particularly important in diversifying investment sources, reducing dependence on public capital, and accelerating project execution. It represents a **flexible, off-budget financing structure well aligned with Vietnam's shift toward market-based capital mobilization.**

The most significant surge in IPP activity occurred during 2018–2021, driven by feed-in tariffs for solar (Decisions 11/2017 and 13/2020) and wind (Decision 39/2018). These mechanisms

catalysed a wave of development, enabling dozens of large projects to reach commercial operation within compressed timelines. Notable examples include Trung Nam Thuan Nam Solar Power (450 MWp), BIM Solar Energy (330 MWp), TTC Phong Dien, and wind-power clusters across Bac Lieu, Ninh Thuan, and Binh Thuan, many of which became reference points for regional renewable-energy investment.

Table 4: Major renewable energy developers

Group/Company	Capacity	Field
Trung Nam Group	3,800 MW	Wind and solar power
BCG Energy	600MW	Wind and solar power
Xuan Thien Group	1,500 MW	Wind, solar, hydroelectric power
Thanh Thanh Cong Group	600MW	Wind and solar power
Gelex Group	1,200 MW	Wind, solar, hydroelectric power
REE	700MW	Wind, solar, hydroelectric power
Bitexco Power	1,000 MW	Hydroelectric
BB group	620MW	Wind, solar, hydroelectric power

All of these projects were executed under the Investment Law 2020 as independent power producers selling to EVN under 20-year PPAs. The model proved extraordinarily effective during the FiT window (2018–2021), when clear tariffs and deadlines enabled developers to reach financial close, complete construction, and achieve COD in 18–30 months.

A particularly important development was the private sector's entry into transmission and grid-connection infrastructure, historically a domain reserved for the State. The landmark case is Trung Nam's investment in the 500 kV Thuan Nam – Vinh Tan transmission line (approximately VND 4,000 billion), representing the first socialized transmission project in Vietnam. The experience also revealed several structural bottlenecks, including the absence of a clear legal basis for private ownership and operation of high-voltage transmission assets, uncertainty over asset handover, valuation, and compensation mechanisms, and the lack of predefined payment or cost-recovery arrangements once the line was transferred to the national grid operator. In addition, coordination challenges among sector regulators, the grid operator, and local authorities contributed to implementation and handover complexity. While these issues underscore the need for clearer regulatory and contractual frameworks, the

project nevertheless established an important precedent for expanding private participation in grid infrastructure, an increasingly critical requirement as Viet Nam scales up variable renewable energy..

Most domestic developers are relatively young (founded post-2004), possess limited accumulated equity, and treat project development as a build-and-divest business. This risk-taking capacity at the greenfield stage, combined with their superior speed and local knowledge, created the platform for the subsequent wave of foreign capital entry through M&A and farm-downs.

2.3.2.2. Domestic Commercial Banks and Green credit channels

Domestic commercial banks continue to serve as the primary source of debt financing for energy projects, typically providing 60–70 % leverage in project-finance structures and accounting for 40–50 % of total private capital mobilised. As of the end of 2024, outstanding loans to the energy sector stood at approximately VND 1,050 trillion (USD 42 billion), representing 8.2 % of total banking-system credit.

Green credit, promoted since Directive 03/2015 and Decision 1604/2016 of the State Bank of Vietnam, reached VND 664 trillion (USD 26.5 billion) by September 2024, equivalent to 4.5 % of economy-wide lending—an impressive increase from 1.54 % in 2016. However, only about 17 % of this portfolio finances renewable-energy projects; the majority supports green agriculture (≈45 %), forestry, sustainable urban development, and pollution-abatement initiatives. Standard loan terms offer maturities of 7–12 years (rarely exceeding 12 years without refinancing) at interest rates of 8.5–10.5 % per annum, reflecting both benchmark movements and elevated risk premiums applied to long-lived energy assets.

Several structural impediments limit further scaling:

- Annual credit-growth quotas imposed by the State Bank (typically 14–15 %) constrain system-wide expansion.
- Single-borrower exposure limits (15 % of a bank's equity) prevent individual institutions from fully financing large-scale projects such as offshore wind farms (USD 1.5–2 billion per GW).
- Persistent tenor mismatch between bank funding (largely short- to medium-term deposits) and the 15–20-year economic life of renewable projects required for debt-service coverage.
- Renewable energy sector is often considered high-risk, owing to curtailment risk, PPA bankability concerns, and policy volatility, which triggers higher provisioning requirements and pricing.

2.3.2.3. Foreign Direct Investment (FDI) and International Project Finance

Foreign direct investment has been instrumental in technology transfer, management expertise, and the introduction of structured project-finance practices. Registered FDI equity inflows into power and renewable energy between 2020 and 2024 totalled approximately USD 15.7 billion, rising from USD 1.82 billion in 2020 to USD 4.12 billion in 2024. When measured by total committed capital (equity plus debt), the World Bank Private Participation in Infrastructure database indicates commitments roughly 2.5–3 times higher, reflecting typical leverage ratios of 70–80 % debt provided by multilateral and bilateral institutions (ADB, KfW, AFD, JICA, IFC) and international commercial syndicates.

Table 5: Registered FDI capital in Vietnam by investment sector in 2024

Industry/Field	Value (billion USD)	Proportion (%)	Note
Processing and manufacturing	25.58	66.9	
Real estate	6.31	16.5	
Electricity production and distribution	1.42	3.7	
Wholesale, retail	1.41	3.7	
Renewable energy	0.89	2.3	
Agriculture - Forestry - Fisheries	0.46	1.2	
Other	2.18	5.7	
Total	38.25	100	Disbursement in 2024 reached a record level of about USD 25.35 billion, up 9.4% compared to 2023.

Source: Compiled from data of General Statistics Office in 2024.

Investment remains heavily concentrated in solar PV (≈68 % of cumulative commitments) and onshore wind (≈12 %), while offshore wind, despite an estimated technical potential exceeding 600 GW, has attracted negligible capital owing to the absence of a comprehensive regulatory framework, grid-connection guarantees, and marine spatial planning.

Prominent investors include Singaporean offshore-wind sponsors, Thai conglomerates (Gulf Energy, B.Grimm), Danish developers and turbine suppliers (Ørsted, Vestas, Copenhagen Infrastructure Partners), and Japanese trading houses and utilities (JERA, Sojitz).

2.3.2.4. Corporate and Green/ sustainability-linked bonds

Although Vietnam's corporate bond market expanded rapidly, with 2024 issuance reaching VND 443 trillion, up 27 % year-on-year, the segment is currently not suitable to the long-term, capital-intensive nature of energy infrastructure.

Green and sustainability-linked bonds grew 41 % to VND 6.9 trillion but still represent only 1.55 % of total issuance. Energy and mining issuers accounted for merely 2 % of corporate bonds placed between 2021 and 2024, with volumes declining from VND 18.2 trillion in 2021 to VND 9.4 trillion in 2024. Average tenor has shortened to approximately 2.5 years, creating a fundamental mismatch with the 15–20-year cash-flow profiles required for clean-energy projects.

Market development is hindered by high concentration (65 % bank issuers, 21 % real estate), very few rated credits (only nine issuers), negligible secondary-market liquidity (turnover ratio <6 %), and the continued absence of a binding national green-bond taxonomy and mandatory ESG disclosure regime.

The most notable exception remains EVN's USD 500 million 10-year green bond issued in 2023 and listed on the Singapore Exchange in accordance with ICMA Green Bond Principles.

2.3.2.5. Private Equity, Venture Capital, and Specialist Infrastructure Funds

Equity funds play a complementary rather than leading role. Dedicated clean-energy private equity and infrastructure funds manage approximately USD 1.2–1.5 billion in assets (e.g., Armstrong Southeast Asia Clean Energy Fund, Energy Capital Vietnam, Dragon Capital Mekong Enterprise Fund, VinaCapital Vietnam Opportunity Fund, and CLMV funds).

Typical investment size ranges from USD 15–50 million with expected holding periods of 5–7 years. Consequently, most funds enter projects only after financial close, providing mezzanine or growth capital rather than absorbing greenfield development risk.

Merger-and-acquisition activity has been robust, with transactions worth an estimated USD 2–3 billion between 2020 and 2024, allowing early domestic developers to recycle capital into new pipelines (storage, offshore wind, hydrogen).

2.3.3. Mixed and Hybrid Capital – The Emerging Bridge for the 2026 – 2035 Period

Public–private partnerships remain a critical bridge between the State and private investors in Vietnam's energy sector, particularly for large-scale infrastructure and

projects with long amortization periods. In these projects, the public sector provides the enabling legal framework, long-term planning, licensing, and selective risk sharing, while private investors contribute technology, management expertise, and access to international capital markets.

Between 2000 and 2015, the traditional Build–Operate–Transfer (BOT) model was the backbone of Vietnam's power infrastructure development. Major thermal power projects, including Phu My 2.2 (715 MW), Phu My 3 (715 MW), Mong Duong 2 (1,240 MW), and Vinh Tan 1 (1,200 MW), each attracted USD 1.2–2 billion in foreign investment from corporations such as EDF, AES, Sumitomo, and China Southern Power Grid, with EVN and PVN acting as long-term offtakers under Government-backed contractual structures. These BOTs delivered substantial capacity additions but relied heavily on sovereign guarantees, take-or-pay commitments, and long-term foreign-currency obligations.

After 2015, however, **traditional BOTs sharply declined due to a convergence of factors:**

- Stricter international ESG standards and the near-cessation of financing for unabated coal and gas projects;
- Domestic reforms requiring greater transparency and reducing the scope of Government guarantees;
- Persistent constraints such as PPA inflexibility, exchange-rate volatility, revenue risk borne disproportionately by investors, lengthy land-acquisition processes, and limited institutional capacity for managing complex PPP contracts.
  As a result, fossil-fuel BOTs have become largely unbankable, with capital costs rising by 20–30 percent and most multilateral and commercial lenders withdrawing from coal and new gas-to-power projects without carbon-capture solutions.

In this context, Vietnam has begun transitioning toward "new-generation" green and transition PPPs, better aligned with global climate-finance standards and the investment requirements of the energy transition. These emerging models proposed in this report include:

- Transmission-focused PPPs, including BLT/DBLT structures for 220–500 kV lines and offshore wind grid-connection assets;
- Hybrid PPPs for battery energy storage systems and pumped-storage hydropower, where commercial returns are modest but system value is high;
- Cluster-based offshore wind PPPs, linking generation zones to backbone transmission investments with cost-sharing and availability-payment structures.

Table 6: Comparison of Traditional BOT Models and New-Generation Transition PPPs in Vietnam's Energy Sector

Dimension	Traditional BOT (2000–2015)	New-Generation Transition PPPs (2025–2035)
Primary Project Types	Coal and gas thermal power plants (Phu My 2.2, Mong Duong 2, Vinh Tan 1, etc.)	Transmission lines (220–500 kV), offshore wind grid connections, BESS, pumped-storage hydropower, renewable clusters
Financing Structure	High reliance on foreign commercial loans + Government guarantees; 20–25-year tenors	Blended finance (ODA + climate funds + private capital); concessional loans; 15–18-year sustainability-linked loans
Role of Government	Extensive guarantees (sovereign guarantees, fuel supply assurances, take-or-pay PPAs)	Targeted risk-sharing only (partial guarantees, availability payments, indexed tariffs); capped State-capital contributions
Bankability Drivers	Fixed PPA tariffs; full offtake guarantee; sovereign backstop	Revenue certainty through availability payments, deemed-generation clauses, enhanced FX tools, improved PPA structures
ESG and Climate Compatibility	Increasingly non-compliant with global ESG restrictions; coal financing now largely unavailable	Fully aligned with Net Zero, JETP, and PDP8 priorities; eligible for climate finance (GCF, CIF, JETP USD 15.5 billion)
Institutional Complexity	Long negotiation cycles (5–7 years); heavy due diligence on fossil-fuel risks	Faster structuring through standardized PPP templates; stronger inter-ministerial coordination required
Currency and FX Risk	High FX exposure; no standard hedging; often shifted to Government	Tiered FX-support schemes; partial FX guarantees; hedging facilities supported by DFIs

Private Sector Role	Developers responsible for EPC + O&M; limited role in transmission infrastructure	Private sector participates in transmission, storage, offshore wind integration, and innovation-heavy components
Public Sector Role	Core investor + guarantor; heavy fiscal exposure; primary infrastructure owner	Strategic "catalyst" investor; mobilizes private capital; uses limited public funds to crowd in larger private flows
Eligible Instruments	BOT agreements, sovereign guarantees, long-term PPAs	BLT/DBLT PPPs, availability payments, revenue-sharing models, green & sustainability bonds, MIGA/IFC/ADB guarantees
Alignment with PDP8	New fossil BOTs no longer viable due to caps on new coal/gas after 2035	Central to PDP8: transmission expansion, offshore wind integration, flexible capacity, and system stability
Future Viability	Declining; fossil BOTs considered unbankable by most lenders	Expected to dominate large-scale, low-return, system-critical energy investments

At the same time, Vietnam is adopting blended-finance structures that combine ODA, concessional climate finance, and private capital. Key facilities include the Green Climate Fund (GCF), Climate Investment Funds (CIF), Just Energy Transition Partnership (JETP) with USD 15.5 billion, and ongoing co-financing from ADB, IFC, JICA, KfW, AFD, and MIGA. These funds, when paired with credit-enhancement tools, can extend loan tenors to 15–18 years and reduce borrowing costs by 200–300 bps, significantly improving bankability for early-stage or capital-intensive projects.

Notable de-risking tools that Vietnam can leverage include:

- IFC Risk-Sharing Facilities for clean energy;
- ADB Partial Credit and Partial Risk Guarantees;
- MIGA Non-Honouring of Sovereign and Sub-Sovereign Financial Obligations for offtaker-related risks;

- Sustainability-linked loans and transition finance, which improve affordability for private developers meeting ESG conditions.

Despite positive momentum, significant bottlenecks remain. Clearer regulations are needed for offshore wind grid-connection responsibilities, cost-sharing between State and developers, and availability-payment frameworks for privately financed transmission. Strengthening domestic capacity in PPP structuring, negotiation, and long-term contract management is also essential, especially as Vietnam moves to integrate large volumes of variable renewable energy and meet PDP8 objectives.

Looking toward 2026–2035, hybrid PPPs blending public, private, and concessional finance are expected to become Vietnam's dominant financing architecture for the energy transition. These models offer a viable pathway for mobilizing multi-billion-dollar investment into lower-return but system-critical infrastructure such as transmission lines, storage systems, and offshore wind integration, laying the foundation for a resilient, modern, and low-carbon power system.

2.4. Barriers, Risks, and Institutional Constraints

2.4.1. Institutional and Management Capacity Observations

2.4.1.1. Decentralisation of Decision-Making Authority

Responsibility for energy-project development and financing is currently shared among several competent authorities, including the Ministry of Finance, Ministry of Industry and Trade, State Bank of Vietnam, and provincial People's Committees. While this multi-stakeholder approach brings valuable expertise, it can also lead to extended coordination timelines. Many peer economies have found that establishing a dedicated inter-ministerial coordination platform, similar to Korea's Green Finance Committee or Japan's Green Transformation Executive Committee, helps streamline policy coherence and accelerate decision-making without compromising thoroughness.

2.4.1.2. Transparency and Availability of Sector Data

Robust, timely, and publicly accessible data on project economics, performance, and ownership are essential for informed investment decisions and effective policy design. At present, comprehensive national datasets on capital expenditure, operating costs, curtailment rates, and cash-flow histories remain fragmented. Greater standardisation and centralisation of such information would significantly reduce due-diligence costs for investors and lenders, strengthen credit-assessment capabilities, and enable more precise forecasting of future capital requirements.

2.4.1.3. Development of Risk-Sharing and Credit-Enhancement Instruments

Vietnam has successfully mobilised large volumes of private capital without widespread sovereign guarantees, which reflects prudent fiscal management. At the same time, the absence of standardised partial-risk or viability-gap instruments, common in many comparable markets, means that certain systemic risks (off-taker credit, curtailment, foreign-exchange convertibility) continue to be borne predominantly by project sponsors and lenders. Targeted, time-bound, and well-governed credit-enhancement mechanisms could help distribute these risks more efficiently, thereby lowering the overall cost of capital while preserving fiscal discipline.

2.4.2. Qualitative Risk Assessment for Private Energy Investment (2018–2025)

Below is a summary table of qualitative assessments of the main risk groups in the Vietnamese energy investment sector, especially for renewable energy and transmission projects in the period 2018–2025. This table divides the groups by the nature of the risks (policy, financial, technical, market, institutional), stating the level of impact, likelihood of occurrence, and impact on the private sector:

Table 7: Qualitative Risk Profile for Private-Sector Energy Projects (2018–2025)

Risk category	Principal manifestations	Severity	Likelihood	Observed impact on private investment
Policy & regulatory	Transition from FiT to new mechanisms, coordination across multiple laws	High	High	Temporary slowdown in new commitments
Institutional & licensing	Multi-agency approval processes	High	High	Extended project preparation timelines
Financial & liquidity	Limited long-tenor funding, bond-market depth	High	High	Higher equity requirements, elevated WACC

Tenor & currency	Mismatch between loan terms and asset life; VND revenue vs. USD obligations	High	Medium-High	Mid-life cash-flow pressure
Curtailment	Grid congestion in high-renewable provinces	High	High	Revenue reduction and DSCR challenges
Technical & operational	Equipment quality, local O&M capacity	Medium	Medium	Moderate impact on plant performance
Market & offtake	Single-buyer structure, payment timeliness	High	High	Perceived credit risk on PPA
Environmental, social & governance	Land conversion, community engagement, international ESG standards	Medium-High	High	Access restrictions to certain capital sources
Green-finance ecosystem	Developing green taxonomy, limited blended-finance precedents	Medium-High	High	Higher financing costs relative to regional peers
Data & governance	Fragmented project-performance disclosure	Medium	High	Increased due-diligence burden

The table highlights risks that are largely systemic rather than project-specific, suggesting that well-designed policy and institutional responses can materially improve the overall investment climate.

2.4.3. Insights from Four Representative Renewable-Energy Projects

Four carefully selected projects, including Lac Hoa Wind, Trung Nam Thuận Nam Solar, LOTUS Wind, and Dohwa Solar, provide concrete illustrations of how different financing approaches performed in practice. Together, these projects account for >650 MW of installed

capacity and >USD 700 million in total investment, making them highly representative of the financial, legal, and operational challenges faced by the sector in the FIT era.

Table 8: Comparative Overview of Financing Structures

Indicator	Lac Hoa Wind (domestic-led)	Trung Nam Solar (domestic flagship)	LOTUS Wind (DFI-led)	Dohwa Solar (Korean-sponsored)
COD	2021	2020	2021	2020
Capacity	30 MW	450 MWp	144 MW	49.5 MWp
Total investment	~USD 55 m	~USD 480 m	USD 254 m	~USD 45 m
Debt : Equity	65 : 35	65 : 35	68 : 32	70 : 30
Primary lenders	Domestic commercial banks	Domestic commercial banks	ADB-led syndicate	Shinhan + local banks
Blended interest rate	8–9 %	8–8.5 %	~4.5 %	4.5–8.5 % blend
Tenor	12 years	13 years	15 years	14 years
Key strengths	Rapid execution	Scale and ambition	Strong ESG governance	Effective bilateral partnership
Principal challenge observed	Tenor/cost pressure	Curtailment impact	FX exposure	Land & permitting complexity

The cases reveal complementary strengths: domestic-led structures excelled in speed and local execution, while internationally supported projects benefited from lower costs and stronger governance frameworks. Both models faced common challenges around tenor, currency exposure, and the need for more flexible revenue-indexation mechanisms.

Vietnam's achievements in mobilising more than USD 20 billion of predominantly private capital for renewables in under a decade remain exceptional by regional and global standards.

The constraints identified above are therefore best understood as natural growing pains of a young, fast-evolving market rather than fundamental flaws.

The evidence converges on a constructive conclusion: abundant capital—both domestic and international—stands ready to flow at significantly larger scale and lower cost provided the enabling environment evolves in three priority areas:

1. Greater policy predictability and inter-agency coordination,
2. Targeted, transparent, and time-bound risk-sharing instruments,
3. Enhanced data disclosure and standardised credit-enhancement frameworks.

Addressing these areas through collaborative dialogue among government, industry, and development partners will allow Vietnam to preserve the entrepreneurial energy that drove the 2017–2025 boom while creating the institutional maturity required to finance the far larger and more complex investments needed for the Net Zero pathway.

2.5. Building an Optimal Mixed Financial Structure for the Energy Transition

2.5.1. The Complementary Roles of Domestic and Foreign Investors: A Highly Efficient Capital-Recycling Engine

Vietnam's renewable-energy expansion has been driven by a powerful division of roles between domestic and foreign investors. Domestic developers consistently assume the riskiest phase of the investment cycle. They identify sites, negotiate land and permitting, secure grid-connection agreements, and manage compressed construction schedules. Their strength lies in local capability, agility, and a deep understanding of Vietnamese administrative processes.

Because most domestic developers were only established after the 2004 Electricity Law and therefore have limited accumulated equity, they operate on a rational development model: take projects from conception to commercial operation (COD), then divest partially or fully within two to seven years. This divestment supplies the capital needed to begin the next cycle of projects, forming the foundation of Vietnam's energy-sector M&A market.

Foreign investors enter the market at later stages. They bring lower costs of capital, deeper balance sheets, and long-term holding strategies suited for stable, cash-flowing assets. Their presence spans global utilities, infrastructure funds, and strategic investors across Thailand, Japan, Korea, Singapore, Europe, and the US. Notable players include Gulf, Super Energy, Banpu, B.Grimm, Enel, Ørsted, TotalEnergies, SCATEC, Tokyo Gas, SK Energy, ACEN, Actis, CIP, and others.

A typical capital-recycling loop now characterizes Vietnam's market:

1. Domestic developers originate, de-risk, and build projects to COD.
2. Foreign investors acquire equity stakes through M&A or joint-venture structures.
3. Domestic developers recycle capital into new pipelines and restart the process.

Recent transactions illustrate this flow:

- Trung Nam sold 35 percent of its 151.95 MW wind plant (VND 4,000 billion, approx US$160 million) to Hitachi Sustainable Energy in May 2021.
- Seampcorp Solar Vietnam acquired 196 MW of wind and solar assets from Gelex on June 20, 2024.

This mechanism generates clear systemic benefits:

- **Rapid deployment**, as domestic developers accelerate high-risk phases.
- **Efficient recycling of scarce Vietnamese equity**, enabling continuous project origination.
- **Infusion of international standards**, long-term debt access, and lower financing costs.
- **Stronger investor confidence**, supported by clear legal, pricing, and output frameworks.

Vietnam should reinforce this system through:

- Faster M&A approvals
- Tax-neutral treatment of reinvested capital
- Standardized transaction documents to reduce friction

This capital-recycling engine is essential to sustaining renewable-energy growth through 2050.

2.5.2. Requirements for High-Quality, Long-Term Debt Capital

Energy projects demand massive upfront investment and long revenue profiles. As a result, debt makes up 70–80 percent of total project financing. Because repayments depend on long-term, stable cash flows, the suitability of debt capital determines overall project bankability and tariff affordability.

International project-finance norms require debt to be:

- Large in scale
- Long-tenor
- Grace-period aligned
- Low-cost and predictable
- Structured as non-recourse financing
- Supported by lenders with strong technical and ESG competence
- Capable of managing currency mismatches

These characteristics are essential because energy projects feature:

- Continuous cash outflows during construction
- Slow, long-term capital recovery
- High technical specificity
- Significant environmental and social management requirements

Vietnam faces persistent constraints:

- Domestic banks rarely lend beyond 12 years.
- Hedging instruments remain underdeveloped.
- FX exposure is high because revenues are in VND and inputs are in USD/EUR.
- Collateral-based lending continues to dominate over cash-flow-based project finance.

Addressing these constraints could reduce the cost of capital by 250–400 basis points, which would materially lower electricity prices and enhance investor returns.

Table 9: Required Characteristics of Debt Capital for Energy Projects

Characteristic	Why it matters for energy projects	Current Vietnam status (2025)
Large ticket size	Offshore wind ≥ USD 2 bn, transmission corridors USD 500 million –1 billion	Domestic banks constrained by single-borrower limits
Long tenor (15–25 years)	Must match 20-year PPAs and asset life	Domestic banks rarely >12 years; international deals 15–18 years
Grace period during construction	No debt service until revenues begin	Available internationally; rare domestically

Low, stable all-in cost	Keeps equity IRR reasonable and tariffs affordable	Domestic 8.5–10.5 %; international/blended 5–7 %
True limited-recourse project finance	Lenders rely on project cash flows, not corporate collateral	Standard internationally; still collateral-heavy domestically
Technical & ESG competence	Lenders must understand technology and social/environmental risks	Strong in DFIs; improving in leading domestic banks
Currency risk management	Revenues in VND, major inputs in USD/EUR	Hedging market almost non-existent

2.5.3. Investment Law vs. Public-Private Partnership Law

Every grid-scale solar and wind project in Vietnam, 143 solar plants and 83 wind plants, totaling more than 24 GW, was developed under the Investment Law rather than the PPP Law. The reasons are structural (Table 10):

- Investor autonomy
- Faster implementation timelines
- Simpler commercial negotiations
- Fewer procedural layers
- Clearer risk allocation

Table 10: Required Characteristics of Debt Capital for Energy Projects

Dimension	Investment Law (chosen route)	PPP Law (almost unused in energy)
Investor autonomy	Full control over timeline, partners, financing	Multi-layer approvals, mandatory bidding
Speed to COD	18–30 months achievable	5–7+ years typical for legacy BOT thermal projects
Revenue certainty	Direct PPA negotiation (imperfect but faster)	Rigid 75–125 % revenue-sharing band; VGF still unclear

State capital contribution	0 %	Up to 70 % (2024 amendment) but procedures not streamlined
FX & termination risk	Same weak PPA, but no additional contractual complexity	Extra layer of contractual risk
Outcome 2017–2025	>24 GW deployed	0 GW new energy PPPs since 2021

The PPP Law offers structured risk sharing, potential revenue guarantees, and state capital contributions of up to 70 percent (following 2024 amendments). However, the procedural and contractual complexity, combined with lengthy preparation and bidding requirements, makes PPP uncompetitive for time-sensitive renewable projects. Even after the PPP Law came into force in 2021, no new energy PPP projects have been initiated, particularly renewable energy and grid ones.

In contrast, the Investment Law allowed developers to meet stringent FIT deadlines in 2019 and 2021. The speed and flexibility required to build 24 GW of renewable energy within four years would have been impossible under PPP procedures.

Vietnam's continued reliance on the Investment Law reflects investor priorities: speed, autonomy, and cost control. For PPP to play a meaningful role in clean energy, significant legal and procedural reforms are necessary. This is addressed in Section 4 on Policy and Institutional Framework for Private Capital Mobilisation.

2.5.4. Accessibility matrix of Capital Sources

From 2005 to 2025, Vietnamese energy investors have drawn on several main categories of debt capital, with very different levels of access across investor groups.

- **Official development assistance and concessional loans from multilateral institutions** are almost entirely channelled to EVN and its subsidiaries, such as EVNPT and EVNPC, through a State on-lending structure in which the State Bank of Vietnam and the Ministry of Finance borrow on behalf of the State. There are no recorded cases of private investors directly accessing these sources.
- **Foreign commercial loans** follow a similar pattern. They are mainly raised for EVN and its subsidiaries under government on-lending arrangements, rather than by private developers. Figure 4 illustrates the typical structure of these foreign loan arrangements.

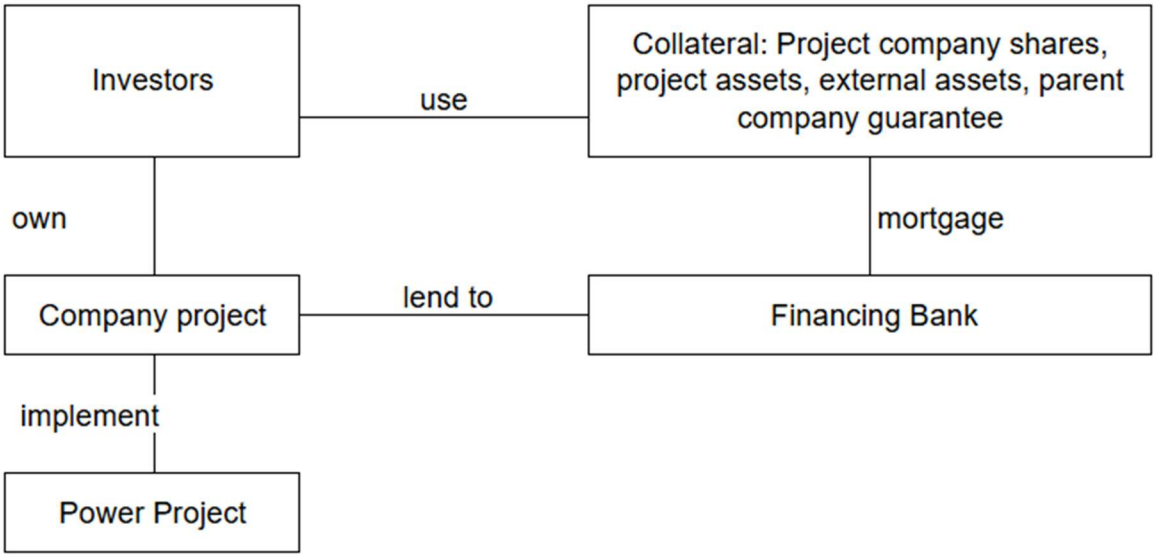


Figure 4. Common Structure of Foreign Loan Arrangements

- **Domestic commercial bank credit** has been the dominant source of debt during the FIT period. Banks that actively financed renewable projects include BIDV, VietinBank, Vietcombank, MB Bank and HDBank, with HDBank focusing largely on rooftop solar. Figure 5 shows a common structure for these domestic loan facilities.

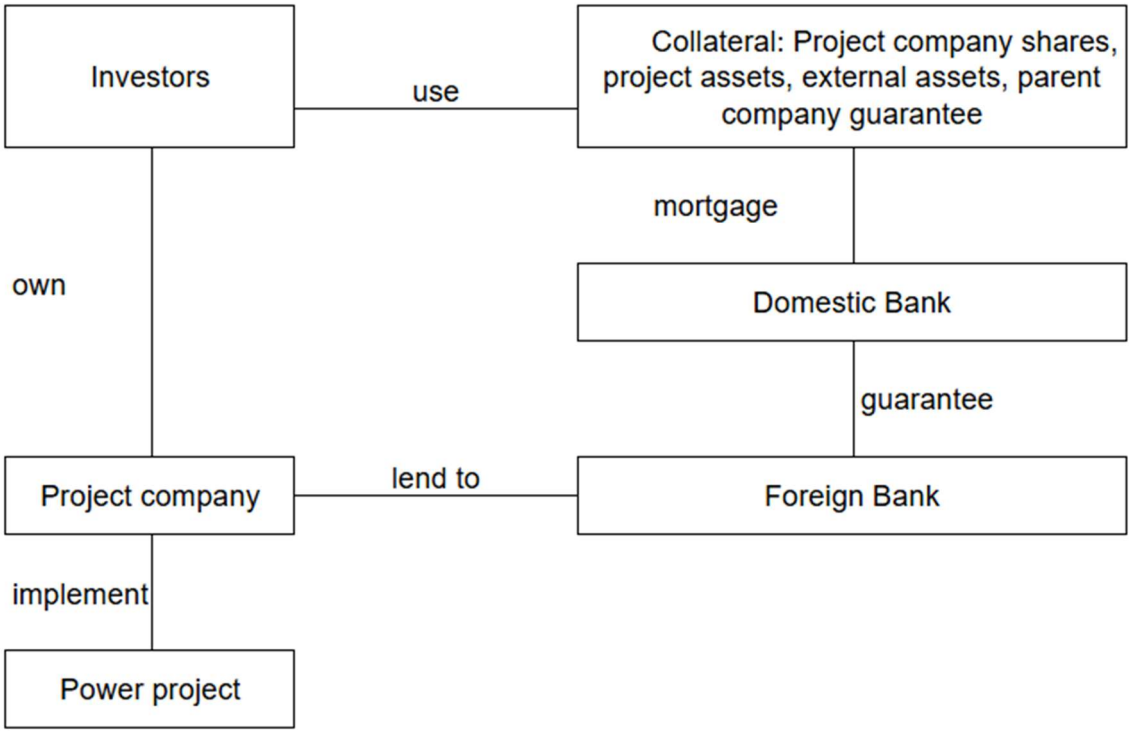


Figure 5.Common Foreign Loan Structure Diagram

- **Corporate bonds** emerged as an additional funding channel during the rapid expansion of the bond market from 2018 to 2021, when issuance volumes rose sharply, driven mainly by real estate firms. Energy companies also tapped this market, but their

share of outstanding bonds remained modest. This reflects the better alignment between real estate business cycles and typical Vietnamese bond tenors of three to five years, whereas energy projects require tenors of ten years or more and often face refinancing and restructuring risks if bonds are used.

Several access patterns stand out:

- **Domestic commercial loans** are easiest to obtain for large conglomerates and SOEs, because lending is collateral-based. Smaller private firms that lack multi-layered, diversified corporate structures and sufficient asset pools struggle to meet collateral and covenant requirements.
- **Bond financing** is the next rung up the ladder. To use this channel, investors need enough reputation to attract buyers, robust financials to meet issuance criteria, and the capacity to refinance or restructure bonds at maturity, since bond tenors rarely match project payback periods. Bond capital is therefore only suitable for a subset of investors with strong fundamentals and scale, and cannot serve as a universal solution for smaller developers.
- **Foreign commercial loans** are the third access option for the private sector. They offer lower costs and longer tenors, but structures are complex and documentation follows international standards that many domestic firms find difficult to negotiate and comply with. In practice, foreign borrowing is only viable for foreign sponsors and a limited group of large Vietnamese investors with sufficient financial strength, project execution capacity, and specialized human resources.

The summary table below provides an overview of these funding sources and their accessibility to investors.

Table 11: Accessibility of Capital Sources in Vietnam's Energy Sector

Capital source	SOEs / EVN	Large domestic private	Small domestic private	Foreign investors / FDI
ODA & concessional loans	✓✓✓	✗	✗	✗ (except blended)
International commercial / DFI loans	✓✓✓ (with govt guarantee)	✓ (with foreign partner)	✗	✓✓✓

Domestic commercial bank loans	✓✓✓	✓✓	✓ (small tickets)	✓ (project finance)
Corporate bonds (domestic)	✓✓	✓ (if rated)	✗	✓ (international listing)

Key observations are:

- **Capital quality hierarchy:** ODA → international loans → domestic loans → corporate bonds. These sources differ markedly in tenor, cost, and risk allocation.
- **Accessibility hierarchy:** SOEs → foreign investors → large domestic → small domestic. The higher an enterprise's creditworthiness, the more diversified its capital-access options become.

Smaller Vietnamese developers struggle to scale because they lack collateral and credit ratings required for long-tenor financing.

Closing Vietnam's investment gap depends on systematically lifting domestic private developers up this accessibility ladder through guarantees, credit enhancements, and predictable revenue frameworks.

2.5.5. Typical Capital-Structure Evolution of a Vietnamese Renewable Project

A project's capital structure evolves through distinct stages:

Table 12: Evolution of Capital Structure Across Project Lifecycle

Phase	Typical structure	Equity holder	Debt providers
Development & construction	25–30 % equity / 70–75 % debt	Domestic developer	Domestic commercial banks
1–5 years post-COD	Partial farm-down + refinance	Domestic + foreign JV	Domestic + international syndicate
Long-term hold (10–25 yrs)	30–40 % equity / 60–70 % long debt	Foreign strategic / fund	DFI-led syndicate (15–18 yrs or longer)

This pattern reflects the fact that domestic developers typically rely on local banks during the construction phase, while post-COD stabilisation enables access to longer-tenor and lower-cost capital from foreign strategic investors and development finance institutions.

A representative example is REE Corporation's Duyen Hai Wind Power Project, which secured a loan package of approximately VND 1,640 billion (about US$64 million). The project illustrates how Vietnamese renewable assets are initially financed with domestic balance-sheet support, before becoming suitable for refinancing and equity rebalancing once operational risks are reduced. In practice, this transition is commonly accompanied by:

- **Equity turnover**, through partial divestment to foreign investors or diversification of the shareholder base; and
- **Debt restructuring**, including refinancing into longer-tenor or lower-cost international facilities, often involving DFIs or international lenders.

This evolution highlights the importance of predictable PPAs, refinancing-friendly regulations, and access to international capital markets in lowering the overall cost of capital for renewable-energy projects in Viet Nam.

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2.5.6. Policy Principles and Immediate Actions to Support Blended Finance at Scale

Vietnam's energy sector has access to diverse capital sources and a broad mix of investors, each bringing different comparative advantages. Domestic developers contribute agility and local capability, while foreign investors provide long-term financing capacity and global expertise. These differences also mean that financing conditions vary across investor groups, which shapes how capital flows into the sector.

Although equity liquidity remains healthy, converting this capital into long-tenor, internationally bankable project finance remains challenging. Factors such as exchange-rate exposure, tenor mismatch, limited guarantee mechanisms, evolving pricing frameworks, and the absence of standardized risk-sharing tools continue to influence investor sentiment. Following the conclusion of the FIT mechanism in 2021, new renewable energy development slowed, reflecting both regulatory transition and the need for clearer long-term signals on pricing and investor selection.

2.5.6.1. Policy Objectives

Vietnam's policy direction may balance two complementary goals:

- **Long term:**
  Develop a cohort of large, internationally competitive Vietnamese clean-energy enterprises capable of accessing global capital markets and operating according to international standards.
- **Short term:**
  Strengthen the financing environment for private developers by expanding access to high-quality capital through measures such as:
    - Temporary State-backed credit-enhancement tools
    - Predictable revenue mechanisms
    - Stable, transparent pricing frameworks
    - Viability-gap financing and flexible revenue-sharing
    - Standardized, transparent model contracts

These measures would help bridge the gap between immediate investment needs and longer-term market development.

2.5.6.2. Guiding Principles for Blended-Finance Design

Blended finance is most effective when it reflects the maturity of the market and the characteristics of participating investors. Several principles can guide policy formulation:

- **Different projects require different capital structures; one model cannot serve all investors.**
- **Financing structures must evolve over time,** becoming more sophisticated as domestic capacity grows.
- **All capital structures originate with equity,** making investor risk appetite a central consideration.
- **Policies should reflect real financing constraints,** not theoretical models of risk allocation.
- **A clear sector roadmap is essential** to guide investor planning and ensure regulatory predictability.
- **Continuous monitoring of domestic and international capital markets** will allow policymakers to identify emerging constraints and respond proactively.

2.5.6.3. Enabling Actions

A number of practical steps can help mobilize long-term, affordable capital at scale:

- Introduce and formalize credit-enhancement mechanisms, including partial-risk guarantees and sovereign support letters.

- Strengthen foreign-exchange risk mitigation through currency-stability tools, hedging facilities, or indexed tariff structures.
- Enhance off-take bankability by expanding long-term PPAs, capacity payments, and price-floor mechanisms.
- Reduce transaction costs through standardized contracts and streamlined approvals.
- Improve coordination among MOF, MOIT, SBV, the State Treasury, and provincial authorities to ensure consistent implementation.
- Incorporate viability-gap financing and calibrated revenue-sharing frameworks into renewable energy and storage projects where appropriate.
- Support domestic developers in improving credit transparency, developing rating pathways, and gaining access to domestic and international capital markets.

Together, these measures can help Vietnam build a more predictable, cohesive, and efficient blended-finance ecosystem capable of sustaining large-scale investment throughout the energy transition.

3. POLICY AND INSTITUTIONAL FRAMEWORK FOR PRIVATE CAPITAL MOBILISATION

Vietnam's framework for mobilising private capital in the energy sector has evolved into a dynamic, multi-layered legal ecosystem that integrates sectoral, investment, and fiscal policies. Instead of relying on a single Renewable Energy Law, the country's approach draws on cross-cutting instruments that shape project viability, revenue certainty, and access to financing. Reforms introduced in 2024 and 2025, particularly amendments to the Electricity Law, Investment Law, and PPP Law, have strengthened flexibility, improved risk-sharing, and enhanced alignment with international green finance standards. Taken together, these updates respond directly to the post–FiT slowdown, the PDP8 investment gap, and Vietnam's long-term Net Zero 2050 commitment.

This section provides a consolidated assessment of the legal foundations underpinning private participation, with a focused examination of the Investment Law and the PPP regulatory framework from a financing and bankability perspective.

3.1. CORE LEGAL FOUNDATIONS: A MULTI-LAYERED ECOSYSTEM

Private participation across generation, transmission, storage and corporate offtake depends on an interconnected suite of laws that collectively determine the cost of capital, financing tenor, revenue stability and investor liquidity.

- The **Electricity Law** sets the sectoral direction and creates the legal basis for DPPAs, competitive mechanisms and future market liberalization.
- The **Investment Law** is the default and fastest route for most renewable projects and governs how private investors structure and exit assets.
- The **PPP Law** provides the framework for state supported models in transmission, offshore wind, BESS and other large scale infrastructure where sovereign risk sharing is required.

Each law influences a different dimension of risk, including regulatory, operational, financial and counterparty risk. Understanding how they interact is essential for assessing project bankability rather than looking at each instrument in isolation.

Table 13: Core Laws and Their Primary Impact on Private Financing Decisions

#	Law / Regulation	Primary financial/investment impact

1	Investment Law No. 61/2020/QH14 (amended by Laws 57/2024 & 90/2025)	Default route for >99 % of renewable projects; maximum procedural flexibility, fastest COD, easiest equity transfers and M&A. Key amendments strengthening private mobilisation: • **Expanded Incentives and Protections**: Updates liberalise foreign ownership in renewables (up to 100 % in non-strategic segments), extend CIT holidays (up to 20 years for high-tech/green projects), and introduce tax-neutral M&A for reinvested proceeds. This facilitates capital recycling, a core driver of the domestic-foreign hand-off model. • **Streamlined Procedures**: Approval timelines are shortened (120–180 days for most projects), with "special-case" designations for strategic renewables (e.g., offshore wind surveys). Digital platforms for registration reduce bureaucracy, enabling faster financial close. • **Integration with Green Finance**: Amendments align with Decision 21/2025/QĐ-TTg's taxonomy, allowing verified green projects to access preferential credit and bonds. ESG disclosure is now mandatory for listed investments, enhancing access to international funds. • **Exit and Liquidity Enhancements**: Clearer rules on equity transfers, farm-downs, and profit repatriation (with partial FX guarantees) make the law highly attractive for build-and-divest strategies. The law's flexibility supports non-recourse project finance and quick COD, but weak PPA enforceability under it (no sovereign backstop) limits tenors to 12–15 years. Further harmonisation with PPP for hybrid models would broaden its appeal for larger assets.
2	PPP Law No. 64/2020/QH14 (amended	Enacted in 2020 and amended by Law No. 57/2024/QH15 and Law No. 90/2025/QH15, the PPP Law is indispensable for private involvement in transmission, BESS, pumped hydro,

by Laws 57/2024 & 90/2025)	and strategic generation, where state support is required. Recent changes have made it more investor-friendly while preserving fiscal safeguards. Key amendments and provisions: • **Expanded Scope and State Support**: Energy (excluding state-monopoly hydro) is prioritised, with state capital now up to 70 % for high-risk/remote projects (e.g., offshore wind connections). This leverages public funds to de-risk private entry, enabling DSCR ≥1.4–1.6 and 20–30-year debt. • **Contract Types and Flexibility**: Recognises BOT, BOO, BTL, BT, O&M. Amendments reinstate BT (build-transfer) for grid assets and introduce availability payments (95 % threshold), ideal for transmission/BESS where revenues are not usage-based. • **Risk-Sharing Enhancements**: Revenue sharing covers shortfalls from policy changes (50 % below 75 % threshold); FX guarantees up to 30 % of VND revenue. Law 90/2025 broadens to include market risks, with clearer dispute resolution. • **Procurement and Timeline Improvements**: Decree 35/2021 (amended by Decree 71/2025) shortens bidding to 120 days; "special-case" selection for complex projects. Decree 243/2025 clarifies agency authority, reducing overlaps. • **Financial Management and Guarantees**: Decree 28/2021 governs payments, bond issuance, and land valuation. Amendments mandate ESG audits and digital platforms for transparency. With stronger guarantees and payments, PPPs can achieve 5.5–6.5 % blended WACC. However, procedural complexity (still 4–7 years for some) and narrow risk coverage limit uptake – only 19 legacy BOTs in energy. Full potential requires

		quantitative green taxonomy integration and MOF-led model contracts.
3	Electricity Law No. 61/2024/QH15	Creates legal basis for DPPA, future CfD/auctions, tariff indexation, private-to-private sales, and eventual wholesale/retail competition. By providing long-term revenue certainty and ESG alignment, the law lowers risk premiums (potentially 150–250 bps) and extends debt tenors. However, full impact depends on implementing decrees (e.g., DPPA amendments, price corridors), which should be prioritised to avoid the post-FiT investment slowdown.
4	Land Law No. 31/2024/QH15 (effective 1 Aug 2025)	Determines 12–20 % of total project cost via land clearance, lease fees, rice-land conversion premiums, and (new) sea-area allocation fees for offshore wind.
5	Planning Law 2017 (amended 2024–2025)	Project must be explicitly listed in national PDP8 and provincial master plans to be eligible for grid studies and PPA.
6	Bidding Law No. 22/2023/QH15 (amended 2024–2025)	Mandatory when any state capital or state land is involved; governs EPC procurement and (in PPP) investor selection.
7	Environmental Protection Law 2020 + Decree 08/2022	EIA/Environmental License now a covenant in virtually every international loan; non-compliance = event of default.
8	Green Taxonomy Decision 21/2025/QĐ-TTg + Circular 17/2022/TT-NHNN	Determines eligibility for green/sustainable loans, bonds, tax incentives, and preferential reserve requirements for banks.

From a finance perspective, the Investment Law and the PPP Law form the structural "gatekeepers" that determine how a renewable or grid project can be implemented. In practice, renewable energy plants have overwhelmingly been developed under the Investment Law, while transmission and large energy-storage assets can only proceed through the PPP pathway.

The Investment Law offers developers a high level of autonomy, flexible capital structuring, and fewer procedural layers, which explains why the majority of operational wind and solar plants to date chose this route. It enables rapid project formation, quicker permitting, and easier equity transfers, an essential exit mechanism for domestic developers.

By contrast, the PPP Law governs projects that require deeper State involvement or public-interest obligations, including transmission networks. Vietnam's PPP framework is rooted in PPP Law No. 64/2020/QH14, which has since been substantially amended by Law 57/2024/QH15 and Law 90/2025/QH15. These amendments signal a strategic shift: PPP is no longer seen merely as a procurement mechanism but as a fiscal co-financing tool designed to mobilize private investment while ensuring prudent State-budget discipline. Under the revised laws, the energy sector, including power generation (except hydropower subject to State monopoly), transmission lines, and storage, is identified as a priority area for PPP investment. The legal framework establishes a set of mechanisms that are essential for bankability, such as viability-gap funding, revenue-risk sharing, foreign-currency support, and tax and land incentives. These mechanisms allow the State to attract capital while sharing risks appropriately between public and private actors.

A major development is the confirmation of MOF's statutory authority. The amended laws explicitly empower MOF to oversee the implementation of PPP projects and design or approve all financial mechanisms related to PPP projects, including the structure of State capital contributions, payment and settlement rules, risk-sharing formulas, the management of contingent liabilities, and financial guarantees. This consolidates MOF's role as the central institution responsible for ensuring that PPP projects, especially those involving very large energy and transmission assets, are fiscally sustainable.

3.2. Tiered PPP Legal Framework and Implications for MOF

3.2.1. Current State of PPP Regulatory Framework

Vietnam's PPP regime operates through a tiered hierarchy of laws and decrees that progressively detail principles, mechanisms, and procedures. This structure ensures national-level policy consistency while allowing implementation flexibility. Below is a systematic breakdown. The framework has evolved significantly since 2024, with amendments emphasizing renewables and transmission socialization.

Table 14: Key PPP legal framework in Vietnam

Level	Document	Effective Date	Key Provisions for Energy PPPs	Finance & Investment Implications
1. National Assembly Laws (Principles & Scope)	**Law No. 64/2020/QH14 (PPP Law, as amended by Law No. 57/2024/QH15 and Law No. 90/2025/QH15)**	Original: 01 Jan 2021 Amendments: 15 Jan 2025 (Law 57); 01 Jul 2025 (Law 70)	- Expands PPP to all public-service projects (including renewables, transmission, storage) except state monopolies (e.g., nuclear dispatch). - Reinstates BT contracts (Article 45 amendment via Law 57) and allows 70% state capital contribution for high-risk/remote projects (offshore wind, mountainous hydro). - Introduces "special-case" investor selection (Article 29) and provincial autonomy in approvals (Law 70). - Mandates ESG valuation in public-asset payments and digital PPP platforms for bidding/contract management.	- Lowers equity barriers (70% state VGF possible), enabling DSCR ≥1.4–1.6 for 20–30-year debt. - Availability payments and revenue indexation (up to 30% CPI/FX) make renewables/transmission bankable at 5.5–6.5% blended WACC. - Digital tools cut bidding time by 40%, reducing soft costs (~1–2% capex).

2. Government Decrees (Detailed Mechanisms)	**Decree No. 35/2021/ND-CP** and **No. 71/2025/ND-CP** (amending Decree 35/2021/ND-CP)	29 Mar 2021 (Decree No. 35) and 28 Mar 2025 (Decree No. 71)	- Shortens bidding to 120 days; allows investor-initiated proposals for transmission/offshore wind. - Introduces availability-payment model (95% threshold) and special selection for strategic projects. - Strengthens guarantees (FX hedging up to 30%) and standardizes energy-specific contracts.	- Enables non-recourse project finance for transmission/storage; first workable model since 2020.
	Decree No. 243/2025/ND-CP	11 Sep 2025	- Details authority of competent agencies for PPP contract signing and project approval (e.g., heads of ministries, provinces as competent authorities). - Specifies procedures for PPP project appraisal, including pre-feasibility studies for National Assembly-level projects. - Covers investor selection processes (bidding, designation),	- Streamlines multi-agency coordination for energy PPPs, reducing approval timelines by 20–30% and clarifying fiscal liability for MOF. - Enhances bankability by mandating detailed risk-allocation in contracts, supporting non-recourse debt for renewables/transmission. - Enables faster unsolicited proposals for strategic projects like offshore wind.

			contract termination, asset transfer, and violation handling. - Applies to amendments in Laws 57/2024 and 90/2025, including BT reinstatement and 70% state capital cap.	
	Decree No. 28/2021/ND-CP (PPP financial management)	26 Mar 2021	- Regulates payments only on compliant docs; expands bond issuance for capital mobilization. - Details shortfall recovery, land valuation, and dispute resolution. - Law 70 amendments: provincial payment approvals and ESG-integrated audits.	- Improves cash-flow waterfalls and escrow setups, boosting lender confidence. - Reduces post-contract disputes
	Decree No. 69/2019/ND-CP (BT asset payments)	15 Aug 2019	- Allows public assets (land, infra) for BT payments, with market-based valuation. - Law 57: Reinstates BT for energy; includes ESG factors in asset equivalence.	- Facilitates quicker exits for developers via asset swaps; ideal for renewables-linked transmission BT deals. - Cuts equity needs by 20–30% through asset offsets.

The importance of PPP for MOF increased substantially after the passage of Law 57/2024/QH15 and Law 90/2025/QH15. Several amendments materially strengthen MOF's authority and responsibilities:

- **Financial mechanisms and payment rules**
  MOF is now explicitly empowered to formulate or approve regulations on PPP financial structures, settlement procedures, state capital contributions and revenue risk sharing.

- **Higher state capital participation**
  For strategically important or high risk energy projects, including offshore wind and transmission, state capital contributions may reach up to 70 percent of total investment. This offers powerful leverage for mobilizing private capital but requires careful management of contingent liabilities.

- **Integration with planning**
  Amendments to the Planning Law require PPP projects to be embedded in approved national and provincial plans, which reduces regulatory uncertainty and improves fiscal predictability.

- **Streamlined investor selection**
  Amendments to the Bidding Law simplify PPP procurement and permit "special case" selection for complex projects, which lowers preparatory costs and reduces the build up of implicit fiscal exposure.

These reforms move the PPP framework closer to international practice. At the same time, they increase MOF's responsibility to ensure that financial guarantees, revenue sharing commitments and availability payment obligations remain fiscally sustainable.

Despite progress, several structural challenges still constrain PPPs' ability to mobilize capital at the required scale.

Table 15: Summary of Structural Bottlenecks

Area for Further Strengthening	Current Situation & Opportunity for Enhancement	Expected Benefit of Targeted Improvement
1. Regulatory coordination, implementation timing, and legal harmonisation	High-level laws and plans are approved rapidly, but detailed implementing decrees, circulars, model contracts, and tariff mechanisms often follow with a lag of 12–24 months. Minor overlaps and differing interpretations continue to exist	Significantly shorter and more predictable project preparation cycles (target reduction from 24–36 months to 12–18

	across the PPP Law, Electricity Law, Investment Law, Land Law, and Environmental Protection Law. Supplements to PDP VIII, while necessary, can still create planning-risk exposure for projects that have not yet reached financial close.	months) and lower regulatory risk premium
2. Bankability of Power Purchase Agreements (PPAs) and EVN counterparty risk	Traditional EVN PPAs remain relatively short-dated by international project-finance standards, do not yet contain fully bankable termination-payment formulas, and lack an explicit government or sovereign payment guarantee. EVN continues to operate with a high debt-to-equity ratio, which raises legitimate concerns among lenders about long-term payment capacity under conventional single-buyer structures.	Restoration of non-recourse, limited-recourse project finance for utility-scale generation projects; potential reduction of 150–300 basis points in debt margins
3. Risk allocation and government support mechanisms	• Revenue-risk sharing (Art. 82 PPP Law) currently applies only to policy or legal changes. • Foreign-exchange conversion support (Art. 81) is capped at 30 % of VND revenue after expenses. • Curtailment events in 2025 repeatedly reached 50–99 % in certain provinces without standardised compensation. • No rapid-access government payment guarantee currently exists for availability-payment or take-or-pay obligations.	Balanced risk transfer that renders offshore wind, transmission, and battery storage projects fully financeable on international terms

4. Taxation framework and incentive alignment	Existing incentives (CIT holidays, import-duty exemptions, VAT refunds) are generous and well regarded. However, they are scattered across multiple decrees and do not yet systematically extend to green/sustainable bonds, sustainability-linked loans, or non-resident portfolio investors.	Stronger demand-side pull for green capital and a clearer cost-of-capital advantage (50–150 bps) for verified sustainable projects
5. Depth and tenor of domestic capital markets	Domestic commercial banks predominantly offer tenors below 8 years. The corporate bond market remains shallow, and institutional investors (insurance companies, pension funds, social security) allocate less than 1 % of assets to infrastructure or green instruments.	Availability of genuine 15–25-year local-currency funding at scale, reducing reliance on offshore refinancing
6. Remaining frictions for foreign capital mobilisation	Foreign investors continue to face elevated transaction costs, limited availability of long-tenor VND hedging instruments, and certain restrictions on equity transfers and profit repatriation. The domestic independent-verifier ecosystem is still nascent.	Substantial increase in annual FDI and foreign portfolio inflows into the sector (target USD 8–12 billion per year by 2030)
7. Institutional capacity, dispute resolution, and green verification	Domestic arbitration and litigation processes are sometimes perceived as lengthy. Provincial capacity for complex financial structuring and green-taxonomy verification varies.	More uniform, high-quality project execution nationwide and materially lower contingency pricing by lenders

3.2.2. INNOVATIVE FINANCING MECHANISMS

The recent amendments to the Electricity Law, Investment Law and in particular the PPP Law do more than streamline procedures. They gradually create a statutory platform for a new generation of financial instruments that can lower perceived risk, extend the tenor of debt and increase the volume of private capital available for Vietnams energy transition.

Rather than treating these reforms in the abstract, it is useful to focus on specific mechanisms that they now permit. Each instrument rests on a clear legal basis, is at a distinct stage of operationalization and can support a measurable share of the projected USD 109 billion private capital requirement to 2030.

The table below summarises the main mechanisms, the primary legal provisions that enable them, their implementation status as of December 2025 and an indicative estimate of their potential contribution by 2030.

Table 16: Innovative financing mechanisms unlocked by recent legal reforms

Mechanism / Instrument	Primary Legal Enabler	Notes
Availability payment PPPs for transmission and BESS	PPP Law amendments (Laws 57 and 90) + Decree 71/2025	Law 57/2024 and Law 90/2025 amend the PPP Law to explicitly permit availability payments (e.g., 95% threshold) for capital-sensitive infrastructure like transmission and BESS; Decree 71/2025/ND-CP (March 2025) amends Decree 35/2021 to enable these for high-risk projects, including offshore wind.
Green and sustainability linked bonds and loans	Green Taxonomy Decision 21/2025 + MOF tax incentives and bond regulations	Decision 21/2025/QD-TTg (July 4, 2025) establishes environmental criteria for green classification, enabling eligibility; MOF tax incentives (e.g., relief on interest income) and other bond regulations support issuance and alignment with sustainable financing.
Blended finance and viability gap funding (VGF)	PPP Law 70 percent state capital provision	PPP Law amendments (via Law 57/2024) raise state capital to 70% for strategic/high-risk projects, directly facilitating VGF and blended structures by crowding in private funds.

Currency convertibility and hedging facility	Draft MOF and SBV framework (2025)	Draft MOF/SBV framework (circulated in 2025) proposes a hedging facility to cover up to 50% exposure, building on SBV's FX management under Circulars like 17/2022.
Green infrastructure trusts and YieldCos	Investment Law amendments + MOF and SBV to propose regulations in alignment	Investment Law amendments (Laws 57/2024 & 90/2025) enable trust structures for green assets; MOF and SBV to issue regulations aligning with green taxonomy for institutional investors.
Sustainability linked loans with KPI based pricing	Circular 17/2022 + international market practice	Circular 17/2022/TT-NHNN mandates environmental risk integration in lending, supporting KPI-based pricing; supplemented by international practices (e.g., Equator Principles) adopted by Vietnamese banks.
Project bond market with credit enhancement	PPP Law + MOF to modify Decree 28	PPP Law allows bond issuance; Decree 28/2021 governs financial management and should be amended to reflect changes in the PPP law and current implementation situations.

Taken together, these instruments broaden the menu of options available to both project sponsors and financiers. The practical implications can be summarised as follows.

- **Availability payment PPPs for transmission and BESS** apply a model widely used in other infrastructure sectors. Investors are remunerated based on asset availability and performance rather than purely on energy sales. This structure supports longer tenors and lower borrowing costs, which is particularly relevant for transmission and storage projects that have long asset lives but do not always generate direct tariff revenue.
- **Green and sustainability linked bonds and loans** allow both public and private issuers to access investors that have mandates to hold sustainable assets. When supported by a clear taxonomy and appropriate incentives, these instruments can lower funding costs for compliant projects, while encouraging higher standards of environmental and social performance.

- **Blended finance and VGF** combine public and concessional resources with private capital to make complex projects bankable. In Vietnams context, these tools are especially relevant for first of a kind offshore wind and large scale BESS projects, where high upfront costs and untested revenue models would otherwise deter private investment.

- **Currency convertibility and hedging facilities** address foreign exchange risk, which remains one of the main obstacles for long tenor foreign lending in local currency revenue environments. By providing more predictable conversion and hedging options, these facilities can attract a broader range of international lenders and reduce the pricing premium currently associated with FX exposure.

- **Green infrastructure trusts and YieldCos** provide vehicles through which operational projects can be pooled and listed, attracting domestic institutional investors with long term liabilities. Over time, this can help recycle capital from mature assets into new project development and deepen domestic capital markets.

- **Sustainability linked loans** complement green loans by tying pricing to measurable performance indicators rather than project type alone. This approach encourages continuous improvements in ESG performance across a broad set of borrowers, including those in the energy sector.

- **Credit enhanced project bonds** can gradually extend the tenor and depth of the domestic bond market. With appropriate guarantees or insurance, project bonds can become a viable complement to bank lending, particularly for transmission and grid reinforcement projects.

These mechanisms are no longer only conceptual. Each is now explicitly provided for in law and is either already in use or moving towards pilot implementation. The combined effect is to address the three constraints on private finance that investors most frequently identify:

1. Short domestic debt tenors compared with project lifetimes.

2. Exposure to foreign exchange risk for loans denominated in foreign currency.

3. Limited availability of sovereign grade offtake or payment support for large infrastructure assets.

Within this package, availability payment PPPs for transmission and storage appear particularly significant. By combining long tenor non recourse debt with predictable payment streams, they have the potential to reshape how strategic grid and storage investments are financed and to bring pricing closer to that previously reserved for state owned enterprises.

Overall, the recent legal reforms have shifted Vietnams position from having mainly framework level legislation to possessing a set of instruments that are ready to be applied in practice. The key challenge now is to ensure timely, coordinated implementation, including clear secondary regulations, model contracts and institutional capacity. Vietnams track record in implementing large scale infrastructure programs suggests that, with appropriate coordination among MOF, MOIT, SBV and other stakeholders, these mechanisms can be translated into tangible investment flows in the near term.

3.3. SUMMARY OF RECOMMENDATIONS FOR REFORM

Benchmarking Vietnam's investment framework against international practice shows that successful regimes share several features: clear and consistent legal foundations, balanced risk allocation, diversified financing instruments and strong institutional governance.

Vietnam's experience over the past decade has created broad agreement on three immediate objectives:

1. **Harmonize the legal framework** so that investors and lenders can see a single coherent pathway from planning approval to PPA signature and financial close.
2. **Rebalance risk sharing and guarantee mechanisms** to align incentives and attract long term capital into high priority assets such as offshore wind, BESS and transmission.
3. **Develop deeper capital markets and green finance instruments** so that PPPs and DPPAs can tap domestic savings at suitable tenors and pricing.

From MOF's perspective, the reform agenda must reduce regulatory uncertainty, safeguard fiscal space and ensure that PPP and DPPA mechanisms operate consistently with the emerging green-finance architecture. The key recommendations are set out below.

3.3.1.1. HARMONISING THE LEGAL AND REGULATORY FRAMEWORK

- **Regulatory harmonization**

  Priority should be given to continue harmonizing the PPP Law (Law No. 64/2020/QH14) with the Investment Law, Bidding Law, Electricity Law, Land Law and implementing decrees. Overlaps between these instruments create conflicting interpretations, increase transaction costs and undermine investor confidence. Joint inter-ministerial guidance is needed so that investors see one coherent pathway from planning approval to PPA signature and financial close.

- **Coordinating amendments to Decree 35/2021/ND-CP and Decree 28/2021/ND-CP**

  Decree 35 on PPP project selection and management (as amended by Decree 71) and Decree 28 on financial management of PPP projects should be reviewed and amended

in a coordinated manner and in alignment with the revisions under Laws No. 57 and 90, so that legal, financial and risk-sharing provisions form a single coherent framework for investors and lenders. The amendments should:

i) reflect the new orientation of PPP as a strategic national instrument for mobilizing private capital in priority sectors such as renewable energy, grid modernization, science and technology;
ii) clarify roles and responsibilities of line ministries and provincial authorities in project preparation, approval and contract management;
iii) strengthen consistency between financial provisions (Decree 28) and technical/sectoral provisions (Decree 35 and amendments under Decree 71) and
iv) embed transparent, predictable processes for project screening, value-for-money assessment and fiscal risk control in line with MOF and State Treasury requirements.

- **Updating Decree 28 to reflect new legislative changes**

  Decree 28 should be aligned with Law No. 57/2024/QH15 and Law No. 90/2025/QH15, which permit State capital contributions of up to 70 percent for certain large-scale, capital-intensive projects. Clear rules are needed on eligibility, budgeting and reporting to ensure fiscal transparency and predictable support for strategic clean energy PPPs.

- **Streamlined procedures and clear mandates**

  Administrative procedures should be simplified, particularly for approvals that involve multiple agencies (MOF, MOIT, Provincial People's Committees and EVN). Clear assignment of "lead agency" responsibilities, standard timelines and the use of electronic systems (VNEPS, PPP portals) would reduce preparation time and increase predictability.

- **Protection from adverse legal changes**

  PPP provisions should include clearer stabilization clauses and transition rules to protect investors from adverse changes in laws or regulations that directly undermine the agreed project economics. This can be designed with fiscal safeguards (for example, caps, eligibility criteria, sunset clauses) so that MOF can manage the budgetary implications.

- **Alignment with green finance instruments**

  Legal reforms should explicitly reference the Law on Environmental Protection, Decision 21/2025/QD-TTg on the Green Classification List and Circular 17/2022/TT-NHNN to ensure that PPP and DPPA projects can qualify for green credit and green bonds without duplicative procedures.

3.3.1.2. IMPROVING RISK SHARING AND FINANCIAL GUARANTEES

There is broad consensus that current risk sharing mechanisms are unbalanced and discourage long term capital, especially for offshore wind and large grid projects.

- **Expanding the revenue risk sharing mechanism**
  Article 82 of the PPP Law should be expanded so that revenue risk sharing covers not only shortfalls caused by legal or policy changes but also, under defined conditions, market risks and demand fluctuations. This is particularly relevant for projects exposed to curtailment risk or demand uncertainty.
- **Flexible revenue sharing thresholds**
  Rather than fixed thresholds of 75 percent (deficit) and 125 percent (surplus), more flexible revenue bands (for example 110–130 percent) should be negotiated case by case for high risk projects such as offshore wind. This would better reflect project specific financial profiles while still protecting public finances.
- **Strengthening FX guarantees**
  Foreign exchange guarantees under Article 81, currently limited to 30 percent of VND revenue after expenses, are insufficient for projects relying heavily on USD debt. For qualifying clean energy projects, the ceiling could be increased (for example to 50 percent) with clear eligibility criteria and robust reporting. Detailed MOF guidance is needed on procedures, funding sources and accounting treatment for such guarantees.
- **Establishing a dedicated guarantee fund**
  A dedicated, ring-fenced **revenue and guarantee fund** managed by the State Treasury could provide timely compensation for eligible revenue shortfalls and FX cover, reducing perceived sovereign payment risk. Contributions could come from budget allocations, fees, and possibly climate finance or development partner support.
- **Scaling up Viability Gap Funding (VGF)**
  VGF should be expanded and better targeted at clean energy projects that are economically sound but not yet commercially viable under current tariffs. For MOF, this means developing transparent criteria, competitive allocation mechanisms and clear rules on how VGF interacts with PPP State capital contributions and green finance instruments.

3.3.1.3. DEVELOPING INNOVATIVE FINANCIAL INSTRUMENTS AND CAPITAL MARKETS

Addressing the shortage of long term bank credit requires deeper capital markets and a coherent green finance framework in which MOF plays a central role.

- **Promoting green bonds and sustainable debt instruments**
  Green bond issuance should be encouraged through tax incentives, reduced market

service fees and clear disclosure requirements to attract institutional investors. Sovereign and sub-sovereign green bonds, piloted under MOF's leadership, can establish benchmarks and help crowd in private capital to energy PPPs and DPPA portfolios.

- **Operationalizing the national green taxonomy**
  Decision 21/2025/QD-TTg has established a national Green Classification List. The next step is to refine Annex I with quantitative, sector specific thresholds and link it directly to MOF's bond regulations and SBV's green credit guidelines. This will reduce ambiguity for banks and issuers and support the development of a credible, internationally recognized green asset class.

- **Strengthening the role of SBV and coordination with MOF**
  The State Bank of Vietnam should further develop the green credit framework, introduce risk mitigation tools (credit guarantees, refinancing windows, differentiated capital requirements) and encourage commercial banks to extend tenors for renewable energy and PPP projects. Close coordination between SBV and MOF is essential so that green taxonomy, bank supervision and capital market rules form a coherent system.

- **Standardization of financial metrics and reporting**
  Mandatory use of standard financial metrics such as IRR, NPV and Benefit/Cost Ratio in project appraisal, accompanied by standardized reporting templates, would enhance transparency and comparability of clean energy projects. This is important both for MOF's fiscal risk assessment and for investors evaluating bond and loan portfolios.

- **Linking PPP reforms with long-term capital market development**

  Amendments to Decree 35 and Decree 28 should explicitly support the development of long-term domestic capital markets by allowing PPP pipelines to anchor green bonds, blended finance structures and risk-sharing instruments.

3.3.1.4. CONTRACTS, PROJECT PRIORITIZATION AND INSTITUTIONAL CAPACITY

Reforms also need to shift the focus of PPP investment and strengthen implementation capacity in the public sector.

- **Prioritizing clean technology in PPP planning**
  PPP pipelines should be aligned with national climate commitments by prioritizing renewable energy, storage and grid modernization. Support for new coal fired power should be phased out given high transition risk and limited access to international finance.

- **Developing sector specific PPP contract templates**

  The development of sector-specific PPP contract templates should follow a coordinated approach consistent with the PPP Law. Under the Law on PPP and its implementing decrees, the MOF, as the agency responsible for PPP financial policy, state capital participation, risk-sharing mechanisms, and payment arrangements, should lead the formulation of standard financial and risk-allocation clauses applicable across PPP contracts. Line ministries, notably the Ministry of Industry and Trade for energy projects, should then initiate and develop sector-specific technical and operational provisions, including technology-specific risks, performance standards, and grid-integration requirements, within this common framework. On this basis, standardised PPP contract templates for offshore wind, BESS, and grid projects should be issued through inter-ministerial coordination, incorporating tariff-adjustment mechanisms, curtailment compensation, foreign-exchange arrangements, and explicit references to green and performance-based indicators.

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- **Strengthening the bankability of PPAs**

  PPAs need clearer payment guarantees from EVN, transparent curtailment rules and dispute resolution mechanisms that meet international financing standards. In the medium term, these provisions should be integrated with the DPPA framework and the evolving wholesale and retail electricity markets.

- **Enhancing institutional capacity and systems**

  MOF's central coordination role should be reinforced, with a dedicated PPP and green finance function. The National Electronic Procurement System (VNEPS) should be upgraded with PPP specific modules to allow real time monitoring of project preparation, procurement and contract management.

- **Integrating just transition principles**

  Just transition principles should be mainstreamed into PPP and green finance strategies, especially in coal dependent regions. This includes planning for reskilling, social protection and targeted investment in new green industries.

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4. IMPLEMENTATION STRATEGY AND ROADMAP

This chapter consolidates the diagnostic analysis and policy recommendations presented in the preceding chapters into a concise, coherent and fully actionable framework. It is designed to provide the Government and relevant agencies with suggestions to deliver the private-capital mobilization targets of the adjusted PDP8 and establish a transparent path toward a competitive, private-sector-led electricity market by the mid-2030s.

4.1. DEPLOYMENT STRATEGY

The following orientations are recommended to strengthen Vietnam's ability to mobilize private investment for power generation, grid expansion and supporting technologies, while ensuring fiscal prudence and alignment with the evolving responsibilities of the Ministry of Finance.

- **Prioritize investment conditions that accelerate system expansion**

  Vietnam's urgent need to expand generation and grid capacity requires a financing environment that reduces uncertainty and makes long-term investment viable. It is recommended that the Government articulate a predictable regulatory roadmap as suggested in Table 17 below, aligned with typical investment cycles, so that investors and lenders can anticipate risks and structure financing appropriately. These conditions can gradually tighten as market maturity improves, but predictability is essential in the near and medium term.

- **Establish a unified government approach to attracting private capital**

  A consistent understanding across ministries and provinces is needed that privately financed energy projects, including those developed through PPPs or DPPA arrangements, form part of national infrastructure. Recognizing private investors as contributors of essential capital and technology helps ensure they receive legal stability, administrative facilitation and risk-adjusted returns appropriate to the project profile. This coherence is critical to avoid fragmented decision-making and ad-hoc interventions that discourage investment.

- **Introduce investment-support mechanisms appropriate to each development phase**

  Support mechanisms may be direct or indirect, but should be guided by explicit eligibility criteria, fiscal discipline and alignment with green-finance objectives. All support instruments should include mandatory sunset clauses (maximum 5–7 years) and be linked to verifiable additionality (MW delivered, jobs created, or local-content achieved).

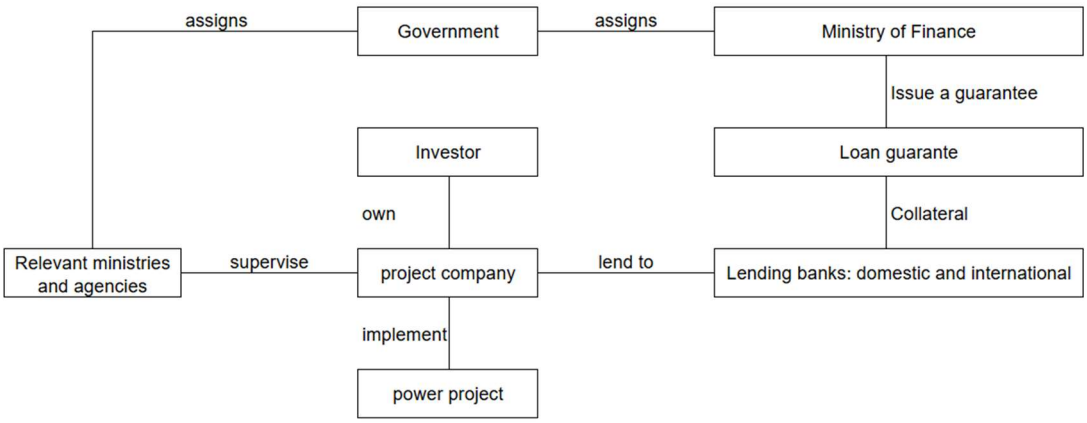
- **Direct**: For strategic projects, the Government may consider structured support such as: i) On-lending concessional or ODA loans to private and FDI developers; ii) Providing sovereign or partial guarantees to facilitate access to long-tenor domestic or international financing; iii) Using SOEs as investment anchors to crowd in private capital while maintaining oversight.
- **Indirect**: The FIT regime demonstrated that predictable tariff structures can mobilize domestic capital quickly, even though it was less suitable for large, foreign-financed projects. Given the scale of capital required under PDP VIII, similar mechanisms, with a transparent and pre-announced phase-out schedule, could help restore market confidence. Although reforms under the amended Electricity Law (2024) and Decree 56/2025/ND-CP move in this direction, persistent delays suggest that stronger and more credible commitments may be needed.

Such mechanisms can leverage the State's access to preferential financing while ensuring private investors earn returns within transparent, rules-based parameters.

4.2. PROPOSED INVESTMENT STRUCTURES FOR STATE-SUPPORTED ENERGY PROJECTS

4.2.1. DIRECT SUPPORT

Model 1: The Government provides a guarantee for the company to implement the power project.



Model explanation:

- Investors, through the Project Company, implement the power project, including project development, signing EPC contracts with construction contractors, and entering into a PPA with EVN for electricity sales.
- The Government, through the Ministry of Finance, provides a direct loan guarantee for the Project Company. These loans may be domestic or international. With this guarantee, the Project Company's credit rating is elevated to the sovereign level,

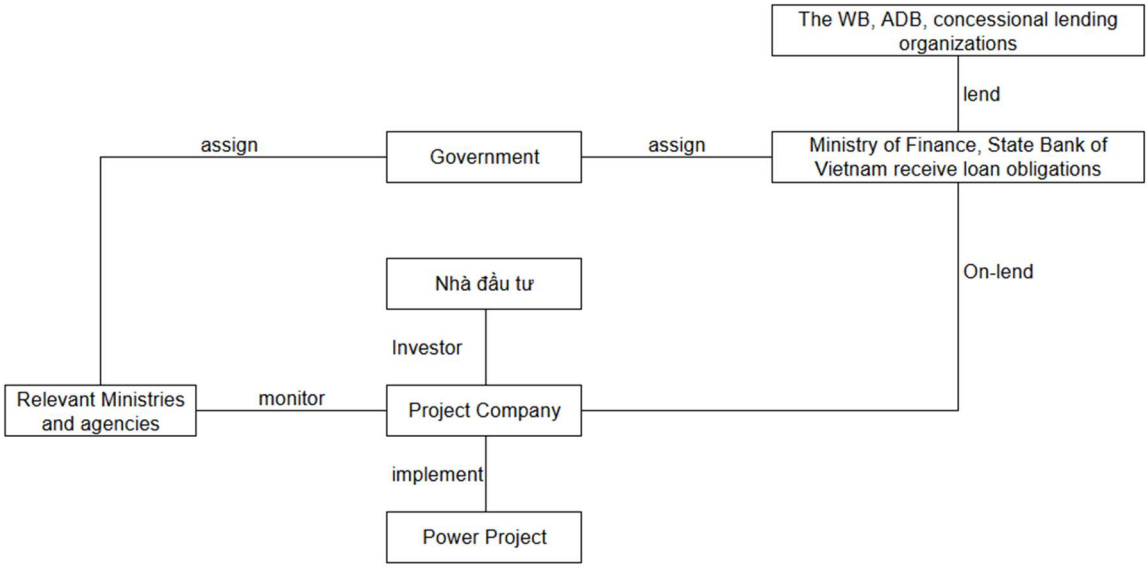
enabling it to mobilize capital on favorable terms that match the scale and capital requirements of the project.

- At the same time, the Government exercises oversight over all activities of the Project Company, including investment costs, procurement, contracting, and may even assign personnel to participate in the company's operations alongside the Investor.

Project's expected blended finance structure:

- Equity capital (domestic and foreign): 30 percent of total investment.
- Debt financing (domestic and international commercial loans): 70 percent of total investment.
- Loan security: A Government guarantee covering the full debt service obligation, including principal, interest, and all associated fees.

Model 2: The Government borrows concessional loans and re-lends them to project enterprises



Model explanation:

- Investors, through the Project Company, implement the power project, including project development, signing EPC contracts with construction contractors, and signing a PPA with EVN to sell electricity generated by the project.
- The Government, through the Ministry of Finance and the State Bank of Vietnam, borrows concessional loans from the World Bank, ADB and other international development partners, and then re-lends these funds to the Project Company. Through this arrangement, investors gain access to long-tenor, low-cost capital from international organizations, which helps reduce overall investment costs, lower the cost of electricity generation and, ultimately, reduce electricity prices.
- At the same time, the Government exercises oversight over the Project Company in all key areas, including investment costs, procurement, contract execution and may

even appoint representatives to participate in company operations alongside the investor.

Project's expected blended finance structure:

- **Equity capital** (domestic and foreign): 30% of total investment
- **Loan source:** Re-lending facility from the Ministry of Finance / State Bank of Vietnam, accounting for 70% of total investment
- **Loan terms**: The full concessional benefits of the original loan (principal, interest and maturity conditions) are transferred to the Project Company under the re-lending arrangement

4.3. Implementation plan

In the current period, given the urgent need for rapid expansion in installed capacity to meet economic growth (183–236 GW by 2030), strong incentive mechanisms must be deployed. Specifically:

- Consider meeting investor requirements on payment commitments (take-or-pay) and minimum output guarantees.
- Consider a mechanism whereby the Government borrows concessional capital and re-lends it to enterprises, or provides sovereign guarantees for loans financing key power projects (with monitoring conditions), applicable to enterprises meeting certain criteria (scale, capability, willingness to accept oversight).
- Once system reserves stabilise and improve, and when 70–80 per cent of electricity demand is met through the competitive market (meaning that the average dispatchability of any plant reaches a comparable level), and once the spot market no longer operates under a price cap, then:
    - The electricity market will reflect true market costs and provide a level playing field for all investors.
    - Generators will be able to sell electricity on the market at any time with a high probability of dispatch.
    - The bankability of PPAs will increase, allowing both domestic and international commercial banks to finance projects.
    - Incentive mechanisms will be gradually reduced for new projects and ultimately phased out completely.

4.4. Detailed Action Roadmap (Short, Medium and Long Term)

The detailed implementation roadmap for enhancing private-capital mobilisation through PPPs in the renewable energy, power grid and BESS sectors in Vietnam is synthesised from the recommendations presented throughout this report.

This plan focuses on resolving the core constraints currently hindering investment: an inconsistent legal framework, an unbalanced risk-sharing structure, and the absence of long-term financial instruments. The following section sets out the detailed Implementation Plan, structured into three phases: Short-term (1 year), Medium-term (2–4 years), and Long-term (beyond 4 years).

Table 17: Overview of the Roadmap for Mobilising Private Capital through PPPs and Relevant Innovative Mechanisms in the Renewable Energy, Power Grid and BESS Sectors in Vietnam

Focus area	Short term (1 year) – Regulatory foundation & bottleneck resolution	Medium term – Deployment & financial-market development	Long term – Sustainable market development & integration	Institutional role
Regulatory framework, PPP and risk allocation	• Revise PPP financial-management decree (Decree 28/2021/ND-CP) and related implementing decrees • Issue standardised PPP models by renewable-energy technology • Finalise DPPA technical guidelines • Expand revenue-risk sharing and strengthen FX protection • Improve legal consistency across related laws	• Continue synchronisation of PPP, Electricity, Investment and Land Laws • Strengthen competitive electricity-market mechanisms	• Consider a dedicated Renewable Energy Law • Consolidate fully market-based investment mechanisms	MOF (lead on finance, risk, PPP); MOIT (technical and sector inputs)
Transmission grid and BESS	• Issue pricing and cost-recovery frameworks for BESS • Pilot transmission PPPs, prioritising BLT/DBLT models with availability payments	• Expand PPP pilots for grid and storage • Scale BESS deployment linked to renewable integration	• Gradually expand controlled private participation in grid infrastructure • Establish sustainable mechanisms for land clearance and cost sharing	MOF (PPP finance, payment mechanisms); MOIT (grid planning and technical standards)
Investment funds and green finance	• Quantify National Green Taxonomy categories • Develop standard PPP contract templates with payment and off-take provisions	• Promote green bonds and sustainability-linked instruments • Introduce credit-rating and disclosure requirements	• Integrate with international green-finance markets • Mobilise pension funds, private equity and venture	MOF (lead); SBV and line ministries (support)

			capital for long-term PPP investment	
Institutions, governance and enforcement	• Strengthen central coordination mechanisms • Provide targeted training on financial structuring, risk assessment and contract management	• Continue capacity building for PPP appraisal and E&S assessment	• Institutionalise data transparency and monitoring systems to support investor confidence	MOF (coordination); line ministries and provinces (implementation)

4.4.1. SHORT-TERM PHASE (1 YEAR): ESTABLISHING LEGAL FOUNDATION AND RESOLVING BOTTLENECKS THROUGH COORDINATION MECHANISMS

This phase focuses on resolving urgent legal conflicts, strengthening initial institutional capacity, and clarifying immediate risk mitigation mechanisms to stabilize the investment environment.

Table 18: Short-term implementation roadmap (1 year)

Field	Key Actions	Specific, measurable goals	Background/Notes
PPP Legal & Risks	Completing critical sub-law documents	1. Update the PPP Finance Decree: Amend Decree 28/2021/ND-CP to reflect the new ceiling on State capital contribution (up to 70% of total investment), especially for high-risk RE projects (offshore wind). 2. Update the PPP Implementation and Management Decree to align with potential changes in the Decree 28.	Reduces capital burden on private investors and improves PPP attractiveness.
	Standardize model contracts	3. Issue specialised Model PPP Contracts: Develop model BOT/PPP contracts for renewable energy and transmission projects. Clarify risk-allocation mechanisms for curtailment, FX fluctuations and policy changes.	Enhances project bankability and strengthens trust among IFIs and international lenders.

Power grid & BESS	Establishing a price framework and recovery mechanism	4. Issue Price Framework for BESS: Release service price framework and generation tariff for BESS and pumped storage hydropower. 5. Pilot Transmission PPP: Establish clear capital recovery and availability-payment mechanism under BLT/DBLT models.	Critical to attract capital into BESS and storage infrastructure.
Green Finance Market	Finalising the Green Taxonomy	6. Quantify the Green Taxonomy: Revise Appendix I of Decision 21/2025/QD-TTg with detailed quantitative technical criteria and thresholds for each energy-sector activity. Provide unified criteria for renewable energy projects, and orient the green credit and bond markets. Issue specific guidance and financial support for the implementation of green taxonomy and initiate sovereign green bond pilots.	Current ambiguity on “green” limits credit appraisal and green bond underwriting. Needed for alignment with international capital markets.

Electricity Purchase and Sale Mechanism	Completing DPPA	7. Issue DPPA Technical Guidelines: Finalise rules on wheeling / transmission charges, payment settlement and technical connection procedures.	Reduces EVN single-buyer risk and unlocks foreign corporate demand for RE procurement. This should be done by MOIT in consultation with MOF and relevant ministries.
Bidding mechanism	Improving RE procurement	8. Implement a unified one-round competitive bidding mechanism. Complete urgently to enable transparent investor selection for new RE capacity.	MOF to revise the overarching bidding framework (Bidding Law and guidance) with preferential clauses for RE.
Institutional Capacity & Coordination	Training programmes	9. Strengthen the MOF's central coordination role for PPPs, ensuring systematic coordination with MOIT and provincial People's Committees. 10. Deliver specialised training for MOF, MOIT and PPCs on PPP financial structuring, demand-risk assessment and contract management.	Addresses institutional fragmentation and procedural complexity. Builds technical and regulatory capacity for complex RE and BESS projects.

4.4.2. MEDIUM-TERM PHASE (1–3 YEARS): DEPLOYMENT AND DEVELOPMENT OF FINANCIAL MARKET

This phase focuses on implementing enacted legal reforms, expanding financial risk-sharing mechanisms, and developing long-term green financial instruments to support energy transition goals and attract international capital.

Table 19: Medium-term implementation roadmap (1-3 years)

Field	Key Actions	Specific, measurable goals	Background / Notes
PPP Legal & Risks	Apply a balanced risk sharing mechanism	1. Expand revenue risk: Amend Article 82 of the PPP Law to extend risk-sharing to market and demand-fluctuation risks, rather than limiting it solely to policy-related risks. 2. Strengthen foreign-exchange (FX) guarantees: Increase the FX guarantee ceiling from 30% to a higher level (e.g. 50% of post-expense VND revenue) for USD-intensive renewable energy and transmission projects.	Minimises dual risks (tenor and FX), and attracts long-term FDI investors.
	Legal synchronization	3. Harmonise the legal framework: Conduct a comprehensive review to address overlaps between the PPP Law, the Electricity Law 2024, the Investment Law and the Land Law. Issue inter-sectoral guidelines to shorten project preparation times.	Reduces compliance costs and accelerates project-development timelines.
Power grid & BESS	Expand PPP for infrastructure and RE integration	4. Pilot PPP for the transmission grid: Implement pilot PPP projects for 220 kV transmission lines and transformer stations or connection grids serving concentrated renewable energy clusters.	Ensures the grid keeps pace with renewable-energy expansion. Strengthens BESS as an attractive financial component.

		5. BESS incentives: Provide green-credit or incentive packages (JETP-linked) for standalone or hybrid BESS projects.	
Green financial market	Enable long-term capital markets	6. Promote green bonds: Provide tax incentives (e.g. 5% reduction in corporate income tax), transparent fees and credit-enhancement mechanisms to support long-term (10–20 year) green-bond issuance by EVN/NPT and the private sector. 7. Credit-rating requirements (CSR): Mandate or strongly apply corporate sustainability ratings for renewable-energy enterprises, and develop CSR criteria tailored to the energy sector. 8.1 Develop specialised PPP contract templates for priority sectors (offshore wind, BESS), clarifying specific risks, tariff-adjustment mechanisms and grid-access provisions. 8.2 Payment guarantees and off-take guarantees (e.g. 90% output for 15 years for offshore wind) in PPAs for large-scale renewable-energy projects.	Solving capital maturity mismatch risks, attracting international institutional and pension fund capital. Addresses capital-maturity mismatch risks and attracts institutional and pension-fund capital. Stabilises revenue streams, improves ADSCR and strengthens bankability.

Institutions & Governance	Strengthening institutional capacity	9. Continue strengthening central coordination: Build on short-term efforts by reinforcing the coordinating role of MOF/MOIT in financial appraisal, risk management and PPP-contract oversight, avoiding fragmentation or overlap. 10. Enhance E&S due-diligence capacity: Credit institutions must develop toolkits and specialist teams to assess environmental and social risks (ESG/E&S due diligence) in line with international standards (ICMA/IFC).	Ensures transparency, improves governance and expands access to international climate-finance sources.

4.4.3. Long Term Phase (4+ years): Sustainable market development and international integration

This phase aims to complete the institutional transition, ensure the private sector's capital autonomy, and maintain a stable investment pace without direct government guarantees, achieve capital market maturity, and prioritize systemic projects to achieve the Net-Zero 2050 target.

Table 20: Long-term implementation roadmap (4+ years)

Field	Key Actions	Specific, measurable goals	Base / footnote
Legal and Market	Fully marketize the investment mechanism	1. Continue reviewing and fully harmonising the PPP Law with the Electricity Law, the Investment Law and the Land Law to ensure a seamless investment process and	The State fully transitions to the role of “market creator and arbitrator". Provides a stable and coherent legal

		minimise unnecessary administrative procedures. 2. Competitive electricity market: Achieve 70–80% generation through the competitive electricity market. Remove the price ceiling mechanism in the spot market so that electricity prices reflect true market costs.	framework with maximum predictability for long-term investment commitments. Minimises inherent legal risks for investors.
PPP & Renewable Energy/ BESS	Ensuring project sustainability	3. Diversify investment models: PPP/BOT should primarily apply to strategic infrastructure (500 kV inter-regional transmission). Small and medium-sized RE/BESS projects should prioritise commercial DPPA/BOO models. 4. Strengthen the curtailment-compensation mechanism: Establish a clear and predictable compensation mechanism for curtailed output to mitigate financial risks for RE investors.	Ensures RE/BESS projects maintain financial performance (IRR) above the cost of capital (WACC).
Sufficient cost for electricity	Ensuring system sustainability	5. Apply full-cost methodologies for renewable energy instead of relying solely on LCOE when planning and evaluating RE projects and schemes.	
Power grid	Socialized controlled transmission	6. Strengthen the role of the private sector in the power grid: Expand private-sector participation in distribution grids, substations and grid-connection facilities for RE clusters under PPP/BOO models. 7. Land clearance counterpart fund: Establish a central/local land-clearance counterpart fund to ensure the timely delivery of transmission	Reduce investment burden for EVN and ensure grid adaptability to renewable energy.

		projects and to reduce non-technical risks for investors.	
Capital Mobilization	International green finance integration	8. Mobilise long-term blended-finance capital: Effectively leverage international commitments and blended-finance structures to supply long-term, low-cost USD financing for PPP and RE projects. 9. Data transparency: Build a comprehensive national database on CAPEX/OPEX, capital flows and ownership structures to reduce due-diligence and risk-assessment costs for international investors. 10. Leverage emerging International Finance Centres (IFCs) (e.g. Ho Chi Minh City, Da Nang) as hubs for global financial services and green capital, particularly FDI for RE and modern grid infrastructure. 11. Strengthen the participation of pension funds, PE funds and VC funds in PPPs through co-investment funds, blended-finance vehicles and targeted tax incentives.	The private sector assumes a central role (70–75% of total capital), supporting sustainable development aligned with Net Zero 2050. Diversifies capital sources and reduces reliance on foreign debt.

5. CONCLUSION

Viet Nam's ability to deliver the adjusted Power Development Plan VIII and meet its 2030 energy and climate objectives will depend on how rapidly it can mobilise large volumes of private capital through predictable, bankable, and fiscally disciplined mechanisms. Public-Private Partnerships form a central pillar of this effort. As highlighted in Resolutions No. 55 and No. 70, PPPs are essential not only for expanding transmission, storage, and strategic generation assets, but also for strengthening national energy security and enabling the transition to net-zero. When structured well, PPPs do not replace private capital; they unlock it by providing revenue certainty, transparent risk allocation, and a stable contractual environment that encourages institutional and commercial lenders to participate at scale.

Over the past decade, Viet Nam has shifted from a predominantly state-financed power system to one driven by private investment and FDI. The rapid expansion from 2017 to 2021 demonstrated that when contractual certainty and pricing frameworks align with international practice, private investors can deliver capacity at exceptional speed. The subsequent slowdown reflects structural constraints rather than diminished investor appetite. Fragmented legal frameworks, rigid risk-sharing provisions, inconsistent sub-law guidance, limited domestic long-tenor financing, and heightened foreign-exchange exposure have collectively increased project risk, weakened bankability, and delayed investment in critical infrastructure such as transmission, battery storage, offshore wind grids, and large-scale renewables.

Addressing these constraints requires a coordinated reform agenda. Viet Nam has already taken important steps through the PPP Law and recent amendments that increase state-capital participation and modernise financial instruments. However, implementation challenges remain. No new energy PPPs have reached contract signature under the current framework, and existing projects are transitional. To move from a legal foundation to a fully functioning PPP market, the framework must better accommodate project-level realities, particularly revenue volatility, exchange-rate risk, curtailment compensation, and the need for long-term guarantees or availability-payment structures.

Strengthening the PPP ecosystem must go hand in hand with deepening the green-finance architecture. International experience shows that robust PPP frameworks attract the majority of green bonds, sustainability-linked loans, and blended-finance instruments. Viet Nam can replicate this momentum by finalising its national green taxonomy, issuing sovereign and sub-sovereign green bonds, scaling viability gap funding, enhancing FX-mitigation tools, and improving credit-enhancement mechanisms that allow domestic and foreign lenders to extend long-tenor financing. A more sophisticated project-finance ecosystem will also require standardised financial metrics (NPV, IRR, B/C ratios), stronger disclosure requirements, and clearer coordination among MOF, MOIT, SBV, and provincial authorities.

The reform package proposed in this report aligns with the Ministry of Finance's ongoing revision of the PPP regulatory framework, including the law, implementation plan, and financial management regulations. It offers a fiscally prudent pathway that support Viet Nam in mobilising the USD 135–150 billion in predominantly private investment required by 2030 while safeguarding macroeconomic stability and managing contingent liabilities. The approach prioritises availability-payment PPP models for transmission and storage, expanded state-capital participation for high-risk projects, investor-initiated PPP proposals, sector-specific model contracts, upgraded procurement and monitoring systems, and a green-finance ecosystem capable of providing long-term, low-cost capital.

Finally, the analysis underscores the need for more rigorous quantitative tools to support implementation. This includes modelling FX volatility and tenor mismatch, forecasting curtailment risk, designing PPP and BLT structures for transmission and BESS, and developing updated metrics for taxonomy-aligned project evaluation. Timely adoption and disciplined execution of these measures will allow Viet Nam to maintain reliable and affordable power for high-quality growth, accelerate its energy transition, and consolidate its position as a regional leader in clean-energy investment.

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