

The Infrastructure Opportunity in Viet Nam

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Foreign, Commonwealth
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CẦU TRẢNG TÊN
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Khởi phục:
1991-1995

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FOREWORD

It is a pleasure to introduce this report on Infrastructure Opportunities in Viet Nam. My thanks to the team at Arup Viet Nam for delivering this vital piece of work, and to all individuals and teams that have contributed.

Viet Nam's growth story is well known. The country has consistently been amongst the world's fastest-growing economies over the last two decades even managing to achieve annual economic growth throughout the COVID-19 pandemic. Economic success has been accompanied by rapid population growth with Viet Nam exceeding 100 million people earlier this year.

This impressive development has inevitably brought challenges as Viet Nam navigates growing pressures posed on its national infrastructure by a growing and ever-more mobile population. Despite having the highest average annual infrastructure spend in Southeast Asia, Viet Nam's export-driven economy risks becoming constrained by limited airport and port capacity. Congestion in urban centres is exacerbated by an ongoing lack of viable public transport. And significant potential in renewable energy generation is undermined by limited investment into power transmission infrastructure. Viet Nam was ranked 77th out of 141 economies for overall infrastructure quality by a WEF Global Competitiveness Report in 2019.

It is estimated that the country is in need of approximately \$68bn of investment for the development of its transportation infrastructure, \$13.1bn of investment in clean water and sanitation and \$24bn for broadband development by 2030.

Viet Nam faces the additional pressure of being one of the world's top five most vulnerable countries to the adverse impacts of climate change, threatening food security in the Mekong region and wreaking damage as extreme weather events increase in frequency and severity. Prime Minister Pham Minh Chinh showed great vision at the COP26 Summit in 2021, committing to a raft of ambitious climate-related commitments, including a target for Viet Nam to achieve net zero by 2050. Building green, sustainable and resilient infrastructure will be vital to realising this ambition.

We are therefore, pleased in the UK Government to be working with Viet Nam to support the development of critical infrastructure through a number of collaborative programmes including the UK's Global Infrastructure Programme, Future Cities Programme, digital transformation support for the Hanoi metro, and many others. Last year, the UK, alongside other international partners, announced the mobilisation of an initial \$15.5bn via the Viet Nam Just Energy Transition Partnership to support Viet Nam's clean energy transition. This year is particularly symbolic, marking the 50th year anniversary of UK-Viet Nam diplomatic relations.

As we look ahead to the next five decades, we very much hope to see ever-deeper collaboration between our two countries across multiple sectors. In this context, I am very pleased to introduce this vital report delivered by UK firm Arup, a timely evaluation of the opportunities for infrastructure development in Viet Nam. This valuable resource seeks to inform policymakers, businesses, and wider readers, helping them to better understand Viet Nam’s infrastructure landscape and identify a potential role for international and UK expertise to support Viet Nam’s long-term development aspirations.

I trust that this work will serve to further deepen UK-Viet Nam collaboration and promote the development of green and resilient infrastructure – critical to ensuring Viet Nam’s sustained economic success.

Once again, let me thank all who have played a part in delivering this vital project. I hope you find this a useful resource.

SAM WOOD

Deputy Consul General,
Head of Trade & Investment,
British Consulate in Ho Chi Minh City



This report has been commissioned by South Asia Research Hub, Foreign, Commonwealth and Development Office, Government of UK. However, the views expressed in the report do not necessarily reflect the official policies of the Government of UK.



EXECUTIVE SUMMARY

REPORT SCOPE

This report covers the current landscape, key challenges faced, the opportunities arising, and key market entry considerations to take for infrastructure development in Viet Nam. This has been prepared by Arup on request from the Department of Business & Trade, British Embassy Hanoi and British Consulate General, Ho Chi Minh City, supported by FCDO's South Asia Research Hub.

The assessment covers five sectors of infrastructure: Transport, Energy, Water & Waste, Social and Digital. It seeks to outline the current state of infrastructure in Viet Nam, highlighting the key drivers and gaps. The report then outlines the main challenges and bottlenecks associated with developing infrastructure in the market. Finally, it provides an overview of the key areas of opportunity and market entry considerations to ensure success.

The research process involved a thorough desktop research exercise consulting national strategy and planning documents, media articles, industry reports and databases. In tandem, a set of experts and key public and private sector stakeholders were engaged to develop a holistic understanding of key bottlenecks to development, opportunity areas and entry considerations.

OVERVIEW

Over the past few decades, Viet Nam has made tremendous strides marked by a 6.3% GDP growth between 2000 to 2022 and declining poverty rates from 51% to 5% between 1990 and 2020. The country's success can largely be attributed to the Đổi Mới

economic reforms initiated in 1986, propelling the nation to middle-income status by 2015. In this time, Viet Nam significantly expanded their core infrastructure providing widespread access to necessary transportation networks, power infrastructure and social services, among other necessary provisions.

Official Development Assistance (ODA) has also played a critical role in fostering such development with infrastructure accounting for 53% of total ODA received between 2010 and 2017. Moving forward, it is estimated that Viet Nam requires, on average US\$25-30 billion as investment in infrastructure annually to sustain current economic growth rates (Global Infrastructure Hub). Having graduated from low-income country status in 2015, concessional financing from multilateral development banks continues to dwindle. Public sector spending and private sector investments are thus the key to finance infrastructure needs.

Despite significant achievements in infrastructure development, the country still has a long way to go. A growing population, rapid urbanization and the rise of the middle-class place stress on existing infrastructure, calling for new and higher-quality systems. In addition to demographic change, Viet Nam is increasingly vulnerable to various climate-related shocks and stresses that drive a need for upgraded, resilient infrastructure. The country ranks first for high exposure to flooding. Moreover, chronic stresses like poor air quality and urban heat worsen as the nation urbanizes rapidly.

CHALLENGES & OPPORTUNITIES

To respond to imminent risks and sustain a healthy growth rate, Viet Nam has taken steps to develop necessary policy to attract investment, such as the 2021-2030 Socio-Economic Development Plan. That said, much more is required to bridge the investment gap and address quality concerns across all the sectors:

In the **energy sector**, insufficiencies of the current transmission and distribution networks call for heavy investment in such infrastructure. In tandem, it is expected that renewable energy generation will be a long-term priority area, as per the latest Power Development Plan VIII and national climate commitments, with a high likelihood of developing more offshore wind capacity.

In the **transport sector**, the primary issue is that existing systems are unable to cope with burgeoning demand. Airports have been reported to run over their total designed capacity of 91 million passengers annually, with total volume of passengers in 2019 rising to 116 million. Current urban networks unable to handle the loads that have come with rapid urbanization, inhibiting road safety. Moving forward, the country has ambitions to develop several large-scale projects such as the North-South High-Speed Railway, Long Thanh International Airport, and several regional and urban roads, to sustain the country's economic growth and foster its position as a growing trade hub and tourism destination in the region.

Having established foundational **social infrastructure**, the focus for the sector is shifting towards offering higher value

services and improving quality. For example, digital transformation of healthcare has become a key priority set out by the government to address the overcrowding of hospitals and raise accessibility to primary care services. In the education sector, there is a huge emphasis on developing higher education institutions that offer internationally recognised certifications.

The **water sector** is relatively fragmented, with 68 state-owned Water Supply Companies (WSCs) responsibly for operating water supply services. The quality of service continues to be an issue with 80% of diseases in Viet Nam being attributed to contaminated water. This sector is also where the most significant urban-rural divide is noticed. As such, the key focus for the sector moving forward is ensuring water security nation-wide by 2050. Initiatives include smart water management, restoration of domestic water resources and PPPs to develop new supply plants.

In contrast, the **digital sector** has the fewest gaps with the nation achieving widespread coverage of connectivity infrastructure, with 4G signal coverage across 99.8% of the country. The government is actively developing 5G infrastructure and has initiated R&D into 6G. With relatively reliable connectivity and power infrastructure, coupled with rapidly rising demand for digital services in the nation, Viet Nam has become a more attractive market for data centres.

ENABLING ENVIRONMENT

Each of the sectors are ripe with opportunity, with the majority of earmarked projects lying in the energy and transportation sectors. However, meeting the infrastructure needs of the nation has proven difficult due to a variety of bottlenecks that challenge the development of infrastructure in the country. Most notably, obstacles faced at the regulatory level have inhibited new projects from taking off. While Viet Nam enacted a new Public-Private Partnership law in 2021, infrastructure developers and related stakeholders have found a lack of clarity, issues of discrepancies and insufficient supporting mechanisms to make this form of investment attractive. The legal framework has often been described as complex, due to the numerous regulations that must be met in the form of laws, decrees and circulars. This leads to discrepancies between regulations across agencies or level of government, impacting investor confidence and delaying approval timelines.

Additionally, Viet Nam would benefit from institutional capacity building. Doing so can help address siloed approaches and work towards developing more integrated development strategies. This could be via creating new integrated governance institutions, digitizing agencies, or upskilling public sector personnel.

Similarly, the nation is constrained by limitations among private sector ecosystem players to support the development of new projects. This may include legal consultancies or financial advisors to facilitate deal structuring, for example.

Moreover, the financial ecosystem for infrastructure financing is still developing, with local institutions limited in their ability to provide sufficient long-term capital required for large infrastructure projects. Supporting players and mechanisms like export credit agencies and viability gap financing are yet to be fully leveraged, constraining the ability to finance new projects. As such, efforts and investment must go towards developing the enabling environment to foster infrastructure development in the country. As policy and supporting frameworks are further clarified and strengthened over time, opportunities for UK private investors may emerge, given the significant demand for investment.

CONCLUSION

Viet Nam is ripe with opportunity across all sectors of infrastructure, and all stages of a project lifecycle. Beyond hard infrastructure assets, there are a variety of opportunities to address the bottlenecks faced in the market. This may include capacity building, digitalization, change management or improved governance, developing the financial markets, and addressing sustainability-linked challenges. Such activities will bolster the success of any further infrastructure development in the country. For private sector participants keen to take part in Viet Nam's growth story, this report can provide a great starting point to navigating the market.

PARAMETERS OF REPORT

This study covers 5 sectors of infrastructure: transportation, energy, waste & water, social and digital. This page provides a description of each sector, detailing how they have been

defined for the purposes of this report and segmented into subsectors. For more detailed descriptions of sectors and subsectors, please refer to section 1 of the appendix.

SECTORS & SUBSECTORS OF INFRASTRUCTURE

Transportation

- **Road**
 - Strategic Roads
 - Urban Networks
- **Rail**
 - Regional
 - Urban
- **Airports**
 - International
 - Domestic
- **Water Transportation**
 - Inland Waterways
 - Seaports

Energy

- **Fossil Fuel**
 - Coal-fired
 - Oil & gas
- **Hydropower**
 - Dams
 - Run-Of-River
- **Clean Energy**
 - Solar
 - Wind
 - Biomass
 - Waste-to-Energy
- **Others**
 - Transmission
 - Distribution
 - Storage

Water & Waste

- **Water Supply**
 - Collection
 - Treatment
 - Distribution
- **Wastewater**
 - Collection
 - Treatment
- **Stormwater**
 - Collection
 - Treatment
- **Solid Waste**
 - Collection
 - Treatment
 - Disposal

Social

- **Healthcare**
 - Primary
 - Secondary
 - Tertiary
- **Education**
 - Primary
 - Secondary
 - Tertiary

Digital

- **Connectivity**
 - Wireless
 - Wired
- **Data Storage & Processing**
 - Data Centres

Introduction **Overview** Challenges Opportunities Market Entry

Part ① Overview

A landscape of infrastructure
development in Viet Nam

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A BRIEF HISTORY OF INFRASTRUCTURE DEVELOPMENT IN VIET NAM

THE RISE OF MODERN VIET NAM

Viet Nam’s GDP growth has averaged close to 6.3% from 2000 to 2022 and proven remarkably resilient during the Covid-19 pandemic. Poverty as measured using the \$1 threshold fell from 51% to 5% between 1990 and 2020.¹

A large portion of this success can be attributed to the high level of investment in infrastructure, which overhauled the country’s landscape following the *Đổi Mới*, a host of economic reforms initiated by the Communist Party of Viet Nam (CPV) since 1986. These reforms were accompanied by a rapid expansion in access to power, all of which combined propelled Viet Nam from a low-income economy to a middle income one in 2015. The focus on infrastructure development intensified in the past 12 years. Between 2010 and 2014, public and private infrastructure spending accounted for 5.7% of the country’s GDP, compared to only 2 to 3% in other Southeast Asian countries.²

This high level of investment propelled the expansion of infrastructure, enabling Viet Nam to provide basic access to its fast-growing industrial base, and growing middle class population. Access to paved roads is high, and rural household electrification reached almost 99% in 2016, from <50% in 1990. The country’s electricity consumption per capita has almost tripled in the past decade. As such, power generation, transmission and distribution

infrastructure has expanded rapidly in order to meet rising demand.³ Viet Nam’s internet penetration rate has reached 77.1%, on par with its neighbours.⁴ Provision of social and water & waste infrastructure has rapidly grown a well.

Official development assistance (ODA) has also played a critical role in fostering infrastructure development in Viet Nam. Infrastructure accounted for 53% of total Official Development Assistance received between 2010 and 2017.⁵ Since 1993, Viet Nam has attracted more than US\$80 billion in Official Development Aid (ODA) and concessional loans, making it one of the largest ODA beneficiaries globally.⁶

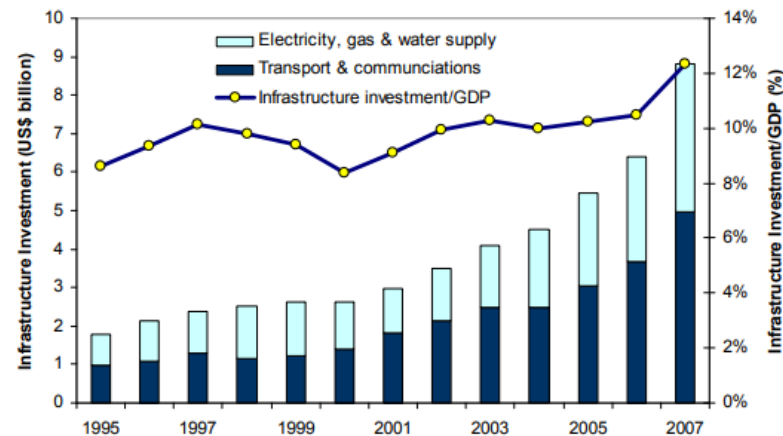


Figure 1: Infrastructure Investment in Viet Nam,⁷

¹ ISEAS-Yusof Ishak Institute – Viet Nam’s Tentative Approach to Regional Infrastructure

² Infrastructure Report, BritCham Viet Nam, 2021

³ Viet Nam’s Development Success Story and the Unfinished SDG Agenda

⁴ Countries with the highest internet penetration rate, Statista, January 2023

⁵ “Transition Finance Country Study – Viet Nam – On the edge of transition,” OECD, 2019

⁶ ‘Viet Nam Gears Up For ODA Acceleration To Drive Projects,’ Viet Nam Investment Review - Thanh Thu, December 2021

⁷ Viet Nam Infrastructure Constraints, Harvard, NA

THE LONG ROAD AHEAD

Despite these improvements, Viet Nam still has a long way to go infrastructure wise. For example, the World Economic Forum's 2019 Global Competitiveness Report ranked Viet Nam as 67th out of 141 economies for national competitiveness and 77th for infrastructure quality.¹ Only 20 per cent of the country's national roads are paved,² much lower than neighbouring countries such as Malaysia (80.9%),³ India (63.24%)^{2,4} and Indonesia (89.7%).⁵

Infrastructure remains fragmented and of low quality. Water pollution is a big challenge; average energy consumption is still low compared to other emerging markets but is expected to increase dramatically until 2030. The current, especially urban road network is already severely congested during peak hours, with increases in private car ownership exacerbating this problem.

INVESTMENT NEEDS AND OPPORTUNITIES

However, while large public investments have been earmarked for the country's infrastructure development, Viet Nam is facing difficulties in mobilizing infrastructure investment from the private sector, causing it to rely heavily on state resources, which currently fund about 90% of the country's infrastructure project. By 2020, although several road-building PPP projects have been implemented, some of them were later renegotiated and eventually converted to public-invested ones due to project delays, incompetent investors, or financial irregularities.

Recently, two North-South Expressway component projects have also been converted from PPP to public investment due to the lack of interest from private investors.⁷

In addition, as Viet Nam graduated from low-income country status in 2018, concessional funds to Viet Nam from the World Bank's International Development Association has dwindled, from \$1.38B in 2014 to \$0 in 2018.

This is a real challenge, considering the size of the investments Viet Nam needs in order to maintain its growth trajectory. As per the Global Infrastructure Hub, Viet Nam needs on average US\$25-30B annually for infrastructure if the country wants to maintain its current rate of economic growth.⁶



¹ The Global Competitiveness Report 2019, World Economic Forum, 2019

² "Accelerating Viet Nam's infrastructure development for Sustainable Growth," Infrastructure Viet Nam, Ministry of Industry and Trade, 2019

³ ASEAN regional road safety strategy, ASEAN, 2016

⁴ Basic Road Statistics of India 2016-177, Ministry of Road Transport and Highways, 2017

⁵ ASEAN regional road safety strategy, ASEAN, 2016

⁶ Why Viet Nam's infrastructure is crucial for economic growth, Viet Nam Briefing, September 2022

⁷ "Chuyen doi 2 du an tren cao toc Bac - Nam phia Dong sang dau tu cong", Dang Cong san Viet Nam, January 2021

THE ROLE OF REGIONAL INFRASTRUCTURE INITIATIVES

As a counterbalance to the reduction in ODA to Viet Nam, many significant infrastructure development initiatives have been introduced in recent years. For example, China introduced the ambitious US\$1 trillion Belt and Road Initiative (BRI) in 2013 to support “affordable infrastructure” in developing countries, primarily in transportation and power.¹

Japan quickly responded with its “quality infrastructure” drive and ramped up lending under its 2015 Partnership for Quality Infrastructure (PQI) campaign. Accordingly, Japan pledged to increase its investment in Asian infrastructure to roughly US\$116 billion for the period 2016-2020, a 30 per cent increase compared to the previous five years.

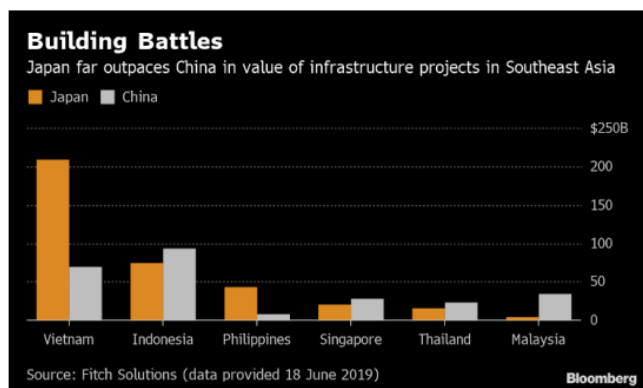


Figure 2: China vs. Japan’s Infrastructure Projects in SEA in 2019.³

In 2016, Japan announced the Expanded Partnership for Quality Infrastructure, the High-Quality Infrastructure Export Expansion Initiative, as well as reforms to improve its loan-granting process and to provide additional guarantees against risks, to encourage private sector investment. The annual budget for Japan’s infrastructure exports has since 2017 nearly doubled from ¥110 billion to ¥200 billion (approximately US\$1.8 billion).²

However, many of these initiatives come with trade offs that Viet Nam has been careful to avoid, from impact on local communities to debt concerns, commercial sustainability, geopolitical tensions, implementation difficulties, loan costs and procurement rules.

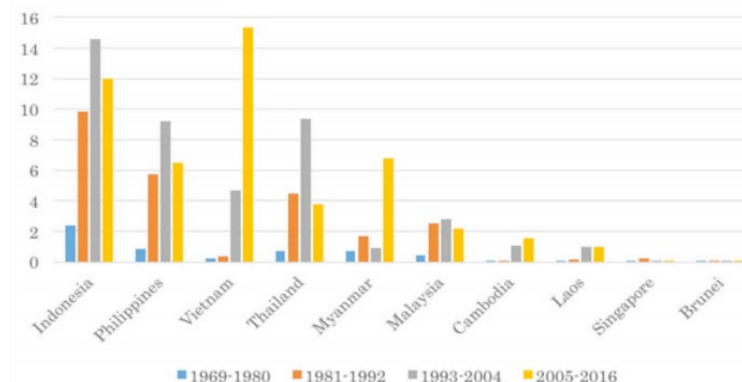


Figure 3: Japan’s ODA to Southeast Asia (gross disbursement base, billion US\$)⁴

¹ “How Big is China’s Belt and Road?”, Jonathan Hillman, Center for Strategic and International Studies, 8 April 2018
² “Quality infrastructure: Japan’s robust challenge to China’s Belt and Road,” Tobias Harris, War on the Rocks, 9 April 2019
³ “China no match for Japan in South East Asia Infrastructure Race, Bloomberg, June 2019
⁴ “White Paper on Development Cooperation,” Ministry of Foreign Affairs, Japan, 2017

KEY DRIVERS FOR INFRASTRUCTURE IN VIET NAM

In addition to policy and regulatory pushes, there are several other drivers necessitating the development of infrastructure in Viet Nam, such as demographic change and climate-related risks, among others.

POLICY AND REGULATORY PUSH

To sustain a healthy growth rate, Viet Nam needs to take a proactive approach to attract investment and develop crucial infrastructure, and they have done so through landmark policy and regulation. Most notably, the country's 2021-2030 Socio-Economic Development Plan highlights comprehensive infrastructure development as one of three strategic interventions.¹

In addition to this, Viet Nam has implemented ambitious policy to achieve widespread access to base social infrastructure, such as primary education, health insurance. Similarly, the government has actively driven the development of renewable energy production through climate commitments, national strategy development and provision of incentives e.g. attractive feed-in-tariffs. Finally, the introduction of the PPP law has opened new avenues for investment in infrastructure.

DEMOGRAPHIC CHANGE

Viet Nam is rapidly urbanizing with approximately 40% of the population living in urban areas, up from 30.5% in 2010. This is expected to reach at least 45% by 2025. As such, there is rising

pressure for urban infrastructure such as roads or public transportation. Additionally, rapid population growth has called for increased capacity of all infrastructure types. Waste & water, and healthcare infrastructure being the most pressing.

Moreover, economic growth has resulted in a rising middle class – defined as those that spend over US\$11 per day. This was >10% in 2000, is now 40% and is expected to reach 75% by 2030. As this base grows, the demand for higher quality infrastructure will soar. This is already noticeable in the education sector with rising demand for international and private education.

CLIMATE RISK

Viet Nam is particularly vulnerable to certain climate-related shocks and stresses that will drive the need for upgraded infrastructure built with resilience and climate adaptation in mind. The country has been ranked 1st by the World Bank for high exposure to flooding (tied with Bangladesh) - currently, 70 per cent of the population lives in low-lying deltas or coastal areas. Additionally, the country has high exposure to tropical cyclones and related hazards.

Viet Nam is also experiencing more frequent, extended and severe periods of drought, highlighted by the severity of the 2015-2017 drought. Such stresses put pressure on existing infrastructure – particularly water management systems.

Additionally, as the country urbanizes, concerns of poor air quality, chronic congestion, and urban heat continue to grow.

¹ ISEAS-Yusof Ishak Institute – Viet Nam's Tentative Approach to Regional Infrastructure

ECONOMIC FACTORS

Viet Nam's accession to the World Trade Economy (WTO) in 2007 signaled to the global economy that the country is a committed trade partner. Since then, the country has entered several Free Trade Agreements with other economies like the UK, the EU and Japan, to name a few. This marks the country's ambition to transform into a higher-value, export-oriented economy. Achieving this and remaining competitive with regional competitors has generated incredible demand for upgraded physical infrastructure, particularly in transportation and logistics.

Furthermore, an abundance of natural resources is driving opportunities in the infrastructure space. While the energy sector was traditionally driven by the relative affordability and abundance of coal, the tides are shifting to take advantage of the ample solar and wind potential – this change is driven by a reduction of costs in such technologies and changing business models.

BUSINESS MODELS

Breakthroughs in research and innovation are driving down the costs of advanced technologies and solutions everyday, making them more accessible. As an example, EV technology has become more pervasive globally, driving new charging infrastructure development, new EV business models – all of which are transforming the transport sector. Similarly, advancements in wind harvesting technology considerably reduce the capital costs associated with such development (e.g. multi-turbine technology). Moving forward, advanced solutions such as IoT-enabled sensors, AI/ML, digital twins and GIS technologies can be applied to optimize infrastructure planning, development and maintenance more easily.

¹ ISEAS-Yusof Ishak Institute – Viet Nam's Tentative Approach to Regional Infrastructure

² Viet Nam Briefing, Viet Nam's Free Trade Agreements

STATE OF PLAY

Demographic change, climate risk, and the changing dynamics of financing and policy impact all sectors of infrastructure in Viet Nam, among other major drivers. That said, there are key variations on how these demand drivers play out in each sector.

Furthermore, the level of infrastructure provision varies across all five. For example, a base level of digital infrastructure is widely accessible country-wide, but the same cannot be said for necessary water infrastructure. This section will speak to some of the key variations in the state of each sector and the key drivers pushing for increased or upgraded infrastructure provision.

TRANSPORT

Thus far, the focus for transportation infrastructure has largely been on roads, highways and expressways, as well as other large-scale assets (e.g. regional railways, ports, and airports). Less attention has been paid to public transportation, resulting in a relatively low mode share of <10%, even though the government sought to reach 25-30% by 2020. The country is struggling to expand on such infrastructure now as it largely relies on ODA financing, which is a dwindling source of capital.

The Ministry of Transport, through their industrial research institute, developed a nation-wide transport masterplan to 2030, with a vision to 2050. This comprehensive document outlines an ambitious set of projects with great focus on an expansion of road networks and raising port capacity – air and sea.

There is growing focus on urban and public transportation, however, individuals still prefer private vehicle ownership or hires. Viet Nam has 3.6 million cars and 65 million motorbikes nationwide, largely in urban centres which are not equipped to handle such loads. Concessional has been funneled to cities to alleviate these pressures by multilateral banks like ABD, World Bank, as well as bilateral finance organisations like Export Finance Australia, the Finnish Fund for Industrial Cooperation.

The sector will continue to be a huge focus area for Viet Nam to support the rapid growth of cities, tourism and trade.

ENERGY

There is still a high reliance on coal-fired power, but with Viet Nam's 2050 net zero commitments at COP26, energy generation has been privatised to allow more clean energy players to enter the market and diversify the energy mix. Transmission and distribution infrastructure, however, is still monopolised by state-owned enterprise, Viet Nam Electricity (EVN) as such assets are considered important to national security.

In recent years, solar power was prioritised through attractive policies and feed-in-tariffs, resulting in a staggering growth in capacity to 17.6 GW in 2021. Onshore wind capacity grew significantly as well. As investors await the release of Power Development Plan VIII (PDP8), the expectation is that offshore wind will be the key focus area for growth in the clean energy sector.

WATER & WASTE

Water supply infrastructure has been expanded significantly over the past decade or so, with approximately 650 centralized water supply systems. The ecosystem is fragmented with 68 state-owned Water Supply Companies (WSCs) nation-wide that are responsible for operating these systems. Access is not yet uniform across urban and rural regions. Currently, groundwater is one of the main sources, serving up to 50% of the population.

As many Vietnamese flock to cities, the demand for urban waste management and wastewater treatment is rapidly rising. Existing wastewater treatment and solid waste management infrastructure is severely lacking, resulting in high contamination and disease incidence.

The sector is highly reliant on ODA and struggles to attract private financing. Furthermore, rising climate risk has raised concerns over water insecurity. Some policy shifts and concessional financing has opened the door for Viet Nam to exposure implementing more circular economy solutions. An example of this is the ADB funded Binh Duong Waste-to-Energy plant.

SOCIAL

Spurring from the Universal Health Coverage (UHC) policy, there is good country-wide health coverage. Social Health Insurance (SHI) reached 90.8% in 2020, marking the policy successful. There is now great focus on expanding primary healthcare infrastructure and new solutions to ensure easy access, such as telehealth.

Healthcare thus far has been reliant on ODA but is moving towards more private investment and use of PPP models.

There is sufficient access to primary and secondary education across the country but with some minor urban-rural disparity. Primary and secondary education is reliant on ODA while tertiary education is seeing good growth and receiving some private and foreign investment.

As the country's middle class grows, the demand for higher quality healthcare services and internationally recognized educational programmes is rising.

DIGITAL

Viet Nam is well covered for basic connectivity infrastructure countrywide. 5G infrastructure has already been developed and deployed and is soon to be licensed for commercial use. The focus now is on data storage/ data centres as demand for such infrastructure is growing, and the relevant supporting infrastructure is there (e.g. power reliability). Viet Nam has been named one of the top data centre markets in Southeast Asia, for colocation, enterprise and hyperscale. With a base level of digital infrastructure in place, the country is well positioned to incorporate more advanced technologies in cities – a key goal of the various smart city plans in place.



Part ② **Challenges**

Bottlenecks to infrastructure
development in Viet Nam

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CRITICAL GAPS THAT EXIST IN VIET NAM'S INFRASTRUCTURE LANDSCAPE

While Viet Nam has made great strides to develop core infrastructure across all sectors, there are significant gaps and growing pressures that need to be addressed. These have arisen from various forces such as rapid urbanization, climate concerns, economic growth, or policy changes – among other push factors. These gaps manifest in two main ways – insufficient supply, or quality. In addition, the country faces a significant investment gap.

SUPPLY GAP

Infrastructure is just not present

In some cases, the core infrastructure needed to support the local population has yet to be developed. This is particularly true for the water & waste and social sectors.

Viet Nam has outlined a target to provide 93-95% of people in rural areas, and 95% of those in urban areas, with access to clean water by 2025. However, as of 2022, just 34.8% and 84.2% of people in rural and urban areas, respectively, have access to clean water.¹ These statistics also point to the urban-rural disparity in provision of infrastructure.

Existing infrastructure is lacking

Even where necessary infrastructure has been implemented, the country is now facing issues of overcrowding or assets running overcapacity – both of which cause health and safety concerns.

Across Viet Nam, there is rampant overcrowding of hospitals with issues of bed-sharing, long wait times and high doctor-patient loads. In 2021, it was estimated that Viet Nam had 3.1 hospital beds per 1,000 population, while the WHO recommendation is 5 beds per 1,000 population.²

Patients often wait for 3-4 hours with their young children, evening sleeping in waiting areas, prior to being attended to.³ On peak days, some doctors examine up to 100 patients in a day. Due to such pressures, many doctors and nurses often choose to work at private hospitals or clinics, resulting in a brain drain from public institutions. This overcrowding has been attributed to the lack of access to/ and awareness of primary healthcare infrastructure, resulting in individuals continuing to visit secondary and tertiary institutions for all ailments.

In the transportation sector, airports face a similar issue where many now run overcapacity due to rapid growth of travel to and within Viet Nam. The total designed capacity of airports was 91 million passengers annually in 2019, however total volume reached 116 million.⁴

QUALITY GAPS

Current infrastructure is under-utilized

In contrast, there are issues of infrastructure being under-utilized, which is particularly apparent in transportation. Some ports are unable to operate to their designed capacity, not for a lack of demand, but rather a lack of supporting infrastructure.

¹ "Just 34.8 percent of people in rural areas have access to clean water", Viet Nam Plus, 2022

² Exciting times ahead – Healthcare in Viet Nam remains high on investors' radar, BDA Partners, 2022

³ Vietnamese hospitals extremely overloaded, Viet Nam Net, 2011

⁴ Viet Nam - Country Commercial Guide – Aviation, Trade.Gov, 2022

Public transportation, however, is underused due to limited interest. Vietnamese people continue to perceive private vehicle ownership or hires as more affordable or attractive – as such, public transportation mode share in major cities, like Hanoi, remains under 10%.¹

There is an urban-rural disparity in quality

Noting that wealthier individuals predominately live in cities, there is a visible urban-rural divide. For example, access to and quality of secondary education infrastructure in rural and remote areas is much lower than that of cities. The Covid-19 pandemic only exacerbated this gap with students such areas facing difficulties to access online platforms. Such gaps are apparent in the provision of healthcare as well, with lacking primary care infrastructure country-wide.

Finally, with economic growth and a rising middle class, the demand for higher quality infrastructure is rising country-wide. As such, significant improvements need to be made.

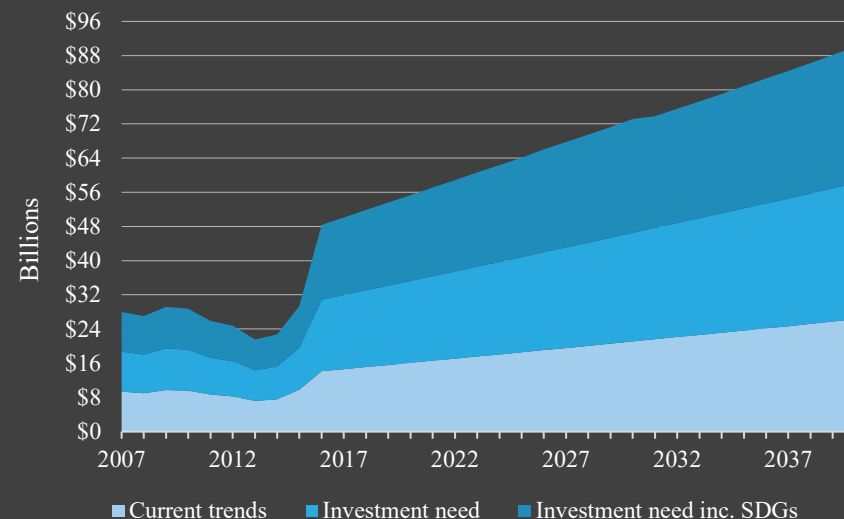
DEFINING THE INVESTMENT GAP

Due to various supply and quality gaps, and dwindling ODA financing, there lies a large investment gap. This is prevalent ASEAN-wide but varies country-to-country. Viet Nam has a 17% gap, like that of Philippines (14%) and Thailand (20%). The country, however, leads in infrastructure investment regionally, currently spending 6% of its GDP on infrastructure, while other ASEAN members commit an average of 2.3%.

¹ Improving the commuter experience in Viet Nam, Arup, NA

² Infrastructure Outlook – Viet Nam, GIHub, 2022

OVERALL INVESTMENT GAP



INVESTMENT GAP BY SECTOR



The overall investment gap (excluding social) is US\$102bn



US\$0 investment gap (telecommunications)



US\$70.2 billion investment gap



US\$23 billion investment gap (water infrastructure)



US\$8.9 million investment gap




NA

VARIATION OF GAPS BY SECTOR


The severity of supply, quality and investment gaps vary across all five sectors, with transportation showing the largest gaps.

TRANSPORT

 Currently, the investment gap is greatest for this sector at US\$70.2 billion with roads requiring a staggering US\$55 billion (airports US\$1.3 billion, seaports US\$8.1 billion, rail US\$5.8 billion).¹ In addition, there are significant supply gaps with roads and airports running over capacity due to burgeoning demand. The quality of logistics infrastructure is lacking and inhibits these running at optimal capacity. In addition, necessary connectivity infrastructure between ports and distribution facilities is lacking or running at overcapacity (e.g. expressways).


Finally, urban railway like the Cat Linh – Ha Dong Line, Hanoi’s first metro line, is underused due to concerns of poor quality from contractors used. While this may differ for other metro lines being developed by other international ODA funds, many people find private vehicles more convenient, affordable and attractive. Such projects have also neglected to integrate with other urban infrastructure and account for last-mile connectivity.

ENERGY

 There was an astounding rise in energy generation infrastructure, particularly solar, in 2021. This expansion, however, was not matched with the required transmission and distribution


infrastructure. As such, there is currently huge curtailment of solar power. Furthermore, Viet Nam has set net-zero goals by 2050, yet the country is still reliant on coal-fired power, pointing to significant infrastructure gaps in facilitating an energy transition.

WATER & WASTE

 There are significant quality gaps here with 80% of diseases in Viet Nam being attributed to contaminated water supply (e.g. cholera, typhoid, dysentery). Urban-rural disparity is most noticeable in the water sector with 84.2% of people in urban areas having access to clean water and just 34.8% in rural areas.²

The country is also severely lacking in waste management infrastructure with an estimated US\$10-20 billion required to reach Viet Nam’s goal to collect and properly dispose of / treat 95% of municipal solid waste. In a similar vein, an estimated US\$8-10 billion is required develop urban wastewater drainage and treatment systems – in 2020, just 13.2% of wastewater was treated in Ho Chi Minh City.

SOCIAL

 While the investment gap for social infrastructure has not been estimated, there is evidence of both supply and quality gaps. With regard to healthcare, there is a significant gap in the provision of primary care infrastructure, as well as awareness of such facilities – resulting in overcrowding of hospitals. Within hospitals themselves, there are major gaps in necessary staff, equipment and medicines needed to treat patients.

¹ Infrastructure Outlook – Viet Nam, GIHub, 2022

² Just 34.8 percent of people in rural areas have access to clean water”, Viet Nam Plus, 2022

There are also significant disparities in education with higher education enrolment varying by socio-economic status – by age 19, 1 out of 5 from the poorest 20% remain in school, while 4 out of 5 from the wealthiest 20% do.

DIGITAL

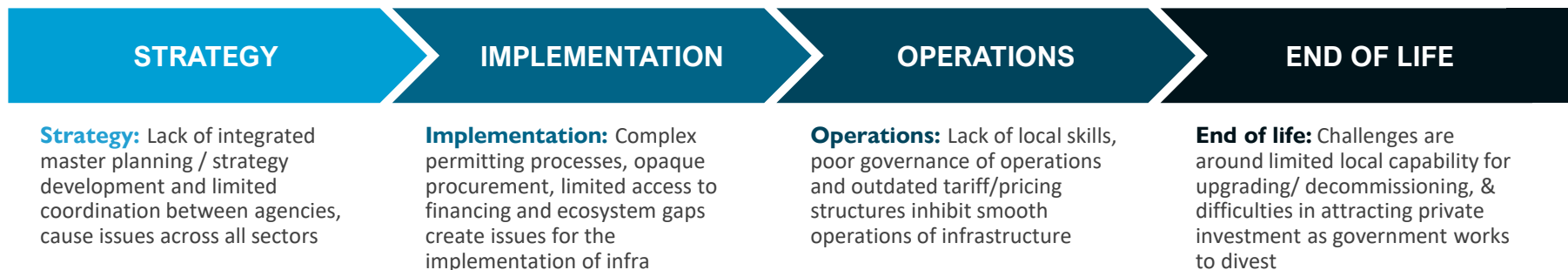
Finally, it is estimated that there is no investment gap for the telecommunications sector, with widespread provision of such infrastructure – although access and usage may vary between urban and rural areas, to a certain extent. There have been instances where connectivity has been inhibited by the performance of submarine optic cables (e.g., errors, partial breaks). That said, Viet Nam is fairly well-covered for necessary digital infrastructure

CRITICAL INFRASTRUCTURE BOTTLENECKS ACROSS THE PROJECT LIFECYCLE

While there is an intention to fill the gap and several projects initiated over the last decade to do so, there are some intrinsic issues that plague the development of infrastructure. These exhibit as projects not taking off the ground or delayed and stalled projects.

These issues are caused by bottlenecks that can be understood across the project lifecycle (see below). Majority of bottlenecks are noticed at strategy level (regulatory institutions like PDPVIII delay, government agencies don't speak to each other so lack integrated planning, especially for projects that span several provinces, the PPP law is very restrictive)

INFRASTRUCTURE PROJECT LIFECYCLE



Bottlenecks at the strategy stage, particularly those related to the regulatory environment, institutional capacity and access to capital, **are essential to address to ensure downstream activities are successful** and bring positive returns.

CATEGORISING BOTTLENECKS

The key barriers observed across various aspects can be understood across five key thematic areas – regulatory landscape, capacity & skills, technology readiness, access to capital, and infrastructure ecosystem.

REGULATORY LANDSCAPE

The regulatory landscape in Viet Nam can be very complex to navigate. A focal point has been the **PPP law** which forms the basis of private sector investment; however, it is still lacking in its current form to be truly effective (see side bar). Overall, there is **insufficient national oversight** in a coordinated approach to infrastructure project execution for e.g., in assessing land prices, overseeing transactions and ensuring construction abides by approved plans. There is significant autonomy even at provincial level in decision-making, including infrastructure planning and project approval, which can result in inconsistencies in standards and practices across different regions as well as with national level. Another common issue is the **lack of transparency** in bidding process, land valuation, transactions between public & private sector. Weak regulations and oversight of the bidding process, leads to inconsistencies, significant delays in bidding

processes and their fairly opaque evaluation linking to concerns over favoritism and inefficiencies. Another dominant theme is **land acquisition issues** and delays primarily plagues transport infrastructure development. Viet Nam Land Law does not sufficiently address fair pricing mechanisms, appeal processes and dispute resolutions, resettlement policies which can lead to conflicts that add years of delays to infrastructure construction.

THE PPP LAW AND RELATED CHALLENGES IN VIET NAM

New PPP Law: In recent years, the PPP framework in Viet Nam was regulated and operationalized through several laws, decrees and circulars. This has led to overlapping provisions, grey areas and conflicting interpretations. The new PPP law (Law No. 64/2020/QH14) coming into affect from 2021, seeks to address these challenges however is still seen as lacking market friendly regulations.

Complex Legal Framework: PPP projects are regulated by new law and several other laws, decrees and circulars. In the transport and energy sector, sectoral regulations also apply. General laws (e.g., the Investment Law, the Public Investment Law, etc.) will continue to be applicable. This leads to **discrepancies** between regulations across agencies or level of government. Laws, decrees and circulars often do not line up.

Parts of new Law perceived as less attractive: there is more clarity on investment procedures, revenue sharing mechanisms etc but it takes away flexibility by removing Prime Minister approval discretions, foreign law governance, step-in rights for lending banks, investor transfer rights etc.

Lack of supporting frameworks for PPPs: several enablers e.g. loan guarantees, availability of payment/ risk sharing mechanisms, and arbitration mechanisms for legal disputes are insufficient to provide certainty and assurance to private sector.

CAPACITY & SKILLS

There is insufficient institutional capacity and local skills to meet needs of infrastructure development in Viet Nam. A principal issue at the strategy level is a **lack of integrated planning** and the capacity to do so. Thus far, agencies have not adequately coordinated infrastructure development and **operate in siloes**.

There is no dedicated body to facilitate integrated master planning of infrastructure.

In strategy development and planning, there are limited skills to appropriately forecast demand and required infrastructure capacity, impacting the performance of various assets as noted previously (e.g., overcapacity of airports, curtailment of solar)

Even with sufficient access to financing, the government struggles to unlock certain loans stemming from a lack of institutional capacity and skills to do so e.g., World Bank loans to develop primary healthcare infrastructure have been granted but remain unutilised due to a lack of intervention planning and prioritisation capacity.

Beyond the strategy stage, there is a lack of capacity and skills in implementing and operating infrastructure. Little to no local players have experience in **project managing implementation of large-scale infrastructure** e.g., North-South High-Speed Rail. Existing Project Management Units (PMUs) lack project setup, programme management and cashflow management skills. There is also limited expertise in managing certain types of assets that require more complex skillsets, such as offshore wind farms.

Furthermore, the country experiences issues of brain drain from the public to private sector, most noticeably in social infrastructure with doctors, nurses and educators.

As the country aims to develop better quality, more technologically advanced and integrated infrastructure, more complex skills will be required.

TECHNOLOGY READINESS

Development of new assets, and upgrading existing ones, will be limited by the relative technology readiness of the government, and other relevant stakeholders.

At the government level, the **national standards and laws that govern emerging technologies is lacking** e.g., EV vehicles, charging technology, smart grids, 5G licensing, etc. In addition, while some provinces / cities have taken to digital transformation and digitizing government processes, this is still lacking – e.g., record management, tracking inventories, e-government services.

In various sectors, **technology is outdated**. This is particularly true for healthcare where hospital equipment and machines are obsolete, or appropriate technology is under provisioned.

Similarly, in the water & waste sector, solid waste remains largely unsorted or untreated as existing processing methods are insufficient and **new processing technologies are unavailable or require high capital investment**.

ACCESS TO CAPITAL

As Viet Nam's access to concessional / ODA financing declines, infrastructure development is more reliant on receiving financing and funding from other sources. As highlighted by the investment gaps previously, this is insufficient.

The local financial ecosystem is relatively underdeveloped and unable to provide sufficient long-term capital needed by investors necessitating credit enhancements and additional guarantee mechanisms, e.g., via export credit agencies, viability gap financing.

Thus far, it has been difficult to attract private investors due to relatively high capital costs with low service prices (e.g., unfavourable tariffs and fee schedules in the water and waste sector).

In addition, the regulatory environment has deterred private sector players from entering PPPs due to lengthy approval processes, long payback periods, complexity of regulations and high taxes (largely in education).

In the energy sector, for example, the lack of predictability of feed-in-tariffs and future tariff structures deters investors – The government has the autonomy to change tariffs at any time, with no clear mechanism that triggers this.

INFRASTRUCTURE ECOSYSTEM

This refers to the ecosystem of players that is necessary to develop infrastructure, or lack thereof. Across all sectors of infrastructure, and impacting all stages of a project lifecycle, there are limited legal advisory in the local infrastructure ecosystem. This, coupled with a lack of set arbitration mechanisms inhibits the financing and implementation of infrastructure. In addition, foreign entrants must compete for local consultants.

For some types of infrastructure, there is a lack of specialized companies with relevant experience. This is noticed in waste management, wastewater treatment, offshore wind, and electric vehicles, among other areas.

Lastly, many areas of infrastructure have historically been dominated by state-owned enterprises, resulting in a lack of local private sector players. For example, while EVN has divested from power generation, they still hold a monopoly on transmission & distribution which are where most issues currently lie – no private parties actively participate in developing or managing such type of infrastructure.

Similarly in transportation, the government is keen for more private sector investment, but numbers remain limited. The Airports Corporation of Viet Nam (ACV) seeks to divest their stake further, but has struggled to do so, so far.

VARIATION OF BOTTLENECKS BY SECTOR

Across the board, most challenges are noticed at the strategy stage. Furthermore, most bottlenecks directly stem from those at the regulatory level. Each sector faces a variety of challenges to develop infrastructure, however the lack of mechanisms to support PPPs / private investment is noticed across all. This includes the lack of guarantee and risk sharing mechanisms; lack of predictability or clarity of regulations and tariffs; and lack of arbitration mechanisms, among other issues.

In addition, underdeveloped financial markets (e.g., lack of local credit rating agency, bonds market), complex land acquisition processes, and lack of transparency in procurement processes, impacts all sectors to varying degrees. Beyond this, each sector faces other unique bottlenecks impacting infrastructure development.

TRANSPORT

A lack of institutional capacity in integrated planning is one of the greatest issues plaguing the transportation sector, explaining why various assets operate well overcapacity (e.g., airports) or are under utilized (e.g., public transport). While this issue is prevalent across all sectors, the impact is most pronounced in transport.

ENERGY

Delays in publishing the national strategy document, Power Development Plan VIII (PDP8) have been the greatest bottleneck

stalling energy and power infrastructure development at the moment. Due to a lack of clarity on the future power mix, and what generation plants will be included in PDP8, investors have halted the development of new plants. Transmission and distribution infrastructure is still lacking as the nation awaits PDP8.

WATER & WASTE

Water projects struggle to access capital due to a mismatch between regulation and financing mechanisms. The average water project may have an economic life of approximately 12 years, but financing provided is available for fewer. In addition, water tariffs remain low (detering private investment) due to socio-political forces – People’s Committees are reluctant to raise tariffs despite policies encouraging this (Decree 117/2007).

SOCIAL

The lack of clarity and lengthy approval processes of procurement are massively impacting the performance of healthcare assets – time taken between submitting requests for medicine and receiving them is unpredictable and often, medicines provided are insufficient by the time of delivery.

DIGITAL

Land ownership laws cause some hesitation among private sector investors, particularly in developing mission-critical assets like data centres. Leasing land from the government and no private ownership is risky without guarantees on land security.



Part ③

Opportunities

Which opportunities do these present?

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OPPORTUNITIES LINKED TO INFRASTRUCTURE DEVELOPMENT

When analyzing opportunities in Viet Nam's infrastructure landscape, these opportunities can vary from active projects open in the short-term, to long-term development targets set by policymakers. These opportunities are categorized below based on their expected time of entering the pipeline.



CURRENT PROJECTS IN THE PIPELINE

Project type: Of all active projects in the pipeline, over 40% consist of PPPs. The sector with the highest number of PPPs is transport, followed by water & waste. Within transport, the subsector with the highest number of PPPs is in roads, using a Build-Operate-Transfer (BOT) model. Conversely, the social sector has the fewest active PPPs, of which most are delayed and have yet to reach financial close. As for the energy sector, there are a handful of PPPs open for tenders like the Vinh Tan Energy-to-Waste Plant. However, many energy projects in Viet Nam are proposed by private investors through unsolicited proposals under the popular independent power producer (IPP) model.

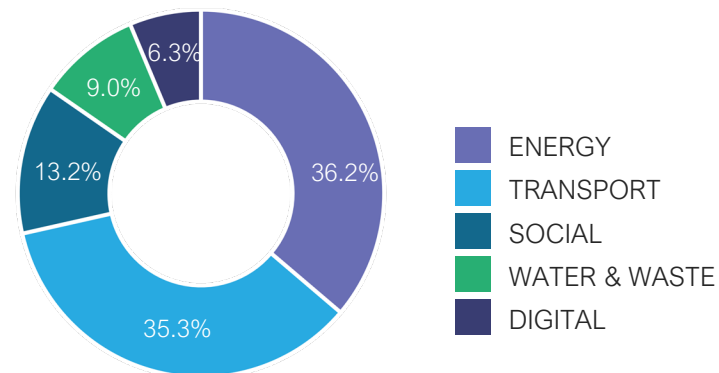


Figure: Total opportunities in the pipeline by sector

Across sectors: Viet Nam's infrastructure opportunities lie mostly in the energy (36.2%) and transportation (35.3%) sectors, and least in the digital (6.3%) and water & waste (9.0%) sectors.

Project grantors: Most projects in the pipeline are granted by government bodies, ranging across national ministries, provincial governments and state-owned entities. Projects located in a specific province will be tendered out and governed by that province's People's Committee, while projects of larger regional coverage, deal value or capacity may be governed by national government ministries, illustrated in the example of Viet Nam's North-South High-Speed Rail, which is expected to span 1,570km across the country and thus has been tendered out by the Ministry of Transport. However, there is a notable difference in the clean energy sector, in which majority of infrastructure projects are being granted by state-owned enterprise EVN.

HOW OPPORTUNITIES DIFFER BY SECTOR

TRANSPORT

Roads: Across transport, the subsector with the highest number of opportunities is roads. Of all active road projects, almost 90% are in the form of PPPs, mostly following the BOT model. Some notable road projects in the pipeline with the highest deal values include the development of the North-South Highway and Ho Chi Minh City Ring Roads. The Vietnamese government has also issued long-term targets for its nationwide road system to expand from a capacity of 3,841km in 2021 to over 5,000km by 2030 –expected to scale up opportunities for road development. However, it is worth noting that road projects are often led by local players or face limited bidder interest thus making them prone to re-nationalization. As such, this subsector less prioritised for foreign players.

Airports: To respond to growing demand, the Vietnamese government is set to spend US\$17.65 billion to build 4 additional airports by 2030, with majority of projects utilizing a PPP model. Anticipated airport infrastructure investments, upgrades, and expansions between 2021-2030 include Long Thanh International Airport and Terminal 3 of Tan Son Nhat Airport in HCMC.

Rail: The North-South High-Speed Rail is a top priority project for the sector, in addition to developing passenger and freight rail networks across provinces such as the Bien Hoa-Vung Tau Railway. Developing urban metro rail is also increasingly prioritised, with project opportunities such as the Ho Chi Minh City Metro Rail and Hanoi Urban Railway expected to launch for tender shortly.

ENERGY

Clean energy: Although Viet Nam is still reliant on fossil fuels, clean energy projects, particularly solar and offshore/onshore wind make up majority of opportunities in the sector, with over 30% of clean energy opportunities being M&A deals and the rest comprising greenfield development projects.

With a 100% foreign ownership right in the renewable energy sector and foreign investors being allowed to own up to 100% equity, opportunities in the clean energy sector are anticipated to accelerate, especially in offshore wind due to Viet Nam's huge wind potential. This focus on offshore wind is in tandem with Viet Nam's Net Zero targets for 2050, where Viet Nam has committed to stop the construction of and decommission coal-fired power plants from 2030 onwards.

Digital transformation: Led by EVN, the sector has long-term targets to undergo digital transformation by adopting smart grid tech, remote controls, SCADA/EMS, data analytics, etc. In addition, EVN seeks to establish a science & tech institution focusing on R&D in electricity-related fields.

Waste to energy: Not only has demand for electricity dramatically risen, but waste generated has too. About 25.5 million tons is generated a year, 75% of which ends up in landfills. The government is actively looking into waste-to-energy solutions shaping regulation to enable the development of waste-to-energy plants, with more expected in coming years.

WATER & WASTE

Water supply: The government has announced targets of ensuring water security across the nation by 2050, achieving this through smart water management and restoration of important domestic water supply sources, with plans to restore Vu Gia - Thu Bon river and Ba river to take place soon. There are also several PPPs open for tender to develop water supply plants like Long An Water Plant and Dong Dien Reservoir Water Supply Plant.

Flood preparedness: The Master Plan of Water Resources for 2021 – 2030 states the need for climate preparation by developing smart systems for forecasting and regulating water, and stormwater drainage. One project tendered by ADB titled Climate Resilient Urban Services Project serves to support Ho Chi Minh City People's Committee to finance a sound wastewater and drainage system, necessary for flood protection.

SOCIAL

Higher education: There are projects to develop infrastructure and provide enabling activities for tertiary education institutions. The World Bank is financing and seeking out tenders for the construction of modern learning and technical infrastructure for University of Da Nang, VNU-Hanoi and VNU-HCM.

Access to education: The Ministry of Education and Training Viet Nam and MDBs have an active presence in enhancing provision and quality of primary and secondary education, inviting bids for projects across each province in Viet Nam for the

supply, delivery and installation of equipment for libraries and classrooms for lower secondary schools in disadvantaged areas.

Healthcare PPPs: The healthcare sector is anticipated to see stronger adoption of PPPs to meet demand. One such example is the Pham Ngoc Thac University Outpatient Clinic PPP seeking bidders, with IFC as its lead advisor to design the PPP transaction.

Health tech: The government has set priorities for digital transformation in the healthcare sector, by expanding health tech, such as remote medical advisory and consultations. Funding opportunities from the government to develop health tech and telemedicine apps are also expected soon.

DIGITAL

Data centres: Viet Nam sees a huge investment opportunities for data centre development, to support rapidly growing demand for digital services like e-commerce, e-governance and cloud computing. In 2022, Amazon announced that it would choose Hanoi as one of 10 locations in Asia Pacific to build its 10 data centers. Viettel also has plans to build the largest data center in Viet Nam, aiming to invest US\$261 million in the project.

5G & 6G connectivity: Viet Nam has outlined plans in the National Digital Transformation Plan 2025 to provide 5G coverage nationwide by 2030, having installed & piloted the required infrastructure, attracting further investment to expand 5G coverage beyond urban areas and high-tech industrial zones.

OPPORTUNITIES TO RESOLVE BOTTLENECKS THROUGH ENABLING ACTIVITIES

On top of opportunities for developing infrastructure, there are enabling activities that do not involve physical development of infrastructure, but rather support or enhances its development. These enablers can serve a range of purposes from capability building and technical assistance to R&D, supporting a project across its lifecycle – especially intervening in upstream activity. Most enabling activities are small-sized opportunities granted by MDBs like ADB, World Bank and UNOPS, or international government bodies such as the Japan Social Development Fund.

Enabling activities were found to be most common in the social sector, followed by energy then water & waste. These enabling opportunities have been categorized below based on their ability to provide solutions to bottlenecks hindering development.

REGULATORY LANDSCAPE

Limitations in policy and regulation governing development can be overcome through various capacity building opportunities. Capacity building can help to streamline regulatory, procurement and permitting frameworks across governments, as well as ensure national oversight, adequate arbitration mechanisms and sufficient governance frameworks across the project lifecycle. This could improve the regulatory landscape for carrying out PPP projects, especially important in the transport sector where 90% of its road projects rely on a clear PPP framework.

CAPACITY & SKILLS

To resolve the bottleneck of insufficient institutional capacity and local skills, there are several enabling activities that can help. Some enablers open for tenders include ‘Strategy Development and Planning: Strengthening Regional Health Cooperation in the Greater Mekong Subregion’ granted by ADB, seeking integrated planning expertise for healthcare, ‘eConsult Technical Solid Waste Management Advisory Support’ granted by World Bank looking for technical assistance, and ‘Bac Kan Vocational Education and Training’ by the Government of Luxembourg aiming to upskill the workforce. These opportunities serve to strategically enhance local capacity and skills, to ensure that infrastructure implementation is appropriately supported.

TECHNOLOGY READINESS

To resolve issues of limited access to technologies, there are several high-level government commitments and interests across all sectors for digital transformation and adoption of technology. The National Digital Transformation Program to 2025, with a vision to 2030, delineates telemedicine services, remote medical advisory and blockchain-powered health tech as key priorities for the healthcare sector, further enhancing access to healthcare. Other enabling activities focused on supporting tech readiness includes ‘Facilitating Knowledge for Innovation & Technology Cooperation to Accelerate Development’ by ADB, which focuses on efforts to develop human capital to advance and share knowledge for innovation and technology adoption.

ACCESS TO CAPITAL

Insufficient financing or funding for infrastructure development and operations can be alleviated through building a financial ecosystem of financial institutions, DFIs and export credit agencies which can provide blended finance that synergizes public and private capital, as well as mobilize financing for infrastructure development through credit enhancements and guarantee mechanisms. One project that is providing short-term early-stage grant financing is the Energy Efficiency Innovation Window, part of the Energy Transition Partnership by UNOPS – which serves to allay issues of under-investment in energy efficiency in Viet Nam.¹

INFRASTRUCTURE ECOSYSTEM

Since Viet Nam has a small number of players in its ecosystem as a result of strong presence of SOEs and local players, there is an opportunity to expand its infrastructure ecosystem by encouraging more companies to enter. Having a wider range of players, which bring in demonstrated expertise and breadth of expertise across different fields, will benefit Viet Nam in upskilling the entire ecosystem and welcoming competition in the market.

ENABLING INFRASTRUCTURE

Although Viet Nam faces limitations in necessary supporting infrastructure, there are emerging opportunities to resolve this. For example, certain ports are unable to operate at full capacity due to inadequate road and rail infrastructure to support them. To resolve this, there are new railway opportunities that serve to improve connectivity across the nation.



Bien Hoa-Vung Tau Railway is a railway opportunity, part of the Trans-Asian railway network, with a total investment capital of over US\$2.15 billion and length of 84km. This railway project aims to connect the station to the Cai Mep-Thi Vai International Port across several provinces, to provide a connectivity network.

Example of how a project can provide enabling infrastructure

¹ Energy Transition Partnership (ETP) - Energy Efficiency Innovation Window (Eeiw) Round 4, UNOPS, 2022

OPPORTUNITIES BY COMPANY TYPE

Opportunities for the UK differ across types of companies, based on their products, services and skillsets. For example, within a rail development opportunity, there can be opportunities beyond construction; legal, financial and professional advisory services could also be crucial for smooth project delivery. As such, this section aims to understand the opportunities that different company types can capture in the Viet Nam market.

LEGAL

There are huge opportunities in Viet Nam for law firms and legal advisors providing services like transaction advisory, structuring concession agreements, PPP contract structuring, arbitration and compliance.

- ▶ **PPP advisory:** With over 40% of projects under the PPP model and this number forecasted to grow, there is huge room for legal firms to provide services to private sector players for PPP contract structuring and drafting, PPP project litigation and general advice on PPP project implementation

FINANCIAL

Financial companies can play a huge role in drawing investments and closing critical investment gaps. There are opportunities for investors, developers, banks, brokerages, financial institutions and related advisors to offer a range of solutions such as funding and financing, debt instruments credit guarantee schemes, insurance, accounting and tax services, investment advice and equity sponsors.

- ▶ **Clean energy:** There are huge opportunities for investors in clean energy, as investments in this sector are not subjected to foreign ownership restrictions, allowing up to 100% foreign ownership rights. With more renewable projects also demonstrating viability, more state-owned and private domestic banks are willing to finance at higher interest rates, which boosts investor confidence and in turn attracts more investment into Viet Nam's clean energy sector.
- ▶ **Aviation:** As per Decision 236/QD-TTg, there are plans underway to seek 100% foreign investment to execute the production, maintenance, and repair of aviation equipment. This move is expected to boost opportunities for foreign investors and developers to increase participation in this subsector.

PROFESSIONAL

Across almost every infrastructure development project, there is an opportunity for professional consultancies to offer their wide range of services of management consulting, commercial strategy, workforce development, compliance, risk consulting, project planning and strategy development, especially intervening at the upstream stage.

- ▶ **Holistic planning:** Professional expertise can be especially critical in large-scale long-term projects, such as the Ho Chi Minh City Green Transport Development, which is financing the construction of a BRT corridor. Beyond construction, technical assistance for holistic planning is crucial to ensure the BRT route provides ripple effects that can improve overall transport and urban mobility in HCMC in the long run



Ho Chi Minh City Green Transport Development

The development objective of this project is to develop reliable and fast passenger transport while minimizing negative impacts to the environment. This multi-component project focuses on the development of a Bus, Rail and Train Corridor. The client is the Transportation Works Construction Investment Project Management Authority of Ho Chi Minh, in cooperation with the World Bank.

Professional consultancies offering integrated holistic planning can provide a value-add in large city-wide projects such as this, to ensure that transport development provides ripple effects that can improve urban mobility in the long-term for the city.

ENGINEERING & CONSTRUCTION

Companies that provide services in design, engineering and construction can capture opportunities across a wide range of projects. These companies can offer their international expertise when undertaking feasibility studies, geotechnical surveys, environmental impact assessments, and downstream project management.

DIGITAL

Companies offering solutions like automation, enterprise software, data management, analytics, specialist modelling applications (GIS, 3D visualization) and cybersecurity services among others, can capture huge long-term opportunities across sectors. This can be attributed to digital transformation being a key national priority, as outlined in the National Digital Transformation Program to 2025.

- ➔ **Smart city:** Digital players can leverage on plans for smart city development by providing various solutions across sectors to optimize management and augment urban experience. This includes services like 5G and 6G network deployment, smart mobility, telemedicine, fintech, edutech, smart waste management, smart traffic management and cybersecurity



Provision of a Technical Firm for Digital Solutions to Optimize Port Efficiency

ADB tendered out this project which is seeking technical assistance to support research activities on how to carry out digital transformation for smart port operations in Viet Nam. This project serves as an enabler, carrying out capacity building to support the development of port infrastructure.

Digital companies with experience in digital transformation and tech advancement can excel in providing their services here, leveraging on their digital expertise to improve port operations.

MATERIALS & EQUIPMENT

Companies that specialize in the production and distribution of raw materials, components, and machinery can capture a wide range of opportunities, especially if providing equipment that is high-tech and innovative. For example, high-tech materials & equipment companies can leverage on the nation's targets for clean energy and provide advanced energy storage systems, wind turbines, submarine power cables and advanced batteries for electric vehicles.

OPERATIONS & MANAGEMENT

O&M companies specialize in providing comprehensive solutions like facilities management, utilities operations and payment systems to help organisations optimize their operations, improve efficiency, and reduce costs. O&M companies can bring value into infrastructure projects by carrying out operations, streamlining project management, enhancing operational efficiency, and ensuring compliance with local regulations.

- ▶ **Payment systems:** Payment systems are critical for revenue collection, especially in the transport sector. O&M companies can operate electronic toll collection, smart card ticketing and mobile payments for urban transit.

TRAINING & EDUCATION

Specialized organisations have a unique opportunity to build capacity in Viet Nam to address its growing skills gaps. This may include provision of services such as vocational training, technical training and education programmes to upgrade skills of Viet Nam's workforce.

- ▶ **Healthcare training:** To address the nation's shortage of healthcare professionals, the national Socio-Economic Development Strategy 2021-2030 has pinpointed an urgent need to develop a skilled and competent workforce. This creates huge opportunities for international organisations with advanced healthcare capacity to provide vocational medical training and human resource development.

Introduction

Overview

Challenges

Opportunities

Market Entry

Part ④

Market Entry

How to capture these opportunities
in a very competitive landscape?

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MARKET ENTRY CONSIDERATIONS

To effectively seize potential opportunities in a market with complex regulations and frameworks, companies must understand market entry considerations. This chapter will delve into the key factors that companies need to carefully consider when entering the Vietnamese market.

KEY CLIENTS AND HOW PROJECTS ARE BEING PROCURED

To successfully capture opportunities, it is crucial to understand the key clients who are responsible for granting, tendering, managing and supervising the project. Identifying the key clients in charge of granting projects can help companies understand the key stakeholders they will need to interact and work with.

Majority of infrastructure development opportunities are granted by a government authority. Projects of large scale that span across various provinces are typically under the responsibility of national ministries such as MoT or MoIT, while projects that occur within a particular province will be governed and regulated by the People's Committee of that specific province. In addition, there are SOEs that grant and manage projects.

Apart from winning tenders and projects, companies can also capture opportunities further downstream by providing services to a variety of stakeholders throughout the project lifecycle.

MODES OF ENTRY INTO THE MARKET

Modes of market entry are the ways in which a company can expand its services into a foreign market. The Vietnamese market has several key market entry modes available, which companies must be aware of when planning to capture opportunities in the country.

- **PPP:** The PPP model is growing, wherein a private company collaborates with the government to jointly develop a project.
- **Joint venture (JV):** JV refers to when several companies form a new entity to jointly invest in and operate a business. JVs can provide foreign entrants with local market knowledge, access to distribution networks, and shared risks and costs.
- **Consortium:** Consortium is a mode of entry where two or more companies come together to form an alliance or partnership to bid for and execute a project or contract.
- **M&A:** M&As are a common mode of entry where a company acquires or merges with an existing company in Viet Nam. This can provide companies with a strong presence in the local market, access to customer base, and operational synergies.
- **Public procurement:** Public procurement is a mode of entry into the Vietnamese market where companies participate in government tenders to provide works to the government.

RIGHT TO PLAY

In order to successfully enter and compete in Viet Nam's market, foreign entrants will need to meet a certain set of eligibility criteria, collectively known as the right to play. This section will outline the key requirements and needs that companies must meet in order to establish themselves in the market.

Mandatory regulations and licenses

Depending on the sector or project type, firms will have to register with relevant government agencies to obtain necessary licenses and permits required to participate in the market. Across all projects, companies must ensure their projects comply with laws and regulations governing matters of land clearance, land use rights and construction amongst others, by acquiring licenses and permits including the business license, construction permit and land use right certificate. In certain cases, compliance with specific regulations and standards must be declared.

Depending on the nature and scale of the infrastructure project, an environmental impact assessment may be necessary to submit, to assess potential environmental impacts and obtain approval from the relevant environmental authorities.

Proof of financial health

Under the Law on Investment guided by Decree No. 31/2021/ND-CP, all foreign investments in Viet Nam require the submission of a detailed investment plan that outlines the company's financial

projections, sources of funding, and expected returns, which must be approved by the relevant authorities and comply with the Law on Investment and its implementing decrees.

Local participation

Investors and developers may require to partner with local businesses to consolidate relationship with local communities and better understand regulatory conditions. In some sectors, foreign players may be required to forge such local partnerships in order to submit tenders and navigate approval processes.

Skills & capacity

Bidders must be able to show they have the relevant skills and experience to execute a project, and the capacity in terms of time, resources, and manpower to successfully implement and manage the project. This may include showcasing technical expertise, management capabilities, and prior track records to demonstrate the ability to undertake the project efficiently and effectively. Proof of skilled personnel, adequate financial resources, and project management capabilities can be important factors in meeting the eligibility criteria for the right to play in Viet Nam's market.

Market Entry Considerations

RIGHT TO WIN

The competitive landscape of Viet Nam's infrastructure market favor foreign players who possess distinct advantages. This section covers the concept of the right to win, which refers to the unique strengths that companies can showcase to outperform competitors and secure opportunities in the market.

Trust & local partnerships

Companies that prioritize building trust can establish a solid foundation for market entry. Trust can be measured by willingness to invest time to conduct business and to develop an understanding of the local culture and language. Partnering with local companies is also highly effective, as these local partners provide local context and connections crucial for market entry. Investors committed to using domestic content may also be eligible for preferential treatment during the tender process.

Specialised expertise

Foreign companies with specialized expertise in niche areas can gain a competitive edge in the market, especially if this expertise is not found locally. Possessing such unique skills and experience can provide companies with a huge competitive edge.

Brand reputation

Globally renowned and reputable companies with an established legacy and track record have proven to win or participate in key major infrastructure development opportunities in Viet Nam.

Strong diplomatic relations

Engagement with Viet Nam via strategic partnerships, bilateral development finance, trade agreements, or other commitments to develop infrastructure, can influence where a winning bidder may come from. Strong diplomatic ties provide foreign companies with ample opportunities and advantageous positioning to enter the market.

Cost competitiveness

Many projects are government-funded and face tight budget limitations, making them cost-sensitive. Thus, companies who benefit from pre-existing economies of scale and can price their services more competitively will have a strong competitive edge in the market.

Funding & financing

Having graduated from IDA, Viet Nam has less access to concessional financing. As Viet Nam is transitioning away from its aid-funding dependency towards public and private funding, private companies who bring along investments or financing pathways are highly preferred.

Patience

As the Viet Nam market has certain complexities and difficulties that entrants will need to navigate, companies that are patient and prepared to invest time and resources necessary to do business with the public sector are highly preferred.

HOW MARKET ENTRY CONSIDERATIONS VARY ACROSS SECTORS

There are several conditions of market entry that apply across all infrastructure sectors, which foreign entrants must be aware of when intending to participate in Viet Nam.

Across all sectors, the key clients granting and managing most projects in the pipeline are government bodies, ranging from national ministries and provincial People's Committees to state-owned enterprises. Thus, all foreign entrants, regardless of the infrastructure sector they wish to participate in, should be well-prepared to communicate with local government officials.

When engaging in an infrastructure project in Viet Nam, local participation and partnership is considered essential, although it is not explicitly codified in regulation within any sector. Therefore, all foreign players are highly encouraged to partner with local businesses to consolidate relationship with local communities and better understand regulatory conditions.

Lastly, companies that offer specialised expertise are highly preferred and boast a strong competitive edge in its sector, especially if they provide a niche expertise that cannot be sourced locally.

Market entry considerations also vary by sector, as each sector has its unique modes of entry, eligibility requirements, and key success factors that foreign players require to stand out.

TRANSPORT

Need for local participation: As there are laws that prevent foreigners from owning land-use rights in Viet Nam, there is a need for foreign transport players to collaborate with local partners to engage in transport projects via a joint venture.

Stringent market access conditions: Decree 31/2021/ND-CP outlines a foreign ownership limit applicable to investment in transportation, across aviation, passenger transport, freight transport, sea transport and logistics. These subsectors face conditional market access for foreign investors. To be able to invest in these areas in Viet Nam, foreign investors must meet market access conditions on the National Investment Portal.

Cost competitiveness: Cost competitiveness is a crucial factor for transport developers to succeed in a new market. Transport developers that employ cost-saving measures such as optimizing its supply chain, reducing overhead costs, leveraging technology to increase efficiency, and negotiating better deals with suppliers will have an edge.

 ENERGY

Mode of entry: 100% foreign ownership allowed in the clean energy sector. Most opportunities are either via M&A, or it is a greenfield development project.

Key project grantor: Majority of greenfield projects are granted by state-owned enterprise EVN, thus foreign entrants can expect to work closely with them.

Registration for investing: All investment projects in renewable energy must be licensed under the investment law regime. Power projects must comply with laws and regulations which govern matters spanning across land clearance, land use rights, construction, sale of electricity.

Specialized Expertise: Foreign companies that provide expertise in clean energy are highly preferred and have a strong edge, especially if such energy expertise is not found locally.

Brand reputation: As clean energy projects are gradually attracting more investments, energy developers with a strong global brand image may be more likely to receive greater investor interest – as seen through the success of globally renowned energy companies like Orsted and Shire Oak International in Viet Nam.

 WATER & WASTE

Permitted license to operate: Companies operating in the water & waste sector will require a permitted license. The license is issued by the Ministry of Natural Resources and Environment and is governed by the Law on Environmental Protection and its implementing decrees. The application process and requirements are outlined in Decree 38/2015/ND-CP.

Funding & financing: Availability of funding is critical for the water and waste sector. The cost of infrastructure development in the water & waste sector can be high, and financing and good access to capital is needed to cover capital costs.

 SOCIAL

Capital requirements to set up an education institution: Foreign investors must prove they have the minimum investment capital required by law in order to establish a foreign-owned education institution. The minimum investment capital to establish a foreign-owned education institution at the university level is VND1 trillion (c. US\$42.9 million).

Local partners for medical equipment: Foreign suppliers producing medical equipment and supplies often work through local distributors or agents, as only companies with a legal business entity in Viet Nam and an import license can distribute medical equipment.

Market Entry Considerations

Licenses to set up an education institution: While there is no foreign ownership limit and foreign investors can own up to 100% of an education institution, foreign-owned education institutions are subject to stringent operational requirements, such as requiring an establishment license and operating license.

DIGITAL

Compliance for data centre investment: There are a variety of regulations and standards that data centre investors, developers and operators must meet under Circular 03/2013. Compliance with these regulations and standards must be declared to the Telecommunications Authority under MIC.

Stringent cybersecurity laws: Vietnamese law regulates services and products that may impact cybersecurity and civil encryption. As such, data centre developers must attain relevant licenses to operate in the country. Under Viet Nam's Law on Cybersecurity, there is a data localisation requirement wherein companies collecting, analysing and processing personal data or data generated by users in Viet Nam must store such data locally.

Expertise and capabilities in innovation: Given Viet Nam's aspirations for innovation and digital transformation, foreign companies with robust innovative capabilities can play a crucial role in supporting the country's efforts in areas such as R&D, new technologies, and local innovation systems. Below is a success case of a foreign player in the data centre market, who showcases strong capabilities that can contribute to the development and advancement of Viet Nam's digital ecosystem.



Quang Dung Technology and Japan's leading telecoms company NTT partner to develop Ho Chi Minh City's latest data centre¹

¹ NTT & QD.TEK to develop a new data center in Ho Chi Minh City, Vietnam, Data Centre Dynamics, 2022

