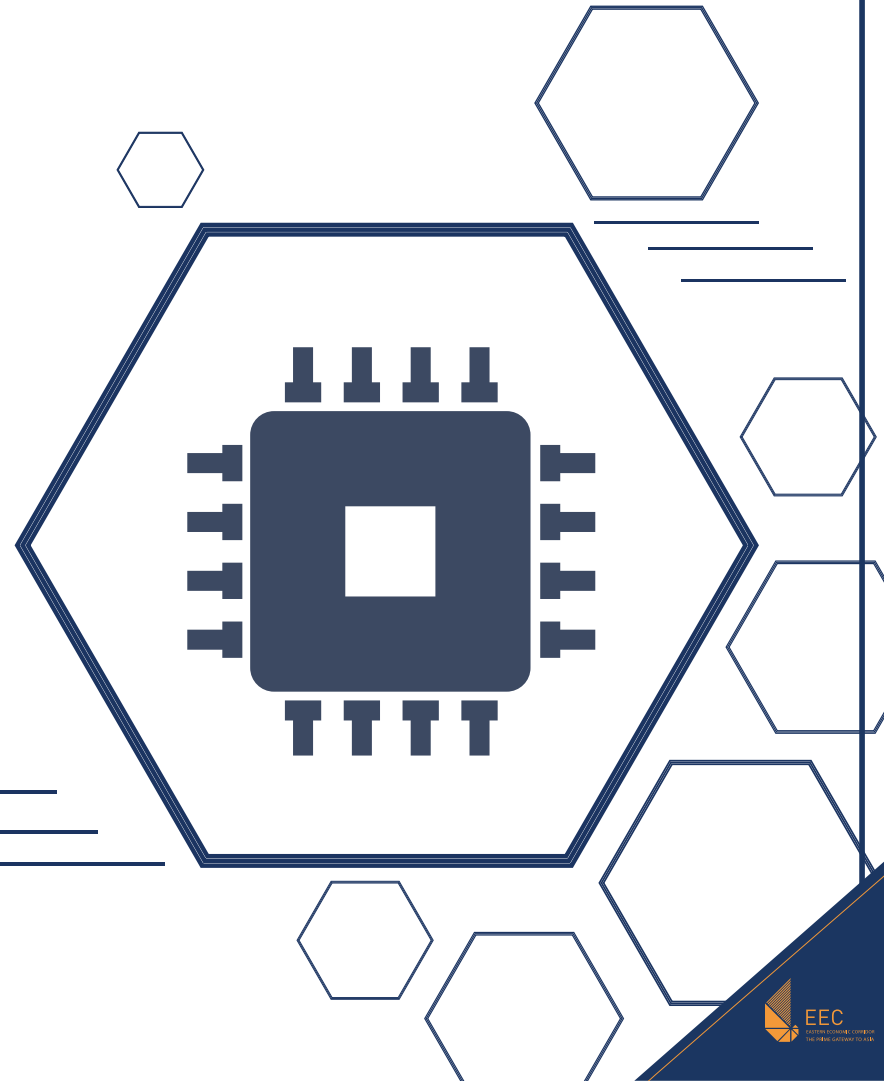




# ***INTELLIGENT***

---

# ***ELECTRONICS***



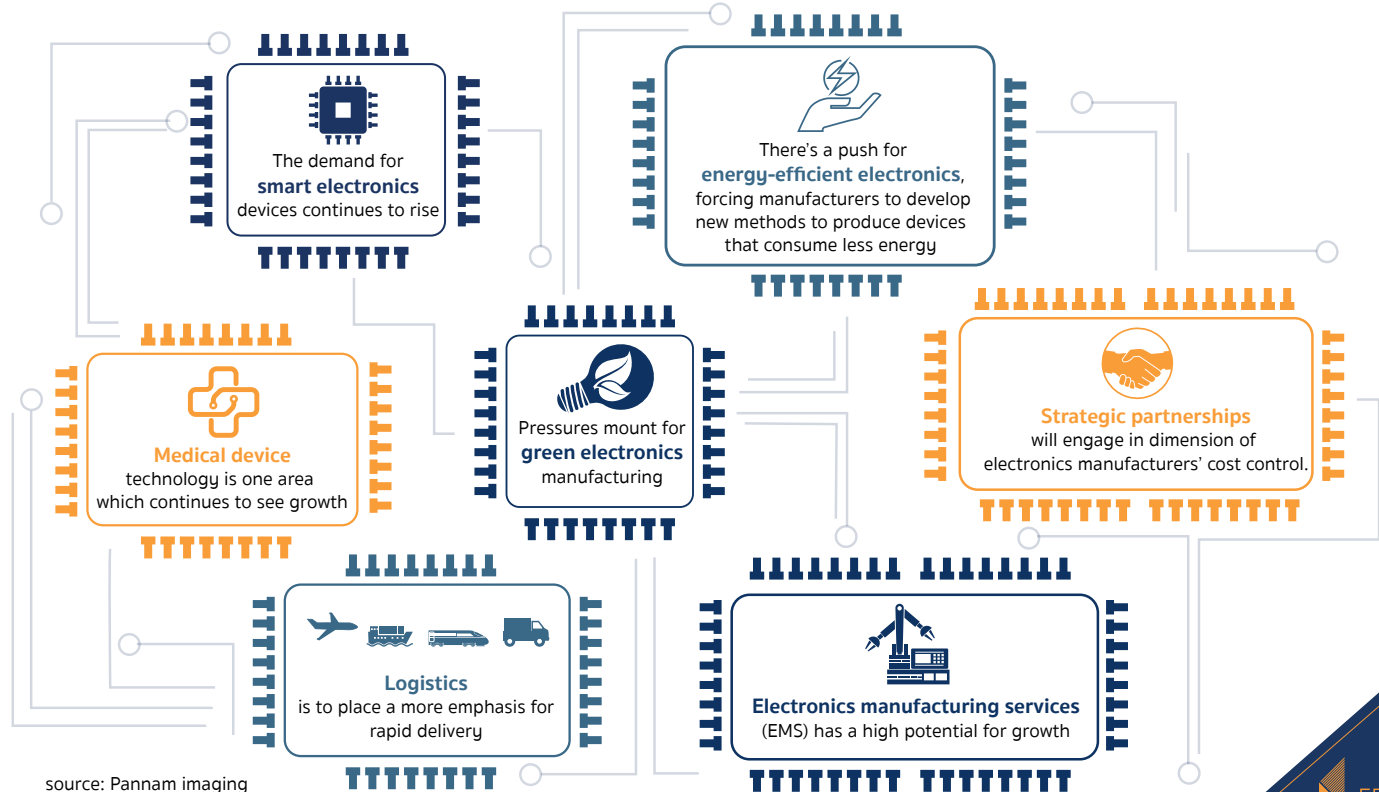
## Trend and Challenges in the E&E Industry

Global Market

Industry  
in Thailand

Investment  
Incentives  
in EEC

Related  
Agencies



source: Pannam imaging

Global Market

Industry  
in Thailand

Investment  
Incentives  
in EEC

Related  
Agencies

## Growth in Global Electrical and Electronic Market by Sub-sector

Unit: Million USD, %

Sector	Value in 2016	2017	2018	2019
Automation	577.5	6%	5%	4%
Electric Drives	146.3	7%	6%	4%
Switchgears & Industrial Control Equipment	202.0	6%	5%	4%
Measurement & Process Automation	229.3	4%	5%	5%
Power Engineering	271.5	4%	4%	4%
Medical Engineering	115.2	5%	5%	5%
Communications Technology	484.0	5%	5%	4%
Information Technology	473.5	4%	4%	3%
Household Appliances	275.3	4%	4%	3%
Lighting	131.8	4%	4%	4%
Consumer Electronics	258.4	3%	3%	3%
Electronic Components & System	1064.4	9%	6%	4%

Note: Forecast at constant exchange rates, Bank of Germany as of 15 October 2018, 1 Euro = 1.1688 USD

Source: German Electrical and Electronic Manufacturers' Association as of July 2018

## The Role of 5G for Industry 4.0

Global Market

Industry  
in Thailand

Investment  
Incentives  
in EEC

Related  
Agencies

### Industry 4.0

Increase the **flexibility, versatility, productivity, resource efficiency** and **usability** of industrial production

**Connectivity** as a key enabler for cyber-physical production systems



### 5G

Strong focus on **machine-type communication** and the IoT<sup>1</sup>

URLLC<sup>2</sup> and mMTC<sup>3</sup> enable completely **new applications**, also in industry

5G as “one size fits all” solution

5G as a key enabler for new & optimized use cases and applications



<sup>1</sup>Internet of Things

<sup>2</sup>Ultra-Reliable and Low-Latency Communication

<sup>3</sup>Massive Machine-Type Communication



## Thailand's Electrical and Electronics Industry

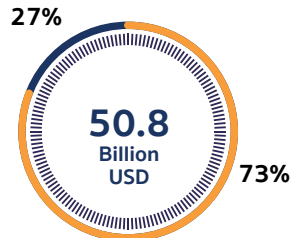
Global Market

Industry  
in Thailand

Investment  
Incentives  
in EEC

Related  
Agencies

### Thailand Electrical and Electronics (E&E) Exports, 2018



● Electronics ● Electrical Products

**27%**

#### Electrical Products

- Home Appliance
- Audio and Video Player
- Parts and Components

**73%**

#### Electronics

- Computer
- Computer Parts & Accessories
- Integrated Circuits & Parts
- Telecommunication Equipment
- Others Electrical Apparatus

Thailand's electrical and electronics (E&E) industry has rapidly evolved over the past five decades.



Thailand was ranked  
**the 13<sup>th</sup> largest E&E exporter**  
in the world in 2018

### Thailand is a major exporter products

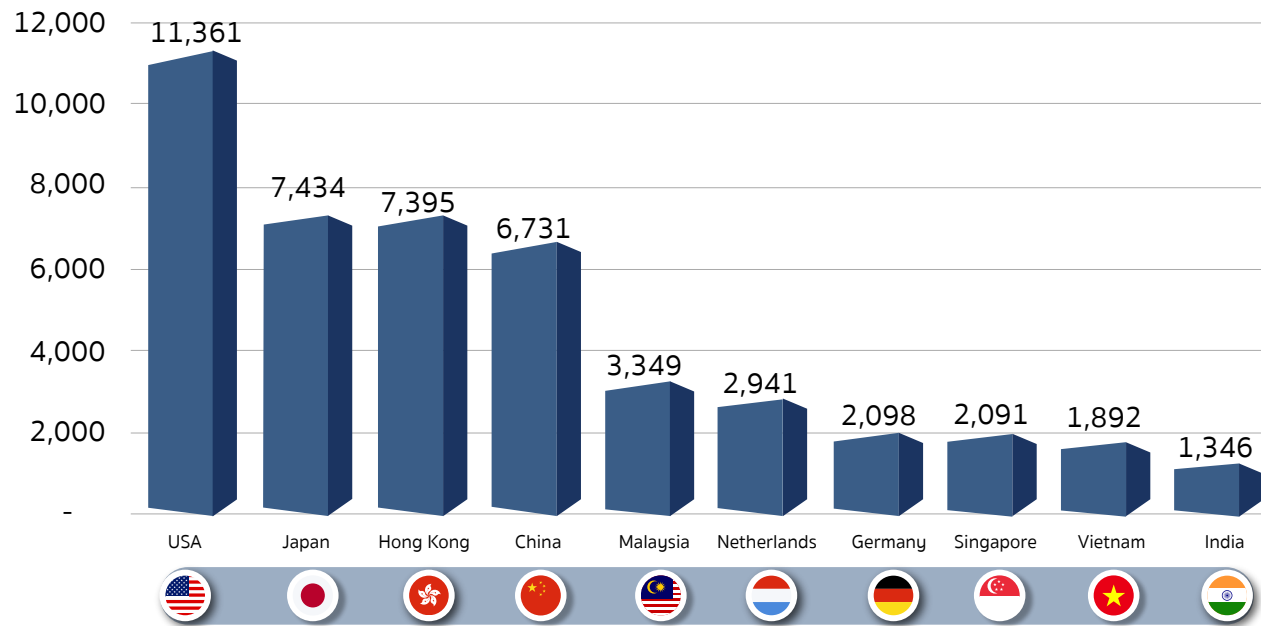
such as Hard Disk Drives and electronic manufacturing services; integrated circuit assembly, packaging and testing; and parts and components for electrical products.



## Top 10 Export Destinations for Thai E&E Products in 2018

### Thailand E&E Export

Unit: Million USD



Source: International Trade Centre

Global Market

Industry  
in Thailand

Investment  
Incentives  
in EEC

Related  
Agencies

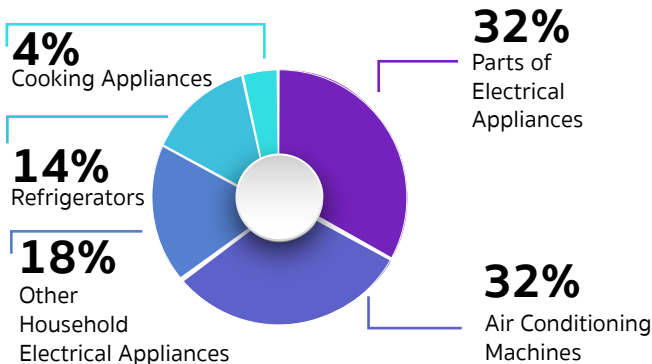
## Overview of Thailand's Electrical Appliance Market

Global Market

Industry  
in Thailand

Investment  
Incentives  
in EEC

Related  
Agencies



The sector is expected to grow by 8-10% annually from 2018 to 2020. The **major exported products** are **air conditioners, cameras, washing machine and refrigerators**.



\*Note: 2018 Data  
Source: Krungsri Research (2017) and International Trade Centre



## Smart Home Appliances

Thailand is moving towards **sophisticated and high-value** and **becoming a hub for manufacturing smart appliances**. Many companies advanced technology products ranging from smart refrigerators, smart washing machines to smart air conditioners.

# INTELLIGENT ELECTRONICS

8

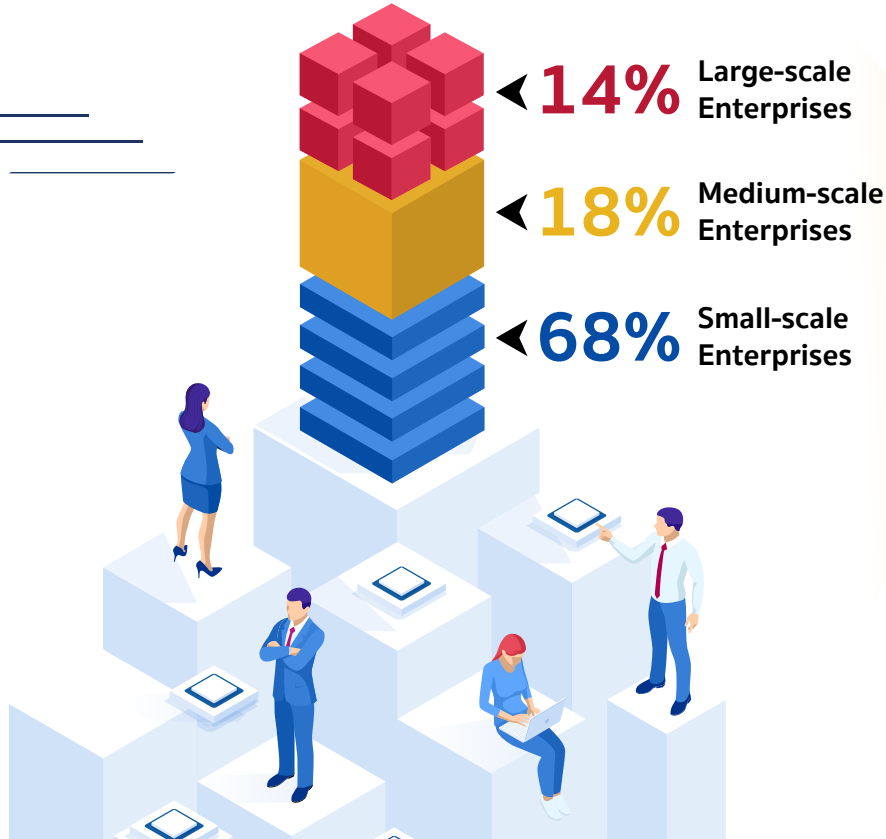
## Electrical Appliance Industry's Structure in Thailand

Global Market

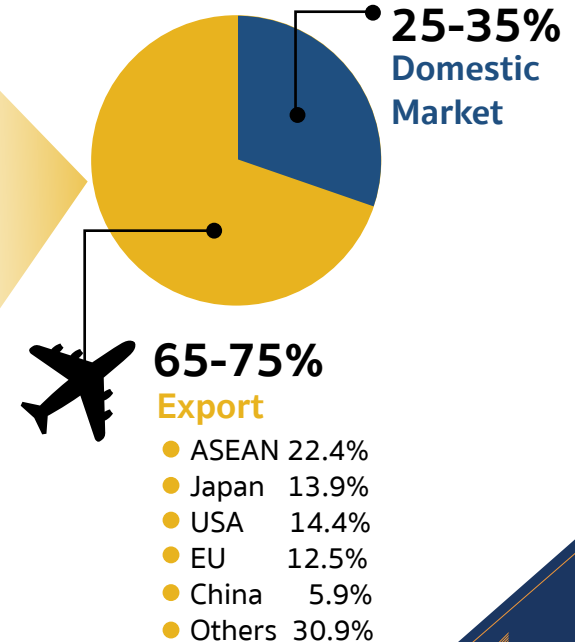
Industry  
in Thailand

Investment  
Incentives  
in EEC

Related  
Agencies



## Electrical Appliance's Destination



Source: Krungsri Research (2017)

## Investment incentive package for investment projects in the Eastern Economic Corridor (2020-2021)

Key features	Investment Incentives	Targeted activities			
		Section 8	A1	A2	A3
1. Standard tax package	Tax holidays	10 Years (no cap)	8 Years (no cap)	8 Years	5 Years

### Human resource development programs (additional tax incentives)

2. Investment projects which are engaged in human resource development programs	Tax holidays	2 Years (no cap)	-	-	-
	50% reduction of CIT	-	3 Years	3 Years	3 Years

### Projects located in the four promoted zones for specific industries (EECi, EECd, EECA and EECmd) OR industrial estates and promoted industrial parks

3. Investments located in EECi, EECd, EECA and EECmd	Tax holidays	1 year (no cap)	-	-	-
	50% reduction of CIT	-	2 Years	2 Years	2 Years
OR					
3. Investments located in industrial estates and promoted industrial parks.	Tax holidays	1 year (no cap)	-	-	1 Year
	50% reduction of CIT	-	-	-	-

### Remarks:

- A1 : Knowledge-based activities focusing on R&D and design to enhance the country's competitiveness.  
A2 : Infrastructure activities for the country's development, activities using advanced technology to create value-added, with no or very few existing investments in Thailand.  
A3 : High technology activities which are important to the development of the country, with a few investments already existing in Thailand.  
Section 8 : Technology and Innovation Development includes targeted core technology development such as development of biotechnology, nanotechnology, advanced materials technology and digital technology.

### New investment promotion measure in EEC

- Starting January 2, 2020

According to the announcement of the Board of Investment No.2/2563, announced on January 15th, 2020,

- Applications must be submitted by the last working day of 2021.

- Projects located in the four promoted zones for specific industries (EECi, EECd, EECA and EECmd) are eligible for the incentives without application deadline.

Global Market

Industry  
in Thailand

Investment  
Incentives  
in EEC

Related  
Agencies

## SUPPORTING ORGANIZATIONS

Global Market

Industry  
in Thailand

Investment  
Incentives  
in EEC

Related  
Agencies



The Electrical and  
Electronics Institute ( EEI )



Promotes and supports  
the development and export  
of electrical and electronic products,  
as well as serving as a center  
of information for the industry.



The National Electronics  
and Computer Technology  
Center (NECTEC)



Undertakes, supports, and promotes  
the development of electronics and  
computer technologies through  
research and development activities.



Thailand Science Park  
(TSP)



Research centers provide services  
ranging from technology transfer  
from universities and technology  
centers to financial assistance and  
business incubation.

Source : BOI



Thailand Organic and  
Printed Electronics  
Innovation Center  
(TOPIC)



Supports and promotes the Organic  
and Printed Electronics Industry in  
Thailand through R&D,  
One-Stop-Service and to make  
Thailand the location of O&PE  
infrastructure.

Thai Embedded Systems  
Association (TESA)



Promotes and supports  
the development of the electronics  
design industry in Thailand by  
producing a skilled and innovative  
engineer supply pool for  
the electronics industry.



Electrical Electronics,  
Telecommunications and  
Allied Industry Club  
(EETIC)



Supports and strengthens  
the relationship between  
industrial club members in  
establishing a network in order  
to enhance efficiency for  
the industry.