

# RATCH



RATCHABURI  
ELECTRICITY GENERATING  
HOLDING PCL.

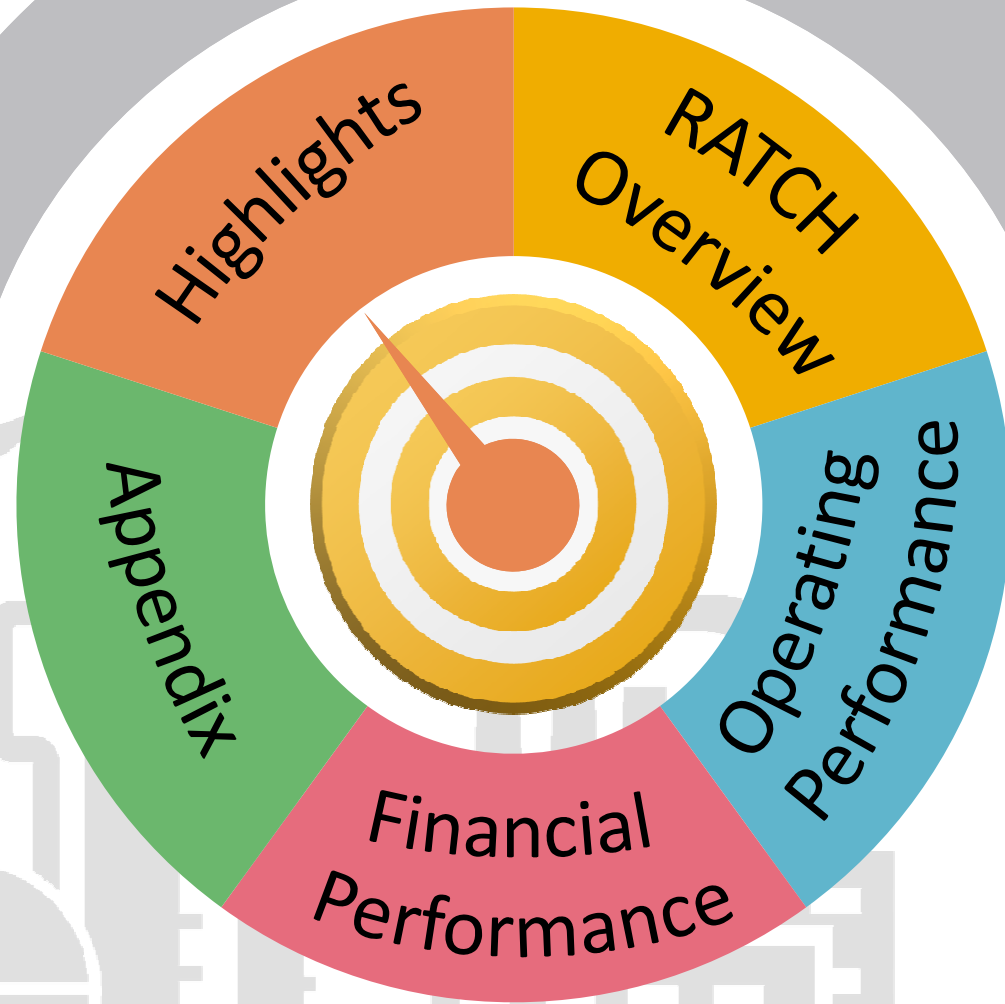
# Analyst Meeting 2Q2016

16 August 2016





# Agenda



# Highlights

**On 27<sup>th</sup> May 2016**, RATCH-Australia Corporation Limited (RAC) jointly invested with Port Bajool Pty Ltd. at the proportion of 50:50 in order to operate Mount Emerald Wind Farm Power Project (installed capacity of 180 megawatts), which has signed Power Purchase Agreement (PPA) with Ergon Energy Queensland (a state enterprise of Queensland, Australia). The expected commercial operation date is on 1<sup>st</sup> September 2018. Such PPA will expire on 31<sup>st</sup> December 2030.

**On 28th June 2016**, RAC has signed Share Purchase Agreement of Mount Emerald Wind Farm Pty. with Port Bajool Pty Ltd. in order to buy 50% stake of Port Bajool Pty Ltd at AUD 10 million . After the purchase is complete, RAC will hold 100 percent stake in Mount Emerald Wind Farm Pty.





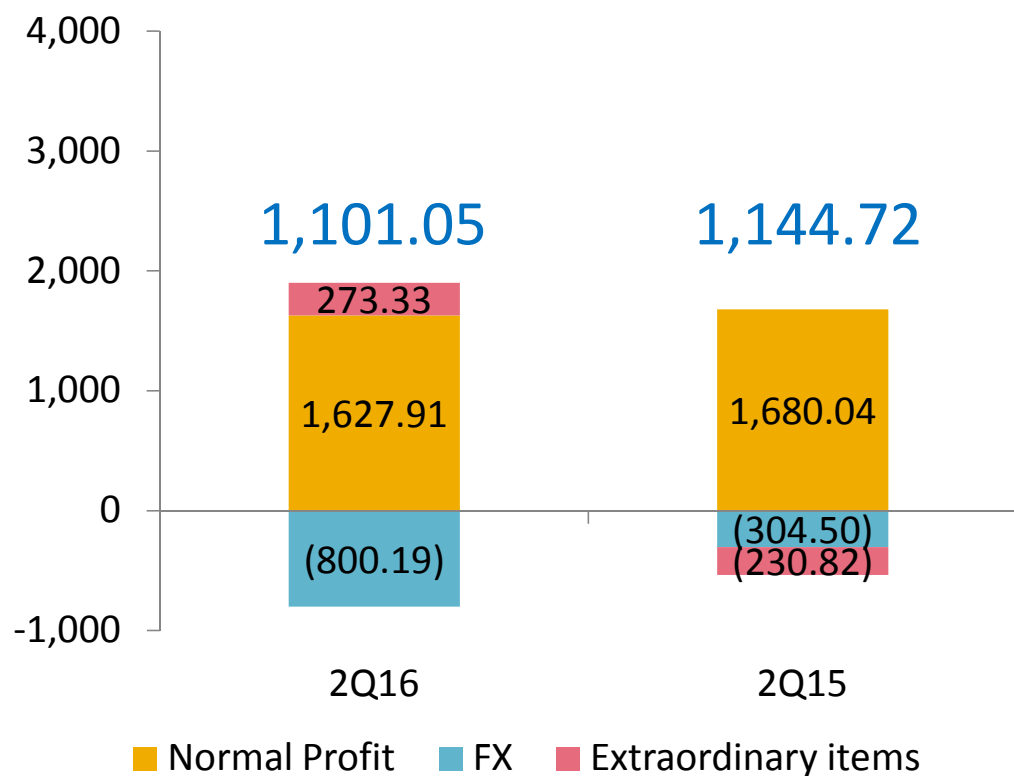
# Profit for the period: Equity holders of the Company

Nava Nakorn Electricity Generating Company Limited with 139.13 megawatts installed capacity has commenced commercial operation since 3<sup>rd</sup> June 2016.

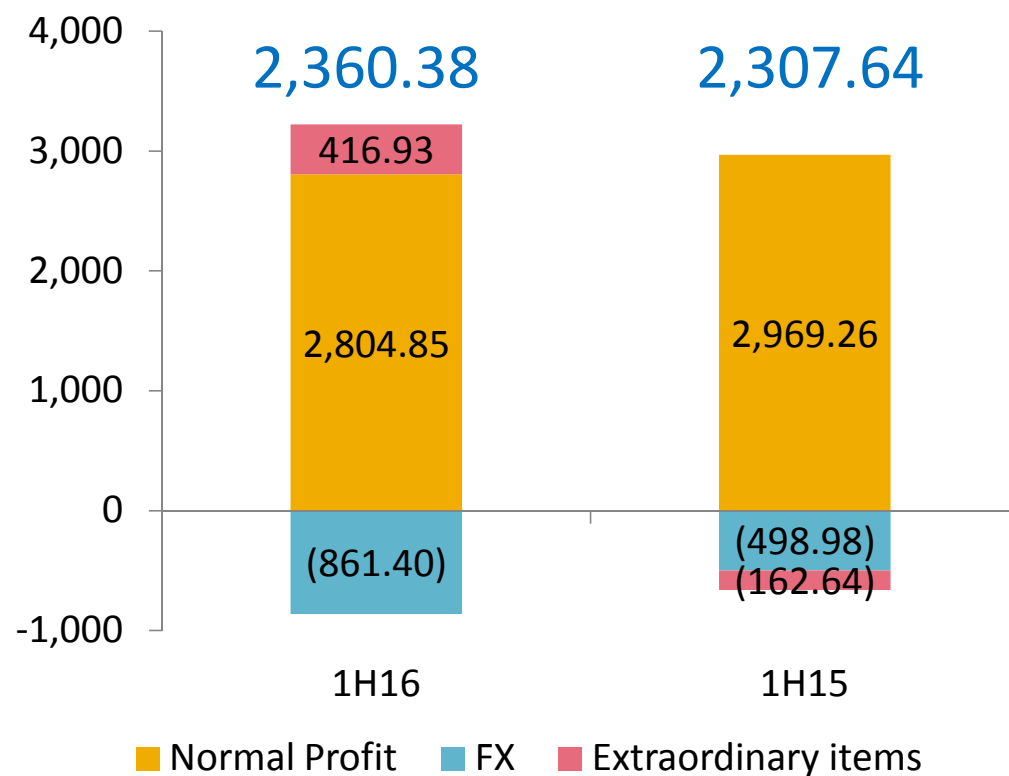


# Profit for the period: Equity holders of the Company

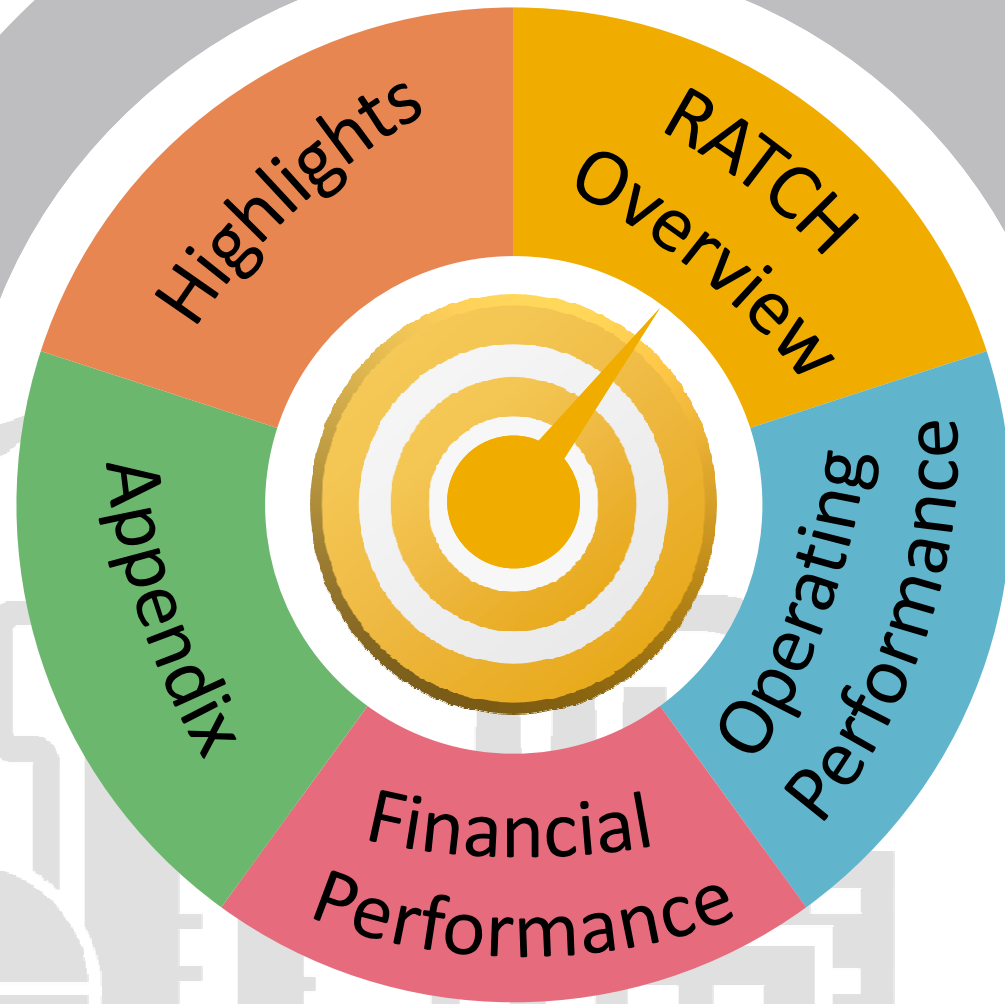
Profit for the period: 2Q16&2Q15



Profit for the period: 1H16&1H15



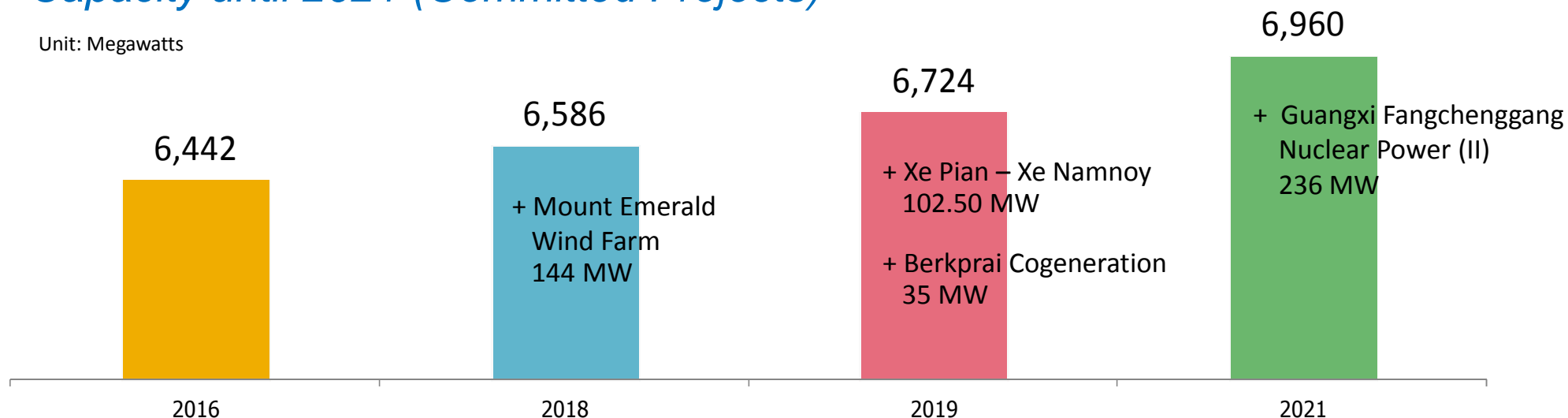
# Agenda



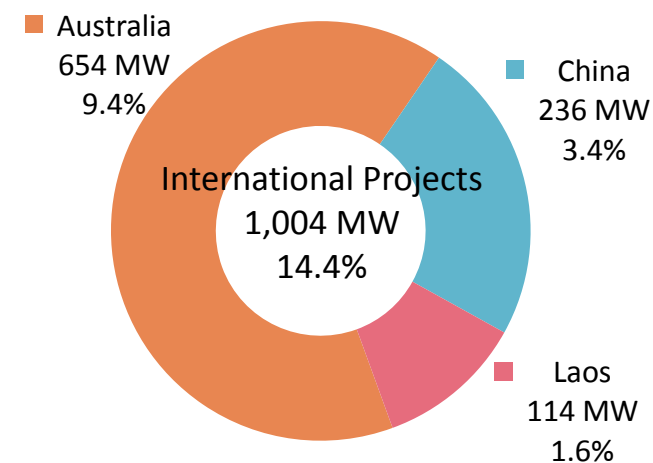
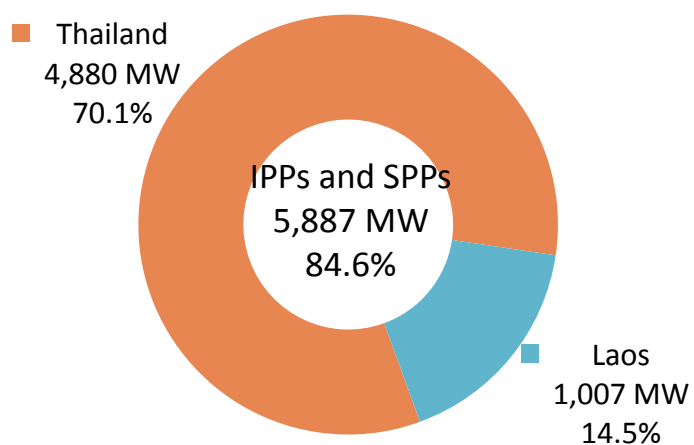
# Overview of RATCH projects

## Capacity until 2021 (Committed Projects)

Unit: Megawatts



## Current Breakdown of Capacity till 2021



# Portfolio by Core Business

## IPPs and SPPs in Thailand

Name of Power Plant/Project	Location	Technology	Total Capacity (MW)	Capacity contributed to the 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	Not Applicable
		Combined Cycle	2,175	2,175 (100%)	EGAT	25 years/ 2027	Not Applicable
Tri Energy Power Plant	Ratchaburi Province	Combined Cycle	700	700 (100%)	EGAT	20 years/ 2020	Not Applicable
Ratchaburi Power Power Plant	Ratchaburi Province	Combined Cycle	1,400	350 (25%)	EGAT	25 years/ 2033	Not Applicable
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	Not Applicable
Nava Nakorn Electricity Generating Project	Nava Nakorn Industrial Promotion Zone, Pathumthani Province	Cogeneration	139.13	55.65(40%)	EGAT	25 years/ 2041	Not Applicable
Total			6,118.13	4,844.25			

# Portfolio by Core Business

## IPPs and SPPs in Thailand (Cont.)

Name of Power Plant/Project	Location	Technology	Total Capacity (MW)	Capacity contributed to the Group (MW)	Terms of the PPA		
					PPA Party	Tenure/ Expiry Year	Renewal/ Option to Extend
Under Development							
Berkprai Cogeneration	Ratchaburi Province	Cogeneration	100	35 (35%)	EGAT	25 years/2044 (Expected COD: 2019)	Not Applicable
		Total	100	35			
Grand Total			6,218.13	4,879.25			

# Portfolio by Core Business

## IPPs and SPPs in Laos

Name of Power Plant/Project	Location	Technology	Total Capacity (MW)	Capacity contributed to the 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	Not Applicable
Hongsa Thermal Project	Sainyaburi Province, Laos	Lignite-Fired Power Plant	1,878	751.20 (40%)	EGAT & EDL	25 years/ 2040	Not Applicable
		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)	Not Applicable
		Total	410	102.50			
Grand Total			2,903	1,007.45			

# Portfolio by Core Business

## Renewable Projects in Thailand

Name of Power Plant/Project	Location	Technology	Total Capacity (MW)	Capacity contributed to the 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	18	7.20 (40%)	PEA	5 years/ 2017	Automatic renewal for a further 5 years every 5 years
Solarta Power Projects	Ayutthaya, Nakhon Pathom, and Suphanburi Provinces	Solar Power	34.25	16.78 (49%)	PEA	Ayutthaya Province : 5 years / 2016 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	Not Applicable
		Total	269.15	69.34			
Grand Total			269.15	69.34			



# Portfolio by Core Business

## International Projects

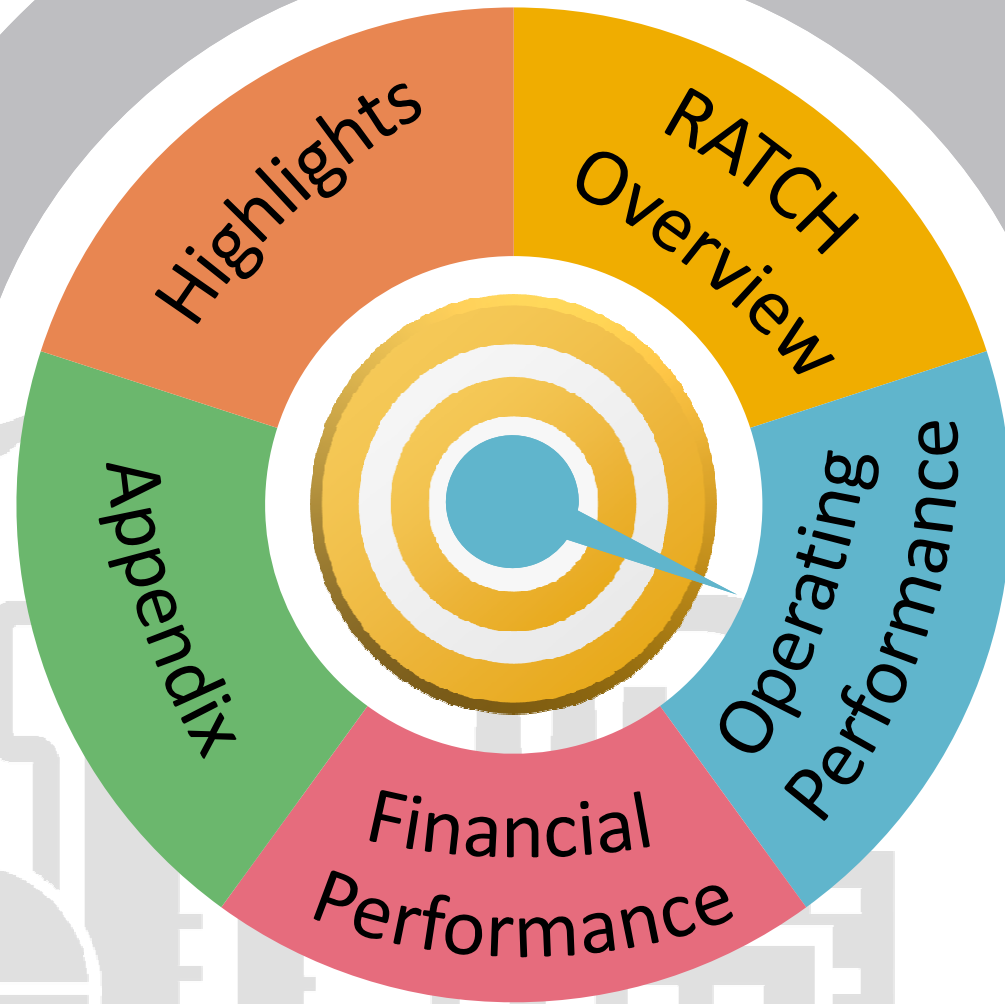
Name of Power Plant/Project	Location	Technology	Total Capacity (MW)	Capacity contributed to the Group (MW)	Terms of the PPA		
					PPA Party	Tenure/ Expiry Year	Renewal/ Option to Extend
In Operation							
Townsville Power Plant	North Queensland, Australia	Combined Cycle Gas Turbine	234	187.20 (80%)	AGL/Arrow	February 2025	Not Applicable
Kemerton Power Plant	Western Australia, Australia	Open Cycle Gas/Diesel Turbine	300	240 (80%)	Synergy	October 2030	Not Applicable
BP Kwinana Power Plant	Western Australia, Australia	Cogeneration	35.40	28.32 (80%)	Verve Energy/BP	December 2021	Not Applicable
Starfish Hill Wind-Turbine Power Plant	South Australia, Australia	Wind-Turbine	34.50	27.60 (80%)	Diamond Energy	December 2016	Not Applicable
Toora Wind-Turbine Power Plant	Victoria, Australia	Wind-Turbine	21	16.80 (80%)	Merchant	Not Applicable	Not Applicable
Windy Hill Wind-Turbine Power Plant	Queensland, Australia	Wind-Turbine	12	9.60 (80%)	Ergon Energy	December 2018	Not Applicable
		Total	636.90	509.52			

# Portfolio by Core Business

## International Projects (Cont.)

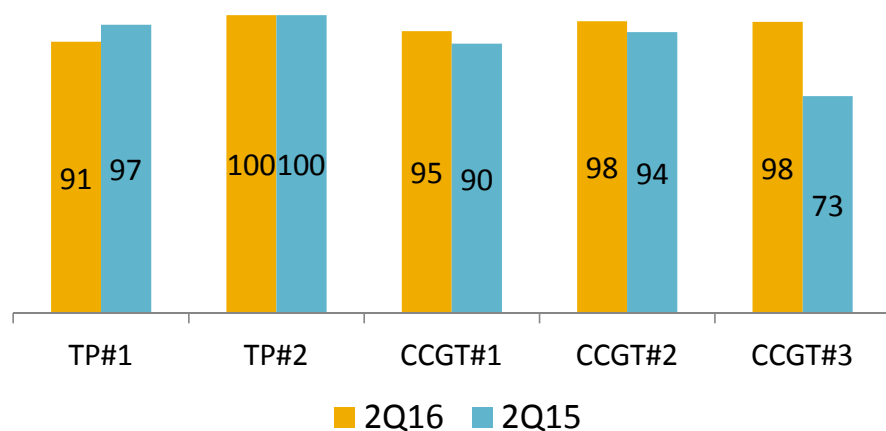
Name of Power Plant/Project	Location	Technology	Total Capacity (MW)	Capacity contributed to the Group (MW)	Terms of the PPA		
					PPA Party	Tenure/ Expiry Year	Renewal/ Option to Extend
Under Development							
Guangxi Fangchenggang Nuclear Power (II)	Fangchenggang , China	Nuclear Power	2,360	236 (10%)		30 years (Expected COD: 2021)	
Mount Emerald Wind Farm	Queensland, Australia	Wind-Turbine	180	144 (80%)	Ergon Energy	12 years/2030 (Expected COD: 2018)	
		Total	2,540	380			
Related Businesses							
EDL-Generation	Laos	Hydro Power Plant	1,131.15	114.36 (10.11%)			
		Total	1,131.15	114.36			
Grand Total			4,308.05	1,003.88			

# Agenda

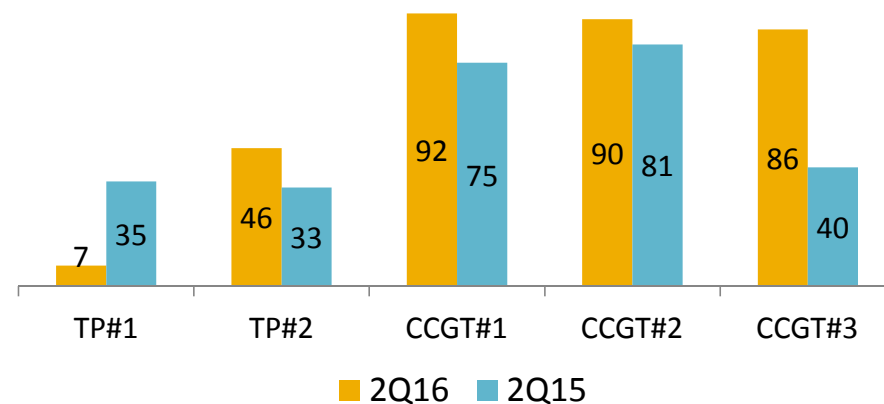


# Operation Performance : RATCHGEN

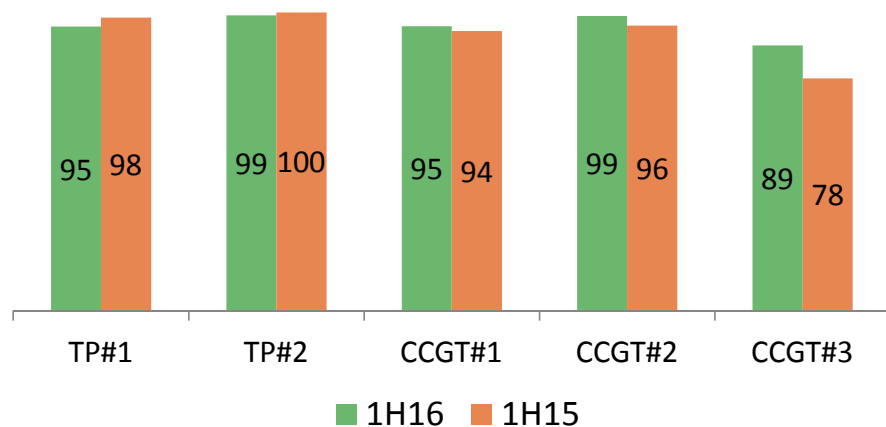
%Equivalent Availability Factor :  
2Q16 & 2Q15



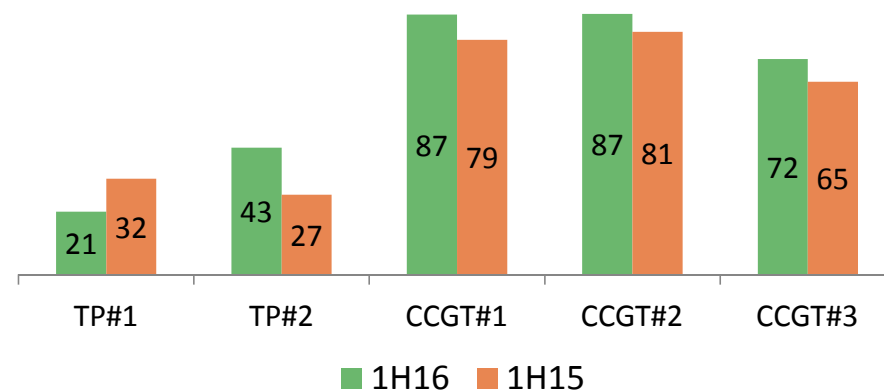
%Dispatch Factor :  
2Q16 & 2Q15



%Equivalent Availability Factor :  
1H16 & 1H15



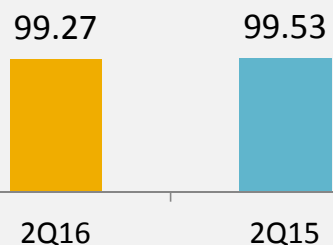
%Dispatch Factor :  
1H16 & 1H15



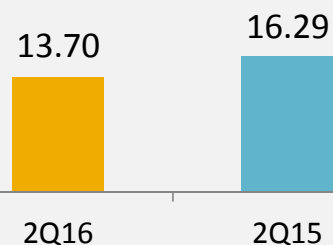
# Operation Performance : Huay bong 2 (KR2)

## Huay bong 2 (KR2)

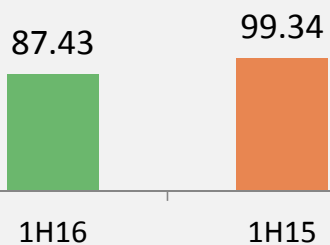
Avg. Commercial Availability (%)



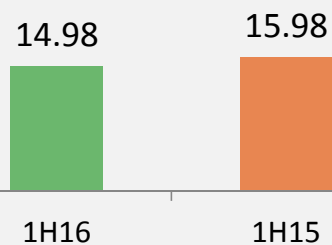
Capacity Factor (%)



Avg. Commercial Availability (%)

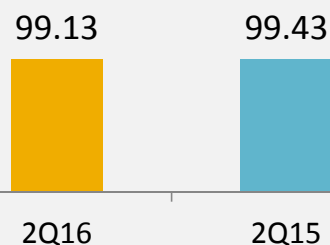


Capacity Factor (%)

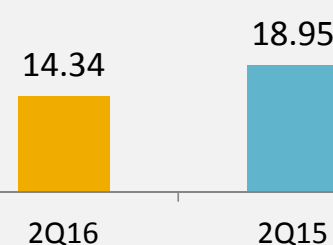


## Huay bong 3 (FKW)

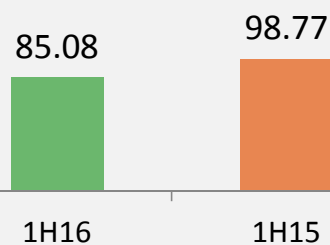
Avg. Commercial Availability (%)



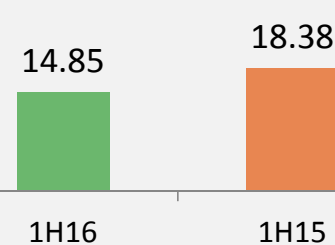
Capacity Factor (%)



Avg. Commercial Availability (%)

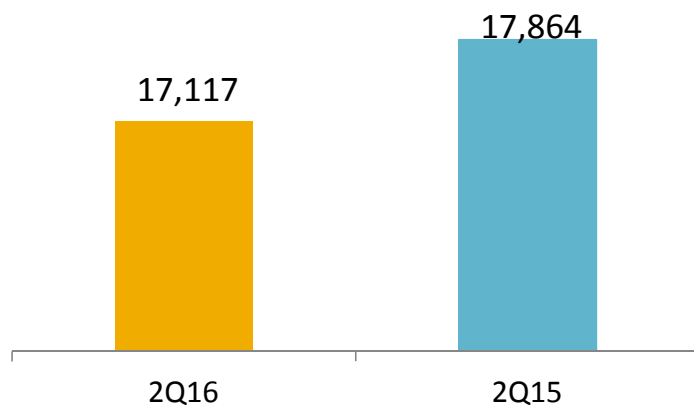


Capacity Factor (%)

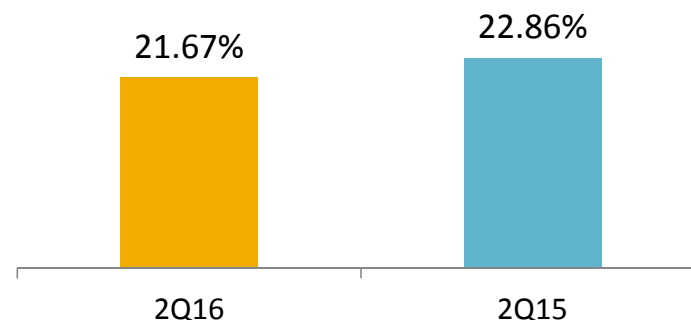


# Operation Performance : Solarta

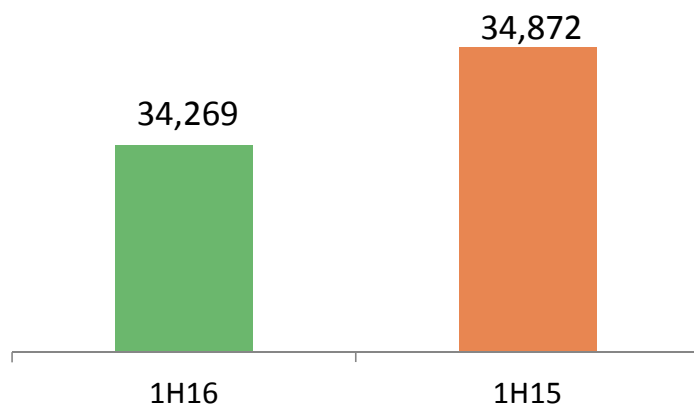
Total Net Energy (MWh /Quarter)  
2Q16 & 2Q15



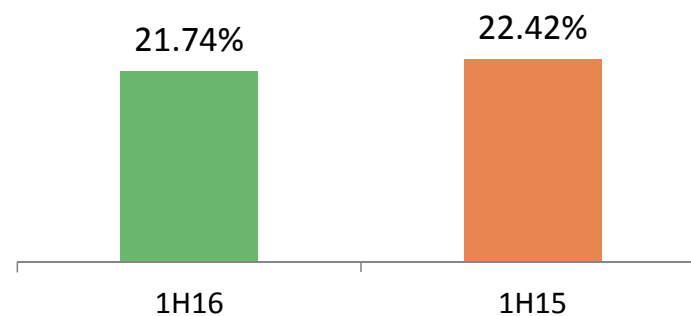
% Avg. Capacity Factor  
2Q16 & 2Q15



Total Net Energy (MWh /Quarter)  
1H16 & 1H15



%Avg.Capacity Factor  
1H16 & 1H15



# Operation Performance : Solar Power

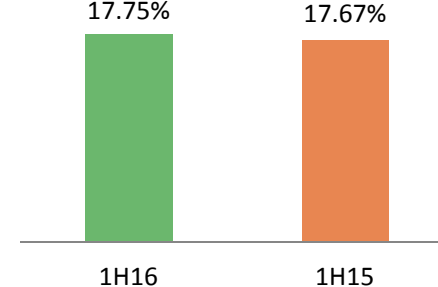
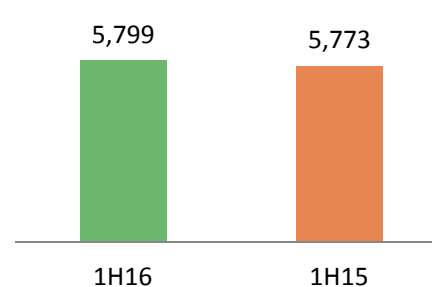
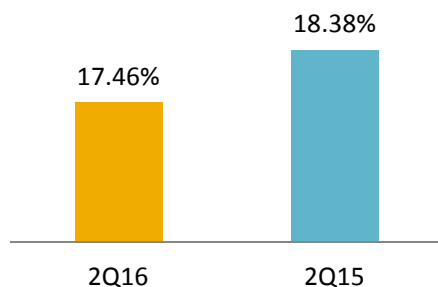
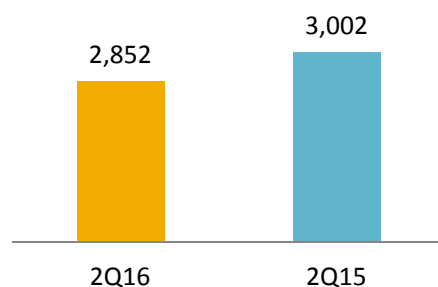
## Korat 3

Total Net Energy (MWh/Quarter)

%Avg.Capacity Factor

Total Net Energy (MWh/Quarter)

%Avg.Capacity Factor



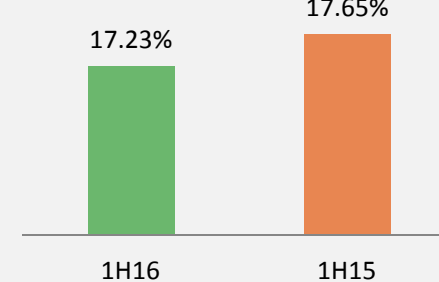
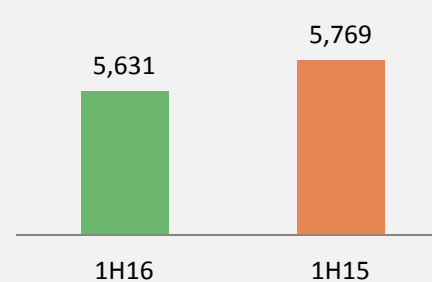
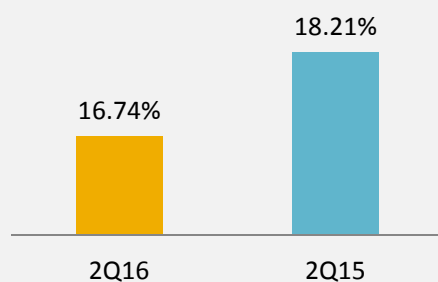
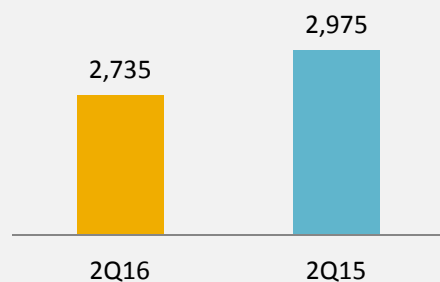
## Korat 4

Total Net Energy (MWh/Quarter)

%Avg.Capacity Factor

Total Net Energy (MWh/Quarter)

%Avg.Capacity Factor



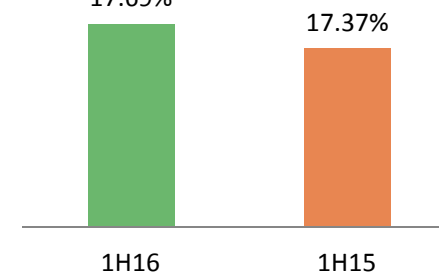
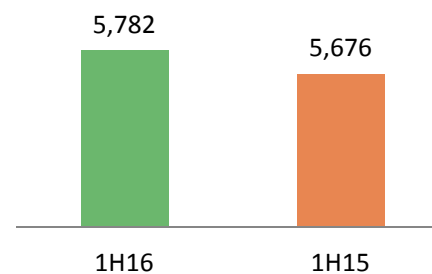
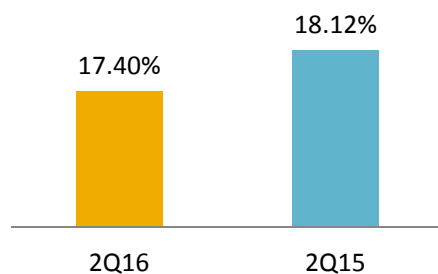
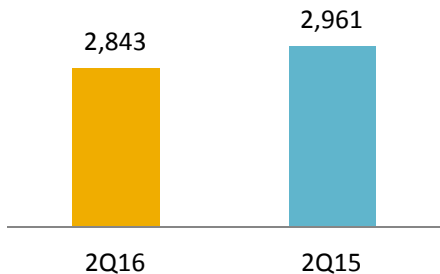
## Korat 7

Total Net Energy (MWh/Quarter)

%Avg.Capacity Factor

Total Net Energy (MWh/Quarter)

%Avg.Capacity Factor



# Agenda

Highlights

RATCH  
Overview

Operating  
Performance

Financial  
Performance

Appendix



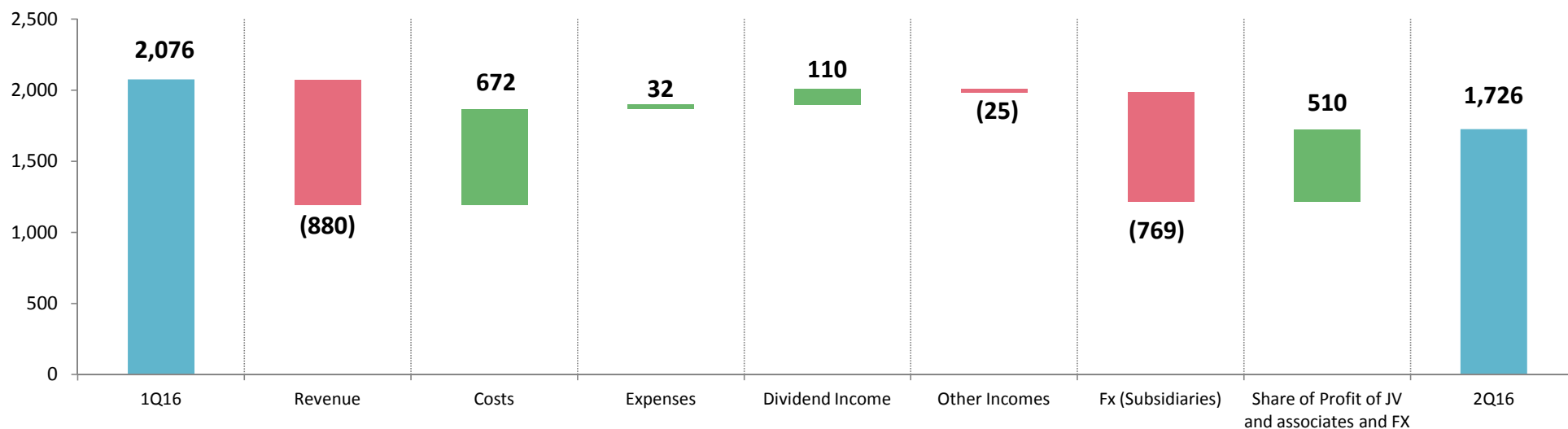


# Income Statement

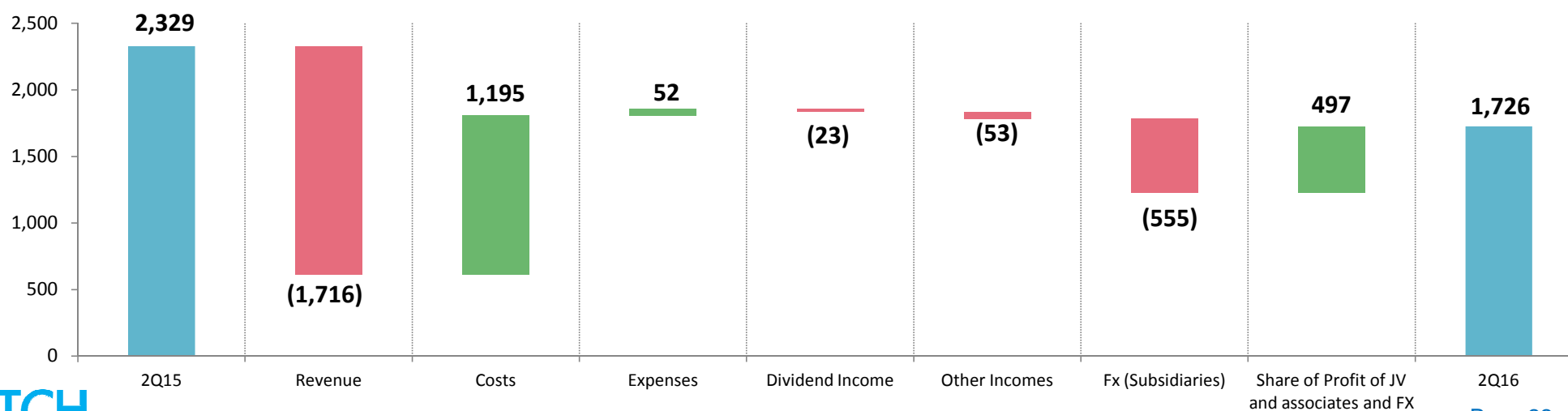
Unit : in Million Baht	2Q16	1Q16	4Q15	3Q15	2Q15	1Q15
Revenues	12,589.67	13,384.52	12,905.64	14,963.02	14,381.97	15,796.19
Cost & Expenses	(10,961.40)	(11,665.12)	(11,901.78 )	(12,906.37)	(12,208.25)	(13,665.10)
<b>EBITDA before Share of Profit and FX</b>	<b>1,628.27</b>	<b>1,719.40</b>	<b>1,003.86</b>	<b>2,056.65</b>	<b>2,173.72</b>	<b>2,131.09</b>
Share of profit of jointly-controlled entities and associates excluding gain (loss) on exchange rate	897.59	417.68	603.86	417.61	459.42	159.68
<b>EBITDA included share profit of JV before FX</b>	<b>2,525.86</b>	<b>2,137.08</b>	<b>1,607.72</b>	<b>2,474.26</b>	<b>2,633.14</b>	<b>2,290.77</b>
Gain (Loss) on exchange rate of subsidiaries	(762.23)	6.49	257.65	(1,150.97)	(207.44)	(232.99)
Gain (Loss) on exchange rate of JV	(37.96)	(67.70)	(128.98)	(281.27)	(97.06)	38.51
<b>EBITDA included share profit of JV and FX</b>	<b>1,725.67</b>	<b>2,075.87</b>	<b>1,736.39</b>	<b>1,042.02</b>	<b>2,328.64</b>	<b>2,096.29</b>
O&M Compensation – NN2	134.71	-	-	-	-	-
Gain on selling assets (Pratu Tao-A & Sao Thian-A)	-	-	126.08	-	-	-
Insurance claim	-	53.56	-	-	-	37.29
Diesel price movement (RG & RPCL)	138.62	90.04	(260.85)	20.02	(13.13)	30.89
Depreciation & Amortization	(350.99)	(347.92)	(294.77)	(346.28)	(345.02)	(348.90)
<b>EBIT</b>	<b>1,648.01</b>	<b>1,871.55</b>	<b>1,306.85</b>	<b>715.76</b>	<b>1,970.49</b>	<b>1,815.57</b>
Finance costs	(352.58)	(326.83)	(348.31)	(340.43)	(331.34)	(342.73)
Income tax expense	(217.75)	(309.06)	(149.62)	(362.47)	(570.03)	(348.82)
<b>Profit for the period</b>	<b>1,077.68</b>	<b>1,235.66</b>	<b>808.92</b>	<b>12.86</b>	<b>1,069.12</b>	<b>1,124.02</b>
Non-controlling interests	23.37	23.67	35.97	22.48	75.60	38.90
<b>Equity holders of the Company</b>	<b>1,101.05</b>	<b>1,259.33</b>	<b>844.89</b>	<b>35.34</b>	<b>1,144.72</b>	<b>1,162.92</b>

# EBITDA Growth QoQ & YoY

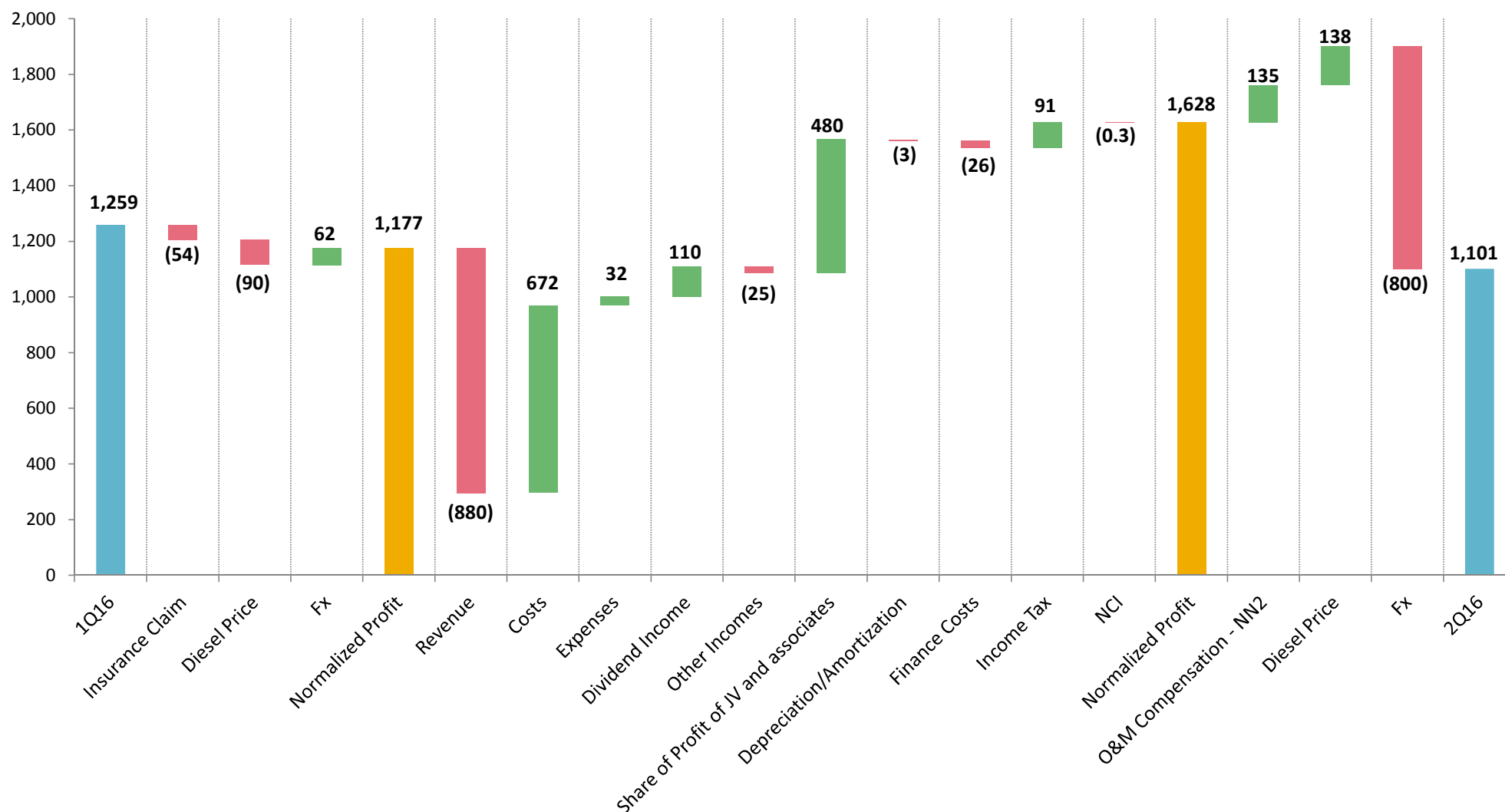
## EBITDA Growth QoQ



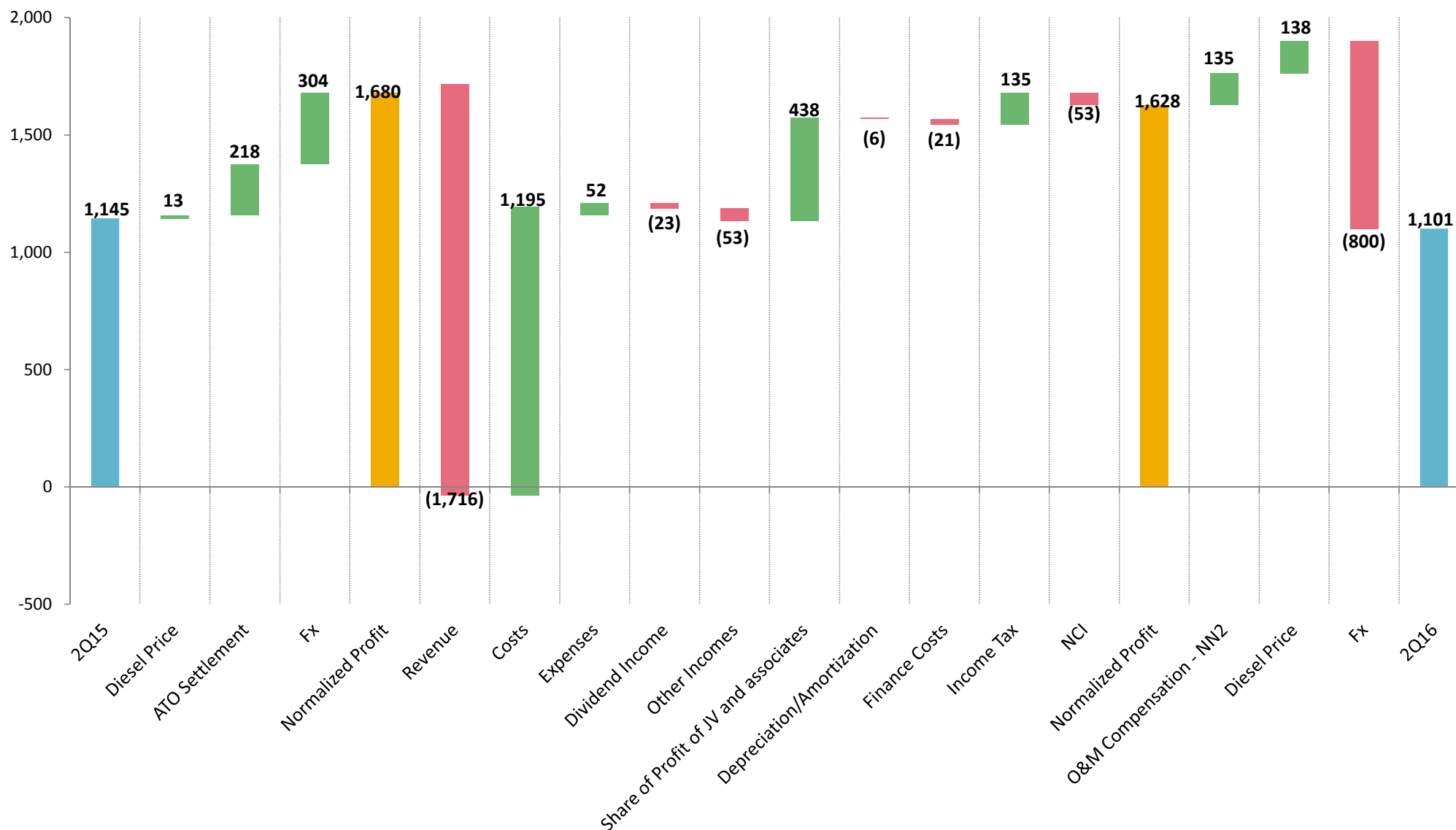
## EBITDA Growth YoY



# Net Profit Growth QoQ



# Net Profit Growth YoY

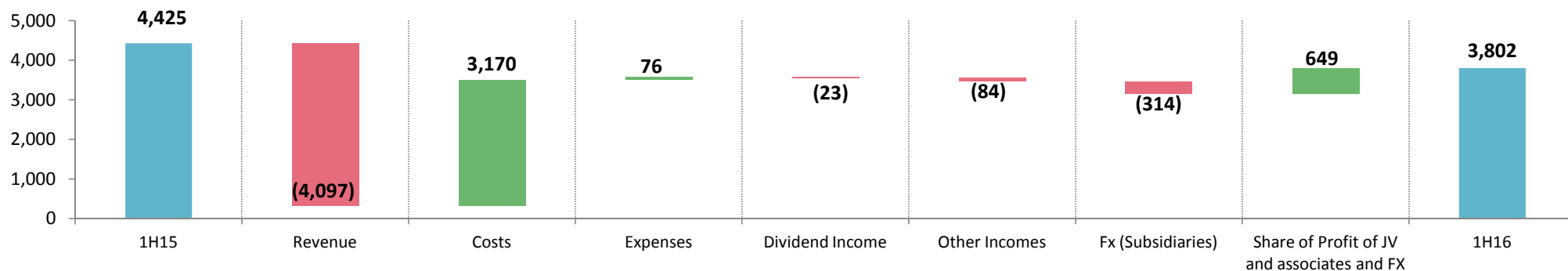


# Income Statement

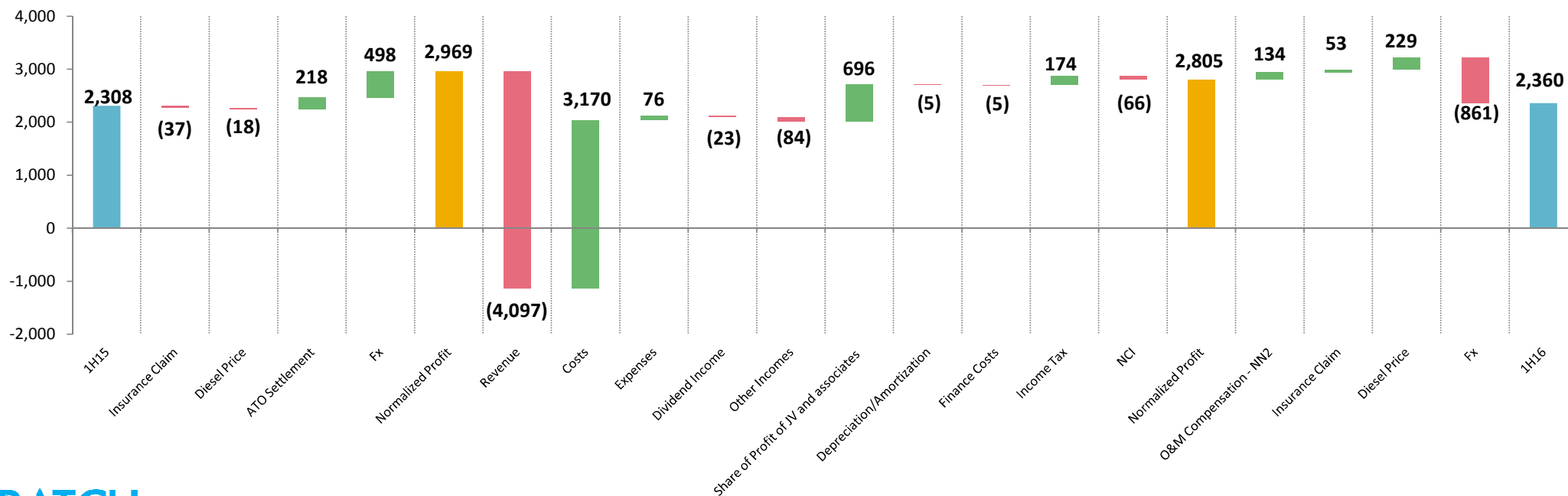
Unit : in Million Baht	1H16	1H15
Revenues	25,974.19	30,178.16
Cost & Expenses	(22,626.52)	(25,873.35)
<b>EBITDA before Share of Profit and FX</b>	<b>3,347.67</b>	<b>4,304.81</b>
Share of profit of jointly-controlled entities and associates excluding gain (loss) on exchange rate	1,315.27	619.10
<b>EBITDA included share profit of JV before FX</b>	<b>4,662.94</b>	<b>4,923.91</b>
Gain (Loss) on exchange rate of subsidiaries	(755.74)	(440.43)
Gain (Loss) on exchange rate of JV	(105.66)	(58.55)
<b>EBITDA included share profit of JV and FX</b>	<b>3,801.54</b>	<b>4,424.93</b>
O&M Compensation – NN2	134.71	-
Insurance claim	53.56	37.29
Diesel price movement (RG & RPCL)	228.66	17.76
Depreciation & Amortization	(698.91)	(693.92)
<b>EBIT</b>	<b>3,519.56</b>	<b>3,786.06</b>
Finance costs	(679.41)	(674.07)
Income tax expense	(526.81)	(918.85)
<b>Profit for the period</b>	<b>2,313.34</b>	<b>2,193.14</b>
Non-controlling interests	47.04	114.50
<b>Equity holders of the Company</b>	<b>2,360.38</b>	<b>2,307.64</b>

# EBITDA & Net Profit Growth YoY

## EBITDA Growth QoQ



## Net Profit Growth YoY



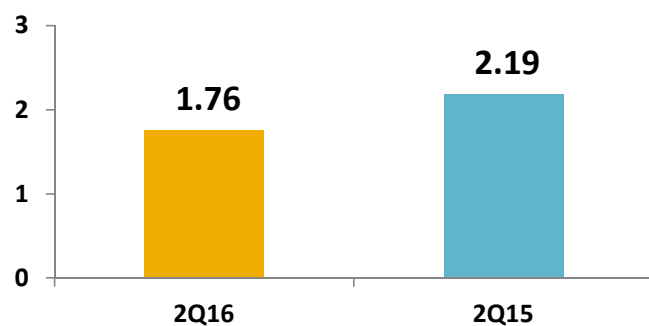
# Statements of Financial Position

As of 30 June 2016

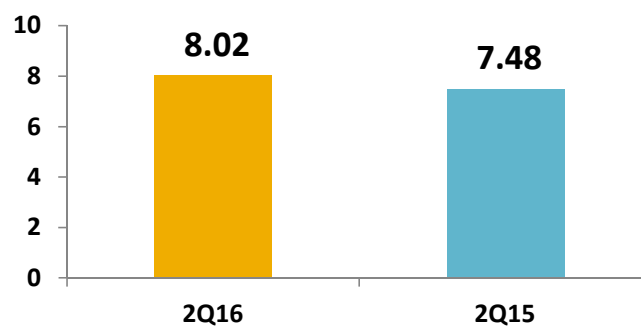
Total Assets	Million Baht	Total Liabilities & Equity	Million Baht
<b><u>Assets</u></b>		<b><u>Liabilities</u></b>	
Cash and cash equivalents	3,668.86	Loans from Related party, Financial Institutions & Debentures	22,991.84
Current investments	3,891.02	Other liabilities	11,288.43
Current Assets	12,445.40	Total Liabilities	34,280.27
Investment in Jointly-controlled entities/Associates/Others	29,971.30	<b><u>Equity</u></b>	
Financial lease receivables	26,650.88	Issued and paid-up share capital	16,031.78
Property, plant & equipments	13,259.51	Other components of equity	(1,749.91)
Other assets	5,465.55	Retained earnings	46,614.81
		Total equity attributable to owners of the Company	60,896.68
		Non-controlling interests	175.57
<b>Total Assets</b>	<b>95,352.52</b>	<b>Total Liabilities &amp; Equity</b>	<b>95,352.52</b>

# Financial Ratios\*

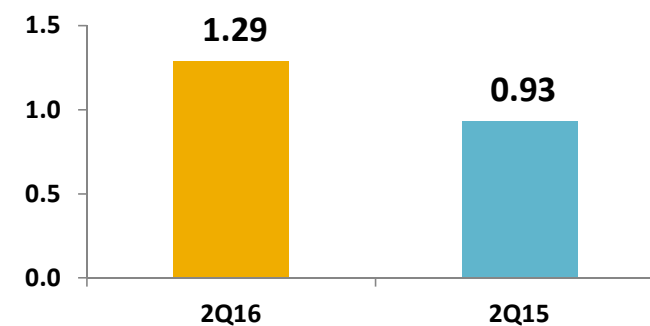
Current ratios (times)



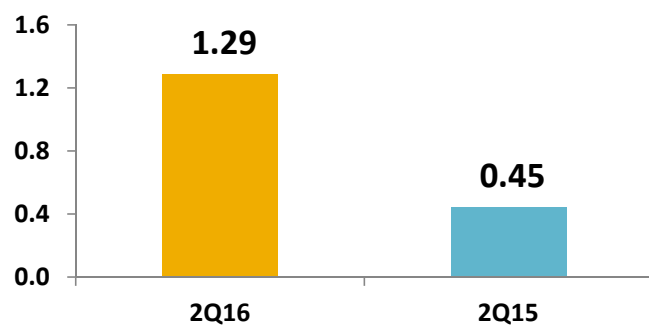
ROE (%)



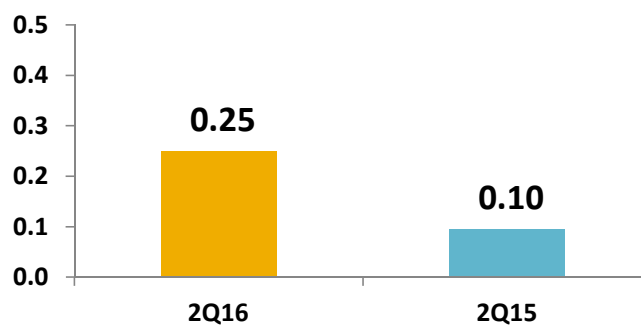
EPS (Baht per share)



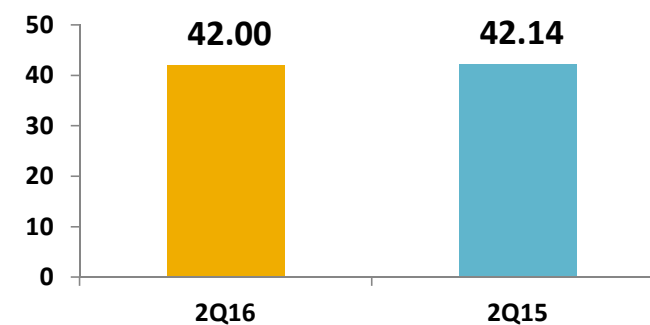
Net debt to EBITDA\*\* (times)



Net debt/Equity (times)



Book Value per share (Baht)





# Agenda

Highlights

RATCH  
Overview

Operating  
Performance

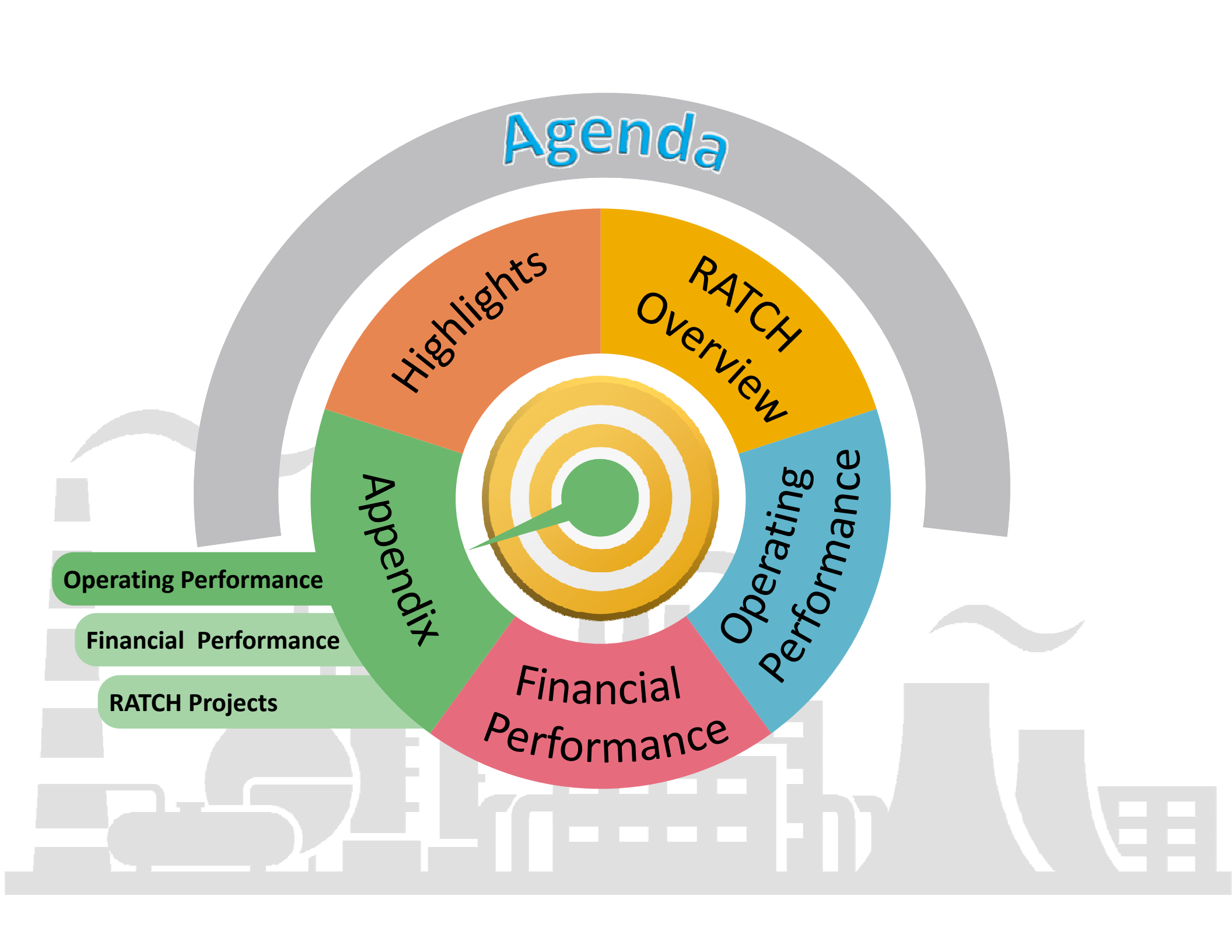
Financial  
Performance

Appendix

Operating Performance

Financial Performance

RATCH Projects



# RATCHGEN Operating Performance

Fuel Consumption					
By Type of Power Plant		2Q16	2Q15	1H16	1H15
Fuel Consumption (TH#1-2)					
- Gas	Million MMBTU	7.27	6.87	15.59	14.41
- Heavy Oil	Million Liters	31.38	89.84	104.89	90.15
Fuel Consumption (CCGT#1-3)					
- Gas	Million MMBTU	26.38	17.73	48.44	41.98
- Diesel	Million Liters	0.17	6.71	3.91	6.85
Gas Price (Average) Baht/MMBTU		233.18	300.72	245.88	311.05
Heavy Oil Price (Average) Baht/Liter		8.92	12.89	7.79	12.88
Diesel Oil Price (Average) Baht/Liter		23.96	25.23	24.65	25.24


# RATCHGEN Operating Performance

Net Generation (GWh)				
By Type of Power Plant	2Q16	2Q15	1H16	1H15
Net Generation (TP#1-2) (GWh)	<b>828.15</b>	<b>1,055.22</b>	<b>1,956.13</b>	<b>1,820.44</b>
- By Gas (GWh)	716.96	681.53	1,554.32	1,445.58
- By Heavy Oil (GWh)	111.19	373.69	401.81	374.86
Net Generation (CCGT#1-3) (GWh)	<b>3,735.88</b>	<b>2,502.21</b>	<b>6,840.94</b>	<b>5,875.84</b>
- By Gas (GWh)	3,735.88	2,473.71	6,825.02	5,847.34
- By Diesel (GWh)	-	28.50	15.92	28.50
Total Net Generation (GWh)	<b>4,564.03</b>	<b>3,557.44</b>	<b>8,797.07</b>	<b>7,696.28</b>












Actual Outage

Planned Outage at Ratchaburi Power Plant in 2015

Plant		Jan	Feb	Mar	Apr	May	Jun	July	Aug	Sep	Oct	Nov	Dec
RG	CCST-10									13	MO (51D)	2	
	CCGT-11									2	MI (46D)	16	
	CCGT-12									2	MI (32D)	2	
RG	CCST-20											8	MO (47D) 24
	CCGT-21												12 CI (13D) 24
	CCGT-22												12 CI (13D) 24
RG	CCST-30				26								
	CCGT-31												
	CCGT-32	1	CI (15D) 15										
RG	Thermal-1										4	MI (40D)	12
RG	Thermal-1											15	MI (40D) 24
RG	CCST-10 - CCTE	20	CI (9D) 28										
	CCGT-11 - CCTE												
	CCGT-12 - CCTE												
RPCL	CCST-10										11	MI (24D)	3
	CCGT-11										11	MI (24D)	3
	CCGT-12										11	MI (24D)	3
RPCL	CCST-20												
	CCGT-21	3	CI (10D) 12										
	CCGT-22	3	CI (10D) 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		<div><div></div><div>RATCH</div></div> <div><div></div><div>RATCHABURI POWER PLANT HOLDING PCL</div></div>	
		Normal (WI**)		Gen.Rotor Removed (WI*)			(MI)			(MO)			
		26 Days		30 Days			26 Days			49 Days			

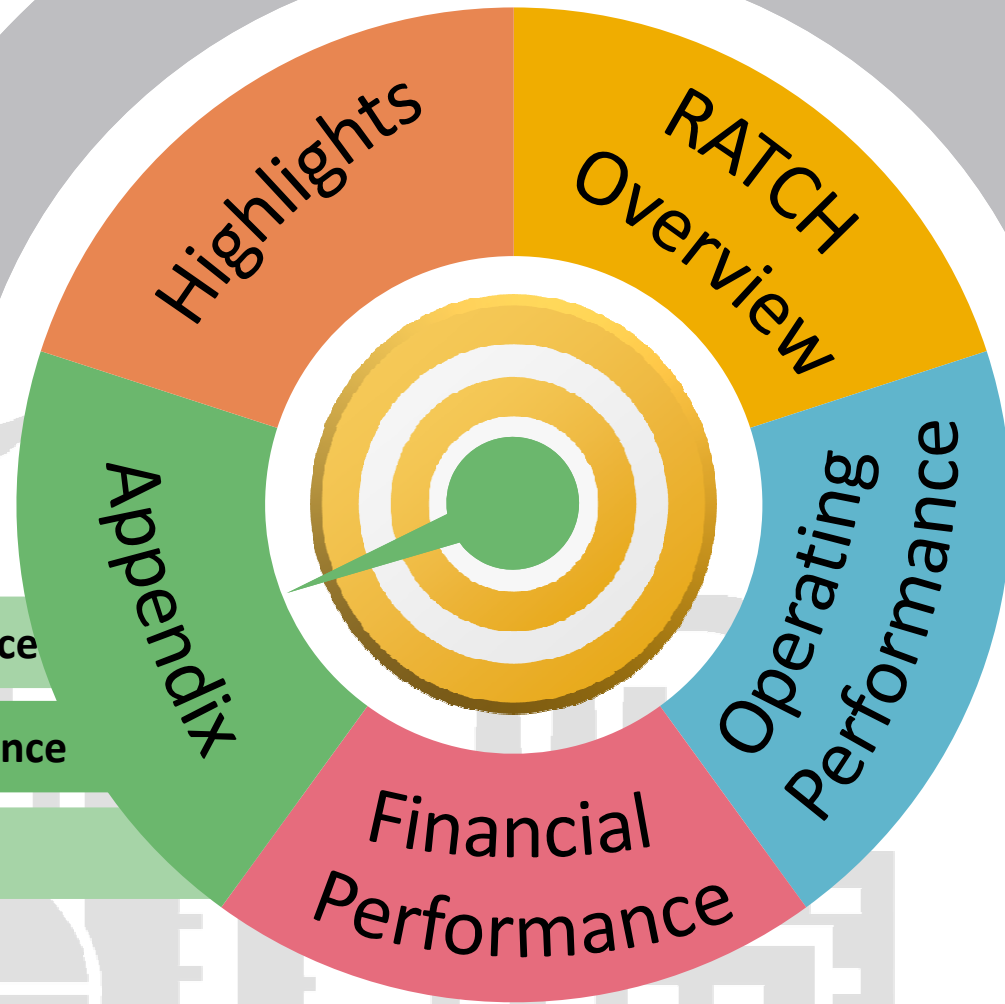
 Actual Outage  
 Planned Outage

## 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) 11  25
	CCGT-12												CI (15D) 11  25
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												CI (10D) 4  13
	CCGT-12												CI (10D) 4  13
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		

# Agenda



Operating Performance

Financial Performance

RATCH Projects

# Revenues : 2Q16 & 2Q15

Unit : in Million Baht		2Q16	2Q15	Diff	%
Sales		11,211.18	12,745.87	(1,534.69)	(12.04)
AP	- RG/TECO	840.43	1,131.67	(291.24)	(25.74)
	- RAC	385.12	370.21	14.91	4.03
EP (Fuel)	- RG/TECO	9,762.67	11,004.99	(1,242.32)	(11.29)
	- RAC	222.96	221.73	1.23	0.55
	- Flared Gas	-	17.27	(17.27)	(100.00)
Revenue from financial leases - RG/TECO		1,141.01	1,271.66	(130.65)	(10.27)
Revenue from Rendering of services		12.60	63.26	(50.66)	(80.08)
Management service income		63.90	61.83	2.07	3.35
Dividend Income		109.86	133.14	(23.28)	(17.49)
Interest Income		35.86	90.51	(54.65)	(60.38)
Other Incomes (exc. Extraordinary items)		15.26	15.70	(0.44)	(2.80)
<b>Total Revenues</b>		<b>12,589.67</b>	<b>14,381.97</b>	<b>(1,792.30)</b>	<b>(12.46)</b>

# Revenues : 1H16 & 1H15

Unit : in Million Baht		1H16	1H15	Diff	%
Sales		23,221.54	27,007.04	(3,785.50)	(14.02)
AP	- RG/TECO	1,682.44	2,356.67	(674.23)	(28.61)
	- RAC	808.12	770.68	37.44	4.86
EP (Fuel)	- RG/TECO	20,331.06	23,515.70	(3,184.64)	(13.54)
	- RAC	399.92	330.96	68.96	20.84
	- Flared Gas	-	33.03	(33.03)	(100.00)
Revenue from financial leases - RG/TECO		2,309.24	2,576.12	(266.88)	(10.36)
Revenue from Rendering of services		78.59	122.91	(44.32)	(36.06)
Management service income		131.98	123.52	8.46	6.85
Dividend Income		109.86	133.14	(23.28)	(17.49)
Interest Income		83.92	183.33	(99.41)	(54.22)
Other Incomes (exc. Extraordinary items)		39.06	32.10	6.96	21.68
<b>Total Revenues</b>		<b>25,974.19</b>	<b>30,178.16</b>	<b>(4,203.97)</b>	<b>(13.93)</b>



# Share of profit from jointly-controlled entities : 2Q16 & 2Q15

Unit : in Million Baht	2Q16	2Q15	Diff	%
RPCL	145.07	156.52	(11.45)	(7.32)
SEAN	57.51	27.93	29.58	105.91
HPC	424.66	(56.60)	481.26	850.28
CRESCO	7.39	(1.42)	8.81	620.42
SOLARTA	43.76	48.78	(5.02)	(10.29)
KORAT 3,4,7	19.95	21.89	(1.94)	(8.86)
FKW	17.54	33.05	(15.51)	(46.93)
KR2	16.83	26.84	(10.01)	(37.30)
KWINANA	14.33	19.96	(5.63)	(28.21)
PNPC	14.57	19.83	(5.26)	(26.53)
RW COGEN	60.61	51.82	8.79	16.96
NNEG	1.03	2.96	(1.93)	(65.20)
Songkhla Biomass	13.24	(0.54)	13.78	2,551.85
Others	23.14	11.34	11.80	104.06
<b>Total Share of profit from jointly-controlled entities</b>	<b>859.63</b>	<b>362.36</b>	<b>497.27</b>	<b>137.23</b>

# Share of profit from jointly-controlled entities : 2Q16 & 2Q15

EXCL.FX	Unit : in Million Baht	2Q16	2Q15	Diff	%
	RPCL	143.22	199.27	(56.05)	(28.13)
	SEAN	55.66	75.87	(20.21)	(26.64)
	HPC	489.78	(7.84)	497.62	6,347.19
	CRESCO	6.13	(2.23)	8.36	374.89
	SOLARTA	43.76	48.78	(5.02)	(10.29)
	KORAT 3,4,7	19.95	21.89	(1.94)	(8.86)
	FKW	17.54	33.05	(15.51)	(46.93)
	KR2	16.83	26.87	(10.04)	(37.37)
	KWINANA	14.33	19.96	(5.63)	(28.21)
	PNPC	(4.01)	(6.38)	2.37	37.15
	RW COGEN	60.54	51.86	8.68	16.74
	NNEG	(3.73)	(4.98)	1.25	25.10
	Songkhla Biomass	13.24	(0.54)	13.78	2,551.85
	Others	24.35	3.84	20.51	534.11
	<b>Total Share of profit from jointly-controlled entities</b>	<b>897.59</b>	<b>459.42</b>	<b>438.17</b>	<b>95.37</b>

# Share of profit from jointly-controlled entities : 1H16 & 1H15

Unit : in Million Baht	1H16	1H15	Diff	%
RPCL	278.43	353.45	(75.02)	(21.23)
SEAN	134.28	90.41	43.87	48.52
HPC	333.24	(227.16)	560.40	246.70
CRESCO	24.30	3.04	21.26	699.34
SOLARTA	88.90	94.93	(6.03)	(6.35)
KORAT 3,4,7	42.08	42.02	0.06	0.14
FKW	49.99	61.00	(11.01)	(18.05)
KR2	44.77	49.41	(4.64)	(9.39)
KWINANA	35.86	37.00	(1.14)	(3.08)
PNPC	9.56	7.68	1.88	24.48
RW COGEN	119.58	50.05	69.53	138.92
NNEG	(5.46)	(8.92)	3.46	38.79
Songkhla Biomass	28.60	(2.82)	31.42	1,114.18
Others	25.48	10.46	15.02	143.59
<b>Total Share of profit from jointly-controlled entities</b>	<b>1,209.61</b>	<b>560.55</b>	<b>649.06</b>	<b>115.79</b>

# Share of profit from jointly-controlled entities : 1H16 & 1H15

EXCL.FX	Unit : in Million Baht	1H16	1H15	Diff	%
	RPCL	251.23	378.25	(127.02)	(33.58)
	SEAN	96.70	119.38	(22.68)	(19.00)
	HPC	527.02	(184.73)	711.75	(385.29)
	CRESCO	21.81	0.56	21.25	3,794.64
	SOLARTA	88.89	94.93	(6.04)	(6.36)
	KORAT 3,4,7	42.08	42.02	0.06	0.14
	FKW	49.99	60.99	(11.00)	(18.04)
	KR2	44.77	49.40	(4.63)	(9.37)
	KWINANA	35.86	37.00	(1.14)	(3.08)
	PNPC	(6.05)	(14.69)	8.64	58.82
	RW COGEN	119.40	50.08	69.32	138.42
	NNEG	(12.66)	(14.23)	1.57	11.03
	Songkhla Biomass	28.60	(2.82)	31.42	1,114.18
	Others	27.63	2.96	24.67	833.45
	<b>Total Share of profit from jointly-controlled entities</b>	<b>1,315.27</b>	<b>619.10</b>	<b>696.17</b>	<b>112.45</b>

# Cost and Expenses : 2Q16 & 2Q15

Unit : in Million Baht	2Q16	2Q15	Diff	%
Cost of Sale and rendering of services	10,656.06	11,851.20	(1,195.14)	(10.08)
– Fuel Cost : RG/ TECO	9,607.32	10,927.56	(1,320.24)	(12.08)
– Fuel Cost : RAC	-	-	-	-
– Fuel Cost : Flared Gas	-	2.79	(2.79)	(100.00)
– Operation & Maintenance	367.99	392.02	(24.03)	(6.13)
– Repairing Expense (CSA)	264.85	233.93	30.92	13.22
– Spare parts	84.28	94.28	(10.00)	(10.61)
– Insurance Premium	120.94	94.19	26.75	28.40
– Standby Charge	52.44	62.73	(10.29)	(16.40)
– Others	158.24	43.70	114.54	262.11
<b>Selling and Admin- Expenses</b>	<b>305.34</b>	<b>357.05</b>	<b>(51.71)</b>	<b>(14.48)</b>
<b>Total Cost and Expenses*</b>	<b>10,961.40</b>	<b>12,208.25</b>	<b>(1,246.85)</b>	<b>(10.21)</b>

# Cost and Expenses : 1H16 & 1H15

Unit : in Million Baht	1H16	1H15	Diff	%
Cost of Sale and rendering of services	21,984.05	25,154.52	(3,170.47)	(12.60)
– Fuel Cost : RG/ TECO	20,007.09	23,303.66	(3,296.57)	(14.15)
– Fuel Cost : RAC	6.03	7.80	(1.77)	(22.69)
– Fuel Cost : Flared Gas	-	5.30	(5.30)	(100.00)
– Operation & Maintenance	746.84	799.65	(52.81)	(6.60)
– Repairing Expense (CSA)	528.67	475.97	52.70	11.07
– Spare parts	147.82	183.54	(35.72)	(19.46)
– Insurance Premium	240.36	187.39	52.97	28.27
– Standby Charge	107.75	104.33	3.42	3.28
– Others	199.49	86.88	112.61	129.62
Selling and Admin- Expenses	642.47	718.83	(76.36)	(10.62)
<b>Total Cost and Expenses*</b>	<b>22,626.52</b>	<b>25,873.35</b>	<b>(3,246.83)</b>	<b>(12.55)</b>

# Gain (Loss) From Foreign Exchange Rate

Unit : in Million Baht	2Q16	2Q15	1H16	1H15
<b>Gain (Loss) from Foreign Exchange Rate</b>	<b>(800.19)</b>	<b>(304.50)</b>	<b>(861.40)</b>	<b>(498.98)</b>

<b>The Company and Subsidiaries</b>	<b>(762.23)</b>	<b>(207.44)</b>	<b>(755.74)</b>	<b>(440.43)</b>
- RH	(9.84)	46.37	(77.35)	30.36
- RH Inter	(759.09)	(223.80)	(739.25)	(449.33)
- RG / RE / RL	6.70	(30.01)	60.86	(21.46)

<b>Jointly-controlled entities and Associates</b>	<b>(37.96)</b>	<b>(97.06)</b>	<b>(105.66)</b>	<b>(58.55)</b>
- SEAN (33.33%)	1.85	(47.94)	37.58	(28.97)
- RPCL (25%)	1.85	(42.75)	27.20	(24.80)
- HPC (40%)	(65.12)	(48.76)	(193.78)	(42.43)
- PNPC (40%)	18.58	26.21	15.61	22.37
- Others (CRESCO, RW Cogen, FKW, KR2, NNEG, Solarta, RICI)	4.88	16.18	7.73	15.28

Foreign Exchange Rate as at 30 June 2016 = 35.195 Baht/USD and as at 30 June 2015 = 33.773 Baht/USD

Foreign Exchange Rate as at 31 March 2016 = 35.230 Baht/USD and as at 31 March 2015 = 32.548 Baht/USD

Foreign Exchange Rate as at 30 December 2015 = 36.077 Baht/USD and as at 30 December 2014 = 32.964 Baht/USD

# Agenda

Highlights

RATCH  
Overview

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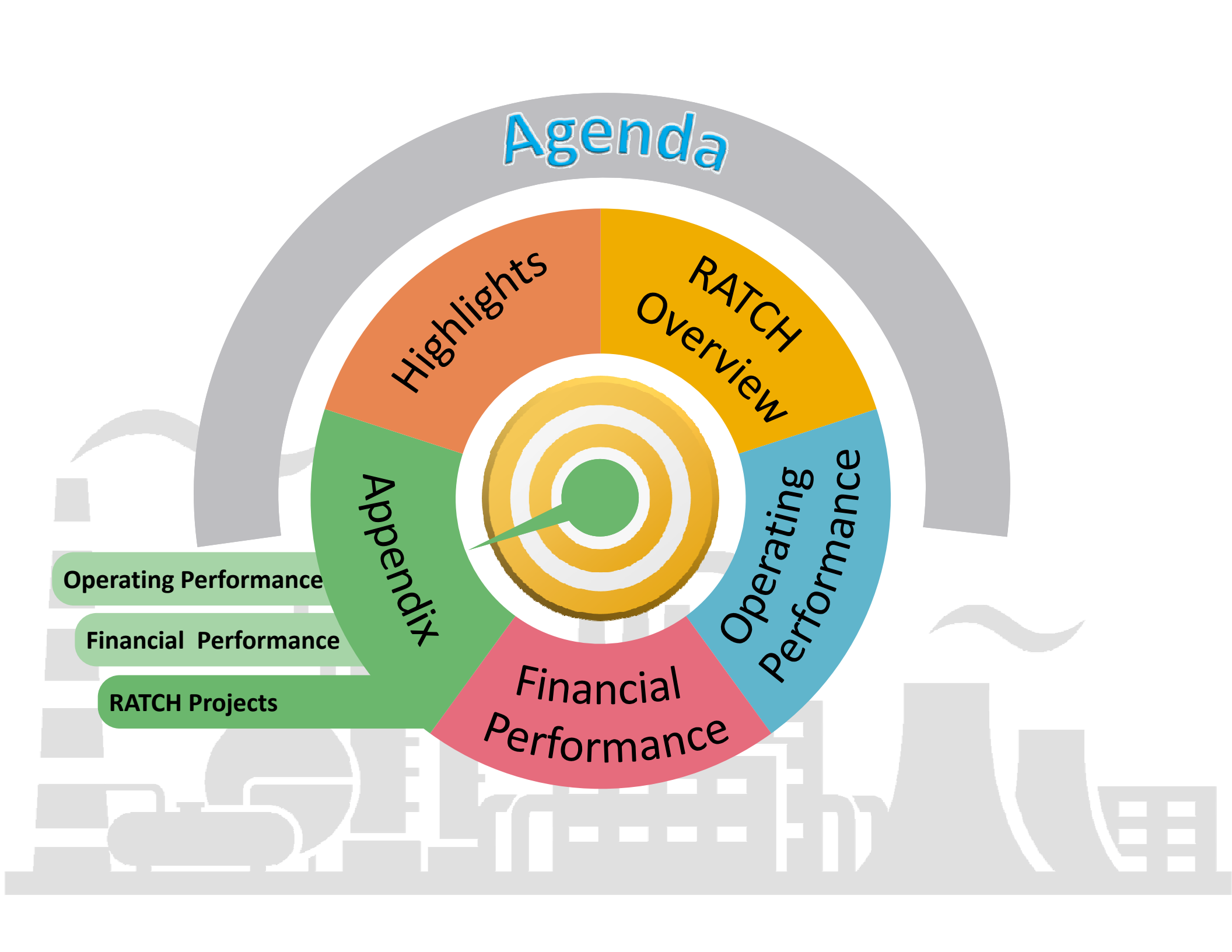
Financial  
Performance

Appendix

Operating Performance

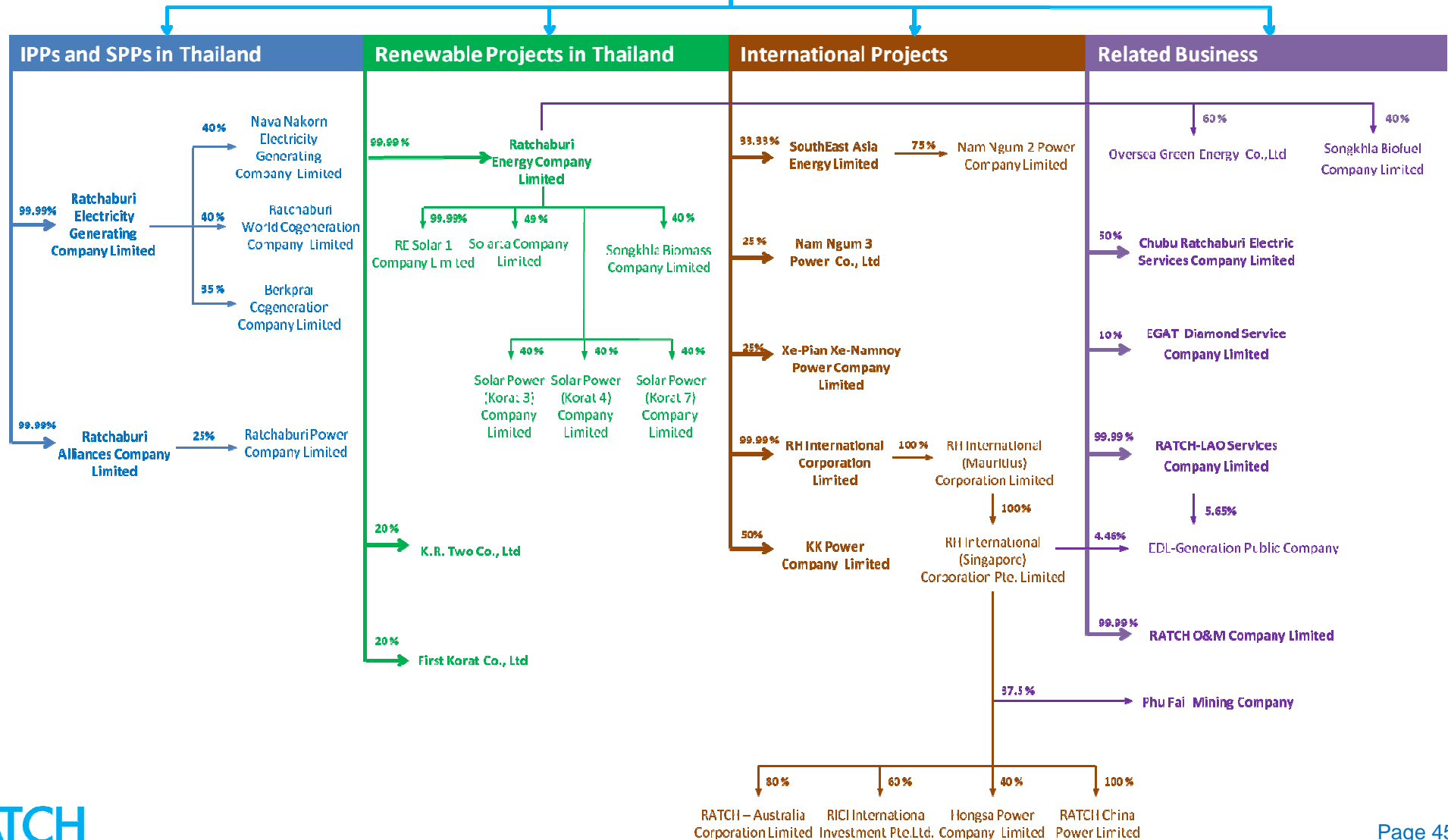
Financial Performance

RATCH Projects





# New Company Structure



# IPPs and SPPs in Thailand



**In Operation**

## Ratchaburi Power Plant (RATCHGEN)



### Location

Ratchaburi Province

### Technology

Thermal & Combined Cycle

### Total 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%

## Tri Energy Power Plant (TECO)



### Location

Ratchaburi Province

### Technology

Combined Cycle

### Total Capacity

700 MW (holds 100%)

### PPA

20-Year

### COD

1 July 2000

### Partner

Ratchaburi Electricity Generating  
Company Limited holds 100%

## Ratchaburi Power Plant (RPCL)



### Location

Ratchaburi Province

### Technology

Combined Cycle

### Total Capacity

1,400 MW (350 MW holds 25 %)

### PPA

25-Year

### COD

Block 1: 1 March 2008  
Block 2: 1 June 2008

### Partner

- Ratchaburi Alliances Company Limited holds 25%
- Power Assets holds 25%
- Chubu Electric Power Company International B.V. holds 15%
- PTT PCL holds 15%
- Union Energy Company Limited holds 10%
- Toyota Tsusho Corporation holds 10%

# IPPs and SPPs in Thailand



**In Operation**

## Ratchaburi World Cogeneration (RW Cogen)



**Location**

Ratchaburi Province

**Technology**

Cogeneration

**Total Capacity**

234 MW (93.60 MW holds 40%)

**PPA**

25-Year

**COD**

Unit 1: November 2014  
Unit 2: March 2015

**Project Cost**

THB 10,620 Million

**Partner**

- Ratchaburi Electricity Generating Company Limited holds 40%
- Major Shareholder Group of Thai Agri Food PCL holds 60%

## Nava Nakhon Electricity Generating (NNEG)



**Location**

Pathum Thani Province

**Technology**

Cogeneration

**Total Capacity**

139.13 MW (55.65 MW holds 40%)

**PPA**

25-Year

**Progress**

3 June 2016

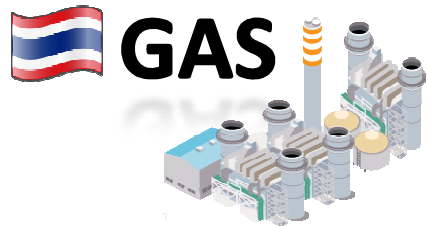
**Project Cost**

THB 6,000 Million

**Partner**

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

# IPPs and SPPs in Thailand



**Under Development**

## **Berkprai Cogeneration (Former name: Ratchaburi Cogeneration)**

### Location

Ratchaburi Province

### Technology

Cogeneration

### Total Capacity

100 MW (35 MW holds 35%)

Steam Generation 15 ton/hour

### PPA

25-Year

### Expected COD

In 2019

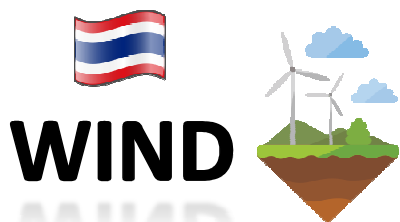
### Project Cost

THB 4,700 Million

### Partner

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

# IPPs and SPPs in Thailand



**In Operation**



## Huay Bong 2 Wind-Turbine Power Project

### Location

Nakorn Ratchasima Province

### Technology

Wind-Turbine

### Total 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

### Project Cost

THB 6,100 Million

### Debt to Equity

70 : 30

### 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 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

### Project Cost

THB 6,100 Million

### Debt to Equity

70 : 30

### Partner

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

# IPPs and SPPs in Thailand



## SOLAR

### In Operation



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

##### Location

Nakorn Ratchasima Province

##### Technology

Solar Power

##### Total Capacity

18 MW (7.2 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 Capacity

34.25 MW (16.78 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%

# Renewable Projects in Thailand

## BIOMASS



**In Operation**



**ESP**

### Songkhla Biomass Power Project

#### Location

Songkhla Province

#### Technology

Thermal Power Plant

#### Total Capacity

9.9 MW (3.96 MW holds 40%)

#### VSPP

20 Year

#### COD

9 November 2015

#### Project Cost

THB 846 Million

#### Debt to Equity

75 : 25

#### Partner

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

**Boiler & Economizer**



**Fuel Storage Silo**



# International Projects



## HYDRO



### In Operation

#### Num Ngum 2 Hydroelectric Power Plant



Location  
Lao PDR

Technology  
Hydro Power Plant

Total Capacity  
615 MW (153.75 MW holds 25%)

PPA  
27-Year

IOD / COD  
In 2011 / In 2013

#### Partner

- SEAN\* holds 75%
- GOL holds 25%

#### EDL-Generation Public Company (EDL-Gen)



Location  
Lao PDR

Technology  
Hydro Power Plant

Total Capacity  
1,131.15 MW  
(114.36 MW holds 10.11%)

#### Shareholders

- RATCH-Lao holds 5.65%
- RH International (Singapore) Corporation Pte. Limited holds 4.46%
- EDL holds 75%
- Others holds 14.89%

**\* Remark: SEAN's shareholder consist of**

- RATCH holds 33.33%
- CK Power PCL holds 55.99%
- Other holds 10.68%



# International Projects



## HYDRO



**Under Construction**

### Xe-Pian – Xe Namnoy Project

Location

Lao PDR

Technology

Hydro Power Plant

Total Capacity

410 MW (102.5 MW holds 25%)

PPA

27-Year

Progress

54.64% as of June 2016

Project Cost

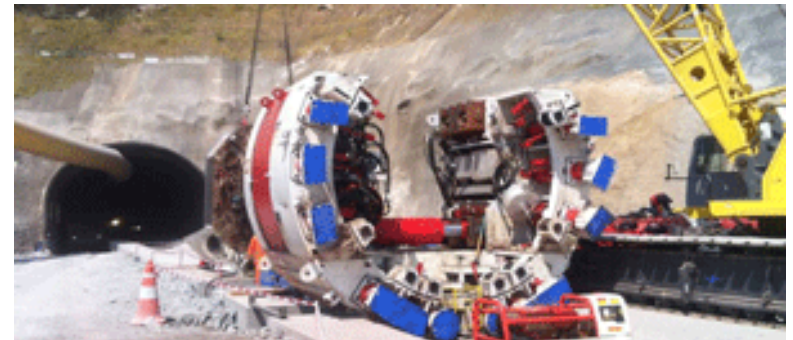
USD 1,020 Million

Debt to Equity

70 : 30

Partner

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



# International Projects



**In Operation**

## Partner (Power Plant)

- RATCH holds 40%
- Banpu Power holds 40%
- Lao PDR holds 20%

## Partner (Phu Fai Mining)

- RATCH holds 37.5%
- Banpu Power holds 37.5%
- Lao PDR holds 25%

## Hongsa Power Plant Unit 1&2

Location

Lao PDR

Technology

Lignite-Fired

Total Capacity

1,878 MW (751.2 MW holds 40%)

PPA

25-Year

COD

Unit 1 : 2 June 2015

Unit 2 : 2 November 2015

Unit 3 : 2 March 2016

Project Cost (3 Units)

USD 3,710 Million

Debt to Equity

75 : 25



# International Projects



**In Operation**

## Townsville Power Plant



### Location

North Queensland, Australia

### Technology

Combined Cycle Gas Turbine

### Total Capacity

234 MW (187.20 MW holds 80%)

### COD

In 1999

### Contract end date

February 2025

### Contract counterparty

AGL / Arrow

## Kemerton Power Plant



### Location

Western Australia

### Technology

Open Cycle Gas / Diesel Turbine

### Total Capacity

300 MW (240 MW holds 80%)

### COD

In 2005

### Contract end date

October 2030

### Contract counterparty

Synergy

## BP Kwinana Power Plant



### Location

Western Australia

### Technology

Co-generation

### Total Capacity

35.4 MW (28.32 MW holds 80%)

### COD

In 1996

### Contract end date

December 2021

### Contract counterparty

Verve Energy / BP

# International Projects



**In Operation**

## Toora



### Location

Victoria, Australia

### Technology

Wind Farm

### Total Capacity

21 MW (16.80 MW holds 80%)

### COD

In 2002

### Contract end date

n.a.

### Contract counterparty

Merchant

## Starfish Hill



### Location

South Australia

### Technology

Wind Farm

### Total Capacity

34.5 MW (27.60 MW holds 80%)

### COD

In 2003

### Contract end date

December 2016

### Contract counterparty

Diamond Energy

## Windy Hill



### Location

Queensland, Australia

### Technology

Wind Farm

### Total Capacity

12 MW (9.60 MW holds 80%)

### COD

In 2000

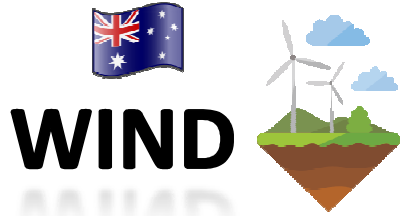
### Contract end date

December 2018

### Contract counterparty

Ergon Energy

# International Projects



**Under Development**

## Mount Emerald Wind Farm

### Location

Queensland, Australia

### Technology

Wind Farm

### Total Capacity

180 MW (144 MW holds 80%)

### Expected COD

In 2018

### Project Cost (100%)

9,500 Million Baht

### Contract end date

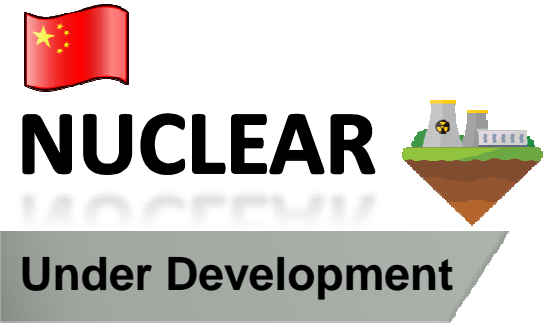
December 2030

### Contract counterparty

Ergon Energy\*

\* State Enterprise of Queensland, Australia

# International Projects



## Guangxi Fangchenggang Nuclear Power (II)

### Location

Fangchenggang , China

### Technology

HPR1000 (Hualong-1)

### Total Capacity

2,360 MW (236 MW holds 10%)  
(2 unit x 1,180 MW)

### PPA

30-Year

### Expected COD

In 2021

### Project Cost (100%)

200,000 Million Baht

### Equity Investment

7,500 Million Baht

### Partner

- China General Nuclear Power Corporation (CGN) holds 51%
- Guangxi investment Group Co./ Ltd (GIG) holds 39%
- RATCH China Power Limited holds 10%



# Thank you! Q&A



**RATCH**



**RATCHABURI**  
ELECTRICITY GENERATING  
HOLDING PCL.