

Thailand's Transport Infrastructure Construction

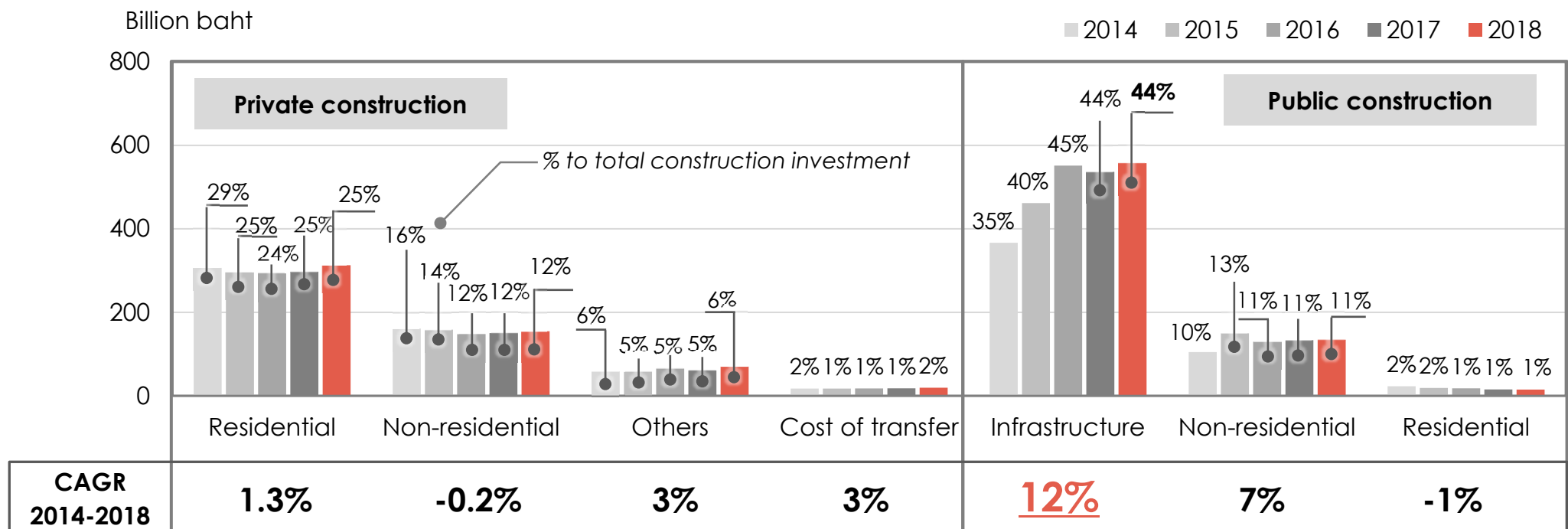
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Thailand's Construction Overview

- Since 2012, construction expenditure in Thailand has exceeded 1,000 billion baht.
- Public construction accounted for 56% of the country's construction expenditure, while private construction contributed around 44% in 2018.
- Mega infrastructure projects are the main drivers of Thailand's construction over the past few years with a CAGR of 12% between 2014-2018.

Composition of Public Construction Investment in Thailand (2014-2018)



Note: Residential: low-rise (i.e., single houses, townhouses), high-rise (i.e., condominiums, apartments, flats)

Non-residential: i.e., office buildings, factories, warehouses, retail centers, hospitals, and schools

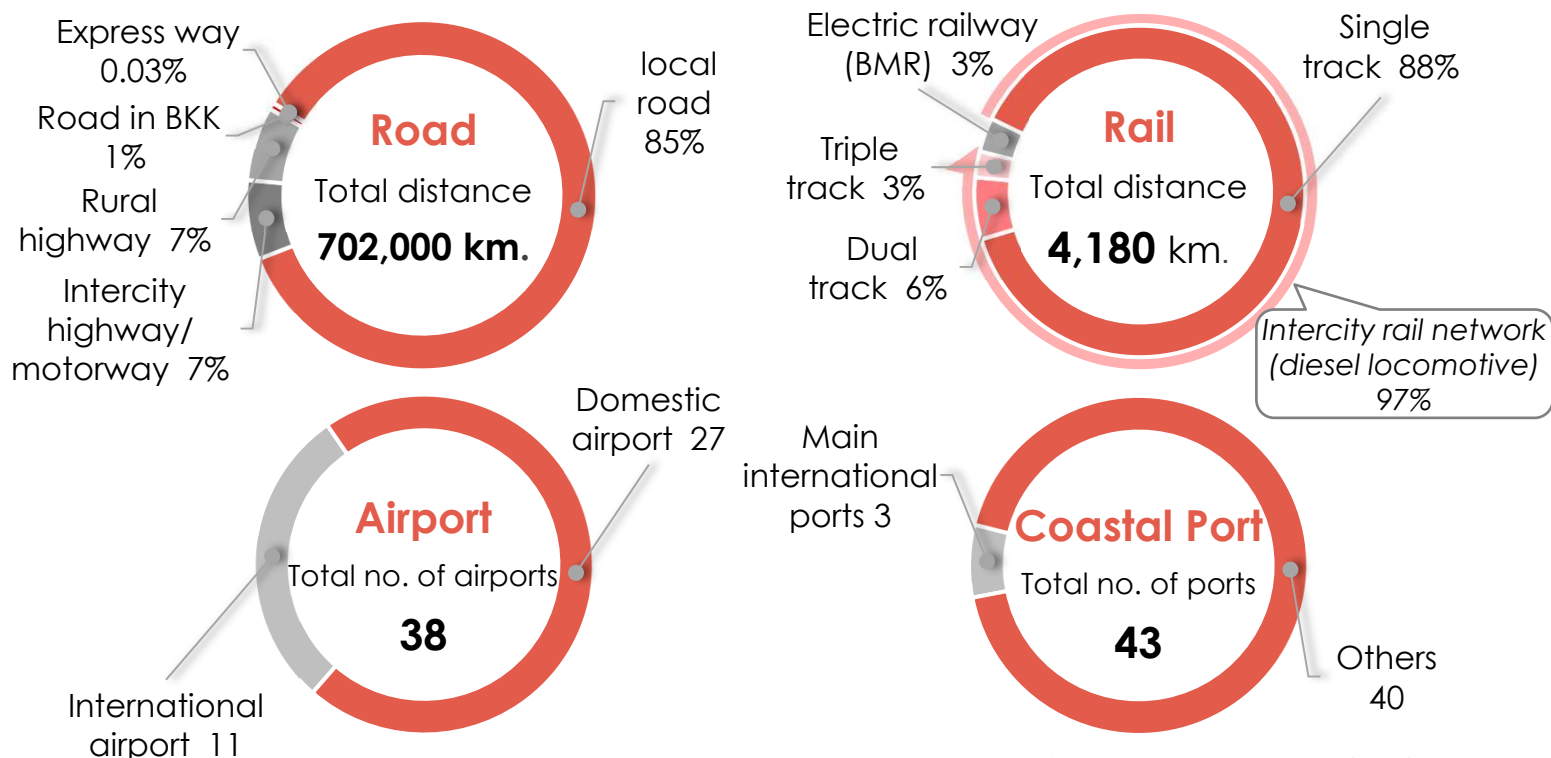
Infrastructure: non-building construction or infrastructure establishment (i.e., roads, railways, ports, and dams)

Source: National Economics and Social Development Council (NESDC)

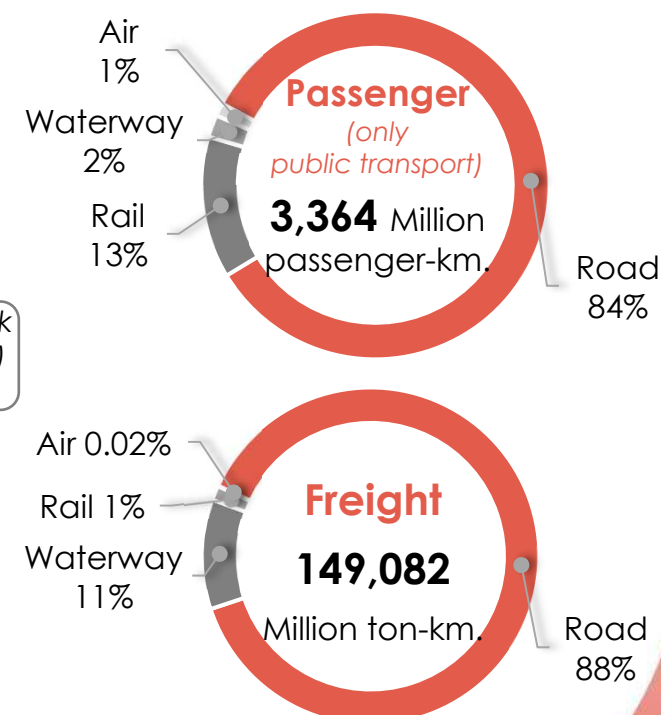
Current Status of Thailand's Transport infrastructure

- **The road network** is the most extensive type of transport infrastructure in Thailand. The total road network consists of around 702,000 km, of which 85% are local roads. Therefore, the most popular mode of transport in Thailand is by road, contributing more than 80% of passenger and freight transports. However, the traffic congestion, especially in Bangkok and major intercity routes, is the cause of high logistics costs.
- **The rail network** in Thailand has poor infrastructure due to the insufficient maintenance and development. In addition, most are single track rail that causes delays. Thus, rail is not a popular mode for intercity transportation in Thailand. On the other hand, the electric trains operating in BMR has increased popularity among urban population as it helps avoid traffic jams.
- **The Air network** is the main mode for international passenger transport. International airports served around 94% of overall passenger air transports in 2018.
- The maritime transport dominates international freight in terms of value and volume in Thailand. There are 43 **coastal ports** located along the 3,219 km. long coastline. Three main international ports, namely Bangkok port, Laem Chabang port, and Map Ta Phut port, accounted for more than 80% of nationwide coastal ports operation in 2017.

Thailand's Transport Infrastructure (2018)



Domestic Transport Mode (2017)



Source: Office of Transport and Traffic Policy and Planning (OTP), Ministry of Transport

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Trends in Transport Infrastructure Construction in Thailand

Infrastructure construction will drive construction industry over the next several years.

- The government aims to enhance the country as a regional logistics hub. Several mega projects in all modes of transportation have been encouraged together with the revision of related acts show the government's commitment towards infrastructure investment.
- Bangkok Metropolitan Region (BMR) and the Eastern Economic Corridor (EEC) are the main locations for recent infrastructure development and other regional provinces (i.e., Chiang Mai, Phuket, Khon Kaen, Nakhon Ratchasima) are the target areas for future development.
- Approximately 2.8 trillion baht was planned to be invested in transport infrastructure between 2015-2022. This will boost infrastructure construction in the country for the next 5 years.

BMR include Bangkok, Nontaburi, Samut Prakarn, Samut Sakhon, Pathum Thani, and Nakhon Pathom

EEC include Chonburi, Rayong, and Chachoengsao

Major Transport Infrastructure Projects



- ▶ Intercity high-speed railways
 - Don Muang – Suvarnabhumi – U Ta Pao (EEC)
 - Bangkok - Nakhon Ratchasima – Khon Kaen
 - Bangkok – Chiang Mai
 - Bangkok – Hua Hin
- ▶ Intercity dual-track railways nationwide
- ▶ Mass transit network in BMR (10 routes in total)
- ▶ Mass transit network in major cities
 - Chiang Mai
 - Phuket
 - Khon Kaen
 - Nakhon Ratchasima



- ▶ Deep sea port expansion
 - Laem Chabang port (EEC)
 - Map Ta Phut port (EEC)
- ▶ Ferry pier development
 - Samui ferry pier



- ▶ New intercity motorways
 - Bang Pa In – Nakhon Ratchasima
 - Bang Yai – Kanchanaburi
 - Nakhon Pathom – Cha Am
 - Had Yai – Thai - Malaysia border
- ▶ 4-lane highway expansion nationwide
- ▶ Rural roads upgrading (gravel road → paved road)
- ▶ Logistics centers in border provinces and major cities
- ▶ New phase of expressways in Bangkok



- ▶ International airport expansion
 - Suvarnabhumi international airport
 - Don Muang airport
 - U Ta Pao airport & MRO (EEC)
- ▶ Domestic (regional) airport development/ expansion
 - Southern (Surat Thani airport, Nakhon Sri Thammarat airport, Trang airport)
 - Northern (Lam Pang airport, Phrae airport)
 - Central (Hua Hin airport)
 - Northeastern (Sakonnakon airport)
- ▶ Construction of new airport (Be Tong airport)

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Trends in Transport Infrastructure Construction in Thailand

The rail system is the major transportation mode for Thailand's infrastructure investment in recent years.

- Rail transport has been promoted both for passengers and freight to reduce the country's logistics expenditure. So, investment in rail system, including intercity dual track railways, high speed trains, mass transit systems in BMR and major cities, has been accelerating.
- The government plans to develop around 6,000 km of rail network nationwide, including double-track, electric and high-speed rail, over the next 10 years.

Recent Progress of High-Speed Train Projects

Bangkok - Nong Khai (Sino-Thai railway project)

This project is the cooperation between Thai and Chinese government. The route will connect to Kunming (China) via Laos.

Estimated Cost: BHT 224 billion

Recent Progress:

Phase I: Bangkok – Nakhon Ratchasima

- The project is under construction, which is expected to commence operation by 2023.

Phase II: Nakhon Ratchasima – Nong Khai

- This phase is under the process of detail design, which will finish in early 2020 and start construction around mid-2020.

Don Muang (BKK) – Suvarnabhumi – U-Tapao airport

Estimated Cost: BHT 123 billion

Recent Progress:

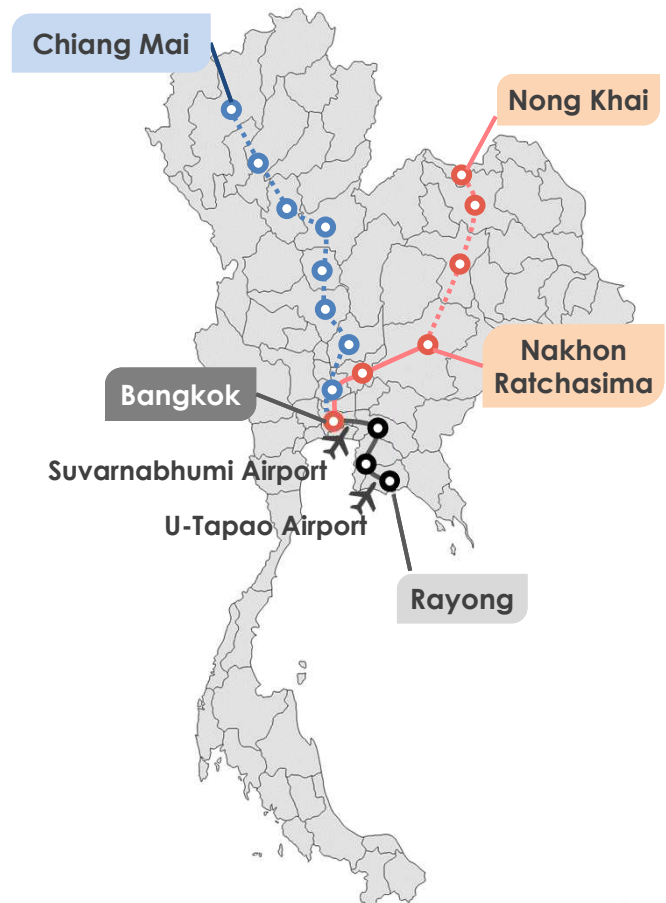
- Bidding winner was announced, and the PPP contract is expected to be signed in July 2019.
- It is expected to commence operation by 2024.

Bangkok – Chiang Mai

Estimated Cost: BHT 526 billion

Recent Progress:

- Under the process of feasibility study



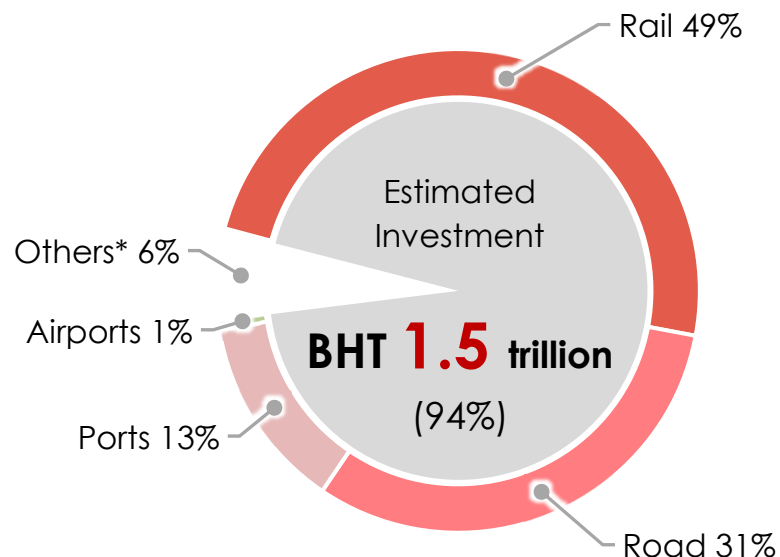
Source: NESDC, EECO, cabinet meeting press release, public news

Trends in Transport Infrastructure Construction in Thailand

Public Private Partnership (PPP) has been increasingly promoted in public construction and service provision.

- PPP investment scheme has been used as the key mechanism to leverage the expertise and capital of the private sector in providing efficient public services, especially in the construction of transport infrastructure and related service activities.
- Transport infrastructure projects worth 1.4 trillion baht, which amounts to around 94% of overall investment in the PPP strategic plan (2017-2021).
- Under the PPP strategic plan (2017-2021), projects that require private sector investment include high-speed trains, urban rail systems, toll roads, and logistics ports.

Projects under PPP Strategic Plan (2017-2021) by Type



Source: State Enterprise Policy Office (SEPO)

Note: *Others are non-transport projects such as public health, education, telecommunication, water management, S&T, etc.

Requirement for private sector investment in infrastructure projects

REQUIRE private sector investment

- ▶ Development of urban rail transit lines
- ▶ Development of toll roads in metropolitan areas
- ▶ Development of public logistics ports
- ▶ Development of high-speed rail lines

ENCOURAGE private sector participation and investment


- ▶ Development of intercity toll roads
- ▶ Development of logistics depots
- ▶ Development of common ticketing systems
- ▶ Development of management of airport ancillary services
- ▶ Development of freight rail lines
- ▶ Development of airports
- ▶ Development of cruise terminals and facilities




Trends in Transport Infrastructure Construction in Thailand

- **PPP Fast-Track program** has been implemented since 2015 to accelerate the country's infrastructure development by shortening the process of project preparation, project approval, and private selection from around 40 months down to 20 months. Especially for projects in EEC, the duration has been shortening to only 8-10 months for PPP contract signing.

Comparison of the Procedures of General PPP, PPP Fast Track, and EEC Track

		General PPP	PPP Fast Track	EEC Track
Project Preparation	▶ Preparation of project appraisal report by host agency ▶ Approval by host Ministry	8-10 Months	3.5 Months	3.5 – 4.5 Months
	▶ Review of report and approval by PPP committee ▶ Approval by Cabinet	6-8 Months	4 Months	
Project Proposal				
Private Selection	▶ Preparation of tender documents/Terms of Reference/ Investment Contract* ▶ Appointment of Selection Committee ▶ Approval of tender documents by Selection Committee ▶ Announcement of bidding winner/ awarded company	5-7 Months	1.5 Months	4.5-5.5 Months
	▶ Drafting of contract by host agency and awarded company ▶ Review by host Ministry ▶ Approval by Cabinet	12-18 Months	10.5 Months	
Contract Signing				
Total period of project implementation		40 Months	20 Months	8-10 Months

	PPP Fast-Track	<ul style="list-style-type: none"> Mass transit rail lines in BMA <ul style="list-style-type: none"> Purple (Tao Poon – Kanchanaphisek) Orange (Bang Khun Non – Minburi) Urban mass transit in Chiang Mai, Phuket, and Nakhon Ratchasima
	EEC Track	<ul style="list-style-type: none"> High speed rail system <ul style="list-style-type: none"> Don Muang – Suvarnabhumi – U Ta Pao

	PPP Fast-Track	<ul style="list-style-type: none"> Intercity motorway <ul style="list-style-type: none"> Bang Pa In – Nakhon Ratchasima Bang Yai – Kanchanaburi Nakhon Pathom – Cha Am
	EEC Track	<ul style="list-style-type: none"> Laem Chabang port (phase III) Map Ta Phut port (phase III)
	EEC Track	<ul style="list-style-type: none"> U-Ta Pao Airport & MRO

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Trends in Transport Infrastructure Construction in Thailand

More intense competition in the construction market

- The high worth infrastructure development plan has been attracting foreign investment interests in Thailand. Recently, several Chinese companies have joined in bidding for mega projects. In addition, contractors from many countries, including Japan, European countries, South Korea, Singapore, and Malaysia, have shown interest in investment in several infrastructure projects.
- The international bidding guideline for public construction projects was announced in 2017, which states that international bidding is required for construction projects worth 5 billion baht or more, which creates more opportunities for foreign companies to get involved in public projects.
- In the meantime, foreign construction companies have been increasingly collaborating with local contractors through joint ventures and consortiums in order to participate in the bidding process.

More opportunities for small and medium-sized construction companies

- Small and medium-sized contractors have enjoyed the growth of infrastructure construction through subcontracting arrangements by the large contractors.
- It was found that some construction companies, which focuses on private sector projects, have increasingly joined public infrastructure projects during the slow growth period of private sector construction.

Trends of business diversification

- Intense competition in the industry has pushed contractors to seek new opportunities to ensure sustainable growth of their businesses.

Expansion to neighboring countries	<ul style="list-style-type: none"> ▶ The emerging economic expansion and accelerating infrastructure development in the CLMV has attracted Thai contractors to invest for the past couple of years, mostly in dams and power generation utilities. ▶ Recently, some medium-sized contractors have expanded their businesses into those countries, especially Cambodia that welcomes foreign investors by allowing 100% foreign company to operate construction businesses.
Expansion to new businesses	<ul style="list-style-type: none"> ▶ Some construction companies have expanded into the property development business so that they can leverage their expertise in construction; and the properties will also generate a new revenue stream to supplement their existing businesses in the long term.

Major Construction Companies in Thailand

- Local listed construction companies, namely Italian-Thai Development Plc. (ITD), Sino-Thai Engineering and Construction Plc. (STEC), Ch. Karnchang Plc. (CK), Unique Engineering and Construction Plc. (UNIQ), and Naowarat Pattanakarn Plc. (NWR), have dominated the country's public infrastructure construction.
- Foreign contractors have contributed to public projects through collaboration with local contractors under joint ventures or consortiums.

Top 5 Thai Construction Companies*

Company name	2018 Total Revenue (Mil. BHT)	% of public work to construction revenue
Italian Thai Development Plc.	64,314	73%
Ch. Karnchang Plc.	31,176	48%
Sino-Thai Engineering & Construction Plc.	27,976	79% (infra 62%)
Unique Engineering & Construction Plc.	12,983	99%
Nawarat Pattanakarn Plc.	10,037	85%

Note: *The companies in the table are top 5 construction companies that heavily rely on public projects.

Source: Companies' Annual Reports, Investor Relation Documents

Foreign Infrastructure Construction Companies

Japanese companies

- Sumitomo Mitsui Construction Co., Ltd.
- Tokyu Construction Co., Ltd.
- Takenaka Corporation
- Obayashi Corporation
- Taisei Corporation
- Nishimatsu Construction Co., Ltd.

Chinese companies

- China Railway Engineering Corporation
- China State Construction Engineering Corp
- Sinohydro Corporation Ltd.
- Chun Wo Construction & Engineering Co., Ltd.
- China Harbour Engineering Co., Ltd.

European companies

- Right Tunneling Co., Ltd.
- Bilfinger SE

Note: The foreign companies mentioned above are the companies engaging in public infrastructure projects in Thailand.

Source: compiled from public news

Key Issues for Foreign Construction Companies

Foreign restrictions in construction activities

- Foreign companies, which have half or more of its shares held by non-Thais, are restricted from engaging in the construction business in Thailand. However, there is an exemption for companies with large capital investments.
- Foreign workers are also prohibited from working as engineers or architects in Thailand. Accordingly, companies wishing to undertake engineering and architectural activities in Thailand are required to engage Thai engineers/ architects.



Restrictions to operate construction businesses in Thailand

Foreign companies wishing to engage in architectural, engineering, and construction service businesses in Thailand are required to obtain a Foreign Business License (FBL) from the Ministry of Commerce.

Exceptional case: Foreign companies with capital of at least 500 million baht can engage in the business of infrastructure construction of public utilities or communications requiring tools, technologies or special expertise without FBL requirement.

Foreign Business Act B.E. 2542 (1999)



Restrictions on foreign workers

Foreigners are not allowed to engage in the following construction related works:

- Civil engineering works concerning design and calculation, organization, research, project planning, testing, construction supervision or advising, **excluding** works which require special expertise.
- Architectural works concerning designing, drawing of plans, cost estimating, construction directing or advising

Royal Decree Prescribing Occupations and Professions Prohibited for Foreign Workers B.E.2522 (1979)

Key Issues for Foreign Construction Companies

Foreign restrictions on engaging in public infrastructure construction

- Prior to submission of proposals for some types of public construction projects, the business operator is required to register with the Ministry of Finance. According to related regulations, foreign-majority companies are not eligible for this registration.
- However, in the exceptional case, foreign companies can be involved in mega construction projects, which require special expertise and advanced technologies, through international competitive bidding.



Restrictions on engaging in public infrastructure construction

Types of construction requiring registration:

- | | | |
|---|---------------------|-------------------------|
| ▶ Roads | ▶ Irrigation system | ▶ Seawall/revetment |
| ▶ Bridges (i.e., overpass, underpass, elevated highway & jetty) | ▶ Channel dredging | ▶ Offshore construction |

Eligibility for registration & tendering proposals

- ▶ Company Limited: ≥51% of the company's capital shares are held by Thai natural/ juristic persons AND more than half of the directors are Thais
- ▶ Public Company Limited: ≥50% of the company's capital shares are held by Thai natural/ juristic persons AND more than half of the directors are Thais

Authorized agency: Comptroller General's Department under Ministry of Finance

Notification of Central Price and Business Operation Registration Committee Re: Rules, Procedures, and Conditions for the Construction Business Registration Eligible for Submitting Proposal to Public Agency B.E. 2560 (2017)

Exceptional case: Foreign companies can contribute to mega infrastructure projects that have the following specifications through international bidding:

- ▶ The project investment value is worth not lower than 5 billion baht.
- ▶ Sophisticated projects that require specialized technique, advanced technologies, and specialized technicians/ advanced construction professionals (i.e., elevated highways, underground tunnels, ports, airports, etc.)

Cabinet Approval on February 28, 2017 regarding the rule of public procurement by international bidding

Conclusion

- In recent years, Thailand has been scaling up transport infrastructure investment in order to enhance the country's competitiveness by reducing logistics costs and improving regional connectivity.
- Several transport infrastructure projects have been under development as part of the 2.8-trillion-baht transport infrastructure plan, which will create massive opportunities and growth for construction-related businesses in Thailand.
- For foreign investors, there are still restrictions on engaging in construction activities in Thailand, even though some regulations and official procedures have been relaxed to promote foreign investment. Therefore, the most common form of investment for foreign construction companies in Thailand is the collaboration with Thai partners, **to establish Thai-majority companies to operate construction businesses or set up a joint-venture/consortium to bid for specific projects**, in order to avoid business restrictions as well as gain from market insights and local business networks.
- It was expected that there will be more collaboration between local and foreign contractors in infrastructure projects as Thai contractors are also seeking foreign partners to strengthen their capital and technological competitiveness.
- However, amid continued growth, key challenges that players may face are labor shortages and increasing construction material prices. Business operators, therefore, should consider leveraging new technologies and strengthening supply chain management of construction materials.

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