

"Your Ultimate Solution Partner"



How have Thai corporates adapt to new normal and what are the next move?

***Ms. Jareeporn Jarukornsakul, Chairman and Group Chief Executive Officer
WHA Corporation PCL.***

26 August 2020



Ms. Jareeporn Jarukornsakul

Position & Company

- **WHA Corporation PCL.**
 - Chairman of The Board of Directors
 - Chairman of the Executive Committee
 - Group Chief Executive Officer
- **WHA Industrial Development PCL.**
 - Chairman of The Board of Directors
 - Chairman of the Executive Committee
- **WHA Utilities and Power PCL.**
 - Chairman of The Board of Directors
 - Chairman of the Executive Committee
 - Chairman of the Risk Management Committee
- **Siam Commercial Bank PCL.**
 - Director
 - Member of the Technology Committee
 - Member of the Corporate Social Responsibility Committee

Degree Obtained

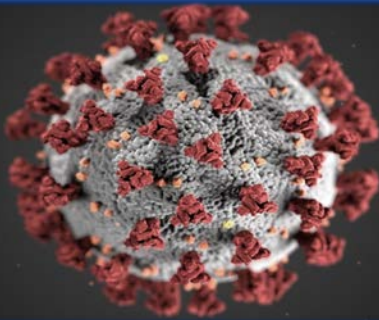
- Bachelor of Public Health, Mahidol University
- Master of Business Administration (English Program), Bangkok University
- Honorary Ph.D. (Arts), Logistics & Supply Chain Management, Christian University

Award

- Bangkok University Alumni Award 2020 , hosted by the BU Alumni Association
- Mahidol Thayakorn Award 2018 for the most outstanding Mahidol Alumni from Mahidol University Alumni Association under the Royal Patronage of His Majesty the King winners list
- Outstanding Asean Women Entrepreneurs 2018 Award from Asean Women Entrepreneurs Network
- Frost & Sullivan Thailand Excellence Award 2017 (Warehouse Development)
- Thailand TOP Company Awards 2017 (Warehouse Development Company) by the University of the Thai Chamber of Commerce and Business Plus Magazine
- Quality Persons of The Year 2016 (Section : The Property Developer), Foundation of The Scientific and Technological Council of Thailand (FSTT)
- Woman Entrepreneur of The Year 2016 by Asia Pacific Entrepreneurship Awards
- Thailand Corporate Excellence Awards 2015 by Thailand Management Association
- Outstanding Alumni of Faculty of Public Health 2015 by Mahidol University

Training

- Thailand Energy Academy (TEA9/2017)
- Senior Executives on Justice Administration Program, National Justice Academy, Office of Judiciary (*BYS 20/2015*)
- Director Certification Program, Thai Institute of Directors Association (IOD) (*DCP210/2015*)
- Executive Program, Capital Market Academy (CMA) (*CMA18/2014*)
- Director Accreditation Program, Thai Institute of Directors Association (IOD) (*DAP 94/2012*)
- National Defense Course (NDC60), National Defense College



**COVID-19
Pandemic**



**Global Economic
Slowdown**



**Black Lives Matter
Movement**



**Hong Kong's National
Security Law**



**Digital
Transformations**



**Sustainable
Development**

COVID-19 to Slash 2020 Growth

“A Crisis Like No Other”

IMF, June 2020

WORLD



CHINA



EUROPE



JAPAN



USA



THAILAND



MIDDLE EAST



VIETNAM



INDIA



2020F

Original figures before COVID-19

2020F

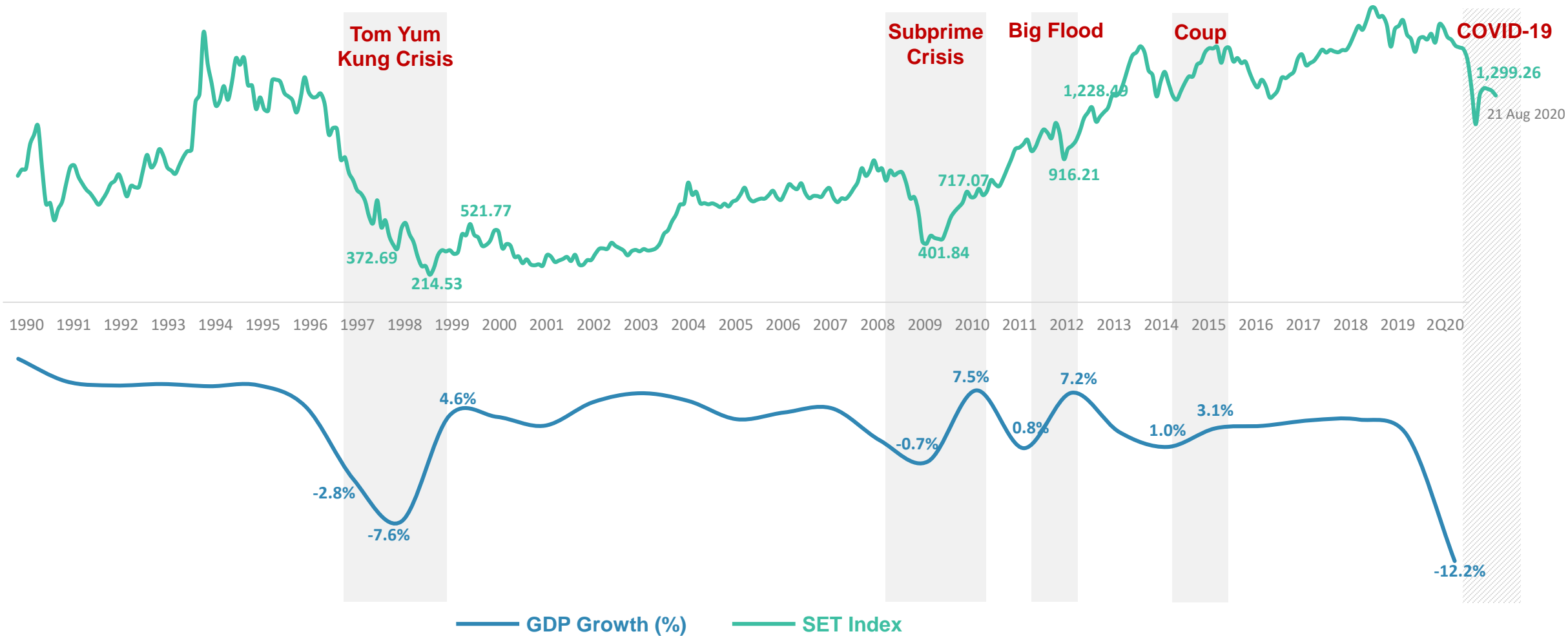
Estimated figures after COVID-19 by IMF

2021F

Estimated figures after COVID-19 by IMF

Thailand During Crisis

Resilient Thailand?

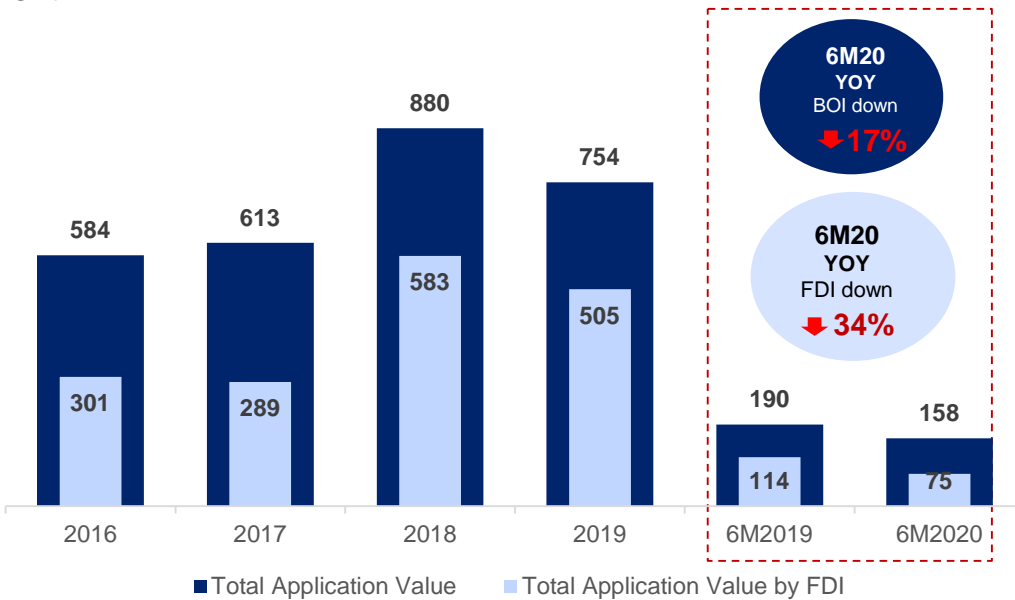


Thailand Investment Situation – Private Sector

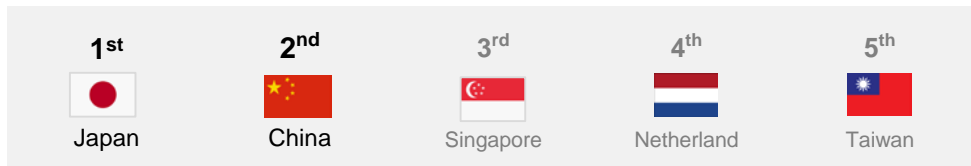
FDIs slow in the second quarter, BOI launches new campaign highlighting core competencies of Thailand

Private Investment - BOI Application Value and FDI Value

Unit : THB Bn



Top Sources of FDI in 6M'2020



Supporting Measure To alleviate COVID-19 Business Impact


- Thailand considering 'business bubble' plan in bid to boost economy
- BOI launching an online document submission service (e-submission) apart from existing e-services
- IEAT reducing rental, property, and management fees for industrial customers

The New Campaign "Think Resilience, Think Thailand"



Investment Relocation

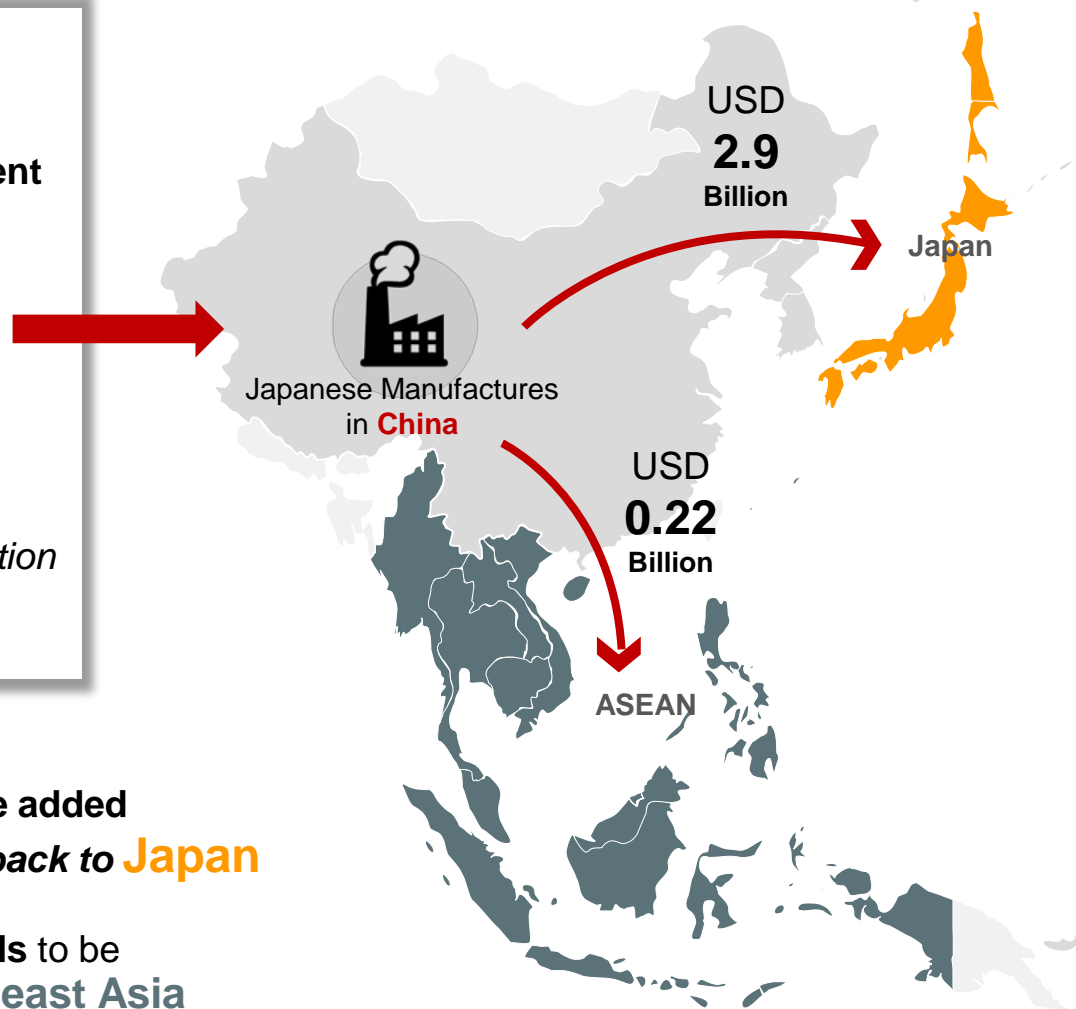
Japan sets aside ¥243.5 billion (equivalent to USD 2.3 bn) to help firms shift out from China



The Japanese government earmarked

USD 2.32 Billion

to help *Japanese manufacturers shift production out of China*



Latest Status

USD **653** Million
(70 Billion Yen)

were approved in the first round to subsidize

87 Companies request to move out from China

USD **542** Million

Approved for **57 companies** to move back to **Japan**

Example of company

- Irsis Ohayama Inc.
- Sharp Corp.

USD **123** Million

Approved for **30 companies** to move to **Southeast Asia nations**

Out of 30 companies

- 15 companies eye on Vietnam
- 5 companies eye on Thailand
- The others target Philippines, Myanmar, Malaysia and Laos

- Production of **High-value added products** to be **shifted back to Japan**
- Production of **other goods** to be diversified across **Southeast Asia**

Chinese investments are expected to increase, mainly for the high-tech industry



5 Investor Groups

- Relocation due to Trade War
- High-Tech Industry
- Infrastructure and Logistics
- Regional Headquarter
- General Sectors

2019

257 Projects

THB **280** billion

Chinese investment applications surpassed those made by Japanese companies for the first time

2020 (6 Months)

121 Projects ↑ 17%

THB **21.9** billion ↓ 28%

- Electric Vehicles -	- Smart Electronics -	- Genomics-
		 <small>GLOBAL GENOMIC SERVICES</small>
- Digital and Technology -		- Others -
		Medical Sector e.g. Rubber Glove

Thailand and Its Ability to Contain Coronavirus

Thailand ranks first among the countries with the highest COVID-19 recovery index, according to a report issued by the Global COVID-19 Index (GCI)



The GCI ranks countries based on Severity and Recovery Rating scores.

COVID-19 Severity Rating

1st

Severity Index

10.69

(Out of 100) (0 = Best, 100 = Worst)

COVID-19 Recovery Rating

5th

Recovery Index

82.06

(Out of 100) (100 = Best, 0 = Worst)

The GCI report, published on 28 July 2020

Sectors Set to Outperform Post COVID-19

E-Commerce



- E-Commerce platforms have undergone a **6% global traffic increase** between January and March 2020 (Statista)
- The COVID-19 will result in permanent change to shopping behavior as **convenience beats price as the #1 reason** for online shopping (Deloitte)

Food Delivery



- The revenue of the online **Food Delivery in Thailand** is projected to reach **\$275 million** in 2020 with expected an annual growth rate **CAGR 2020-2024 of 13.5%** (Statista)
- The number of food deliveries will be in the range of **66-68 million orders**, or **growth of up to 80%**, which is a tremendous leap upward compared to the previous year (KResearch)

Digital Healthcare



- The number of new users on **Ping An Good Doctor**, a Chinese healthcare services platform, **rose nearly 900%** in January 2020, compared with December 2019 (Bain & Company)
- Consumer adoption has skyrocketed, from of US consumers using telehealth in 2019 to **projected 45% of US consumers** using telehealth in 2020 (McKinsey)

Workplace Communication



- Global downloads of **workplace communication tools** application like Zoom, Teams, Slack etc. have **surged over 100%** amid the pandemic (Statista)
- **Zoom** has had a **78% increase** in revenue over the previous year in Q12020 (WSJ)
- Widespread telework will remain a **permanent feature** of the future working environment (OECD)

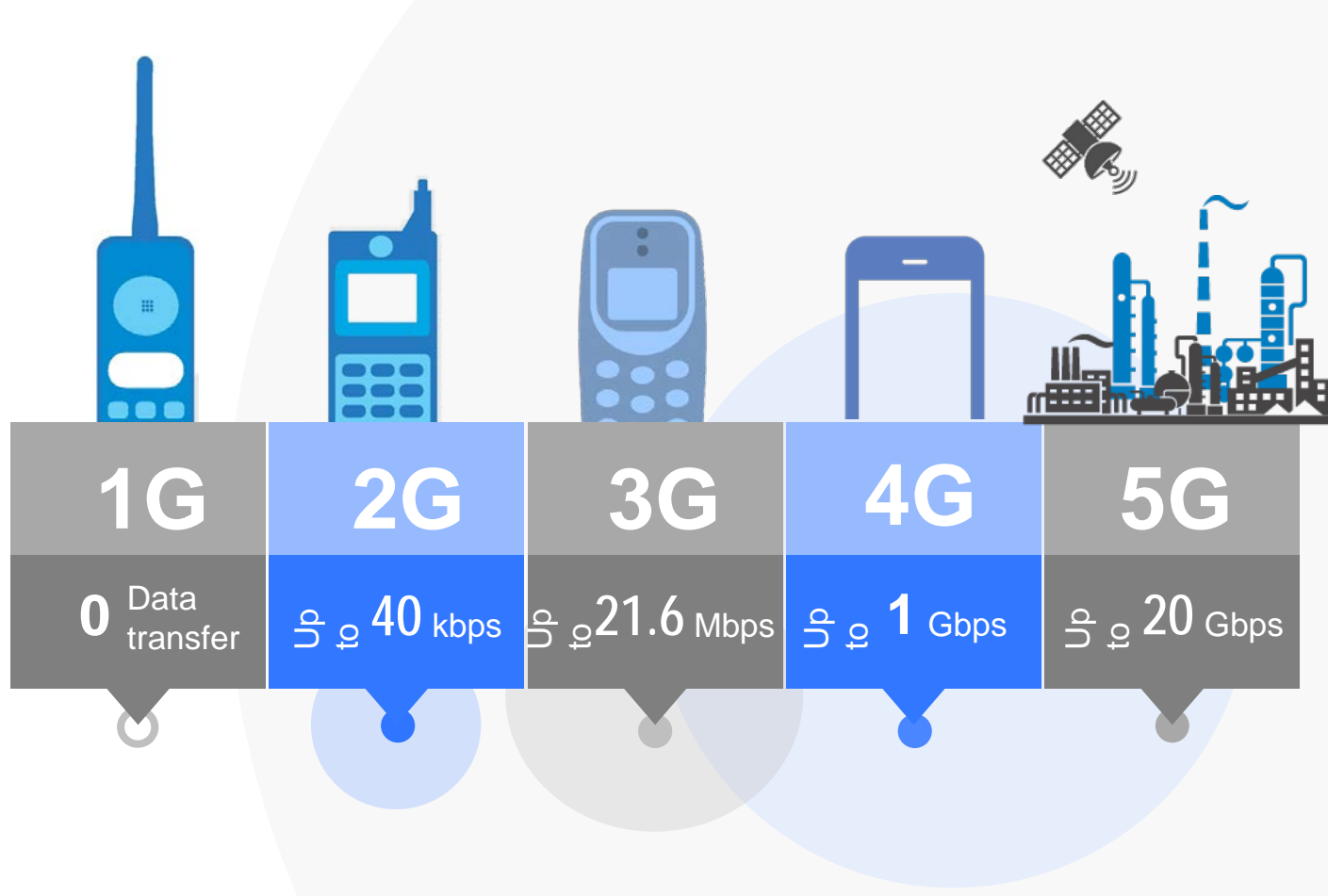
Contactless Payment



- **E-Wallet and cashless payment** are no longer a convenience but the **crucial part of "new normal"** (Computerworld.com)
- **One-fifth** of consumers surveyed internationally amid the coronavirus outbreak believed contactless payments to be a **cleaner alternative** to other payment (Businesswire.com)

5G Technology

5G is the latest wireless network connectivity with potential large-scale application for both consumer and enterprise segments as it promises to deliver capabilities that previously unattainable on 4G network



5G has differentiated itself by delivering various improvements



10x Decrease in latency:
Delivering latency as low as 1ms.



10x Connection density:
Enabling more efficient signaling for IoT

10x



Experience throughput:
Bringing more uniform, multi-Gbps peak rate



3x Spectrum efficiency:
Achieving more bits per Hz with advanced antenna technique



100x Traffic capacity:
Driving network hyper-densification with more small cell everywhere

100x

Network efficiency:
Optimizing network energy consumption with more efficient processing





“Be market leader in aligning vertical integrated logistics facilities provider, total solution industrial estates, utilities, power, and digital infrastructure platforms with high quality capturing throughout value chain in Asia”



Higher Value Properties, Riding Technology Wave

#1 First Class Premium Logistics Infrastructure Developer

Emphasis on Strategic Partnerships
Establish long term and mutually beneficial partnerships with global and regional players

- Smart Warehouse
- Internet Of Things
- Automation
- Big Data

Capitalize on High Growth & Government Supported Sectors

- E-Commerce
- Aviation & Aerospace
- Food processing
- Automotive
- Seaport or other transportation infrastructure

Regional Expansion
Leverage on Industry Leadership in Thailand to Expand to Strategic Target Countries

■ Existing Footprint
■ Under Study

>2.4 Million Sq.m.
under owned and managed

36
Locations in Thailand

Our logistics facilities are located in Strategic Locations in Thailand

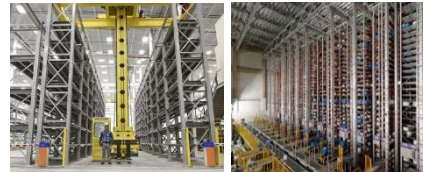
#1 Built-to Suit (BTS) Warehouse and Factories
World Class standard warehouse and factories built to specific client's requirements

200+ well-known tenants profile

Embracing Smart Technologies

- AUTOMATION
- FLEXIBILITY
- REAL-TIME CONNECTION

Automated Storage and Retrieval Systems (AS/RS)



RFID (Radio Frequency Identification)



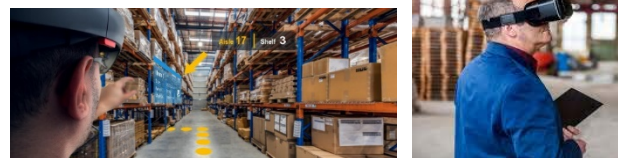
Collaborative Robots (Cobots)



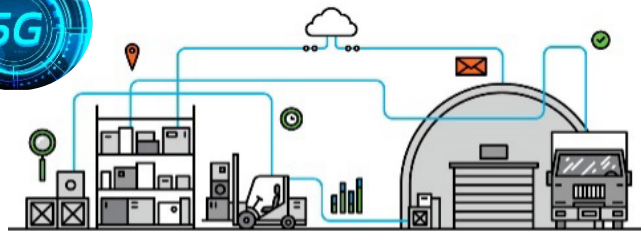
Automated Guided Vehicles (AGVs)



Augmented/ Virtual Reality



Internet of Things



Signed MOU with “GROUND Inc.” a leading LogiTech® business in Japan



To optimize warehouse operation using Artificial Intelligence & Robots

Industrial Development Business

#1 Industrial Developer in Thailand

11
Industrial Estates

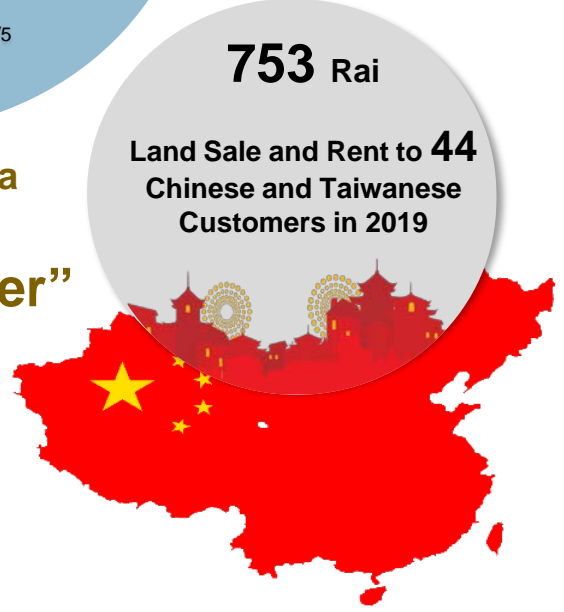
68,900
Rai^{1/2}



1
Industrial Estate

12
Industrial Estates^{1/1}
50% Market Share⁴
No.1 for 5 years
65 New Customers⁵

Successfully Captured China Investments As
“Most Ready Developer”



Remark: ¹ including new Industrial Estate WHA RY36
² including 44,400 Rai operating and under development in Thailand and Vietnam
³ including LOI of 112 rai in Thailand and MOU of 83 rai in Vietnam
⁴ market share based on adjusted accumulated land transfer since 2014 to 2019 (reference total market number from CBRE)
⁵ New customers include customers from land sales and rental building in Thailand

Extending Our Domestic Leadership

The Most Ready Industrial Estate Developer to Capture Continuing Investment Relocation and New S-Curve Opportunities

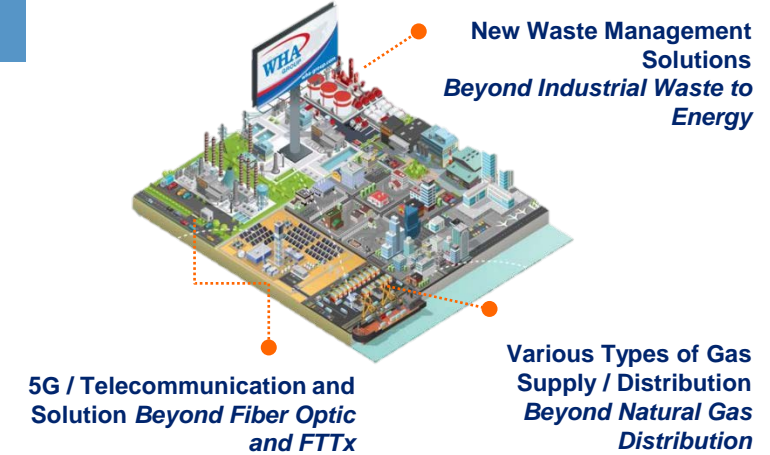


Higher-Value Moving Up

All WHA Industrial Estates applied EEC for promoted 10 new S-Curve Industries

- WHA ESIE4
WHA ESIE3
- WHA ESIE
WHA ESIE2
ESIE
- WHA CIE
- WHA CIE2
- New I.E. in Rayong
- WHA EIE

Collaborations With Industry Experts For New Products and Services



Embracing New Technologies and Innovation

Continue Rolling out "Smart Eco IE Concept" in WHA Industrial Estates

Sustain Efforts to Increase Land Bank in Target Areas

Explore strategic partnerships for land acquisition and new IE development

LAND STOCK IN THAILAND
10,000Rai¹

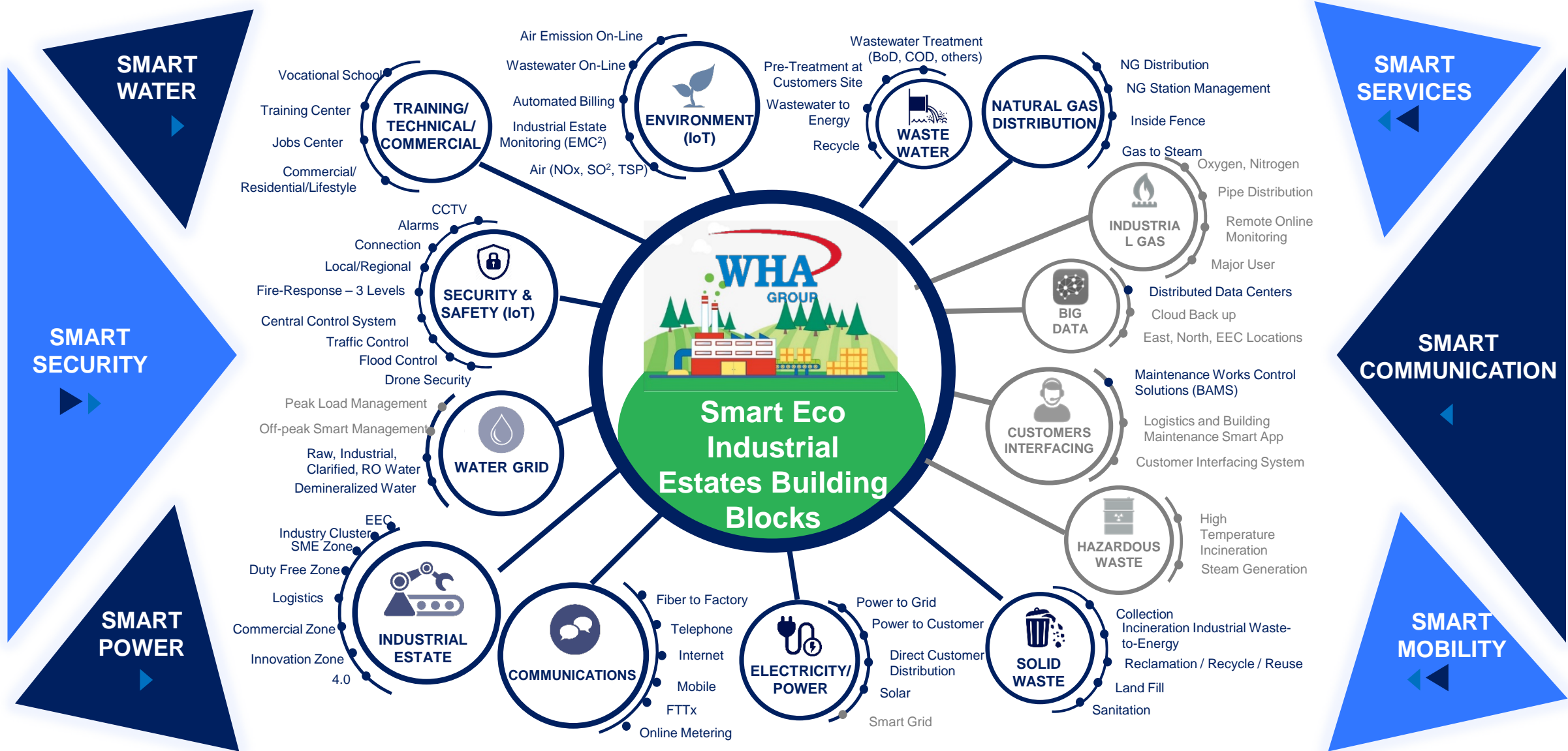


Smart Industrial Estate Certificate

Awarded By Digital Economy Promotion Agency's Smart City Thailand Office for the commitment to develop Smart IE

Officially Being Smart IE in 2020

Remark: ¹Land Stock is Gross Area Including Land Under Developing and Plan to Develop as well as Raw Land



Water Product/Services and Capacity

Growing Beyond the Core

New WHA IEs
Non-WHA IEs

Launch Innovative Products and Solutions

Wastewater Reclamation, RO Water, Demineralized Water, Smart Water Solution, Wastewater Pretreatment

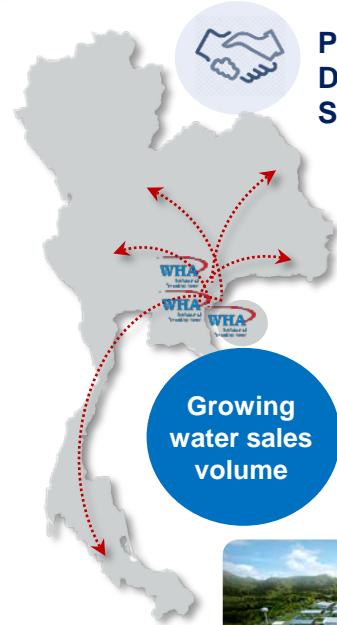


Industrial Water

Wastewater Treatment

Municipal Water

Reclaimed & Demineralized Water



Partner with Industrial Estate Developers to provide Utility Solution



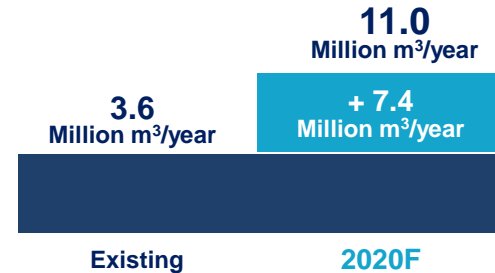
New up-coming WHA IEs (WHA RY36, WHA IER and WHA SIL2)

Growing water sales volume



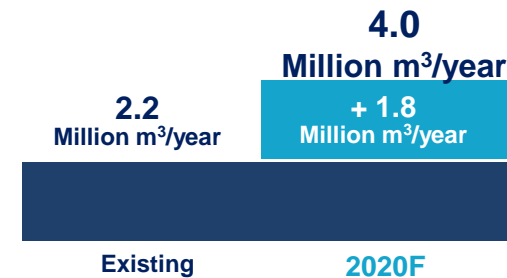
Up to 400,000 m3/yr (full capacity)
Central Wastewater Treatment Plant
30Y BOO contract with PTT
(Expected to be complete in 4Q'20)

RECLAMATION WATER



Wastewater Reclamation Plant (WHA EIE)

DEMINERALIZED WATER



Demineralized Water Plant (GPSC)

Enlarging Power Portfolio

Continuing Growth from Projects Under Construction and Committed Projects in Pipeline



Conventional Power Plants



547

Equity MW of Existing Conventional Power

PARTNERSHIP



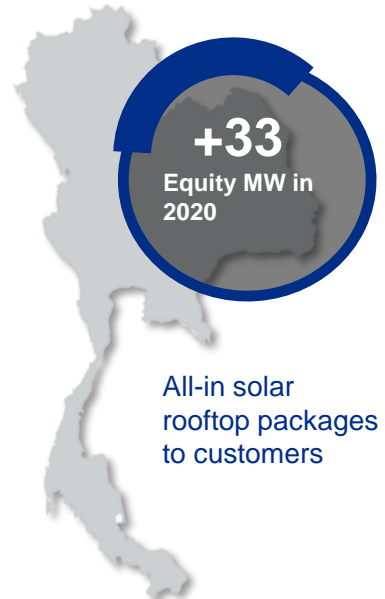
Renewable Energy



Solar Rooftops

20

Equity MW COD as of Q220



Natural Gas Distribution



Operating Projects – WHANGD 2 & 4

Under Development – WHANGD 3 (EIA Approved)

PARTNERSHIP & COLLABORATIONS



Industrial Waste to Energy



Chonburi Clean Energy PARTNERSHIP



3

Equity MW

Utilities and Power Business

Solar Monitoring



Benefits of Monitoring System

- Detect and send alert to owners when problems occur
- Compute and quantify saving on electricity
- Track how much electricity that owner use
- Save time and increase efficiency
- Compute and measure carbon reduction
- Ensure regular maintenance

Sample of Solar Rooftop Projects

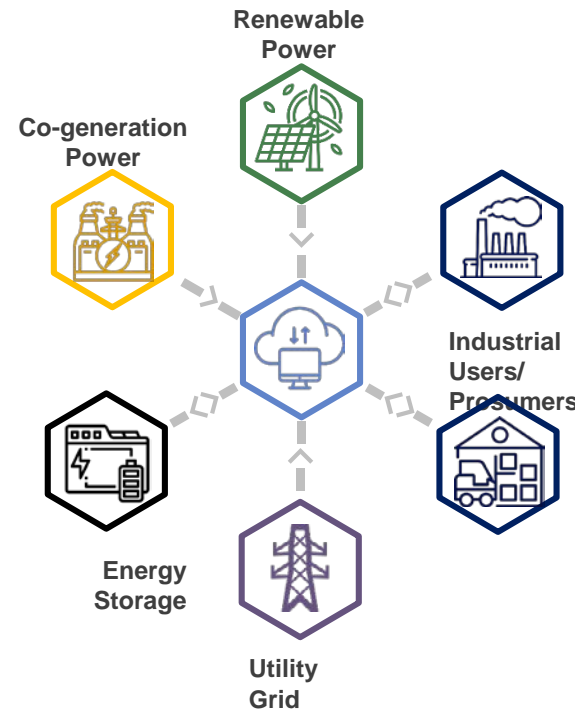


4.88 MW



4.99 MW

Smart Microgrid



Benefits of Smart Microgrid

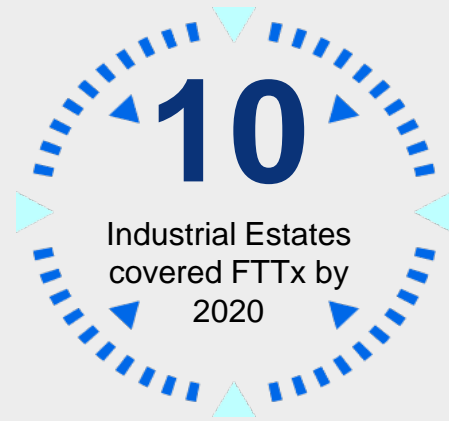
- ⚡ Enhance reliability, efficiency and cost saving for industrial users
- ⚡ Increase opportunity to Invest in distributed generation
- ⚡ Enhanced grid resiliency



WHA signed a Memorandum of Understanding with PEA

for a joint feasibility study on **energy innovation projects** under the Energy Regulatory Commission Sandbox (ERC Sandbox) program and joint implementation of other energy innovation projects in WHA Group's industrial estates.

FTTx: Enhancing Digital Connectivity



- Leverage WHA Group's customers base to capture captive demand
- Recurring income
- Becoming provider of FTTx infrastructure of WHA Group

1 Industrial Estate having 100% FTTx coverage

6 Industrial Estates having partial FTTx coverage (100% coverage by 2021)

3 Industrial Estates to start FTTx service by 2020

WHA SIL

1.3
Cores Per Factory

Tendency to increase in the future!

WHA CIE 2, ESIE, WHA ESIE 1, WHA ESIE 2, WHA ESIE 3, WHA ESIE 4

WHA CIE, WHA EIE, WHA RIL

Data Center: Gaining Traction



- Attract customers through cross selling with existing services (network infrastructure, DC & Backup and System Integrators)
- Leverage from WHA Group's customers base
- Moving up the value chain (from IAAS to PAAS and SAAS)

TIER III **356** Equity Racks Capacity

TIER IV GOLD **102** Equity Racks Capacity



PRODUCTS & SERVICES

Colocation Service



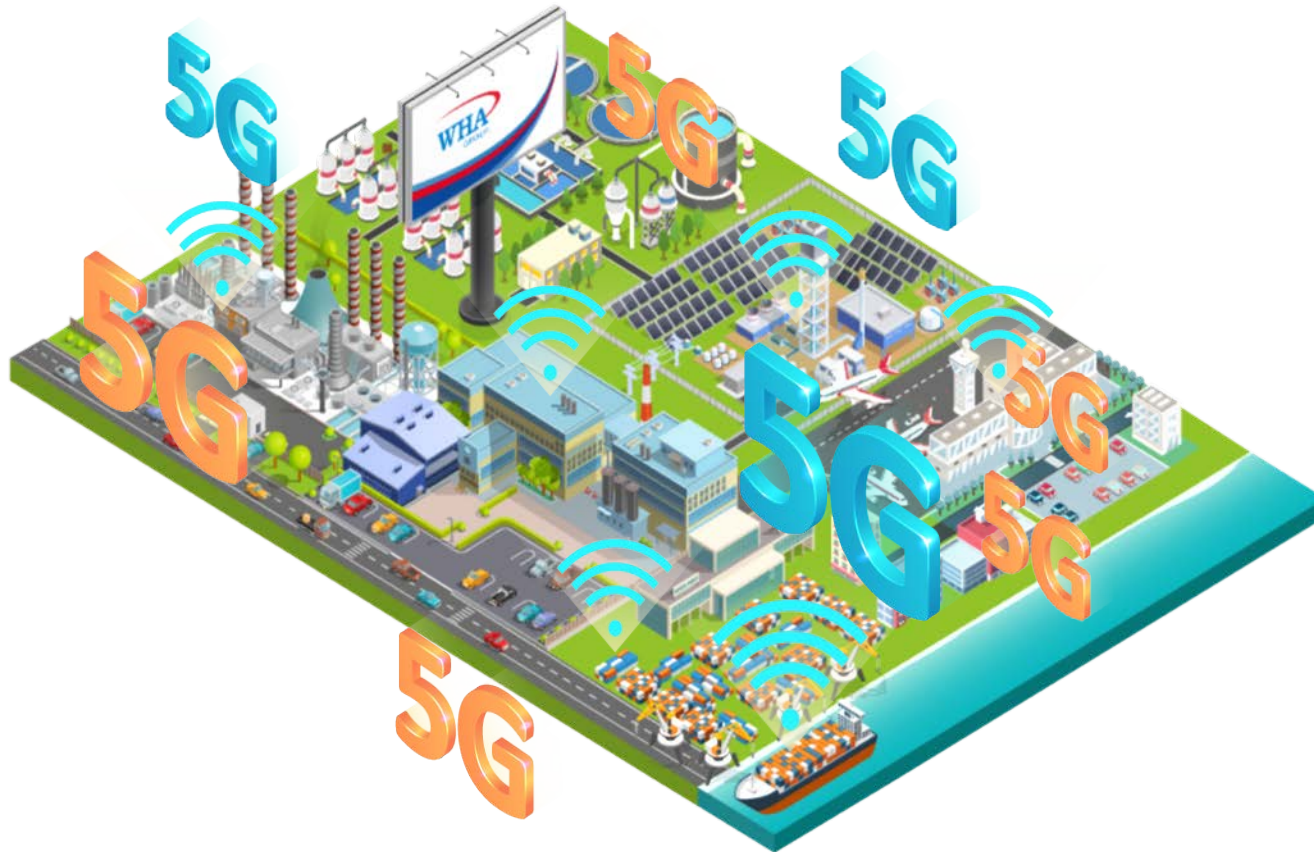
Cloud Computing Service



5G - Potential Applications for WHA Group

5G Sandboxes

WHA to offer 5G network to our customers through cooperation between telecom operators and government authorities within WHA boundaries



5G Potential Use-Cases



Autonomous Vehicles
e.g. driverless car and truck



Smart Homes/Buildings/Cities
e.g. smart light, smart meter



Critical Infrastructure Protection & Control
e.g. Smart Grid



New Form Factors
e.g. wearables and sensors



Process Automation
e.g. aviation, robotics



Extreme Mobile Broadband
e.g. UHD Virtual Reality

Enabling

5G Availability in all IEs
5G & FTTx Management Plan

5G Telecom Tower

Construct the tower and lease slots out to telecom operators



Fiber Optic

Providing FTTx for offload traffics from telecom towers



Deployment

Collaborates with 5G operators to create new business model and provide more solution for Customer in IEs.



Autonomous Truck



Remote Control Forklift



Field Maintenance Smart Assistance

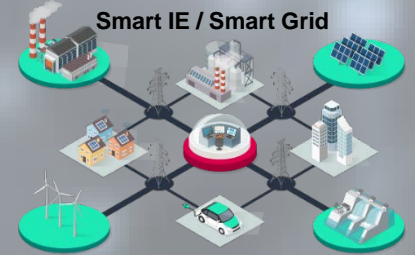


360° Camera for Security Surveillance



Empowerment

Add elements & Features
Enhance Management



Smart Manufacturing



Traffic Management



Smart Warehouse





**Your Ultimate
Solution Partner**