

# RATCH

# Analyst Meeting 2Q2017



RATCHABURI  
ELECTRICITY GENERATING  
HOLDING PCL.

## 22 August 2017



# Agenda

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- Highlights
- RATCH Overview
- Operating Performance
- Financial Performance
- Appendix



# Agenda

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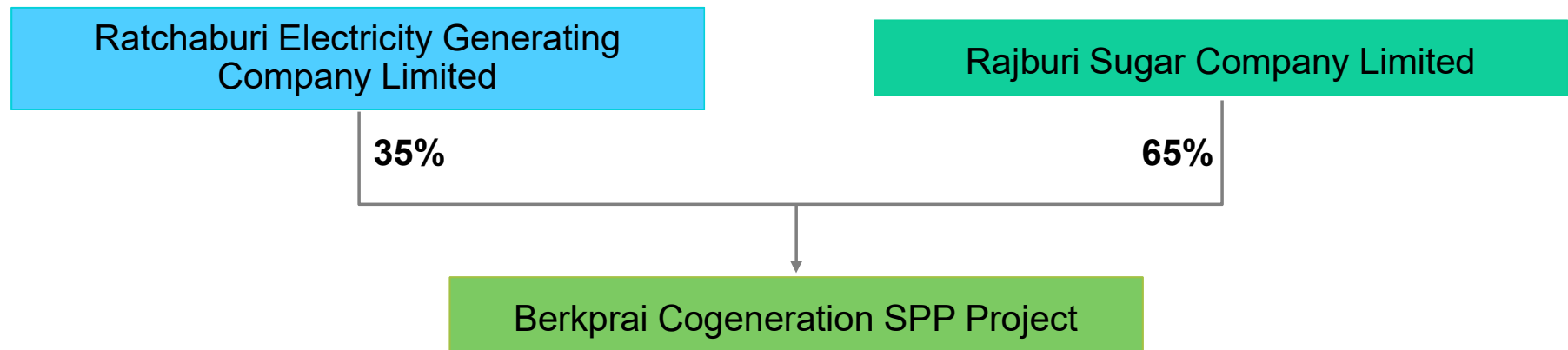
- **Highlights**
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# Highlights

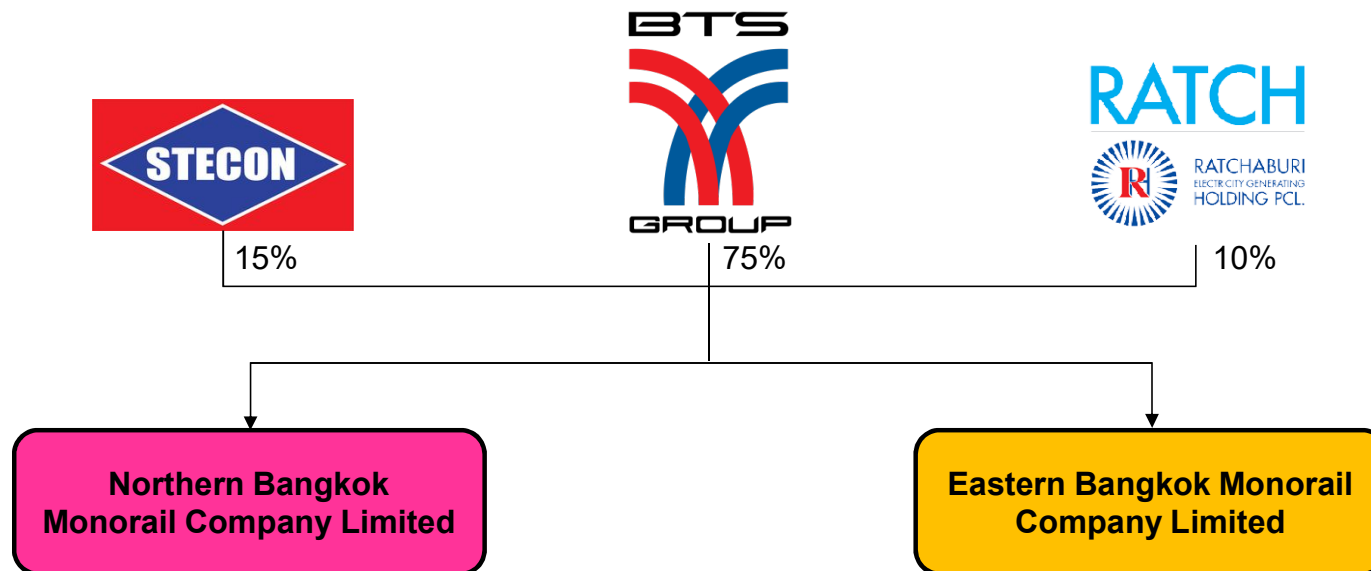
**On 25 May, 2017**, Ratchaburi Electricity Generating Company Limited has paid for additional share capital, by its proportion, in the amount of Baht 86.18 million. As a result, the total paid up capital is Baht 752.45 million or 56.53 percent of the registered capital.

Berkprai Cogeneration SPP Project has 99.23 MW electricity generating capacity and steam generating capacity of 15 tons per hour. It is located in Berkprai Sub-district, Ban Pong District, Ratchaburi Province. The Project has 25-year Firm Cogeneration PPA with EGAT. It is expected to COD in 2019.



# Highlights (Cont.)

On 12<sup>th</sup> June 2017, RATCH, BTS and STEC jointly established companies namely “**Northern Bangkok Monorail Company Limited**” and “**Eastern Bangkok Monorail Company Limited**”, in which RATCH, BTS and STEC held 10% stake, 75% stake and 15% stake of shares in each company respectively.



On 16<sup>th</sup> June 2017, **Northern Bangkok Monorail Company Limited** and **Eastern Bangkok Monorail Company Limited** have entered into the Concession Contracts including of the obligation for extensions of the MRT Pink Line Project and the MRT Yellow Line Project with MRTA.

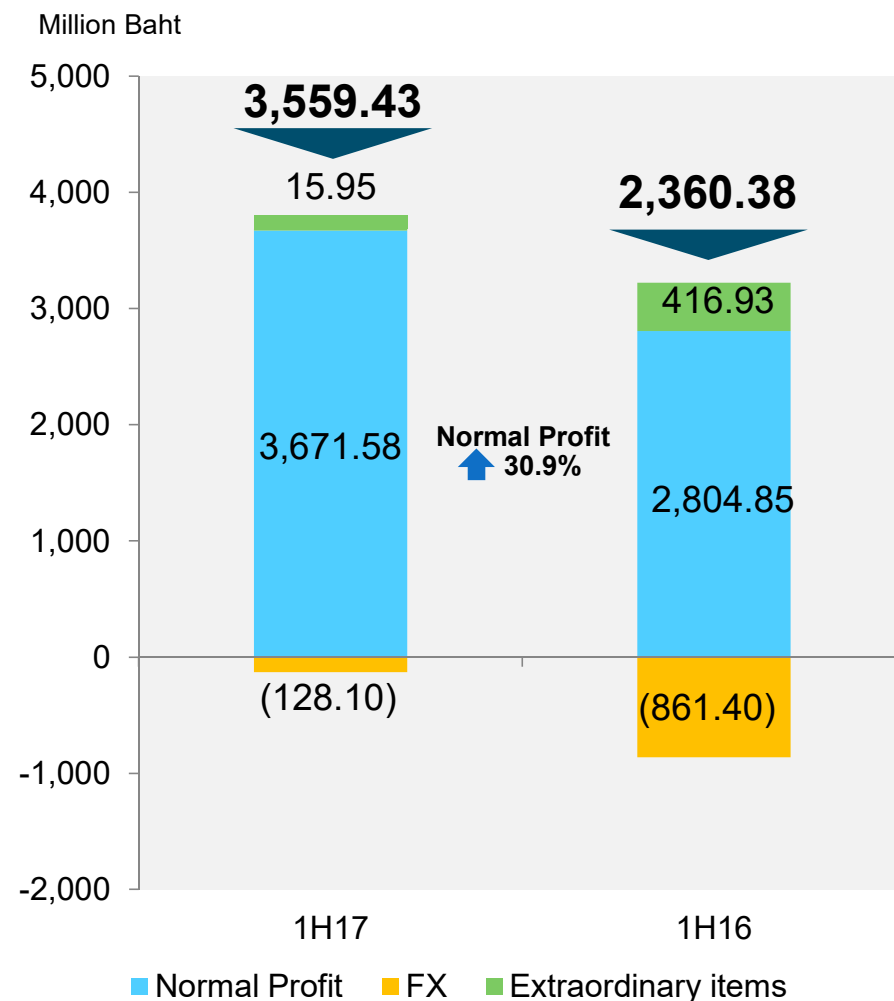
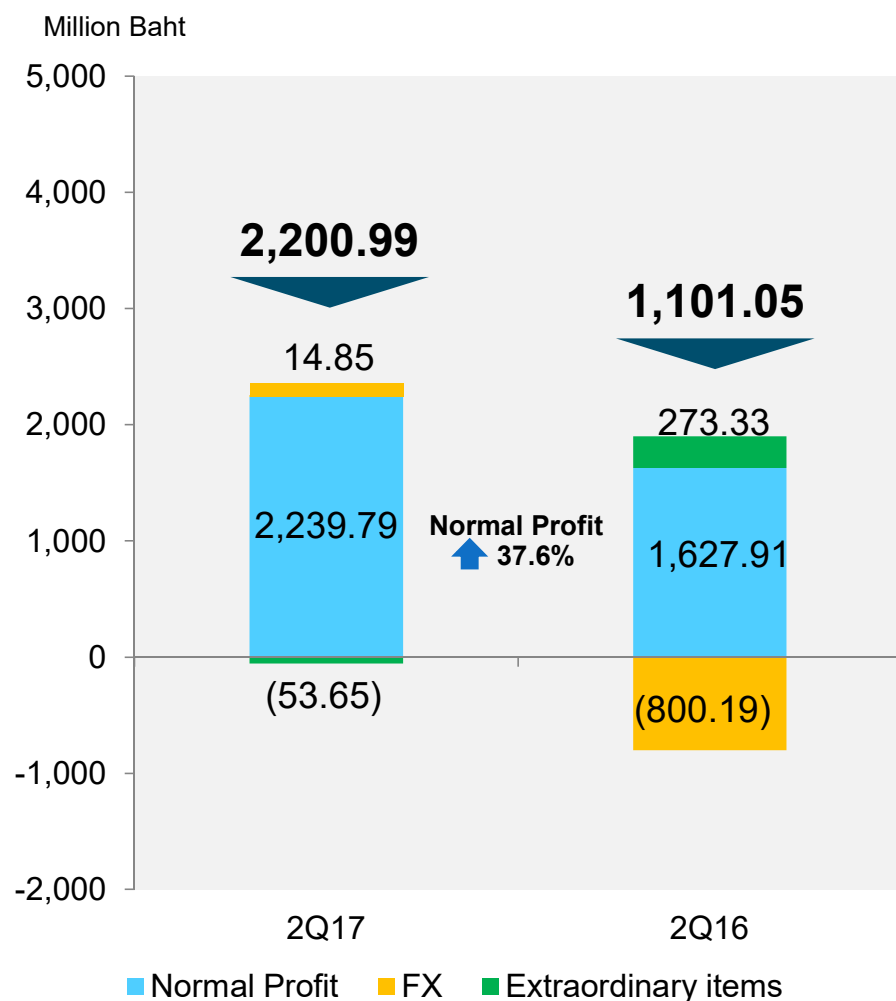
# Highlights (Cont.)

**On 11 August 2017**, The Company informed to the Stock Exchange of Thailand that the Company's Board of Directors approved the Company's subsidiaries to sell their entire shareholding to the existing shareholders for the amount equivalent to Baht 354.5 million. The details are as follows:

- 1) Ratchaburi Energy Co.,Ltd. would sell its entire ordinary shares totaling 1.26 million shares (60% of the total shares in Oversea green Energy Co., Ltd. involving project management service of Iwaki-Fukushima and Ueda Power Projects in Japan) to Premier Solution Co., Ltd. (the existing shareholder) at Baht 9.6 million (paid capital).
- 2) RH International (Singapore) Corporation Pte. Ltd. (RHIS) would sell its entire ordinary shares totaling 9.51 million shares (60% of the total shares in RICI International Investment Pte. Ltd. which is the developer of Iwaki-Fukushima and Ueda Power Projects in Japan) to Chow International Co.Ltd. (the existing shareholder) at Baht 334.9 million (paid capital).
- 3) Opportunity Cost equivalent to Baht 10 million.
- 4) The payment Condition: it is expected that the payment will be completed within the 3rd quarter of 2017.

Such sale of a termination of joint investment for the development of Iwaki-Fukushima and Ueda Power Projects in Japan with the Company's total attribution installed capacity of approx. 20.11 MW. The rationale behind the sales is to avoid the impact of the Projects' development progression which has not achieved the Company's target. In this regard, the Company will consider utilizing cash from this sale transaction to invest in other project.

# Profit for the period: Equity holders of the Company



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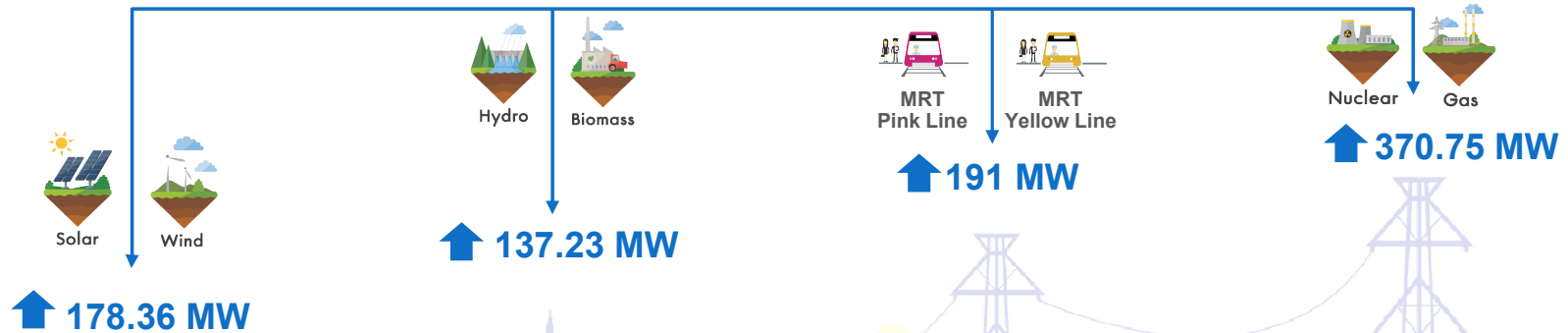


# Overview of RATCH projects

Capacity until 2021  
(Committed Projects)

*Projects in pipeline from 2018 to 2021*  
**877.34 MW.**

**Current  
Projects  
6,495.51 MW**



**2017**

**2018**

**2019**

**2020**

**2021**

+ Mount Emerald Wind Farm **144.36 MW**  
+ Collinsville Solar PV **34 MW**

+ Xe Pian – Xe Namnoy **102.50 MW**  
+ Berkprai Cogeneration **34.73 MW**

+ MRT Pink Line Project and MRT Yellow Line Project equivalent to **191 MW**

+ Guangxi Fangchenggang Nuclear Power (II) **236 MW**  
+ Riau Combined-Cycle Power Plant **134.75 MW**

# Agenda

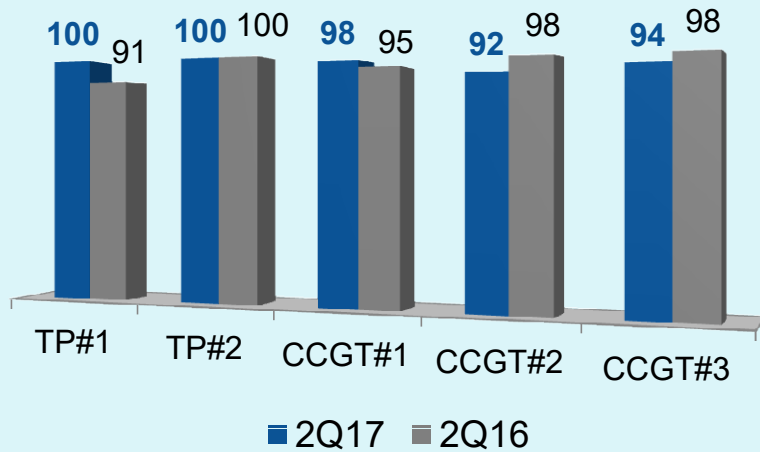
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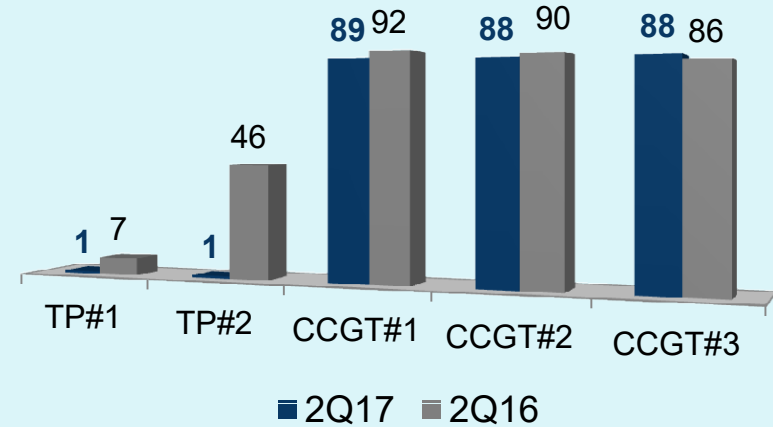


# Operation Performance : RATCHGEN

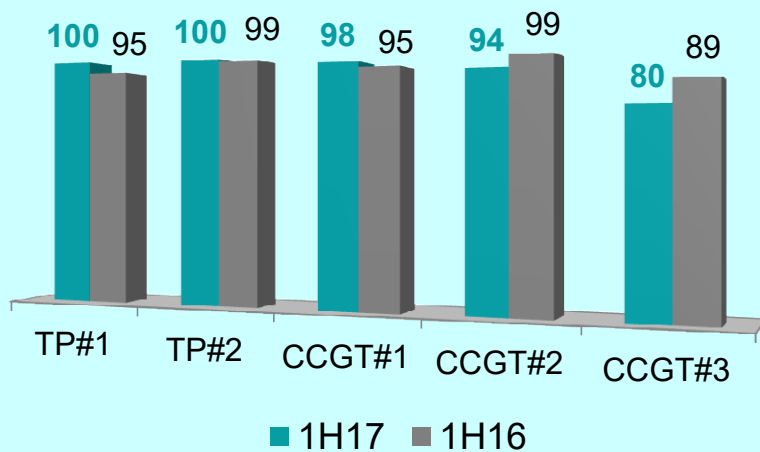
**%Equivalent Availability Factor**



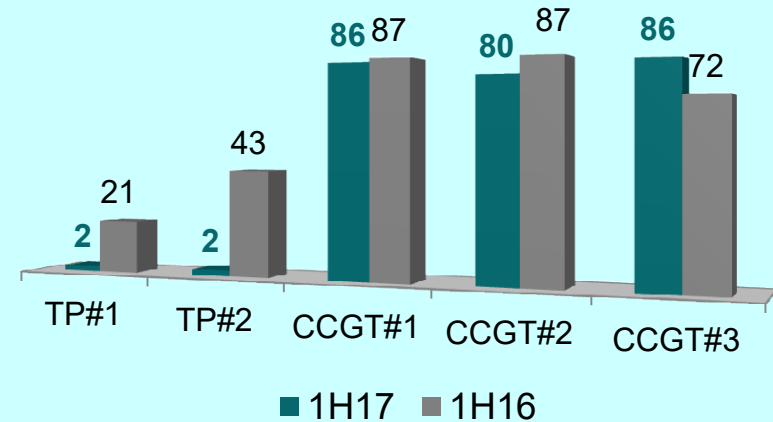
**%Dispatch Factor**



**%Equivalent Availability Factor**

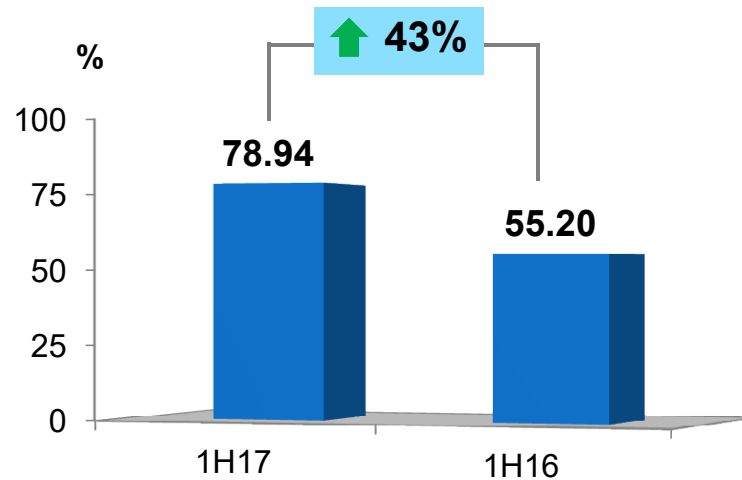
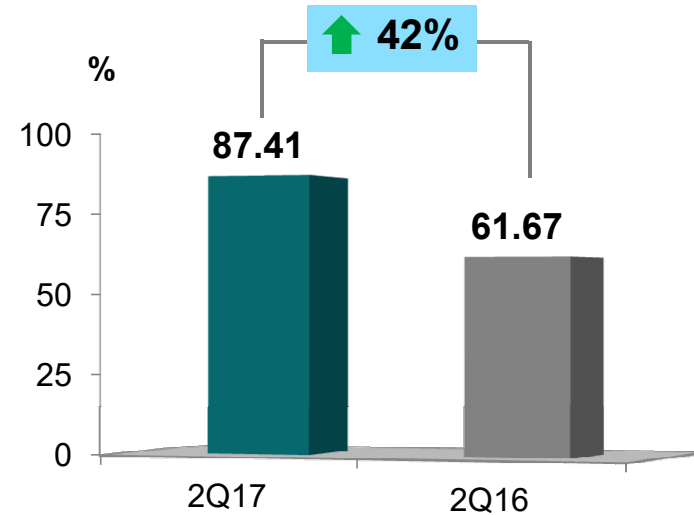
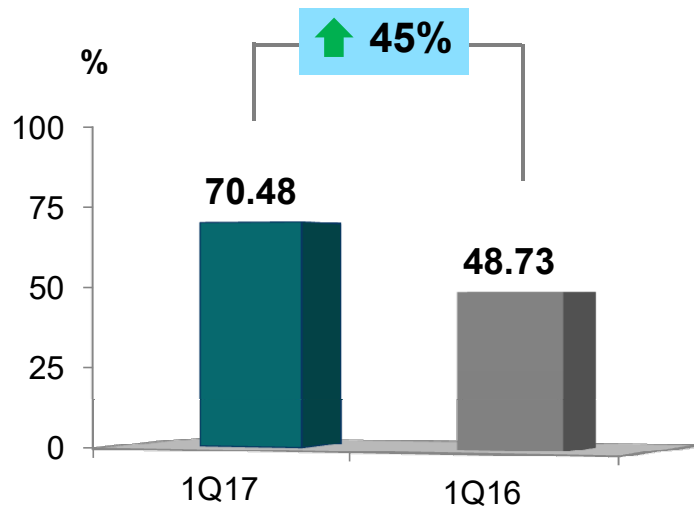


**%Dispatch Factor**



# Operation Performance : Hongsa

%Equivalent Availability Factor ( 3 Units)

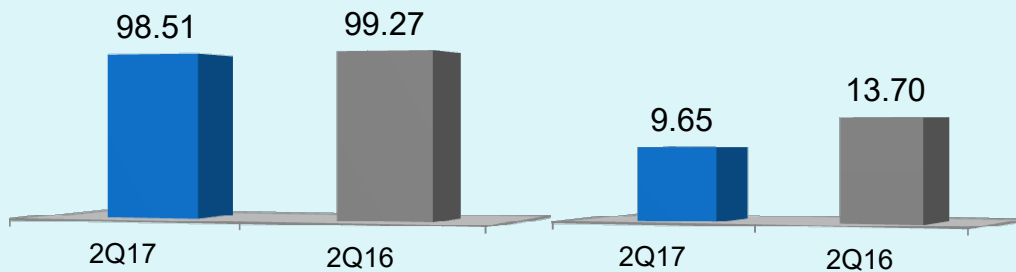


# Operation Performance : Huay bong

## Huay bong 2 (KR2)

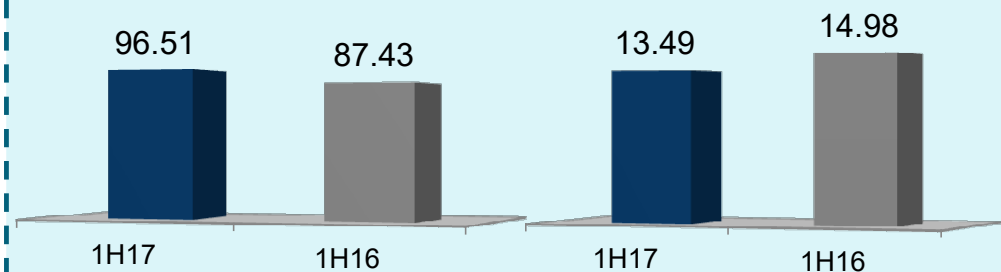
Avg. Commercial Availability (%)

Capacity Factor (%)



Avg. Commercial Availability (%)

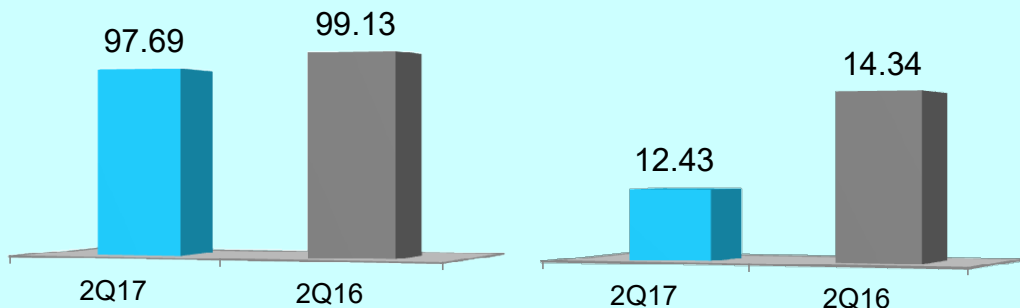
Capacity Factor (%)



## Huay bong 3 (FKW)

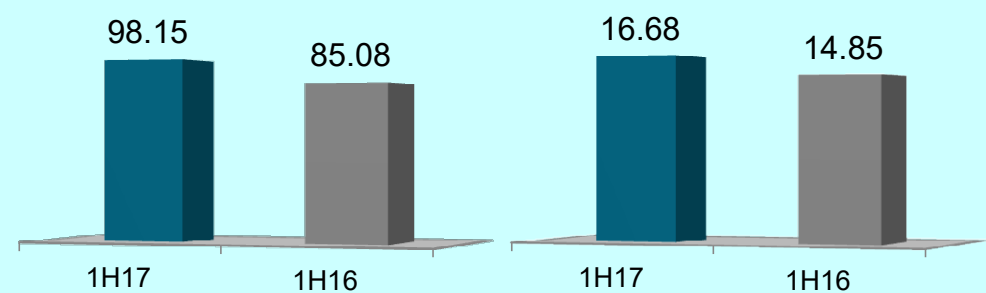
Avg. Commercial Availability (%)

Capacity Factor (%)



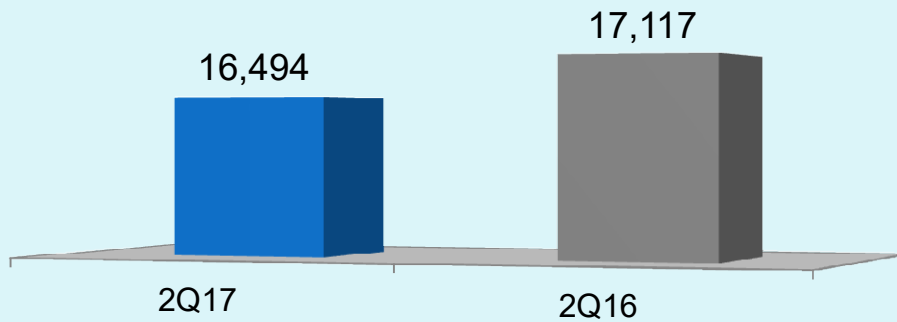
Avg. Commercial Availability (%)

Capacity Factor (%)

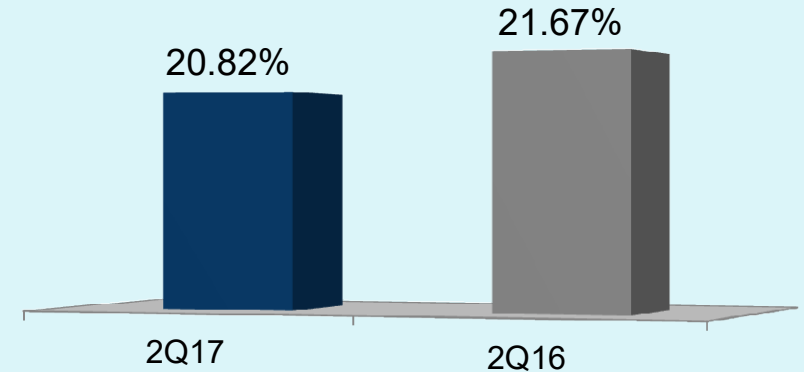


# Operation Performance : Solarta

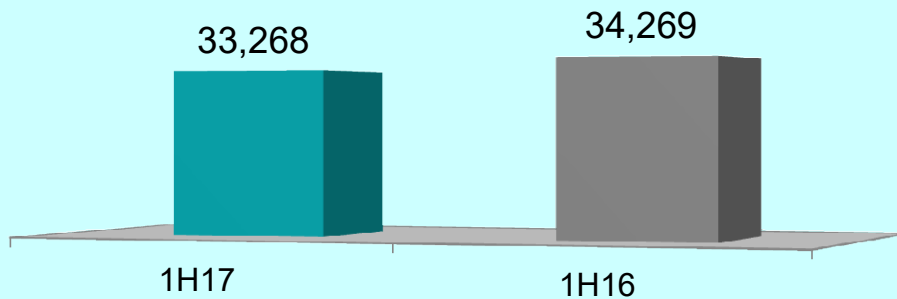
**Total Net Energy (MWh /Quarter)**



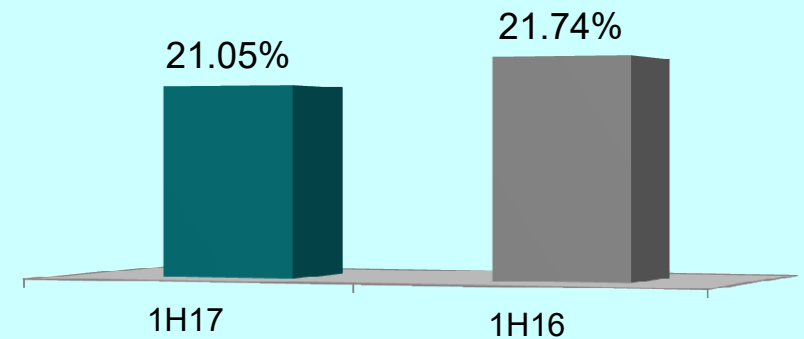
**% Avg. Capacity Factor**



**Total Net Energy (MWh /Quarter)**



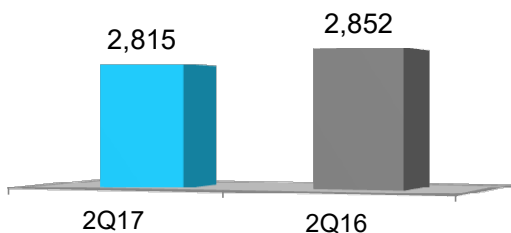
**% Avg. Capacity Factor**



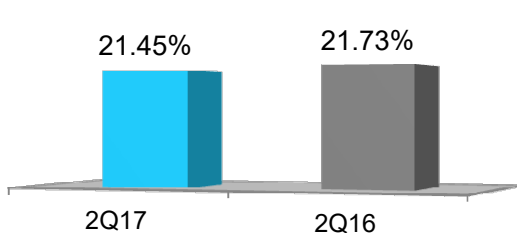
# Operation Performance : Solar Power

## Korat 3

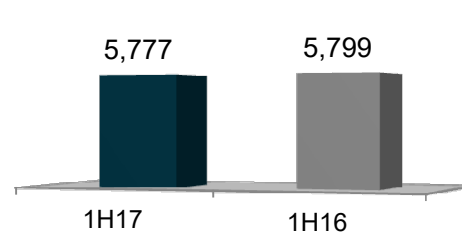
Total Net Energy (MWh /Quarter)



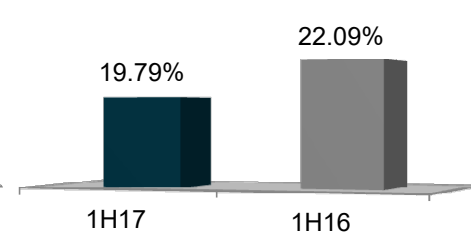
% Avg. Capacity Factor



Total Net Energy (MWh /Quarter)

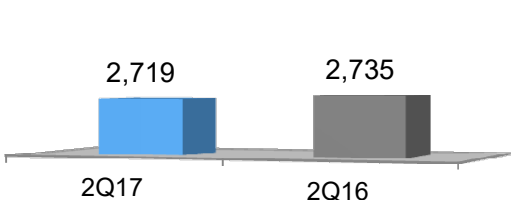


% Avg. Capacity Factor

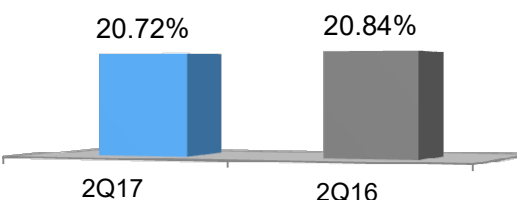


## Korat 4

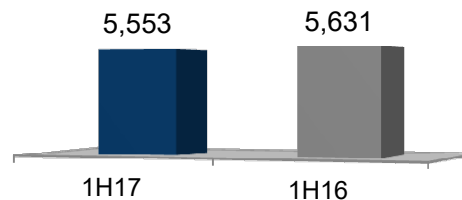
Total Net Energy (MWh /Quarter)



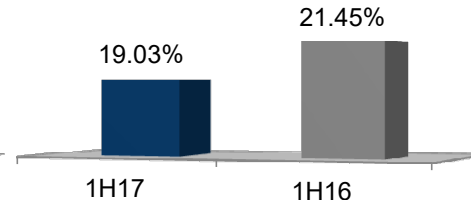
% Avg. Capacity Factor



Total Net Energy (MWh /Quarter)

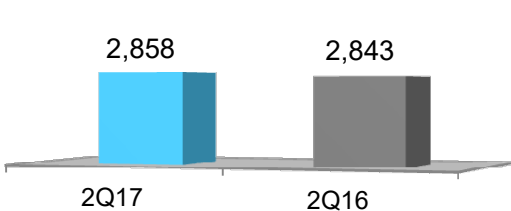


% Avg. Capacity Factor

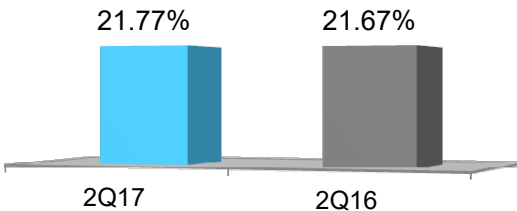


## Korat 7

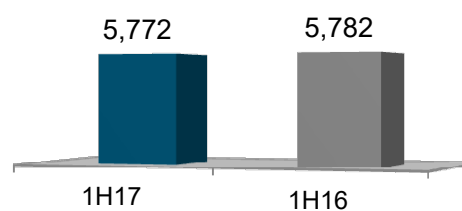
Total Net Energy (MWh /Quarter)



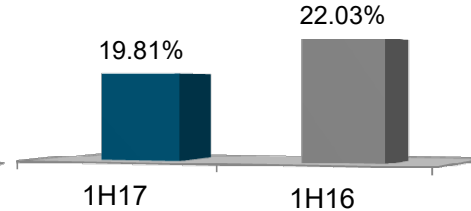
% Avg. Capacity Factor



Total Net Energy (MWh /Quarter)



% Avg. Capacity Factor



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# Income Statement

Unit : in Million Baht	2Q17	1Q17	4Q16	3Q16	2Q16
Revenues	11,150.26	9,978.02	10,860.57	11,349.65	12,589.67
Cost & Expenses	(9,412.26)	(8,477.49)	(9,437.12)	(9,892.70)	(10,961.40)
<b>EBITDA before Share of Profit and FX</b>	<b>1,738.00</b>	<b>1,500.53</b>	<b>1,423.45</b>	<b>1,456.95</b>	<b>1,628.27</b>
Share of profit of jointly-controlled entities and associates <b>excluding</b> gain (loss) on exchange rate	1,425.15	902.65	908.38	654.72	897.59
<b>EBITDA included share profit of JV before FX</b>	<b>3,163.15</b>	<b>2,403.18</b>	<b>2,331.83</b>	<b>2,111.67</b>	<b>2,525.86</b>
Gain (Loss) on exchange rate of subsidiaries	48.02	233.00	1,169.73	(256.33)	(762.23)
Gain (Loss) on exchange rate of JV	(33.17)	(375.95)	340.32	(118.26)	(37.96)
<b>EBITDA included share profit of JV and FX</b>	<b>3,178.00</b>	<b>2,260.23</b>	<b>3,841.88</b>	<b>1,737.08</b>	<b>1,725.67</b>
<i>Development cost - Nam Bak</i>	-	-	(126.00)	-	-
<i>O&amp;M Compensation – NN2</i>	-	-	-	-	134.71
<i>Gain on selling assets (Pratu Tao-A &amp; Sao Thian-A)</i>	-	-	-	-	-
<i>Insurance claim</i>	-	85.61	-	-	-
<i>Diesel price movement (RG &amp; RPCL)</i>	(53.65)	(16.01)	98.25	(33.40)	138.62
<i>Depreciation &amp; Amortization</i>	(356.57)	(354.27)	(356.13)	(343.01)	(350.99)
<b>EBIT</b>	<b>2,767.78</b>	<b>1,975.56</b>	<b>3,458.00</b>	<b>1,360.67</b>	<b>1,648.01</b>
Finance costs	(369.63)	(400.37)	(361.41)	(361.62)	(352.58)
Income tax expense	(233.25)	(247.06)	(155.59)	(180.84)	(217.75)
<b>Profit for the period</b>	<b>2,164.90</b>	<b>1,328.13</b>	<b>2,941.00</b>	<b>818.21</b>	<b>1,077.68</b>
Non-controlling interests	36.09	30.31	22.83	23.30	23.37
<b>Equity holders of the Company</b>	<b>2,200.99</b>	<b>1,358.44</b>	<b>2,963.83</b>	<b>841.51</b>	<b>1,101.05</b>

# Income Statement

Unit : in Million Baht	1H17	1H16
Revenues	21,128.28	25,974.19
Cost & Expenses	(17,889.75)	(22,626.52)
<b>EBITDA before Share of Profit and FX</b>	<b>3,238.53</b>	<b>3,347.67</b>
Share of profit of jointly-controlled entities and associates <b>excluding</b> gain (loss) on exchange rate	2,327.80	1,315.27
<b>EBITDA included share profit of JV before FX</b>	<b>5,566.33</b>	<b>4,662.94</b>
Gain (Loss) on exchange rate of subsidiaries	281.02	(755.74)
Gain (Loss) on exchange rate of JV	(409.12)	(105.66)
<b>EBITDA included share profit of JV and FX</b>	<b>5,438.23</b>	<b>3,801.54</b>
<i>O&amp;M Compensation – NN2</i>	-	134.71
<i>Insurance claim</i>	85.61	53.56
<i>Diesel price movement (RG &amp; RPCL)</i>	(69.66)	228.66
<i>Depreciation &amp; Amortization</i>	(710.84)	(698.91)
<b>EBIT</b>	<b>4,743.34</b>	<b>3,519.56</b>
Finance costs	(770.00)	(679.41)
Income tax expense	(480.31)	(526.81)
<b>Profit for the period</b>	<b>3,493.03</b>	<b>2,313.34</b>
Non-controlling interests	66.40	47.04
<b>Equity holders of the Company</b>	<b>3,559.43</b>	<b>2,360.38</b>

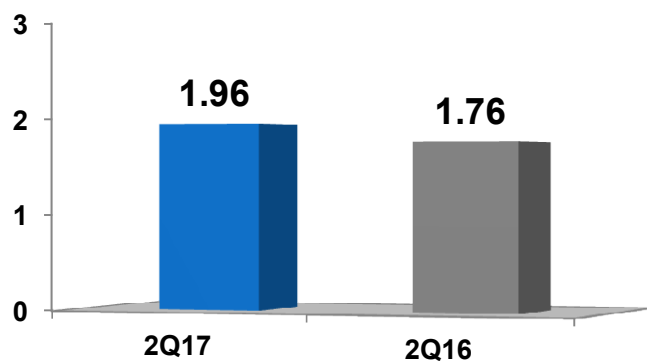
# Statements of Financial Position

As of 30 June 2017

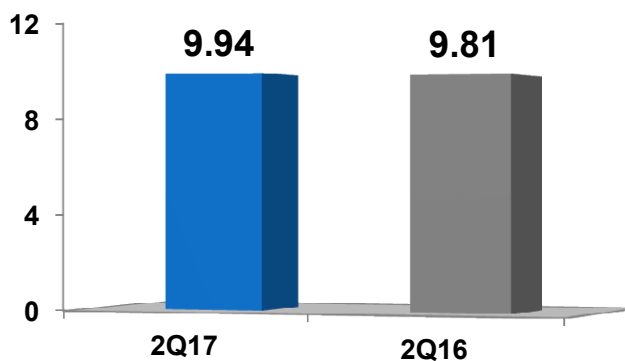
Total Assets	Million Baht	Total Liabilities & Equity	Million Baht
<b><u>Assets</u></b>		<b><u>Liabilities</u></b>	
Cash and cash equivalents	9,104.04	Loans from Related party, Financial Institutions & Debentures	23,056.28
Current investments	1,538.92	Other liabilities	10,673.35
Current Assets	11,915.18	<b>Total Liabilities</b>	33,729.63
Investment in Jointly-controlled entities/Associates/Others	30,934.75	<b><u>Equity</u></b>	
Financial lease receivables	23,041.00	Issued and paid-up share capital	16,031.78
Property, plant & equipments	15,136.42	Other components of equity	(3,289.63)
Other assets	5,443.40	Retained earnings	50,572.08
		<b>Total equity attributable to owners of the Company</b>	63,314.23
		Non-controlling interests	69.85
<b>Total Assets</b>	<b>97,113.71</b>	<b>Total Liabilities &amp; Equity</b>	<b>97,113.71</b>

# Financial Ratios\*

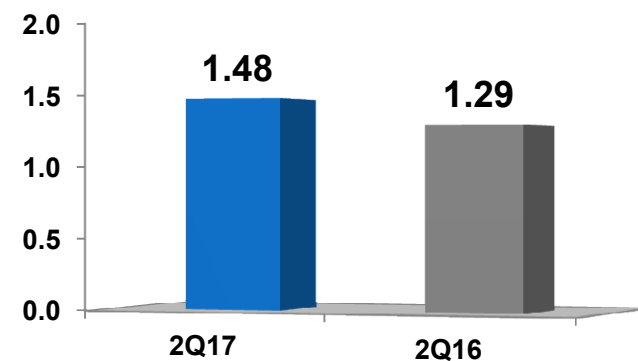
Current ratios (times)



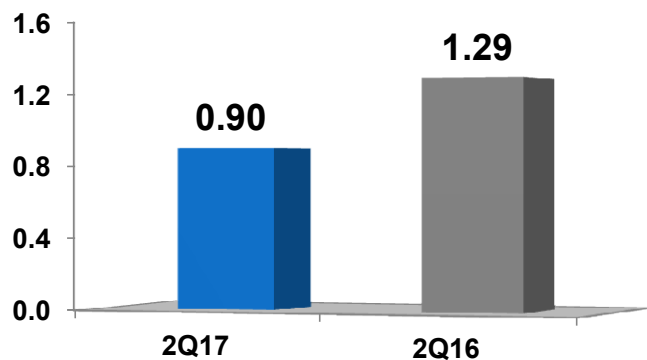
ROE (%)



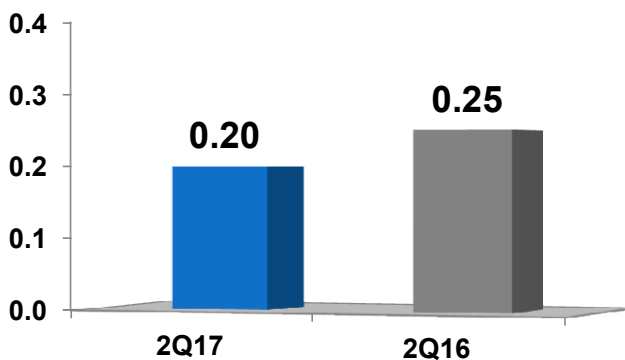
EPS (Baht per share)



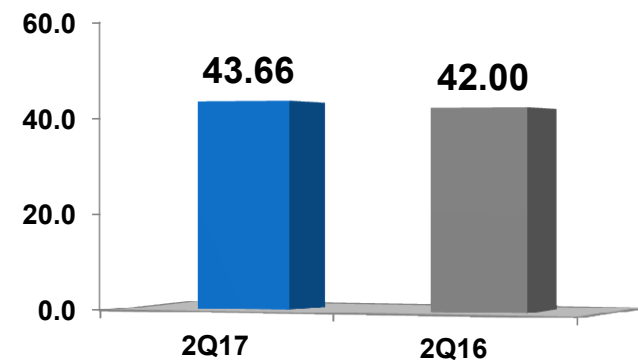
Net debt to EBITDA\*\* (times)



Net debt/Equity (times)



Book Value per share (Baht)



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- **Appendix : *Operating Performance***



# RATCHGEN Operating Performance

Fuel Consumption					
By Type of Power Plant		2Q17	2Q16	1H17	1H16
Fuel Consumption (TH#1-2)					
- Gas	Million MMBTU	0.14	7.27	0.45	15.59
- Heavy Oil	Million Liters	4.27	31.38	26.70	104.89
Fuel Consumption (CCGT#1-3)					
- Gas	Million MMBTU	26.14	26.38	47.06	48.44
- Diesel	Million Liters	0.12	0.17	0.28	3.91
Gas Price (Average) Baht/MMBTU		<b>238.68</b>	<b>233.18</b>	<b>238.73</b>	<b>245.88</b>
Heavy Oil Price (Average) Baht/Liter		<b>10.70</b>	<b>8.92</b>	<b>9.46</b>	<b>7.79</b>
Diesel Oil Price (Average) Baht/Liter		<b>23.88</b>	<b>23.96</b>	<b>23.84</b>	<b>24.65</b>

# RATCHGEN Operating Performance

Net Generation (GWh)				
By Type of Power Plant	2Q17	2Q16	1H17	1H16
Net Generation (TP#1-2) (GWh)	<b>28.88</b>	<b>828.15</b>	<b>140.75</b>	<b>1,956.14</b>
- By Gas (GWh)	13.40	716.96	41.42	1,554.32
- By Heavy Oil (GWh)	15.48	111.19	99.33	401.82
Net Generation (CCGT#1-3) (GWh)	<b>3,685.58</b>	<b>3,735.88</b>	<b>6,633.71</b>	<b>6,840.94</b>
- By Gas (GWh)	3,685.58	3,735.88	6,633.71	6,825.02
- By Diesel (GWh)	-	-	-	15.92
Total Net Generation (GWh)	<b>3,714.46</b>	<b>4,564.03</b>	<b>6,774.46</b>	<b>8,797.08</b>


**Actual Outage**

**Planned Outage at Ratchaburi Power Plant in 2016**

Plant		Jan	Feb	Mar	Apr	May	Jun	July	Aug	Sep	Oct	Nov	Dec
RG	CCST-10												
	CCGT-11									CI (15D) 17 27			
	CCGT-12									CI (15D) 17 27			
RG	CCST-20												
	CCGT-21						2	MI (30D)	31				
	CCGT-22						2	MI (30D)	31				
RG	CCST-30												
	CCGT-31	1 CI (12D)	12										
	CCGT-32	1 CI (12D)	12										
RG	Thermal-1												
RG	Thermal-1												
RG	CCST-10 - CCTE												
	CCGT-11 - CCTE												
	CCGT-12 - CCTE												
RPCL	CCST-10												
	CCGT-11												4 CI (10D)
	CCGT-12												4 CI (10D)
RPCL	CCST-20	3 MO(24D)	26										
	CCGT-21	3 MO(24D)	26										
	CCGT-22	3 MO(24D)	26										
Thermal Plant		Minor Inspection (MI)			40 Days		Major Overhaul (MO)			57 Days			
Gas Turbine		Warranty Inspection (WI)					Combustion Inspection			Minor Inspection		Major Overhaul	
		Normal (WI)		Gen.Rotor Removed (WI*)			(CI)			(MI)		(MO)	
		26 Days		32 Days			15 Days			30 Days		52 Days	
Steam Turbine		Warranty Inspection (WI)					Minor Inspection			Major Overhaul			
		Normal (WI**)		Gen.Rotor Removed (WI*)			(MI)			(MO)			
		26 Days		30 Days			26 Days			49 Days			

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 Actual Outage  
 Planned Outage

## Planned Outage at Ratchaburi Power Plant in 2017

Plant		Jan	Feb	Mar	Apr	May	Jun	July	Aug	Sep	Oct	Nov	Dec
RG	CCST-10											12 MI(26D)	7
	CCGT-11											23 CI (15D)	7
	CCGT-12											23 CI (15D)	7
RG	CCST-20								3 MI (26D)	28			
	CCGT-21								14 MI (15D)	28			
	CCGT-22								14 MI (15D)	28			
RG	CCST-30	1 MI (26d)	26										
	CCGT-31	28 MI (30d)	26										
	CCGT-32	28 MI (30d)	26										
RG	Thermal-1								6 MI (40D)	14			
RG	Thermal-1											19 MI (40D)	28
RG	CCST-10 - CCTE												
	CCGT-11 - CCTE								5 CI (19d)	14			
	CCGT-12 - CCTE				8 CI (10d)	18							
RPCL	CCST-10												
	CCGT-11										14 MI (3D)	14	
	CCGT-12										14 MI (3D)	14	
RPCL	CCST-20	3 CI (9D)	12										
	CCGT-21	3 CI (9D)	12										
	CCGT-22	3 CI (9D)	12										

Thermal Plant	Minor Inspection (MI)		40 Days	Major Overhaul (MO)		57 Days		
Gas Turbine	Warranty Inspection (WI)			Combustion Inspection		Minor Inspection	Major Overhaul	
	Normal (WI)	Gen.Rotor Removed (WI*)		(CI)		(MI)	(MO)	
	26 Days	32 Days		15 Days		30 Days	52 Days	
Steam Turbine	Warranty Inspection (WI)			Minor Inspection		Major Overhaul	Page 25	
	Normal (WI**)	Gen.Rotor Removed (WI*)		(MI)		(MO)		
	26 Days	30 Days		26 Days		49 Days		

# Agenda

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- Highlights
- RATCH Overview
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- **Appendix : *Financial Performance***



# Revenues: 2Q17 & 2Q16

Unit : in Million Baht		2Q17	2Q16	Diff	%
<b>Sales</b>		9,853.38	11,211.18	(1,357.80)	(12.11)
AP	- RG/TECO	1,087.07	840.43	246.64	29.35
	- RAC	378.90	385.12	(6.22)	(1.62)
EP (Fuel)	- RG/TECO	8,246.53	9,762.67	(1,516.14)	(15.53)
	- RAC	140.88	222.96	(82.08)	(36.81)
<b>Revenue from financial leases - RG/TECO</b>		1,021.65	1,141.01	(119.36)	(10.46)
<b>Revenue from Rendering of services</b>		12.99	12.60	0.39	3.10
<b>Management service income</b>		62.94	63.90	(0.96)	(1.50)
<b>Dividend Income</b>		114.15	109.86	4.29	3.90
<b>Interest Income</b>		44.76	35.86	8.90	24.82
<b>Other Incomes (exc. Extraordinary items)</b>		40.39	15.26	25.13	164.68
<b>Total Revenues</b>		<b>11,150.26</b>	<b>12,589.67</b>	<b>(1,439.41)</b>	<b>(11.43)</b>

# Revenues: 1H17 & 1H16

Unit : in Million Baht		1H17	1H16	Diff	%
<b>Sales</b>		18,638.86	23,221.54	(4,582.68)	(19.73)
AP	- RG/TECO	2,091.54	1,682.44	409.10	24.32
	- RAC	817.93	808.12	9.81	1.21
EP (Fuel)	- RG/TECO	15,414.16	20,331.06	(4,916.90)	(24.18)
	- RAC	315.23	399.92	(84.69)	(21.18)
<b>Revenue from financial leases - RG/TECO</b>		2,077.87	2,309.24	(231.37)	(10.02)
<b>Revenue from Rendering of services</b>		25.56	78.59	(53.03)	(67.48)
<b>Management service income</b>		123.74	131.98	(8.24)	(6.24)
<b>Dividend Income</b>		114.15	109.86	4.29	3.90
<b>Interest Income</b>		91.96	83.92	8.04	9.58
<b>Other Incomes (exc. Extraordinary items)</b>		56.14	39.06	17.08	43.73
<b>Total Revenues</b>		<b>21,128.28</b>	<b>25,974.19</b>	<b>(4,845.91)</b>	<b>(18.66)</b>

## Share of profit from jointly-controlled entities : 2Q17 & 2Q16

Unit : in Million Baht	2Q17	2Q16	Diff	%
RPCL	124.58	145.07	(20.49)	(14.12)
SEAN	19.41	57.51	(38.10)	(66.25)
HPC	1,024.14	424.66	599.48	141.17
CRESCO	1.00	7.39	(6.39)	(86.47)
SOLARTA	49.38	43.76	5.62	12.84
KORAT 3,4,7	20.34	19.95	0.39	1.95
FKW	8.68	17.54	(8.86)	(50.51)
KR2	3.52	16.83	(13.31)	(79.08)
KWINANA	20.17	14.33	5.84	40.75
PNPC	(27.67)	14.57	(42.24)	(289.91)
RW COGEN	65.18	60.61	4.57	7.54
NNEG	36.90	1.03	35.87	n.a.
Songkhla Biomass	5.97	13.24	(7.27)	(54.91)
Others	40.38	23.14	17.24	74.50
<b>Total Share of profit from jointly-controlled entities</b>	<b>1,391.98</b>	<b>859.63</b>	<b>532.35</b>	<b>61.93</b>

# Share of profit from jointly-controlled entities : 2Q17 & 2Q16

EXCL.FX

Unit : in Million Baht	2Q17	2Q16	Diff	%
RPCL	116.75	143.23	(26.48)	(18.49)
SEAN	2.17	55.67	(53.50)	(96.10)
HPC	1,062.37	489.79	572.58	116.90
CRESCO	0.10	6.13	(6.03)	(98.37)
SOLARTA	49.38	43.75	5.63	12.87
KORAT 3,4,7	20.34	19.95	0.39	1.95
FKW	8.68	17.54	(8.86)	(50.51)
KR2	3.52	16.83	(13.31)	(79.08)
KWINANA	20.17	14.33	5.84	40.75
PNPC	(4.08)	(4.01)	(0.07)	(1.75)
RW COGEN	65.16	60.54	4.62	7.63
NNEG	36.91	(3.74)	40.65	n.a.
Songkhla Biomass	5.97	13.24	(7.27)	(54.91)
Others	37.71	24.34	13.37	54.93
<b>Total Share of profit from jointly-controlled entities</b>	<b>1,425.15</b>	<b>897.59</b>	<b>527.56</b>	<b>58.78</b>

## Share of profit from jointly-controlled entities : 1H17 & 1H16

Unit : in Million Baht	1H17	1H16	Diff	%
RPCL	220.19	278.43	(58.24)	(20.92)
SEAN	75.31	134.28	(58.97)	(43.92)
HPC	1,150.84	333.24	817.60	245.35
CRESCO	15.61	24.30	(8.69)	(35.76)
SOLARTA	102.31	88.90	13.41	15.08
KORAT 3,4,7	42.68	42.08	0.60	1.43
FKW	42.88	49.99	(7.11)	(14.22)
KR2	32.76	44.77	(12.01)	(26.83)
KWINANA	28.63	35.86	(7.23)	(20.16)
PNPC	(77.88)	9.56	(87.44)	(914.64)
RW COGEN	123.07	119.58	3.49	2.92
NNEG	71.82	(5.46)	77.28	n.a.
Songkhla Biomass	7.75	28.60	(20.85)	(72.90)
Others	82.71	25.48	57.23	224.61
<b>Total Share of profit from jointly-controlled entities</b>	<b>1,918.68</b>	<b>1,209.61</b>	<b>709.07</b>	<b>58.62</b>

# Share of profit from jointly-controlled entities : 1H17 & 1H16

EXCL.FX

Unit : in Million Baht	1H17	1H16	Diff	%
RPCL	181.73	251.23	(69.50)	(27.66)
SEAN	12.51	96.70	(84.19)	(87.06)
HPC	1,599.41	527.02	1,072.39	203.48
CRESCO	13.13	21.81	(8.68)	(39.80)
SOLARTA	102.31	88.89	13.42	15.10
KORAT 3,4,7	42.68	42.08	0.60	1.43
FKW	42.88	49.99	(7.11)	(14.22)
KR2	32.76	44.77	(12.01)	(26.83)
KWINANA	28.63	35.86	(7.23)	(20.16)
PNPC	(8.06)	(6.05)	(2.01)	(33.22)
RW COGEN	122.95	119.40	3.55	2.97
NNEG	71.82	(12.66)	84.48	667.30
Songkhla Biomass	7.75	28.60	(20.85)	(72.90)
Others	77.30	27.63	49.67	179.77
<b>Total Share of profit from jointly-controlled entities</b>	<b>2,327.80</b>	<b>1,315.27</b>	<b>1,012.53</b>	<b>76.98</b>

# Cost and Expenses: 2Q17 & 2Q16

Unit : in Million Baht	2Q17	2Q16	Diff	%
<b>Cost of Sale and rendering of services</b>	<b>9,056.26</b>	<b>10,656.06</b>	<b>(1,599.80)</b>	<b>(15.01)</b>
– Fuel Cost : RG/ TECO	8,090.95	9,607.32	(1,516.37)	(15.78)
– Operation & Maintenance	371.29	367.99	3.30	0.90
– Repairing Expense (CSA)	287.37	264.85	22.52	8.50
– Spare parts	57.00	84.28	(27.28)	(32.37)
– Insurance Premium	111.96	120.94	(8.98)	(7.43)
– Standby Charge	60.02	52.44	7.58	14.45
– <b>Others</b>	<b>77.67</b>	<b>158.24</b>	<b>(80.57)</b>	<b>(50.92)</b>
<b>Selling and Admin- Expenses</b>	<b>356.00</b>	<b>305.34</b>	<b>50.66</b>	<b>16.59</b>
<b>Total Cost and Expenses*</b>	<b>9,412.26</b>	<b>10,961.40</b>	<b>(1,549.14)</b>	<b>(14.13)</b>

*\*excluding depreciation & amortization*

# Cost and Expenses: 1H17 & 1H16

Unit : in Million Baht	1H17	1H16	Diff	%
<b>Cost of Sale and rendering of services</b>	<b>17,133.13</b>	<b>21,984.05</b>	<b>(4,850.92)</b>	<b>(22.07)</b>
– Fuel Cost : RG/ TECO	15,163.25	20,007.09	(4,843.84)	(24.21)
– Fuel Cost : RAC	1.85	6.03	(4.18)	(69.32)
– Operation & Maintenance	728.80	746.84	(18.04)	(2.42)
– Repairing Expense (CSA)	572.10	528.67	43.43	8.21
– Spare parts	169.78	147.82	21.96	14.86
– Insurance Premium	230.82	240.36	(9.54)	(3.97)
– Standby Charge	121.41	107.75	13.66	12.68
– Others	145.12	199.49	(54.37)	(27.25)
<b>Selling and Admin- Expenses</b>	<b>756.62</b>	<b>642.47</b>	<b>114.15</b>	<b>17.77</b>
<b>Total Cost and Expenses*</b>	<b>17,889.75</b>	<b>22,626.52</b>	<b>(4,736.77)</b>	<b>(20.93)</b>

*\*excluding depreciation & amortization*

# Gain (Loss) From Foreign Exchange Rate

Unit : in Million Baht	2Q17	2Q16	1H17	1H16
<b>Gain (Loss) from Foreign Exchange Rate</b>	<b>14.85</b>	<b>(800.19)</b>	<b>(128.10)</b>	<b>(861.40)</b>
<b>The Company and Subsidiaries</b>	<b>48.02</b>	<b>(762.23)</b>	<b>281.02</b>	<b>(755.74)</b>
- RH	(20.83)	(9.84)	(74.34)	(77.35)
- RH Inter	42.71	(759.09)	263.34	(739.25)
- RG / RE / RL	26.14	6.70	92.02	60.86
<b>Jointly-controlled entities and Associates</b>	<b>(33.17)</b>	<b>(37.96)</b>	<b>(409.12)</b>	<b>(105.66)</b>
- SEAN (33.33%)	17.24	1.84	62.80	37.58
- RPCL (25%)	7.83	1.84	38.46	27.20
- HPC (40%)	(38.23)	(65.13)	(448.57)	(193.78)
- PNPC (25%)	(23.59)	18.58	(69.82)	15.61
- Others (CRESCO, RW Cogen, FKW, KR2, NNEG, Solarta, RIC)	3.58	4.91	8.01	7.73

Foreign Exchange Rate as at 30 June 2017 = 33.984 Baht/USD and as at 30 June 2016 = 35.195 Baht/USD

Foreign Exchange Rate as at 31 March 2017 = 34.450 Baht/USD and as at 31 March 2016 = 35.230 Baht/USD

Foreign Exchange Rate as at 30 December 2016 = 35.820 Baht/USD and as at 31 December 2015 = 36.077 Baht/USD

# Agenda

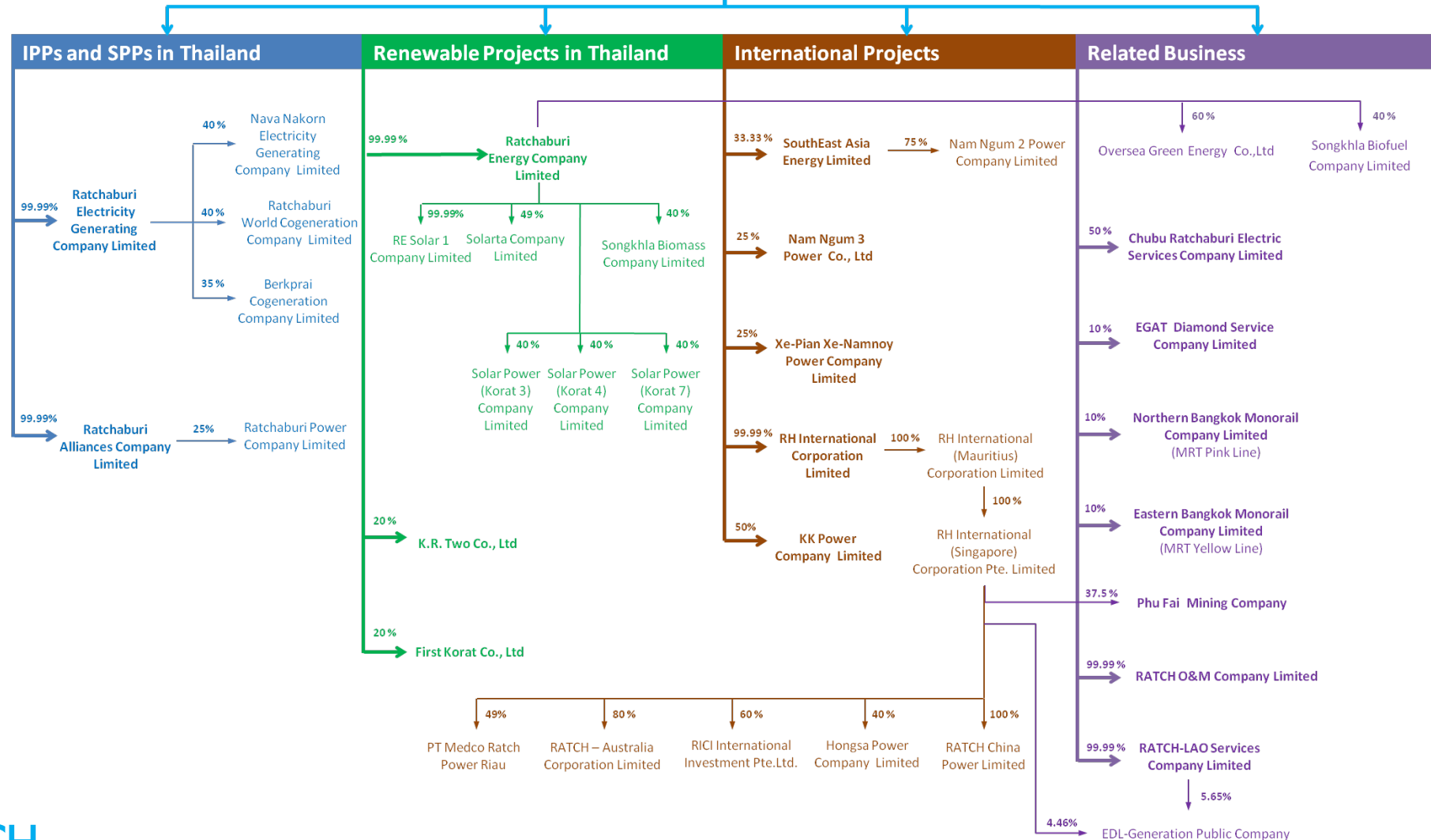
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- Highlights
- RATCH Overview
- Operating Performance
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- **Appendix : *RATCH Projects***



# Company Structure

As of July 2017



# Portfolio by Core Business

## IPPs and SPPs in Thailand

Name of Power Plant/Project	Location	Technology	Total Installed Capacity (MW)	Installed Capacity contributed to the RATCH's Group (MW)	Terms of the PPA		
					PPA Party	Tenure/ Expiry Year	Renewal/ Option to Extend
In Operation							
Ratchaburi Power Plant	Ratchaburi Province	Thermal	1,470	1,470 (100%)	EGAT	25 years/ 2025	N/A
		Combined Cycle	2,175	2,175 (100%)	EGAT	25 years/ 2027	N/A
Tri Energy Power Plant	Ratchaburi Province	Combined Cycle	720	720 (100%)	EGAT	20 years/ 2020	N/A
Ratchaburi Power Power Plant	Ratchaburi Province	Combined Cycle	1,490	372.50 (25%)	EGAT	25 years/ 2033	N/A
Ratchaburi World Cogeneration Project	Ratchaburi Industrial Estate, Ratchaburi Province	Cogeneration	234	93.60 (40%)	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	139.13	55.65(40%)	EGAT	25 years/ 2041	N/A
Total			6,228.13	4,886.75			

# Portfolio by Core Business

## *IPPs and SPPs in Thailand (Cont.)*

Name of Power Plant/Project	Location	Technology	Total Installed Capacity (MW)	Installed Capacity contributed to the RATCH’s Group (MW)	Terms of the PPA		
					PPA Party	Tenure/ Expiry Year	Renewal/ Option to Extend
Under Development							
Berkprai Cogeneration	Ratchaburi Province	Cogeneration	99.23	34.73 (35%)	EGAT	25 years/2044 (Expected COD: 2019)	N/A
		Total	99.23	34.73			
Grand Total			6,327.36	4,921.48			

# Portfolio by Core Business

## Renewable Projects in Thailand

Name of Power Plant/Project	Location	Technology	Total Installed Capacity (MW)	Installed Capacity contributed to the RATCH's Group (MW)	Terms of the PPA		
					PPA Party	Tenure/ Expiry Year	Renewal/ Option to Extend
In Operation							
Huay Bong 2 Wind-Turbine Power Plant	Nakorn Ratchasima Province	Wind-Turbine	103.50	20.70 (20%)	EGAT	5 years/ 2018	Automatic renewal for a further 5 years every 5 years
Huay Bong 3 Wind-Turbine Power Plant	Nakorn Ratchasima Province	Wind-Turbine	103.50	20.70 (20%)	EGAT	5 years/ 2017	Automatic renewal for a further 5 years every 5 years
Solar Power Projects (Korat 3, Korat 4, Korat 7)	Nakorn Ratchasima Province	Solar Power	21.60	8.64 (40%)	PEA	5 years/ 2022	Automatic renewal for a further 5 years every 5 years
Solarta Power Projects	Ayutthaya, Nakhon Pathom, and Suphanburi Provinces	Solar Power	42.30	20.73 (49%)	PEA	Ayutthaya Province : 5 years / 2021 Suphanburi and Nakhon Pathom Provinces : 5 years / 2017	Automatic renewal for a further 5 years every 5 years
Songkhla Biomass Power Project	Songkhla Province	Thermal	9.90	3.96 (40%)	PEA	20 years/2035	N/A
		Total	280.80	74.73			
Grand Total			280.80	74.73			

# Portfolio by Core Business

## International Projects in Australia

Name of Power Plant/Project	Location	Technology	Total Installed Capacity (MW)	Installed Capacity contributed to the RATCH's Group (MW)	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	234	187.20 (80%)	AGL/Arrow	February 2025	N/A
Kemerton Power Plant	Western Australia, Australia	Open Cycle Gas/Diesel Turbine	308	246.40 (80%)	Synergy	October 2030	N/A
BP Kwinana Power Plant (30 % owned by RAC)	Western Australia, Australia	Cogeneration	35.40	28.32 (80%)	Verve Energy/BP	December 2021	N/A
Starfish Hill Wind-Turbine Power Plant	South Australia, Australia	Wind-Turbine	33.00	26.40 (80%)	ALINTA Energy	In 2020	N/A
Toora Wind-Turbine Power Plant	Victoria, Australia	Wind-Turbine	21	16.80 (80%)	Merchant	N/A	N/A
Windy Hill Wind-Turbine Power Plant	Queensland, Australia	Wind-Turbine	12	9.60 (80%)	Ergon Energy Queensland (EEQ)	December 2018	N/A
		Total	643.40	514.72			

# Portfolio by Core Business

## International Projects in Australia

Name of Power Plant/Project	Location	Technology	Total Installed Capacity (MW)	Installed Capacity contributed to the RATCH’s Group (MW)	Terms of the PPA		
					PPA Party	Tenure/ Expiry Year	Renewal/ Option to Extend
Under Construction							
Mount Emerald Wind Farm	Queensland, Australia	Wind-Turbine	180.45	144.36 (80%)	Ergon Energy Queensland (EEQ)	12.5 year (Expected COD: 2018)	N/A
Collinsville Solar Power Project	Queensland, Australia	Solar Power	42.50	34 (80%)	Braemar Power Project	12.5 year (Expected COD: 2018)	N/A
		Total	222.95	178.36			
Grand Total			866.35	693.08			

# Portfolio by Core Business

## International Projects in Laos

Name of Power Plant/Project	Location	Technology	Total Installed Capacity (MW)	Installed Capacity contributed to the RATCH’s Group (MW)	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	615	153.75 (25%)	EGAT	27 years/ 2038	N/A
Hongsa Power Plant	Sainyaburi Province, Laos	Lignite-Fired Power Plant	1,878	751.20 (40%)	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	410	102.50 (25%)	EGAT	27 years/ 2046 (Expected COD: 2019)	N/A
		Total	410	102.50			
Grand Total			2,903	1,007.45			

# Portfolio by Core Business

## *International Projects in China & Republic of Indonesia*

Name of Power Plant/Project	Location	Technology	Total Installed Capacity (MW)	Installed Capacity contributed to the RATCH’s Group (MW)	Terms of the PPA		
					PPA Party	Tenure/ Expiry Year	Renewal/ Option to Extend
Under Construction							
Guangxi Fangchenggang Nuclear Power (II)	Fangchenggang , China	Nuclear Power	2,360	236 (10%)	N/A	30 year (Expected COD: 2021)	N/A
		Total	2,360	236			
Under Development							
Riau Combined-Cycle Power Plant	Republic of Indonesia	Combined Cycle	275	134.75 (49%)	PT PLN (PERSERO)	20 year (Expected COD: 2021)	N/A
Total			275	134.75			
Grand Total			2,635	370.75			

# Portfolio by Core Business

## Related Businesses

Name of Power Plant/Project	Location	Technology	Total Installed Capacity (MW)	Installed Capacity contributed to the RATCH’s Group (MW)	Terms of the PPA		
					PPA Party	Tenure/ Expiry Year	Renewal/ Option to Extend
In Operation							
EDL-Generation	Laos	Hydro Power Plant	1,131.15	114.36 (10.11%)	N/A	N/A	N/A
		Total	1,131.15	114.36			
Under Development							
MRT Pink Line Project and MRT Yellow Line Project	Nonthaburi and Bangkok Province	Elevated Straddle Monorail	~1,910 MW	~191.00 MW (10%)	N/A	30 years/2051 (Expected COD: 2020	N/A
Total			1,910	191.00			
Grand Total			3,041.15	305.36			

# IPPs and SPPs in Thailand



## Ratchaburi Power Plant (RATCHGEN)



### Location

Ratchaburi Province

### Technology

Thermal & Combined Cycle

### Total Installed Capacity

3,645 MW (holds 100%)

### PPA

25-Year

### COD

TH#1-2 : 31 Oct 2000

CCGT #1-2 : 18 Apr 2002

CCGT#3 : 1 Nov 2002

### Partner

Ratchaburi Electricity Generating  
Company Limited holds 100%

### Project Cost (100%)

60,775 Million Baht

### Debt to Equity

2.3 : 1

### Project Cost (RATCH Portion)

60,775 Million Baht

## Tri Energy Power Plant (TECO)



### Location

Ratchaburi Province

### Technology

Combined Cycle

### Total Installed Capacity

720 MW (holds 100%)

### PPA

20-Year

### COD

1 July 2000

### Partner

Ratchaburi Electricity Generating  
Company Limited holds 100%

### Project Cost (100%)

404.75 Million USD

### Debt to Equity

3 : 1


### Project Cost (RATCH Portion)


- In 2005, RATCH holds 50% of the total share, at the amount 202.50 Million USD
- In 2014, RATCH has purchased 50% of the total share, at the amount 21.32 Million USD

# IPPs and SPPs in Thailand



<b>Project Cost (100%)</b> 840 Million USD
<b>Debt to Equity</b> 2.5 : 1
<b>Project Cost (RATCH Portion 25%)</b> 210 Million USD

<b>Ratchaburi Power Plant (RPCL)</b>

<b>Location</b> Ratchaburi Province
<b>Technology</b> Combined Cycle
<b>Total Installed Capacity</b> 1,490 MW (372.50 MW holds 25 %)
<b>PPA</b> 25-Year
<b>COD</b> Block 1: 1 March 2008 Block 2: 1 June 2008
<b>Partner</b> <ul style="list-style-type: none"> <li>• Ratchaburi Alliances Company Limited holds 25%</li> <li>• Power Assets holds 25%</li> <li>• Chubu Electric Power Company International B.V. holds 15%</li> <li>• PTT PCL holds 15%</li> <li>• Union Energy Company Limited holds 10%</li> <li>• Toyota Tsusho Corporation holds 10%</li> </ul>

<b>Ratchaburi World Cogeneration (RW Cogen)</b>

<b>Location</b> Ratchaburi Province
<b>Technology</b> Cogeneration
<b>Total Installed Capacity</b> 234 MW (93.60 MW holds 40%)
<b>PPA</b> 25-Year
<b>COD</b> Unit 1: November 2014 Unit 2: March 2015
<b>Partner</b> <ul style="list-style-type: none"> <li>• Ratchaburi Electricity Generating Company Limited holds 40%</li> <li>• Major Shareholder Group of Thai Agri Food PCL holds 60%</li> </ul>

<b>Project Cost (100%)</b> 10,620 Million Baht
<b>Debt to Equity</b> 75 : 25
<b>Project Cost (RATCH Portion 40%)</b> 4,248 Million Baht

# IPPs and SPPs in Thailand



## Project Cost (100%)

6,000 Million Baht

## Debt to Equity

75 : 25

## Project Cost (RATCH Portion 40%)

2,400 Million Baht

## Nava Nakhon Electricity Generating (NNEG)



## Location

Pathum Thani Province

## Technology

Cogeneration

## Total Installed Capacity

139.13 MW (55.65 MW holds 40%)

## PPA

25-Year

## COD

3 June 2016

## Partner

- Ratchaburi Electricity Generating Company Limited holds 40%
- PTT holds 30%
- Nava Nakhon holds 30%

## Berkprai Cogeneration (Former name: Ratchaburi Cogeneration)

## Location

Ratchaburi Province

## Technology

Cogeneration

## Total Installed Capacity

99.23 MW (34.73 MW holds 35%)  
Steam Generation 15 ton/hour

## PPA

25-Year

## Expected COD

In 2019

## Partner

- Ratchaburi Electricity Generating Company Limited holds 35%
- Rajburi Sugar Company Limited 65%

## Project Cost (100%)

5,331 Million Baht

## Debt to Equity

3 : 1

## Project Cost (RATCH Portion 35%)

1,866 Million Baht

## Under Development

### About Berkprai Cogeneration

On 15th September 2014, Ratchaburi Electricity Generating Company Limited has entered into Shareholders Agreement with Rajburi Sugar Company Limited

On 30th October 2014, Ratchaburi Electricity Generating Company Limited purchased 35 % of Ratchaburi Cogeneration Company Limited's total shares from Rajburi Sugar Company Limited

On 27th January 2015, Ratchaburi Cogeneration Company Limited changed its name to Berkprai Cogeneration Company Limited (the project).

On 28th September 2016, the project increased its registered capital from 100 Million Baht to 1,331 Million Baht

On 6th June 2017, the project has signed Facilities Agreement with Bangkok Bank. The loan amount is 4,000 Million Baht for the period of 20 years from the agreement signed date.

# Renewable Projects in Thailand



## Huay Bong 2 Wind-Turbine Power Project



### Location

Nakorn Ratchasima Province

### Technology

Wind-Turbine

### Total Installed Capacity

103.5 MW (20.7 MW holds 20%)

### PPA

5 years with automatic renewal for a further 5 years every 5 years

### COD

8 February 2013

### Partner

- RATCH holds 20%
- Aeolus Power holds 60%
- Chubu Electric Power Korat, BV holds 20%

## Huay Bong 3 Wind-Turbine Power Project



### Location

Nakorn Ratchasima Province

### Technology

Wind-Turbine

### Total Installed Capacity

103.5 MW (20.7 MW holds 20%)

### PPA

5 years with automatic renewal for a further 5 years every 5 years

### COD

14 November 2012

### Partner

- RATCH holds 20%
- Aeolus Power holds 60%
- Chubu Electric Power Korat, BV holds 20%

### Project Cost (100%)

6,500 Million Baht

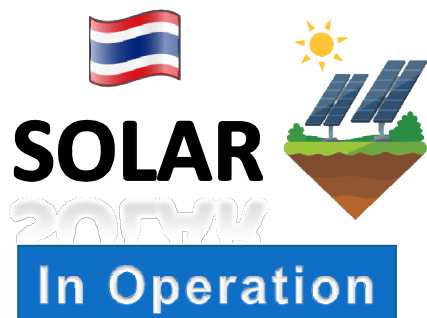
### Debt to Equity

70 : 30

### Project Cost (RATCH Portion 20%)

1,300 Million Baht

# Renewable Projects in Thailand



## Project Cost (100%)

1,950 Million Baht

## Debt to Equity

75 : 25

## Project Cost (RATCH Portion 40%)

780 Million Baht

## Solar Power Projects (Korat 3, Korat 4, Korat 7)



## Location

Nakorn Ratchasima Province

## Technology

Solar Power

## Total Installed Capacity

21.60 MW (8.64 MW holds 40%)

## PPA

5 years with automatic renewal for a further 5 years every 5 years

## COD

Korat 3 : 9 March 2012

Korat 4 : 14 May 2012

Korat 7 : 30 May 2012

## Partner

- Ratchaburi Energy Company Limited holds 40%
- Solar Power holds 60%

## Solarta Power Projects



## Location

Ayutthaya Province

Suphan Buri Province

Nakon Pathom Province

## Technology

Solar Power

## Total Installed Capacity

42.30 MW (20.73 MW holds 49%)

## PPA

5 years with automatic renewal for a further 5 years every 5 years

## COD

Ayutthaya Province : 7 April 2011

Suphan Buri Province : In 2012

Nakon Pathom Province : In 2012

## Partner

- Ratchaburi Energy Company Limited holds 49%
- Yanhee Power holds 51%

## Project Cost (100%)

4,400 Million Baht

## Debt to Equity

75 : 25

## Project Cost (RATCH Portion 49%)

2,156 Million Baht

# Renewable Projects in Thailand

## BIOMASS



In Operation

### Songkhla Biomass Power Project

#### Location

Songkhla Province

#### Technology

Thermal Power Plant

#### Total Installed Capacity

9.9 MW (3.96 MW holds 40%)

#### VSPP

20-Year

#### COD

9 November 2015

#### Partner

- Ratchaburi Energy Company Limited holds 40%
- Precise Power Producer holds 40%
- Assiddeek Saving Cooperative holds 20%

#### Project Cost (100%)

846 Million Baht

#### Debt to Equity

75 : 25

#### Project Cost (RATCH Portion 40%)

338.40 Million Baht

### ESP



### Boiler & Economizer



### Fuel Storage Silo




# International Projects



<b>Project Cost (100%)</b> 30,832 Million Baht
<b>Debt to Equity</b> 2.5 : 1
<b>Project Cost (RATCH Portion 25%)</b> 7,708 Million Baht

Num Ngum 2 Hydroelectric Power Plant	
	
<b>Location</b>	Lao PDR
<b>Technology</b>	Hydro Power Plant
<b>Total Installed Capacity</b>	615 MW (153.75 MW holds 25%)
<b>PPA</b>	27-Year
<b>IOD/COD</b>	In 2011 / In 2013
<b>Partner</b>	<ul style="list-style-type: none"> <li>• SEAN* holds 75%</li> <li>• GOL holds 25%</li> </ul>
* Remark: SEAN's shareholder consist of <ul style="list-style-type: none"> <li>• RATCH holds 33.33%</li> <li>• CK Power PCL holds 55.99%</li> <li>• Other holds 10.68%</li> </ul>	

EDL-Generation Public Company (EDL-Gen)	
	
<b>Location</b>	Lao PDR
<b>Technology</b>	Hydro Power Plant
<b>Total Installed Capacity</b>	1,131.15 MW (114.36 MW holds 10.11%*)
<b>Shareholders</b>	<ul style="list-style-type: none"> <li>• RATCH-Lao holds 5.65%</li> <li>• RH International (Singapore) Corporation Pte. Limited holds 4.46%</li> <li>• EDL holds 75%</li> <li>• Others holds 14.89%</li> </ul>
*Remark: <ul style="list-style-type: none"> <li>• EDL-Gen has been traded on Lao Securities Exchange since 2010.</li> <li>• In 2016, RATCH acquired 169.78 million shares, or equivalent to 3,254 Million Baht</li> </ul>	

# International Projects



## Xe-Pian – Xe Namnoy Project

### Location

Lao PDR

### Technology

Hydro Power Plant

### Total Installed Capacity

410 MW (102.5 MW holds 25%)

### PPA

27-Year

### Expected COD

In 2019

### Progress

77.20% as of June 2017

### Partner

- RATCH holds 25%
- SK Engineering holds 26%
- Korea Western Power holds 25%
- Lao PDR holds 24%

### Project Cost (100%)

1,020 Million USD

### Debt to Equity

70 : 30

### Project Cost (RATCH Portion 25%)

255 Million USD



# International Projects




<b>Project Cost (100%)</b>
3,710 Million USD
<b>Debt to Equity</b>
75 : 25
<b>Project Cost (RATCH Portion 25%)</b>
1,484 Million USD


<b>Hongsa Power Plant Unit 1-3</b>
<b>Location</b> Lao PDR
<b>Technology</b> Lignite-Fired
<b>Total Installed Capacity</b> 1,878 MW (751.2 MW holds 40%)
<b>PPA</b> 25-Year
<b>COD</b> Unit 1 : 2 June 2015 Unit 2 : 2 November 2015 Unit 3 : 2 March 2016
<b>Partner (Power Plant)</b> <ul style="list-style-type: none"> <li>• RHIS holds 40%</li> <li>• Banpu Power holds 40%</li> <li>• Lao PDR holds 20%</li> </ul>
<b>Partner (Phu Fai Mining)</b> <ul style="list-style-type: none"> <li>• RHIS holds 37.5%</li> <li>• Banpu Power holds 37.5%</li> <li>• Lao PDR holds 25%</li> </ul>




# International Projects




Townsville Power Plant

<b>Location</b> North Queensland, Australia
<b>Technology</b> Combined Cycle Gas Turbine
<b>Total Installed Capacity</b> 234 MW (187.20 MW holds 80%)
<b>COD</b> In 1999
<b>Contract end date</b> February 2025
<b>Contract counterparty</b> AGL / Arrow

Kemerton Power Plant

<b>Location</b> Western Australia
<b>Technology</b> Open Cycle Gas / Diesel Turbine
<b>Total Installed Capacity</b> 308 MW (246.40 MW holds 80%)
<b>COD</b> In 2005
<b>Contract end date</b> October 2030
<b>Contract counterparty</b> Synergy

BP Kwinana Power Plant

<b>Location</b> Western Australia
<b>Technology</b> Co-generation
<b>Total Installed Capacity</b> 35.40 MW (28.32 MW holds 80%)
<b>COD</b> In 1996
<b>Contract end date</b> December 2021
<b>Contract counterparty</b> Verve Energy / BP

# International Projects



Toora

<b>Location</b> Victoria, Australia
<b>Technology</b> Wind Farm
<b>Total Capacity</b> 21 MW (16.80 MW holds 80%)
<b>COD</b> In 2002
<b>Contract end date</b> n.a.
<b>Contract counterparty</b> Merchant

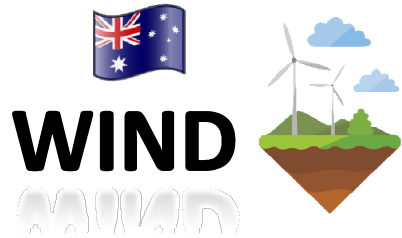
Starfish Hill

<b>Location</b> South Australia
<b>Technology</b> Wind Farm
<b>Total Capacity</b> 33 MW (26.40 MW holds 80%)
<b>COD</b> In 2003
<b>Contract end date</b> In 2020
<b>Contract counterparty</b> ALINTA Energy

Windy Hill

<b>Location</b> Queensland, Australia
<b>Technology</b> Wind Farm
<b>Total Installed Capacity</b> 12 MW (9.60 MW holds 80%)
<b>COD</b> In 2000
<b>Contract end date</b> December 2018
<b>Contract counterparty</b> Ergon Energy Queensland (EEQ)

# International Projects



Under Construction



Mount Emerald Wind Farm
<b>Location</b> Queensland, Australia
<b>Technology</b> Wind Farm
<b>Total Installed Capacity</b> 180.45 MW (144.36 MW holds 80%)
<b>Expected COD</b> In 2018
<b>Contract end date</b> December 2030
<b>Contract counterparty</b> Ergon Energy Queensland (EEQ)*
<b>Project Cost (100%)</b> 9,500 Million Baht
* State Enterprise of Queensland, Australia

## About Mount Emerald Wind Farm

On the 26th May 2016, Queensland Premier Anastacia Palaszczuk, announced in parliament that ERGON Energy has offered to purchase the full output of the Mount Emerald wind farm under a power purchase agreement.

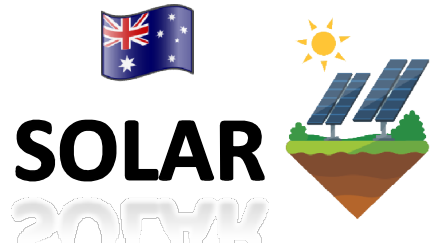
The agreement was signed by executives of ERGON Energy and Mount Emerald on the 27th May 2016.

This agreement includes the purchase of all of the electricity and green energy certificates produced by the wind farm through to the end of 2030. This is a major milestone for the project as the power purchase agreement provides the revenue stream which underpins the financial case for the project.

source: RATCH-Australia Corporation



# International Projects



Under Construction

Collinsville Solar Power Project
<b>Location</b> Queensland, Australia
<b>Technology</b> Solar Power
<b>Total Installed Capacity</b> 42.50 MW (34 MW holds 80%)
<b>Expected COD</b> In 2018
<b>Contract end date</b> December 2030
<b>Contract counterparty</b> Braemar Power Projects
<b>Project Cost (100%)</b> 95 Million AUD*
* Loan from financial institute at approximately 60 percent, grant fund from ARENA at 10 percent and equity investment at approximately 30 percent.



Collinsville Solar PV - Visualization

## Remark

The Project has Power Purchase Agreement with the Braemar Power Projects, a subsidiary of Alinta Energy, for 70 percent. Such Power Purchase Agreement will be expired on 31<sup>st</sup> December 2030. The other 30 percent of the generated electricity will be sold in Australia's National Electricity Market (NEM).

# International Projects



Guangxi Fangchenggang Nuclear Power (II)	
<b>Location</b>	Fangchenggang , China
<b>Technology</b>	HPR1000 (Hualong-1)
<b>Total Installed Capacity</b>	2,360 MW (236 MW holds 10%) (2 unit x 1,180 MW)
<b>PPA</b>	30-Year
<b>Expected COD</b>	In 2021
<b>Partner</b>	<ul style="list-style-type: none"> <li>• China General Nuclear Power Corporation (CGN) holds 51%</li> <li>• Guangxi investment Group Co./ Ltd (GIG) holds 39%</li> <li>• RATCH China Power Limited holds 10%</li> </ul>
<b>Project Cost (100%)</b>	200,000 Million Baht
<b>Debt to Equity</b>	62.5 : 37.5
<b>Equity Investment</b> (RATCH Portion 10%)	7,500 Million Baht



The signing of the equity joint venture contract (Image: CGN)

On 25<sup>th</sup> January 2016, RATCH has agreed to take a stake in the two Hualong One reactors being built as Phase II of the Fangchenggang nuclear power plant in China's Guangxi province.

source: world nuclear news



Kanchanarat (left) and Bekri shake on the agreement (Image: NEA)

On 29<sup>th</sup> March 2017, China and Thailand have signed an agreement to cooperate in the peaceful use of nuclear energy. The agreement was signed in Beijing by Nur Bekri, director of China's National Energy Administration (NEA), and Thai energy minister Anantaporn Kanchanarat.

source: world nuclear news

# International Projects



**Under Development**



## Riau Combined-Cycle Power Plant

### Location

Republic of Indonesia

### Technology

Combined-Cycle

### Total Installed Capacity

275 MW (134.75 MW holds 49%)

### PPA

20-Year

### Purchaser

PT PLN (PERSERO)

### Expected COD

In 2021

### Partner

- RH International (Singapore) Corporation Pte. Limited holds 49%
- PT Medco Power Sentral Sumatera holds 51%

### Project Cost (100%)

300 Million USD

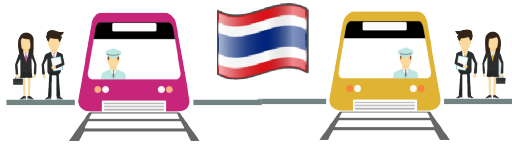
### Debt to Equity

75:25

### Equity Investment (RATCH Portion 49%)

36.75 Million USD

# Related Business



## MRT Pink Line Project and the MRT Yellow Line Project

MRT Pink Line Project (Khae Rai-Min Buri)	Stations	Line length
	30	34.5 KM

MRT Yellow Project (Lat Phrao - Samrong)	Stations	Line length
	23	30.4 KM

### Overview

- On 7<sup>th</sup> November 2016, the Company, BTS Group Holding Public Company Limited (BTS) and Sino-Thai Engineering & Construction Public Company Limited (STEC) have jointly submitted the proposals under the name of "BSR Joint Venture" for the biddings of the MRT Pink Line and the MRT Yellow Line Project.
- On 14<sup>th</sup> December 2016, MRTA has issued letters No. MRTA 004/3227 and MRTA 004/3228, notifying that BSR Joint Venture was the bidder who proposed the best offer for the MRT Pink Line Project and the MRT Yellow Line Project.
- On 12<sup>th</sup> June 2017, the Company, BTS and STEC jointed established companies namely "Northern Bangkok Monorail Company Limited" and "Eastern Bangkok Monorail Company Limited".
- On 16<sup>th</sup> June 2017, Northern Bangkok Monorail Company Limited and Eastern Bangkok Monorail Company Limited have entered into the Concession Contracts including of the obligation for extensions of the MRT Pink Line Project and MRT Yellow Line Project with Mass Rapid Transit Authority Of Thailand (MRTA).

### Partners

- BTS Group Public Company Limited holds 75%
- Sino-Thai Engineering and Construction Public Company Limited holds 15%
- Ratchaburi Electricity Generating Holding Public Company Limited holds 10%

### Concession Period

33 Years and 3 months divided in to 2 phases as follows

- Phase 1: Design and construction of civil works, procurement, installation, testing and trial run of the train system with the implementation of no more than 3 years and 3 months.
- Phase 2: Provision of train operation and maintenance service with the implementation of 30 years

# RATCH



RATCHABURI  
ELECTRICITY GENERATING  
HOLDING PCL.

## Q&A

# Thank You

### *Disclaimer*

*The information contained in our presentation is intended solely for your personal reference only. In addition, such information contains projections and forward-looking statements that reflect the Company's current views with respect to future events and financial performance. These views are based on assumptions subject to various risks. No assurance is given that future events will occur, that projections will be achieved, or that the Company's assumptions are correct. Actual results may differ materially from those projected. Investors are, however, required to use their own discretion regarding the use of information contained in this presentation for any purpose.*