

Guide to Thailand

Opportunities and Limitations in Manufacturing



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Disclaimer

This material is prepared and intended for general information and reference purposes only. It does not cover exhaustively the subject it treats, but is intended to answer some of the important broad questions that may arise. When specific issues arise in practice, it will often be necessary to consider the relevant laws and regulations, and to obtain appropriate professional advice. The information contained here is current at the date of publishing and may change over time, and no representation, expressed or implied, is made as to its accuracy, completeness or correctness.

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1. Overview of Thailand

Executive Summary

Thailand witnessed strong economic growth over the last decade partly as a result of effective reforms and policies introduced by the government. The country is now one of the most advanced economies in Southeast Asia and has managed to strike major agreements with international partners to foster trades.

Thailand is engaged in seven bilateral trade agreements with countries in Asia Pacific as well as Latin America. These agreements eliminate tariffs and incentivise investments in a number of industries. As part of the Association of Southeast Asian Nations (ASEAN), Thailand also benefits from six other multilateral trade agreements with Mainland China, South Korea, Japan, India, Australia and New Zealand.

Foreign investors may benefit from Thailand's favourable trade agreements, but need to consider the risks related to continuous political turmoil and uncertainties before investing in the country.



1. Overview of Thailand

I. Country Profile^{1,2,3,4,5,6,7}

The economic and social development of Thailand over the last few decades has been a success story. As a result of its economic policies, Thailand evolved from being a low income country to a middle income economy in less than a generation; millions of jobs were created, welfare, healthcare and education have improved significantly and poverty rate has been on decline. The Thai government sets its 20-year development goals to attain the status of a developed country by 2036. Reforms have been put in place to address economic stability, human capital, equal economic opportunities, environmental sustainability, competitiveness, and government efficiency.



GDP (in USD)
539.1 billion (2019f)
503.3 billion (2018)



GDP Per Capita (in USD)
7,778 (2019f)
7,275 (2018)



Economic Structure
(in terms of GDP composition, 2017)
Agriculture: 8.2%
Industry: 36.2%
Services: 55.6%



External Trade (% of GDP)
Import: 56.5% (2018)
Export: 66.8% (2018)



Population
69.31 million (2019)
World ranking: 20/191



Median Age
38.1 (2018)
World ranking: 63/228 (from oldest to youngest)



Language
Thai (official)
Burmese
English



English Literacy
Low proficiency (2018)
World ranking: 64/88



Government Structure
Constitutional monarchy



Land Area
510,890 sq km

II. Country Profile on Trade

A. International Trade Agreements and Restrictions⁹




International trade agreements provide various benefits for participating countries with the aim of enhancing economic growth for all parties. It allows companies located in two or more countries to trade goods with each other at reduced or zero tariffs.

Thailand first signed the Framework Agreement on Enhancing ASEAN Economic Cooperation in 1992, under which all member states agreed to establish and participate in the ASEAN Free Trade Area (AFTA) and are eligible for favourable tariffs arrangement under the Common Effective Preferential Tariff (CEPT) Scheme. It was one of Thailand's first and most important trade agreements, and is instrumental to the country's participation in the region's economic integration agenda. Nowadays, Thailand has a total of 13 trade agreements in place, including seven bilateral and six regional trade agreements. In addition, the ASEAN – Hong Kong Free Trade Agreement came into effect in June 2019 (see section below). There are nine trade agreements currently under negotiation and another 13 proposed. One of the proposed agreements between ASEAN and the EU covers restructuring import quotas and tariffs for services, regulatory issues, intellectual property, and sustainable development.

Signed and Effective Bilateral Trade Agreements⁸ (Part 1/2)

	Affected Industry	Agreement (signing date)
	<ul style="list-style-type: none"> All 	Laos-Thailand Preferential Trade Agreement (1991) <ul style="list-style-type: none"> Preferential import and export tariffs for goods and services with Laos.
	<ul style="list-style-type: none"> Agriculture 	People's Republic of China-Thailand Free Trade Agreement (2003) <ul style="list-style-type: none"> The countries had opened their agricultural markets for trade before the broader deal with ASEAN countries came into place in 2010. Eliminated tariffs for 188 fruits and vegetables.
	<ul style="list-style-type: none"> Food Mining Construction 	Australia-Thailand Free Trade Agreement (2005) <ul style="list-style-type: none"> Eliminated nearly all import tariffs for goods from Australia (tariffs for some dairy products are set to be eliminated by 2025). Increased Thailand's attractiveness to Australian investors by allowing an Australian dominated ownership in important sectors such as restaurants, mining operations or construction services.
	<ul style="list-style-type: none"> Food 	New Zealand-Thailand Closer Economic Partnership Agreement (2005) <ul style="list-style-type: none"> Import tariffs from New Zealand have been progressively reduced or eliminated until 2025. As of 2015, around 65% of imports from New Zealand were already duty free, which included forestry products, buttermilk and wine. Imports and exports have almost doubled since the agreement came into place.

Signed and Effective Bilateral Trade Agreements⁸ (Part 2/2)

	Affected Industry	Agreement (signing date)
	<ul style="list-style-type: none"> Food Textile Jewellery 	Japan-Thailand Economic Partnership Agreement (2007) <ul style="list-style-type: none"> More than 99% of tariffs on imported goods from Japan have been reduced or eliminated. The top three beneficiary sectors were processed food, textiles and garments, jewelry and ornaments. Japan is allowed to establish businesses, holding up to 50% investment equity in the automotive production in Thailand and provide services such as management consulting, marketing or computer services.
	<ul style="list-style-type: none"> Food Automobile Home appliances 	Thailand-Peru Free Trade Agreement (2011) <ul style="list-style-type: none"> First agreement between Thailand and a South American country. Eliminated 70% of all tariff lines. Increase imports from Peru for products such as canned food, flour, frozen fish, grapes etc. Thai goods that benefit from zero tariffs: automobiles, components and parts, washing machines and rubber products.
	<ul style="list-style-type: none"> Food Energy Automobile 	Thailand-Chile Free Trade Agreement (2015) <ul style="list-style-type: none"> Eliminated tariffs on over 90% of products traded between the two countries. For the remaining products, the tariffs will be eliminated within the first eight years after signing in 2015. Export tariffs are cut to zero for products such as auto parts, canned seafood, natural gas, construction materials and digital cameras, etc. Chilean products that benefit from zero tariffs: meat, dairy, vegetables, auto parts, forest, papers and packaging products etc.

Signed and Effective Regional Trade Agreements as Member of The ASEAN

As a member of the ASEAN, Thailand benefits from agreements signed between the association and other countries. Therefore, the country has entered effective FTAs with: Mainland China (2005), South Korea (2007), Japan (2008), India (2010), Australia and New Zealand (2010).⁹

The Association of Southeast Asian Nations (ASEAN)⁹

The ASEAN was founded in 1967 and currently has 10 members. The five founding members are Indonesia, Singapore, Malaysia, the Philippines, and Thailand. The remaining five countries joined in subsequent years: Brunei in 1984, Vietnam in 1995, Laos in 1997, Myanmar in 1997, and Cambodia in 1999.

ASEAN Members



Indonesia



Singapore



Malaysia



Philippines



Thailand



Brunei



Vietnam



Laos



Myanmar



Cambodia

The Association's Three Major Goals:

- Acceleration of economic growth, social progress and cultural development in the region;
- Promotion of regional peace and stability in Southeast Asia; and
- Foster cooperation and mutual assistance in economic, social, cultural, technical, scientific and educational fields.

The ASEAN Free Trade Area (AFTA)

In 1992, ASEAN countries decided to strengthen this comprehensive cooperation by implementing the AFTA. The main objective of the AFTA is to increase the region's economic competitive advantage through trade liberalisation and the elimination of tariffs and non-tariff barriers among the ASEAN members.

The Common Effective Preferential Tariff (CEPT) Agreement for AFTA reduces the tariff rates on a wide range of products within the region to 0-5%. In addition, restrictions on quantity traded and other non-tariff barriers are eliminated.

The CEPT covers all manufactured products, including capital goods and processed agricultural products, and those falling outside the definition of agricultural products. Agricultural products are excluded from the CEPT Scheme (further details on www.asean.org).

There are only three situations where a product can be excluded from the CEPT Scheme:

- General Exceptions: a member may exclude a product considered necessary for the protection of its national security, the protection of public moral, the protection of human, animal or plant life and health, and the protection of articles of artistic, historic or archaeological value;
- Temporary Exclusions: a member which is temporarily not ready to include certain sensitive products (i.e. rice) in the CEPT Scheme may exclude such products on a temporary basis; and
- Unprocessed agricultural goods.

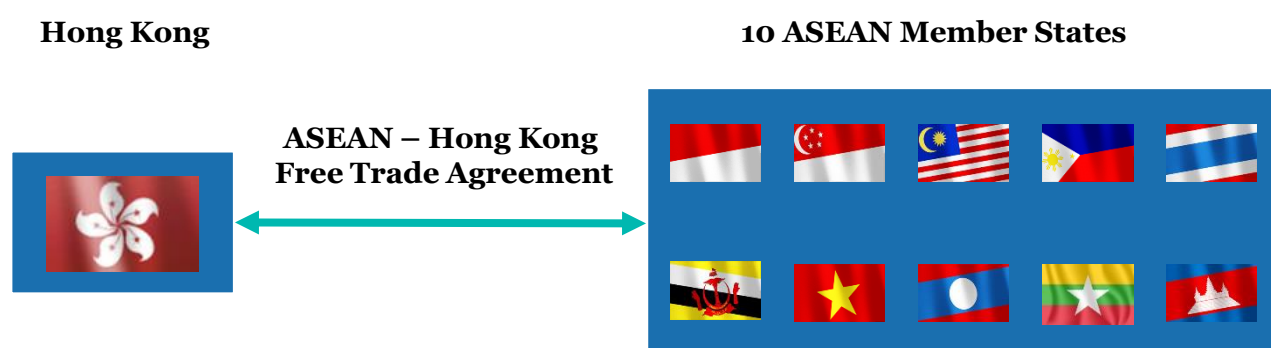
International Trade Agreement between Hong Kong and the ASEAN¹⁰

Overview

Trade within the region has been booming since the removal of tariffs between the ASEAN member states in 2015.

Hong Kong and the ASEAN announced the conclusion of negotiations on their Free Trade Agreements in September 2017 and forged agreements on 12 November 2017. Member states agreed to progressively cut down or eliminate custom duties on goods originating from Hong Kong. The agreements are comprehensive in scope and cover trade of goods and services, investments, economic and technical cooperation, dispute settlement, and other relevant areas.

The ASEAN was Hong Kong's second largest merchandise trade partner in 2018 with a total value of HKD 1.1 trillion (around 12% of the total trade value).





Entry

Free Trade Agreement: 11 June 2019

Investment Agreement: 17 June 2019

Both for the parts relating to Hong Kong and Laos, Myanmar, Singapore, Thailand, and Vietnam. The dates of entry for the remaining five countries have not been announced yet.

Affected Major Industries		Other Affected Industries	
The tariff reduction commitments cover different kinds of major Hong Kong export commodities, such as (non-exhaustive):		<ul style="list-style-type: none"> • Food and Beverages • Chemicals • Pharmaceutical • Metals • Plastics & Rubber • Footwear • Machinery and Mechanical Appliances 	
	Jewellery		Watches and Clocks
	Apparel and Clothing Accessories		Toys

B. Government Structure¹¹

Thailand is a constitutional monarchy. The King acts as the leader of the country and the Prime Minister as leader of the government. The country comprises three branches: the Executive, Legislative and Judiciary.

Since the coup d'état in May 2014, the National Council for Peace and Order (NCPO), a military junta, has been ruling Thailand. The NCPO repealed Thailand's existing constitution, declared new laws and banned political assemblies. Since then, Thailand has been under an interim constitution.

Formally, the Prime Minister is the head of the Executive Branch as well as the leader of the Cabinet, who formulates and executes government policies. The Prime Minister has the prerogative to choose or remove any minister from the Cabinet at his discretion. He also represents Thailand abroad.

The Legislature of Thailand is a bicameral system, comprising the House of Representatives and the Senate. The two houses are equipped with the power to remove the Prime Minister as well as Cabinet Ministers through a vote of no confidence. The Senate generally has limited legislation power, however it retains the power to advise on the appointment of the Judiciary members.

The Judiciary of Thailand consists of judges nominated by the monarch and comprises four systems: the Court of Justice, the Military Court, the Constitutional Court, and the Administrative Court.

C. Political Uncertainties and Historical Coup Records^{12,13}

Thailand has been marked by political polarisations and conflicts for a very long time. Since 1932, the country experienced 20 military coups of which 12 succeeded. Therefore, Thailand is not considered as a politically stable country and ranked 157th out of 195 countries in the World Bank's Political Stability Index.

The latest coup took place in 2014, when Thailand's constitution was revoked by NCPO, a military organisation. The NCPO eliminated the influence of former Prime Minister Thaksin Shinawatra by overthrowing his younger sister Yingluck Shinawatra who was the Prime Minister at that time. The NCPO's goal was to establish an unelected People's Council which oversees political reforms. The NCPO provoked protests, occupied governmental offices and boycotted general elections. As a result, the House of Representatives, which used to be the primary legislative of Thailand, was dissolved, martial laws were imposed and the military junta was established. In March 2019, the first election since the 2014 coup took place under the NCPO's orchestration, and coup leader Prayut Chan-o-cha was elected by the Council as the new Prime Minister. Therefore, tensions between the pro-military forces and their populist opponents are likely to remain in the near future.

Political instability in Thailand has negatively impacted investment in the country. With investment standing at 24% of GDP, Thailand is approximately 5-6% behind some of Southeast Asia's largest economies. Foreign direct investment also declined during the same period as some foreign investors were wary of future instabilities after the general election in May 2019. Longer term investors are holding onto a more optimistic outlook.

Source:

¹ *The World Bank in Thailand, The World Bank, Apr 2019*

² *Thailand 10-Year Forecast, Fitch Solutions, 2019*

³ *The World Factbook, Central Intelligence Agency*

⁴ *Imports of Goods and Services (% of GDP), Exports of Goods and Services (% of GDP), The World Bank*

⁵ *Thailand population, Worldometers, 2019*

⁶ *EF English Proficiency Index, EF Education First*

⁷ *Geography Statistics Of Thailand, Worldatlas*

⁸ *Free Trade Agreements, Asia Regional Integration Centre*

⁹ *ASEAN official website*

¹⁰ *The Government of Hong Kong Special Administrative Region – Trade and Industry Department, Press Release, May 2019*

¹¹ *Government And Society – Constitutional Framework, Britannica*

¹² *Thailand's Investment Outlook for 2019, Nikkei Asian Review, Feb 2019*

¹³ *Foreign investors upbeat over Thailand's prospects, Bangkokpost, Feb 2019*

2. Legal Environment and Competition Law

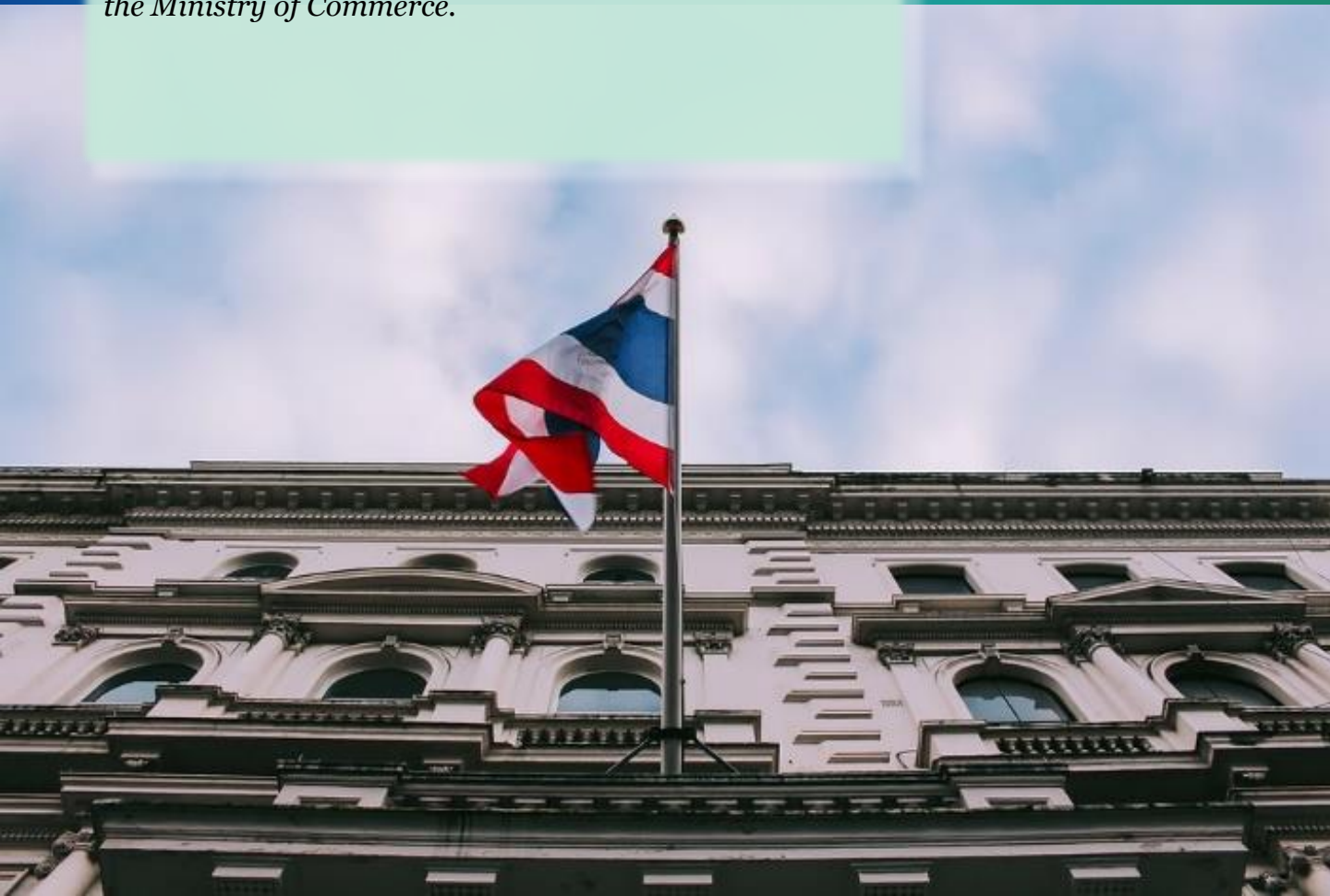
Executive Summary

Thailand generally welcomes and attracts foreign investors. However, there are certain sectors that are limited to domestic participation only.

Investors from Mainland China and Hong Kong can choose to set up different types of business entities. The most common type is a private limited company, where 100% foreign ownership is allowed through obtaining a Foreign Business License.

The legal environment is supportive of foreign investors engaging in the import and export as no partnership with a domestic company is required to operate in Thailand.

Depending on the type of trade, operators from Mainland China and Hong Kong may have to obtain a license from the Ministry of Commerce.



2. Legal Environment and Competition Law

Foreign direct investment (FDI) are governed under the Foreign Business Act B.E. 2542 (1999) (FBA). The FBA considers a company as foreign if half or more of its shares are held by non-Thai natural or juristic persons. The law only distinguishes between Thai and foreign companies and does not outline special laws for Mainland China or Hong Kong companies.

Thailand is generally an open market economy and welcomes foreign investments. However, there are a number of restrictions that investors should be aware of.

The FBA Defines Three Lists with Restricted Businesses for Foreign Investors¹



List 1

Businesses that are Strictly Prohibited for non-Thais

Examples:

- Newspapers and radio broadcasting;
- Operating a television station;
- Land farming and rice farming.



List 2

Businesses that are Restricted and Require a Special Permission from the Minister of Commerce with the Approval of the Cabinet

Examples:

- Businesses concerning safety or national security: production of military weapons, firearms or explosives;
- Arts: trading of antiques, production of Thai instruments and making of goldware;
- Exploitation of natural resources: salt farming, mining, and production of sugar.



List 3

Businesses that are Restricted and Require Permission from the Director-General of the Department of Business Development with the Approval of the Foreign Business Board (Businesses in which Thais are Not Yet Ready to Compete Against)

Examples:

- Professional services;
- Operating restaurants;
- Wholesale and retail where minimum capital thresholds have not been met.

For further details please refer to section 8 of this report or visit the official website of Department of Business Development of Thailand (www.dbd.go.th/dbdweb_en/more_news.php?cid=273) .

I. Types of Legal Business Entities Available for Foreign Investment

As in most countries, there are several different main structures to relocate a factory or a business as an investor from Mainland China or Hong Kong to Thailand. The most common form for foreign companies is the private limited company.² Some other forms of doing business or relocating a factory to Thailand include branch, regional and representative offices.

Partnerships

There are three types of partnerships in Thailand, which basically differ in terms of the liability that the partners assume for the obligations.

- Unregistered ordinary partnership: all partners are jointly and wholly liable for all obligations of the partnership. There is no registration needed.
- Registered ordinary partnership: this partnership needs to be registered with the Department of Business Development (DBD). Once registered, the partnership becomes a legal entity, separate and distinct from the individual partners.
- Limited partnership: individual partner liability is restricted to the amount of capital contributed to the partnership. Limited partnerships must be registered at the Partnership Registration Office under the Ministry of Commerce.

Under the Civil and Commercial Code (CCC), there is no minimum investment amount required. However, when engaging in restricted activities under the Foreign Business Act, there may be a minimum investment requirement.

Limited Companies (private or public)

There are two types of limited companies, which are covered by different regulatory bodies dealing with legal affairs.

Private Limited Companies

This is the most common business structure in Thailand. It is a company of which the liability of the shareholders is limited to the unpaid amount of the shares held. Generally, the maximum share structure is 49% foreign ownership, however, by obtaining a Foreign Business License (FBL) or a promotion from the Board of Investment (BOI), foreign companies can hold up to 100% of the shares. Business activities eligible for a promotion by BOI are detailed in Section 8.

Setting up a limited company requires various steps and involves different authorities, meetings and documents: register a company name, fill out the Memorandum of Association, hold the Statutory Meeting, register the company at the Ministry of Commerce, and register for income tax and value added tax (VAT).

Depending on the nature of the business, different licenses may be required: the FBL (if seeking more than 49% of the shares), the value added tax license (if the revenues per year exceed THB 1.8 million), and other licenses (depending on the type and the size of the business).

The minimum required capital for Private Limited Companies are as follows:

- If no FBL is required: THB 2 million
- If a FBL is required: THB 3 million

Public Limited Companies

These are companies established with the purpose to offer shares for sale to the public whereby the liability of the shareholders is limited to the amount payable on the shares. The objective of the company has to be stated in its Memorandum of Association.

The minimum capital required is the same as for the Private Limited Companies.

Joint Venture (JV)

A JV is a group of people (natural and/or juristic) entering into an agreement in order to carry out a business together. JVs are one of the most popular vehicles for foreign investments in Thailand. They are often established between foreign and Thai companies if the foreign company is restricted by the FBA. If the foreign company wants to hold more than 50% of the shares, its status has to change and it must be registered under the Foreign Business Act. A JV has to be incorporated under the Civil and Commercial Code.

Others

Foreign companies have three more options to enter the Thai market. For all of these options, they are allowed to hold 100% of the shares.

Branch Office

Foreign companies can establish a branch in Thailand which would be recognised as foreign juristic person (and not as an independent legal entity). Therefore, the head office abroad would generally be liable for the actions taken by the local branch in Thailand. To establish a branch office, a potential foreign investor has to renew the FBL every five years. In addition, for the registration, a value added tax registration number, a taxpayer identification number, and a Commercial Registration Certificate are needed. Setting up a branch office takes on average 12 weeks.

Regional Office

Foreign companies can also set up regional offices in Thailand in order to own and supervise Group subsidiaries. The permitted activities of a regional office are limited (e.g. they can provide consultancy services and manage the Asian operations, train and develop people in Asia or undertake product development activities), but at the same time, they can enjoy a corporate tax rate of 10%. Setting up a regional office requires an FBL as well as an investment promotion from the Board of Investment. Establishing a regional office takes around 14 weeks on average.

Representative Office

This company type is not allowed to make direct sales within Thailand. A representative office is often used for market research, promoting the business of the parent company, finding sources to purchase goods or services and controlling the goods purchased or manufactured in Thailand. The manager of the office must be a Thai citizen. In addition, a corporate tax identification number is needed, income tax returns have to be submitted and audited financial statements have to be provided to the Revenue Department. The average set up time of a representative office is approximately 12 weeks.

II. Overview on Other Business Laws and Regulations

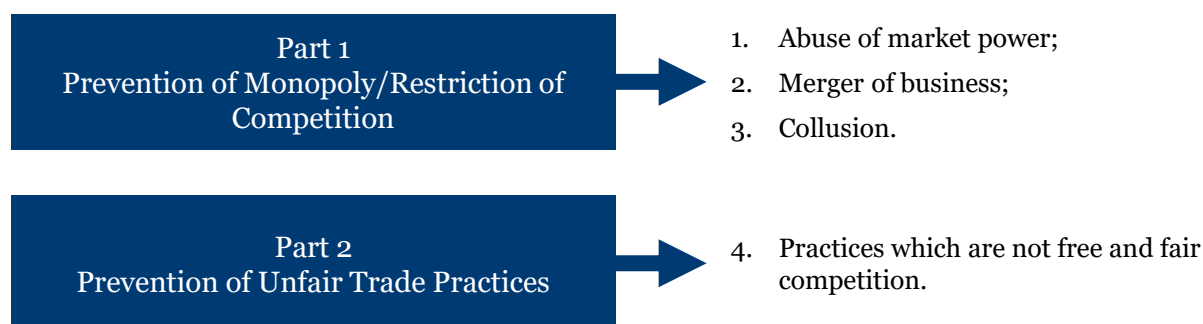
A. Legal and Administrative Framework on Competition Law⁴

Thailand's first regulation on competition dates back to 1979. The first effective competition law came into force in 1999 and aims to provide fair and free trade within a competitive environment. Thailand is the first country in Southeast Asia to implement a competition law.

Due to the lack of enforcement, amendments on the competition law were made in October 2017: the new Trade Competition Commission is now independent of the government, has its own budget and is made up of individuals with no political or business ties. Further changes, such as the inclusion of state-owned enterprises into the ambit of the new act, have been made.

The law outlines general regulations and does not specify particular rules for Mainland China or Hong Kong businesses that want to relocate factories to Thailand.

The key provisions of the new act can be divided into two sections:



1. Abuse of Market Power

Being a dominant market player does not automatically indicate violation of the competition law. Instead, in order to identify a breach of the law, specific manners have to be observed. This includes unfair fixing, maintaining purchasing or selling price of goods or services, and destroying or causing damage to goods in order to reduce the quantity to be lower than the market demand.

2. Merger of Business

Under the new merger control scheme, both a pre-merger approval as well as a post-merger notification are required: mergers that may cause significant decrease of competition in a particular market must be reported to the Commission within seven days from the date of the merger, while mergers that may result in a monopoly or a dominant business operator must obtain prior approval.

Exception: a merger of business for the purpose of internal restructuring for business operators that are related by policy or administration.

3. Collusions (cartels)

Collusions are anti-competitive agreements between horizontal competitors or vertical business operators, (e.g. between retailers and distributors). The 2017 Act differentiates between two kinds of cartels: 1) “hardcore cartels” which are agreements between competitors, and 2) “non-hardcore cartels” which are agreements with other business operators. Hardcore cartels are subject to criminal penalties, whereas non-hardcore cartels are subject to administrative fines.

2. Legal Environment and Competition Law

The acts that define the various collusions are summarised below:⁴

Agreement Between Competitors (“Hardcore Cartel”)	Agreement with Other Business Operators (“Non-hardcore Cartel”)	Agreement with Business Operators in a Foreign Country
<ul style="list-style-type: none"> • Fixing purchasing or selling price, or commercial conditions • Limiting quantity of goods or services • Bid-rigging • Fixing geographical sale and purchase areas 	<p>Actions in 1, 2, and 4 where the business operators are not competitors</p> <ul style="list-style-type: none"> • Reducing quality of goods or services • Appoint or entrust any person as a sole distributor • Fixing conditions • Others as prescribed by notifications 	<p>Any juristic act or contract which results in monopoly or unfair restriction of trade without justifiable reason, and has a severe impact on the economy and the consumers’ interests.</p>
<p>Excludes</p> <ul style="list-style-type: none"> • Affiliated companies 	<p>Excludes</p> <ul style="list-style-type: none"> • Affiliated companies • R&D agreements • Licensing agreement • Specific forms of business as prescribed in the Ministerial Regulation 	<p>Excludes</p> <ul style="list-style-type: none"> • N/A

4. Practices Which are not Free and Fair Competition

A business operator shall not carry out any act which causes damage to other business operators in the following manners: 1) unfairly restrict the business operation of other business operators; 2) unfairly exercise their superior market power or bargaining power; and 3) unfairly fix commercial conditions which restricts or impedes the business operations of other people, or other acts as notified by the Commission.

B. Intellectual Property Protection Law on Trademarks^{5,6}

Trademarks are protected and governed by the Trademark Act of Thailand B.E. 2534 which came into force in 1991. A trademark is defined as a symbol which indicates that a certain good belongs to the owner of the trademark.

In Thailand, overall intellectual property protection is very low (ranked 42nd out of 50). Even within the specific category of trademark protection, Thailand's score is low compared to other Asian countries. The trademark law is rather general and does not specify particular protection rules for companies from Mainland China or Hong Kong that are considering to relocate factories to Thailand. For more details, please refer to section 5.

The trademark can be registered by the proprietor or through an agent. An approved trademark will be published in the Official Journal; if not opposed, the owner will have the exclusive right to use the trademark. It is valid for 10 years and can be renewed indefinitely. The Trademark Act allows the protection of service marks, service names, collective marks, certification marks, and trade names.

C. Import/Export Regulations and Licenses^{7,8}

Generally, the import/export business in Thailand is appealing to foreign companies, as it is not restricted by the Foreign Business Act of 1999. This means that foreign companies can engage in the import/export business without a partnership with a Thai company holding 51% of the shares, and without applying for permission from the government. In addition, there is no overarching law regulating the import of goods, with the exception of some laws regulating the import of specific goods. Therefore, foreign companies might require licenses depending on the goods imported.

For Mainland China and Hong Kong companies, licenses from the Ministry of Commerce in Thailand are required for the import of raw materials, petroleum, industrial, textiles and agricultural items.

Foreign companies that want to import or export goods from Thailand are recommended to seek advice from the Department of Foreign Trade (a subdivision of the Ministry of Commerce), which regulates the corresponding activities.

D. Jurisdiction System on Business Related Matters⁹

Civil actions are lawsuits brought before courts whereby a party sues another for the enforcement or protection of a right, or the prevention or redress of a wrong. In Thailand, there are three levels of Courts of Justice, which also cover civil cases such as property and business disputes.

- Courts of First Instance: trial courts where the cases are first lodged;
- Court of Appeals: proper court where issues on decisions from the Court of First Instance are brought; and
- Supreme (Dika) Court: highest Court of Justice in Thailand whose judgement is considered as final. The Dika also handles special cases related to violation of intellectual property and international trading or procedural law on labour.

Buying property or land in Thailand can be appealing for foreign investors, yet by the law of Thailand it is generally prohibited for foreigners to own freehold land. However, there are some legal exceptions and methods for acquiring valid and legal rights to land and real estate in Thailand that do not amount to outright ownership. Foreigners are permitted to hold a 100% interest in a Thailand land lease: the Thai citizen would remain the owner of the land, however, a foreigner can lease it for 30 years with the possibility of renewing for additional 30 years period. In addition, foreigners are allowed to own buildings and houses in Thailand as the Real Estate Law does not impose nationality restrictions on ownership of such.

Under the Thai property law it is illegal for a Thai citizen to act as a nominee to purchase real estate on behalf of a foreigner.

2. Legal Environment and Competition Law

Source:

¹ *Foreign Business Act of 1999 and activities restricted to Thai Nationals, Thailand Board of Investment*

² *Types of Thailand Business Structures, Thaiembassy*

³ *Public Limited Company Act B.E.2535, Department of Business Development – Ministry of Commerce; Thaiembassy*

⁴ *Thailand's New Trade Competition Act, Rajah & Tann, Aug 2017*

⁵ *U.S. Chamber International IP Index, GIPC, 2019*

⁶ *Trademark Act B.E. 2534*

⁷ *Foreign Business Act B.E. 2542 (1999)*

⁸ *Thai Customs official website*

⁹ *Buying Land and Property in Thailand, Chaninat & Leeds Thailand and International Attorneys*

3. Taxation, Transfer Pricing, Banking and Currency Control

Executive Summary

The principal tax law in Thailand is the Revenue Code. The main forms of taxation are personal and corporate income tax (CIT), and value added tax (VAT). Other specific business taxes also exist.

Transfer pricing provisions have been legalised and shall be applied for accounting periods after 1 January 2019.

Thailand adopts a managed float exchange rate regime by the Bank of Thailand. Foreign direct investment is generally welcomed in Thailand, with the exception of investment in key sensitive industries which are restricted from participation by foreign companies and individuals. Investment and repatriation of foreign funds into and out of Thailand is basically without limitation, subject to relevant taxes and administrative requirements.



3. Taxation, Transfer Pricing, Banking and Currency Control

I. Taxation Practice

A company incorporated in Thailand is taxed on its worldwide income.

A company incorporated abroad is taxed on its net profits arising from the business carried in Thailand. If it does not conduct business in Thailand, but has received certain types of income (e.g. service fees, interests, dividends, rent, or professional fees), it may be subject to corporate income tax on its gross amount received, via withholding tax.

In addition, foreign companies can also be subject to a separate profit remittance tax of 10%. This rate applies to all profits remitted from the Thailand to overseas.

A. Corporate Income Tax (CIT)¹

Tax Calculation

CIT in Thailand is calculated from net profits on an accrual basis. The calculation includes all revenues arising from/or in consequence of the business conducted during an accounting period (i.e. 12 months). All expenses incurred for the purpose of deriving profits or for conducting business in accordance with the conditions prescribed by the Revenue Code are deductible.

Applicable Tax Rate

The standard CIT rate is 20% in Thailand. The rates vary depending on the types of taxable person. In particular, small and medium-sized enterprises (SMEs) enjoy certain tax benefits as shown in the following table.

Taxable Person	Tax Base	CIT Rate
Companies Or Juristic Partnerships	All taxable profit	20%
Small and Medium-sized Enterprises (SMEs) (Note)	THB 1 – 300,000	0%
	THB 300,001 – 3 million	15%
	Over THB 3 million	20%

Note: SME hereby refers to any company or juristic partnership with 1) paid-up capital of less than THB 5 million on the last day of the accounting period, and 2) with an income from sales of goods and provision of services in any accounting period of not more than THB 30 million.

3. Taxation, Transfer Pricing, Banking and Currency Control

Dividend Income²

Dividend income received by different types of companies enjoy different degrees of tax exemptions.

Source of Dividend	Tax Exemption Condition	Tax Exemption
Dividends received from Thai resident company	The taxpayer is a Stock Exchange of Thailand (SET) listed company.	100%
	The taxpayer owns at least a 25% equity interest in another Thai resident company, provided that the latter company does not own a direct or indirect equity interest in the recipient company.	100%
	All other unlisted companies not mentioned above.	50%
Dividends received from overseas company	The taxpayer owns at least a 25% equity interest in another overseas company, provided that it has held the investment for at least 6 months before receiving such dividends, and that the profit out of which the dividends are distributed is subject to income tax in the overseas country at a standard rate of not less than 15%.	100%

Deductible Expenses^{1,2}

Some of the key CIT deductible expenses for the manufacturing industry include:

- Ordinary and necessary expenses. However, the following expenses are entitled to 200% deduction:
 - Research and development expense;
 - Job training expense; and
 - Expenditure on the provision of equipment for the disabled.
- Interest, except interest on capital reserves or funds of the company;
- Taxes, except for CIT and value added tax paid to the Thai government;
- Net losses carried forward from the last five accounting periods;
- Bad debts; and
- Provident fund contributions.

3. Taxation, Transfer Pricing, Banking and Currency Control

- Depreciation: must be based on historical cost of an asset acquired. Companies shall adopt any generally accepted accounting methods in depreciation but in no case shall the rate of deduction exceed the following percentage:

Asset Type	Maximum Depreciation Rate/Duration per Annum	
	General Company	SME (<i>Note</i>)
1. Buildings	5%	5%, with initial allowance of 25% on the acquisition date
2. Depletive Natural Resources	5%	
3. Leasehold Rights	<ul style="list-style-type: none"> 10% (without a lease agreement) 100% divided by lease period plus any renewable periods (under a written lease agreement) 	
4. Trademarks, Goodwill, Licenses, Patents and Copyrights or Other Rights	<ul style="list-style-type: none"> Period of use 10% (if period of use is unlimited) 	
5. Computer Hardware and Software	Within 3 accounting periods from the acquisition date	Within 3 accounting periods, with initial allowance of 40% on acquisition date
6. Machinery and Equipment Used in R&D	20%, with initial allowance of 40%	
7. Cash Registers Used for Issuing Abbreviated Tax Invoices by Retail Business or Other Business	A choice of either 5 years, or 5 years with 40% upfront depreciation or 1 year	
8. Passenger Car or Bus with No More Than 10 Passengers Capacity	20%, depreciable value is limited to THB 1 million	
9. Other Assets Not Mentioned Above Excluding Land and Inventory	20%	

Note: SME hereby refers to any company or juristic partnership with 1) fixed assets (excluding land) of no more than THB 200 million, and 2) no more than 200 employees.

Losses and Consolidation³

Tax losses can be carried forward for a maximum of five years to deduct against future profits. There is no claw-back provision. Each company is taxed independently, without any form of group relief or relief by consolidation.

3. Taxation, Transfer Pricing, Banking and Currency Control

Tax Filing⁵

Thailand operates a self-assessment based tax system. Thus each legal entity is obliged to submit a CIT return.

- Half-year tax return: a half-year tax return must be filed, with related tax paid, within two months from the end of the first six months of the accounting period. The prepaid tax is creditable against its annual tax liability.
- Annual tax return: an annual tax return must be filed, with related tax paid, within 150 days from the end of the accounting year.

Tax Governance^{1,5}

The Revenue Department of Thailand is the highest tax collection agency of the country governed under the Ministry of Finance. It is responsible for collecting taxes according to the rules and regulations prescribed in the Revenue Code. (www.rd.go.th/publish/index_eng.html)

The Revenue Code is the principal tax law in Thailand that codifies procedures regarding tax assessment, the collection of revenue taxes, personal and corporate income tax, value added tax and tax liability, specific business taxes, and stamp duty.

Double Taxation Agreement (DTA) with Hong Kong^{3,5}

As of May 2018, Thailand has entered into DTAs with 61 countries including Hong Kong (since 2005).

The table below illustrates the various tax rates applicable to the different sources of income as per mentioned in the Thailand/Hong Kong DTA:

Categories	Conditions to Satisfy	Applicable Rates of Withholding Taxes
Dividends	All dividends are applicable	10%
Interests	Interest paid to any financial institution and Interest paid with respect to indebtedness arising as a consequence of a sale on credit of any equipment, merchandise or services, except where the sale was between persons not dealing with each other at arm's length	10%
	All other conditions not mentioned above	15%
Royalties	Royalties paid for the use or the right to use any copyright of literary, artistic or scientific work	5%
	Royalties paid for the use of the right to use any patent, trademark, design or model, plan, secret formula, or process	10%
	All other conditions not mentioned above	15%

B. Value Added Tax (VAT)

Any person or entity who supplies goods and/or services in Thailand with an annual turnover exceeding THB 1.8 million is subject to the VAT. An importer is subject to VAT regardless of whether one is registered with relevant tax authority or not.

The standard VAT rate stipulated by law is 10%. Since 1999, the government has discretionarily reduced VAT rate to 7%, subject to regular review.

Business Activities Subject to 0% VAT

The following business activities are subject to 0% VAT on output but are still eligible for input VAT credits:

Business Activities	Tax Rate
Exports of goods	0%
Provisions of services that are used abroad	
Sales of goods or services to the United Nations (UN), UN specialised agencies, embassies and consulates	
Sales of goods or provision of services to government agencies or state enterprises under projects funded by a foreign loan or aid	
International air or sea transportation services	

Exemptions from VAT

Small entrepreneurs whose annual turnover is less than THB 1.8 million are exempted from VAT. Other business activities exempted from VAT include:

- Sales and import of unprocessed agricultural products and related goods such as fertilisers, animal feeds, pesticides, etc.;
- Domestic and international land transportation, healthcare services and educational services;
- Goods exempted from import duties under the Industrial Estate law imported into an Export Processing Zones (EPZs) and under Chapter 4 of the Customs Tariff Act; and
- Imported goods that are kept under the supervision of the Customs Department which will be re-exported and be entitled to a refund for import duties.

To see the entire list please visit the the website of the Revenue Department (www.rd.go.th/publish/6043.o.html).

VAT Filing and Payment

VAT returns must be filed on a monthly basis, together with tax payments submitted to the Area Revenue Branch Office within 15 days of the following month.

C. Transfer Pricing Provisions⁶

The Revenue Code Amendment Act introduced specific transfer pricing provisions into the income tax law in 2018.

Specific transfer pricing provisions are applied to accounting periods starting on or after 1 January 2019.

The arm's length principle is applied to the Thai income tax law and penalties for failure to comply with the transfer pricing disclosure requirement and transfer pricing rules are introduced.

Major points of the issued transfer pricing provisions include:

- Where it is believed that there has been misconduct related to transfer pricing, revenue officers have the power to uplift or reduce companies' revenue and expenses to the arm's length price (i.e. primary adjustment). If such misconduct resulted in a tax shortfall, a secondary adjustment which arises from imposing tax on a constructive transaction, usually in the form of deemed dividends, also would apply;
- If transfer pricing assessments result in a tax refund, taxpayers may claim refunds within 60 days from the date of receiving the tax assessment letter, or three years from the last day of the time limit prescribed by law for filing tax returns;
- Taxpayers that have annual turnover of THB 200 million or more and that do not meet the exemption conditions must submit a transfer pricing disclosure form – disclosing information on the related parties and related party transactions at the time of filing their annual tax returns;
- This group of companies must also prepare full transfer pricing documentation and keep the documentation for five years from the date of filing the disclosure form, which is subject to submission upon request;
- A special deadline is provided for the initial year that is subject to the full transfer pricing documentation requirement, under which companies have up to 180 days to submit full documentation following a request by Revenue officers, but can be extended to 120 days if the taxpayer has justifiable reasons for being unable to meet the 60 days deadline; and
- Failure to comply with the transfer pricing disclosure, or submitting incorrect information, will be subject to a penalty of not exceeding THB 200,000.

Since not all the necessary details are contained in the newly enacted provisions, the Ministry of Finance and the Revenue Department will issue further subordinate regulations to provide additional clarifications and implementation guidance.

D. Statutory Auditing Requirements and Accounting Standards^{1,4}

Audit Requirements

All juristic business entities must prepare financial statements each year. The financial statements must be audited by an independent certified auditor, and thereafter submitted to the Revenue Department and the Commercial Registrar each accounting year.

Foreign Company

Financial statements of a foreign company, including branch office, representative office or regional office but excluding joint venture, must be submitted to the Company Registrar no later than 150 days after the end of the fiscal year. Approval of the shareholder meeting is not required.

Exception

The financial statements of a registered partnership under tax law with capital, assets, and/or income not exceeding certain values prescribed in the Ministerial Regulations are not required to be audited by an authorised Thai auditor.

Accounting Standards

Auditing practices conforming to international standards are, for the most part, recognised and practiced by authorised auditors in Thailand. The Federation of Accounting Professions (FAP) issued accounting standards for public and private entities.

Public Companies

Thai Financial Reporting Standards (TFRSs) and Thai Accounting Standards (TAS) are required. TAS are very similar to the International Financial Reporting Standards (IFRS), but TAS have not adopted the Financial Instruments Standards under the IFRS. Thai Accounting Standards include several national financial instruments standards that differ from IFRS Standards.

Private Companies

TFRS for small and medium-sized enterprises (TFRS for SMEs) follow IFRS for SMEs closely but IFRS for SMEs are still under discussion for full adoption in Thailand. The FAP distinguishes between two types of Non-Public Accountable Entities (NPAE) in setting the basis for application:

- Complex NPAE; and
- Non-Complex NPAE.

Complex NPAE are required to comply with TFRS for SMEs in full. Non-Complex NPAE are only required to comply with certain TFRS for SMEs.

II. Banking & Currency Control

A. Bank Account Setup Requirements and Restrictions for Foreign Direct Investment (FDI)⁷

Bank Account Setup Requirements

Both locally and foreign incorporated companies can open business bank accounts in Thailand. Technically, there are no limitations on the type of business accounts foreign companies can open, but in practice, foreign incorporated companies can only choose from a limited range of accounts in Thai banks. The process, requirements and strictness for a company to open a bank account differ between different banks, and even between branches within the same bank.

General Requirements for Locally Incorporated Limited Companies

The documents described below are for reference only as requirements vary between commercial banks. It is advised to check with the desired commercial bank on the exact documents required before visiting the bank.

#	Documents Required for Opening a Bank Account for Locally Incorporated Limited Companies
1	Documents related to the juristic person such as Certificate of the Company Registration verifying names of directors, managing partners and authorised directors (dated not more than one month previously).
2	Identity documents and House Registration of authorised person(s) such as Citizen ID card or any other ID cards.
3	Certificate of Shareholder Registration (Bor Or Jor 3), certifying the company seal or any amended registration details (Bor Or Jor 4).
4	Letter of Authority from authorised person(s) on behalf of the juristic person (if other person is an authorised representative to withdraw funds).
5	Identity documents and House Registration of authorised representative to withdraw funds such as Citizen ID card or any other ID cards.
6	Minutes of the Board Meeting authorising the opening of the account and designating the signatories for payments with a company seal (if any).

3. Taxation, Transfer Pricing, Banking and Currency Control

General Requirements for Foreign Incorporated Limited Companies

Some banks request the documents of foreign incorporated companies to be certified by the Notary Public, and/or the Thai Embassy or Consulate in the country where the company is registered. For exact requirements, it is recommended to consult the corresponding commercial bank directly.

#	Documents Required for Opening a Bank Account for Foreign Incorporated Limited Companies
1	Minutes and Board Meeting authorising the opening of the account and designating the signatories for payments and closure of the account.
2	Certificate of Incorporation.
3	Articles of Association.
4	Memorandum of Association.
5	List of Directors.
6	List of shareholders.
7	Power of Attorney and Passport of grantee (required in case the signatory is not a director of the company).
8	Citizen ID card or Passport of the directors and authorised persons. If a shareholder holds more than 25% of company shares: <ul style="list-style-type: none">• Individuals: Citizen ID card or Passport (for foreigners).• Juristic Persons: List of shareholders of the relevant juristic persons.

Foreign Direct Investment (FDI) Restrictions

Foreign Direct Investment (FDI) is generally welcomed and does not require government approval unless foreign investors apply for special incentives offered by the Board of Investment (BOI). However, the Foreign Business Act (FBA), the overarching law governing FDI in Thailand, restricts/prohibits foreign investors from engaging in certain business activities. For further details please refer to section 8 of this report.

Definition of “Foreign Investment”

A company is considered foreign if 1) it is not registered in Thailand; or 2) if 50% shares or more of a Thai registered company are held by a non-Thai entity.

Restricted Ownership of Real Estate

Foreign investment in Thai real estate is also restricted under the FBA. Generally foreign investment in land ownership is forbidden unless exemptions are granted by the government. Exemption may be granted by the Board of Investment to own land for business operations such as factory building for manufacturing operations.

Ownership of apartment units in a building is permitted under the condition that not more than 49% of all units in a condominium project are foreign-owned.

B. Restrictions on Inbound and Outbound Funding in Foreign Currency and Local Currency^s

Foreign Currency

Inbound

There is no limitation on the amount of foreign currency that can be brought into Thailand. However, the foreign currency must be converted to THB or deposited into a foreign currency account at a Thai bank within 360 days.

Outbound

Repatriation of investment funds and repayment of overseas loans in foreign currency are freely permitted, subject to submission of supporting documents to an authorised bank.

Declaration Requirements

Any person bringing into or taking out of Thailand an amount exceeding USD 20,000, or equivalent in other foreign currency is required to declare such funds at the Custom.

Furthermore, any transaction involving the sale, exchange, withdrawal or deposit of foreign currencies in an aggregate amount exceeding USD 50,000, or equivalent shall be reported to an authorised bank in a Foreign Exchange Transaction Form as prescribed by the Competent Officer.

Local Currency

Inbound

There is no restriction on the amount of Thai currency brought into Thailand.

Outbound

The maximum limit of Thai currency that can be brought to other countries without authorisation (apart from the ones mentioned below) is THB 50,000.

Exception and Declaration Requirements

Any person travelling to Vietnam, the People's Republic of China (only Yunnan Province), and other countries that have an adjacent border with Thailand, is allowed to take up to THB 2 million from Thailand.

Any amount exceeding THB 450,000 must be declared to Thai Customs Officer before leaving Thailand.

C. Policy on Foreign Exchange Rate and Three-year Historic Trend

Policy on Foreign Exchange Rate⁹

A managed float exchange rate regime is adopted by Thailand. The value of THB is determined mainly by market forces to allow the currency to fluctuate in line with economic fundamentals. Regular interventions by the Bank of Thailand prevent excessive volatility and are designed to achieve economic policy targets.

The Bank of Thailand prohibits THB-denominated lending to non-residents where there are no underlying trade or investment activities by the borrower in Thailand.

Three-year Exchange Rate Trend for HKD to THB¹⁰



Date	HKD/THB Rate
30/03/2016	4.5356
30/03/2017	4.4216
30/03/2018	3.9726
30/03/2019	4.0427




















D. List of Banks from Foreign Investments^{11,12}

Foreign banks are mainly licensed to undertake commercial banking business in Thailand in the form of 1) commercial banks; 2) foreign commercial bank's subsidiaries; 3) foreign commercial bank's branches and; 4) foreign bank representative offices.

A commercial bank license allows a bank to provide the most comprehensive range of banking services in deposits, credit, foreign exchange, payment, remittance, derivatives and capital market, etc. to both individuals and corporations. There are restrictions in the scope of business and the number of branches in various degrees for holders of other licenses. The following list presents the foreign banks with commercial banks' licenses, foreign commercial bank's subsidiary and foreign commercial banks' branch. For banks' detailed scope of business bank, please refer to their official websites.

In addition, there are another 50 foreign banks with a representative office in the country. A detailed list of foreign bank representative offices can be found in Appendix 1.

List of Banks from Foreign Investments

Name of Foreign Bank Branches		
Commercial Bank (full range of banking services)		CIMB Thai Bank Public Company Limited
		Industrial And Commercial Bank Of China (Thai) Public Company Limited (ICBC)
		Standard Chartered Bank (Thai) Public Company Limited
		United Overseas Bank (Thai) Public Company Limited (UOB)
Foreign Commercial Bank's Subsidiary		ANZ Bank (Thai) Public Company Limited
		Bank Of China (Thai) Public Company Limited (BOC)
		Mega International Commercial Bank Public Company Limited
		Sumitomo Mitsui Trust Bank (Thai) Public Company Limited
Foreign Commercial Bank's Branch		Bank Of America, National Association
		BNP Paribas
		Citibank, N.A.
		Deutsche Bank AG.
		Indian Oversea Bank
		JPMorgan Chase Bank, National Association
		Mizuho Bank, Ltd. Bangkok Branch
		Over Sea-Chinese Banking Corporation Limited (OCBC)
		RHB Bank Berhad
		Sumitomo Mitsui Banking Corporation
		The Hong Kong and Shanghai Banking Corporation Ltd. (HSBC)

3. Taxation, Transfer Pricing, Banking and Currency Control

Source:

¹ *A Business Guide to Thailand 2018, Thailand Board of Investment*

² *Thailand Tax Facts 2018 (Thai Practical Notes), Ernest & Young*

³ *Thai Tax 2018/19 Booklet, PricewaterhouseCoopers*

⁴ *A Guide to Doing Business in Thailand, RSM International*

⁵ *The Revenue Department of Thailand*

⁶ *Tax Insights from Transfer Pricing, PricewaterhouseCoopers*

⁷ *Bangkok Bank official website*

⁸ *Investment in Thailand 2018, KPMG*

⁹ *Thailand - Foreign Exchange Controls, Export.gov, Aug 2019*

¹⁰ *Bloomberg*

¹¹ *Financial Business under the Bank of Thailand's supervision and examination, Bank of Thailand*

¹² *Names, Addresses and Websites of Financial Institutions, Bank of Thailand*

4. Labour, Compensation Rule and Labour Supply Situation

Executive Summary

Thailand has established labour laws providing guidance on matters such as maximum working hours, minimum wages, and welfare to protect employees.

Foreign workers are forbidden or restricted from engaging in certain jobs which are prone to keen competition with local workers or in certain sensitive industries.

Foreign workers are required to obtain a work permit for legal employment in Thailand, which is approved by the Thai government on a discretionary basis.



4. Labour, Compensation Rule and Labour Supply Situation

I. Overview on Laws and Regulations over Local Labour Employment

A. Contracts and Protection Towards Employees^{1,2}

The Labour Protection Act and the Labour Relations Act, among other related laws, govern the Thai labour employment.

These laws apply to all businesses with at least one employee. All employees (except domestic workers/household staff), whether full- or part-time, seasonal, casual, occasional or contract, are covered.

Employment contracts and service contracts are governed separately under Thai laws. Employees under employment contracts receive wages as they work, and are supervised by employers. Independent contractors however, are only entitled to receive payment when work is completed, and are primarily governed by the “Hire of Work” provisions under the Thai Civil and Commercial Code (CCC).

Minimum Legal Working Age

The minimum employment age is 15 (subject to restricted employment conditions if workers are below the age of 18).

Children over 15 but under 18 years of age may be allowed to work if approval from the Ministry of Labour and Social Welfare is acquired. They are not allowed to work at night (i.e. between 10 pm and 6 am). No one under 18 years is allowed to perform work prejudicial to their health, morals or safety.

Labour Contract

The Labour Protection Act governs the agreement between employer and employees. If both parties agree to the contract and if it is not against the public order or good morals, Thailand accepts the validity of the contract, either written or verbal.

Termination of Employment

Conditions for termination of employment are laid out in the Labour Protection Act, and a code governs unfair practices and unfair dismissals. If an employment contract does not specify any duration, either party can terminate the contract by giving advance notice before the following pay period for it to take effect, up to three months in advance.

Thai labour laws provide considerable freedom in managing labour. The government does not interfere with a company’s retrenchment and labour relocation policies, provided that labour relocation is not ordered with the exclusive intent to create hardship on them. Refusal to transfer can be a legal cause for dismissal.

4. Labour, Compensation Rule and Labour Supply Situation

Employees are entitled to severance pay depending on the period of employment, as describe below.

Period of Employment	Severance Payment (Minimum)
120 days to 1 year	30 days of wage
1 year to 3 years	90 days of wage
3 years to 6 years	180 days of wage
6 years to 10 years	240 days of wage
10 years to 20 years	300 days of wage
20 years or more	400 days of wage

B. Minimum Wage Level³

Since April 2018, the minimum wage ranges from THB 308 (around USD 10) to THB 330 (around USD 11) per day. The wage can vary depending on the location where the service is performed.

The minimum wage rate is to be updated from time to time by the government.

C. Maximum Working Hours and Days

The maximum number of hours for non-hazardous work is eight hours per day, or 48 hours per week.

The maximum number of hours for hazardous work is seven hours per day, but not exceeding 42 hours per week.

Once employees have worked for five consecutive hours, they must be given an hour resting break.

Overtime

For work performed in excess of the maximum number of hours, fixed either by regulations or by specific agreement (whichever lower applies), employees must be compensated with overtime pay ranging from 1.5 to three times their normal wage rate. The maximum number of overtime is 36 hours per week. Executives and supervisors are not entitled to overtime pay.

D. Mandatory Welfare

The Social Security Act⁴

According to the Social Security Act, annual contributions to the Social Security Fund by the government, employees and employers are required. The fund provides compensation to insure workers for cases such as injuries, illnesses, disabilities, maternity, death, child welfare, pensions and unemployment.

The monthly contribution by employers and employees is capped at THB 750 (around USD 24) each, or 5% of the employee's monthly wage (whichever is lower).

4. Labour, Compensation Rule and Labour Supply Situation

Workmen's Compensation Act⁵

According to the Workmen's Compensation Act, any employer with at least one employee is required to make contributions to the Workmen's Compensation Fund to provide protection to employees against injuries, diseases, disabilities or death resulting from employment. The rate of contribution ranges from 0.2% to 1% of an employee's annual wage, depending on the type of business undertaken, i.e., the assessed risk of the business.

Skills Development Act¹

According to the Skills Development Act, it is compulsory for companies with at least 100 employees to provide trainings to at least 50% of them. Otherwise the employer has to make a contribution to the Skill Development Fund of approximately THB 480 (around USD 15) per year for each untrained employees.

Other Benefits and Rights²

In addition to these provisions, workers in Thailand are entitled to various rights, as described below.

- Annual leave: employees who have worked continuously for one full year are entitled to at least 6 days of annual leaves per year;
- Sick leave: employees can take as many days of sick leave as necessary, but a maximum of 30 days per annum will be paid. The employer may ask for a doctor certificate from the employee for a sick leave of three consecutive days or more;
- Employee Welfare Fund: for companies with at least 10 employees that do not have a provident fund, an Employee Welfare Fund shall be established to compensate resigned, laid off or perished employees who passed away whilst in service. Both employers and employees will be required to contribute to this fund; and
- Female labour rights: female workers may not be employed to perform work which is strenuous and dangerous to their health or detrimental to their morals and safety. Except for work on shift, female labour shall not be required to work between 12 midnight and 6 am. Female employees are entitled to maternity leave with pay for 45 days and an additional 45 working days without pay when they worked for the employer for more than 180 days. Maternity leave is in addition to the 30 days paid sick leave to which all employees are entitled.

Apart from the above mentioned legal provisions, Thai employers are required by law to provide adequate drinking facilities, washrooms and toilets for employees and must have first aid and medical facilities available at the premises. The extent of such facilities depends on the nature of the business and the number of employees.

E. Labour Law Governing Authorities, Enforcements, and Restrictions

Governing Authorities²

The Ministry of Labour and Social Welfare is the official government body responsible for the oversight of labour administration and protection, social policy, labour skill development, and the promotion of employment in Thailand.

4. Labour, Compensation Rule and Labour Supply Situation

Labour Law Enforcements²

The Labour Inspectors (operating under the Labour Protection Act and the Labour Relations Act) are responsible for overseeing compliance with general working conditions, occupation safety and health, labour welfare, labour relations, negotiation and application of collective agreements and settlement⁶ of labour disputes.

The Labour Court provides an escalated way to resolve any disputes arising between employers and employees.

Employment Restrictions

The Foreign Employment Act (FEA) imposes certain restrictions on foreign employment to protect the domestic labour market.

Restrictions on the Number of Foreign Employees⁷

- For Thai incorporated companies, the FEA sets a statutory ratio of local/foreign employees of 4:1 (i.e. for every non-Thai employee hired, a company needs to employ four Thais). Moreover, foreign employees are required to obtain a work permit to work in Thailand. For each work permit, the sponsored Thai company is required to have at least THB 2 million fully-paid up registered capital to cover up to a maximum of 10 foreign employees per company. The cap can be relaxed in certain situations subject to approval of the Ministry of Labour on a discretionary basis. Some examples of criteria considered for relaxation of foreign employment cap include:
 - The employer paid an income tax equal or greater than THB 3 million in the previous accounting year; or
 - The employer has 100 or more Thai employees.
- Foreign incorporated companies are permitted to employ one foreign employee for every THB 3 million invested.

Restricted Occupations

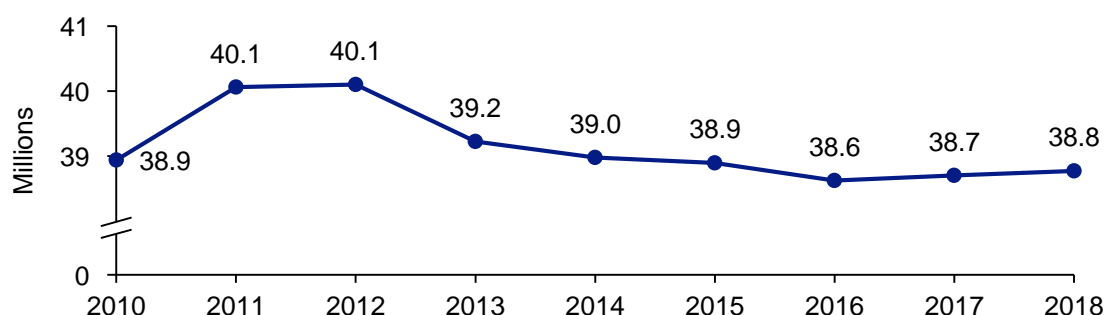
The FEA prohibits foreign workers from engaging in 39 occupations and professions, which include mostly manual, agricultural and industrial work (including shoemaking, hat making, cloth weaving by hand etc.) but also include professional fields like civil engineering, architectural work, legal services and accounting.

For an updated list of prohibited occupations, please visit the website of Ministry of Labour (www.mol.go.th/en/content/page/6347)

II. Local Labour Supply Market Condition

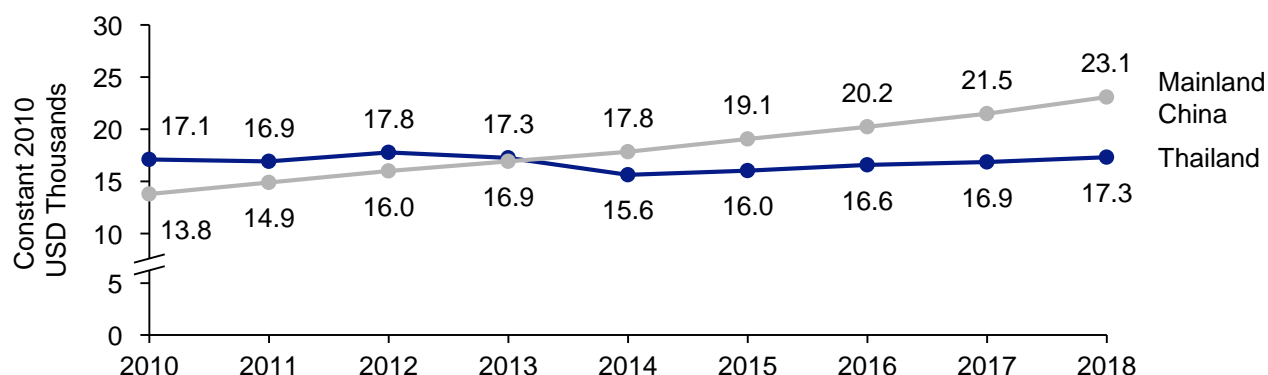
A. Supply Situation for Total Labour Force

Thailand Total Labour Force (2010 – 2018)⁸



The estimated total labour force was around 38.8 million in 2018. The supply of labour has been declining from the peak of 40 million in 2012 and has remained stagnant below 39 million for the past five years.

Thailand Industry Labour Productivity (value added per worker) (Note) (2010 – 2018)⁹

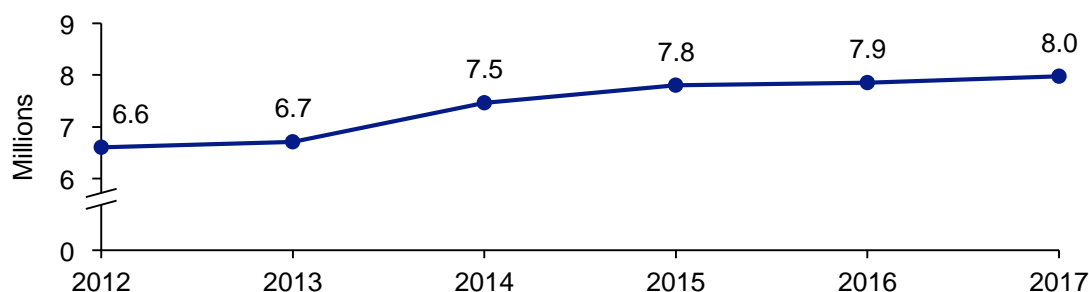


Thailand's labour productivity grew at a lower rate (around 0.2%) than Mainland China's (around 6.7%) between 2010-2018. Thailand's industry labour productivity was around 25% lower than Mainland China's in 2018. Among ASEAN countries, Thailand's productivity is lower than that of Brunei, Singapore and Malaysia.

Note: Industry labour productivity measures the value added per worker in manufacturing, construction, mining and quarrying and public utility sectors.

B. Supply on Educated Employees

Thailand Estimated Labour Force with Higher Education (2012 – 2017)¹⁰



The estimated labour force with higher education (defined as level of education beyond upper secondary school) was around 8.0 million in 2017, approximately 21% of the total labour force.

4. Labour, Compensation Rule and Labour Supply Situation

C. Government Support on Employee Training^a

In 2002, the Thai government enacted the Skills Development Act which encourages employers to conduct skills development courses in order to upgrade the knowledge of the workforce. The table below lists examples of incentives provided under the Skill Development Act.

#	Incentives Granted Under Skills Development Act
1	Income tax exemption on training expenses, up to 200% of the incurred expenses.
2	Government assistance granted to develop training materials, trainers and supervisors.
3	Government consultation services on skill development activities.
4	Exemption on import duty and value added tax for tools and machinery brought into Thailand for training purposes.
5	Deduction on utility charges for electricity and pipe water bills twice the amount of the training expenses.

Additionally, there is a legal requirement for companies with at least 100 employees to provide trainings to at least 50% of them. Otherwise the employer has to make a contribution to the Skill Development Fund of approximately THB 480 (around USD 15) per year for each untrained employees.

D. Labour Unionisation and Related Government Regulations^a

All labour associations must be registered with, and licensed by, the Central Registration Office of Employees' Association, the Ministry of Labour and Social Welfare or by provincial registrars designated by the Ministry of Labour and Social Welfare.

Protection of Rights of Unionisation

The Labour Relations Act (LRA) protects the rights of a member of labour associations from an employer's disciplinary actions (e.g issuing a warning letter, employee lockout or employment termination), provided that the concerned labour association is formed and registered according to the LRA. The employer must submit a petition to the Labour Court seeking an order approving the disciplinary actions against the employee. If approved, the employer may proceed as described above.

Labour Dispute Settlement

In case of employment disputes, only written demands by employees will be considered to have been received by the employers. Negotiations between employers and employees must be undertaken through their authorised representatives.

If the parties cannot reach an agreement, the Ministry of Labour and Social Welfare may provide directions to resolve the dispute. An application of the case must be presented in written form. An arbitrator may be appointed to reconcile the dispute.

4. Labour, Compensation Rule and Labour Supply Situation

E. Work Permits and Visas

Work Permits^{1,2}

Foreign employees need a work permit to work in Thailand. An employer may file an application for a work permit on behalf of the foreign employee before he enters Thailand. A work permit will be valid for the period of time not exceeding four years (insofar as the foreigner's non-immigrant visa permits him/her to remain in Thailand and will be renewed at the same time as the approval of a visa extension).

- Approval criteria: Approval is considered by the Ministry of Labour on a case by case basis. Certain criteria such as employer's paid up capital, ratio of Thais to foreign employees, how beneficial the business is to the Thai economy etc. will be considered by the Ministry before approval.
- Termination of employment: In case of termination of the employment or resignation of employees, the employer has a duty to report the cancellation of the respective work permits within a period of seven days. Failure to comply could result in penalties being imposed.
- Some key points to consider when applying for a work permit:
 - If the job being applied for is not in Bangkok, the application should be filed at the relevant province's Department of Employment, or in the absence of such an office, at the province's city hall; and
 - If the job applied for is subject to other licenses in addition to the Foreign Employment Act, a photocopy of such license shall be attached.

For the detailed procedures, guidelines on application filing and required documents in work permit application, please visit the website of Ministry of Labour of Thailand (www.mol.go.th/en/anonymouse/home).

Visas^{2,11}

Non-immigrant visa are issued by the Royal Thai Embassy or Consulate abroad.

- Visas are classified into different categories. The most common ones for foreign employment are non-immigrant Visa Category "B" (Business Visa), Non-Immigrant Visa category "B-A" (Business Approved Visa) and Non-Immigrant Visa Category "IB" (Investment and Business Visa);
- "Smart Visas" are granted to executives of the companies that invest in "S-Curve" industries. Holders of Smart Visa will be granted visa periods of up to four years and will not be required to obtain a work permit. For details of "S Curve" industries, please refer to section 8 of this report; and
- Most of the Thai embassies overseas now require a certification or letter of invitation from the sponsoring employer in Thailand as well as a work permit pre-approval letter (WP3) for application of Category B visa. Upon arrival, a non-immigrant visa holder needs to apply for visa extension beyond 90 days with the Immigration Department. Approval of the visa extension is considered on a case-by-case basis and the decision of the Immigration Department is final.

Travelling to Thailand¹¹

Hong Kong residents are permitted to stay up to 30 days in Thailand without a visa under the Bilateral Agreement with Thailand if entering via an international airport or through a land border checkpoint from a neighbouring country, such as Laos, Myanmar and Cambodia.

4. Labour, Compensation Rule and Labour Supply Situation

In order to work in Thailand, foreign employees are required to go through the following procedures:

#	Key Steps for Foreigners Wishing to Work in Thailand
1	Enter Thailand with a valid category B non-immigrant visa.
2	Prepare and submit an application for a work permit with the Ministry of Labour. This normally takes between 3 to 7 working days to process.
3	Extend the category B non-immigrant visa beyond 90 days.

F. Religious and Cultural Concerns or Considerations

Religion^{12,13}

Absolute religious freedom exists in Thailand with the King as patron of all major religions. Buddhism is the national religion which is practiced by approximately 95% of the population. Approximately 4.6% of the population is Muslim. Christianity² and various other religions make up the remainder.

Religion in Thailand pervades many aspects of Thai life and senior monks are highly revered; it is advised to observe the rules stipulated in individual wat (temple) in Thailand, especially for women, who may be restricted to enter certain areas of a wat, etc.

Culture¹³

The Thai royal family is highly respected in the country and it is crucial to show great respect to them in any occasion.

The prominence of family businesses among SMEs highlights the importance of personal relationships in Thailand. Relationships are key to a successful deal in the country; the level of closeness with Thai professionals may take precedence over monetary offerings.

4. Labour, Compensation Rule and Labour Supply Situation

Source:

¹ *A Business Guide to Thailand 2018, Thailand Board of Investment*

² *A Guide to Doing Business in Thailand, RSM International*

³ *New Minimum Daily Wage, Mazars, Apr 2018*

⁴ *Investment in Thailand 2018, KPMG*

⁵ *Labour Law, Thailand Ministry of Labour*

⁶ *Labour inspection country profile: Thailand, International Labour Organisation (ILO)*

⁷ *Work Permit and Visa Application Process in Thailand, Mazars*

⁸ *Total labour force, The World Bank*

⁹ *Industry (including construction), value added per worker (constant 2010 US\$), The World Bank*

¹⁰ *Thailand: Labor Market, PersolKelly Consulting, Apr 2019*

¹¹ *Summary of Countries and Territories entitled for Visa Exemption and Visa on Arrival to Thailand, Royal Thai Consulate-General, Hong Kong*

¹² *About Thailand: Religion, Tourism Authority of Thailand*

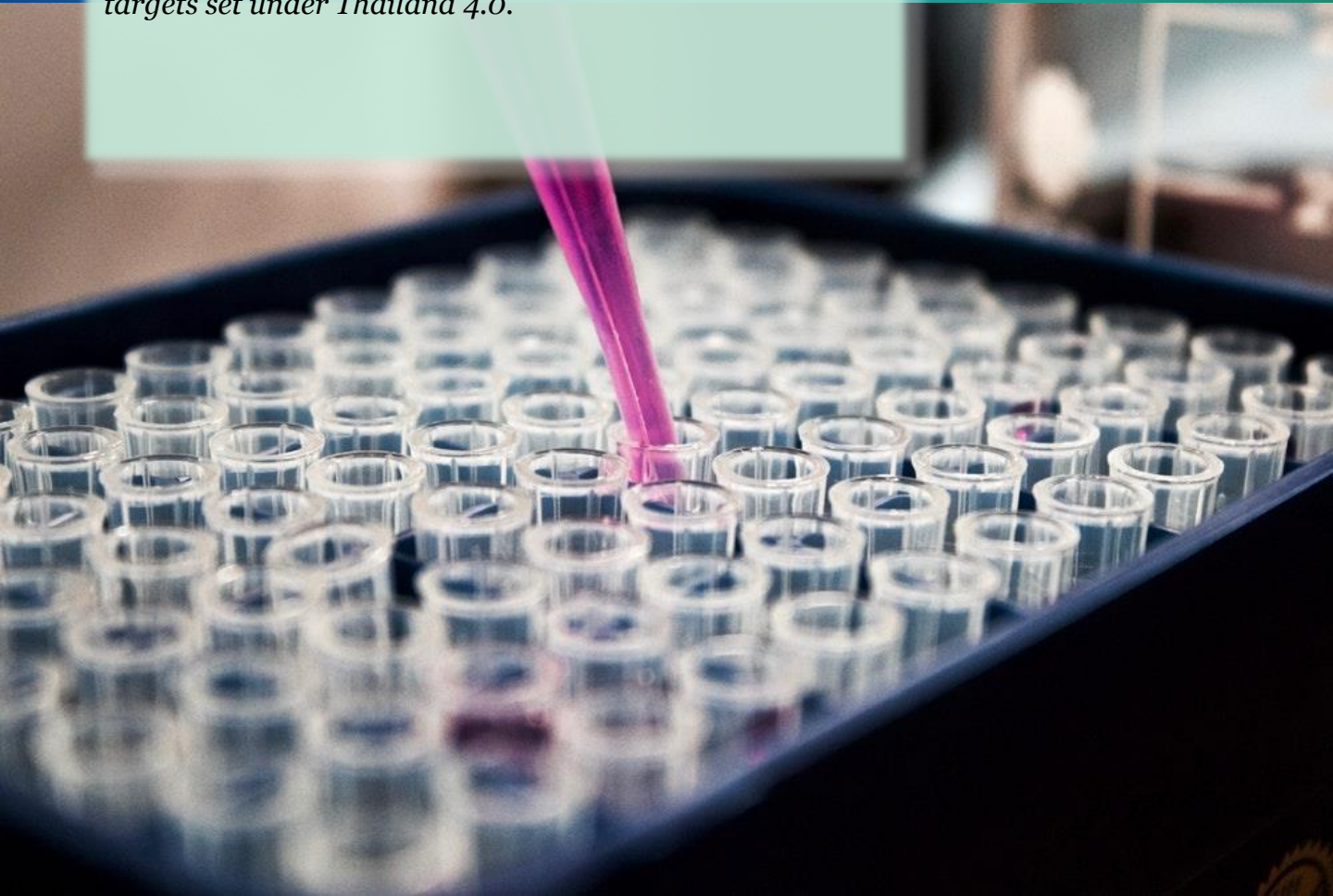
¹³ *Thailand - Cultural Etiquette, eDiplomat*

5. Research and Development Environment

Executive Summary

Thailand's goal for the coming years is to escape from middle income trap and to become a high-level income country. To do so, the government established an economic development framework (Thailand 4.0) which elevates Science & Technology (S&T) and Research & Development (R&D) as a national priority. Therefore, government agencies are rolling out policies and funding enhancing S&T, universities are publishing an increasing number of scientific papers and the private sector is investing in R&D facilities.

However, the country has yet to overcome two major hurdles affecting the S&T ecosystem. Thailand's relative lack of a skilled workforce along with a poor intellectual property protection framework could slow down foreign investments and prevent Thailand from reaching the targets set under Thailand 4.0.



5. Research and Development Environment

I. The Science and Technology (S&T) in Thailand

In Thailand, the government has been implementing strategies and initiatives allowing the country to be more competitive compared with its Southeast Asian peers. In order to fuel the country's economic growth in a sustainable and durable way, the government has chosen to elevate S&T as a national priority.

A. Policies and Trends in S&T

Under the influence of the national government, Thailand has gone through three major economic development cycles. Each cycle was designed to upskill the Thai economy in a particular sector: Agriculture for Thailand 1.0, light industry for 2.0 followed by heavy industry for 3.0. The last cycle created greater inequalities in the country and trapped Thailand in the middle income economy class.

The nation is now aiming to rise towards a high income country (and escape from middle income trap) with a new development framework, Thailand 4.0.

Thailand's Journey Towards Becoming a High Income Country



Thailand 4.0^{1,2,3}

In alignment with Thailand's 12th Social and Economic Development Plan (2017–2021), the country established the Thailand 4.0 strategy in order to become a high income country. This strategy, also called “Digital Thailand”, is a framework for economic development driven by digital technologies and innovation helping to transform the country's current economy into a value-based one. The four main objectives are:

- Reaching economic prosperity: creating an economy built on knowledge, technology, innovation and creativity in order to overcome the middle income trap. The goals are to reach a GDP growth rate of around 5% and to have an income per capita of USD 15,000 by 2032;
- Establishing social well-being: driving the country towards an equalitarian society. The objectives are to reduce social inequalities and to build social security;
- Raising human values: transforming the population into an advanced and educated workforce. The target is to reach a Human Development Index (HDI) of 0.8 and to have five Thai universities ranked within the top 100 of world's higher education institution list; and
- Protecting the environment: balancing economic growth and sustainable growth.

To reach all the objectives, the government also implemented supporting policies such as the ICT-2020 plan (Information Communication Technologies) and the Digital Agenda 2018 (smart cities).

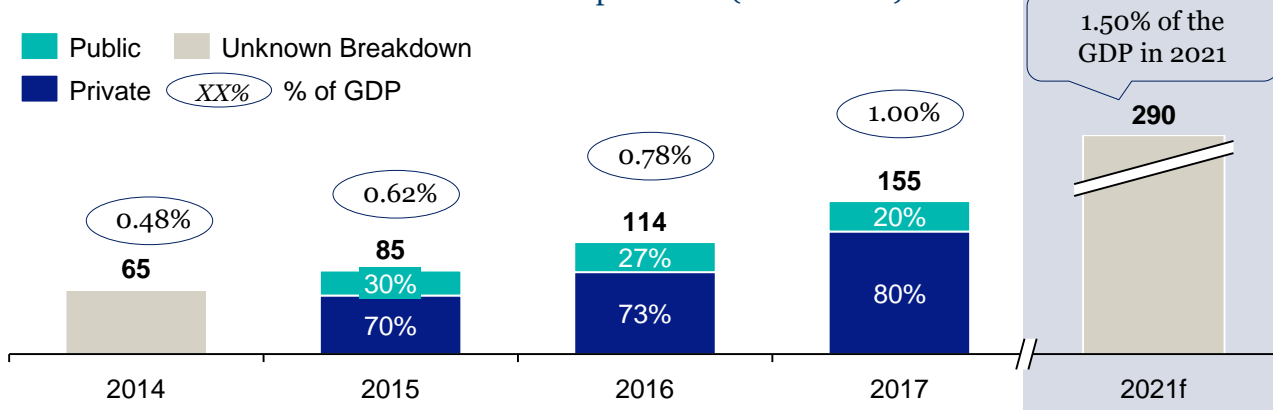
Outlook

Thailand's innovation capabilities are better than average worldwide and strong compared with other ASEAN countries. The country ranked 51st out of 140 countries in the “Innovation Capability” criteria of the World Economic Forum's 2018 Competitiveness Report. Thailand was third among the ASEAN countries.

Thailand's Research and Development (R&D) Investments⁴

In the wake of Thailand 4.0, R&D investments are rising with the government setting a clear target for 2021. According to the National Science Technology and Innovation Policy Office (STI), in 2017 (figures surveyed in 2018 and disclosed in March 2019), R&D investments in Thailand amounted to THB 155.1 billion, reaching the milestone of 1% of the country GDP. This figure was up around 36% from THB 113.5 billion in 2016. The secretary general of the STI, Kitipong Promwong, commented that in 2017, the private sector was the main driver of R&D investments, representing 80% of total investments.

Historical and Forecasted Thailand's R&D Expenditure (THB billion)



In order to strengthen Thailand's innovation capabilities, the government has set a clear but challenging target for R&D investments. The national objective is for R&D investments to reach 1.5% of total GDP by 2021. According to Fitch forecast, Thailand GDP will reach USD 608.1 billion in 2021⁵ (THB 19,343 billion) indicating that if the country meets its target, R&D investment could settle at THB 290 billion in 2021. To meet this target, the country is implementing incentives such as tax deduction to foster investments from companies focused on robotics, healthcare, agriculture, biotechnology and creative economy.

In 2017, R&D investments reached THB 155.1 billion; 40% of this figure⁶ came from five major industries. The breakdown of the R&D expenditure by industry is provided below.

	Automotive Industry (THB 18.9 billion) <ul style="list-style-type: none"> Develop and improve electric vehicles production Support specific technologies such as hybrid electric vehicles (HEV) Construct car testing facilities
	Food Industry (THB 16.2 billion) <ul style="list-style-type: none"> Investigate and research automated production process solution Improve processed and instant food products Carry out consumer behaviour studies and new packaging research
	Petroleum Industry (THB 11.7 billion) <ul style="list-style-type: none"> Invest in petroleum production and transportation technologies R&D in energies for specific industries (e.g. for the automotive industry) Testing of alternative fuel technologies
	Wholesale & Retail (THB 10.2 billion) <ul style="list-style-type: none"> Invest in new products and research personnel Improve production processes Focus on the future of retail/convenience stores and grocery stores
	Financial Services (THB 6.0 billion) <ul style="list-style-type: none"> Improve services Develop FinTech to support modern financial services

B. S&T Related Organisations

In order to properly develop a S&T ecosystem, Thailand needs reliable authorities to set the overall strategic directions, implement policies and track S&T progress nationwide. There are currently two major Ministries (MOST and MDES) and two government agencies (NSTDA and STI) in charge of S&T related developments.

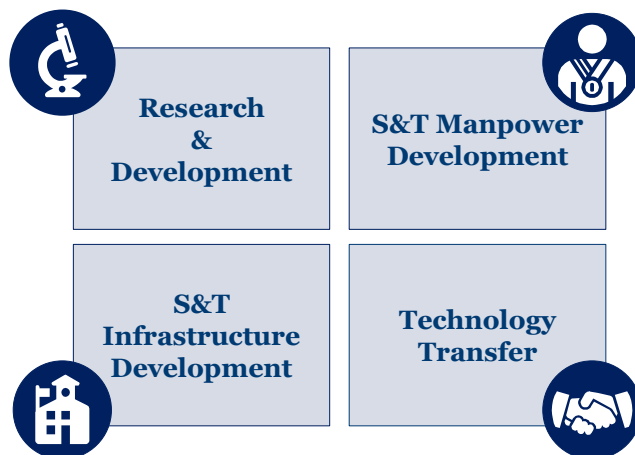
Ministry of Science and Technology (MOST)⁶

The Ministry of Science and Technology's main missions are:

- Draft, implement and track the progress of policies facilitating S&T development;
- Manage the network for the S&T related agencies; and
- Collaborate with various agencies and the private sector in order to investigate policies, plans or reports related to S&T.

The Ministry operates through a defined framework in order to develop every aspect of Thailand's R&D environment.

MOST Operating Framework for S&T



Ministry of Digital Economy and Society (MDES)⁷

The Ministry of Digital Economy and Society's vision is to encourage all sectors to embrace digital technologies in order to drive Thailand's economy and society towards the objective of Digital Thailand (Thailand 4.0).

National Science and Technology Development Agency (NSTDA)⁸

The NSTDA operates under the Ministry of Science and Technology. NSTDA is Thailand's leading research agency and is a key institute of the country's S&T strategy. In 2017, the NSTDA had a staff of 2000 people (of which 500 PhD) and an annual budget of THB 2 billion. The NSTDA conducts basic and applied research in five main domains: Agriculture & Food, Health & Medicine, Energy & Environment, Bioresources & Community, and Manufacturing & Services.

The NSTDA also operates four specialised national research centres:

- Genetic Engineering and Biotechnology Centre (BIOTEC), responsible for life-science related research;
- Metal and Material Technology Centre (MTEC), responsible for materials-related research;
- Electronics and Computer Technology Centre (NECTEC), responsible for IT-related research; and
- Nanotechnology Centre (NANOTEC), responsible for nanotech-related research.

National Science Technology and Innovation Policy Office (STI)⁴

The STI is a national entity created in 2008 that carries out missions along the ministry framework as follows: 1) Research and Development: formulate the national 20 years research and innovation strategy; 2) S&T Infrastructure Development: promote private sector investments; 3) S&T Manpower Development: facilitate talent mobility, create training programmes with universities and private sector; and 4) Technology Transfer: create a Science Diplomacy Programme.

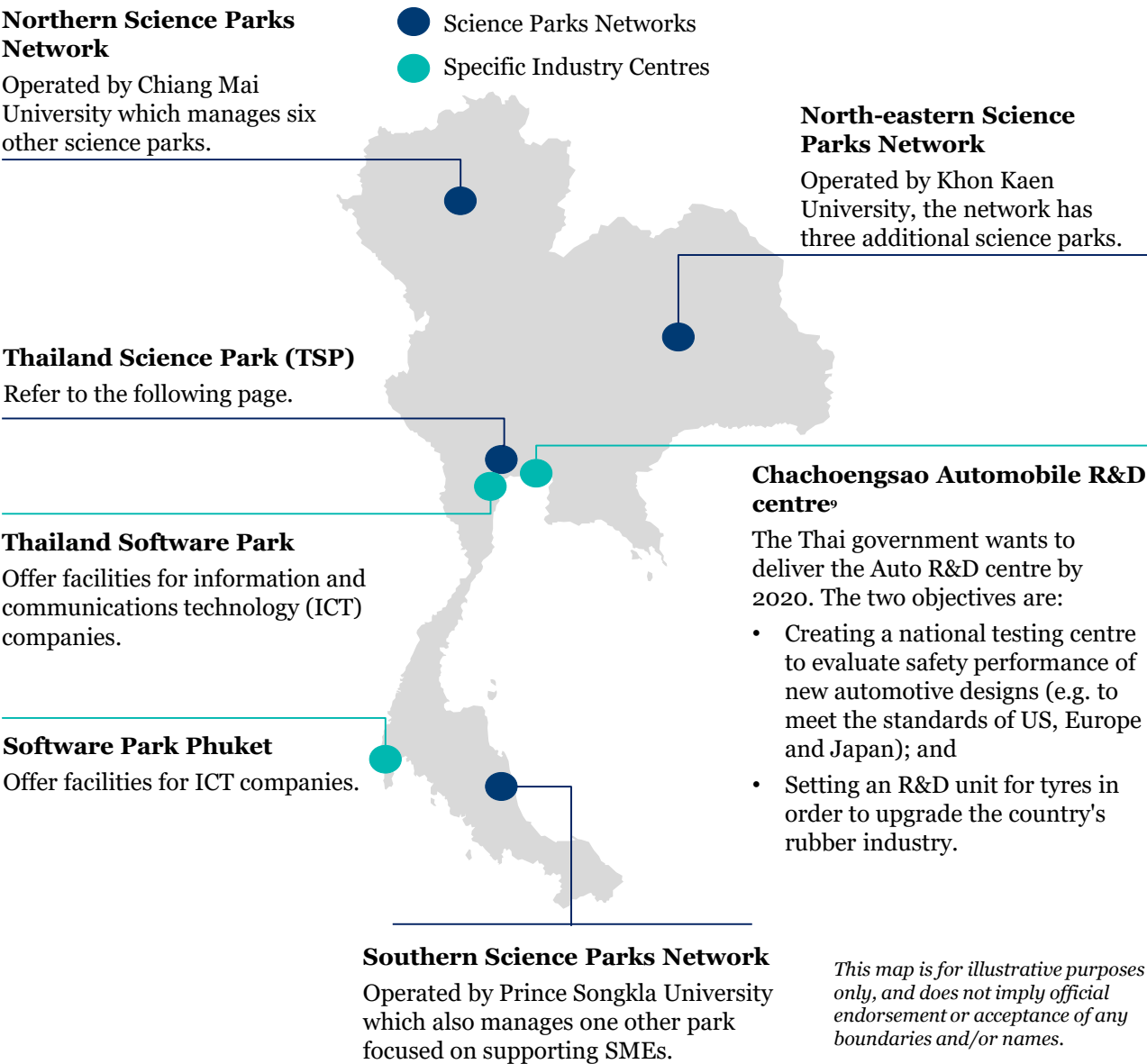
II. The Infrastructure of Science and Technology

Thailand has set R&D as a national priority to support the country’s economic growth. In order to reach the targets set by the government, most of the national S&T policies are targeted at developing the current infrastructures. This development is mainly driven by three parties: the government, universities and the private sector.

A. Government R&D Institutes and/or Funding Agencies

As part of the national development of S&T infrastructures, the public sector will play a key role. The government currently owns or supports most of the country’s Science Parks and also plans to create industry specific R&D centres in the near future (e.g Chachoengsao Automobile R&D centre in 2020).

Thailand National Science Park and R&D Institution Ecosystem*



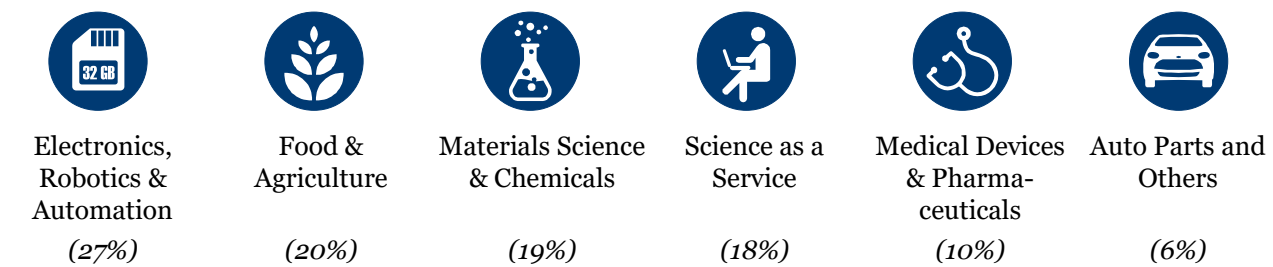
Thailand Science Park (TSP), the Leading R&D Hub in the Country¹⁰



The National Science and Technology Development Agency (NSTDA) created the Thailand Science Park (TSP) in 2002 as the first science park of the country. It is located in Pathumtani province (northern outskirts of Bangkok) near three leading universities: Asian Institute of Technology (AIT), Thammasat University (TU) and Sirindhan International Institute of Technology (SIIT). Overall, the park provides corporate tenants an exclusive access to highly skilled researchers including the 2,000 NSTA full-time researchers (out of which 500 are Ph.D scientists).

TSP is the largest fully integrated R&D hub in Thailand with more than 500 R&D related projects carried out on the campus each year. It accommodates more than 90 technology related companies, of which around 70% are Thai firms and the remaining are foreign companies, covering a wide range of industries.

Companies Located at TSP by Industry (% of companies operating in the sector)



TSP also hosts service providers for R&D-related business, such as the Industrial Technology Assistance Program (iTAP), the Technology Licensing Office (TLO), and the Business Incubation Centre (BIC).

The TSP has three objectives:

- Provide high quality R&D space for public and private sector;
- Incubate technology business start-ups; and
- Support linkage between private companies, NSTDA, and universities.

TSP also hosts six content focused research institutions:



Food Innovation Hub



Network supporting entrepreneurs in auto parts industry

NSTDA

(refer to S&T organisations paragraph)



BIOTEC
a member of NSTDA



NECTEC
a member of NSTDA



MTEC
a member of NSTDA



NANOTEC
a member of NSTDA

B. University-based R&D Institutes¹¹

Apart from the government, universities play an important role in the R&D ecosystem. According to the 2019 QS Asia University Rankings, Thailand has 10 universities ranked in the top 300. Typically, QS Institute ranks the top universities in Asia according to six criteria, among which the most important ones are academic reputation (assessing teaching and research quality) and citation per faculty (assessing importance of research outputs). The top Thai institution comes in 44th place, with two other institutes ranked among the top 100. This implies that research carried out in the universities has a moderate impact in the international S&T scene.

Reflecting the push from the government in the R&D sector, universities and research institutions are increasingly publishing more research papers. Amongst the 10 most prestigious universities in the country, the average growth in paper submissions reached 22% over 2012-2016 with the top two institutions publishing more than 10,000 research papers over the same period. In addition to the growing number of publications, their relevance and impact also increased. Between 2012 and 2016, the number of Thai papers published in the top 10% international journals grew from around 15% to more than 20%. In terms of research paper topics, the top three areas are: Natural Sciences, Medical & Health Science, and Engineering & Technology, which are strongly in line with the sectors prioritised by the government in the Thailand 4.0 strategy.



Out of the 10 Thailand universities that are active in publishing research papers, four are leading institutions in their respective industries. Each one of them hosts three R&D centres that are developing new technologies to address Thailand's current economic issues.

University (ranking)	Research Focus	Name of R&D Centres in the University ⁸
Chulalongkorn University (44th)	Science, Engineering and Energy	<ul style="list-style-type: none"> • The Institute of Biotechnology and Genetic Engineering • Centre of Excellence on Petrochemical and Material (PETROMAT) • The Energy Research Institute
Mahidol University (52nd)	Medical	<ul style="list-style-type: none"> • Faculty of Medical Technology • Institute of Molecular Biosciences • Faculty of Medicine at Siriraj Hospital
Kasetsart University (130th)	Agriculture, Food and Environment	<ul style="list-style-type: none"> • Kasetsart University Food Innovation Research and Services in Thailand (KU-FIRST) • Institute of Food Research and Product Development (IFRPD) • Centre of Excellence for Agricultural Biotechnology
King Mongkut's University of Technology Thonburi (153rd)	Technology and Engineering	<ul style="list-style-type: none"> • Institute of Field Robotics • Faculty of Engineering • School of Bioresources and Technology

C. Private Business Firms (Research Centres)^{12,13}

The third major player in the R&D ecosystem is the private sector. In 2017, private companies contributed to around 80% of Thailand's R&D investment and the government is intending to roll out important incentives to push them to further invest in R&D.

Leading companies such as Charoen Pokphand in the food industry or Nissan in the automotive industry have R&D centres in Thailand. The research carried out in these centres can lead to major innovation, helping the country to grow its economic competitiveness in specific industries.






R&D Centre	Research Focus	Descriptions
Charoen Pokphand (CP) Foods R&D Centre 	Food	<p>Situated in the north of Bangkok in Ayutthaya, the CP Foods centre has an R&D facility intended to:</p> <ul style="list-style-type: none"> • Develop healthy food and beverages, which represent 30% of the company's new products in 2019; • Focus on food biotechnology such as enzymes and microorganism applications aimed at boosting product quality; • Create sustainable packaging to help reduce environmental damage; and • Help CP Foods launch 'smart' products such as smart meals (e.g. vegetarian dish with high-fibre grain, tofu, vegetables and other natural ingredients).
Nissan R&D Centre 	Automotive	<p>Nissan opened its first ASEAN R&D centre in the Samut Prakan province in 2016.</p> <p>The THB 1 billion facility acts as the main research centre for the region. The centre focuses on:</p> <ul style="list-style-type: none"> • Quality assurance (for product launches); • Upstream product-development; and • Evaluation test and trial for prototypes.

D. Infrastructure Availability for Foreign Investments

Thailand has set R&D as a national priority and is therefore incentivising foreign business to invest in the country. The Thailand Board of Investments (BOI) released an Investment Policy Framework with a list outlining the major incentives that could be beneficial to foreign firms. Some examples of favourable policies include: 100% foreign ownership, no local content requirements, no export requirements and no restriction on inflow of foreign currency. Other examples of facilitating measures include: land ownership rights, work permit and visa facilitation benefits. Foreign businesses are therefore encouraged to invest in Thailand. For more details on infrastructure availability, please refer to sections 7, 8 and 9 of this report.

III. Priority Areas in Thailand (major exports)¹⁴

Thailand’s economy is mainly supported by its machinery, electronics and vehicles industries. In 2018, the country’s top five exports were:

Top 5 Exports		% of Total Exports (in 2018) ¹⁵
	Machinery and Equipment	17.2%
	Electronics	14.0%
	Vehicles	12.2%
	Rubber	6.2%
	Plastics	5.8%

These industries (or products) have all been marked by the government as potential levers for economic growth. In order to increase its economic competitiveness the country will need to use R&D to upgrade its exports. Indeed, in 2016, only 22% of Thailand’s manufactured exports were labelled hi-tech products (e.g. products with high R&D intensity such as in computers), compared with around 30% for Malaysia and Vietnam.

IV. Funding for S&T, R&D^s

Funding is an important tool to leverage when developing an industry. In its effort to push forward R&D, the Thai government is offering a wide variety of funding through its main agencies: National Innovation Agency (NIA) and NSTDA. Currently, the funding schemes are targeted at small and medium-sized businesses with projects in early stage development stages or locally owned businesses.

The government is eager to meet its target of R&D investments reaching 1.5% of the country’s GDP by 2021. To facilitate this, it has implemented various measures to incentivise the private sector to invest:

- Provide funding for SMEs and startups working in innovative businesses;
- Promote measures from the BOI providing additional benefits to R&D projects;
- Expand economic innovation zones/centres such as ‘Food Innopolis’; and
- Set favourable funding conditions for private investors (see table below).

5. Research and Development Environment

Favourable Funding Conditions for Private Investors by Incentive Programme (Part 1/2)

Agency	Programme	Descriptions	Requirements	Conditions
National Innovation Agency (NIA): offer financial support for firms with promising prototypes of technological products	Technology to Capital Programme	<ul style="list-style-type: none"> Provides grants to support technology innovations in the testing/pilot phase 	<ul style="list-style-type: none"> Has to be an R&D project that is certified or financially supported by an education or research institute The technology must have passed commercial production and market feasibility evaluations 	<ul style="list-style-type: none"> Grant up to 75% of the project expenditure (company must invest at least 25%), up to a maximum of THB 5 million Maximum support for 3 years
	Innovation Interest Programme	<ul style="list-style-type: none"> Targets innovative projects in the early stages of development. The goal is to support the product to go into production 	<ul style="list-style-type: none"> The project must be in a pre-revenue generating phase The project has good market potential and the company has clear business and investment plans 	<ul style="list-style-type: none"> Support through interest-free loans from banks up to a maximum of THB 5 million Maximum support for 3 years
	Innovation Coupon for SMEs	<ul style="list-style-type: none"> Offers grants and loans to SMEs for finance projects related expenditures (e.g. feasibility studies; consultancy services from experts, research and education institutes; license fees, royalty fees and payments for temporary employees) 	<ul style="list-style-type: none"> Firm must be a small or medium-sized enterprise (registered capital of less than THB 200 million and less than 200 employees) Thai nationals must hold no less than 51% of the firm's total shares The company must be able to finish the project within 2 years 	<ul style="list-style-type: none"> The maximum loan amount is THB 5 million per project (interests are not paid by the receiver) Expenditures should not exceed THB 1.5 million Additional grant of THB 200,000 for feasibility studies to the Thai SMEs

5. Research and Development Environment

Favourable Funding Conditions for Private Investors by Incentive Programme (Part 2/2)

Agency	Programme	Descriptions	Requirements	Conditions
National Science and Technology Development Agency (NSTDA): provide programmes to financially support domestic R&D projects (from Thai companies)	The Company Directed Technology Development Programme	<ul style="list-style-type: none"> Provides low interest loans to support local R&D projects going into commercialisation 	<ul style="list-style-type: none"> Research must lead to commercialisation Firm must be considered an SME (registered capital of less than THB 200 million) Thai nationals must hold no less than 51% of the firm's total shares Firm must be managed by Thai nationals 	<ul style="list-style-type: none"> Loan up to THB 30 million; (should not exceed 75% of the project's total budget) Loan must be repaid within 7 years
	Industrial Technology Assistance Programme (iTAP)	<ul style="list-style-type: none"> Reimburses 100% of experts' consultation fees. Programme also provides free expert matching services 	<ul style="list-style-type: none"> Firm must be considered an SME (registered capital of less than THB 200 million) Thai nationals must hold no less than 51% of the firm's total shares Firm must be managed by Thai nationals 	<ul style="list-style-type: none"> Maximum grant of THB 400,000 (should not exceed 50% of the project's total expenditures) Large companies can benefit from expert matching services but not financial assistance

V. Human Resources for S&T^{15,16}

S&T manpower development is one of the main missions for the Ministry of Science and Technology (MOST). Having a highly skilled workforce is extremely important in order to carry along the R&D projects that will allow the country to meet the goals set by the Thailand 4.0 strategy. According to the latest data available (from 2016), the country's ratio of researchers in R&D was 1,210 per one million people (the third highest ratio among ASEAN countries). On a worldwide basis, in the 2019 Global Innovation Index, the country ranked 48th out of 126 countries in the criteria "Researchers, FTE/million population."

However, it seems that Thailand's education system is not effective and does not allow the country to create a highly skilled¹⁶ workforce. Based on the results of the 2015 Programme for International Student Assessment (PISA), around half of the Thai students performed below the basic proficiency level in science, reading and mathematics. The results indicated that despite attending school for nine years, the Thai students are struggling with basic literate or mathematical exercises. The country is also lagging behind its Southeast Asian peers and other Asian countries and cities (i.e. Singapore, Hong Kong, Macao, Vietnam, Korea and Japan). For these other countries, approximately 30% of students attained a level 4 or higher education in science and mathematics, versus only 5% for Thailand. As a consequence, the country is unable to educate S&T workers and will have a challenging time reaching the target of 60 research and development workers for every 10,000 persons by 2035. Nevertheless, Thailand can leverage a strong base of S&T graduates, as nearly 28% of tertiary students graduate in science and engineering.

VI. Support in Testing and Certification

The Thai government does not provide specific support in testing and certification to S&T companies. However, support in testing and certification is a usual service offered by Science Parks. Most of the advertising services including: testing and technical assistance, licensing, intellectual property rights. Therefore, joining a Science Park Network may help companies with the testing and certification processes.

VII. Intellectual Property Policy¹⁷

Intellectual property (IP) rights are an important factor to consider when entering a country. Some countries have difficulty implementing a strong framework to protect IP rights which can cause serious damages to the companies. Each year the Global Innovation Policy Centre (GIPC) publishes a worldwide ranking which analyses eight IP protection related topics: patents, copyrights, trademarks, trade secrets, commercialisation of IP assets, enforcement, systemic efficiency, membership and ratification of international treaties.

According to the 2019 IP Index published by the GIPC, Thailand's IP protection is very low. Globally, the country is ranked 42nd out of 50 analysed countries. Regionally it is also underperforming when compared with other Asian countries. Overall Thailand scored 32% which is below the Asian average of 52% (as a reference the top five world economies have an average of 92% on the index). Despite improvements over the years, substantial weaknesses still persist in Thailand's IP protection:

- Inefficient framework for patent protection: gap exists in patentability and severe patent backlogs;
- IP rights related to life sciences are misaligned with international standards;
- Poor digital copyright regime: low implementation and a lack of effectiveness;
- Barriers to market access for patent holders;
- High counterfeiting rates; and
- High digital piracy rates (software piracy estimated at 64%).

Source:

¹ Thailand Board of Investment, Royal Thai Embassy

² Ministry of Information and Communication Technology

³ Ministry of Digital Economy and Society, 2018

⁴ National Science Technology and Innovation Policy Office, 2019

⁵ Thailand 10-Year Forecast, Fitch Solutions, 2019

⁶ Ministry of Science and Technology

⁷ Ministry of Digital Economy and Society

⁸ Support measures for activities related to science and technology development, Thailand Board of Investment

⁹ Auto testing centre for research and development, Bangkok Post, 2016

¹⁰ Thailand Science Park Homepage

¹¹ Most prolific research countries in Asia 2012-2016, Elsevier

¹² CP Foods to develop healthy food products with new R&D centre in Thailand, Food Processing, 2019

¹³ Nissan official website

¹⁴ Trade Map, International Trade Centre

¹⁵ Global Innovation Index 2019, INSEAD

¹⁶ Skilled workforce and strong R&D keys to Thailand 4.0 success, The World Bank, 2017

¹⁷ 2019 IP Index, Global Innovation Policy Center, 2019

6. Supply Chain Environment

Executive Summary

Thailand's industry and service sectors contribute to around 90% of its gross domestic product (GDP). The country is particularly strong in the fields of automotive, electronics and food processing. The government aims to further support the development of a stronger supply chain in these industries.

With the ease of customs and clearance process, and the well developed infrastructure for logistics support, the Thai government is devoted to elevating Thailand's position as a key logistics hub within Southeast Asia.



6. Supply Chain Environment

I. Industry Profiles in Thailand^{1,2,3}

Breakdown of 2018’s Top 10 Exports

Thailand’s major sectors by gross domestic product (GDP) in 2017 were services (55.6%), industry (36.2%) and agriculture (8.2%).

In Thailand, the service sector includes tourism, banking and finance.

The industry sector includes vehicle and parts, electronic appliances, computers and parts, mining, petroleum refining, garment and clothing, as well as chemical and plastics.

Agricultural products include rice, corn, rubber, sugarcane, livestock, palm oil, and coconut.

Thailand experienced steady growth due to its industrial and agricultural exports. In 2018, Thailand’s total global shipments amounted to USD 249.8 billion, of which more than 70% were contributed by its top 10 exports.

Product Groups (Note)	Value in 2018	% of Total Exports
1. Machinery (including data processing machines and air conditioning)	USD 42.9 billion	17.2%
2. Electronics	USD 35.0 billion	14.0%
3. Vehicles	USD 30.4 billion	12.2%
4. Rubber, Rubber Articles	USD 15.5 billion	6.2%
5. Plastics, Plastic Articles	USD 14.5 billion	5.8%
6. Precious Metals and Stones	USD 11.9 billion	4.8%
7. Mineral Fuels Including Oil	USD 10.6 billion	4.2%
8. Meat/Seafood Preparations	USD 6.6 billion	2.6%
9. Organic Chemicals	USD 6.1 billion	2.5%
10. Cereals	USD 5.7 billion	2.3%

Note: The above categories are grouped based on the Harmonized Commodity Description and Coding System (HS Code). For specific items within each category, please refer to www.censtatd.gov.hk/trader/hscode/index.jsp.

Thailand is particularly strong in the fields of automotive and electronics. Globally in 2018, it was the fifth largest producer of rubber tires, 11th largest automotive maker, and the eighth largest producer of computer devices.

Thailand also has one of the most advanced food processing industries in Southeast Asia. In 2017, Thailand was ranked first for cassava products (67% of world exports); first for canned tuna (44% of world exports); first for canned pineapple (41% of world exports); second for rice (23% of world exports) and for sugar (16% of world exports). The Thai seafood sector is the third largest in the world, after Mainland China and Norway.

II. The Key Supported Industries in Thailand

Within the Eastern Economic Corridor (EEC) Development Plan, Thailand identified 10 industries to prioritise. These industries are divided into two groups: First S-Curve Industries and New S-Curve Industries. For further details, please refer to section 8 of this report.

This section is primarily focused on the supply situation of the Automotive, Electronics, and the Food and Agriculture industries from the First S-Curve Industries.

A. Supply Chain Policy for Key Supported Industries and Local Supply Situations



Automotive

Thailand has a strong and extensive automotive supply chain. Some of the world's major automotive makers (such as Toyota and Nissan) and auto parts manufacturer (more than 710 auto part makers and 1,700 supporting companies) are present in the country. Thailand was ranked the 11th largest automotive producer globally in 2018 and is expected to reach an estimated production of 3.5 million motor vehicles in 2020.

These major players do not limit their presence to manufacturing and assembly lines, but are also involved in technical and research and development facilities. Technical advancement is an important element of the automotive industry. The EEC has set the development of electric vehicles and of the related value chain as a priority. The plan will focus on enhancing new industry players working on driving systems, surface integration design, prototyping and acting as an original equipment manufacturers (OEM) for batteries.



Electronics

Thailand is a leading electronics and electrical production base in Southeast Asia. Numerous multinational companies (MNCs) operate production sites for hard disk drives (HDD), integrated circuits, and automotive electronics assembly in the country.

Over the years, Thailand has become one of the leading producers of integrated circuits. With around 800 factories in operation, Bangkok hosts the majority of the country's electronics production sites. Many of the components (e.g. semiconductor devices, transistors, and diodes) are imported.

The EEC seeks to further develop the electronics value chain in Thailand by encouraging the production of more valued added products.



Food and
Agriculture

Thailand is rich in natural resources, allowing it to source 80% of the food industry raw materials locally. There are about 10,000 food processing companies in Thailand.

Global trends show an increasing demand for healthier food, higher safety standards and product traceability. Thailand is expected to meet such demands considering its well established production techniques able to deliver international standards quality.

The EEC is also pushing for the adoption of advanced agricultural technologies to foster future production.

III. Key Raw Materials Sourcing Platforms/Channels

The Department of International Trade Promotion (DITP) and the Ministry of Commerce (MOC) have established an official Thailand B2B E-Marketplace, Thaitrade.com, in 2011. The site is managed by the DITP with the aim of connecting businesses with the largest range of verified/authentic Thai products.

IV. Procurement Situation (local and overseas) of Raw Materials

A. Hurdles or Problems Encountered

All shipments arriving in and departing from Thailand are governed by rules and special regulations. Regardless of the operations, an Import or Export License, also called a Customs Card, must be obtained. For cases where the Import and Export Licenses are deemed insufficient, import permits may be required as well.

The Ministry of Commerce has classified 26 categories of goods that require an import license (this list is frequently updated by the ministry). In addition certain products, including pharmaceuticals, processed foods, and medical devices, among others, are subject to controls from other laws and regulations for importation. For further information, please refer to the Thai Customs website (www.customs.go.th).

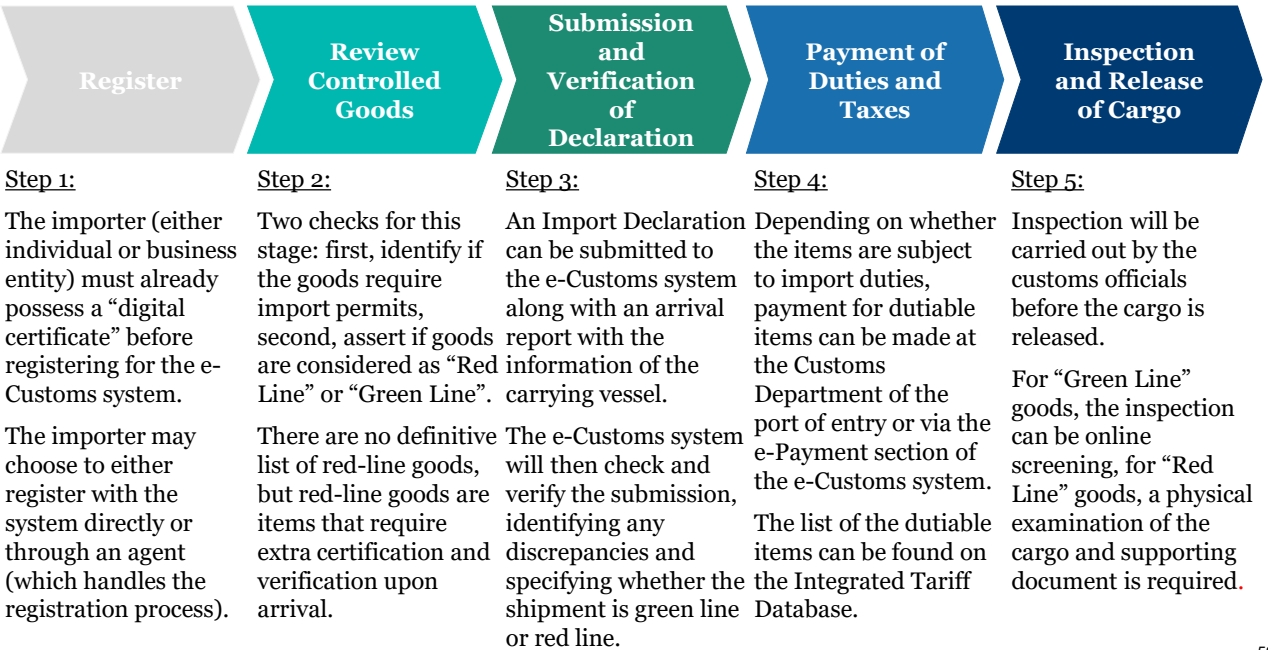
According to a 2019 report by the World Bank, Thailand ranked 27th out of 190 countries in Ease of Doing Business. It was ranked third among the ASEAN countries (Hong Kong ranked fourth worldwide in the same report).

B. Efficiency of Customs and Clearance Process

Thailand adopts the nomenclature of the Harmonised System (HS) for the designation and codification of goods and duties that are collected on both imports and certain exports. All imports are also subject to value added tax (VAT), and some are subject to excise tax (including electrical appliances, alcohol and gasoline).

All goods imported into Thailand must be reported to the Customs Department. With the implementation of the online e-Customs system, the import and export procedures have been streamlined. They are now paperless and easily accessible for all stakeholders involved in cross-border trade.

The custom and clearance process is divided into the five major steps outlined below.



V. Logistics Support

A. Infrastructure Conditions (e.g. major airports/ports/highways)⁴

Thailand has a good transport infrastructure network in place for logistics support.



Airports

Thailand has 38 airports in total, eight of which are international airports: Suvarnabhumi Airport (BKK), Don Mueang International Airport (DMK), Chiang Mai International Airport (CNX), Phuket International Airport (HKT), Hat Yai International Airport (HDY), Chiang Rai International Airport (CEI), Samui International Airport (USM) and the military airport of U-Tapao (UTP).
Thai Airways International Public Co., Ltd. is Thailand’s national carrier. It flies to 66 cities in 36 countries throughout the world.

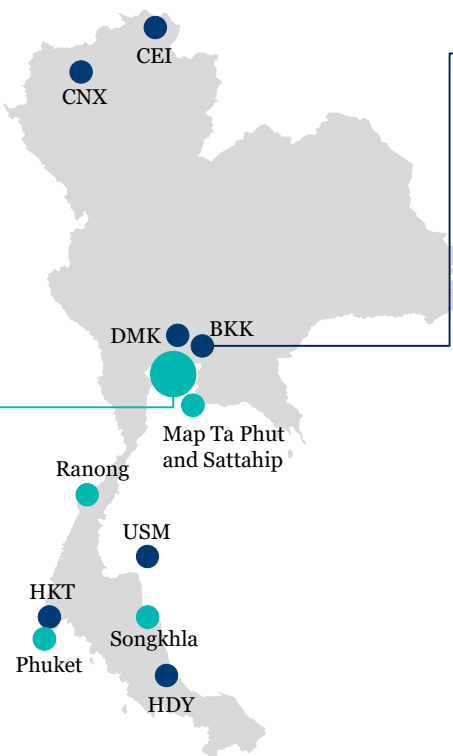


Seaports

Thailand has a coastline of 3,219 km with over 4,000 km of waterways.
Currently there are eight international deep-sea ports in operation, with four private ports permitted to handle container cargos. These ports include Bangkok, Laem Chabang, Sriracha, Map Ta Phut, Ranong, Phuket, Songkhla, and Sattahip.

Location of Major Airports and Seaports in Thailand

- Airport
- Port



Suvarnabhumi Airport

The Thai government has a policy to promote Suvarnabhumi Airport as a centre of Aviation, Passenger and Cargo Transportation.
Suvarnabhumi Airport, located in Bangkok and unofficially known as Bangkok Airport, has drafted a development plan to support the expected passenger number increase from 45 to 60 million passengers per year.
In addition, it hosts a Duty-Free Zone (Cargo Warehouse) designed to facilitate the handling of inbound, outbound cargo and transit cargo with minimum customs procedures.

The area hosts the three major commercial ports of the country:

- 1. Bangkok Port (Klong Toey)**
Currently the largest port in Thailand. It can handle approximately 1.5 million TEU/year.
- 2. Laem Chabang**
The port can handle around 6.9 million TEU/year.
- 3. Sriracha Harbour Deep Seaport**

This map is for illustrative purposes only, and does not imply official endorsement or acceptance of any boundaries and/or names.



Highways

Thailand has the most extensive road transportation network in Southeast Asia with more than 390,000 km, of which 98.5% is concrete or asphalt paved.

The Department of Highways has developed a 20-year Intercity Motorway Development Master Plan for 2017-2036 to connect 21 routes with a total length of about 7,000 km. The plan aims to connect Thailand's major cities, as well as to improve its connections with neighbouring countries.



Railways

The State Railway of Thailand (SRT) is responsible for building, operating and maintaining Thailand's railway tracks. Currently, the government plans to upgrade the railway network with high-speed trains (maximum speed of 250km/hour) to reduce travel time in satellite cities. The project covers 1,000 km comprising of four main lines: Bangkok - Chiang Mai; Bangkok - Nong Khai; Bangkok - Rayong; Bangkok - Padang Besar.

B. Key Logistics Hubs⁵

The Thai government devoted considerable efforts to transform Thailand into a key logistics hub. It enhanced the transport infrastructure network, introduced the e-Customs system to simplify customs procedures and offered tax incentives to attract investors. As a result, Thailand has become one of the key ASEAN transport and logistics hubs. The country currently plays an important role to meet the increased demand for cross-border logistics services and the increasingly sophisticated regional supply chain.

Thailand has become a popular option for foreign logistic companies, as many manufacturers prefer outsourcing transportation to third-party logistics companies (3PLs). These 3PLs can provide a wide range of freight forwarding and supply chain services. Several multinational logistics companies are also accustomed to subcontracting transportation and logistics activities to local 3PLs instead of setting up their own hubs.

C. Logistics Information Tractability and Transparency⁶

Thailand has a relatively strong logistics performance compared to other ASEAN countries. In the World Bank's 2018 Logistics Performance Index (LPI), Thailand ranked 32nd out of 160 countries for the overall LPI which is an improvement from the 2016's result (ranked 45th out of 160 countries). In addition, it was ranked second amongst ASEAN countries.

On a granular level, the LPI score is made up of six elements: (1) Customs; (2) Infrastructure; (3) International shipments; (4) Logistics competence; (5) Tracking and tracing and (6) Timeliness. Specifically for tracking and tracing, Thailand ranked 33rd out of 160 countries, an improvement from the 2016's result (ranked 50th out of 160 countries). Amongst the ASEAN countries, it ranked second in this category.

Source:

¹ *Trade Map, International Trade Centre*

² *Rubber Tires Exports by Country, World's Top Exports*

³ *National Food Institute*

⁴ *Seaports, Airports, Highways, Railways, Thailand Board of Investment*

⁵ *Thailand Domestic Freight Transportation 2015, Ministry of Transport (MOT)*

⁶ *Logistics Performance Index (LPI), The World Bank, 2018*

7. Infrastructure

Executive Summary

Thailand aims to improve its infrastructure and transform the country into a strong ASEAN logistics hub.

There are currently around 74 industrial estates in the country and various incentives have been put in place to attract foreign investments. Most of these industrial estates are concentrated around Bangkok and the eastern seaboard of Thailand benefiting from the Eastern Economic Corridor (EEC) Development Plan.

The Thai government encourages both foreign investments and public-private partnerships in infrastructure projects. Over 50 large scale projects across transportation, urbanisation, education, healthcare and water are currently in the pipeline.

Thailand has a diverse biological ecosystem and is particularly rich in natural resources, benefiting its economy.



7. Infrastructure

I. List of Major Industrial Estates and Geographical Locations

A. Availability of Infrastructure, Associated Cost of Usage, and Options for the Major Industrial Estates¹

For foreign investors looking to establish manufacturing facilities in Thailand, industrial estates can be an attractive option. In these estates, investors can benefit from numerous tax and non-tax incentives, and straightforward processes for starting a business (e.g licence applications for a factory construction).

In Thailand, industrial estates are managed by the Industrial Estate Authority of Thailand (IEAT) or private operators. There are 77 official industrial estates according to the IEAT spanned across 20 provinces. Of these, there are 74 industrial parks, two movie towns, and one science park (i.e. the Thailand Science Park). Some estates are solely owned by IEAT and some are owned and operated under a joint partnership between IEAT and the private sector.

Support and Incentives^{2, 3, 4, 5}

When considering an establishment in Thailand's industrial estates, it is important to assess the availability of utilities, the transportation network around the estate, and the incentives provided by the government.

Utilities

Industrial estates are equipped with utilities including water, electricity, water flood defences, and centralised sewage services etc.

Transportation

Most of the industrial estates are located near Bangkok, and therefore benefit from a privileged access to established transportation links and hubs such as roads, railways, ports, and airports.

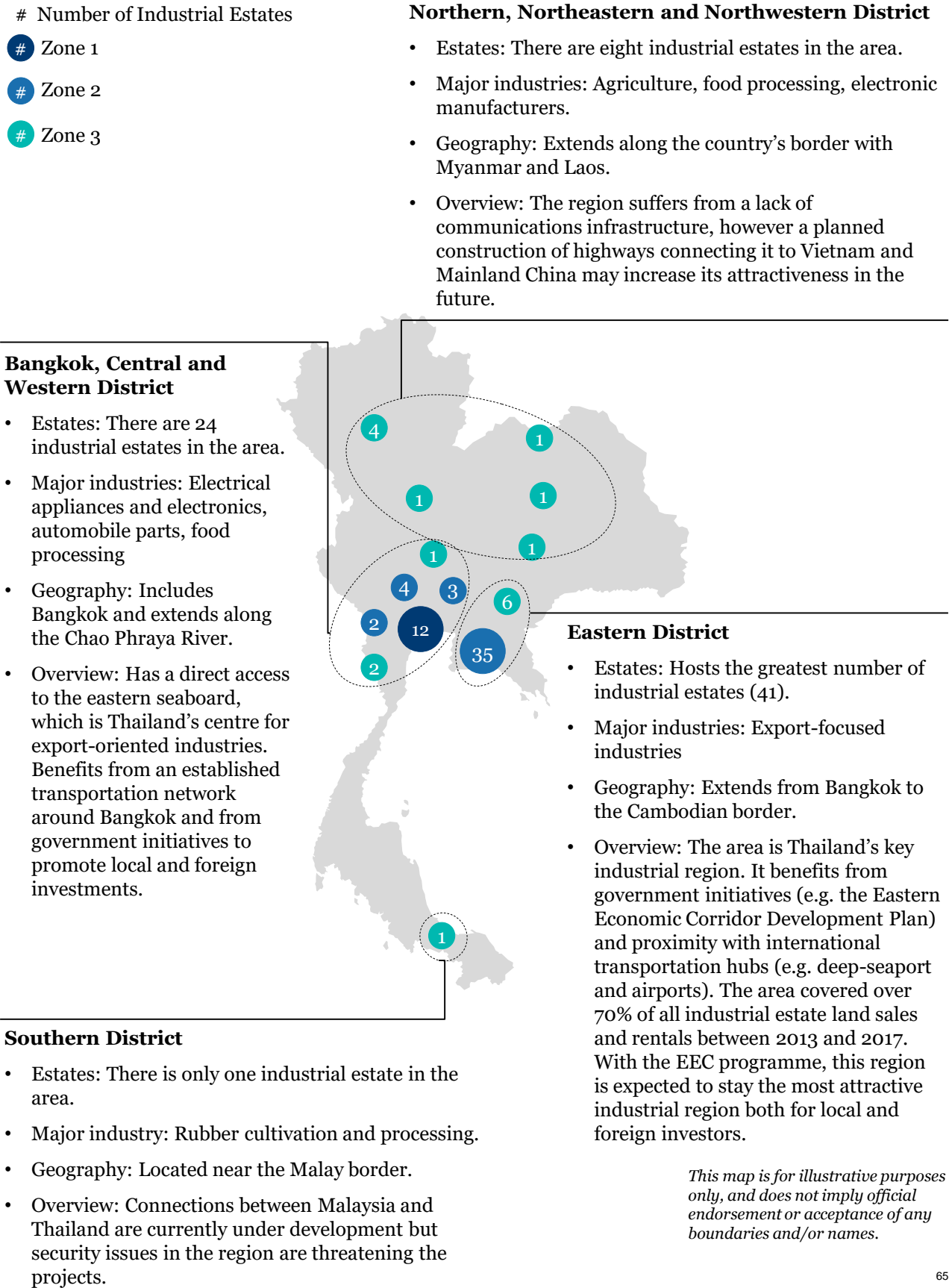
Government Incentives

Industrial estates benefit from the support of the government. This support is generally received in the form of incentives such as tax reliefs or other measures. The Board of Investment (BOI) has divided Thailand into three zones, with different levels of incentives assigned to each. Zone 1 (hosting 12 industrial estates) covers the capital area and its immediate surroundings, Zone 2 (hosting 44 estates) covers a ring of provinces further out, and Zone 3 (hosting 18 estates) covers all the remaining 58 provinces. Investors located in Zones 2 and 3 are granted extra incentives.

Investors also receive different tax and non-tax incentives depending on which type of area (within an industrial estate) they establish their business in: General Industrial Zones (GIZs) or IEAT Free Zone. GIZs are more common than IEAT Free Zones, which are reserved primarily for industries that manufacture products for export. Businesses in IEAT Free Zones generally receive more incentives than those in GIZs. Examples of tax and non-tax incentives granted to investors in these zones are detailed in section 9 of this report.

For further details regarding specific industrial estates please refer to “Cost of Doing Business in Thailand 2019” published by the Thailand Embassy (www.boi.go.th/upload/content/Cost%20of%20Doing%20Business%202019_Online_5c6a5d3a3c43b.pdf)

Industrial Estates’ Location and Regional Implications⁶



Foreign Direct Investment (FDI)⁷

According to the Thailand Board of Investment, the country received a total of THB 283 billion investments in 2018, of which 44% were FDI. In industrial estates, FDI mainly came from Japan.

Cost of Usage

Businesses and investors are typically charged with three main types of fees: 1) land renting price and land tax, 2) maintenance fee, and 3) water and other utilities fees.

The land price in industrial estates vary from one site to another depending on factors such as location, provision of utilities, transportation links, proximity and access to raw materials etc. Bangkok and the nearby provinces (e.g. Samut Prakarn and Pathumthani) benefit from a central location, well-developed water and air transportation networks, and from the proximity to key logistic hubs. Therefore, land prices in these regions are the highest in the country. Industrial estates located in the provinces targeted by the Eastern Economic Development Plan (e.g. Chachoengsao, Chonburi and Rayong) are also expensive locations.

Land and Building Tax Act

Under the Land and Building Tax Act which is effective since March 2019, new land tax rates apply. The Act stipulates that lands and buildings for agricultural, residential, commercial and industrial uses will be subject to different tax rates pursuant to their type, use and appraised value. The applicable tax rates concerning industrial use of land for the 2020 to 2021 tax years are shown in the table below.

Appraisal Value (THB million)	Applicable Tax Rates (of the Appraised Value)	Maximum Rates
≤ 50	0.3%	1.2%
> 50 - 200	0.4%	1.2%

If a company fails to pay the property tax, it may be subject to a penalty of 10% to 40% of the unpaid tax amount plus a monthly fine of 0.50% to 1% of the unpaid tax amount (until the unpaid tax is paid in full).

Outlook⁸

Declining exports, along with tightening environmental and health requirements caused the industrial estate market to drop between 2013 and 2017. The market has been looking more promising from 2018 onwards with growth in both supply (e.g. new industrial estate construction) and demand. Efforts to boost investment, especially through tax incentives and easing regulations are attracting an increasing number of foreign investors. Government spending on infrastructure development projects to integrate national transportation networks is expected to be another major growth driver. However, as these initiatives are mostly part of the EEC, only industrial estates located in eastern Thailand will greatly benefit from them.

B. Land or Building for the Major Industrial Estates

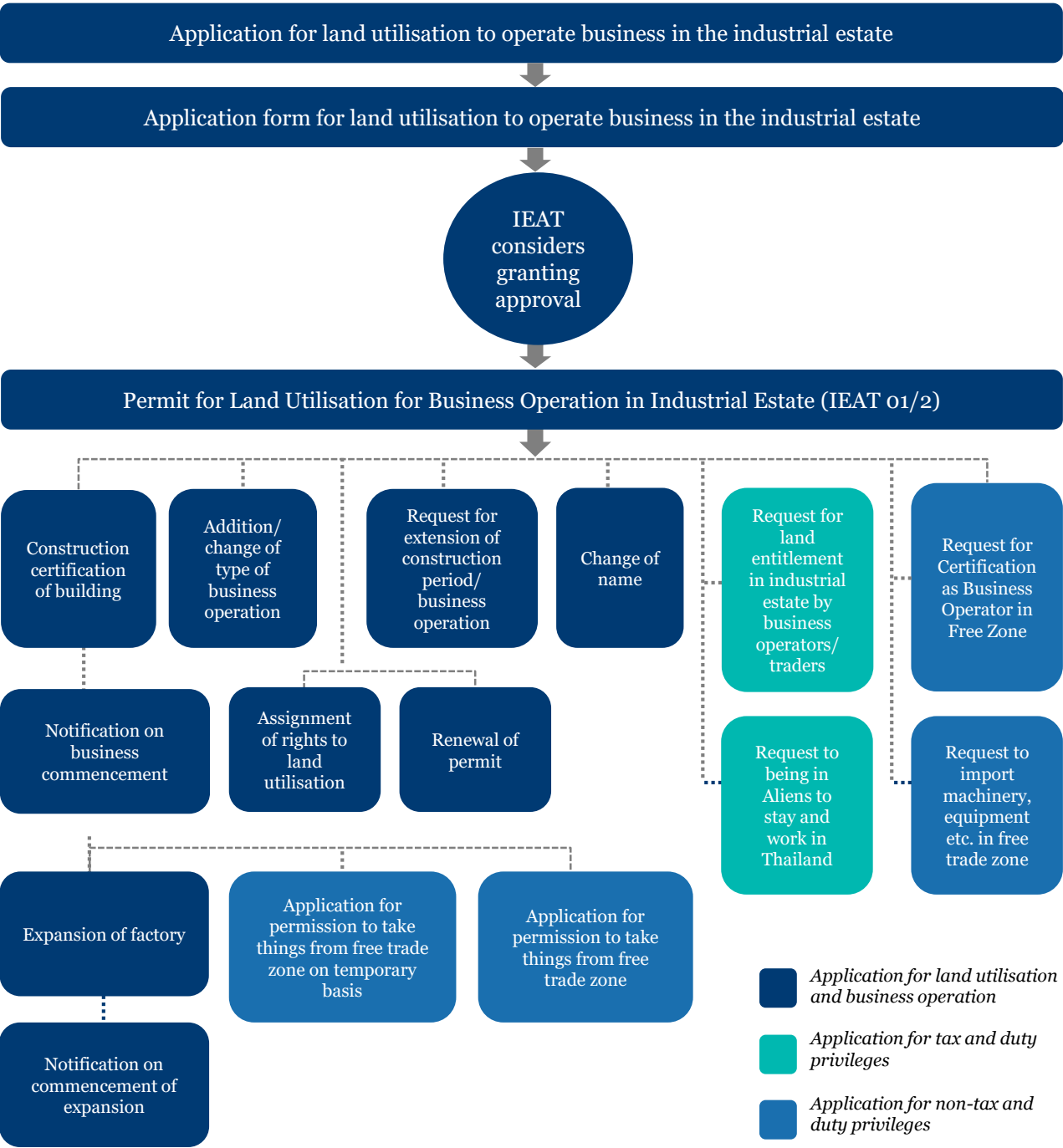
Availability for Foreign Ownership and Terms⁹

Generally, foreign ownership of land in the country is prohibited under the Thai Land Code. However, under Section 44 of the Industrial Estate Authority of Thailand Act of B.E. 2522 (1979), foreign investors and businesses are allowed to own land in industrial estates if they are granted a license by the IEAT. The application to obtain such a license is called Form IEAT 01/1. For general land selling and rental practices, please refer to Appendix 2.

Application Procedures for Business Operation and Privileges in Industrial Estates¹⁰

As land in industrial estates are already zoned for industrial use, businesses are not required to apply for land re-zoning. If construction plans are compliant with the required standards, application for a factory construction license should be a relatively straightforward process.

Detailed Application Procedures



II. Potential Infrastructure Shortfall^{11,12,13,14}

Infrastructure is the backbone of Thailand’s economy and is critical to unlocking the country’s growth. In the 1980s and 90s, Thailand’s infrastructure development was substantially lagging behind its economy. Over the years, the government has been focusing on boosting the country’s manufacturing capabilities and improving connectivity between different economic and industrial bases. A series of long term infrastructure plans have been introduced and Public Private Partnerships (PPP), especially in areas such as water, power and telecommunications, have been encouraged.

Nonetheless substantial room for improvement remains as progresses are often disrupted by sociopolitical unrest, natural disasters and the country’s resource limitations. In 2011, a severe flood caused major disruption to the country’s agricultural and industrial sectors, inundating major industrial estates and causing a global shortage of hard disk drives amongst numerous other key components supporting global manufacturing supply chains. The infrastructure sector also suffered from the 2014 military coup.

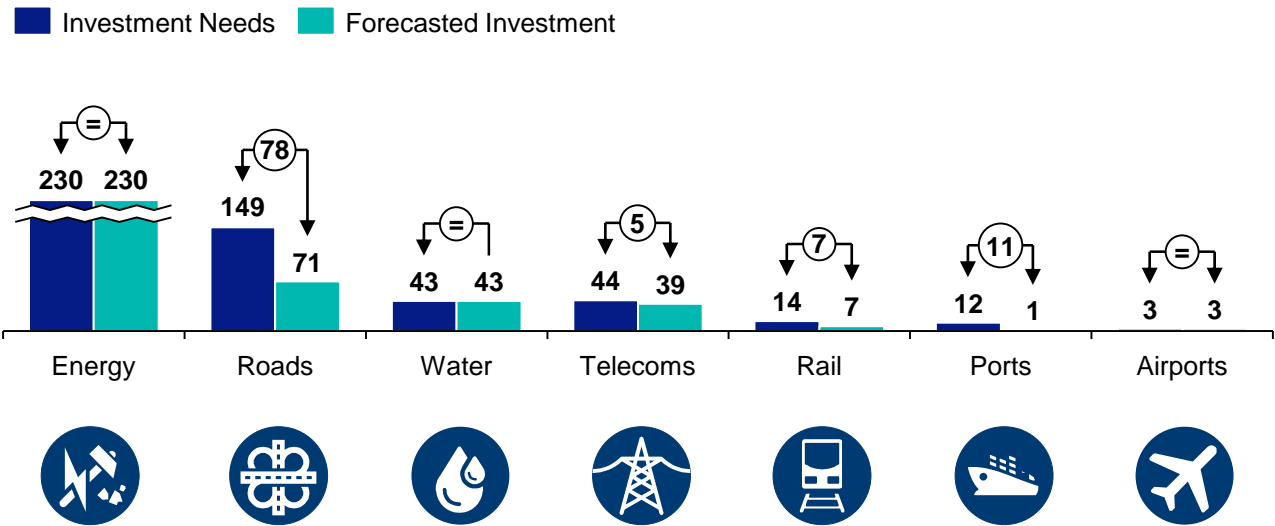
In the World Economic Forum’s 2018 Competitiveness Report, the country ranked 60th out of 140 countries for the quality of infrastructure, well below Southeast Asian countries such as Singapore (1st) or Malaysia (32nd). The country ranked especially low on criteria such as: efficiency of seaport services (68th), efficiency of train services (91st) and exposure to unsafe drinking water (105th). These rankings are a direct result of limited investments in infrastructure projects from any of the Thai administrations in the past two decades.

III. Latest and Upcoming Major Local Infrastructure Projects and Spending

The Thai government has been investing heavily in the country’s infrastructure to facilitate the Thailand 4.0 strategy. Over the next five to 10 years, infrastructure upgrades and development such as airport expansion, new railways and ports and broadband facilities are expected to be completed continually across the country.

According to Global Infrastructure Outlook delivered by G20 in 2017, from 2016 to 2040, around USD 394 billion will be needed to finance all infrastructure projects planned by the government (see chart below for breakdown by sector). Over the period it is forecasted that Thailand’s public and private sector will invest USD 494 billion, therefore covering almost 80% of the country’s needs.

Thailand’s Infrastructure Investment Needs 2016-2040 per Sector (USD billion)



The following highlights the major infrastructure developments in Thailand. Please refer to Appendix 3 for a comprehensive list of projects.

Transportation¹⁵



The Thai government is aiming to reduce the cost of logistics and transportation to improve the competitiveness of the economy. In 2018, the government announced an infrastructure action plan worth USD 25.2 billion covering 36 projects including railways, roads, airports, and ports across the country. These include a USD 7.2 billion high-speed rail project that will link two of Bangkok's main airports with an airport in the eastern province of Rayong, and also a Thailand-China cross-border route that forms a major part of Mainland China's Belt & Road Initiative. The first phase is expected to be operational in 2021.

Utilities

Water¹⁶



Recognising the importance of water to both the agricultural and industrial sectors of Thailand's economy, the government set out a multi-year strategy to improve the country's water resource management. The Thai Ministry of Science & Technology, for example, has mandated Thailand's Hydro and Agro Informatics Institute to create a roadmap to realise integrated water resource management capacity to support Thailand's water resilience and water security efforts.

Power^{17, 18, 19, 20}



As part of the Thailand 4.0 strategy, the Thai government aims to develop the renewable energy sector. Natural resources are also expected to be an important contributor to Thailand's power grid in the future, with the target of a 53% contribution to Thailand's power in 2037 under the 2019 Power Development Plan. The rise in importance of natural gas is due to the recent abandoning of coal projects in southern Thailand as a result of political scrutiny.

Telecommunications²¹

Thailand is aiming to transform itself into a digital economy through the government's third ICT Master Plan, the National Digital Economy Policy and Plan (2016-2020), and the ICT Policy Framework 2020. Infrastructure projects under these policies and plans include:



- A USD 571 million project for the construction of a national broadband infrastructure to provide affordable Internet to 70,000 villages (93% of total villages) nationwide; and
- The Asia Pacific Gateway (APG) project which seeks to extend the country's submarine cable lines connecting Thailand to Hong Kong and India, expanding the bandwidth and speed of data transmission. The aim is to attract more Internet traffic from the Greater Mekong sub-region, currently serving 270 million people. At the moment, Thailand only has seven submarine cable lines, owned and operated by the state enterprise CAT Telecom, as opposed to Singapore's 20 submarine cable lines and Malaysia's 12.

Eastern Economic Corridor Development Plan (EEC)

The Eastern Economic Corridor Development Plan (EEC) is a major government initiative in Thailand, aiming to accelerate infrastructure development and promote local and foreign investments in the three eastern provinces of Chachoengsao, Chonburi, and Rayong. The government expects to allocate USD 43 billion to the EEC over the next five years.

As of October 2017, there are 15 projects in the EEC pipeline. The government hopes to secure much of the funding for the EEC through PPPs and FDI. Offering attractive incentives for both foreign investments and foreign presences in the EEC will be essential in realising the EEC's development. The Eastern Economic Corridor Bill will amend or suspend more than 100 Thai laws and regulations within the EEC which restrict foreign investment and generally curb the ease of doing business.

For further details, please refer to section 9 of this report.

The Public Private Partnerships (PPP) Strategic Plan

Facing budget constraints while seeing the pressing importance of infrastructural enhancement, the Thai government is increasingly turning to the private sector. The Thai government published a new PPP Strategic Plan (2017-2021) in 2017, which outlines 23 sectors where public private partnerships in infrastructure projects are allowed, including transportation, telecommunications, utilities, education, and public services, among others. The plan covers 55 projects with a total investment of THB 1.62 trillion (around USD 51 billion). The new plan emphasises infrastructural development as a national priority and opens up new business opportunities for both Thai and foreign investors.

The PPP Fast Track process is an effort by the Thai government to shorten the time required for the approval and development of PPP infrastructure projects. In 2017, 11 projects worth a combined value of over THB 900 billion were included in the PPP Fast Track Project pipeline, including new Monorail and MRT lines, the Nakhon Pathom – Cha-Am, Bang Yai – Kanchanaburi, and Bang Pa-in – Nakhon Ratchasima Intercity Motorways, the Phuket Mass Transit System, and the Bangkok – Rayong High Speed Rail.

Private Sector Financing via Thailand Future Fund (TFF)

An alternative to PPP projects is fundraising via listed funds. The most recent example of engaging private sector financing in Thailand is the government's attempt to raise funds via the TFF. Traded on the Stock Exchange of Thailand, the TFF is a THB 44.7 billion infrastructure mutual fund that aims to raise capital from institutional and private retail investors for the country's infrastructure development. The fund invests in value-enhancing state agencies' infrastructure assets and projects to create long-term distribution growth potential, including expressways, railways, electricity generation and distribution, airports, and deep seaports. An initial public offering (IPO) was made from 12 to 19 October, with major local institutional investors showing great interest in TFF.

IV. Availability of Natural Resources^{22, 23}

Natural Resource	Details
Natural Vegetation, Forests and Timber	<ul style="list-style-type: none"> • Around 30% of Thailand is forested with hardwood (around 16 million hectares). Forest plantations in Thailand can be classified into three main types: teak, rubber, and other special species. • Thailand was once a major hardwood exporter, specialising in teak. In 1989, the government designated 25% of the land area for protected forests, 15% of the land for timber production, and declared logging illegal. • Thailand is now a net importer of timber.
Agriculture	<ul style="list-style-type: none"> • The agricultural sector in Thailand accounts for roughly 10% of the GDP and involves around 50% of the total labour force. It is highly competitive, diversified, and specialised with successful international exports. • Thailand is the sixth largest agricultural producer in the world. • Common agricultural products and important agricultural exports include: rice, cassava, tobacco, corn, fruit, cocoa, sugar, cashew nuts, soybeans and coffee.
Fishing/ Aquaculture	<ul style="list-style-type: none"> • Thailand is the world's third largest seafood exporter and its fishing industry was estimated to be around USD 7 billion in 2016. • The main river system in Thailand, the Mekong system, is second only to the Amazon River in its biodiversity. Thailand also has access to ocean fisheries in the Andaman Sea, Gulf of Thailand and South China Sea. • Common types of seafood include: prawns, red tail catfish, arapaima, shellfish, giant snakehead, Siamese carp and barramundi.
Livestock	<ul style="list-style-type: none"> • Livestock farming, insect ranching and dairy farming are becoming significantly more important to the Thai economy. • Dairy farms in Thailand produce approximately 2,800 tonnes of milk per day.
Water Resources	<ul style="list-style-type: none"> • The volume of renewable internal freshwater resources per capita has reduced from about 7,700 m³ per capita in 1962 to about 3,300 m³ in 2014. This is largely a result of population growth and is a cause of increased water scarcity contributing to prolonged dry seasons in Thailand.
Minerals	<ul style="list-style-type: none"> • Thailand is one of the world's major producers of cement, feldspar, gypsum, and tin. The country's mineral resources are produced for both export and domestic use. Thailand's mines also include gold, iron ore, lead, manganese silver, tungsten and zinc. • Thailand is the world's second largest exporter of gypsum, ranking just after Canada.
Coal, Oil and Fossil Fuels	<ul style="list-style-type: none"> • Thailand is an oil and natural gas producer, however, the country increasingly relies on imports to sustain its rising fuel demand. • Domestic crude oil reserves are declining in Thailand, and the country imports a significant portion of its total oil consumption. It produces roughly one-third of the oil it consumes and is the second largest importer of oil in Southeast Asia.
Renewable Energy	<ul style="list-style-type: none"> • Thailand has set targets and policies for the development of its energy sector for 2035, with priority being given to indigenous renewable energy resources, including hydropower, wind power and solar power. • Hydropower is the biggest source of renewable energy in Thailand, and solar power is the second biggest source of renewable energy in the country. • Thailand is a major market for western wind power Original Equipment Manufacturers (OEMs) (e.g. Siemens Gamesa, Vestas and GE) in Asia.

Source:

¹ *Industrial Estates Parks & Zones, CBRE Thailand*

² *Cost of Doing Business in Thailand 2019, Thailand Board of Investment*

³ *Where to Build a Factory in Thailand?, Siam Legal International*

⁴ *The Report: Thailand 2011, Oxford Business Group*

⁵ *Thailand IEAT Free Zone, Thai Lawyers Ltd.*

⁶ *Thailand Industry Outlook 2018-20: Industrial Estate, Bank of Ayudhya*

⁷ *Industrial Estate Authority of Thailand*

⁸ *Thailand New Property Tax, LawPlus Ltd.*

⁹ *Foreign Ownership of Industrial Land in Thailand, Siam Legal*

¹⁰ *Business Operator's Handbook for Applying for Business Operation and Privileges in the Industrial Estate, Industrial Estate Authority of Thailand*

¹¹ *Thailand's Transport Infrastructure Development, Siam Shipping*

¹² *Minding the Infrastructural Gap, Reuters*

¹³ *Thailand bets on infrastructure, Asiamoney, Sep 2018*

¹⁴ *The high-speed rail projects giving Thailand's whole economy a boost, Railway Technology*

¹⁵ *Thailand's Infrastructure Plans and Canadian Capabilities, CanCham Thailand*

¹⁶ *Building a digital water management system for Thailand, Prevention Web*

¹⁷ *Thailand's Renewable Energy Transitions: A Pathway to Realise Thailand 4.0*

¹⁸ *Thai energy companies roll out expansions across Southeast Asia, Reuters*

¹⁹ *Fitch: Coal opposition, declining gas reserves to boost Thai renewable energy growth, Institute for Energy Economics and Financial Analysis*

²⁰ *Thailand's PPT plans up to \$11 bn investment in LNG and infrastructure, Reuters*

²¹ *Thailand - Telecommunications, export.gov, Aug 2019*

²² *Biodiversity in Thailand, The Royal Institute of Thailand*

²³ *What Are The Major Natural Resources Of Thailand?, World Atlas*

8. Types of Industries Encouraged by the Local Government

Executive Summary

Any foreign businesses wishing to invest or do business in Thailand must abide by the Foreign Business Act (FBA), enacted in 1999. It restricts foreign companies from participating in certain industries in Thailand.

However, there are many programmes and initiatives encouraging foreign investments that allow exemptions to the FBA. Examples of such programmes and initiatives include Board of Investment (BOI) projects, the Eastern Economic Corridor (EEC) Development Plan, each aiming to promote various industries in Thailand.



8. Types of Industries Encouraged by the Local Government

I. List of Government Programmes Encouraging Specific Industries

In Thailand, there are two main government programmes encouraging investment in specific industries: the Board of Investment (BOI) projects, and the Eastern Economic Corridor (EEC) Development Plan.

Investment Promotion Act and Board of Investment (BOI) Projects¹

The Investment Promotion Act enacted in 1977 allows the BOI of Thailand to grant tax and other incentives to foreign and local investors engaging in BOI approved projects. Most foreign investments in Thailand are managed by the BOI. The eight industries generally eligible for BOI project approval include:



Agriculture and
Agricultural Products



Mining, Ceramics
and Basic Metals



Light Industry



Metals Products, Machinery
and Transport Equipment



Electronics Industry and
Electric Appliances



Chemicals, Paper
and Plastics



Services and
Public Utilities



Technology and
Innovation
Development

Eastern Economic Corridor (EEC) Development Plan²

The EEC Development Plan is the main government initiative under the Thailand 4.0 scheme, which focuses on the three provinces of Chachoengsao, Chonburi, and Rayong along the eastern seaboard. The EEC aims to enhance the region’s physical and social infrastructure through promoting applications of advanced technologies and innovations in various industries. The EEC specifically targets 10 key industries divided into two groups:

- First S-Curve Industries comprise five existing industries in Thailand that the EEC aims to boost the competitiveness of:



Next-Generation
Automotive



Intelligent
Electronics



High Wealth and
Medical Tourism



Agriculture and
Biotechnology



Food Processing

- New S-Curve Industries comprise five advanced industries that the EEC targets to be a new driving force for the Thai economy:



Automation and
Robotics



Aviation and
Logistics



Biofuel and
Biochemicals



Digital



Comprehensive
Healthcare

II. List of Business Activities that Foreign Participation may be Prohibited or Restricted from

Foreign Business Act (FBA)³

The FBA enacted in 1999 governs all foreign businesses operating in Thailand.

A foreign business is defined as any company³ that:

- 1) is established under foreign law; or
- 2) has 50% or more of its capital owned by foreigners; or
- 3) has 50% or more of the total capital value being invested by foreigners.

Under this Act, there are three categories of industries in Thailand that foreign businesses are restricted from engaging in.

Lists of Prohibited or Restricted Industries under the FBA (Part 1/2)

Category	Status	List of Prohibited or Restricted Industries
List One	<ul style="list-style-type: none">• Completely prohibited	<ul style="list-style-type: none">• Newspapers, radio, and television broadcasting;• Farming, animal husbandry, natural forestry, and fishery;• Extraction of Thai medicinal herbs;• Trading of antique objects or objects of historical value of Thailand;• Making or casting Buddha images and alms bowls; and• Land trading
List Two (to be cont'd)	<ul style="list-style-type: none">• Restricted with conditions• Requires a license from the Minister in the Government Gazette• Requires at least 40% Thai shareholders and board members	<p><u>Chapter One: Related to national safety or security</u></p> <ul style="list-style-type: none">• Production, distribution, maintenance of arms, ammunition, and other military equipment; and• Domestic land, water, or air transportation. <p><u>Chapter Two: Related to arts, culture and customs</u></p> <ul style="list-style-type: none">• Trading of antiques, artistic objects, musical instruments, or handicrafts of Thailand;• Production of Thai silk and related businesses; and• Production of goldware, silverware, and other precious metalworks.

8. Types of Industries Encouraged by the Local Government

Lists of Prohibited or Restricted Industries under the FBA (Part 2/2)

Category	Status	List of prohibited or restricted industries
List Two (cont'd)	<ul style="list-style-type: none"> Requires a license from the Minister in the Government Gazette Requires at least 40% Thai shareholders and board members 	<u>Chapter Three: Related to natural resources or the environment</u> <ul style="list-style-type: none"> Production of sugar from sugar cane; Salt farming and production of rock salt; Mining, including stone quarrying; and Timber processing for production of furniture and utensils.
List Three	<ul style="list-style-type: none"> Restricted with conditions Requires a license issued by Director General of the Department of Business Development May be 100% foreign owned 	<ul style="list-style-type: none"> Rice milling and production of flour from rice and plants; Breeding of aquatic creatures; Forestry from a grown forest; Production of plywood, veneer wood, chipboards or hardboards; Production of lime; Accounting services; Legal services; Architectural services; Engineering services; Construction, with certain exceptions; Brokerage or agency, with certain exceptions; Auctioneering, with certain exceptions; Internal trade related to traditional agricultural products or produce not prohibited by other laws; Retail (if total minimum capital is lower than THB 100 million or if minimum capital of each store is lower than THB 20 million); Wholesale (if minimum capital of each store is lower than THB 100 million); Advertising; Hotel operations (except hotel management), and tourism; Food and beverages sales; and Other service businesses, except as prescribed in the Ministerial Regulation.

8. Types of Industries Encouraged by the Local Government

Applying for Exemptions and Licenses for Industries Restricted to Foreign Businesses

While the list of restricted industries for foreign businesses in the FBA is extensive, the Thai government has provided methods for foreign businesses to apply for exemptions. For certain industries, the government has also introduced initiatives to provide incentives to attract foreign investors.

Foreign Business License (FBL)

Foreign businesses that wish to engage in businesses indicated in List Two and List Three of the FBA need to obtain an FBL. The application will need to be filed with the appropriate authorities (Minister of the Government Gazette for List Two industries, Director General of the Department of Business Development for List Three³ industries). An application has a higher chance of approval if the BOI decides the project will positively impact the Thai economy and promote Thai interests. However, as the application for an FBL is complex and time-consuming, foreign investors generally prefer to apply for BOI project approval. For more information regarding the FBL, please refer to Section 2 of this report.

Government Programmes and Incentives

Companies may gain approval for government programmes and initiatives such as the EEC, BOI-promoted projects, the Southern Economic Corridor (SEC), Special Economic Zones, and industrial estates etc. Most of these programmes and initiatives are promoted by the BOI to encourage foreign investment into Thailand. Approved projects will be able to participate in the restricted or prohibited industries, and may also be eligible for certain tax and non-tax incentives. For more information on the criteria and incentives of individual government programmes, please refer to Section 9 of this report.

The Petroleum Act

Companies engaged in oil and gas exploration and production (E&P) in Thailand are governed and regulated by the Department of Mineral Fuels (DMF), under the Ministry of Energy.

An E&P entity must be awarded a petroleum concession by the DMF. E&P companies are not regulated under the FBA and therefore can be wholly owned by a foreign individual or company without obtaining an FBL from the Ministry of Commerce.

8. Types of Industries Encouraged by the Local Government

Source:

¹ *Eligible Activities for Promotion by Business Categories, Thailand Board of Investment*

² *Targeted Industries, Eastern Economic Corridor (EEC) Office*

³ *Foreign Business Act B.E. 2542 (1999)*

9. Key Government Incentives

Executive Summary

The main foreign investment initiatives in Thailand include Board of Investment (BOI) promoted projects, and the Eastern Economic Corridor (EEC) Development Plan. Each initiative grants companies various types of incentives.

Thailand also has 10 Special Economic Zones and many industrial estates around the country, encouraging foreign investors to develop industrial facilities in Thailand.

The Thailand Plus incentive package is another major upcoming incentive programme. The Thai government is looking to take advantage of the ongoing US-Mainland China trade war with the Thailand Plus package, which is specifically aimed at providing incentives for companies looking to relocate to Thailand.



9. Key Government Incentives

I. Eligibility on Incentive Programmes for Foreign Investments

Investment Promotion Act and Board of Investment (BOI)

The BOI is responsible for promoting foreign investments into Thailand. As such, the approval for most projects and incentives provided are determined by the BOI. Other government programmes grant additional tax and non-tax incentives on top of the standard benefits from the BOI.

Application Criteria¹

Projects seeking BOI approval are considered on a case-by-case basis. The BOI sets out the following basic criteria.

Category	Criteria
General Qualifications	<ul style="list-style-type: none">• Value added of the project must be >20% of revenues<ul style="list-style-type: none">○ Except for projects in agriculture and agricultural products, and electronic products and parts, which must have value added of >10% of revenues.• Modern production processes must be used.• New machinery must be used<ul style="list-style-type: none">○ In the case of used machinery, they may not be eligible for import duty exemption, and may have other restrictions based on the age of the machinery.
Environmental Protection	<ul style="list-style-type: none">• Adequate and efficient guidelines and measures to protect the environment and minimise environmental impact.• Submit environmental impact assessment reports that comply with related environmental laws and regulations.• Projects located in Rayong province must comply with the Office of the Board of Investment Announcement No. Por 1/2554 dated 2 May 2011.
Capital Investment	<ul style="list-style-type: none">• Minimum capital investment for each project is THB 1 million (<i>Note</i>)<ul style="list-style-type: none">○ For knowledge-based services, minimum capital investment is based on minimum annual salaries expense.• For new projects, debt-to-equity ratio must not exceed 3:1<ul style="list-style-type: none">○ Expansion projects considered on case-by-case basis.• If investment value (<i>Note</i>)>THB 750 million, a feasibility study must be submitted.

Note: Investment value does not include the cost of land and working capital.

Approval Timeframe²

Investment value (THB) (Note)	Evaluating committee	Timeframe (working days)
≤ 200 million	Office of the Board of Investment	40
200 – 2,000 million	Subcommittee	60
> 2,000 million	Subcommittee, then the BOI board of directors	90

Note: Investment value does not include the cost of land and working capital

Incentives

The incentives granted by the BOI are based on group classifications by industry. Group A includes high-tech industries and activities that help to enhance Thailand's competitiveness, while Group B includes supporting industries that do not use high-technology, but are still important for the development of high-technology in the overall economy. Group A industries will generally receive both tax and non-tax incentives, while Group B industries generally receive non-tax³ incentives.

BOI-approved projects may be eligible for the following tax and non-tax incentives:

Tax Incentives	Non-tax Incentives
<ul style="list-style-type: none"> 50% reduction of corporate income tax (CIT). 	<ul style="list-style-type: none"> Permission to have 100% foreign ownership for certain businesses.
<ul style="list-style-type: none"> Exemption of CIT on the net profit and dividends derived from the promoted activity. 	
<ul style="list-style-type: none"> Exemption/reduction of import duties on machinery. 	<ul style="list-style-type: none"> Permission to bring into Thailand skilled workers and experts to work in investment-promoted activities.
<ul style="list-style-type: none"> Reduction of import duties for raw or essential materials. 	<ul style="list-style-type: none"> Permission to own land.
<ul style="list-style-type: none"> Double deduction for the costs of transportation, electricity and water supply. 	
<ul style="list-style-type: none"> Additional 25% deduction of the cost of installation or construction of facilities. 	<ul style="list-style-type: none"> Permission to take out or remit money abroad in foreign currency.
<ul style="list-style-type: none"> Exemption of import duty on raw or essential materials imported for use in production for export. 	<ul style="list-style-type: none"> Permission for foreign nationals to enter Thailand for the purpose of studying investment opportunities.

The BOI may also grant additional incentives to projects on a case-by-case basis.

Projects may also receive additional tax incentives if the project involves enhancement of competitiveness or industrial area development. Companies engaging in the biotech, nanotech, advanced materials, and digital industries may also be eligible for exemptions of import duties on materials imported for R&D purposes.

Eastern Economic Corridor (EEC) Development Plan

Application Criteria

The EEC Committee considers the following criteria when selecting investors⁴ and businesses:

- Investors that are interested in conducting businesses in one of the ten targeted industries;
- Investors that have received approval for a project or been promoted or supported by the BOI;
- Investors that are part of a project which uses modern and advanced technology capable of enhancing the targeted industries in Thailand; and
- Investors that intend to forge a partnership with government agencies to promote the use of advanced technologies at an industrial level.

Interested investors can access the application online on the BOI website.

Incentives

To attract foreign investors and promote the EEC, the BOI has introduced the following tax and non-tax incentives on top of the standard BOI-projects⁵ incentives:

- Exemption from CIT for up to 13 years;
- Exemption from import duties on machinery, and raw or essential materials used in production and/or R&D;
- Grants for investment, R&D, innovation development, and human resources development in the 10 key industries;
- Permission to own land for projects promoted by the BOI;
- 50-year land lease agreement for state land, renewable for a further 49 years upon approval;
- A reduced personal income tax rate of 17% (vs. usual rate which can go up to 35%) for certain executives, specialists, and researchers;
- A five-year work visa for investors, specialists, and scientists; and
- A one-stop service centre to assist foreign investors engaging in the EEC.

II. Scope of Special Economic Zone Schemes and Geographical Location

Special Economic Zones (SEZs)

The Thai government initiated the SEZs programme in 2015 across 10 different provinces through two phases. The SEZs are all located in the border areas near Myanmar, Laos, Cambodia, and Malaysia. This encourages cooperation with the neighbouring countries, and allows foreign and local investors greater access to labour and materials from those countries.

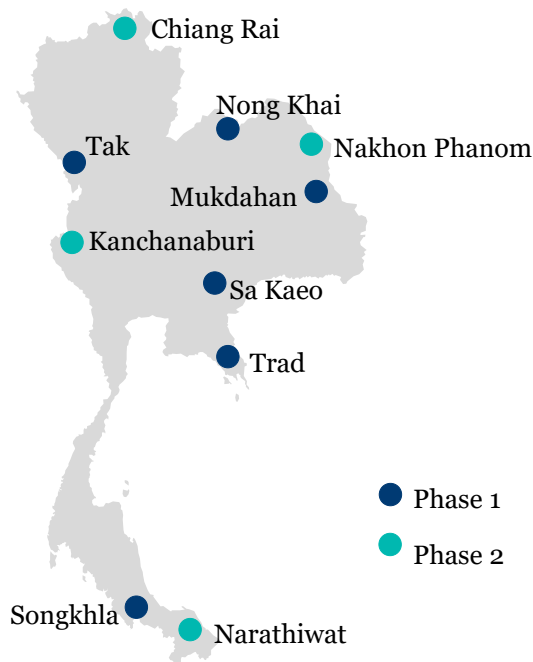
Geography and Supported Industries⁶

Phase 1 development started in 2015 in the following provinces: Tak, Nong Khai, Mukdahan, Sa Kaeo, Trad, and Songkhla.

Phase 2 development started in 2016 in the following provinces: Narathiwat, Chiang Rai, Nakhon Phanom, and Kanchanaburi.

Each SEZ supports a certain number of industries (out of 13 designated by the BOI).

Special Economic Zones in Thailand



This map is for illustrative purposes only, and does not imply official endorsement or acceptance of any boundaries and/or names.

Industries supported in Phase 1 SEZs

	Tak	Nong Khai	Mukdahan	Sa Kaeo	Trad	Songkhla
Agriculture	✓	✓	✓	✓	✓	✓
Ceramics	✓					
Garment and Textiles	✓	✓		✓		✓
Furniture	✓			✓		✓
Jewellery and Gems	✓			✓		
Medical Equipment	✓			✓		
Automotive	✓			✓		
Electronics	✓		✓	✓		
Plastics	✓			✓		
Pharmaceuticals	✓			✓		
Logistics	✓	✓	✓	✓	✓	✓
Industrial Estate	✓	✓	✓	✓	✓	✓
Tourism	✓	✓	✓	✓	✓	✓

Industries supported in Phase 2 SEZs

	Chiang Rai	Nakhon Phanom	Kanchanaburi	Narathiwat
Agriculture	✓	✓	✓	<ul style="list-style-type: none"> • Rubber • Processed Wood • Processed Agriculture • Fabric
Ceramics		✓	✓	
Garment and Textiles	✓	✓	✓	
Furniture	✓	✓	✓	
Jewellery and Gems	✓	✓	✓	
Medical Equipment	✓	✓	✓	
Automotive		✓	✓	
Electronics		✓	✓	
Plastics	✓	✓	✓	
Pharmaceuticals	✓	✓	✓	
Logistics	✓	✓	✓	
Industrial Estate	✓	✓	✓	
Tourism	✓	✓	✓	

Incentives

Businesses operating in the SEZs may be 100% foreign owned without the need to apply for a Foreign Business License. This reduces the time and cost necessary for foreign companies to carry out business in Thailand. Businesses located in SEZs are eligible to certain tax and non-tax incentives including:

- Eight years CIT exemption;
- Additional 50% reduction in CIT for five years;
- Exemption of import duty on raw or essential materials used in production of goods for export;
- Exemption/reduction of import duties on machinery;
- Double deduction for the costs of transportation, electricity and water supply;
- 25% deduction on facilities’ installation/construction cost;
- Permission to bring into Thailand skilled workers and experts, along with their spouses and dependents; and
- Permission to employ foreign unskilled workers in the promoted project.

III. Other Government Support Funding Schemes, Including Both Local and Foreign Investments^{8,9,10,11}

Thailand Plus Incentive Package¹⁰

On 6 September 2019, the Thai government announced the Thailand Plus incentive package. This package aims to attract foreign businesses looking to relocate production facilities because of the ongoing US-Mainland China trade war. It specifically targets companies in Mainland China and Hong Kong, Japan, and South Korea, aiming to further strengthen Thailand's incentive programmes for foreign investments compared to its peers in Southeast Asia.

The main requirement stated by the BOI is that investment projects must have an investment value of THB 1 billion by 2021 to be eligible for the Thailand Plus incentive package. Thailand Plus has a specific emphasis on providing incentives and support for the advanced technology and automation industries, but also aims to promote the export-oriented and tourism industries in Thailand.

The main incentives in the Thailand Plus package include the following:

- An additional 50% reduction on CIT for five years;
- Deductions on training expenses related to advanced technology, to increase upskilling of the labour force in Thailand; and
- Special deductions on hiring highly skilled labour in the fields of science and technology.

Along with the Thailand Plus package, the BOI will also provide additional support to encourage further science, technology, engineering, and mathematics (STEM) training in Thailand, including:

- Double deductions for investments in automation systems, aiming to accelerate the transformation of Thailand's industry to a hi-tech one as part of Thailand 4.0; and
- An investment facilitation committee, to coordinate the approval and operation of large investment projects.

The Thai government will also create special investment zones for the targeted countries, reduce constraints on doing business to further facilitate foreign investments, and create a "smart visa" to increase the pool of highly skilled foreign talent looking to work in Thailand. With the new incentives from the Thailand Plus incentive package and additional support from the BOI, Thailand aims to provide the most competitive incentive programmes in the ASEAN to attract foreign businesses looking to expand or relocate production facilities.

Southern Economic Corridor (SEC)

In Aug 2018, the Thai government approved the SEC programme. The programme will initially be targeted at the southern provinces of Ranong, Surat Thani, Nakhon Si Thammarat and Chumphon, with other southern provinces to be added in the future. Among others, the planned developments include transportation projects in Ranong and Chumphon, providing connections between Thailand and other countries and EEC's projects (on the eastern seaboard of Thailand). In addition, it also targets to enhance the agricultural processing industry in Surat Thani and Nakhon Si Thammarat. The development of infrastructure in these regions will also boost tourism, particularly around Chumphon.

Industrial Estates

The Industrial Estate Authority of Thailand (IEAT) was founded in 1972 to promote industrial development through management of industrial estates. There are 74 industrial estates in Thailand, mostly located near⁷ Bangkok. Around 13 of these industrial estates are owned and managed by the IEAT, while others are joint ventures between the IEAT and private developers.

The IEAT divides industrial estates into two types according to the nature of the industries: the General Industrial Zones (GIZs) and the IEAT Free Zones. Companies that locate their projects in a GIZ or in an IEAT Free Zone may be granted investment incentives without needing to apply for BOI promotion.

General Industrial Zones (GIZs)

GIZs are areas designated for industrial and service operations or other related activities. Investors in a GIZ are eligible for the following non-tax incentives:

- Permission to own land in an industrial estate;
- Permission to bring into Thailand skilled workers and experts, along with their spouses and dependents;
- Permission to remit money abroad; and
- Eligible to receive additional privileges from the BOI when applying for investment promotion.

IEAT Free Zones

IEAT Free Zones are areas designated for industrial and commercial operations or other related activities that benefit the Thai economy. Investors in IEAT Free Zones are eligible for the following tax and non-tax incentives:

- Any non-tax incentives available to investors in a GIZ;
- Exemption of import duties, value added tax (VAT), and excise tax on raw materials and machinery;
- Exemption of export duties, VAT, and excise tax on raw materials, by-products, and products; and
- Exemption or refunds of taxes and duties on raw materials and machinery.

Source:

¹ *Investment Promotion Criteria, Thailand Board of Investment, 2015*

² *Procedures for Utilisation of Promotional Privileges of BOI Promoted Projects, Thailand Board of Investment*

³ *Incentives under the Investment Promotion Act, Thailand Board of Investment*

⁴ *Request Approval Process, Eastern Economic Corridor (EEC) Office*

⁵ *Investment Benefits on EEC, Eastern Economic Corridor (EEC) Office*

⁶ *A Guide to Investment in the Special Economic Zones (SEZ), Thailand Board of Investment, March 2018*

⁷ *Industrial Estates in Thailand, Industrial Estate Authority in Thailand*

⁸ *Industrial Estate Zone Types, Industrial Estate Authority in Thailand*

⁹ *Investment Privileges from I-EA-T, Industrial Estate Authority in Thailand*

¹⁰ *New perks for firms relocating amid trade war, Bangkok Post, Sep 2019*

¹¹ *Thailand announces new promotion package to attract investment, Thailand Board of Investment, Sep 2019*

10. Environmental Requirements

Executive Summary

There are two major environmental laws in Thailand, the Enhancement and Conservation of the National Environmental Quality Act (NEQA 1992) and the Factory Act (FA 1992), both of which were enacted in 1992. Any foreign businesses wishing to invest or do business in Thailand must abide by these two Laws.

Business with factories operating in Thailand may encounter environmental hurdles or problems, such as historical pollution, license requirements, and environmental pollution.

There are environmental organisations and agencies available in Thailand that can provide relevant environmental supporting services to those companies requiring assistance.



10. Environmental Requirements

I. *Environmental Laws and Regulations in Thailand*

In Thailand, the National Environment Board (NEB) is the main body for environmental policies and standards setting. The Ministry of Natural Resource and Environment (MNRE) is the cabinet ministry concerned with the preservation, conservation, rehabilitation of natural resources and environment, management, and sustainable use of resources and implementation of other government services.

Two environmental protection laws were established in 1992, the Enhancement and Conservation of National Environmental Quality Act B.E. 2535 (NEQA 1992) and the Factory Act B.E. 2535 (FA 1992). These two Acts defined the management on environmental impact assessment, pollution control and associated penalties of environmental related issues, with the Factory Act providing further environment-related guidance on factory operations.

A. The Main Environmental Protection Administrations in Thailand

The National Environment Board (NEB)¹

The NEB is responsible for making environmental policies and setting environmental standards in Thailand, and is chaired by the Prime Minister.

According to the Enhancement and Conservation of the National Environmental Quality Act B.E. 2535 (NEQA 1992), the main duties of the NEB are as follows:

- Submit a policy and plan for enhancement and conservation of national environmental quality to the cabinet for approval;
- Prescribe environmental quality standards;
- Propose for regulation amendments or improvements in relation to the enhancement and conservation of environmental quality to the Cabinet; and
- Supervise, oversee, and expedite the enactment of royal decrees and issuance of ministerial regulations, rules, local ordinances, notifications, bylaws, and orders which are necessary to ensure a systematic operation of the laws relating to enhancement and conservation of environmental quality to the fullest extent possible.

Ministry of Natural Resource and Environment (MNRE)^{2,3,4,5}

The cabinet ministry in the Government of Thailand responsible for environmental protection is the MNRE, which is made up of nine departments:

The following three departments are engaged in environmental protection:



Office of Natural Resources
and Environmental Policy
and Planning

- Provide information around policies and regulations over conservation and management of natural resources and environment.



Department of
Environmental Quality
Promotion

- Promote public awareness and participation in environmental conservation, and maintenance of natural resources and biodiversity;
- Provide environmental information services; and
- Carry out analytical research, development, and technology transfer to ensure environmental quality control.



Pollution Control
Department

- Prevent and control pollution throughout the country through enforcement of NEQA 1992.

The other six departments under the MNRE are involved in specific sectors of environmental protection:



Department of Mineral Resources



Department of Marine and Coastal Resources



Department of Water Resources



Department of Groundwater Resources



Royal Forest Department



Department of National Parks, Wildlife and Plant Conservation

B. The Main Environmental Legislation in Thailand⁶

The two major pieces of legislation governing environmental protection in Thailand are the Enhancement and Conservation of National Environmental Quality Act B.E. 2535 (NEQA 1992), which was amended in 2018 and the Factory Act B.E. 2535 (FA 1992), which was amended in 2019. In addition, there are other laws covering specialised environmental requirements.

Enhancement and Conservation of National Environmental Quality Act (NEQA 1992)

Environmental Impact Assessment (EIA)

Depending on the size and type of a proposed project or activity, an EIA report may need to be prepared, which forecasts and evaluates the environmental implications of construction projects and establishes appropriate mitigation measures to ensure efficient use of natural resources for economic development. It must be prepared by a consulting firm registered with the Office of Natural Resources and Environmental Policy and Planning (ONEP) and be submitted to the ONEP for consideration.

The National Environmental Board (NEB) has the authority to prescribe the type and size of projects or activities requiring an EIA report. An EIA Report is required to include details of the project, its environmental impact, and any suggestions to prevent and remedy any damage to the environment.

Pollution Control

Measures which the NEB can take against the possessor of a pollution source include requiring installation or construction of an on-site facility for air pollution control and wastewater treatment, with the submission of a monthly report to the various officials containing key operational data of the facility. Pollution control officials have the power of entry to inspect and to issue orders to correct, change, improve or repair the facilities or equipment. Failure to comply can result in a suspension of operations, the revocation of licenses or a recommendation to close a factory.

Penalties

Any company/person that violates or fails to comply with requirements and measures set out under the Act may be punishable by a fine and/or imprisonment. In cases where the offender to be punished is a juristic person, the directors, managers, or persons in charge of the business operations causing the pollution are jointly liable and can be punished with the same penalties.

Factory Act

Industrial Pollution Control

The Factory Act governs all provisions relating to factory construction, operation, expansion, safety requirements and industrial pollution control. Large-scale industrial factories using machinery of more than five horsepower, or employing seven or more workers must have a factory license issued by the Department of Industrial Works from the Ministry of Industry, which closely monitors and controls the factory operations.

Penalties

The Minister of Industry has broad power to establish standards and methods to control the production and release of waste, pollution, and anything else resulting from factory operations that impact the environment. A factory operator who violates or fails to comply with the Act is liable to punishment in the form of a fine or imprisonment and, if the factory is a serious danger to the public, an order to cease operations can also be made.

Other Regulations Against Pollutions (air, water and wastes, etc.)

Thailand has also issued environmental laws such as the Hazardous Substance Act, B.E. 2535 (HAS 1992), which was amended in 2019, the Ministerial Regulation Soil and Groundwater Contamination Control in Factory Area B.E. 2559 (2016), etc. Emissions and disposal of air and noise pollution, water pollution, soil pollution, wastes and hazardous materials are clearly regulated by the relevant laws, regulations, and standards, and there are corresponding penalties for violation of laws and regulations.

A detailed list of environmental laws and regulations in Thailand can be found in Appendix 4.

C. Main Environmental Related Joint Announcements and Statements which HK and Mainland China Have Issued with Thailand

The Chinese Ministry of Foreign Affairs has issued a joint statement between the People's Republic of China and the Kingdom of Thailand regarding a Comprehensive Strategic Partnership, strengthening cooperation between Mainland China and Thailand. The statement encourages cooperation in environment-related fields.

Apart from that, there are a series of statements and plans to further enhance the environmental cooperation between Mainland China and the ASEAN.

Main Environmental-Related Joint Announcements and Statements^{7,8,9}

Statements	Impact	Clause
Joint Statement of the People's Republic of China and the Kingdom of Thailand on Establishing a Comprehensive Strategic Partnership	Encourage cooperation in energy efficiency, and the fields of clean energy such as solar energy, wind energy, and biomass energy.	Clauses 8 (6) & (7)
Joint Statement of China and ASEAN Leaders on Sustainable Development	Encourage cooperation in conservation of biodiversity and the environment, in clean production, and in awareness of environmental.	Clauses 6 & 8
China-ASEAN Environmental Protection Cooperation Strategy 2016-2020	Establish the China-ASEAN Environmental Protection Cooperation Centre to enhance environmental cooperation. It also improves the sharing of knowledge and experiences, and encourages factories to comply with the environmental laws and regulations.	Clauses 45, 47, 53, 54

D. The Main Environmental Permits in Thailand¹⁰

Thailand has enacted laws and announced numerous environmental regulations, specifying which environmental permits are required.

Factory Establishment Permit

A factory establishment permit shall be required with an Environmental Impact Assessment (EIA) for specified activities or projects. Environmental Safety Assessments (ESA) or Initial Environmental Examinations (IEE) will also be required in some conditions.

Wastewater Permit

Wastewater permits may also be required in some conditions, with varying application criteria for different regions.

II. Environmental Situations in Thailand

A. Hurdles or Problems Encountered and Resolutions

Before Land Acquisition	Pre-construction Period		Operation Period
Historical Pollution Issues	License Requirements		Environmental Pollution Issues
Environmental Due Diligence (EDD) checks for existing soil and groundwater pollution, which can help investors avoid liability for historical pollution	EIA/ESA	Wastewater Permit (subject to project characteristics)	Each industry has different characteristics of pollutants, and will require appropriate monitoring and environmental protection equipment

Before Land Acquisition: Historical Pollution Issues

Soil and groundwater of the targeted land may have been polluted by previous land users. Companies may be impacted by the environmental risks caused by historical pollution if such issues are not identified or the responsibilities are not clarified.

Resolutions



Environmental Due Diligence (EDD)

EDD can help with systematically identifying the environmental risks and responsibilities before corporate investments, acquisitions and mergers, or expansion of the site. An EDD will typically take around two months to complete, but may not be required for every project. The processes are as follows:

- Supporting agency selection: There are no license requirements from local environmental departments on third party agencies providing EDD services. Companies may hire a capable third party service to conduct an EDD where necessary;
- Phase I Environmental Site Assessment: The EDD provider will conduct a limited environmental, health and safety compliance assessment supporting the due diligence for the industrial transaction;
- Phase II Environmental Site Assessment: Based on the results from Phase I, the EDD provider will conduct the actual sampling, monitoring or testing of the soil, air, groundwater, and building materials, in order to evaluate the potential presence of contaminants in the scope;
- Results: The EDD provider will identify potential significant environmental risks in a report.

EDD Case

A global manufacturing company planned to purchase a textile facility located in Samut Prakarn, Thailand. They appointed SLP Environmental to conduct Environmental Due Diligence as part of the transaction due diligence process.

The primary objectives of the study was to: 1) determine the contamination status of soil and groundwater at the property; 2) clarify responsibilities among land owners and users; and 3) comply with Article 4 of the “Management of Soil and Groundwater Contamination Control within the Factory Area” Regulation (2016). During the Environmental Due Diligence process, no deal breaker risk was identified. As a result, the transaction was completed successfully.

For a list of organisations/agencies providing EDD services in Thailand, please refer to Section 10.III.A.

Pre-construction Period: Environmental Impact Assessment (EIA)/Environmental Safety Assessment (ESA)

The local environmental laws have stipulated the projects of industries which are required to conduct an EIA/ESA based on the local environmental laws, and they are not allowed to operate without an EIA/ESA.

Resolutions



EIA/ESA

According to NEQA 1992, EIA/ESA reports must be prepared by a licensed consulting firm registered with ONEP. The ESA is a combination of environmental and safety requirements. The environmental part of the ESA is the same as for the EIA.

EIA/ESA Processes

- Supporting agency selection: Hiring a qualified third party to conduct an EIA/ESA, which must be registered with ONEP;
- EIA/ESA report compilation: Typically lasts one to two months depending on the size and scope of activities/projects;
- Submission: Submitting the EIA/ESA report to ONEP and the permitting agency;
- Review: ONEP examines EIA/ESA and related documents (15 days), reviews and makes preliminary comments (15 days), before finally submitting to the Expert Review Committee (ERC) for approval (45 days);
- Approval: The permitting agency grants the license including any conditions from the ERC.

Types of projects/activities requiring an EIA/ESA in the key industries can be found in Appendix 5 and Appendix 6.

EIA/ESA Case

In May 2018, a Chinese-owned electronics manufacturing factory in Thailand did not obtain the EIA license after its expansion. The factory discharged untreated waste gas during the production process, which contaminated the surrounding environment and received complaints from the nearby residents.

The government subsequently issued accusations against the factory including a lack of EIA license and violation of waste discharge related regulations, etc. The factory was requested to stop all productions and shut down by the government.

For a list of organisations/agencies providing EIA/ESA supporting services in Thailand, please refer to Section 10.III.B.

Pre-construction Period: Wastewater Permit

All factories involved in disposing wastewater require a wastewater permit in accordance with the environmental law, and will not be allowed to operate if the necessary permit is not obtained.

Resolutions



Wastewater
Permit

- The company can either apply themselves or hire a third party to help with obtaining the license;
- Related department: The Department of Business Development Ministry of Commerce;
- Typically takes around 50 days.

Operation Period: Environmental Pollution Problems

During the operation period, company may face environmental pollution problems resulting from non-compliant environmental management or equipment failure:

- Wastewater: Excessive pollutants in wastewater causing soil or groundwater pollution;
- Air emission: Industrial exhaust emissions that are not in compliance, causing air pollution;
- Hazardous waste disposal: Non-compliant disposal of hazardous wastes leads to soil or groundwater contamination, resulting in subsequent penalties; and
- Noise pollution: Noise pollution caused by the operation of machinery and equipment.

Resolutions



Environmental
Monitoring

The Pollution Control Department is mainly responsible for the control of environmental pollution problems. In the case of such problems, the following measures can be taken:

- Hiring third party service providers to conduct regular monitoring or to help with disposal of hazardous waste;
- Enhancing environmental awareness of related workers;
- Improving relevant equipment in use; and
- Optimising the manufacturing process.

Environmental Pollution Case

Gidec Company is a power plant converting heat from burning waste into electricity.

Violation of Related Laws

The emissions from the incinerator of the plant were higher than the standards allowed by the Ministry of Natural Resource and Environment (MNRE). The amount of cadmium, carbon dioxide and hydrogen chloride emissions exceeded the allowable amount.

Penalties

Due to the violation of related regulations, the plant was asked to stop all production until their waste management procedures were up to the standards set by the MNRE.

Resolutions

The power plant subsequently fixed their filter in the air treatment system and ensured that the gas released are in accordance with the standards set. The MNRE also decided that in order for any factory to renew their permit or requesting for a permit, they will need to provide sufficient evidence that the emissions from the factory are within the suggested range.

Waste Management Case

Several companies from the food and beverage industry appointed Ai-co to help with disposal of non-hazardous wastes, such as liquid waste, pulp or ash from biomass fuel burning, and biological sludge from the wastewater treatment system.

In addition, Ai-co provided industrial waste transportation service, with all vehicles installing safety equipment and emergency equipment. The company has a hazardous waste transport license which was approved by the Department of Industrial Works.

For a list of organisations/agencies providing environmental monitoring and related services in Thailand, please refer to Section 10.III.C, D, and E.

B. Study on the Key Manufacturing Industries in which HK/Mainland China Companies Have Invested in Thailand

Potential Environmental Issues ^a	Electronics	Garment & Clothing	Watches & Jewellery	Toys & Games	Hi-tech ^b
Historical Soil Pollution or Groundwater Pollution	✓	✓	✓	✓	✓
Lack of Relevant Environment-related licenses	✓	✓	✓	✓	✓
Wastewater Causing Soil or Groundwater Pollution	✓	✓	✓	✓	✓
Industrial Exhaust Emissions Causing Air Pollution	✓	✓	✓	—	—
Disposal of Hazardous Waste Leading to Soil or Groundwater Contamination	✓	✓	—	✓	—
Noise Pollution Caused by the Operations of Machinery and Equipment	✓	✓	✓	✓	—

✓ indicates that the factory may face the environmental issues in the industry.

“—” indicates that the factory is less likely to face the environmental issues in the industry.

Note:

- “Environmental issue” indicates any environmental related problems factories may have faced during the pre-approval period, construction period and operation period.
- Hi-tech in this table mainly includes industries producing electronic components, and components and accessories used for new power generators and renewable generators, etc.

C. Comparison of Industrial Effluent/Emission Standards Between Thailand and Mainland China

Please refer to the below legend for the understanding of all the comparison tables in this section.

Values in brackets are special limitations of effluent discharged into public sewage treatment system, and values not in brackets are the limitations of effluent discharged into the environment directly.

“↓” indicates the requirement of Mainland China is stricter than Thailand.

“↑” indicates the requirement of Thailand is stricter than Mainland China.

“= ” indicates the requirement of Mainland China is the same as Thailand.

“-” indicates there is no requirement in the standards.

“N/A” indicates that there is no comparison available due to the lack of a standard from one country.

The following tables list out the common pollutants in various industries. For a complete list, please refer to the Notes section below each table for relevant standards.

All standards listed below are applicable to factories in industrial areas. There are no official specialised requirements/standards for non industrial areas in Thailand at the moment, i.e. residential areas. If there are plans to build or operate factories in such areas, it is recommended to confirm with the local environmental department for specific regional requirements.

Electronics (Part 1/5)

Water and air pollutants are the main pollutants in the electronics industry. The following table compares the effluent and emission standards of Thailand and Mainland China:

Industry	Major Types of Pollution	Pollutants		Limits		Comparison
				Thailand ^a	Mainland China ^b	
Electronics	Water pollutants (mg/L) (Except pH, on a scale of 0-14)	pH		5.5-9.0 (5.5-9.0)	6.0-9.0 (6.0-9.0)	↓ (↓)
		Suspended solids		50 (200)	50 (250)	= (↑)
		COD		120 (750)	80 (300)	↓ (↓)
		Ammonia nitrogen	Special electronic materials	-	10/20 ^c (25/45 ^c)	N/A
			Electrical units		5 (25)	N/A
			Printed circuit boards		20 (45)	N/A
			Semiconductor devices		10 (40)	N/A
			Display devices and photoelectron components		5 (25)	N/A
			Electron terminals products		5 (25)	N/A
			TKN	100 (100)	-	N/A
		Total nitrogen	Special electronic materials	-	20/30 ^c (40/60 ^c)	N/A
			Electrical units		15 (40)	N/A
			Printed circuit boards		30 (60)	N/A
			Semiconductor devices		15 (60)	N/A

Electronics (Part 2/5)

Industry	Major Types of Pollution	Pollutants		Limits		Comparison
				Thailand ^a	Mainland China ^b	
Electronics	Water pollutants (mg/L) (Except pH, on a scale of 0-14)	Total nitrogen	Display devices and photoelectron components	-	15 (40)	N/A
			Electron terminals products		15 (40)	N/A
		Total phosphorus	Special electronic materials	-	0.5/1.0 ^h (6.0)	N/A
			Electrical units		0.5 (6.0)	N/A
			Printed circuit boards		1.0 (6.0)	N/A
			Semiconductor devices		1.0 (6.0)	N/A
			Display devices and photoelectron components		0.5 (6.0)	N/A
			Electron terminals products		0.5 (6.0)	N/A
		Sulphide	Special electronic materials	1.0 (1.0)	-	N/A
			Electrical units		-	N/A
			Printed circuit boards		1.0 (1.0)	= (=)
			Semiconductor devices		1.0 (1.0)	= (=)
			Display devices and photoelectron components		-	N/A
			Electron terminals products		-	N/A
		Copper	Special electronic materials	2.0 (2.0)	0.5 (0.5)	↓ (↓)
			Electrical units		0.5 (0.5)	↓ (↓)
			Printed circuit boards		0.5 (1.0)	↓ (↓)
			Semiconductor devices		0.5 (1.0)	↓ (↓)
			Display devices and photoelectron components		0.5 (0.5)	↓ (↓)
			Electron terminals products		-	N/A

Electronics (Part 3/5)

Industry	Major Types of Pollution	Pollutants		Limits		Comparison
				Thailand ^a	Mainland China ^b	
Electronics	Water pollutants (mg/L) (Except pH, on a scale of 0-14)	Zinc	Special electronic materials	5.0 (5.0)	1.5 (1.5)	↓ (↓)
			Electrical units		-	N/A
			Printed circuit boards		-	N/A
			Semiconductor devices		1.5 (1.5)	↓ (↓)
			Display devices and photoelectron components		1.5 (1.5)	↓ (↓)
			Electron terminals products		-	N/A
		Cadmium	Special electronic materials	0.03 (0.03)	0.05 (0.05)	↑ (↑)
			Electrical units		-	N/A
			Printed circuit boards		-	N/A
			Semiconductor devices		0.05 (0.05)	↑ (↑)
			Display devices and photoelectron components		-	N/A
			Electron terminals products		-	N/A
		Total chromium	Special electronic materials	-	1.0 (1.0)	N/A
			Electrical units		-	N/A
			Printed circuit boards		-	N/A
			Semiconductor devices		0.5 (0.5)	N/A
			Display devices and photoelectron components		-	N/A
			Electron terminals products		-	N/A
		Hexavalent chromium	Special electronic materials	0.25 (0.25)	0.2 (0.2)	↓ (↓)
			Electrical units		-	N/A
			Printed circuit boards		-	N/A

Electronics (Part 4/5)

Industry	Major Types of Pollution	Pollutants		Limits		Comparison
				Thailand ^a	Mainland China ^b	
Electronics	Water pollutants (mg/L) (Except pH, on a scale of 0-14)	Hexavalent chromium	Semiconductor devices	0.25 (0.25)	0.1 (0.1)	↓ (↓)
			Display devices and photoelectron components		-	N/A
			Electron terminals products		-	N/A
		Arsenic	Display devices and photoelectron components	0.25 (0.25)	0.3 (0.3)	↑ (↑)
			Electron terminals products		0.3 (0.3)	↑ (↑)
			Printed circuit boards		-	N/A
			Semiconductor devices		0.2 (0.2)	↓ (↓)
			Display devices and photoelectron components		0.2 (0.2)	↓ (↓)
			Electron terminals products		-	N/A
		Lead	Special electronic materials	0.2 (0.2)	0.2 (0.2)	= (=)
			Electrical units		0.1 (0.1)	↓ (↓)
			Printed circuit boards		-	N/A
			Semiconductor devices		0.2 (0.2)	= (=)
			Display devices and photoelectron components		0.2 (0.2)	= (=)
			Electron terminals products		-	N/A
		Nickel	Special electronic materials	1.0 (1.0)	0.5 (0.5)	↓ (↓)
			Electrical units		0.5 (0.5)	↓ (↓)
			Printed circuit boards		0.5 (0.5)	↓ (↓)
			Semiconductor devices		0.5 (0.5)	↓ (↓)

Electronics (Part 5/5)

Industry	Major Types of Pollution	Pollutants		Limits		Comparison
				Thailand ^a	Mainland China ^b	
Electronics	Water pollutants (mg/L) (Except pH, on a scale of 0-14)	Nickel	Display device and photoelectron components	1.0 (1.0)	0.5 (0.5)	↓ (↓)
			Electron terminals products		-	N/A
		Cyanide	Special electronic materials	0.2 (0.2)	0.2 (0.4)	= (↑)
			Electrical units		0.2 (0.4)	= (↑)
			Printed circuit boards		0.2 (0.4)	= (↑)
			Semiconductor devices		0.2 (0.4)	= (↑)
			Display devices and photoelectron components		0.2 (0.4)	= (↑)
			Electron terminals products		-	N/A
	Air pollutants (mg/m ³)	TVOC		-	150	N/A
		NMHC		-	100	N/A
	Noise Emission (dB(A))	Noise limits for boundary of industrial enterprise		-	Daytime 65 Night 55	N/A
		24-hour A-weighted Equivalent Continuous Sound Level		70	-	N/A
		Maximum sound pressure level		115	-	N/A
	Hazardous Waste	Hazardous wastes are required to be disposed by a qualified third party. For more hazardous waste information, please refer to II.A of this section.				

Note:

- Thailand Standards: Control Standards on Discharging of Waste Water from Factory¹¹, General Rules for Discharging Wastewater into Public Sewage System in Industrial Estates¹², Industrial Emission Standard¹³, Noise and Vibration standard¹⁸.*
- Mainland China Standards: Emission standard of pollutants for electrical industry¹⁴ and Emission standard for industrial enterprises noise at boundary²⁴.*
- The value suitable for enterprises producing electrode foil of aluminum electrolytic capacitor.*

Garment & Clothing

Water pollutants and air pollutants were the main pollutants from wool scouring, printing and dyeing, degumming and washing processes in the garment & clothing industry. The following table compares the effluent and emission standards Thailand and Mainland China:

Industry	Major Types of Pollution	Pollutants	Limits		Comparison
			Thailand ^a	Mainland China ^b	
Garment & Clothing	Water pollutants (mg/L) (Except pH, on a scale of 0-14, and colour in ADMI)	pH	5.5-9.0 (5.5-9.0)	6.0-9.0 (6.0-9.0)	↓ (↓)
		Suspended solids	50 (200)	50 (100)	= (↓)
		COD	120 (750)	80 (500)	↓ (↓)
		BOD ₅	20 (500)	20 (150)	= (↓)
		Colour ^c	300 ADMI	50 (80)	↓ (↓)
		Ammonia nitrogen	-	10 (20)	N/A
		TKN	100 (100)	-	N/A
		Total nitrogen	-	15 (30)	N/A
		Total phosphorus	-	0.5 (1.5)	N/A
		Chlorine dioxide	-	0.5 (0.5)	N/A
		Free Chlorine	1.0 (1.0)	-	N/A
		AOX	-	12 (12)	N/A
		Sulfide	1.0 (1.0)	0.5 (0.5)	↓ (↓)
		Aniline	-	Not detectable	N/A
		Hexavalent chromium	0.25 (0.25)	Not detectable	↓ (↓)
	Air Pollutants (mg/m ³)	NMHC	-	120	N/A
	Noise Emissions (dB(A))	Noise limits for boundary of industrial enterprise	-	Daytime 65 Night 55	N/A
		24-hour A-weighted Equivalent Continuous Sound Level	70	-	N/A
		Maximum sound pressure level	115	-	N/A
	Hazardous Waste	Hazardous wastes are required to be disposed by a qualified third party. For more hazardous waste information, please refer to II.A of this section.			

Note:

- Thailand Standards: Control Standards on Discharging of Wastewater from Factory¹¹, and General Rules for Discharging Wastewater into Public Sewage System in Industrial Estates¹², Industrial Emission Standard¹³, Noise and vibration standard¹⁸.
- Mainland China Standards: Discharge Standard for Water Pollutants in Textile Dyeing and Finishing Industry¹⁵, Integrated Air Emission Standard¹⁷, and Emission standard for industrial enterprises noise at boundary²⁴.
- "Colour" is the indicator in Thailand standard, while it refers to "Chroma" in Mainland China standard.

Watches & Jewellery

Water pollutants from washing process and air pollutants from polishing process were the main pollutants in the watches & jewellery industry. The following table compares the effluent and emission standards between Thailand and Mainland China:

Industry	Major Types of Pollution	Pollutants	Limits		Comparison
			Thailand ^a	Mainland China ^b	
Watches & Jewellery	Water pollutants (mg/L) (Except pH, on a scale of 0-14)	pH	5.5-9.0 (5.5-9.0)	6.0-9.0 (6.0-9.0)	↓ (↓)
		Suspended solids	50 (200)	150 (400)	↑ (↑)
		COD	120 (750)	150 (500)	↑ (↓)
		BOD ₅	20 (500)	30 (300)	↑ (↓)
		Ammonia nitrogen	-	25 (-)	N/A
		TKN	100 (100)	-	N/A
		Cyanide	0.2 (0.2)	0.5 (1.0)	↑ (↑)
		Hexavalent chromium	0.25 (0.25)	0.5 (0.5)	↑ (↑)
		Petroleum	-	10 (20)	N/A
	Air pollutants (mg/m ³)	NMHC	-	120	N/A
	Noise Emissions (dB(A))	Noise limits for boundary of industrial enterprise	-	Daytime 65 Night 55	N/A
		24-hour A-weighted Equivalent Continuous Sound Level	70	-	N/A
		Maximum sound pressure level	115	-	N/A
	Hazardous Waste	Hazardous wastes are required to be disposed by a qualified third party. For more hazardous waste information, please refer to II.A of this section.			

Note:

- Thailand Standards: Control Standards on Discharging of Wastewater from Factory¹¹, General Rules for Discharging Wastewater into Public Sewage System in Industrial Estates¹², Industrial Emission Standard¹³, and Noise and vibration standard¹⁸.
- Mainland China Standards: Integrated wastewater discharge standard¹⁶, Integrated emission standard of air pollutants¹⁷ and Emission standard for industrial enterprises noise at boundary²⁴.

Toys & Games

Water pollutants from the washing process, air pollutants resulting from production and storage of polymers, and the precursors process are the major types of pollution in the toys & games industry. The following table compares the effluent and emission standards between Thailand and Mainland China:

Industry	Major Types of Pollution	Pollutants	Limits		Comparison
			Thailand ^a	Mainland China ^b	
Toys & Games	Water Pollutants (mg/L) (Except pH, on a scale of 0-14)	pH	5.5-9.0 (5.5-9.0)	6.0-9.0 (6.0-9.0)	↓ (↓)
		Suspended solids	50 (200)	150 (400)	↑ (↑)
		COD	120 (750)	150 (500)	↑ (↓)
		BOD ₅	20 (500)	30 (300)	↑ (↓)
		Ammonia nitrogen	-	25 (-)	N/A
		TKN	100 (100)	-	N/A
		Sulfide	1.0 (1.0)	1.0 (1.0)	= (=)
		Formaldehyde	1.0 (1.0)	2.0 (5.0)	↑ (↑)
		Phenols	1.0 (1.0)	-	N/A
		Volatile Phenols	-	0.5 (2.0)	N/A
		Cyanide	0.2 (0.2)	0.5 (1.0)	↑ (↑)
	Air Pollutants (mg/m ³)	NMHC	-	120	N/A
	Noise Emissions (dB(A))	Noise limits for boundary of industrial enterprise	-	Daytime 65 Night 55	N/A
		24-hour A-weighted Equivalent Continuous Sound Level	70	-	N/A
		Maximum sound pressure level	115	-	N/A
	Hazardous Waste	Hazardous wastes are required to be disposed by a qualified third party. For more hazardous waste information, please refer to II.A of this section.			

Note:

a. Thailand Standards: Control Standards on Discharging of Wastewater from Factory¹¹, General Rules for Discharging Wastewater into Public Sewage System in Industrial Estates¹², Industrial Emission Standard¹³, and Noise and vibration standard¹⁸.

b. Mainland China Standards: Integrated wastewater discharge standard¹⁶, Integrated emission standard of air pollutants¹⁷ and Emission standard for industrial enterprises noise at boundary²⁴.

Hi-tech

Water from the chemical cleaning process are the major type of pollution in the hi-tech industry. The following table compares the effluent and emission standards of Thailand and Mainland China:

Industry	Major Types of Pollution	Pollutants	Limits		Comparison
			Thailand ^a	Mainland China ^b	
Hi-tech	Water Pollutants (mg/L) (Except pH, on a scale of 0-14)	pH	5.5-9.0 (5.5-9.0)	6.0-9.0 (6.0-9.0)	↓ (↓)
		Suspended solids	50 (200)	150 (400)	↑ (↑)
		COD	120 (750)	150 (500)	↑ (↓)
		BOD ₅	20 (500)	30 (300)	↑ (↓)
		Ammonia nitrogen	-	25(-)	N/A
		TKN	100 (100)	-	N/A
		Sulfide	1.0 (1.0)	1.0 (1.0)	= (=)
		Copper	2.0 (2.0)	1.0 (1.0)	↓ (↓)
		Zinc	5.0 (5.0)	5.0 (5.0)	= (=)
		Formaldehyde	1.0 (1.0)	2.0 (5.0)	↑ (↑)
		Phenols	1.0 (1.0)	-	N/A
		Volatile Phenols	-	0.5 (2.0)	N/A
		Cyanide	0.2 (0.2)	0.5 (1.0)	↑ (↑)
	Air Pollutants (mg/m ³)	NMHC	-	120	N/A
	Noise Emission (dB(A))	Noise limits for boundary of industrial enterprise	-	Daytime 65 Night 55	N/A
		24 hour A-weighted Equivalent Continuous Sound Level	70	-	N/A
		Maximum sound pressure level	115	-	N/A
	Hazardous Waste	Hazardous wastes are required to be disposed by a qualified third party. For more hazardous waste information, please refer to II.A of this section.			

Note:

a. Thailand Standards: Control Standards on Discharging of Wastewater from Factory¹¹, and General Rules for Discharging Wastewater into Public Sewage System in Industrial Estates¹², Industrial Emission Standard¹³, and Noise and vibration standard¹⁸.

b. Mainland China Standards: Integrated wastewater discharge standard¹⁶ , Integrated emission standard of air pollutants¹⁷ and Emission standard for industrial enterprises noise at boundary²⁴.

Food & Beverage, Chemicals & Plastics

Food & beverage industry is one with some obvious characteristic pollutants, such as COD, TSS, and other organic substances in the wastewater. There are special standards in Mainland China focusing on targeted industries such as Discharge Standard of Water Pollutants for Sugar Industry, Discharge Standard of Water Pollutants for Meat Packing Industry, etc. In Thailand, the Food & Beverage industry should be in compliance with the general environmental standards.

Compared with other industries, chemicals & plastics industry involves more significant potential environmental risk. Mainland China has established special standards focusing on industries such as Emission Standards of Pollutants for Inorganic Chemical Industry, Emission Standard of Pollutants for Nitric Acid Industry, Emission Standard of Pollutants for Sulfuric Acid Industry, etc. In Thailand, the chemicals & plastics industry should be in compliance with the general environmental standards.

General Industries

General industries refer to those industries which do not produce massive or characteristic pollutants (such as logistics & transportation industry, furniture industry, etc.). Such industries should be in compliance with the general environmental standards available in both countries.

The following table compares the general effluent/emission standards of Thailand and Mainland China:

Industry	Major Types of Pollution	Pollutants	Limits		Comparison
			Thailand ^a	Mainland China ^b	
General Industries	Water Pollutants (mg/L) (Except pH, on a scale of 0-14)	pH	5.5-9.0 (5.5-9.0)	6.0-9.0 (6.0-9.0)	↓ (↓)
		Suspended solids	50 (200)	150 (400)	↑ (↑)
		COD	120 (750)	150 (500)	↑ (↓)
		BOD ₅	20 (500)	30 (300)	↑ (↓)
		Ammonia nitrogen	-	25 (-)	N/A
		TKN	100 (100)	-	N/A
		Sulfide	1.0 (1.0)	1.0 (1.0)	= (=)
		Hexavalent chromium	0.25 (0.25)	0.5 (0.5)	↑ (↑)
		Petroleum	-	10 (20)	N/A
		Phosphate	-	1.0 (-)	N/A
	Air Pollutants (mg/m ³)	NMHC	-	120	N/A
	Noise Emission (dB(A))	Noise limits for boundary of industrial enterprise	-	Daytime 65 Night 55	N/A
		24 hour A-weighted Equivalent Continuous Sound Level	70	-	N/A
		Maximum sound pressure level	115	-	N/A
	Hazardous Waste	Hazardous wastes are required to be disposed by a qualified third party. For more hazardous waste information, please refer to II.A of this section.			

Note:

- a. Thailand Standards: Control Standards on Discharging of Wastewater from Factory¹¹, and General Rules for Discharging Wastewater into Public Sewage System in Industrial Estates¹², Industrial Emission Standard¹³, and Noise and vibration standard¹⁸.
- b. Mainland China Standards: Integrated wastewater discharge standard¹⁶, Integrated emission standard of air pollutants¹⁷ 106 and Emission standard for industrial enterprises noise at boundary²⁴.

III. The Main Local Supporting Organisations/Agencies in Thailand

Thailand has a well-established regulation system to manage environment protection behaviour of investment and enterprises. NGOs and social groups in Thailand are also concerned about environmental problems and have great influence locally.

To ensure environmental compliance and to maintain a good relationship with the public, the investor must pay particular attention to the environment survey, license application and meet the local discharge standards in the design-build and operation periods.

The following tables list out the main local supporting organisations and agencies providing relevant environment-related support services.

A. Environmental Due Diligence Services in Thailand

Agency/Organisation	Service Coverage	Contact
PwC	<ul style="list-style-type: none"> Environmental Due Diligence; Governance Assessment Practices; Environmental and Social Risk Management; Sustainability Assurance; Carbon Inventory and Reduction Strategy; Environmental and Social Risk Management; Supply Chain Management; and Sustainability Risk Assessment, etc. 	+66 (0) 2844 1000
SLP Environmental	<ul style="list-style-type: none"> Due Diligence, Transaction and Funder Services; Impact Assessment and Planning; Regulatory Compliance & Risk Management; and Contaminated Site Assessment and Management, etc. 	+66 (0) 2168 7016
WSP	<ul style="list-style-type: none"> Environmental Due Diligence; Contaminated Land and Soil Remediation; and Environmental and Social Impact Assessment and Planning, etc. 	+66 (0) 2343 8866

B. EIA Supporting Services in Thailand

Agency/Organisation	Service Coverage	Contact
Consultants of Technology Company Limited	<ul style="list-style-type: none"> Water Supply Engineering; Air Pollution Study/Monitoring; Environmental Impact Study/Evaluation; Environmental Auditing; Environmental Management Plan; and Management System Implementation ISO 14000, etc. 	+66 (0) 29343 233-47
Envimove-tha	<ul style="list-style-type: none"> EIA/HIA/IEE/ESA 	+66 (0) 2156 9397
Wasaphate Company Limited	<ul style="list-style-type: none"> EIA/IEE/Monitor/ESA 	+66 (0) 2171 9241

For more information, please refer to th.kompass.com/a/ecology-and-environmental-consultants-nes/72870/

C. Environmental Monitoring Services in Thailand

Agency/Organisation	Service Coverage	Contact
EnviX Asia	<ul style="list-style-type: none"> • Soil & Groundwater monitoring and survey; • EHS Compliance; • Products Compliance; and • Global Environmental Regulatory Update, etc. 	+66 (0) 2077 5058 +66 (0) 61-409 1200
Consultants of Technology Company Limited	<ul style="list-style-type: none"> • Water Supply Engineering; • Air Pollution Study/Monitoring; • Environmental Impact Study/Evaluation; and • Environmental Auditing, etc. 	+66 (0) 2934 3233-47

D. Hazardous Wastes Disposal Services in Thailand

Agency/Organisation	Service Coverage	Contact
Professional Waste Technology	<ul style="list-style-type: none"> • Treatment and disposal of industrial wastes; • Classification, elimination and landfill management of both non-toxic and toxic waste from factory; and • Waste recycling, etc. 	+66 (0) 2942 9480-8
Genco	<ul style="list-style-type: none"> • Collecting, storing and transporting industrial wastes; • Treatment and disposal of industrial wastes; and • Gathering and transporting wastes from factories industrial wastes disposal plant by using specific types of vehicles, etc. 	+66 (0) 2745 6926-7
Ai-CO	<ul style="list-style-type: none"> • Disposal of non-hazardous wastes such as liquid waste from food and beverage industry; and • Provision of hazardous wastes transportation. 	+66 (0) 856 676 655
Better World Green	<ul style="list-style-type: none"> • Industrial wastes management; • Providing transportation and container services designed according to the nature of wastes; and • Landfill management of both non-toxic and toxic wastes, etc. 	+66 (0) 2012 7888
EN Technology	<ul style="list-style-type: none"> • Treatment and disposal of both hazardous and non-hazardous wastes; • Transportation of industrial wastes; and • Waste recycling, etc. 	+66 (0) 2743 5550-2 ext. 5120
One More Link	<ul style="list-style-type: none"> • Treatment and disposal of industrial wastes and chemical wastes; • Recycling of non-hazardous wastes; and • Transportation of industrial wastes, etc. 	+66 (0) 6387 12666

The organisations/agencies above hold the licenses below:

- - 101 (license as a central waste treatment plant);
- - 105 (license to classify, eliminate and landfill manage both non-toxic and toxic wastes from factory);
- - 106 (license to recycle wastes from factory).

E. Environmental Equipment Services in Thailand

Agency/Organisation	Service Coverage	Contact
OPSIS	<ul style="list-style-type: none">Set up of the air quality systems in accordance to the subscriber’s requirements and specifications, with monitoring data delivered 24 hours a day, 365 days a year	+66 (0) 2433 8331
VENTURY	<ul style="list-style-type: none">Electrostatic air cleanser;Compact Dust Collector; andAir condition, etc.	+66 (0) 2651 0951
CONTROLOGIC (The distributor)	<ul style="list-style-type: none">Water analytical products; andExplosion protection products, etc.	+66 (0) 2021 2878

Source:

- ¹ *Enhancement and Conservation of National Environmental Quality Act B.E. 2535, 1992*
- ² *Ministry of Natural Resources and Environment*
- ³ *Thailand Office of Natural Resources and Environmental Policy and Planning (ONEP), teachenvirolaw, 2019*
- ⁴ *Department of environmental quality promotion, Bangkokpost, 2019*
- ⁵ *The Pollution Control Department (PCD) Thailand, Environnet 2016*
- ⁶ *Guide to doing business in Thailand, MayerBrown, 2019*
- ⁷ *Joint Statement of the People's Republic of China and the Kingdom of Thailand on Establishing a Comprehensive Strategic Partnership, 2012*
- ⁸ *Joint Statement of China and ASEAN Leaders on Sustainable Development, 2010*
- ⁹ *China-ASEAN Environmental Protection Cooperation Strategy 2016-2020, 2017*
- ¹⁰ *Pollution Control Policies & Good Practice for Industry in Thailand, Pollution Control Department, 2015*
- ¹¹ *Re Prescription of Control Standards on Discharging of Waste Water from Factory B.E. 2560, 2017*
- ¹² *Notification of Ministry of Industry No.78/2554 Re: General Rules for Discharging Wastewater into Public Sewage System in Industrial Estates, B.E.2554, 2011*
- ¹³ *Notification of the Ministry of Natural Resources and Environment B.E.2549, 2006, issued under the Enhancement and Conservation of National Environmental Quality Act B.E.2535, 1992*
- ¹⁴ *Emission standard of pollutants for electrical industry, 2nd edition*
- ¹⁵ *Discharge standards of water pollutants for dyeing and finishing of textile industry, GB 4287-2012*
- ¹⁶ *Integrated wastewater discharge standard, GB 8978-1996*
- ¹⁷ *Integrated emission standard of air pollutants, GB 16297-1996*
- ¹⁸ *Notification of the National Environmental Board No.29, B.E.2550, 2007: The Ambient Noise Standard*
- ¹⁹ *Factory Act, B.E. 2535, 1992*
- ²⁰ *Hazardous Substance Act, B.E. 2535, 1992*
- ²¹ *Public Health Act, B.E.2535, 1992*
- ²² *Ministerial Regulation on Soil and Groundwater Contamination Control in Factory Area, B.E. 2559, 2016*
- ²³ *Notification of the National Environmental Board, No. 8, B.E. 2537, 1994, issued under the Enhancement and Conservation of National Environmental Quality Act B.E.2535, 1992*
- ²⁴ *Emission standard for industrial enterprises noise at boundary, 2008*
- ²⁵ *Thailand Board of Investment Guide on Environmental Regulations, Thailand Board of Investment, 2014*

Appendix

<i>Appendix 1</i>	<i>List of Foreign Bank Representative Office</i>
<i>Appendix 2</i>	<i>General Selling Practice and General Rental Terms for Industrial Estates in Thailand</i>
<i>Appendix 3</i>	<i>Thailand's Selected Infrastructural Development Pipelines</i>
<i>Appendix 4</i>	<i>List of the Main Environmental Laws/Regulations and Standards in Thailand</i>
<i>Appendix 5</i>	<i>Types of Projects/Activities with EIA Requirements for the Key Industries in the BOI's Guide on Environmental Regulations</i>
<i>Appendix 6</i>	<i>Types of Factories with ESA Requirements for the Key Industries in the BOI's Guide on Environmental Regulations</i>

Appendix 1

List of Foreign Bank Representative Office (Part 1/2)

Names of Foreign Bank Representative Office	
1. Bank Of Baroda	
2. Bank Of Taiwan	
3. Cathay United Bank	
4. Commerzbank Aktiengesellschaft	
5. Credit Industriel Et Commercial (CIC)	
6. Credit Suisse	
7. CTBC Bank Company Limited	
8. DBS Bank Limited	
9. DEG - Deutsche Investitions - Und Entwicklungsgesellschaft MBH	
10. First Commercial Bank	
11. ING Bank N.V.	
12. Japan Bank For International Cooperation	
13. Japan Finance Corporation	
14. Joint Development Bank Limited	
15. Kanbawza Bank Limited	
16. Korea Development Bank	
17. Natixis	
18. North Pacific Bank, Limited	
19. Resona Bank, Limited	
20. Shinkin Central Bank	
21. State Street Bank And Trust Company	
22. The Ashikaga Bank, Limited	
23. The Bank Of Fukuoka, Limited	
24. The Bank Of Kyoto, Limited	
25. The Bank Of New York Mellon	
26. The Bank Of Yokohama, Limited	
27. The Chiba Bank, Limited	
28. The Chugoku Bank Limited	
29. The Export-Import Bank Of The Republic Of China	

Appendix 1

List of Foreign Bank Representative Office (Part 2/2)

Names of Foreign Bank Representative Office	
30.	The Fukui Bank, Limited
31.	The Gifu Shinkin Bank
32.	The Gunma Bank, Limited
33.	The Hachijuni Bank, Limited
34.	The Hamamatsu Shinkin Bank
35.	The Hekikaishinkin Bank
36.	The Hiroshima Bank Limited
37.	The Hokkoku Bank, Limited
38.	The Hokuriku Bank Limited
39.	The Hokuto Bank, Limited
40.	The Hyakugo Bank, Limited
41.	The Juroku Bank, Limited
42.	The Ogaki Kyoritsu Bank Limited
43.	The Okazaki Shinkin Bank
44.	The San-in Godo Bank, Limited
45.	The Seto Shinkin Bank
46.	The Shanghai Commercial & Savings Bank, Limited
47.	The Shiga Bank Limited
48.	The Shimizu Bank, Limited
49.	The Shoko Chukin Bank, Limited
50.	Wells Fargo Bank, National Association

Appendix 2

General Selling Practice for Industrial Estates in Thailand

Quotation Currency	<ul style="list-style-type: none">Sales are quoted in Thai Baht.
Payment	<p>The normal practice is to divide the transaction into three payments of:</p> <ul style="list-style-type: none">10% on date of signing the Memorandum of Understanding (MOU) or Offer Letter (subject to the company receiving IEAT permission to buy land and/or BOI-approval). In the unlikely event that the company does not receive approval, the deposit is refunded;20% on the date of signing the contract; andthe remaining balance on the date of transfer of ownership.
Deposit	<ul style="list-style-type: none">A deposit equivalent to three months' gross rental is normally payable on signature of the lease agreement.
Taxation	<p>Company owned properties are subject to three major taxes: transfer fee; specific business tax; and withholding tax.</p>
Other Expenses	<p>Individual owned properties: three critical taxes:</p> <ul style="list-style-type: none">Transfer fee;Either specific business tax or stamp duty; andIncome tax (withholding tax).

General Rental Terms for Industrial Estates in Thailand

Lease Term	<ul style="list-style-type: none">Leases are normally for three-year terms. Any lease with a term longer than three years must be registered at the Land Department. There is a registration fee of 1% of the total amount payable under the lease, which must be paid on registration of the lease. This is normally paid by the tenant.
Leases	<ul style="list-style-type: none">In Thailand, leases for industrial property are normally in English. However, if a lease must be registered at the Land Department, then there will need to be a Thai version of the lease.
Rental	<ul style="list-style-type: none">Rental for industrial property is quoted in Thai Baht on a square meter basis per month. Rents are normally paid monthly in advance. The normal practice is a security deposit equivalent to three months' rental and one month's rent in advance upon the signing of the lease agreement.Typically, the rental is exclusive of management fee, government taxes and rates, lease agreements and service agreement.
Deposit	<ul style="list-style-type: none">A deposit equivalent to three months' gross rental is normally payable on signature of the lease agreement.
Other Expenses	<ul style="list-style-type: none">Additional charges vary from landlord to landlord but these could include:<ol style="list-style-type: none">Industrial Estates and Park Management Fees: If the building is situated on an industrial estate or park, then there will be a management fee payable to the estate manager for the upkeep of roads and infrastructure.Property Insurance: This is negotiable but is usually the tenant's responsibility.Repairs: Normally the landlord will be responsible for the day-to-day upkeep of the property.Household Tax: This is a local property tax and amounts to 12.5% of the rental payable.

Appendix 3

Thailand's Selected Infrastructural Development Pipelines (Part 1/4)

Project	Value (USD m)	Government Sponsor
Transport – Airport		
Maintenance, Repair & Overhaul (MRO) Facility Development at U-Tapao Airport	320	Ministry of Transport
Transport - Port		
Laem Chabang Port (Phase 3)	3,652	Ministry of Transport
Pak Bara Seaport, Satun Province	657	Ministry of Transport
2 nd Songkhla Deep Seaport	530	Ministry of Transport
Management of Public Liquid Cargo Berth	416	Ministry of Industry, Industrial Estate Authority of Thailand
Map Ta Phut Industrial Port (Phase 3)	320	Ministry of Industry
Management of 2 nd Public Port	96	Ministry of Industry
Development of Cruise Terminal, Samui District, Surat Thani Province	N/A	Ministry of Transport
Transport – Rail (passenger)		
Bangkok – Rayong High-speed Rail	4,882	State Railway of Thailand - Ministry of Transport
MRT Purple Line	4,106	Ministry of Transport
MRT Orange Line – West Section	3,979	Ministry of Transport
MRT Orange Line – East Section	3,644	Ministry of Transport
Monorail Grey Line	1,471	Ministry of Interior
MRT Green Line	1,217	Bangkok Metropolitan Administration
Light Rail Double Track Transit System	893	Ministry of Interior
Phuket Mass Transit System	N/A	Ministry of Transport
Bangkok – Hua Hin High-speed Rail	N/A	Ministry of Transport
Transport – Rail (freight/commodity)		
Enhance Private Sector Participation in Freight Transportation by Rail	N/A	Ministry of Transport

Appendix 3

Thailand's Selected Infrastructural Development Pipelines (Part 2/4)

Project	Value (USD m)	Government Sponsor
Transportation - Road		
Bang Pa In- Nakhon Ratchasima Intercity Motorway	2,709	Ministry of Transport
The Nakhon Pathom – Cha Am Intercity Motorway	2,530	Ministry of Transport
Bang Yai - Kanchanaburi Intercity Motorway	1,781	Ministry of Transport
Western Bangkok Outer Ring Road	1,377	Ministry of Transport
Bang Pa In - Nakhon Sawan Intercity Motorway	1,281	Ministry of Transport
Hat Yai – Thailand/Malaysia Border Intercity Motorway	1,198	Ministry of Transport
Extension of the Uttraphimuk Elevated Tollway	941	Ministry of Transport
Kathu – Patong Expressway, Phuket Province	454	Ministry of Transport
Transport - Logistics		
Regional Freight Logistics Station	588	Ministry of Transport
Chiang Khong Freight Logistics Distribution Centre	87	Ministry of Transport
Common Ticketing System Management and Maintenance Project	43	Ministry of Transport
Nakhon Phanom Cross-Border Logistic Centre	39	Ministry of Transport
Cargo Warehouse & Ground Support Equipment (GSE) Maintenance Complex at Suvarnabhumi Airport	N/A	Ministry of Transport
Urban Revitalisation/Social		
Urban Renewal of Din Daeng Community (Phase 3 and Phase 4)	1,277	Ministry of Social Development and Human Security
Housing and Commercial Development on Available Plots of Land in the Chiang Mai Housing Community (Nong Hoi)	178	Ministry of Social Development and Human Security
Housing Development around the Railway Network (TOD) within the Bangkok and Vicinity (Phase 2)	<1	Ministry of Social Development and Human Security
Housing Development for Government Officials and Commercial Development on Available Plots of Land	<1	Ministry of Social Development and Human Security
Geo-Spatial Industrial Park	N/A	Ministry of Science and Technology, Geo-Informatics and Space Technology Development Agency

Appendix 3

Thailand’s Selected Infrastructural Development Pipelines (Part 3/4)

Project	Value (USD m)	Government Sponsor
Healthcare		
Health and Elderly Care for The Lower Northern Region, Naresuan University Hospital	125	Ministry of Education
Specialised Medical Centre, Hat Yai, Songkla, Thailand	54	Ministry of Public Health
Specialised Medical Centre, Department of Medical Services	24	Ministry of Public Health
Specialised Medical Centre and Car Park Building, Ratchaburi Hospital	24	Ministry of Public Health
Quarantine Centre for Patient with Contagious and/or Infectious Diseases	23	Ministry of Public Health
Nakhom Pathom Hospital, Medical Service Building and Car Park	13	Ministry of Public Health
Hi-Tech Radiology Diagnostic Service, Suratthani Hospital	4	Ministry of Public Health
Hemodialysis Service for Patient with Chronic Kidney Failure, Ratchaburi Hospital	1	Ministry of Public Health
Education		
Innovation Park for science and Technology Graduate Studies	384	Ministry of Education
King Naresuan The Great Park	96	Ministry of Education
The International Vocational Training Centre	N/A	Ministry of Education

Appendix 3

Thailand’s Selected Infrastructural Development Pipelines (Part 4/4)

Project	Value (USD m)	Government Sponsor
Water & Waste		
Khlong Toei Wastewater Treatment Facility	599	Ministry of Interior
Thonburi Wastewater Treatment Facility	443	Ministry of Interior
Nong Bon Swamp Wastewater Treatment Facility	344	Ministry of Interior
Construction of Samut Sakhon City Municipality Wastewater Treatment Facility, Samut Sakhon Province	209	Ministry of Natural Resources and Environment
Bang Bua Thong Municipality Wastewater Treatment Facility, Nonthaburi Province	149	Ministry of Natural Resources and Environment
Krathumbaen Municipality Wastewater Treatment Facility, Samut Sakhon Province	103	Ministry of Natural Resources and Environment
Rom Klao Community Wastewater Treatment Facility	51	Ministry of Interior
Rangsit City Municipality Wastewater Treatment Facility, Pathumthani Province	14	Ministry of Natural Resources and Environment

Appendix 4

The Main Environmental Laws/Regulations in Thailand

Ministry of Natural Resource and Environment	Ministry of Industry	Ministry of Public Health	Ministry of Labour
Enhancement and Conservation of the National Environmental Quality Act (NEQA 1992) ¹	Factory Act (FA 1992) ¹⁹	Public Health Act (PHA 1992) ²¹	Occupational Safety, Health and Environment Act (OSHE 2011) ²²
	Hazardous Substance Act (HAS 1992) ²⁰		
	Soil and Groundwater Contamination Control in Factory Area (2016) ²³		

The Main Environmental Standards in Thailand

Ambient Standards ^a (enforced by NEQA 1992, Section 32)	1	Surface Water Quality Standard
	2	Marine Water Quality Standard
	3	Ground Water Quality Standard
	4	National Ambient Air Quality Standards
	5	The Ambient Noise Standard
	6	VOCs standards
Effluent Standards (enforced by NEQA 1992, Section 55)	7	Control Standards on Discharging of Waste Water from Factory ^b
	8	General Rules for Discharging Wastewater into Public Sewage System in Industrial Estates ^b
	9	Industrial Emission Standard ^b
	10	The Emission Standard for a Glass Factory
	11	The Emission Standard for a Petroleum Refinery Plant
	12	The Emission Standard for a Cement Manufacturer
	13	Standard of Noise from Plant Operation ^b
	14	Vibration Standard for Protect Impact on Building

Note:

a. Ambient standards and effluent standards for specific industries can be found at www.ieat.go.th/handbook.

b. Corresponding effluent/emission standards are the main standards utilised in chapter 10 section ii) c.

Appendix 5

Types of Projects/Activities with EIA Requirements for the Key Industries in the BOI’s Guide on Environmental Regulations

Industries	Types of Projects/Activities	Size	Criterion, Procedure, Regulation
Food & Beverage	16.1 Liquor and alcohol production	≥40,000 L/month (calculated at 28 degrees)	Submit when applying for permission for construction or operation.
	16.2 Wine production	≥600,000 L/month	
	16.3 Beer production	≥600,000 L/month	
Logistics & Transportation	Mass transportation system by rail	All sizes	Submit when applying for project approval or permission.

Appendix 6

Types of Factories with ESA Requirements for the Key Industries in the BOI's Guide on Environmental Regulations

Industries	Types of Factories	Conditions
Food & Beverage	Distilleries or liquor blending houses (16).	All sites.
Garment & Clothing	Fermenting, carbonising, untangling, combing, pressing, spinning, drying, stranding, winding, texturising, bleaching, or dyeing fibre (22(1)).	Work relating to bleaching or dyeing of yarn or fibre, and generating wastewater of at least 500 m ³ per day.
	Weaving or preparing warp-threads for weaving (22(2));	Work relating to bleaching or dyeing of yarn, fibre, or printing textiles, and generating wastewater of at least 500m ³ per day.
	Bleaching and dyeing or finishing of yarn or textiles (22(3));	
	Printing textiles (22(4)).	
	Weaving fabric, lace or apparel with yarn or fibre, or bleaching and dyeing or finishing of fabric, lace or apparel woven with yarn or fibre;	Work relating to bleaching, dyeing, or finishing of lace or apparel woven with yarn or fibre, and generating wastewater of at least 500m ³ per day.
	Making oilcloth or leatherette that is not purely made from plastic (27(2)).	All sites.
	Fermenting, eviscerating, roasting, pulverising or grinding, tanning, polishing, and finishing, embossing, or paint-coating of animal hides (29).	Work relating to fermenting and polishing and generating wastewater of at least 50m ³ per day.
	Combing, cleaning, bleaching, dyeing, polishing, or dressing of fur (30);	Generating wastewater of at least 50m ³ per day.
	Laundering, dry-cleaning, cleaning, ironing, pressing, or dyeing of apparel, carpet, or fur (98).	
Chemicals & Plastics	Insulation products (related to plastic products) (53(6)).	All products.
Toys & Games		

Note:

The Thailand Board of Investment Guide on Environmental Regulations published by the Board of Investment lists the types factories with EIA/ESA requirements, but does not specify any EIA/ESA requirements in the electronics industry.

Glossary – Section 1 to 9 Operational Requirements

3PLs	Third-party Logistics Companies
AIT	Asian Institute of Technology
ASEAN	Association of Southeast Asian Nations
BIC	Business Incubation Centre
BIOTEC	National Genetic Engineering and Biotechnology Centre
BOI	Thailand Board of Investment
CCC	Thai Civil and Commercial Code
CIT	Corporate Income Tax
DBD	Department of Business Development
DITP	Department of International Trade Promotion
DTA	Double Taxation Agreement
EEC	Eastern Economic Corridor
IEIB	The Environmental Impact Evaluation Bureau
EPZ	Export Processing Zones
EV	Electric vehicles
FAP	Federation of Accounting Professions
FBA	Foreign Business Act
FBL	Foreign Business License
FDI	Foreign Direct Investment
GDP	Gross Domestic Product
HDD	Hard Disk Drive

HDI	Human Development Index
HEV	Hybrid Electric Vehicles
HS	Harmonised System
ICT	Information and Communications Technology
IFRPD	Institute of Food Research and Product Development
IFRS	International Financial Reporting Standards
IP	Intellectual Property
IOT	Internet of Things
iTAP	Industrial Technology Assistance Programme
KU-FIRST	Kasetsart University Food Innovation Research and Services in Thailand
LPI	Logistics Performance Index
LRA	Labour Relations Act
MDES	Ministry of Digital Economy and Society
MICT	Ministry of Information and Communication Technology
MNCs	Multinational Companies
MOC	Ministry of Commerce
MOST	Ministry of Science and Technology
MTEC	National Metal and Material Technology Centre
NANOTEC	National Nanotechnology Centre
NCPO	National Council for Peace and Order
NECTEC	National Electronics and Computer Technology Centre
NIA	National Innovation Agency
NPAE	Non-Public Accountable Entities
NSTDA	National Science and Technology Development Agency

OEM	Original Equipment Manufacturer
PAT	Port Authority of Thailand
PETROMAT	Centre of Excellence on Petrochemical and Materials
PISA	Programme for International Student Assessment
SEA	Southeast Asia
SET	Stock Exchange of Thailand
SME	Small and Medium-sized Enterprises
SRT	State Railway of Thailand
STEM	Science, Technology, Engineering, and Math
STI	National Science, Technology and Innovation Policy Office
S&T	Science and Technology
TAS	Thai Accounting Standards
TFRS	Thai Financial Reporting Standards
THB	Thai Baht
TLO	Technology Licensing Office
TSP	Thailand Science Park
UN	United Nations
USD	United States Dollar
VAT	Value Added Tax

Glossary – Section 10

Environmental Requirements

ADMI	American Dye Manufacturer's Institute
AOX	Absorbable Organic Halogen
BOD	Biochemical Oxygen Demand
COD	Chemical Oxygen Demand
BOI	Thailand Board of Investment
EIA	Environmental Impact Assessment
EIEB	The Environmental Impact Evaluation Bureau
ESA	Environmental Safety Assessment
FA 1992	Factory Act
HAS 1992	Hazardous Substance Act
IEE	Initial Environmental Examination
MNRE	The Ministry of Natural Resource and Environment
MOI	Ministry of Industry
MOL	Ministry of Labour
MOPH	Ministry of Public Health
NEB	National Environment Board
NEQA 1992	Enhancement and Conservation of the National Environmental Quality Act
NMHC	Non-methane Hydrocarbon
ONEP	Office of Natural Resources and Environmental Policy and Planning
OSHE 2011	Occupational Safety, Health and Environment Act
PHA 1992	Public Health Act
TKN	Total Kjeldahl Nitrogen
TVOC	Total Volatile Organic Compounds

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