ENERGY TRANSITION PARTNERSHIP

REPORT

RECOMMENDATIONS FOR THE IMPLEMENTATION OF PPP IN VIETNAM

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Department for Energy Security & Net Zero

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Environnement et Changement climatique Canada

Australian Government
Department of Climate Change, Energy, the Environment and Water

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EXECUTIVE SUMMARY

Vietnam's ambitious energy transition, underpinned by its commitment to achieving net-zero greenhouse gas emissions by 2050, demands urgent and unprecedented capital investment. By 2030, total investment needs are projected to reach USD 136.3 billion, approximately 33% of national GDP. However, conventional public financing channels, such as state budgets and official development assistance (ODA), are increasingly constrained. The availability of concessional finance is declining, while persistent inefficiencies in public investment disbursement continue to limit fiscal impact. In this context, unlocking new financing streams and leveraging private capital is essential to bridge the funding gap and safeguard national energy security.

Public-Private Partnerships (PPPs) have emerged as a strategic pathway to mobilize private capital for green infrastructure, addressing growing energy demand while aligning with Vietnam's long-term climate goals. Defined by the World Bank (2017) as a long-term contract in which a private party undertakes significant risk and management responsibility in delivering a public asset or service with payment linked to performance, PPPs offer a blended finance mechanism capable of combining public oversight with private sector dynamism. Globally, several successful PPP models have been implemented in the renewable energy and grid sectors. For example, in Chile, the Cerro Dominador solar thermal power plant was developed under a PPP structure with support from public guarantees and concessional financing, helping attract private capital for a first-of-its-kind project in Latin America. In Australia, the Hornsdale Power Reserve, a large-scale BESS project, was developed through a PPP where the state government provided regulatory support and Tesla delivered the battery system, stabilizing the grid and enabling greater renewable energy integration. Similarly, in Morocco, the Noor Ouarzazate solar complex, which includes green hydrogen production, leverages a PPP model with public-private risk-sharing to drive investment in both solar and emerging hydrogen technologies. These case studies illustrate how **PPPs, when designed effectively, can unlock investment in capital-intensive clean energy infrastructure while balancing public interest and private** incentives.

Vietnam has officially recognized PPPs as one of the key financing modalities for energy sector development. **The Politburo's Resolution 55-NQ/TW on the Orientation of the Viet Nam's National Energy Development Strategy to 2030 and outlook to 2045 calls for "renovating financial policies to attract non-state investment capital and facilitate energy projects through the PPP model."** This approach is expected to help mobilize private capital while aligning with broader national objectives of increasing the share of renewable energy, reducing greenhouse gas emissions, and simultaneously ensuring economic growth and energy security.

This report, developed under the initiative “Facilitating Private Sector’s Access to and Engagement in Vietnam’s Energy Sector,” explores global best practices that demonstrate the critical importance of political commitment, sound legal and institutional frameworks, and financially viable project structures in successful PPP implementation. The report provides an evidence-based assessment of the current state of PPPs in Vietnam’s energy sector. It evaluates the financial and operational performance of selected completed and ongoing projects, examines the regulatory framework governing PPP implementation, and identifies gaps and opportunities based on both international experiences and local contexts.

CURRENT STATE OF PPP IN VIETNAM

For effective PPP development and implementation, a strong framework is required, anchored in clear policies, harmonized legislation, streamlined procedures, and transparent fiscal governance. In Vietnam, recent legislative progress, including the enactment of the Law on Public-Private Partnership Investment No. 64/2020/QH14 and subsequent decrees such as Decree 35/2021/ND-CP and Decree 28/2021/ND-CP, has laid the foundation for a more unified legal framework. It enables contract modalities such as Build-Operate-Transfer (BOT), Build-Own-Operate (BOO), and Build-Lease-Transfer (BLT), helping attract private sector investment in critical infrastructure.

Despite these legal strides, implementation outcomes have been limited. PPPs in Vietnam’s energy sector face high upfront costs and difficulties in capital mobilization, limiting the feasibility of many projects due to fluctuating fuel prices, non-transparent electricity pricing mechanisms, and restricted access to sovereign guarantees. Despite these constraints, the energy sector remains pivotal to Vietnam’s energy security and economic growth. The country’s energy projects represent the only area where Vietnam has successfully attracted large-scale foreign investment through PPPs.

As of 2024, Vietnam has 19 operational BOT thermal power projects - primarily coal-fired, with some transitioning to liquefied natural gas (LNG), with a combined capacity of approximately 27,000 MW and an estimated investment value of USD 200 billion. While these projects have attracted substantial foreign capital, **they now face increasing global scrutiny due to evolving ESG standards and tightening decarbonization policies. Public–private partnerships will need to be expanded and redirected toward renewable energy and grid infrastructure projects, in alignment with Resolution 55, Vietnam’s net-zero commitments, and global trends in clean energy transition and decarbonization.** To support this shift, PPPs can be applied to emerging sectors such as energy efficiency, demand-side management (DSM), waste-to-energy, offshore wind, and battery energy storage systems (BESS). These areas, structured through PPP models such as BOT, BOO, or BLT models, can attract private investment while advancing Vietnam’s sustainable energy goals.

To provide an in-depth assessment, this study conducts a financial impact analysis using Net Present Value (NPV) and Internal Rate of Return (IRR), coupled with scenario simulations under varying tariff and output assumptions to offset for the lack of available data. The analysis focuses on 11 BOT projects that are either complete or commercially operational (e.g., Phu My 2.2, Phu My 3, Hai Duong, Mong Duong 2), as the remaining projects are still under preparation. These projects were chosen to reflect the real-world performance of existing energy BOT investments.

The findings show that BOT power projects in Vietnam display highly variable economic viability, heavily influenced by technology type, tariff levels, and operating costs. In particular, coal-fired plants, which dominate Vietnam's legacy BOT portfolio, face mounting challenges. Most coal-fired plants, particularly those with high CAPEX and low tariffs, such as Van Phong 1 and Hai Duong, struggle to achieve economic viability even under optimistic tariff scenarios. This underscores that **coal-based BOT projects are increasingly exposed to significant financial risks, heightening the likelihood of stranded assets as global and domestic climate policies tighten.**

High O&M costs, especially in plants with advanced emissions control technologies, require careful cost management and possibly contract renegotiation. These **financial vulnerabilities make continued reliance on coal-fired BOT projects neither economically sustainable nor consistent with Vietnam's net-zero commitments. Instead, they highlight the urgency of shifting PPP investment focus toward renewable energy, grid modernization, and energy storage, where private investment can generate sustainable returns and support the country's transition to a low-carbon economy.**

Realizing this transition through PPPs requires overcoming substantial legal, institutional, and financial barriers. The following section identifies these structural barriers, which currently impede effective deployment of private capital into the renewable energy sector and limit the potential of PPPs to drive Vietnam's clean energy shift.

STRUCTURAL BARRIERS TO PPP EFFECTIVENESS

Upon an in-depth analysis of the legal framework, this report finds legal, financial, institutional, and procedural gaps affecting the entire PPP lifecycle from project preparation to execution:

- **Legal and Financial Risks**: The current PPP regulatory environment is fragmented due to overlapping provisions across the Law on Investment, the Law on Bidding, and various sectoral laws and decrees. This complexity hinders legal clarity and reduces investor confidence. Rigid risk allocation frameworks place disproportionate risks on private developers, particularly in energy PPPs where revenue streams are uncertain. Power Purchase Agreements (PPAs), which are central to energy investments, remain

limited in duration and enforceability. The absence of sovereign guarantees and effective dispute resolution mechanisms further compounds risks for long-term investments. Additionally, capital markets remain underdeveloped, and financial regulations constrain the availability of long-term bank loans and hedging instruments, increasing exposure to currency and demand risks.

- **Capital Mobilization Challenges**: Although the recent amendment under Law No. 57/2024/QH15 raises the state capital contribution cap to 70% for large-scale projects, outdated provisions in Decree 28/2021 create inconsistencies. Domestic banks primarily focus on short-term lending and face difficulties in identifying and financing green projects due to the absence of clear green criteria and sector-specific guidance. Foreign investors face high transaction costs and insufficient risk mitigation tools, making it difficult to finance capital-intensive renewable projects. Although Decree 28 permits project bonds, their uptake is low due to the absence of strong credit enhancements and viable incentive mechanisms.
- **Contract Management Issues**: Standard contract templates lack the flexibility required to address sector-specific risks, such as fluctuations in fuel prices, or regulatory changes. This rigidity increases the operational risks borne by investors. Dispute resolution mechanisms are weak, and generic contract terms are ill-suited for complex projects in the energy sector, such as those involving tariff escalation or grid integration. These weaknesses directly impact investor confidence and link back to broader issues of legal uncertainty and financial risk.
- **Risk-Sharing Limitations**: The current revenue-sharing thresholds (75–125%) do not adequately accommodate market risks such as fluctuating electricity demand or price volatility. This inflexibility places further financial pressure on investors. The process for accessing contingency funds is slow and constrained by budgetary limitations, which may result in payment defaults, further undermining investor trust.
- **Procedural and Capacity Gaps**: The complex and time-consuming appraisal processes, coupled with bureaucratic investor selection procedures and weak contract management, often result in project delays and cost overruns. Limited technical capacity in areas such as financial structuring, risk assessment, demand forecasting, and stakeholder engagement impedes the government's ability to manage PPPs effectively throughout their lifecycle.

Collectively, these barriers not only deter investment into new renewable projects but also exacerbate the risks associated with existing fossil-fuel BOT projects, reinforcing the urgency of comprehensive PPP reform to enable a successful energy transition.

RECOMMENDATIONS

Addressing these barriers is critical if Vietnam is to pivot its PPP framework away from financially unsustainable coal and gas projects and toward renewable energy, storage, and grid modernization. Building on these findings, the report offers targeted recommendations to support ongoing policy reform, with a particular focus on enhancing the public–private partnership framework. Strengthening the PPP framework is essential to improve the financial viability, risk allocation, and investor confidence in energy and infrastructure projects, and to ensure alignment with Vietnam's broader institutional reforms and sustainable development goals.

Key recommendations include:

- **Legal and Financial Reforms**: Vietnam should harmonize the PPP Law with other key legal instruments, such as the Law on Investment, Law on Bidding, and related decrees, to remove inconsistencies that hinder implementation. Decree 28 should be updated to reflect the revised 70% cap on state capital contributions and clarify public budget allocation procedures for PPPs. The government should also provide more flexible revenue-sharing ranges to mitigate market risks. To support financially viable but commercially marginal projects, viability gap funding (VGF) should be scaled up. Furthermore, Vietnam should promote the issuance of green bonds by offering tax incentives and credit enhancements and issuing national green taxonomy.
- **Contract and Risk-Sharing Improvements**: The government should develop sector-specific PPP contract templates, particularly for clean energy projects, that address tariff escalation, input cost volatility, and grid access challenges. Contracts should incorporate flexible adjustment clauses and robust dispute resolution mechanisms to better manage long-term risks. To enhance risk-sharing, the framework should include pre-negotiated clauses for key risks, define audit and review timelines clearly, and link contingent liabilities to the Medium-Term Expenditure Framework (MTEF) to ensure predictability and timely public contributions.
- **Institutional Enhancements**: Vietnam should strengthen the Ministry of Finance's role as the central coordination body for PPPs, while ensuring effective collaboration with other line ministries (MOIT for the energy sector), and key stakeholders including the Vietnam Chamber of Commerce and Industry. It is also critical to upgrade the Vietnam National Electronic Procurement System (VNEPS) by integrating dedicated PPP modules that allow real-time tracking of project appraisal, procurement, land acquisition, and contract management. This would significantly improve transparency, accountability, and inter-agency coordination throughout the PPP lifecycle. Additionally, Provincial People's Committees (PPCs) should be empowered to streamline local approvals, land acquisition, and stakeholder engagement for PPP projects, ensuring alignment with national policies while addressing region-specific needs.

Going forward, the PPP framework must evolve to reflect practical realities and to support Vietnam's strategic shift toward sustainable energy, with targeted applications in areas such as energy efficiency, demand-side management, waste-to-energy, offshore wind, solar energy, and battery energy storage systems. A strong, transparent, and investor-friendly PPP ecosystem, supported by harmonized laws, innovative financial instruments (such as green bonds, green credits, and green FDI), and capable institutions, is essential to unlock private capital and reduce fiscal pressure on the state budget. These reforms will not only strengthen the enabling environment for PPPs but also ensure that Vietnam can deliver on its long-term development and climate objectives.

As a next step, the forthcoming report under this initiative will explore innovative financing mechanisms in greater depth, focusing on how these tools can be leveraged to channel private capital into renewable energy PPPs and broader infrastructure development, reinforcing Vietnam's ambitions for a green and inclusive economic future.