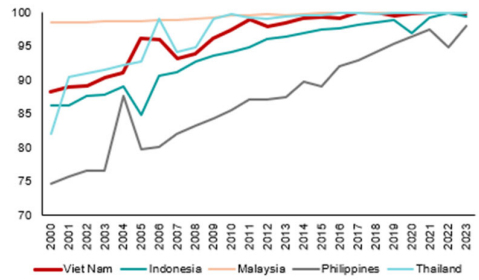
# Infrastructure Development in Vietnam: Achievements So Far and Challenges Ahead[1]

March 4, 2026

## I. Introduction

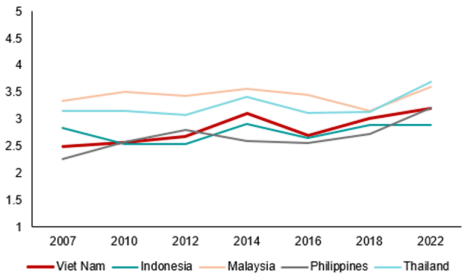
1. **Infrastructure development has played a central role in Vietnam's economic growth and structural transformation.** Given the country's reliance on export-oriented manufacturing[2] production and foreign direct investment (FDI), improving the business environment has been a key policy priority for Vietnam, with infrastructure investment being a major focus. These efforts have led to, for instance, near-universal access to electricity and notable improvements in transport infrastructure over the past decades (Figure 1 & 2). However, firm-level surveys continue to cite power and transport infrastructure as constraints to doing business, suggesting remaining gaps (Figure 3).[3]

**Figure 1. Electrification Rate (% of Population)**



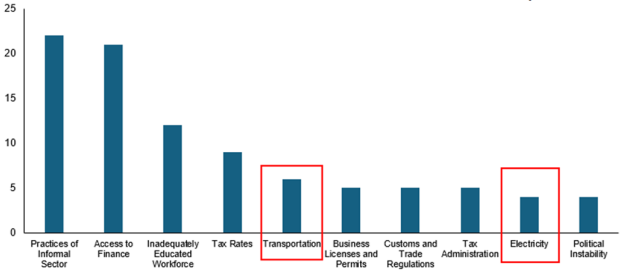

Source: World Development Indicators

**Figure 2. Logistics Performance Index: Quality of Transport Infrastructure (1=Low, 5=High)**




Source: World Development Indicators

**Figure 3. Top 10 Business Environment Constraints in Vietnam (% of Interviewed Firms)**




Source: World Bank Enterprise Survey 2023
Note: The World Bank Enterprise Surveys 2023 for Vietnam interviewed business owners and top managers from 1,028 firms across various industrial sectors, geographic regions, and firm sizes.

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[2] Power and transport infrastructure are the backbone of manufacturing. To survive global competition, export-oriented firms require stable, affordable energy and high-quality transport networks to optimize production and ensure timely international delivery.

[3] For example, Vietnam's total logistics costs amounted to 16.8 percent of GDP as of 2023, exceeding the global average of 10.6 percent, according to the Ministry of Industry and Trade.

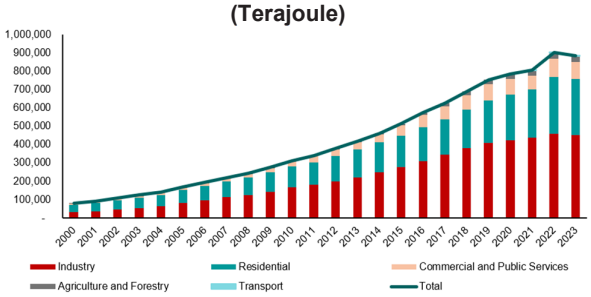
2. **Given the increasingly uncertain global trade environment, infrastructure investment can also play a key role in supporting economic growth, thereby strengthening Vietnam's resilience.** As an export-oriented economy, Vietnam is highly dependent on external demand and therefore vulnerable to global trade uncertainties, including U.S. tariff policies. In this context, accelerating public infrastructure investment is a crucial policy tool to bolster near-term growth, while strengthening the economy's growth potential in line with the government's long-term growth aspirations.[4]

3. **This Analytical Note provides a comprehensive assessment of infrastructure developments in Vietnam, highlighting both progress achieved and challenges ahead. Sections II-1 and II-2** review the recent developments, with a particular focus on the government's infrastructure plans for the power and transportation sectors. **Section III** then examines the challenges to achieving these ambitious targets and discusses their policy implications. Finally, **Section IV** summarizes the key findings and concludes the Note.

## II. Recent Developments: The Power Sector

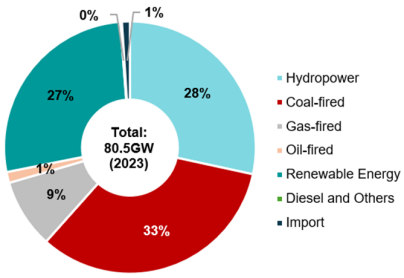
4. **Rapid growth in electricity demand has driven the increase in power generation capacity, particularly in hydropower, coal-fired power, and renewable energy.** Between 2000 and 2023, total electricity demand increased more than tenfold, led by the industrial and residential sectors (Figure 4). To meet this sustained demand, recent additions have been concentrated primarily in coal-fired and renewable power plants, while new hydropower development has been limited (Figure 5). Vietnam continues to remain a net importer of electricity, importing power mainly from Laos and China, while exporting electricity to Cambodia.

**Figure 4. Electricity Final Consumption by Sector (Terajoule)**




Source: IEA

**Figure 5. Installed Capacity by Fuel Type**




Source: EVN

5. **Of significance, the recent expansion of renewable energy has heightened the importance of adequate high-voltage transmission infrastructure.** In the 2010s, Vietnam introduced a feed-in tariff (FiT)[5] that guaranteed attractive prices for electricity generated from renewable sources, spurring rapid development in this sector.[6] Suitable sites for solar and wind power generation are largely concentrated in the south-central provinces such as Ninh Thuan and Binh Thuan. Connecting these generation hubs to major demand centers— Hanoi in the north

[4] Public investment for 2026–2030 has risen to VND8,510 trillion, more than doubling the 2021-2025 plan. As a result, the public investment budget for 2026 is 41.7 percent higher than that for the 2025 initial budget. Part of this funding is expected to support mega-projects such as the North–South high-speed rail and expressway, Long Thanh International Airport, Can Gio International Transshipment Port, and the Ninh Thuan Nuclear Power Plant.

[5] A Feed-in Tariff (FiT) promotes renewable energy investment by providing long-term contracts and guaranteed pricing. Governments or utilities commit to purchasing power from sources like solar and wind at a fixed, premium rate. Beyond financial incentives, a FiT often mandates priority grid access, requiring grid operators to connect renewable producers and buy their electricity before using fossil-fuel sources.

[6] While the FiT successfully drew massive investment into renewable energy, its generous rates increased costs for Electricity Vietnam (EVN)—the state utility mandated to purchase all renewable output at a fixed price for 20 years. The FiT is currently being phased out, with reduced rates applied to projects that missed their commercial operation deadlines. Instead, the Direct Power Purchase Agreement (DPPA) mechanism was formally enacted in July 2024 as the successor to the FiT system (see Box A).

and Ho Chi Minh City in the south—requires extensive high-voltage transmission lines. Substantial progress has been made in this regard: between 2016 and 2020, 78 percent of the planned 500-kV transmission lines and 74 percent of the planned 220-kV lines were completed, marking an important step toward supporting energy integration.[7] Nonetheless, addressing the prevailing infrastructure gaps presents an opportunity to fully meet the growing demand and ensure reliable electricity supply.

6. **The latest Power Development Plan (PDP8) maps out an ambitious target for Vietnam's power sector, building on the progress achieved and addressing remaining gaps.** Covering the period 2021–2030 and articulating a long-term vision to achieve net-zero emissions by 2050, the PDP8 aims to accelerate renewable energy deployment and reintroduce nuclear power. Initially approved in May 2023 and revised in April 2025, the key features are capacity expansion, energy mix restructuring, and the adoption of new technologies (Figure 6). Details of the plan, key targets, and initiatives are set out in Table 1.

**Figure 6. Key Features of PDP8**

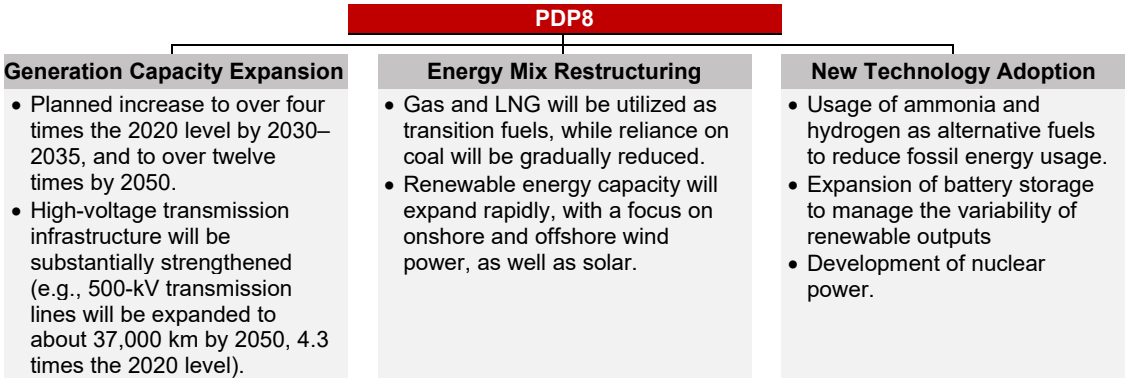



**Table 1. Targets for Generation Capacity under the Revised PDP8**

| Source | | 2020 | | 2030/2035 (Plan) | | 2050 (Plan) | |
|---|---|---|---|---|---|---|---|
| Coal | | 21.6GW | 31% | 31.1GW | 11% | - | - |
| | Switch to Ammonia | - | - | - | - | 25.8GW | 3% |
| Domestic Gas (& Oil) | | 8.9GW | 13% | 14.9GW | 5% | - | - |
| Imported LNG | | - | - | 22.5GW | 8% | 28.5GW | 3% |
| | Switch to Hydrogen | - | - | - | - | 26.1GW | 3% |
| Renewable | Onshore Wind | 0.5GW | 1% | 38.0GW | 14% | 91.4GW | 11% |
| | Offshore Wind | - | - | 17.0GW | 6% | 139.1GW | 17% |
| | Solar | 16.7GW | 24% | 73.4GW | 26% | 295.7GW | 35% |
| | Biomass & W-to-E | 0.4GW | 1% | 4.8GW | 2% | 9.1GW | 1% |
| | Battery | - | - | 16.3GW | 6% | 96.1GW | 11% |
| | Pumped Hydro | - | - | 6.0GW | 2% | 21.3GW | 3% |
| Hydro | | 20.8GW | 30% | 34.7GW | 12% | 40.6GW | 5% |
| Nuclear | | - | - | 6.4GW | 2% | 14.0GW | 2% |
| Others | | - | - | 3.5GW | 1% | 39.1GW | 5% |
| Import | | 0.6GW | 1% | 12.1GW | 4% | 14.7GW | 2% |
| Total Capacity | | 69.2GW | 100% | 280.7GW | 100% | 841.5GW | 100% |
| Growth (2020=1) | | x1.0 | → | X4.1 | → | X12.2 | |

Source: PDP8; ASEAN Center for Energy: AMRO staff compilations
Note: The table shows the upper bound of the generation capacity target ranges specified under PDP8. For the 2030/2035 targets, offshore wind and nuclear power are planned to commence operation by 2035, while other generation sources are expected to be developed by 2030.

[7] In 2024, the government and EVN fast-tracked and completed the construction of the 500kV Circuit-3 transmission line in six months, a project stretching from Central to Northern Vietnam. This project was prioritized to mitigate the blackout risks that disrupted the industrial North in 2023. The line serves as the physical backbone for transmitting renewable energy from the sun- and wind-rich Southern and Central regions to the high-demand industrial hubs in the North.

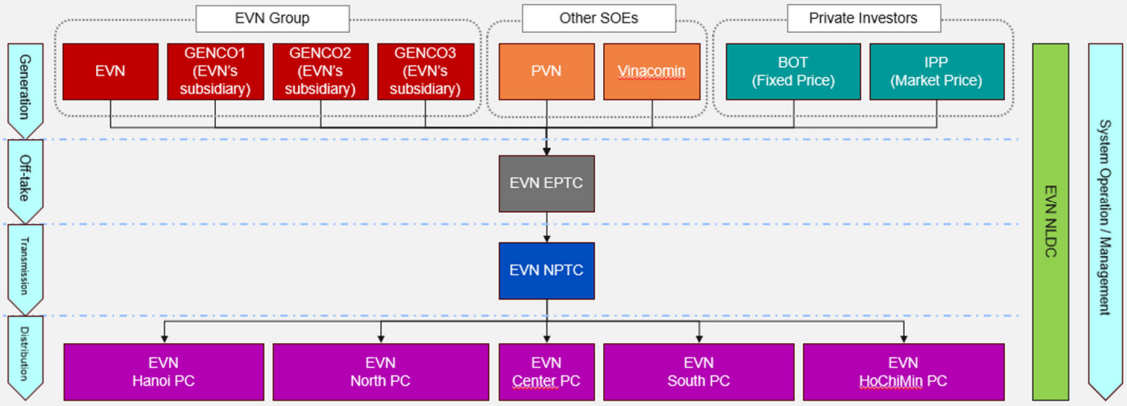
**Box A. Electricity Vietnam (EVN) and the Power Sector Reform**

**Brief Overview**

The power sector in Vietnam is organized into five main segments: generation, offtake, transmission, distribution, and system operation. Electricity Vietnam (EVN), a state-owned utility company, plays an important role across these five segments. There are other private and non-EVN players, but their participation is currently limited to the generation segment only (Figure A1).

Despite the rise in private generation fueled by Public-Private Partnership (PPP) policies, the EVN group still accounts for nearly 40 percent of total installed capacity.[8] Under the current single-buyer model, the EVN Electric Power Trading Company (EPTC) purchases the majority of electricity from these producers. Power is then transmitted across regions by the EVN National Power Transmission Corporation (NPTC), while regional distribution subsidiaries (EVN Power Corporations (PCs)) manage delivery to end-users. Additionally, EVN National Load Dispatch Center (NLDC) serves as the system operator for the national grid, monitoring and controlling the grid to ensure stability. Regulatory oversight is provided by the Ministry of Industry and Trade (MOIT), which is responsible for formulating legislation, developing power master plans, licensing projects, and approving electricity and transmission tariffs.

**Figure A1. Structure of Power Sector**




Source: JICA; AMRO Staff Compilations

**Power Sector Reform**

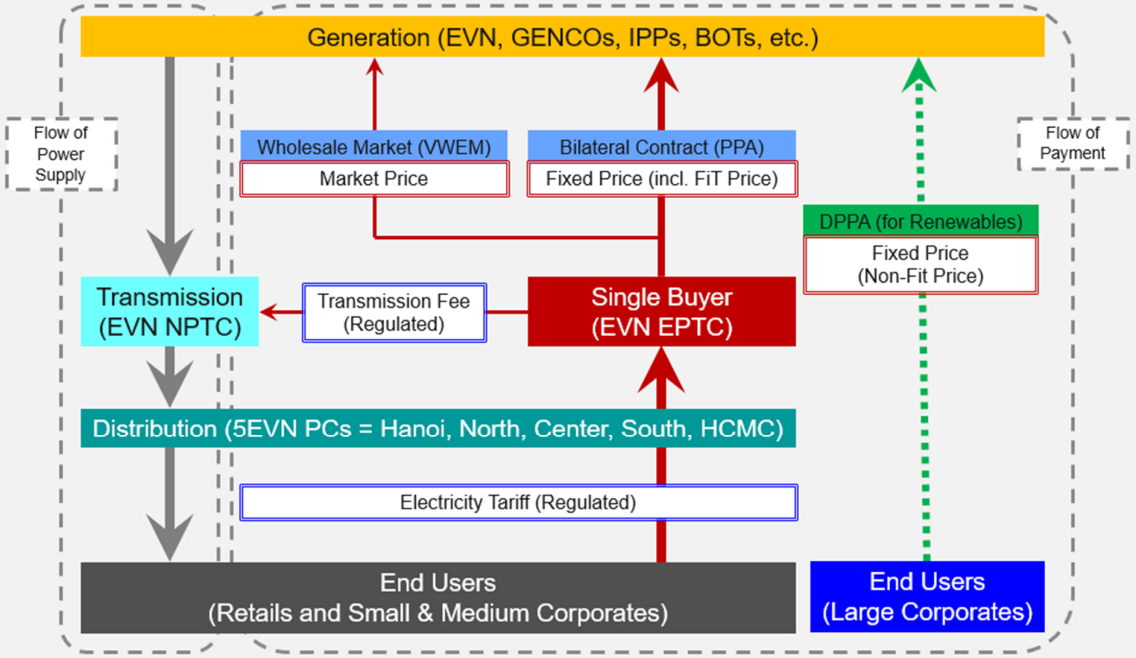
**Prolonged price-cost mismatch drove EVN into significant net losses, underscoring the urgent need for comprehensive electricity tariff reform.** Rising international fuel prices, combined with the depreciation of the Vietnamese Dong, pushed EVN's net losses to approximately VND21 trillion in 2022 and VND27 trillion in 2023. The two tariff hikes in 2023 were insufficient to offset these costs. Although a further increase in 2024 returned the group to a net profit of VND8 trillion, EVN still carries accumulated losses of VND43 trillion. In response, the 2024 Electricity Law and the subsequent Decree 72/2025/ND-CP introduced a mechanism to review average retail electricity prices every three months, enhancing transparency in cost pass-through, including exchange rate impacts. Nevertheless, some private investors continue to view EVN's creditworthiness as inadequate, requiring government guarantees to secure EVN's offtake and payment obligations for their power generation projects.

**The newly introduced Direct Power Purchase Agreement (DPPA) scheme is expected to reduce EVN's procurement costs and investment burden, while accelerating renewable energy development.** Under the previous FiT "single-buyer" model, all renewable electricity was sold exclusively to EVN. By contrast, the DPPA allows private producers to sell power directly to large corporate consumers, bypassing EVN (Figure A2). This change ends EVN's status as the sole off-taker, easing its financial liabilities and facilitating private investment. The mechanism also acts as a key driver for FDI, enabling

[8] Participants in the generation segment include EVN and its subsidiaries (GENCO1–3), other state-owned enterprises such as Petrovietnam (PVN) and Vinacomin, as well as private investors including BOTs and IPPs. According to EVN, BOTs sell electricity at a fixed price determined under individual power purchase agreements, while IPPs sell electricity at market prices observed in the whole sale market.

private entities, including multinational giants like Apple and Samsung, to fulfill their sustainability goals. Over the medium term, by allowing private entities to fund and construct their own off-grid transmission lines and power plants, the government can partially alleviate the fiscal burden on the public balance sheet.

**Figure A2. Transition from Single-Buyer to DPPA Model**

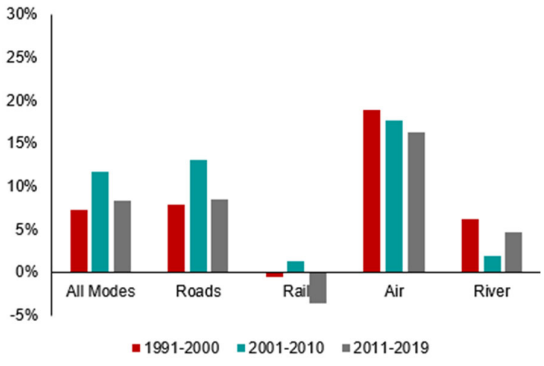



Source: JICA; AMRO staff compilations

## III. Recent Developments: The Transportation Sector

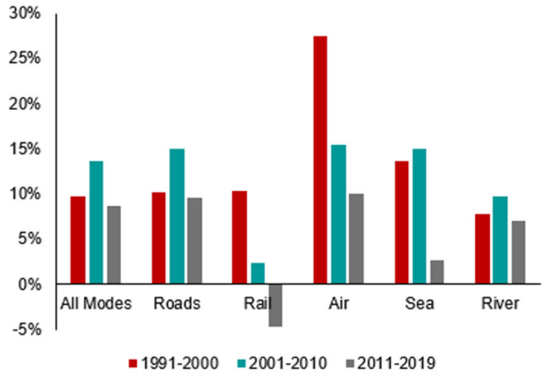
7. **In the transportation sector, the demand for passenger and freight transportation has shown robust growth.** In the three decades leading up to the COVID-19 pandemic, the sector recorded an average growth of approximately 10 percent annually. Vietnam's transportation infrastructure comprises four primary modes: road, rail, waterways (inland and maritime), and aviation. Among these, road transport accounts for the dominant share—in terms of both passenger and cargo volumes. While economic expansion has spurred demand across nearly all sectors, rail transport has significantly underperformed, losing share to road and aviation in recent years (Figures 7–10).

**Figure 7. Average Annual Growth of Passenger Transport (%)**



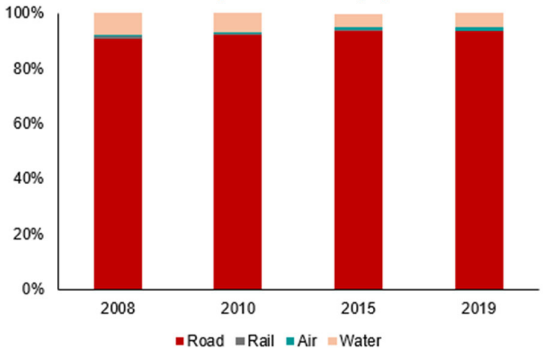

Source: General Statistics Office; JICA; AMRO staff compilations

**Figure 8. Average Annual Growth of Cargo Transport (%)**



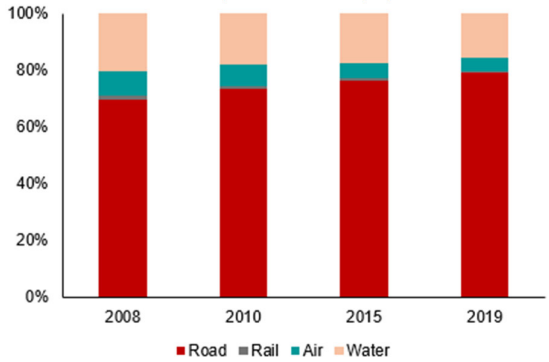

Source: General Statistics Office; JICA; AMRO staff compilations

**Figure 9. Share of Passenger Transport Volume (%)**




Source: General Statistics Office; JICA; AMRO staff compilations

**Figure 10. Share of Cargo Transport Volume (%)**

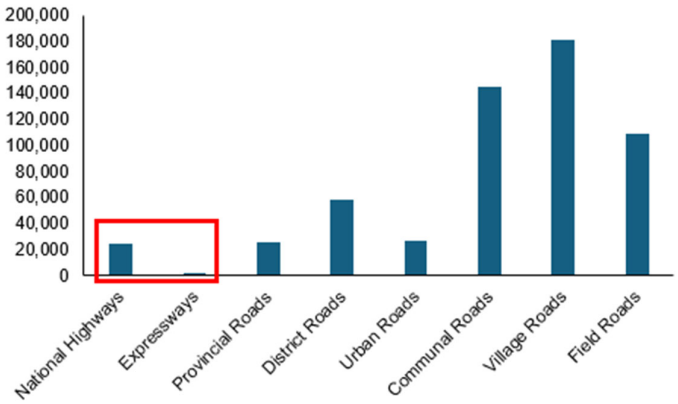



Source: General Statistics Office; JICA; AMRO staff compilations

8. **The expansion of national highways and expressways has been a key focus for road infrastructure development.** Although the country possesses an extensive nationwide road network, the majority consists of local-level roads such as provincial, communal, and village roads (Figure 11). Due to congestion and poor maintenance, existing roads often fail to support adequate speeds, leading to low transport efficiency. Consequently, the government is shifting its focus to the construction of high-quality national highways and expressways. Key projects identified in the Road Network Master Plan 2021–2030 include the North-South expressway (eastern side), ring roads in Hanoi and Ho Chi Minh City, and expressways connecting the borders of China, Lao PDR, and Cambodia (Figure 12). According to the Ministry of Construction, approximately 2,268 kilometres of expressways are operational as of May 2025, with an additional 1,833 kilometres under construction.

9. **Apart from roads, the railway system is currently undergoing modernization through the introduction of high-speed railways and urban metro networks.** The existing infrastructure, originally constructed over a century ago during the French colonial era, suffers from chronic underinvestment (see Box B).[9] Prolonged underinvestment has left the sector trailing other modes of transportation in both efficiency and competitiveness. To address this, the government is planning to develop the North-South high-speed railway in collaboration with international partners. Metro systems are under construction in major cities like Hanoi and Ho Chi Minh City, with some lines already commencing operations (Figure 12).

**Figure 11. Road Networks as of September 2024 (kilometres)**




Source: Ministry of Transport; AMRO staff compilations

**Figure 12. Key Road/Railway Projects**

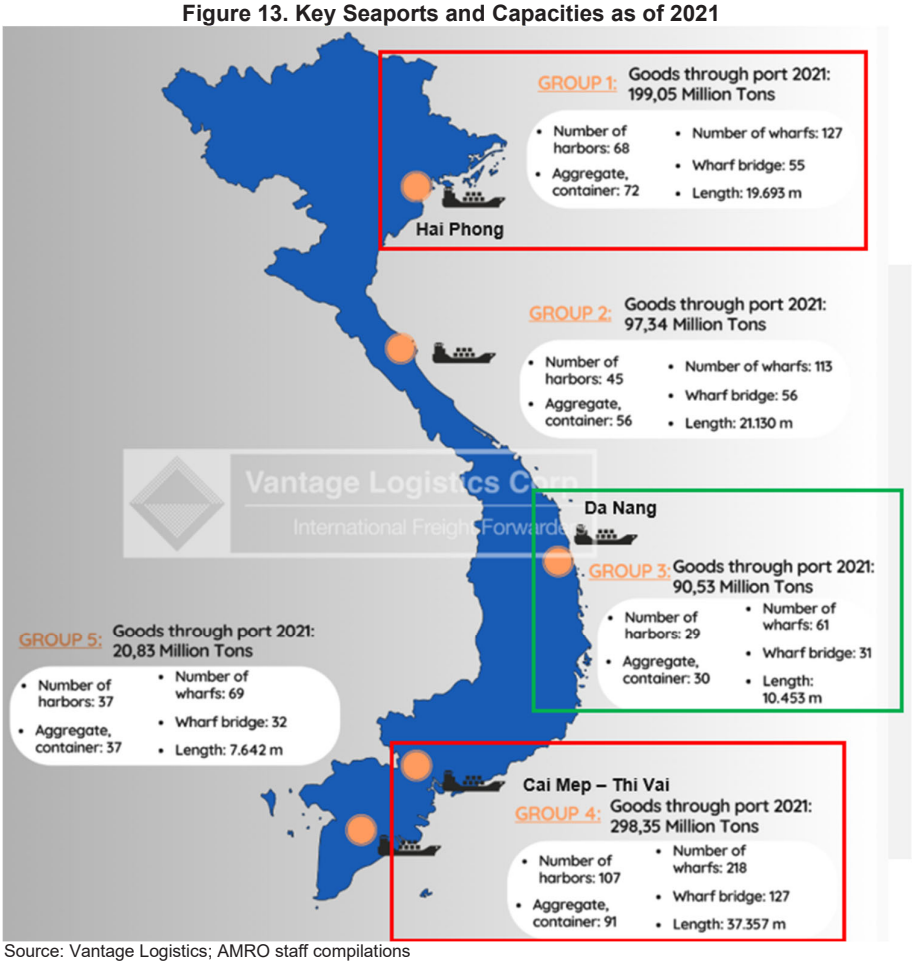

Source: VinaCapital; AMRO staff compilations

[9] The Ministry of Construction reports that only 3 percent of the infrastructure budget has historically been allocated to the rail sector. Consequently, most of the network still utilizes outdated narrow-gauge tracks and continues to rely on diesel fuel.

10. **In the shipping industry, Vietnam has made significant progress in developing key infrastructure, including deep-sea ports.** Seaports serve as the backbone of the nation's trade-driven economy, with major international gateways including Hai Phong in the north and Cai Mep-Thi Vai in the south—amongst the few deep-sea ports capable of accommodating large container vessels. Da Nang Port also plays a vital role as a logistics hub, serving as the starting point for the East-West Economic Corridor, which connects Vietnam to Lao PDR, Thailand, and Myanmar (Figure 13). The establishment of these logistical hubs has certainly provided the impetus to drive trade and investment activities in Vietnam, and there are plans for further expansion, including improving intermodal connections between ports and other modes of transportation.

11. **Air transportation leads the transport sector, propelled by strong and sustained passenger and cargo demand.** Growth in air transport demand has outpaced all other transportation modes (Figures 7 & 8), leaving major international airports in Hanoi, Da Nang, and Ho Chi Minh City operating well beyond their designed capacities (Table 2). Under the government's 2030 vision, Vietnam plans to upgrade 22 existing airports[10] and add 11 new facilities to the national network. Most notably, the new Long Thanh International Airport in the south is designed to become a major regional hub, with an ultimate annual capacity of 100 million passengers and 5 million tons of freight.[11]

**Figure 13. Key Seaports and Capacities as of 2021**




Source: Vantage Logistics; AMRO staff compilations

[10] For instance, at Hanoi's Noi Bai International Airport, Terminal 2 is being expanded to increase international flight capacity, and initial preparations are underway for the future construction of Terminal 3. Meanwhile, at Ho Chi Minh City's Tan Son Nhat International Airport, Terminal 3 opened in April 2025, significantly increasing the airport's domestic handling capacity.

[11] In December 2025, the first phase of Long Thanh International Airport was officially inaugurated, marked by its first ceremonial passenger flights. The airport is set to undergo two additional expansion phases before reaching its final capacity.

**Table 2. Traffic and Capacities of Airports as of 2019**

| As of 2019 | | Total Passenger (A) | Passenger Capacity (B) | Capacity Utilization (A/B) | Total Cargo (Ton) (C) | Cargo Capacity (Ton) (D) | Capacity Utilization (C/D) |
|---|---|---|---|---|---|---|---|
| **I - International Airport** | | 109,677,703 | 86,100,000 | 127% | 1,520,036 | 992,500 | 153% |
| 1 | **Noi Bai** | **29,243,539** | **25,000,000** | **117%** | **706,339** | **403,000** | **175%** |
| 2 | Van Don | 259,643 | 2,500,000 | 10% | 1,223 | 2,000 | 61% |
| 3 | Cat Bi | 2,634,653 | 2,000,000 | 132% | 19,689 | 1,000 | 1969% |
| 4 | Tho Xuan | 1,053,863 | 1,200,000 | 88% | 5,741 | 1,000 | 574% |
| 5 | Vnh | 2,053,204 | 2,600,000 | 79% | 9,197 | 2,000 | 460% |
| 6 | Chu Lai | 937,540 | 1,200,000 | 78% | 1,361 | 1,000 | 136% |
| 7 | Phu Bai | 1,931,337 | 1,500,000 | 129% | 4,850 | 2,000 | 243% |
| 8 | **Da Nang** | **15,532,323** | **10,000,000** | **155%** | **40,626** | **18,000** | **226%** |
| 9 | Cam Ranh | 9,751,415 | 5,100,000 | 191% | 20,676 | 2,500 | 827% |
| 10 | **Tan Son Nhat** | **41,243,240** | **28,000,000** | **147%** | **692,483** | **550,000** | **126%** |
| 11 | Can Tho | 1,336,697 | 3,000,000 | 45% | 9,113 | 5,000 | 182% |
| 12 | Phu Quoc | 3,700,249 | 4,000,000 | 93% | 8,738 | 5,000 | 175% |
| **II - Domestic Airport** | | 6,833,216 | 8,720,000 | 78% | 17,558 | 15,000 | 117% |
| 13 | Dien Bien | 57,339 | 300,000 | 19% | 22 | 1,000 | 2% |
| 14 | Dong Hoi | 539,908 | 500,000 | 108% | 903 | 1,000 | 90% |
| 15 | Pleiku | 726,526 | 600,000 | 121% | 1,781 | 1,000 | 178% |
| 16 | Phu Cat | 1,565,255 | 2,100,000 | 75% | 2,820 | 1,000 | 282% |
| 17 | Tuy Hoa | 433,285 | 550,000 | 79% | 761 | 2,000 | 38% |
| 18 | Buon Ma Thuot | 1,008,095 | 2,000,000 | 50% | 3,040 | 3,000 | 101% |
| 19 | Lien Khuong | 2,003,040 | 2,000,000 | 100% | 7,321 | 3,000 | 244% |
| 20 | Rach Gia | 32,822 | 250,000 | 13% | 46 | 1,000 | 5% |
| 21 | Ca Mau | 36,836 | 20,000 | 184% | 42 | 1,000 | 4% |
| 22 | Con Dao | 430,110 | 400,000 | 108% | 822 | 1,000 | 82% |
| **Total** | | 116,510,919 | 94,820,000 | 123% | 1,537,594 | 1,007,500 | 153% |

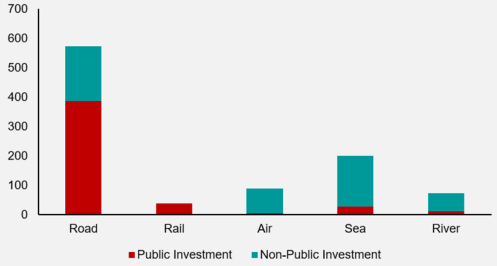
Source: JICA; NSP Sector Report; AMRO staff compilations

## Box B. Government Spending for Transportation Infrastructure

Public investment in Vietnam's transportation sector has historically prioritized roads. Between 2011 and 2020, government spending on roads accounted for over 80 percent of the VND474 trillion spent in the transportation sector. In contrast, air, sea, and inland waterway infrastructure rely more heavily on user-fee models, making them largely self-sufficient and less dependent on the state budget. Rail infrastructure, however, remains almost entirely dependent on public funding, yet it has historically received far fewer resources compared to the road sector (Figure B1).

From the maintenance point of view, maintenance budgets for road and rail infrastructure have fallen short of sectoral budget requests. Between 2011 and 2020, the government budgeted a cumulative VND115 trillion for maintenance in the transportation sector; however, less than half of the requested maintenance funds were allocated to the road and rail sectors (Table B1). This may have led to underinvestment in maintenance and hence premature asset degradation—such as speed restrictions—across the road and rail networks.[12]

**Figure B1. CAPEX for Transport Sector (VND trillion, cumulative 2011-2020)**




Source: Ministry of Transport; Department of Planning and Investment; JICA; AMRO staff compilations

**Table B1. OPEX Request vs Approved Budget (VND trillion, cumulative 2011-2020)**

| | OPEX Request (A) | Approved Budget (B) | B/A |
|---|---|---|---|
| Road | 158.0 | 72.9 | 46% |
| Rail | 53.4 | 22.6 | 42% |
| Air | 5.1 | 5.1 | 100% |
| Sea | 7.6 | 7.6 | 100% |
| River | 6.3 | 6.3 | 100% |

Source: Ministry of Transport; Department of Planning and Investment; JICA; AMRO staff compilations
Note: Ministries request funds for infrastructure operation and maintenance (OPEX Request (A)), but only a portion is authorized (Approved Budget (B)). The B/A ratio shows the final approval rate.

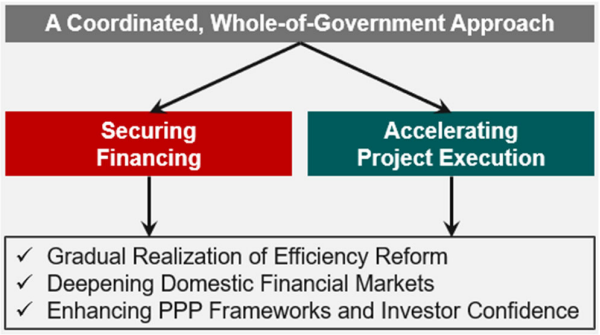
With the planned modernization and multimodal integration, the transportation sector faces sizable investment needs. Maintaining transportation networks will also require additional resources over the next decade. Addressing the historical imbalance between capital expenditure (CAPEX) and operations and maintenance expenditure (OPEX) will be critical to preserving existing assets, improving efficiency, and reducing long-term fiscal costs.

[12] According to the former Ministry of Transport (now the Ministry of Construction), the average speed on national highways is only 50 km/h, whereas freight and passenger trains average 50–60 km/h and 80–90 km/h, respectively.

## IV. Challenges and the Way Forward

12. **Vietnam is at a critical juncture in its infrastructure development.** Amid intensifying global trade risks, strategic infrastructure investment is essential to sustain economic growth and reinforce resilience to external shocks. Despite the significant strides in expanding energy and transportation networks, which have bolstered both productivity and export competitiveness,[13] the country faces substantial challenges in meeting its ambitious long-term targets. On the demand side, the rapid increase in volume calls for continuing capacity expansion, while the growing demand sophistication requires more seamless infrastructure connections, such as between ports and other transportation modes. On the supply side, success depends on mobilizing sufficient financing and ensuring timely project execution. Tackling these challenges requires a coordinated, whole-of-government approach to unlock efficiency gains in public investment and administrative processes, deepen domestic financial markets, and strengthen the policy and regulatory environment to attract private capital (Figure 14).

**Figure 14. Key Strategic Considerations to Bolster Infrastructure Investment**




Source: AMRO staff compilations

13. **Mobilizing sufficient financing, as well as ensuring timely and efficient project implementation, are key for Vietnam to achieve its ambitious infrastructure goals.** AMRO staff estimates indicate that the country must sustain investment averaging 8.2 percent of 2023 GDP to achieve the 2050 targets outlined in sectoral master plans (Table 3). The financing challenge will become more pressing given the additional spending requirements to achieve climate objectives.[14] Historically, public investment has averaged 6–7 percent of GDP. Bridging this gap requires not only increased spending but also a more streamlined and effective deployment of funds. To deliver such a vast and complex project pipeline, it is imperative for Vietnam to optimize government procedures, enhance project preparation and appraisal capacity, and better align project management standards with global best practices.

14. **Beyond the scale of spending, the longer-term growth payoff depends critically on whether public investment can crowd in private capital.** High-quality infrastructure lowers production and logistics costs by easing binding constraints, such as power shortages and transport bottlenecks. A more reliable and predictable business environment improves investor sentiment. Consequently, public investment that enhances infrastructure quality and system reliability is likely to generate stronger catalytic effects on private investment, thereby fostering sustained, productivity-enhancing capital formation.

[13] Between 2014 and 2025, Vietnam achieved an average Total Factor Productivity (TFP) growth of 2.4 percent, complemented by a reduction in logistics costs of over 4 percent of GDP. These efficiencies have sharpened Vietnam's competitive edge, fueling a massive expansion in trade volume—which surged from USD298 billion in 2014 to an estimated USD930 billion in 2025.

[14] According to USAID (November 2022), Vietnam is among the five countries most vulnerable to climate change, facing significant risks from typhoons, droughts, and coastal landslides. To support the nation's shift from coal-dependency to renewable energy, the International Partners Group (IPG)—which includes the EU, UK, US, and Japan—is facilitating the Just Energy Transition Partnership (JETP). Since joining the initiative in December 2022, Vietnam has secured a USD 15.5 billion financial commitment from the IPG.

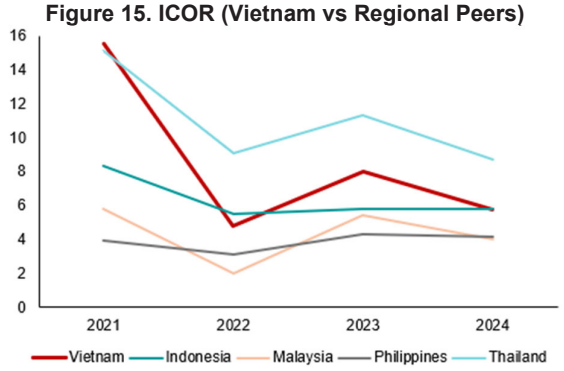
**Table 3. Investment Needs by 2030/2050 (USD billion)**

| | 2021-2030 (10 years) | 2031-2050 (20 years) | 2021-2050 (30 years) |
|---|---|---|---|
| Electricity | 136 | 569 | 705 |
| Road | 37 | 66 | 104 |
| Railway | 63 | 80 | 143 |
| Airport | 21 | 27 | 48 |
| Seaport | 15 | 33 | 48 |
| Inland Waterway | 7 | 5 | 12 |
| Total CAPEX for the Period | 279 | 781 | 1,060 |
| Average CAPEX per Year | 28 | 39 | 35 |
| Average CAPEX per Year (% of 2023 GDP) | **6.5%** | **9.0%** | **8.2%** |

Source: AMRO staff estimates based on sectoral master plans 2021-2030 (with a vision toward 2050)

15. **Given the resource constraints, it is vital to pursue optimal efficiency, ensuring that every unit of public investment delivers maximum economic and social returns.** Vietnam's relatively high incremental capital-output ratio (ICOR) indicates that more investment is required to generate each unit of output (Figure 15). This reflects underlying investment inefficiencies, including challenges in achieving optimal budget allocation and execution (both sectoral and the balance between CAPEX and OPEX), and institutional gaps in project selection and implementation. Improving capital efficiency could help alleviate financing pressure and make high economic growth more sustainable. In this context, the government has implemented several reforms in the past, aimed at enhancing efficiency. In 2025, a major reform was undertaken to reorganize central and local agencies and decentralize authority.[15] By clarifying powers across government levels and reducing bureaucratic layers, these measures are intended to expedite public investment and streamline administrative processes such as licensing. Additionally, the 2024 amended Land Law which promotes transparency and market-based land valuations, is expected to accelerate compensation for infrastructure developers.[16] However, it will take time for the government's efficiency initiatives to yield tangible impacts. For instance, as of late December 2025, the public investment disbursement rate reportedly stood at 83.7 percent of the budget.[17] While this marks an improvement over the previous year, it highlights the ongoing challenges in resource mobilization.

**Figure 15. ICOR (Vietnam vs Regional Peers)**




Source: GSO; World Development Indicators; AMRO staff calculations

Note: ICOR evaluates the efficiency of capital investment in driving economic growth, calculated as the investment-to-GDP ratio over the GDP growth rate. ICOR for Vietnam is provided by the GSO, while those for the other nations are calculated by AMRO based on World Development Indicators data.

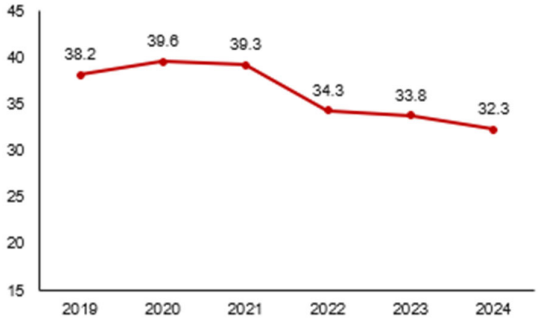
[15] At the central level, the number of ministries and equivalent agencies has been reduced from 22 to 17. Key changes include the Ministry of Finance absorbing investment planning functions and the merger of the Ministries of Transport with the Ministry of Construction. Locally, Vietnam is transitioning to a two-tier system (provinces/centrally-run cities and communes), reducing the total number of provinces and cities from 63 to 34.

[16] Under the 2013 Land Law, land prices were based on state-issued brackets updated every five years, which were often lower than real market prices. This led to delays and disputes in land acquisition and compensation. The revised law abolishes these brackets, requiring Provincial People's Committees to update land price lists annually to ensure they align closely with market conditions.

[17] https://en.vietnamplus.vn/vietnam-gears-up-for-full-force-growth-push-in-2026-post335996.vnp

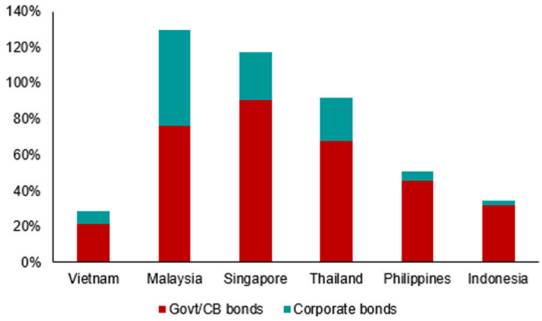
16. **The limited depth of Vietnam's domestic bond market can be a potential bottleneck for scaling public investment, though this challenge can be addressed.** Although Vietnam's public debt-to-GDP ratio remains moderate at just over 30 percent (Figure 16), meeting the sizeable infrastructure demand (or target) will require additional public spending and, consequently, higher government debt levels. Yet, as of Q2 2025, the combined outstanding balance of government and corporate bonds stood at 29 percent of GDP—significantly lower than regional peers (Figure 17). Lower government bond yields, a maturity structure skewed toward long-term tenors, and a concentrated investor base (dominated by Vietnam Social Security) have dampened investor appetite. Expanding the investor base by catering to diverse investor demands will be critical for achieving long-term financial deepening.

**Figure 16. Public Debt to GDP Ratio of Vietnam (% of GDP)**




Source: Ministry of Finance; AMRO staff calculations

**Figure 17. Outstanding Bonds as of Q2 2025 (% of GDP)**




Source: ABMI; AMRO staff compilations

17. **A robust PPP framework is essential for Vietnam to attract private investment as traditional sources of public financing and official development assistance (ODA) become more constrained.** As Vietnam transitions to an upper-middle-income economy, private and commercial capital must increasingly complement state budgets and ODA. Despite the introduction of the inaugural PPP Law in 2020 and subsequent amendments, investor participation—both domestic and foreign—remains limited (see Box C). Retroactive adjustments to the FiT for renewable energy[18] and delays in payments for transportation projects[19] have undermined investor confidence. Strengthening the PPP framework, aligning procurement and environmental/social safeguards with international best practices, and ensuring predictable policy implementation will be critical to better attract private investment and tap into multilateral and bilateral financing.

**Box C. Vietnam's Public-Private Partnership (PPP) Framework: Recent Improvements and Impediments to Commercial Bankability**

Vietnam has made progress in establishing a unified legal framework for PPPs through the enactment of its PPP Law in 2020 and subsequent amendments. However, compared with regional peers such as Indonesia and the Philippines, Vietnam's PPP framework remains insufficiently robust to achieve the 'bankability' thresholds required by international investors and lenders. There are three key risks and challenges associated with PPP projects in Vietnam, posing concerns to global investors.

- **Government guarantee for currency and credit risk mitigation**. A primary concern for investors is the absence of standardized risk-mitigation instruments, largely due to the country's stringent control over contingent liabilities (Figure C1). So far, Vietnam does not provide sovereign guarantees for

[18] MOIT and EVN have introduced a new requirement: renewable energy projects must obtain a construction completion acceptance certificate to qualify for FiT. This condition was not in place when many projects reached their commercial operation date. The retroactive nature of this policy is particularly contentious, as projects previously deemed operational and FiT-eligible are now facing reassessment—and in some cases, total disqualification—based on this newly-imposed criteria.

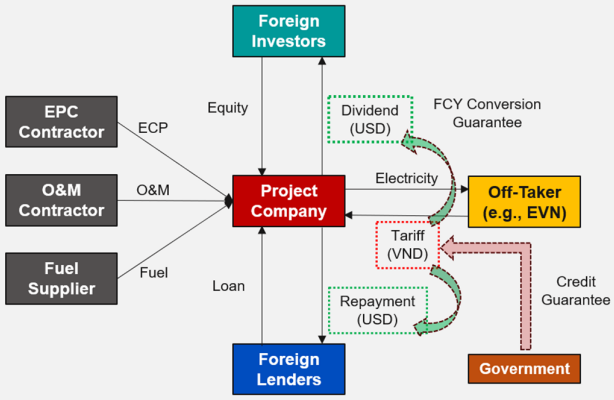
[19] Payment arrears have emerged regarding certain foreign contractors for a local metro project. These liabilities pertain to completed works that have not been settled due to administrative delays in authorizing the cost overruns and securing the necessary state budget allocations.

foreign-currency (FCY) convertibility or transferability; instead, limited foreign exchange (FX) balancing support is granted, but only on a discretionary, case-by-case basis (historically, it is capped at 30 percent of project revenues for priority projects). Where debt and equity are denominated in FCY while revenues are denominated in local currency, this would potentially create significant currency mismatch in PPP projects, raising serious concerns regarding convertibility and the timely remittance of offshore payments. In contrast, regional peers offer more explicit risk mitigation. For example, the Philippines addresses FX risk through tariff indexation and government payment obligations. Furthermore, Vietnam relies heavily on SOEs as off-takers without full sovereign backing, whereas Indonesia provides explicit sovereign guarantee through the Indonesia Infrastructure Guarantee Fund (IIGF), supported by the state budget (Figure C2).

**Figure C1. Government Guarantees (% of GDP, stock)**


Source: Ministry of Finance

**Figure C2. Typical Project Scheme for Power PPPs with Foreign Investors and Lenders**




Source: Allens & Linklaters; AMRO staff compilations

- **Revenue predictability.** PPP projects in Vietnam's transport sector rely predominantly on user-pay models, where revenues depend on tolls paid by users—a metric that is immensely difficult to forecast. The limited use of availability payments[20] transfers excessive demand risk to private investors. In contrast, Indonesia and the Philippines employ availability-payment structures more broadly, effectively reducing traffic and revenue risk for investors. While a risk-sharing mechanism exists—allowing the government and the business entity to share losses if revenues fall significantly below projections—government support remains capped.
- **Early termination compensation and regulatory stability.** Vietnam's PPP Law includes provisions on early termination and compensation for PPP projects,[21] but these are often framed at a high level, leaving uncertainty over valuation methods, payment timing, and coverage of outstanding senior debt. Indonesia and the Philippines provide more detailed and standardized termination compensation frameworks that are widely regarded as bankable. Concerns over regulatory stability have also been heightened by past policy actions perceived as retroactive (e.g., changes to the FiT scheme), which contrast with the stronger record of contract sanctity in peer countries.

In November 2024, the National Assembly approved Law No. 57/2024/QH15, which introduced critical amendments to the PPP Law and related legislation, including the Laws on Planning, Investment, and Bidding. These reforms are designed to broaden PPP applicability, raise the threshold for state capital participation, and streamline approval processes for smaller projects. Furthermore, the amendments

[20] An availability payment scheme is a contractual mechanism where the government makes fixed periodic payments to the private partner based on the project's operational readiness, rather than its usage volume. By decoupling revenue from traffic or demand levels, this structure effectively shifts demand risk from the private sector to the public authority. For investors and lenders, this provides a highly predictable and stable cash flow, making the project significantly more bankable compared to user-pay models where revenue is subject to the volatility of public demand.

[21] Early termination payment refers to the compensation paid to a project company and its lenders when a PPP or concession agreement is terminated before its scheduled expiry. In infrastructure PPPs, the early termination payment is designed to allocate risk fairly and preserve project bankability by specifying, in advance, how investors and lenders will be compensated if the project ends prematurely due to defined events (e.g., government default, change in law, force majeure).Typically, the payment covers outstanding senior debt, and may include a return on equity, depending on the cause of termination.

expand eligibility for early termination compensation and clarify funding sources for the risk-sharing mechanism—key steps in resolving practical implementation challenges (Table C1).

**Table C1. Key Amendments to PPP-related Laws**

| Amended Law | Key Amendments | |
|---|---|---|
| Law on Planning | ✓ Streamline procedures to resolve inconsistencies between national, regional, and provincial master plans | |
| Law on Investment | Investment Support Fund | ✓ Provide financial support to strategic projects by reinvesting additional Corporate Income Tax revenues generated from the OECD global minimum tax reform |
| | Expedited Investment Approval | ✓ Accelerate the administrative processing timelines for projects within industrial parks that perform high-value functions, such R&D |
| | Termination of Delayed Project | ✓ Clearly define the project completion deadline as 24 months from the Commercial Operation Date (COD) originally specified in the project permits |
| Law on PPP | Applicable Sectors | ✓ Broaden project eligibility to encompass all infrastructure and public service sectors, with the exception of state monopolies and national defense |
| | Cap for State Capital Participation | ✓ Increase the state capital participation cap from 50% to 70% for specific high-cost projects, such as those involving significant land clearance expenses or advanced technology transfers |
| | Streamlined Approval Process | ✓ Eliminate the pre-feasibility study (pre-FS) requirement for smaller-scale PPP projects to streamline project preparation |
| | Early Termination Compensation | ✓ Expand the scope of early termination compensation to include Force Majeure events and other unforeseen circumstances |
| | Funding Source for Risk-Sharing Mechanism | ✓ Require competent authorities to identify and secure feasible funding sources to fulfill revenue-sharing obligations in the event of a significant revenue shortfall |
| Law on Bidding | Special Selection of Investors in Exceptional Cases | ✓ Clarify special procurement procedures to streamline investor selection and enhance transparency, particularly for complex projects |

Source: Frasers Law Company; AMRO staff compilations

Improving the financial health and creditworthiness of SOEs is also essential for mobilizing private capital, given their role as primary off-takers in infrastructure PPP projects. Weak balance sheets among SOEs can undermine revenue security and heighten counterparty risks, thereby affecting project bankability. For example, in the power sector, EVN's past financial strain illustrates how off-taker risks can weigh on investor confidence. The recent electricity tariff adjustments and launch of the DPPA framework represent positive steps toward strengthening the financial position of the sector. More broadly, stronger SOE financial positions would support essential infrastructure investment, enhance system reliability, and create a more credible and attractive environment for private investors, including in the renewable energy transition under PDP8.

## V. Conclusion

18. **Strategic public investment in Vietnam is key to supporting near-term growth while strengthening the economy's long-term potential.** While the country has made substantial progress in expanding and upgrading infrastructure, closing the remaining gaps—both in terms of resources and operational capacity—will be critical to sustaining growth momentum and enhancing economic resilience. Delivering on ambitious plans in the power and transport sectors will require not only higher and better-targeted investment, but also timely project implementation, stronger inter-agency coordination, and a more predictable regulatory framework to crowd in private capital. Addressing these structural bottlenecks would help enhance productivity, support the green and digital transitions, and bolster resilience against external shocks.

19. **In recent years, accelerating infrastructure development has become a key policy priority in Vietnam.** In the power sector, to meet the rising demand, significant capacity expansion is needed. Achieving the country's net-zero emissions target by 2050 will also require a fundamental transformation of the energy mix and the integration of advanced technologies. In the transport sector, beyond expanding high-quality inland infrastructure such as expressways and high-speed rail, strengthening both maritime and air gateways to global markets has become increasingly important. Enhancing intermodal connectivity is also essential to driving logistical efficiency.

20. **Closing the infrastructure gaps requires tackling both resource and operational constraints**. Resource gaps, including inadequate public funding and limited private sector participation, can be bridged by strategically deploying public funds, expanding well-designed

PPPs, and providing targeted guarantees for high-impact but less commercially viable projects, all while ensuring long-term sustainability of public finance. Parallel efforts to deepen financial markets—particularly the government bond market—are essential to secure stable, long-term financing. Operational gaps, such as delays in licensing, land acquisition, and project implementation, can be addressed through streamlined government procedures, strengthened inter-agency coordination, and alignment with international project management standards (such as environmental, social, and procurement protocols).

## References


Allens & Linklaters. 2021. Insight: Long-awaited regulations implementing Vietnam's PPP Law have now been issued. https://www.allens.com.au/insights-news/insights/2021/04/long-awaited-regulations-implementing-vietnams-ppp-law/#anchor3

ASEAN Center for Energy. 2025. Policy Insight: Vietnam's Revised PDP8 and Indonesia's RUPTL 2025-2034. https://storage.googleapis.com/aceweb-bucket-261225/files/publication/1766846393_Policy-Insight_Vietnam-Revised-PDP8-and-Indonesia-RUPTL-2025-2034.pdf

Earnst & Young. 2024. Legal Update: Law on Land No.31/2024/QH15. https://www.ey.com/content/dam/ey-unified-site/ey-com/en-vn/technical/tax/documents/ey-vietnam-legal-update-law-on-land-2024-april-2024-en.pdf

Energy Transition Partnership. 2023. Managing Vietnam's Grid Issues for Effective Energy Transition. https://www.energytransitionpartnership.org/wp-content/uploads/2024/06/Managing-Vietnams-Grid-Issues-for-Effective-Energy-Transition.pdf

Frasers Law Company. 2025. Legal Update: New Laws on Planning and Business Investment. https://www.frasersvn.com/api/uploads/New_Laws_on_Planning_and_Business_Investment_Legal_Update_EN_March_2025_b4f42a3fcf.pdf

ISEAS Yusof Ishak Institute. 2025. Vietnam's Bureaucratic Reforms: Opportunities and Challenges in "The Era of National Rise". https://www.iseas.edu.sg/wp-content/uploads/2025/01/ISEAS_Perspective_2025_14.pdf

Japan Bank for International Cooperation. 2025. Vietnam's Investment Climate 2025. https://www.jbic.go.jp/ja/information/investment/image/inv_vietnam202510.pdf

Japan External Trade Organization. 2025. Business Flash: Vietnam Revises 8th National Power Development Plan (PDP8), Adding Nuclear Energy and Upwardly Revising Targets. https://www.jetro.go.jp/biznews/2025/05/6af71e259c705733.html

Japan International Cooperation Agency. 2021. Final Report on Data Collection Survey on Power Sector in Vietnam. https://openjicareport.jica.go.jp/pdf/12341632.pdf

Japan International Cooperation Agency. 2021. Final Report on Data Collection Survey on Sustainable Transport Development Strategy in Vietnam (VITRANSS 3): Main Report. https://openjicareport.jica.go.jp/pdf/12362547_01.pdf

Japan Organization for Metals and Energy Security. 2023. Short Report: Vietnam: Approval of the 8th Power Development Plan (PDP8) — Ambitious Goals to Reach 70% Renewables by 2050, Phase Out Coal, and Expand Gas Power as a Transition. https://oilgas-info.jogmec.go.jp/_res/projects/default_project/_page_/001/009/795/2306_m_vn_powerplan8.pdf

Ministry of Transport of Vietnam. 2024. Strengthening Supply Chain and Logistics by Enhancing Transport Infrastructure and Collaboration with the Private Sector's Participation. https://greatermekong.org/g/sites/default/files/05.Part%201_Vietnam%20240925%20-%20MOT%20VN%20.pdf

VinaCapital. 2025. Economist's Note: "Increased 2025 Infrastructure Target". https://vinacapital.com/wp-content/uploads/2025/02/20250225VinaCapital-Insights-Increased-2025-Infrastructure-Investment-Target.pdf