

RATCH

Powering the Future

8 March 2019



dbTICSO Thailand Energy & Utilities Sector Corporate Day

Agenda

01 Vision & Mission & Strategies

02 Company Overview

03 Group Performance

04 Financial Performance

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Vision & Mission

Vision : To become a leading value-oriented
energy and infrastructure company in Asia Pacific

To ensure shareholders' value creation by continuously generating superior financial returns

M1

M4

To raise employees' awareness and motivation of self-development in preparation for future business competition

To achieve world-class operational excellence and enhance competitiveness

M2

M5

To support long-term domestic energy security and infrastructure

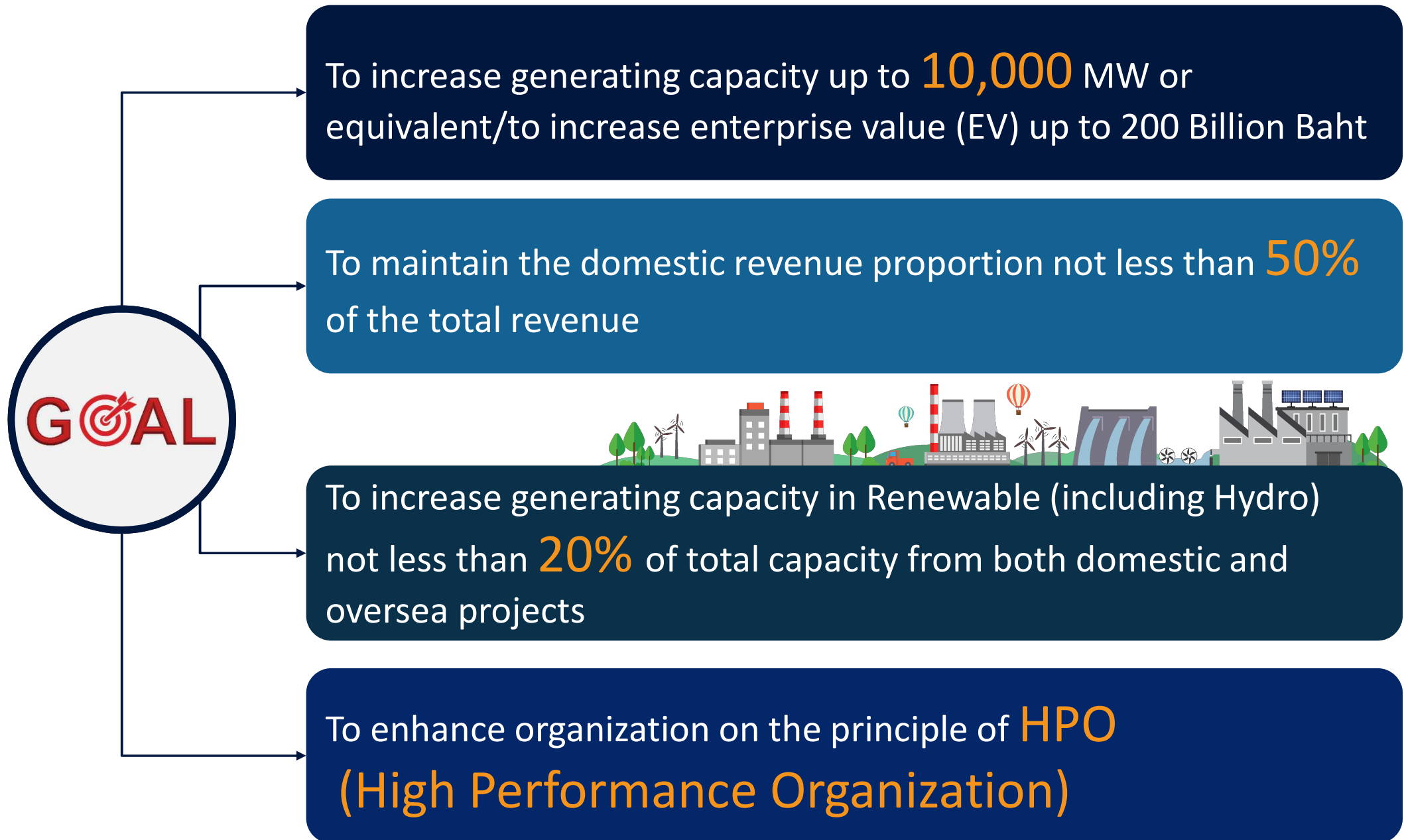
To be socially and environmentally responsible, conducting business in a fair and sustainable manner and complying with all related laws and regulations

M3

M6

To seek new opportunities and alternatives in related and other businesses to generate growth and expand business base for shareholders

Goal



Our Aspiration to Move Upward “Investment Grade”



“S & P Global Ratings’ population of rated Infrastructure credits has grown substantially over the years”

Source: S & P Global Ratings

Valued Portfolio to Enhance Long-term Growth

- ☐ **Electric Power Generation**
: Gas, Coal, Mining, LNG
- ☐ **Renewable Energy**
: Wind, Solar, Hydro, Biomass, Nuclear, Geothermal, Wood Pallet
- ☐ **O&M**



- ☐ **Water Supply**
- ☐ **Waste Water Management**



Power

Water Supply

Energy & Infrastructure

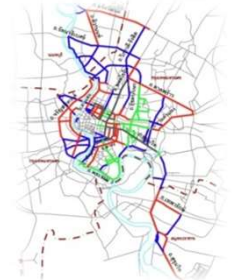
Transportation

Telecommunication

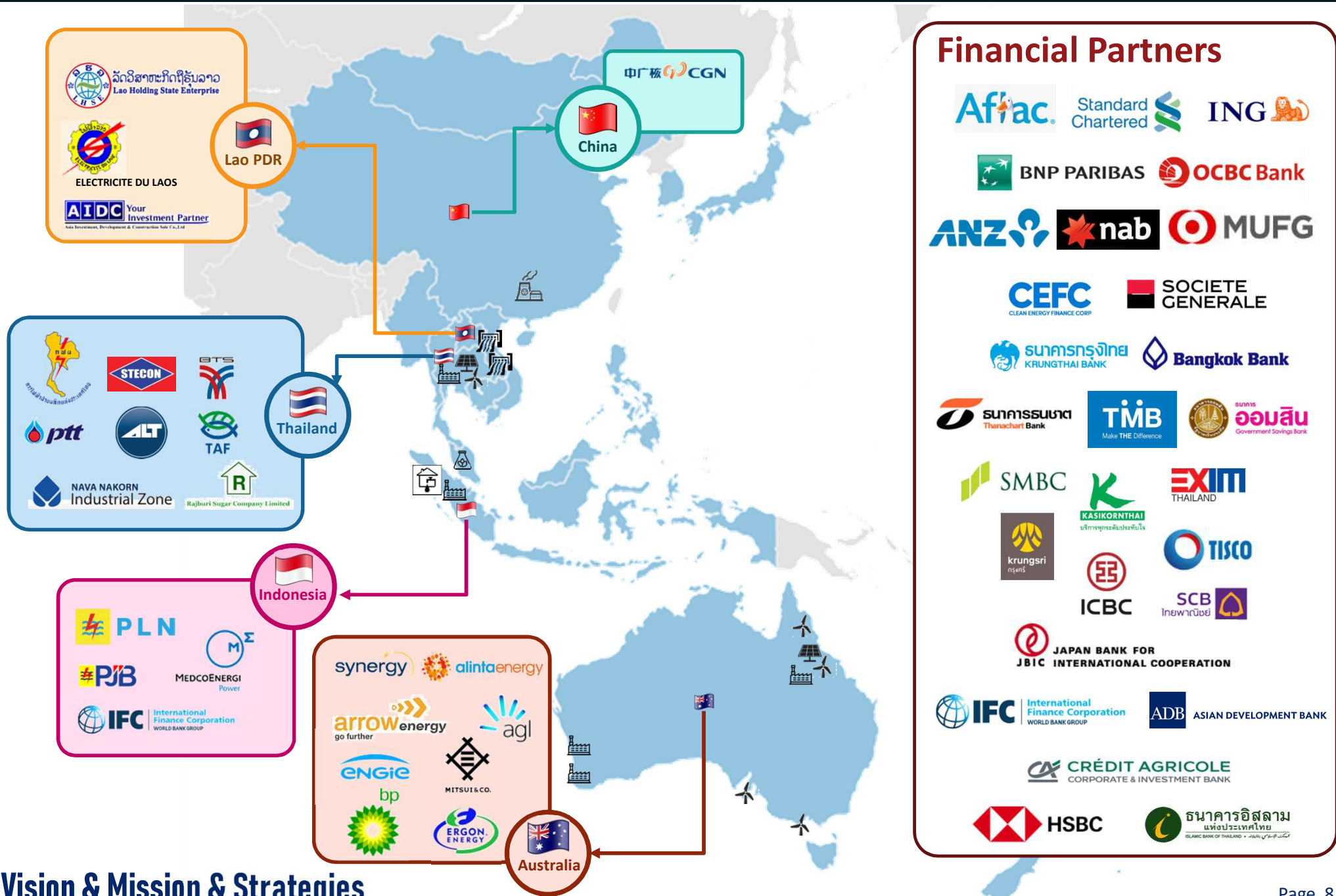
- ☐ **Roads**
- ☐ **Rails**
- ☐ **Mass Transit**
- ☐ **Ports**
- ☐ **Airports**



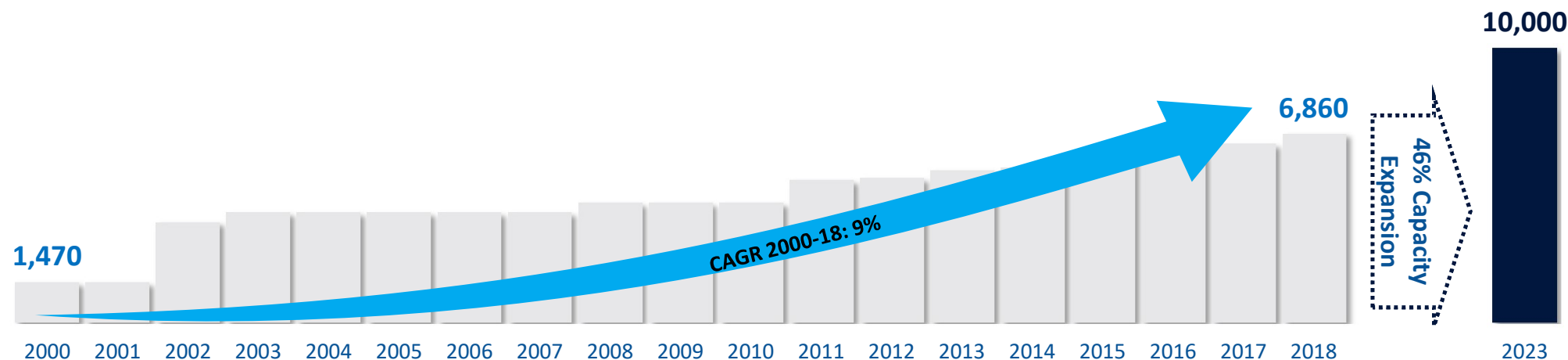
- ☐ **Underground Fiber Optic Network**
- ☐ **Smart Grid/Smart City**
- ☐ **Broadband Connectivity**



Geographical Diversification with Strong Partnership



Continued Growth Projects Investment



- Founded in 2000
- Owned, constructed and completed RATCHGEN, Thailand's largest IPP

- Successfully acquired, constructed and managed IPPs, SPPs and renewable projects in Thailand and Lao

- Strategically expanded to Australia and Indonesia

- Recognized the benefit from greenfield renewable projects in Australia and completed the best-in-class acquisition deal in Indonesia

✓ Successfully set up large capacity power plants

✓ Experience in renewable energy, Huay Bong 2 & 3, one of the largest wind farms in Southeast Asia

✓ On schedule completion for majority of projects

✓ Continued growth projects investment as planned

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Company Overview

OVERVIEW

- Listed on the Stock Exchange of Thailand since 2 November 2000
- Investment company in the electricity generation business based in Thailand
- Largest independent power producer (“IPP”) based in Thailand by total capacity
- Primarily involved in the construction, development and operation of power plants in Thailand, Laos, Australia and China
- Market Cap of USD 2,456 million* (THB 78,300 million) as at 5 March 2019

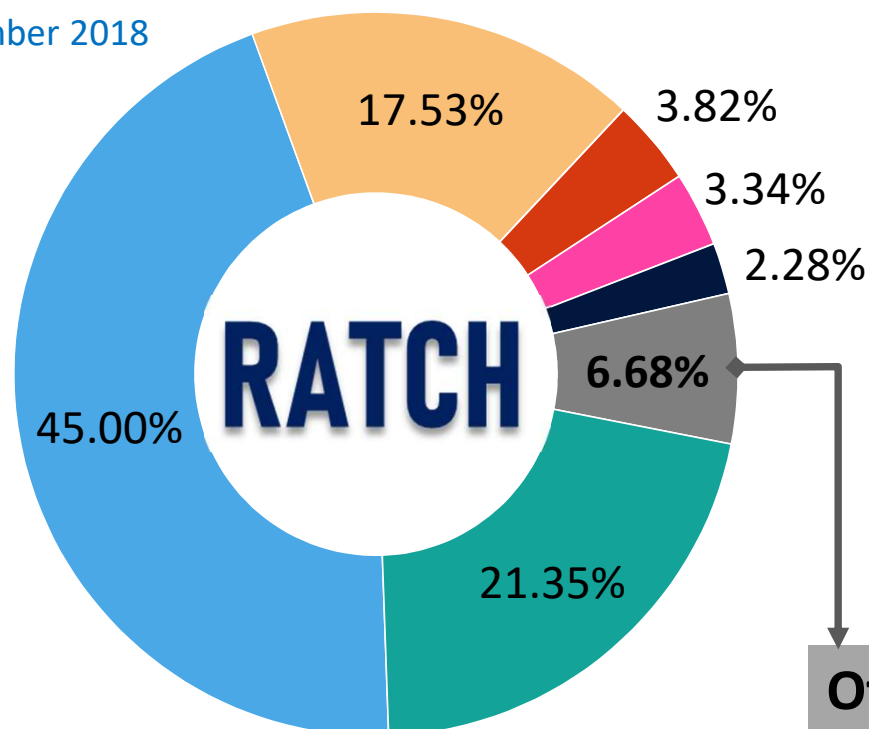
Note: Foreign Exchange Rate as at 5 March 2019 = 31.881 Baht/USD

Credit Rating	S&P Global Rating	Moody's Investor Service
RATCH	BBB+	Baa1
Thailand	BBB+	Baa1

Shareholder Information

Major Shareholders

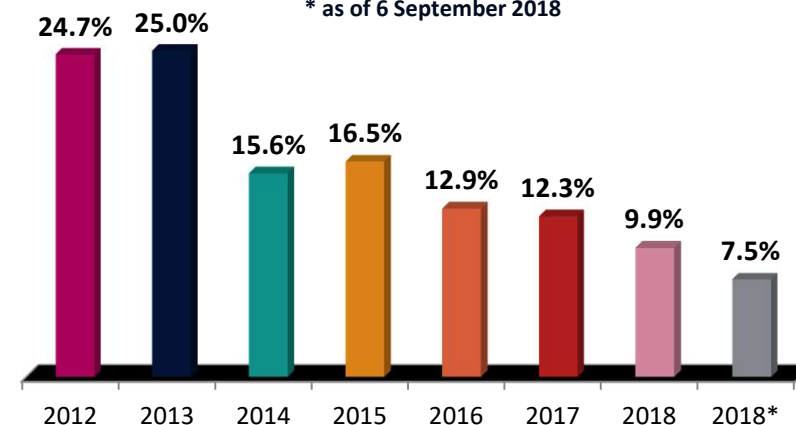
as of 6 September 2018



- Electricity Generating Authority of Thailand
- Thai NVDR Company Limited
- EGAT Saving and Credit Cooperative Limited
- Social Security Office
- SOUTH EAST ASIA UK (TYPE C) NOMINEES LIMITED
- Other Major Shareholders
- Other Shareholders

% Foreign Shareholders

Data are as of AGM closing date in each respective year
* as of 6 September 2018



Remark:

On 17 July 2014, the SILCHESTER INTERNATIONAL INVESTORS LLP transferred its common shares of RATCH by the amount of 157,297,300 shares (equivalent to 10.85% of the Company's common shares) to Thai NVDR Company Limited.

Other Major Shareholders

Other Major Shareholders consisted of

- AIA COMPANY LIMITED - EQ3-P 1.89%
- STATE STREET EUROPE LIMITED 1.85%
- Mr. Min Tieworn 1.49%
- EGAT Saving and Credit Cooperative Limited Private Fund by Krunghthai Asset Management PCL 2 0.87%
- Thanachart Bank Public Company Limited 0.58%

Experienced Management Team

Key Management



*Experienced management team
with a strong understanding of both
the financial and technical aspects of
the power generation business*



Mr. Kijja Sripattangkura
Chief Executive Officer
and Director



Mr. Peerawat Pumthong
Chief Business
Development Officer



Mrs. Wadeerat Charoencoop
Chief Financial Officer



Mr. Nimit Lekcharoensuk
Chief Asset Management
Officer

- Assumed current position in 2017
- Previously held various positions at EGAT including Deputy Governor - Policy and Planning, Assistant Governor – Planning, Director - Power System Planning Development, Assistant Director, Power System Planning -Transmission System Department, Chief of Transmission System Planning, Power System Planning Department
- Bachelor of Engineering (Electrical) from Prince of Songkla University
- Certificate of Advanced Management Program from Harvard Business School

- Previously Chief of Engineering & Project Implementation, Chief of Contract Negotiation of Domestic PPA, and Chief of Portfolio Management Division of EGAT
- Served on board of and Chairman of a number of subsidiaries
- Bachelor of Engineering (2nd Class Honor) from Khonkaen University
- Master of Business Administration from Monash University, Australia
- Master of Engineering from Asian Institute of Technology (AIT)

- Previously EVP- Financial at RATCH and Head of Group Finance, Treasury, Tax and IR at Siam City Cement PCL
- Served on board of and Chairman of a number of subsidiaries
- Bachelor of Business Administration (Finance) (2nd Class Honor) from Chulalongkorn University
- Master of Business Administration from the University of Washington, U.S.A.

- Previously EVP – Asset Management at RATCH
- Managing Director at Ratchaburi Power Plant
- Served on board of and Chairman of a number of subsidiaries
- Bachelor of Engineering (Electrical) from King Mongkut's Institute of Technology Ladkrabang
- Advanced Certificate Course, Management of Public Economics for Executives (Class 13) from King Prajadhipok's Institute

Excellent Track Record of Successful Diversified Portfolio



Power Generation

Power plant projects in Thailand



Ratchaburi Power Plant (RATCHGEN)
3,645 MW



Tri Energy Power Plant (TECO)
720 MW



Ratchaburi Power Plant (RPCL)
372.50 MW



Ratchaburi World Cogeneration (RW Cogen)
93.60 MW



Nava Nakhon Electricity Generating (NNEG)
55.65 MW

Under Construction

Berkprai Cogeneration
34.73 MW
NNEG Expansion
23.99 MW

International Investment

Power plant and renewable projects outside Thailand



Num Ngum 2 Hydro
153.75 MW



Townsville
234MW



Kemerton
315.20 MW



BP Kwinana
35.40 MW



Mount Emerald
180.45 MW



Hongsa Power Plant
751.20 MW



Toora
21 MW



Starfish Hill
33 MW



Windy Hill
12 MW



Asahan-1
47.90 MW

Under Construction

Xe-Pian— XeNamnoy Project
102.5 MW
Collinsville Solar PV Project
42.50 MW
Riau Combined-Cycle
145.15 MW
Guangxi Fangchenggang Nuclear Power
236 MW

Renewable Energy

Renewable projects in Thailand



Huay Bong 2 Wind-Turbine
20.70 MW



Huay Bong 3 Wind-Turbine
20.70 MW



Solar Power Projects (Korat 3, 4 and 7)
8.64 MW



Solarta Power Project
20.73 MW



Songkhla Biomass Power Project
3.96 MW

Related Businesses

Power Plant Operation & Maintenance Services



CRESCO
Chubu Ratchaburi Electric Services Co., Ltd.

Fuel Supply

ບໍລິສັດ ພູໄຟມາຍນົງ ຈຳກັດ
Phu Fai Mining Company Limited



Capital Investment



EDL-Gen
114.97 MW

Other Business

MRT Pink Line and Yellow Line Projects

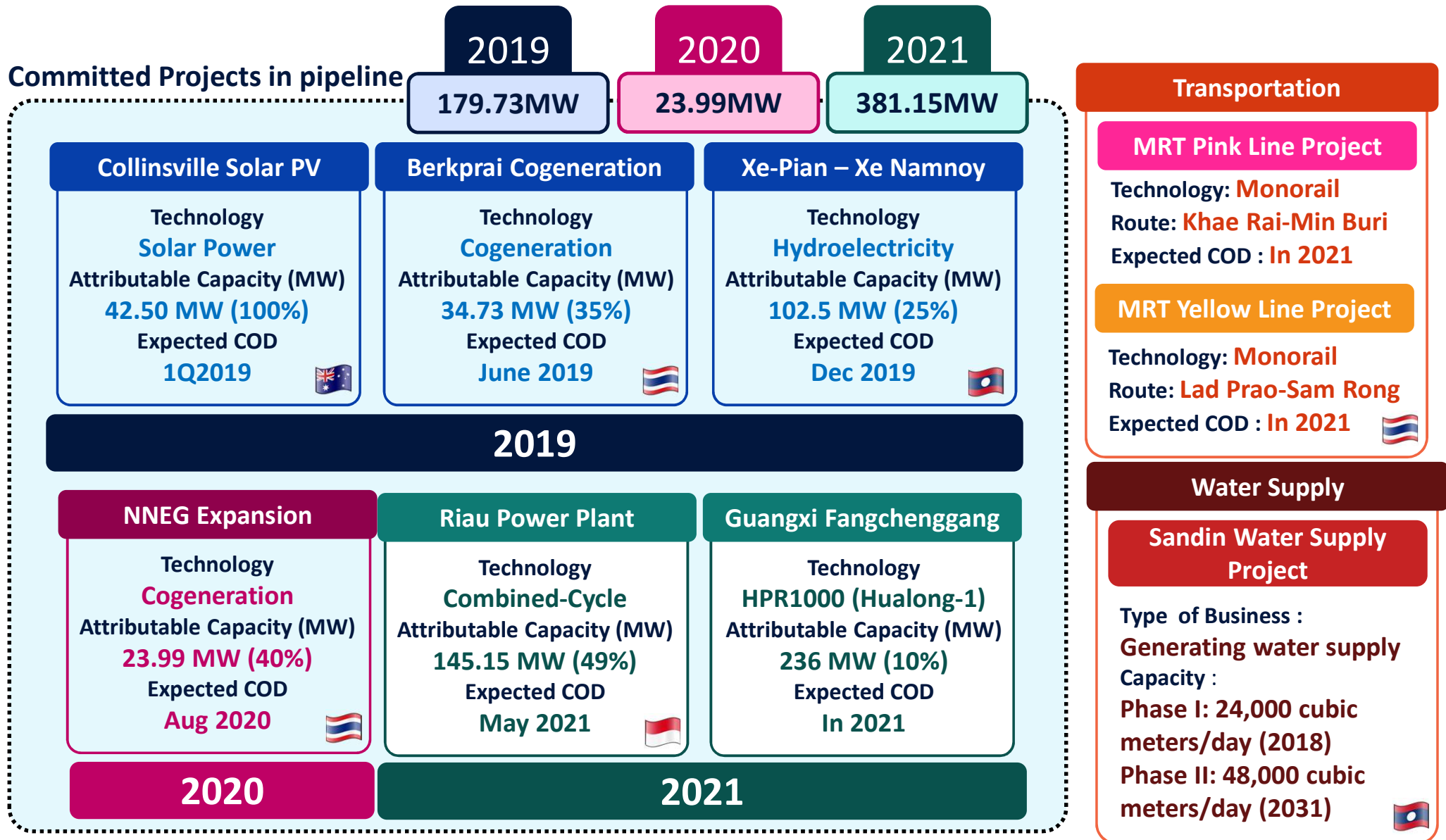


Sandin Water Supply

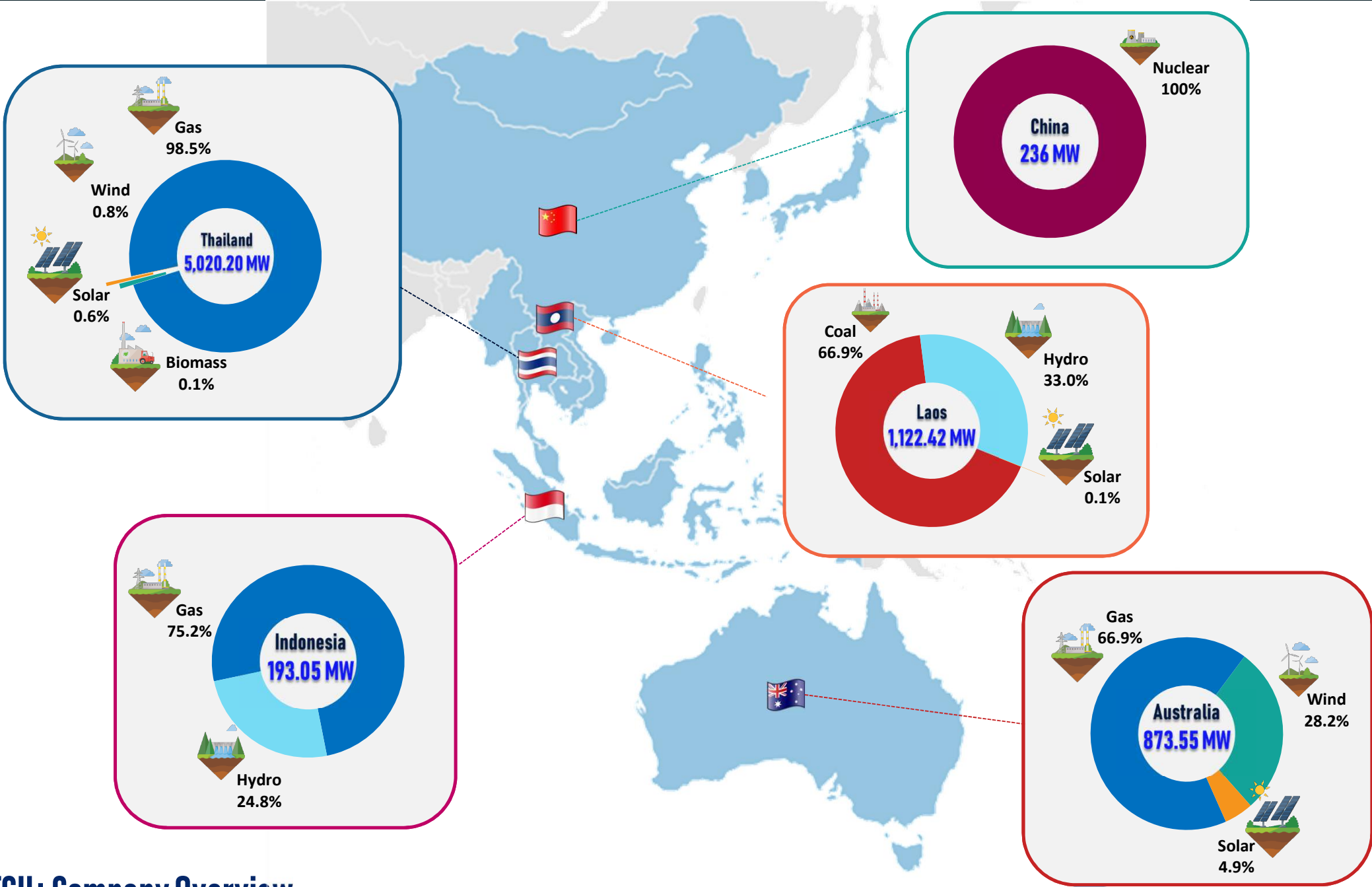


Portfolio in Pipeline to Serve Continued Growth Target

Current Projects in Operation 6,860.35 MW



Diversified Portfolio Across Core Locations



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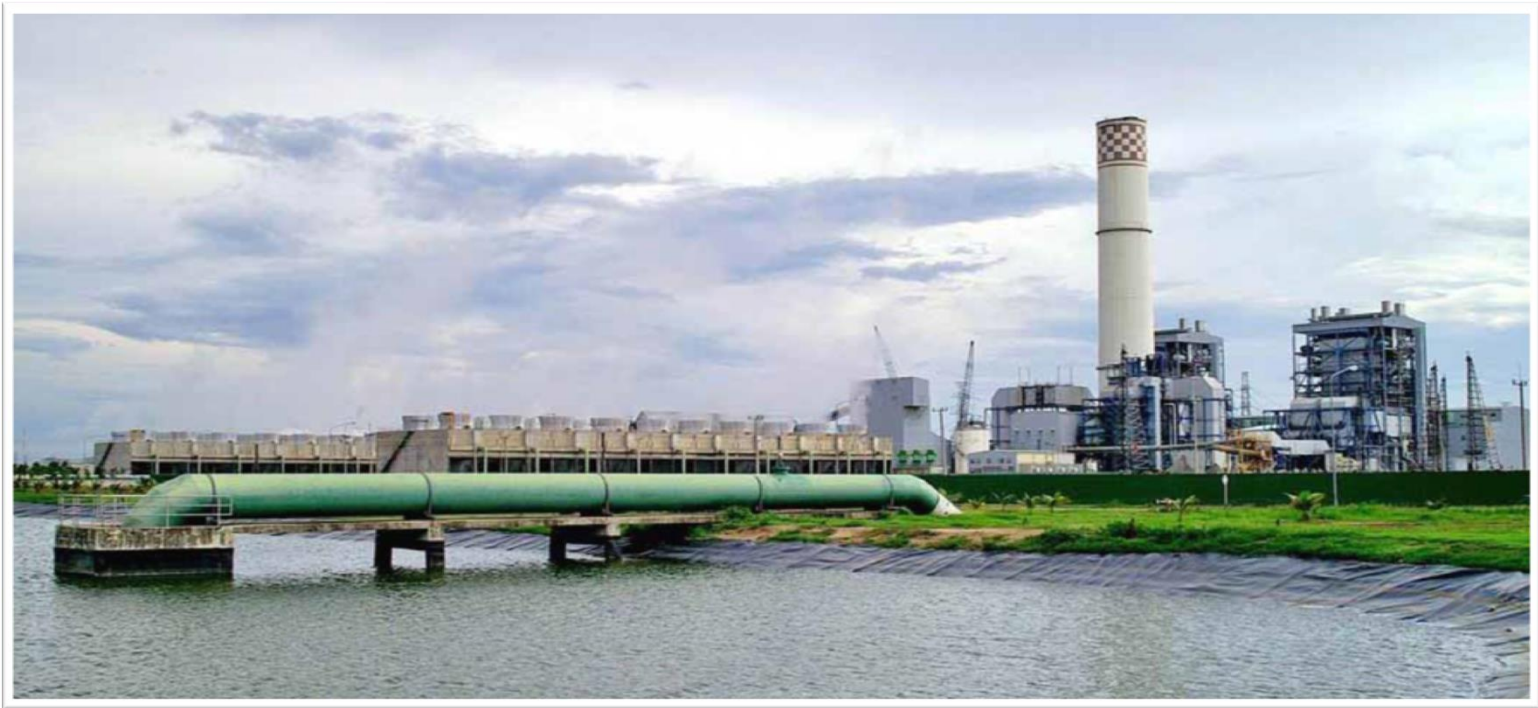
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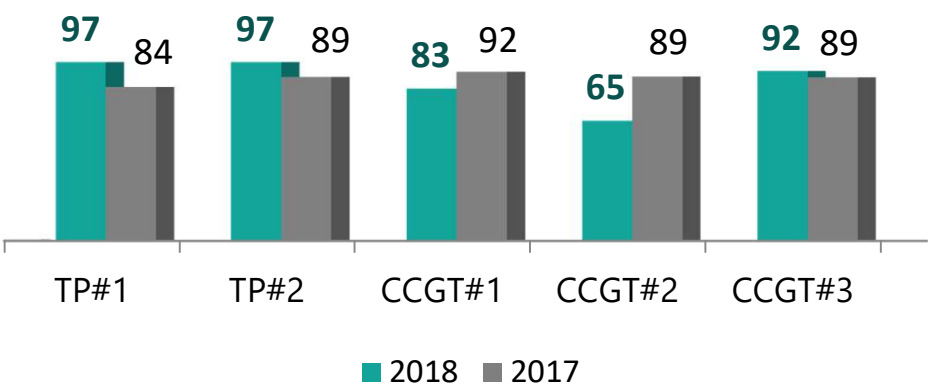
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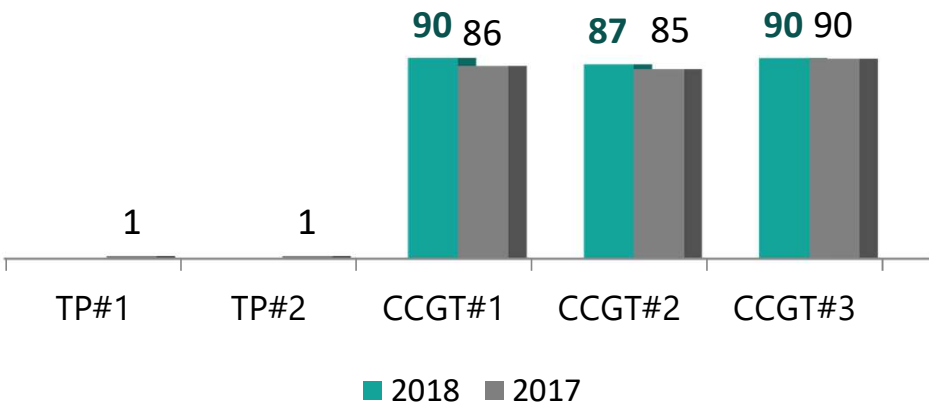
Operation Performance : RATCHGEN



%Equivalent Availability Factor



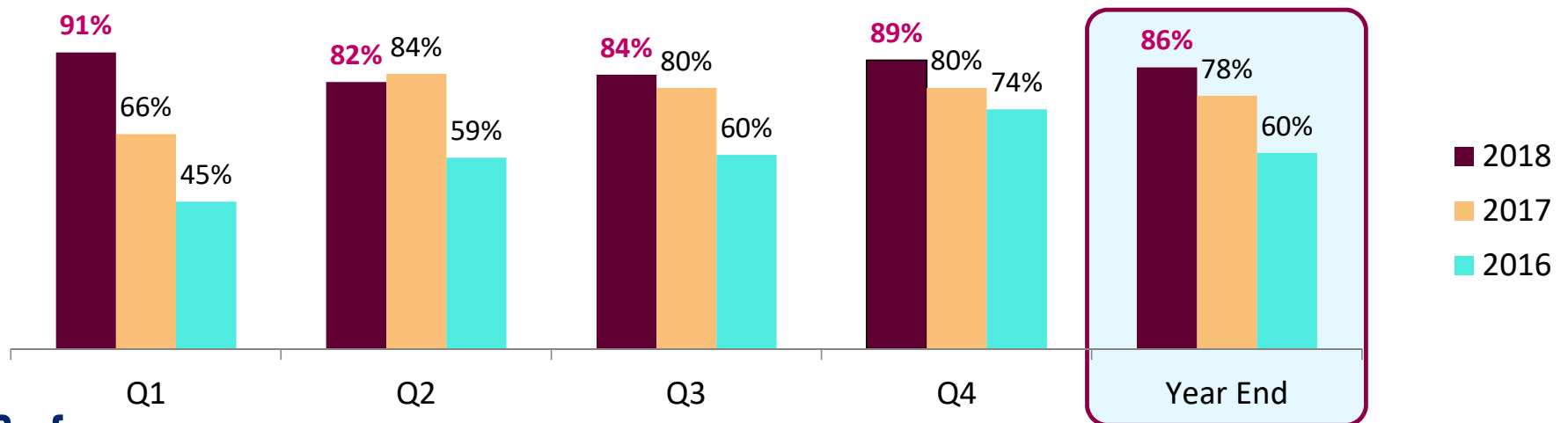
%Dispatch Factor



Operation Performance : Hongsa



% Commercial Equivalent Availability Factor (3 Units)



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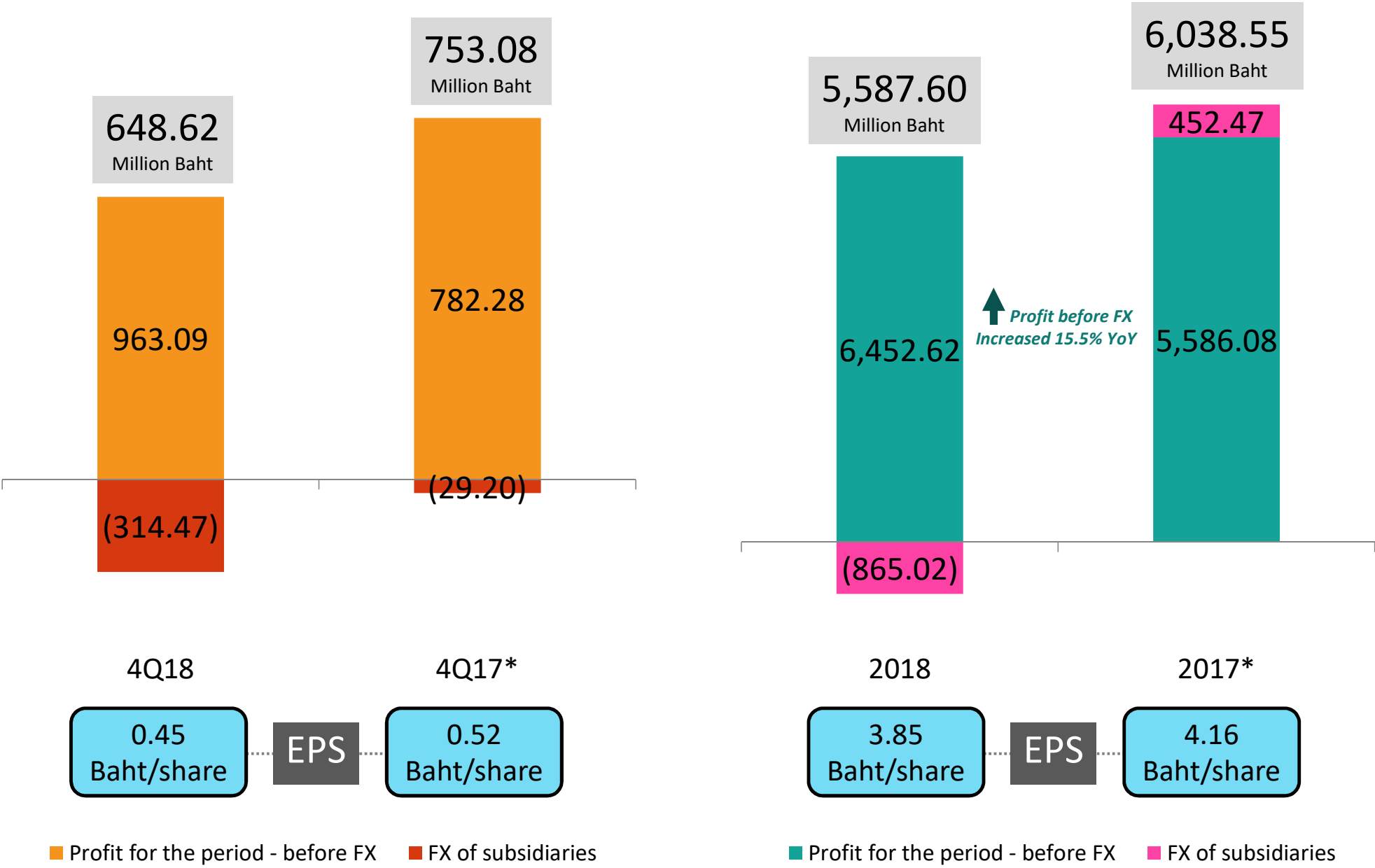
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Profit for the period: Equity holders of the Company



*Restated

Income Statement : 2018 & 2017

Unit : in Million Baht	2018	2017*
Revenues	40,348.07	42,861.17
Cost & Expenses	(35,483.74)	(37,220.25)
EBITDA before Share of Profit and FX	4,864.33	5,640.92
Share of profit of jointly-controlled entities and associates <u>including</u> gain (loss) on foreign exchange	4,735.47	3,595.40
EBITDA	9,599.80	9,236.32
Depreciation & Amortization - Cost	(1,182.25)	(1,182.25)
Depreciation & Amortization – Admin	(98.09)	(131.12)
EBIT	8,319.46	7,922.95
Finance costs	(1,014.89)	(1,587.25)
Income tax expense	(870.58)	(873.00)
Profit for the period	6,433.99	5,462.70
Non-controlling interests	(18.63)	(123.38)
Profit for the period: Equity holders of the Company - before FX	6,452.62	5,586.08
Gain (Loss) on foreign exchange of subsidiaries	(865.02)	452.47
Profit for the Company	5,587.60	6,038.55

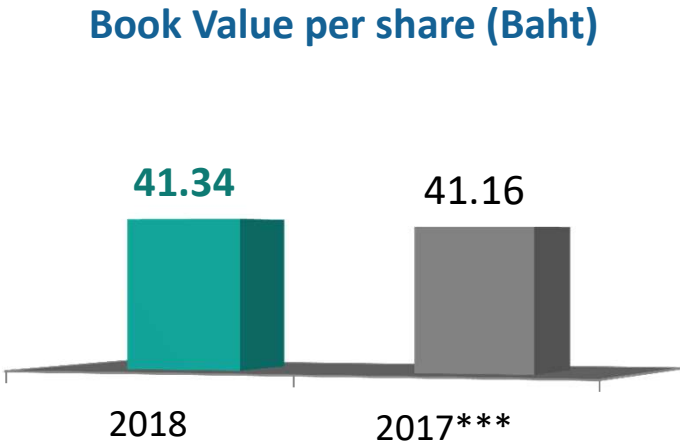
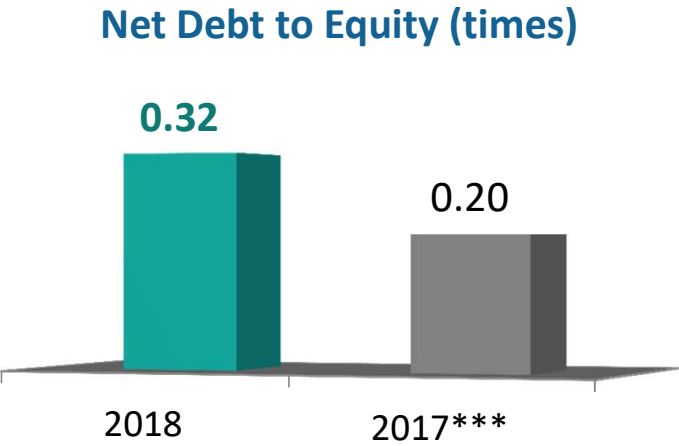
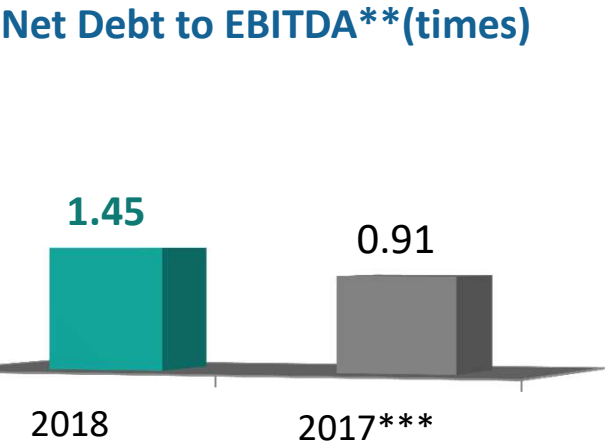
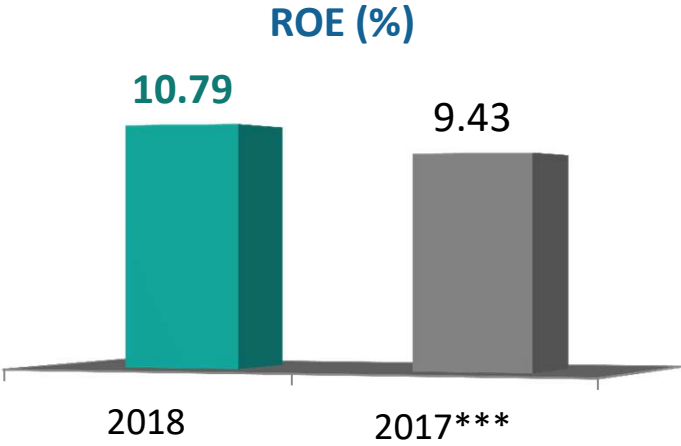
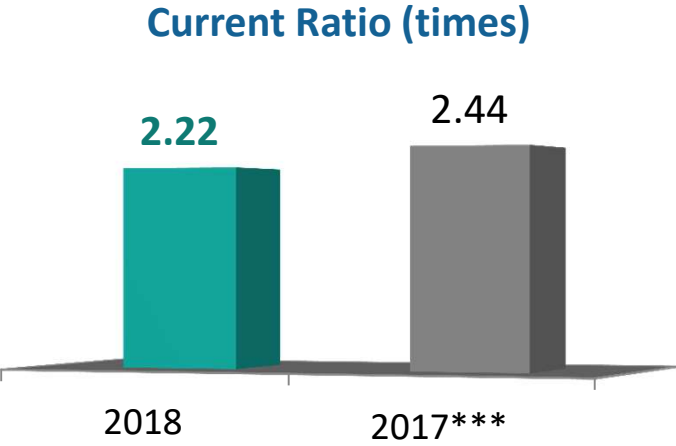
*Restated

Statements of Financial Position

As of 31 December 2018

Total Assets	Million Baht	Total Liabilities & Equity	Million Baht
<u>Assets</u>		<u>Liabilities</u>	
Cash and cash equivalents	11,695.25	Loans from Related party, Financial Institutions & Debentures	33,151.44
Current investments	2,229.09	Derivative liabilities	373.55
Other Current Assets	7,963.13	Other liabilities	7,790.89
Investment in Jointly-controlled entities/Associates/Others	35,816.37	Total Liabilities	41,315.88
Derivative assets	237.02	<u>Equity</u>	
Financial lease receivables	17,670.52	Issued and paid-up share capital	16,031.78
Property, plant & equipments	20,091.17	Retained earnings	49,952.77
Other assets	5,549.35	Other components of equity	(6,048.53)
		Total equity attributable to owners of the Company	59,936.02
Total Assets	101,251.90	Total Liabilities & Equity	101,251.90

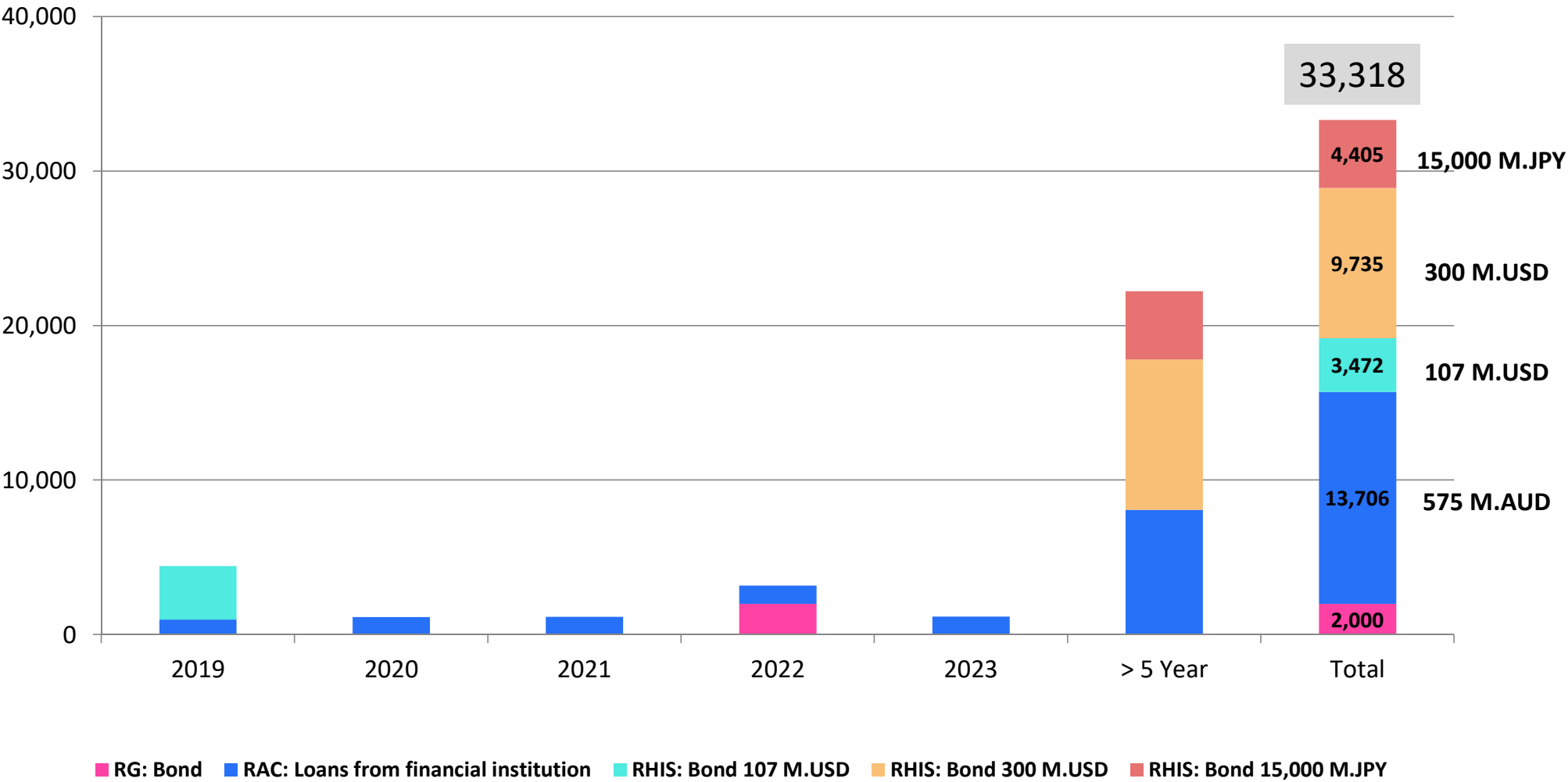
Financial Ratios*



* Not included the effect of foreign exchange rate
** Included the change in lease receivable
*** Restated

Debt Profile

As of 31 December 2018

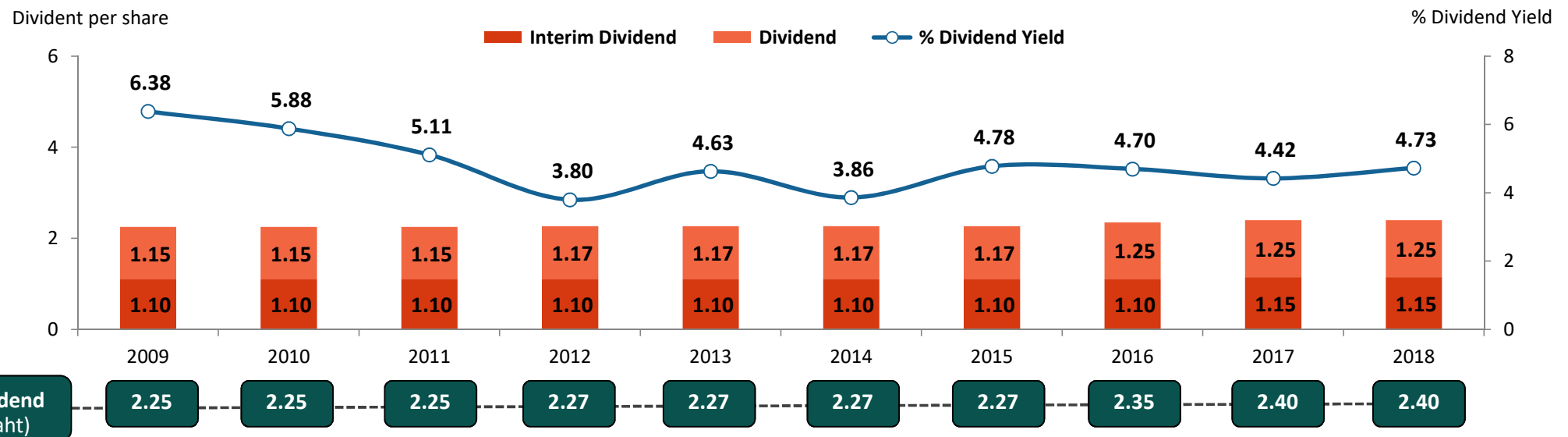
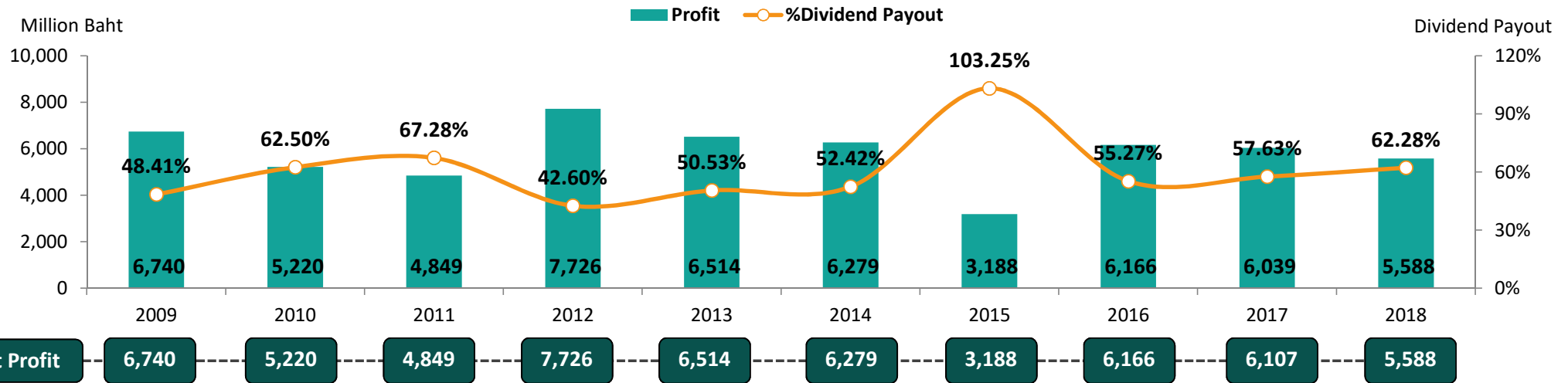


Dividend Policy

RATCH has a dividend payout policy of no less than 40% of the net profit

2009-2018
Avg. %Dividend Payout
60%

2009-2018
Avg. %Dividend Yield
4.83%



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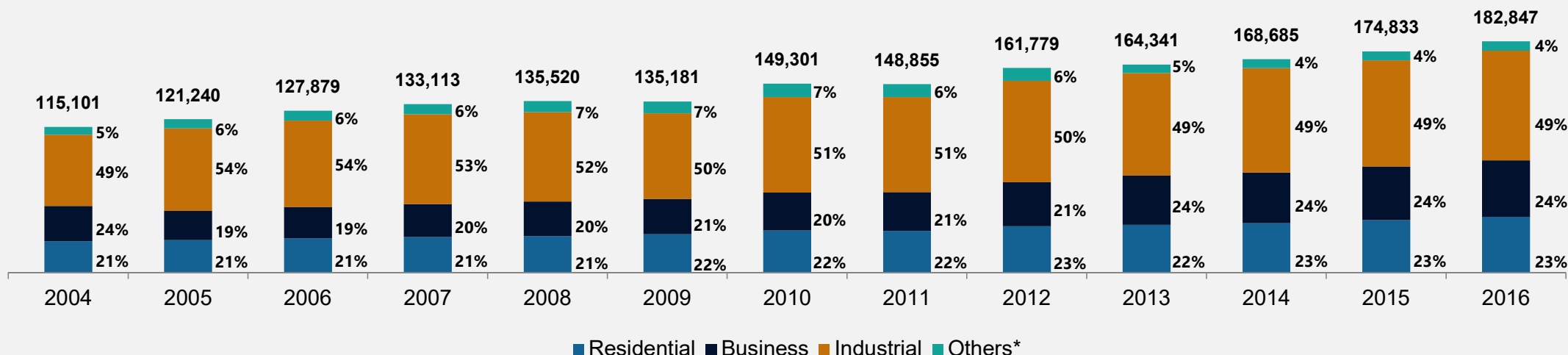
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Electricity Consumption

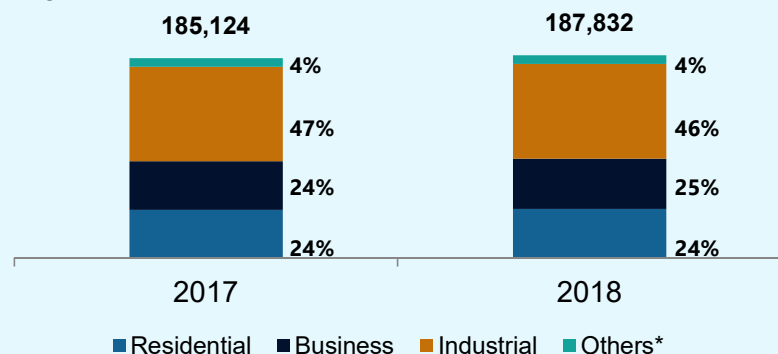
2004-2016

GWh



2017 & 2018

GWh



* Others consisted of Agriculture Pumping / Government and Non-Profit / Free of Charge-Public Infrastructure

Total Installed Capacity is **43,373 MW** as of Dec 2018

The peak demand of 2017 was at **30,303 MW** in May 2017

The peak demand of 2018 was at **29,968 MW** in April 2018

CAGR 2004-2018
≈ **3.6%**

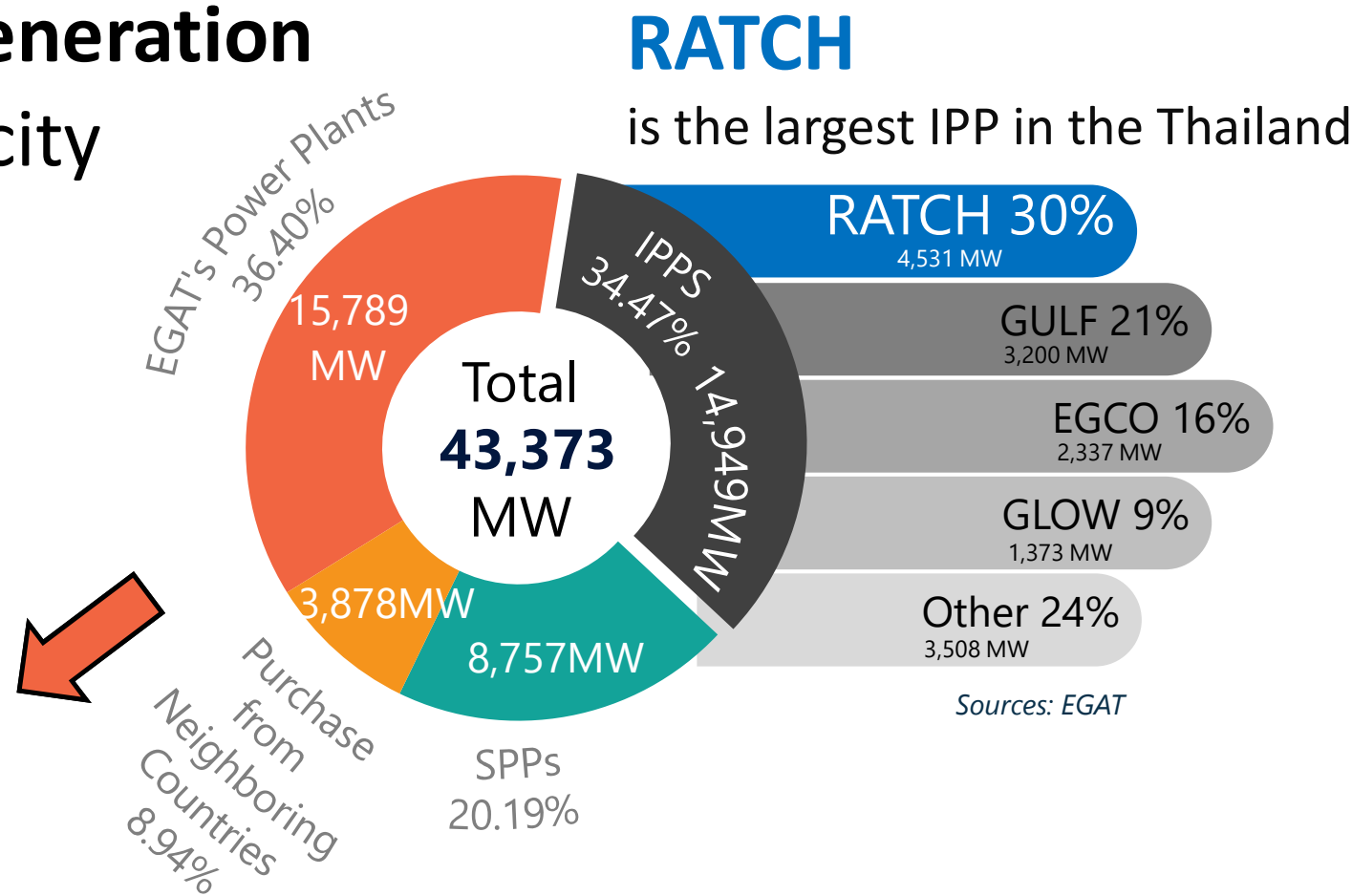
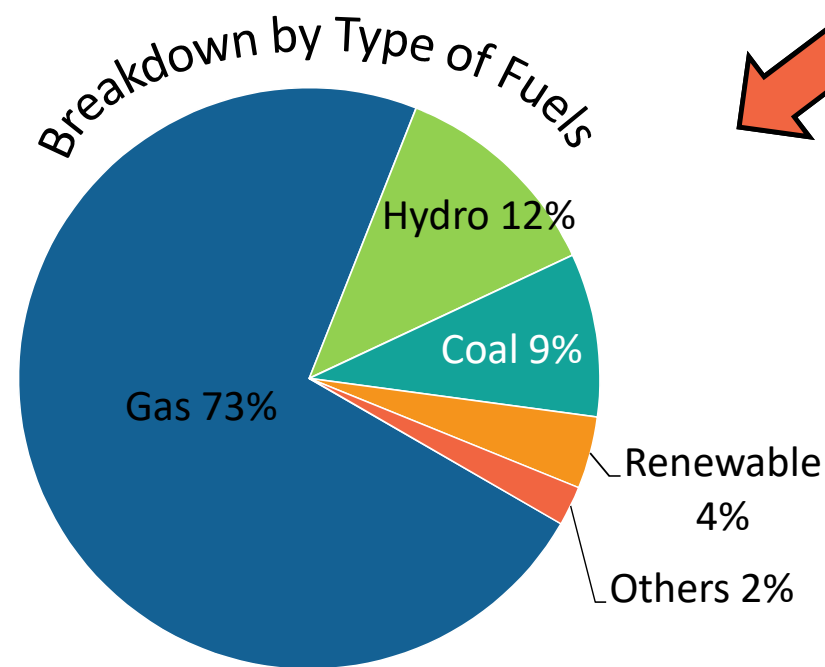
Industry Overview

Thailand : Power Generation

Total Installed Capacity

“43,373 MW”

as of December 2018

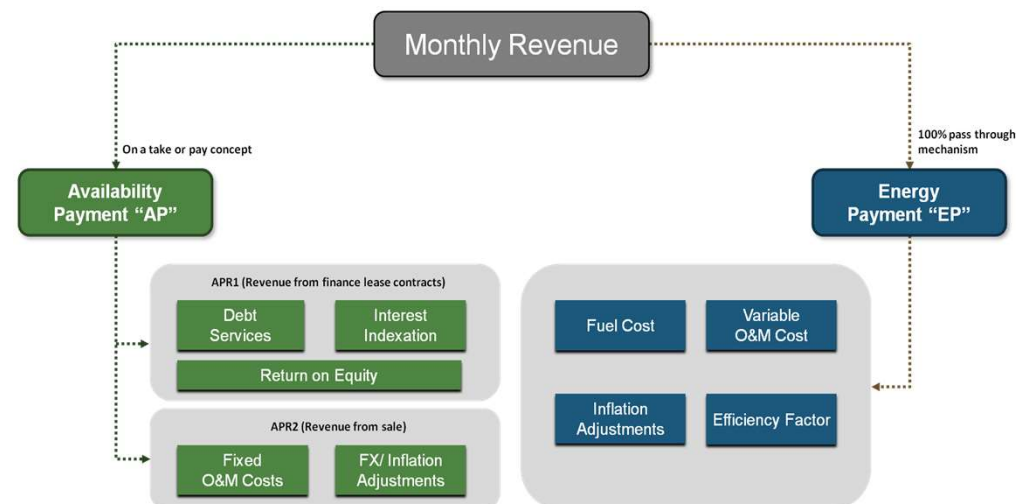


Thailand's Electricity Structure

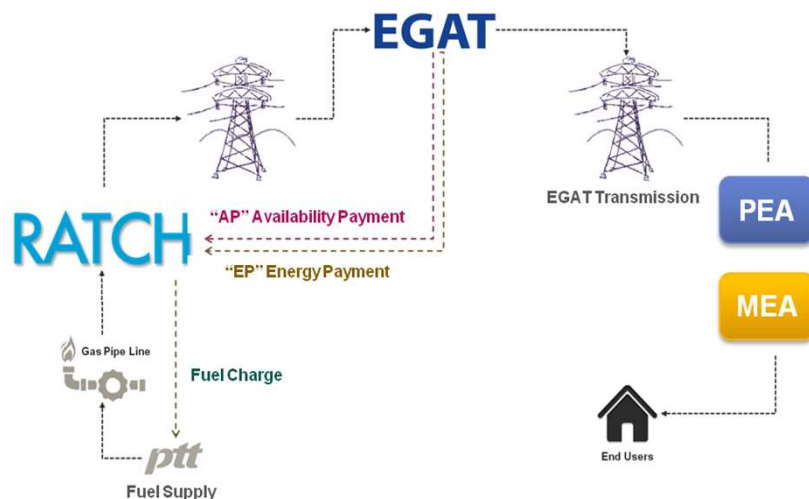
EGAT Overview

- Thailand's state-owned power utility under the Ministry of Energy
- Responsible for electric power generation and transmission for the whole country as well as bulk electric energy sales
- EGAT is the single buyer that purchases bulk electricity from private power producers and neighboring countries
- Sells electricity to Provincial Electricity Authority ("PEA"), Metropolitan Electricity Authority ("MEA"), neighboring countries and others
- Owns and operates a high voltage transmission network which covers all parts of Thailand

PPA Tariff Structure



Thailand's Electricity Structure



Provincial Electricity Authority "PEA"

- ✓ Thai state enterprise under the Ministry of Interior
- ✓ Generation, procurement, distribution and sale of electricity
- ✓ Covers approximately 99.4% of Thailand, with the exception of Bangkok, Nonthaburi and Samut Prakarn provinces



Metropolitan Electricity Authority "MEA"

- ✓ Thai state enterprise under the Ministry of Interior
- ✓ Distribution/Sales of electricity in Bangkok, Nonthaburi, and Samut-Prakarn Provinces

IPPs and SPPs in Thailand

Name of Power Plant/Project	Location	Technology	RATCH’s stake (%)	Installed Capacity (MW)	Attributable Capacity (MW)	COD	Terms of the PPA		
							PPA Party	Tenure/ Expiry Year	Renewal/ Option to Extend
In Operation									
Ratchaburi Power Plant	Ratchaburi Province	Thermal	100	1,470	1,470	2000	EGAT	25 years/ 2025	N.A.
		Combined Cycle	100	2,175	2,175	2002	EGAT	25 years/ 2027	N.A.
Tri Energy Power Plant	Ratchaburi Province	Combined Cycle	100	720	720	2000	EGAT	20 years/ 2020	N.A.
Ratchaburi Power Power Plant	Ratchaburi Province	Combined Cycle	25	1,490	372.50	2008	EGAT	25 years/ 2033	N.A.
Ratchaburi World Cogeneration Project	Ratchaburi Industrial Estate, Ratchaburi Province	Cogeneration	40	234	93.60	1#2014 2#2015	EGAT	Block 1: 25 years/ 2039 Block 2: 25 years/ 2040	N.A.
Nava Nakorn Electricity Generating Project	Nava Nakorn Industrial Promotion Zone, Pathumthani Province	Cogeneration	40	139.13	55.65	2016	EGAT	25 years/ 2041	N.A.
Total				6,228.13	4,886.75				

IPPs and SPPs in Thailand

Name of Power Plant/Project	Location	Technology	RATCH’s stake (%)	Installed Capacity (MW)	Attributable Capacity (MW)	COD	Terms of the PPA		
							PPA Party	Tenure/ Expiry Year	Renewal/ Option to Extend
Under Construction									
Berkprai Cogeneration	Ratchaburi Province	Cogeneration	35	99.23	34.73	Expected COD : June 2019	EGAT	25 years/2044	N.A.
NNEG Expansion Project	Nava Nakorn Industrial Promotion Zone, Pathumthani Province	Cogeneration	40	59.97	23.99	Expected COD : Aug 2020	EGAT	25 years/2045	N.A.
Total				159.20	58.72				
Grand Total				6,387.33	4,945.47				

Renewable Projects in Thailand

Name of Power Plant/Project	Location	Technology	RATCH's stake (%)	Installed Capacity (MW)	Attributable Capacity (MW)	COD	PPA Party	Terms of the PPA Tenure/ Expiry Year	Renewal/ Option to Extend
In Operation									
Huay Bong 2 Wind-Turbine Power Plant	Nakorn Ratchasima Province	Wind-Turbine	20	103.50	20.70	2013	EGAT	5 years/ 2023 Adder 3.5 Baht (10-Year)	Automatic renewal for a further 5 years every 5 years
Huay Bong 3 Wind-Turbine Power Plant	Nakorn Ratchasima Province	Wind-Turbine	20	103.50	20.70	2012	EGAT	5 years/ 2022 Adder 3.5 Baht (10-Year)	Automatic renewal for a further 5 years every 5 years
Solar Power Projects (Korat 3, Korat 4, Korat 7)	Nakorn Ratchasima Province	Solar Power	40	21.60	8.64	2012	PEA	5 years/ 2022 Adder 8 Baht (10-Year)	Automatic renewal for a further 5 years every 5 years
Solarta Power Projects	Ayutthaya, Nakhon Pathom, and Suphanburi Provinces	Solar Power	49	42.30	20.73	2011-2012	PEA	Ayutthaya : 5 years / 2021 Suphanburi and Nakhon Pathom: 5 years / 2022 Adder 8 Baht (10-Year)	Automatic renewal for a further 5 years every 5 years
Songkhla Biomass Power Project	Songkhla Province	Thermal	40	9.90	3.96	2015	PEA	20 years/2035	N.A.
Total				280.80	74.73				
Grand Total				280.80	74.73				

International Projects in Australia

Name of Power Plant/Project	Location	Technology	RATCH’s stake (%)	Installed Capacity (MW)	Attributable Capacity (MW)	COD	Terms of the PPA		
							PPA Party	Tenure/ Expiry Year	Renewal/ Option to Extend
In Operation									
Townsville Power Plant	North Queensland, Australia	Combined Cycle Gas Turbine	100	234	234	1999	AGL Energy /Arrow	February 2025	N.A.
Kemerton Power Plant (Included Black Start)	Western Australia, Australia	Open Cycle Gas/Diesel Turbine	100	315.20	315.20	2005	Synergy	October 2030	N.A.
BP Kwinana Power Plant (30 % owned by RAC)	Western Australia, Australia	Cogeneration	30	118	35.40	1996	Verve Energy/BP	December 2021	N.A.
Starfish Hill Wind-Turbine Power Plant	South Australia, Australia	Wind-Turbine	100	33	33	2003	Alinta Energy	In 2020	N.A.
Toora Wind-Turbine Power Plant	Victoria, Australia	Wind-Turbine	100	21	21	2002	Merchant Market	N.A.	N.A.
Windy Hill Wind-Turbine Power Plant	Queensland, Australia	Wind-Turbine	100	12	12	2000	Ergon Energy Queensland	December 2018	N.A.
Mount Emerald Wind Farm	Queensland, Australia	Wind-Turbine	100	180.45	180.45	2018	Ergon Energy Queensland	December 2030	N.A.
Total				913.65	831.05				

International Projects in Australia

Name of Power Plant/Project	Location	Technology	RATCH's stake (%)	Installed Capacity (MW)	Attributable Capacity (MW)	COD	Terms of the PPA		
							PPA Party	Tenure/ Expiry Year	Renewal/ Option to Extend
Under Construction									
Collinsville Solar PV Project	Queensland, Australia	Solar Power	100	42.50	42.50	Expected COD: 1Q2019	Alinta Energy	12.5 year	N.A.
Total				42.50	42.50				
Grand Total				956.15	873.55				

International Projects in Laos

Name of Power Plant/Project	Location	Technology	RATCH's stake (%)	Installed Capacity (MW)	Attributable Capacity (MW)	COD	Terms of the PPA		
							PPA Party	Tenure/ Expiry Year	Renewal/ Option to Extend
In Operation									
Nam Ngum 2 Hydroelectric Power Plant	Laos	Hydro Power Plant	25	615	153.75	2011	EGAT	27 years/ 2038	N.A.
Hongsa Power Plant	Sainyaburi Province, Laos	Lignite-Fired Power Plant	40	1,878	751.20	1# 2015 2# 2016	EGAT & EDL	25 years/ 2040	N.A.
			Total	2,493	904.95				
Under Construction									
Xe Pian - Xe Namnoy Project	Attapue and Champasak provinces, Laos	Hydro Power Plant	25	410	102.50	Expected COD : Dec 2019	EGAT & EDL	27 years/ 2046	N.A.
			Total	410	102.50				
Grand Total				2,903	1,007.45				

International Projects in China & Republic of Indonesia

Name of Power Plant/Project	Location	Technology	RATCH's stake (%)	Installed Capacity (MW)	Attributable Capacity (MW)	COD	Terms of the PPA		
							PPA Party	Tenure/ Expiry Year	Renewal/ Option to Extend
In Operation									
Asahan-1 Power Plant	Republic of Indonesia	Hydro Power Plant	26.61	180	47.90	2011	PT PLN (PERSERO)	30 year / 2040	N.A.
			Total	180	47.90				
Under Construction									
Riau Combined-Cycle Power Plant	Republic of Indonesia	Combined Cycle	49	296.23	145.15	Expected COD: May 2021	PT PLN (PERSERO)	20 year	N.A.
Guangxi Fangchenggang Nuclear Power (II)	Fangchenggang , China	Nuclear Power	10	2,360	236	Expected COD: 2021	N.A.	30 year	N.A.
			Total	2,656.23	381.15				
			Grand Total	2,836.23	429.05				

Related Businesses

Name of Power Plant/Project	Location	Technology	RATCH’s stake (%)	Installed Capacity (MW)	Attributable Capacity (MW)	COD	Terms of the PPA		
							PPA Party	Tenure/ Expiry Year	Renewal/ Option to Extend
In Operation									
EDL-Generation	Laos	Hydro Power Plant	10.11	1,131.15	114.36	N.A.	N.A.	N.A.	N.A.
EDL-Generation	Laos	Solar Power	10.00	6.00	0.61	2017	N.A.	N.A.	N.A.
			Total	1,137.15	114.97				
			Grand Total	1,137.15	114.97				
Under Construction									
MRT Pink Line Project and MRT Yellow Line Project	Nonthaburi and Bangkok Province	Elevated Straddle Monorail	10	N.A.	N.A.	Expected COD: In 2021	Concession Contracts with MRTA	30 years/2051	N.A.

Related Businesses

Name of Power Plant/Project	Location	Type of Business	RATCH's stake (%)	Generating Capacity (cubic meters/day)	Attributable Generating Capacity (cubic meters/day)	COD	Terms of the PPA		
							PPA Party	Tenure/ Expiry Year	Renewal/ Option to Extend
In Operation									
Sandin Water Supply Project (Phase 1)	Laos	Generating water supply	40	24,000	9,600	2018	Concession Contracts with Nampapa Nakhone Luang	50 years	N.A.
Total				24,000	9,600				
Under Development									
Sandin Water Supply Project (Phase 2)	Laos	Generating water supply	40	24,000	9,600	Expected COD: In 2031	Concession Contracts with Nampapa Nakhone Luang	50 years	N.A.
Total				24,000	9,600				
Grand Total				48,000	19,200				

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