

# Analyst Meeting

## 1Q2016

18 May 2016



# RATCH



RATCHABURI  
ELECTRICITY GENERATING  
HOLDING PCL.

# Agenda



Highlights  
RATCH Overview  
Operating Performance  
Financial Performance  
Appendix

# Agenda



## Highlights

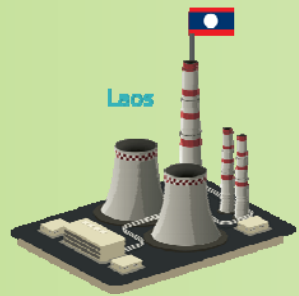
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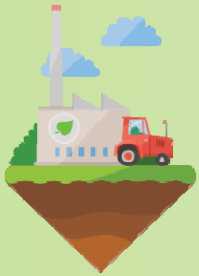
# Highlights



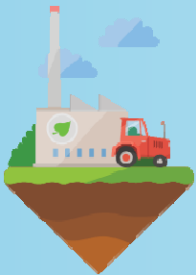
**On 2nd March 2016,** Hongsa Power Plant has commenced commercial operation of the Unit 3 of its power plant as scheduled. As a result, all 3 units of Hongsa Power Plant are commercially operated, with the total installed capacity of 1,878 MW, 751.20 MW of which is the Company's attribution.

**On 8<sup>th</sup> March 2016,** RH International Corporation Limited (RHIC) has increased its registered capital of Baht 10,650 million by issuing 1,065 million new ordinary shares, valuing at Baht 10 each. As a result, RHIC's registered capital is now Baht 17,650 million. This is done in order to increase the registered capital of RH International (Mauritius) Corporation Limited and RH International (Singapore) Corporation Pte. Limited. for the repayment of principal and interest of inter-company loan and for the final installment of equity injection of Hongsa Thermal Power Plant Project.

# Highlights



**On 1<sup>st</sup> April 2016**, Ratchaburi Energy Company Limited (RE) sold Pratu Thao Power Plant and Sao Thian-A Power Plant with the installed capacity of 2.65 MW and 3.6 MW respectively, including assets, contracts and rights related to such both power plants' electricity generation from natural gas to UAC at the amount of Baht 205 million. The Profit of this transaction is Baht 126.08 million



**On 2<sup>nd</sup> May 2016**, Ratchaburi Energy Company Limited (RE) has established three new subsidiaries to invest in renewable energy projects (CN Biomass, PB Biomass, and LP Biomass). Each company's registered capital is Baht 20 million, dividing into 2 million ordinary shares and valuing at Baht 10 each.

# Highlights

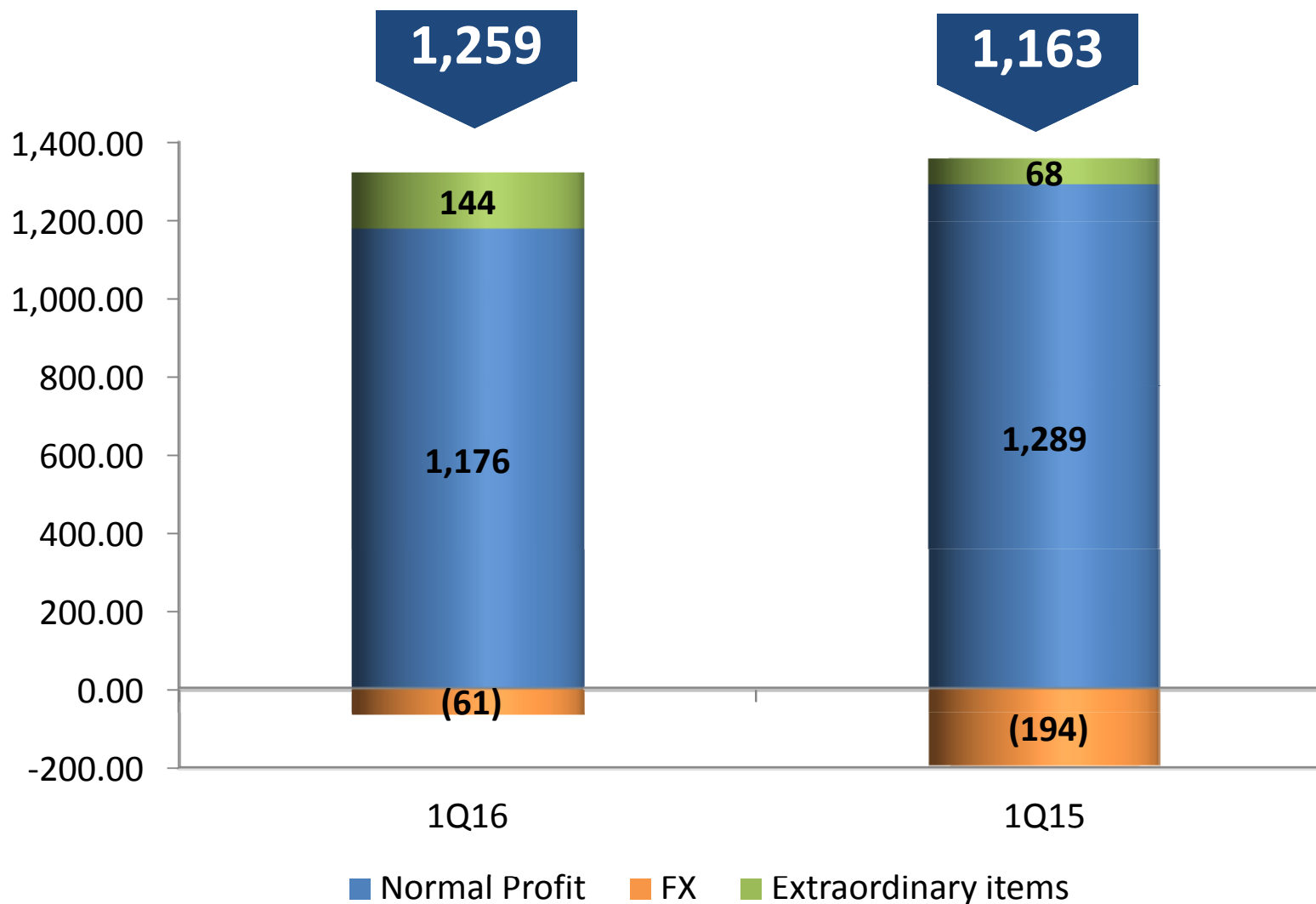


**As of March 2016**, the progression of the construction of Nava Nakorn SPP Project is 98% as planned. The expected commercial operation date is in June 2016.

# Profit for the period: Equity holders of the Company



Unit: Million Baht



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**RATCH Overview**

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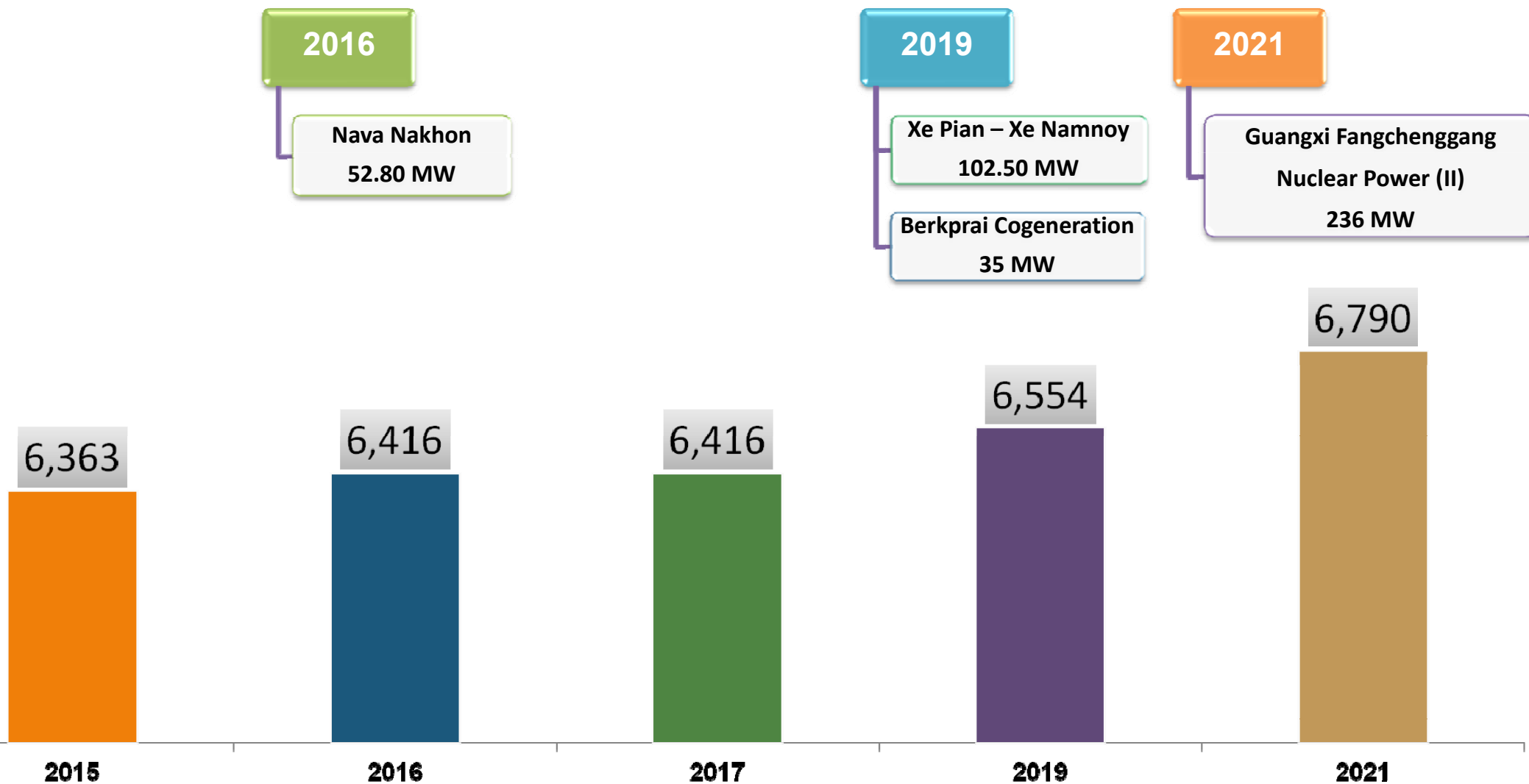


# Overview of RATCH projects



## Capacity until 2021 (Committed Projects)

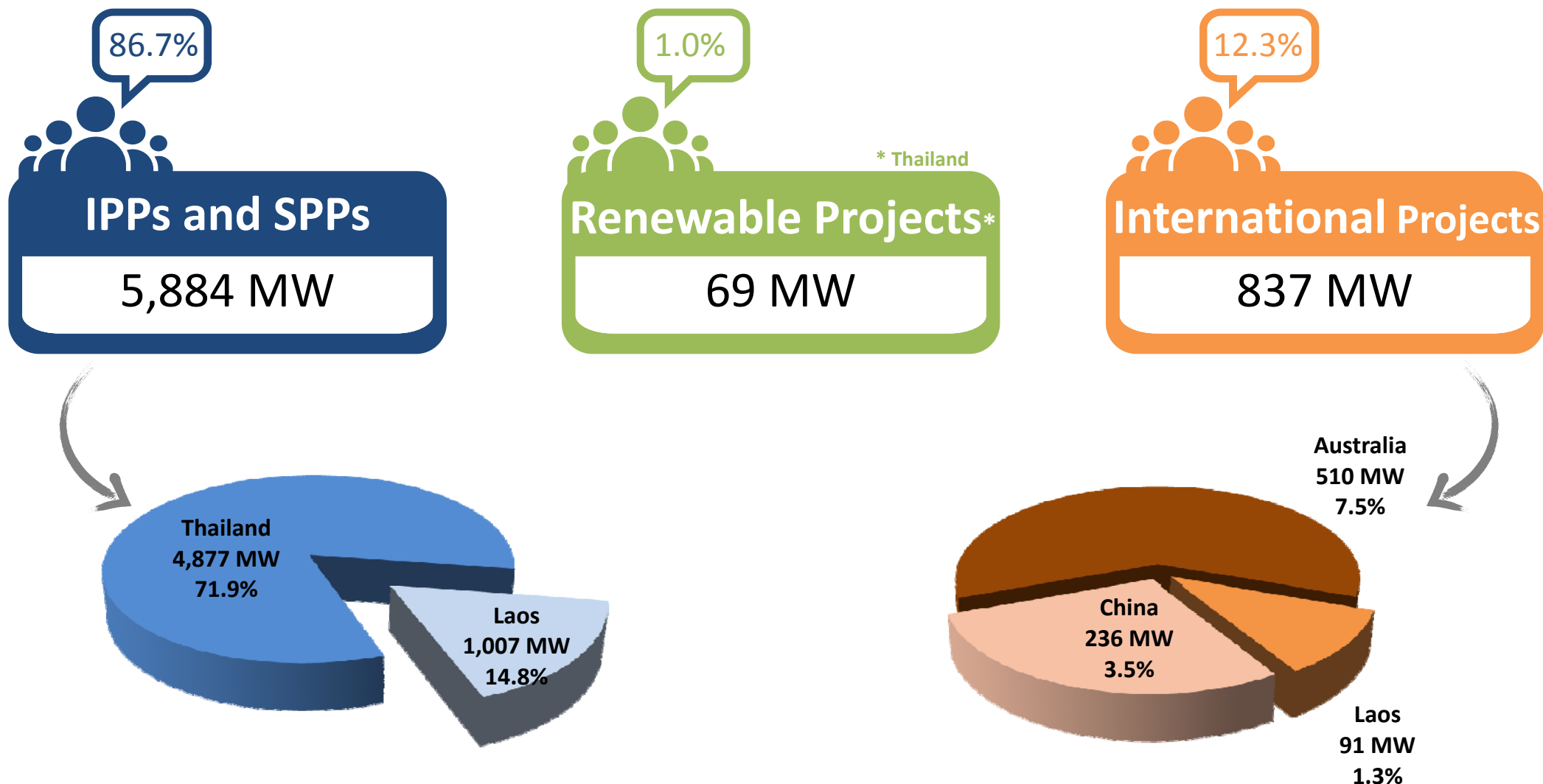
Unit: Megawatts



# Overview of RATCH projects



## 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
Total			5,979.00	4,788.60			

# 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 Construction							
Nava Nakorn Electricity Generating Project	Nava Nakorn Industrial Promotion Zone, Pathumthani Province	Cogeneration	132	52.80 (40%)	EGAT	25 years/ 2041 (Expected COD: June 2016)	Not Applicable
		Total	132	52.80			
Under Development							
Berkprai Cogeneration	Ratchaburi Province	Cogeneration	100	35 (35%)	EGAT	25 years/2044 (Expected COD: 2019)	Not Applicable
		Total	100	35			
Grand Total			6,211.00	4,876.40			

# 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 year (Expected COD: 2021)	
		Total	2,360	236			
Related Businesses							
EDL-Generation	Laos	Hydro Power Plant	899	90.89 (10.11%)			
		Total	899	90.89			
Grand Total			3,895.90	836.41			



# Agenda



Highlights

RATCH Overview

**Operating Performance**

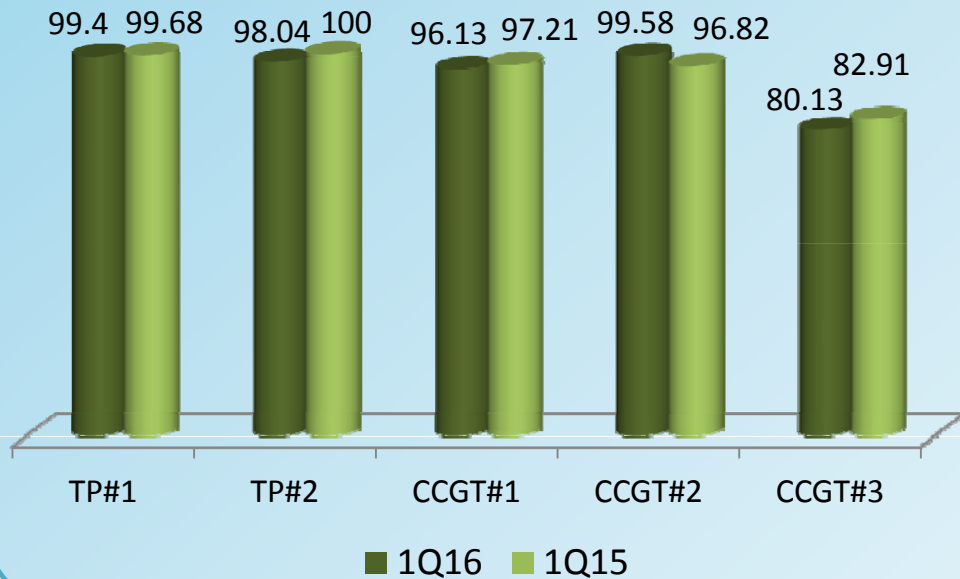
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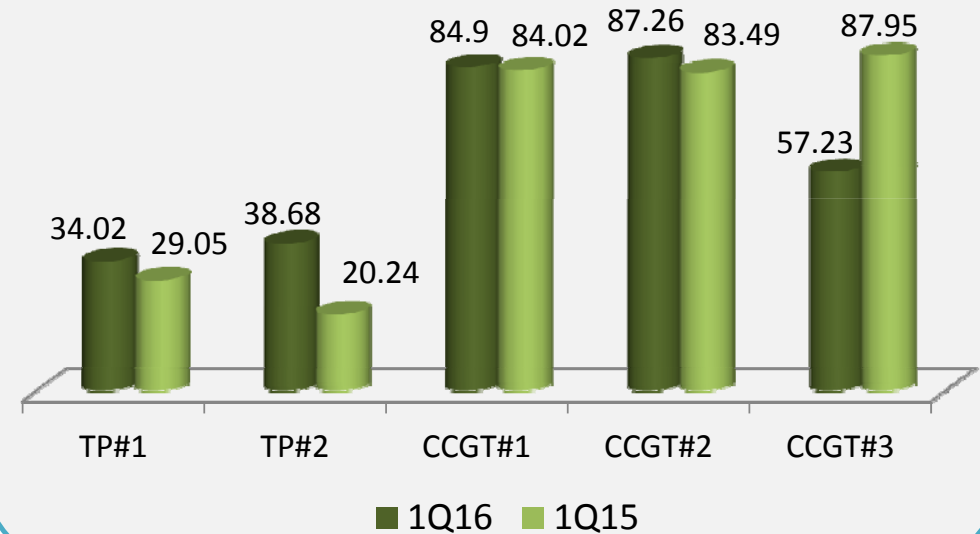
# Operation Performance



%Equivalent Availability Factor



%Dispatch Factor

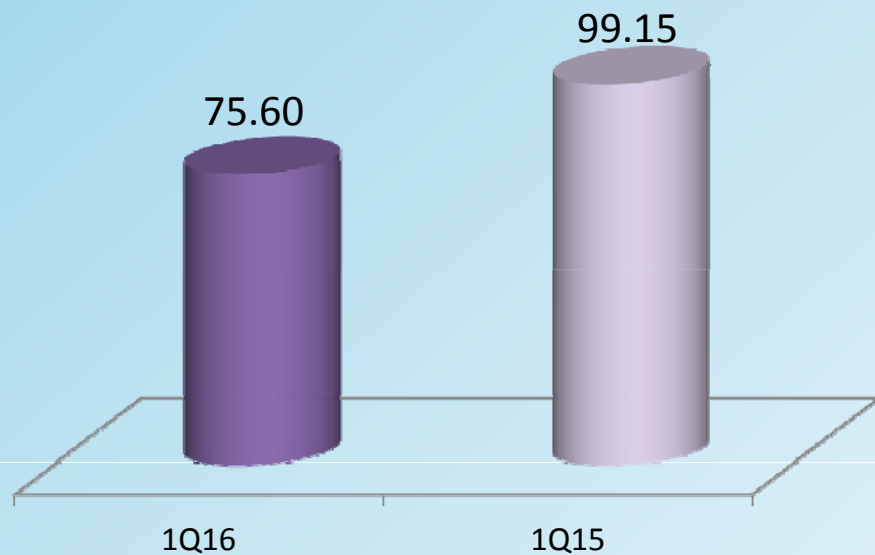


# Operation Performance

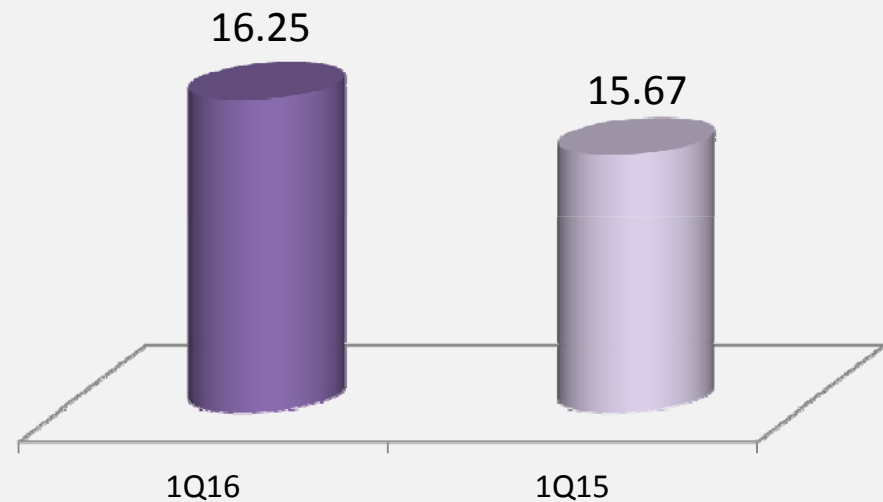


## HUAY BONG 2 (KR2)

%Avg. Commercial Availability



%Avg.Capacity Factor

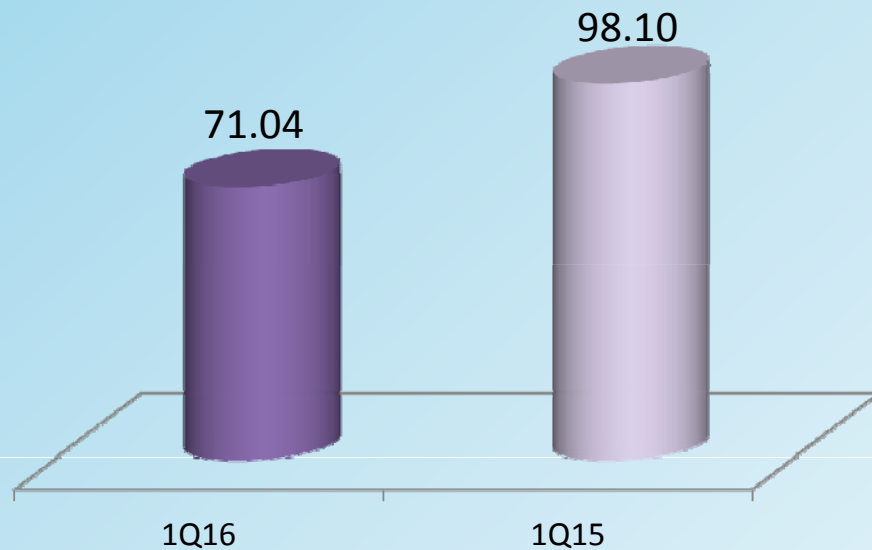


# Operation Performance

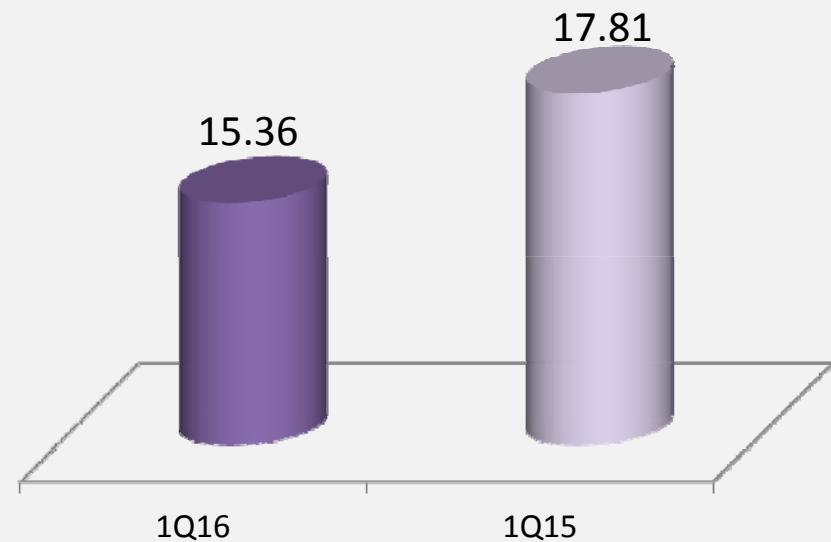


## HUAY BONG 3 (FKW)

%Avg. Commercial Availability



%Avg.Capacity Factor

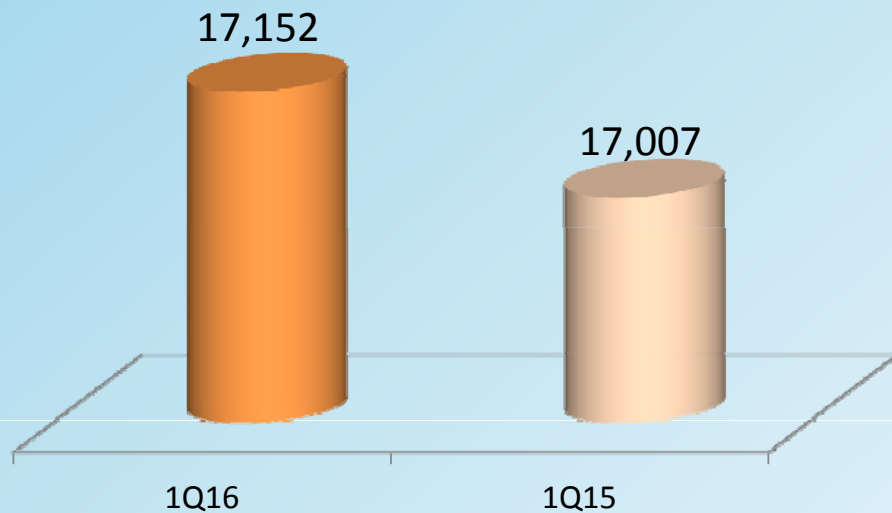


# Operation Performance

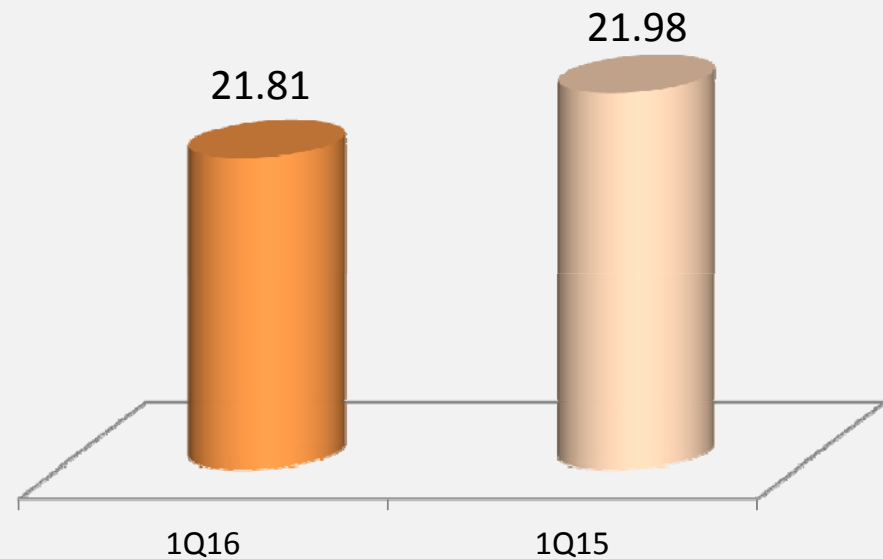


**SOLARTA**

Total Net Energy (MWh/Quarter)



%Avg.Capacity Factor



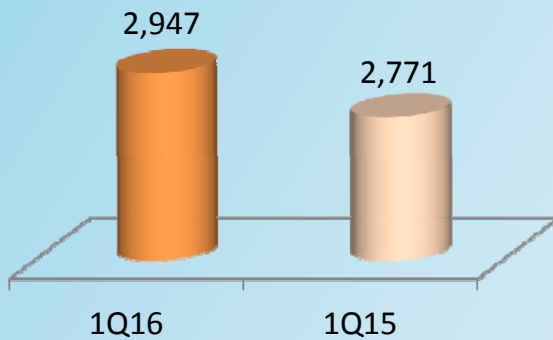
# Operation Performance



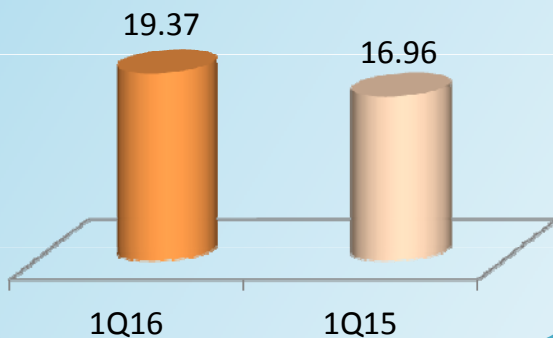
## SOLAR POWER

### Korat 3

Total Net Energy (MWh/Quarter)

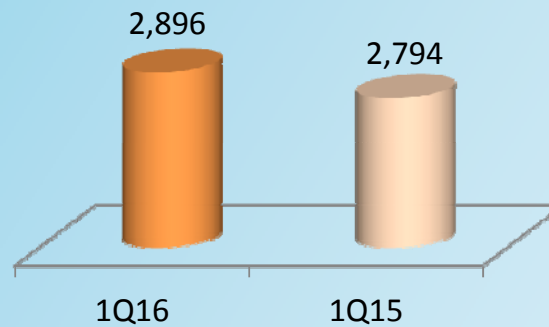


%Avg.Capacity Factor

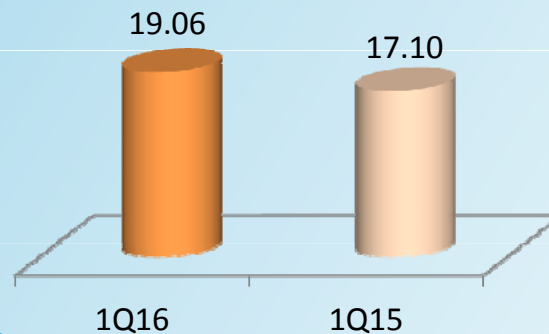


### Korat 4

Total Net Energy (MWh/Quarter)

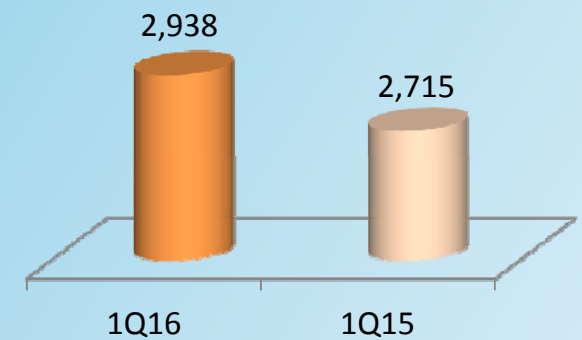


%Avg.Capacity Factor

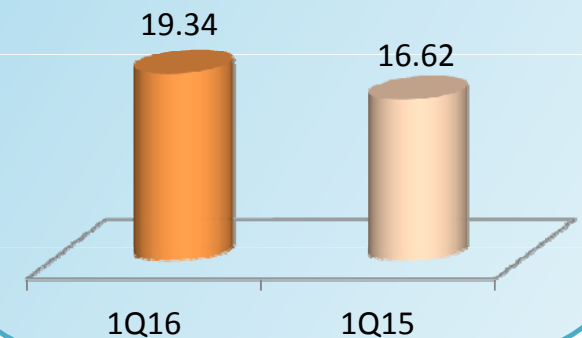


### Korat 7

Total Net Energy (MWh/Quarter)



%Avg.Capacity Factor



# Agenda



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**Financial Performance**

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# Income Statement



Unit : in Million Baht	1Q16	4Q15	3Q15	2Q15	1Q15
Revenues	13,384.52	12,905.64	14,963.02	14,381.97	15,796.19
Cost & Expenses	(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>1,719.40</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	417.68	603.86	417.61	459.42	159.68
<b>EBITDA included share profit of JV before FX</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	6.49	257.65	(1,150.97)	(207.44)	(232.99)
Gain (Loss) on exchange rate of JV	(67.70)	(128.98)	(281.27)	(97.06)	38.51
<b>EBITDA included share profit of JV and FX</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>
Gain on selling assets (Pratu Tao-A & Sao Thian-A)	-	126.08	-	-	-
Insurance claim	53.56	-	-	-	37.29
Diesel price movement (RG & RPCL)	90.04	(260.85)	20.02	(13.13)	30.89
Depreciation & Amortization	(347.92)	(294.77)	(346.28)	(345.02)	(348.90)
<b>EBIT</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	(326.83)	(348.31)	(340.43)	(331.34)	(342.73)
Income tax expense	(309.06)	(149.62)	(362.47)	(570.03)	(348.82)
<b>Profit for the period</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	23.67	35.97	22.48	75.60	38.90
<b>Equity holders of the Company</b>	<b>1,259.33</b>	<b>844.89</b>	<b>35.34</b>	<b>1,144.72</b>	<b>1,162.92</b>

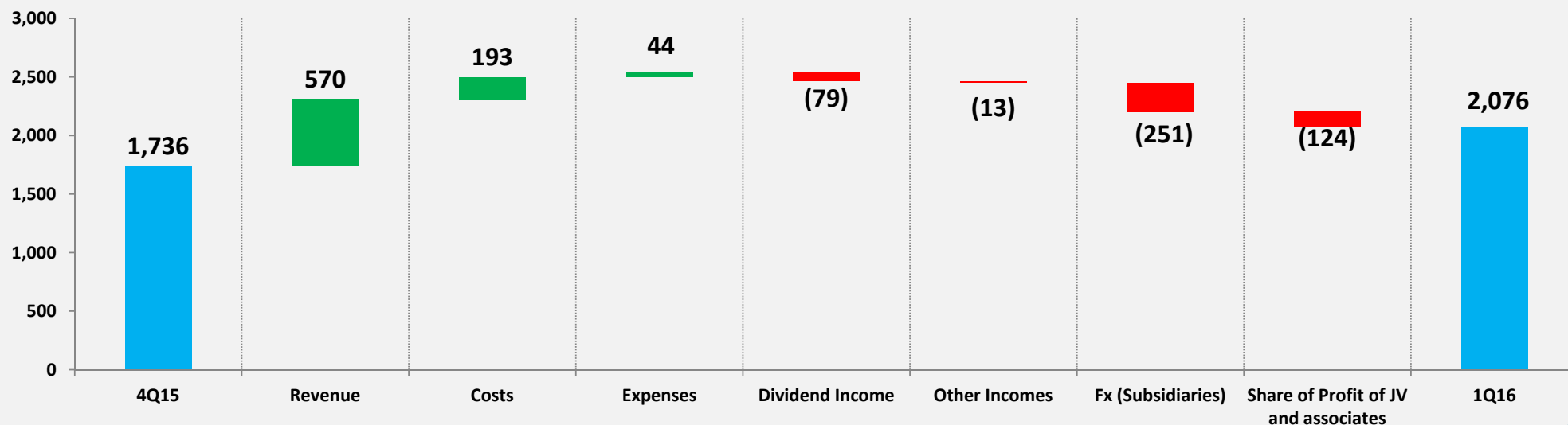


# EBITDA Growth QoQ & YoY



## EBITDA Growth QoQ

Unit: Million Baht



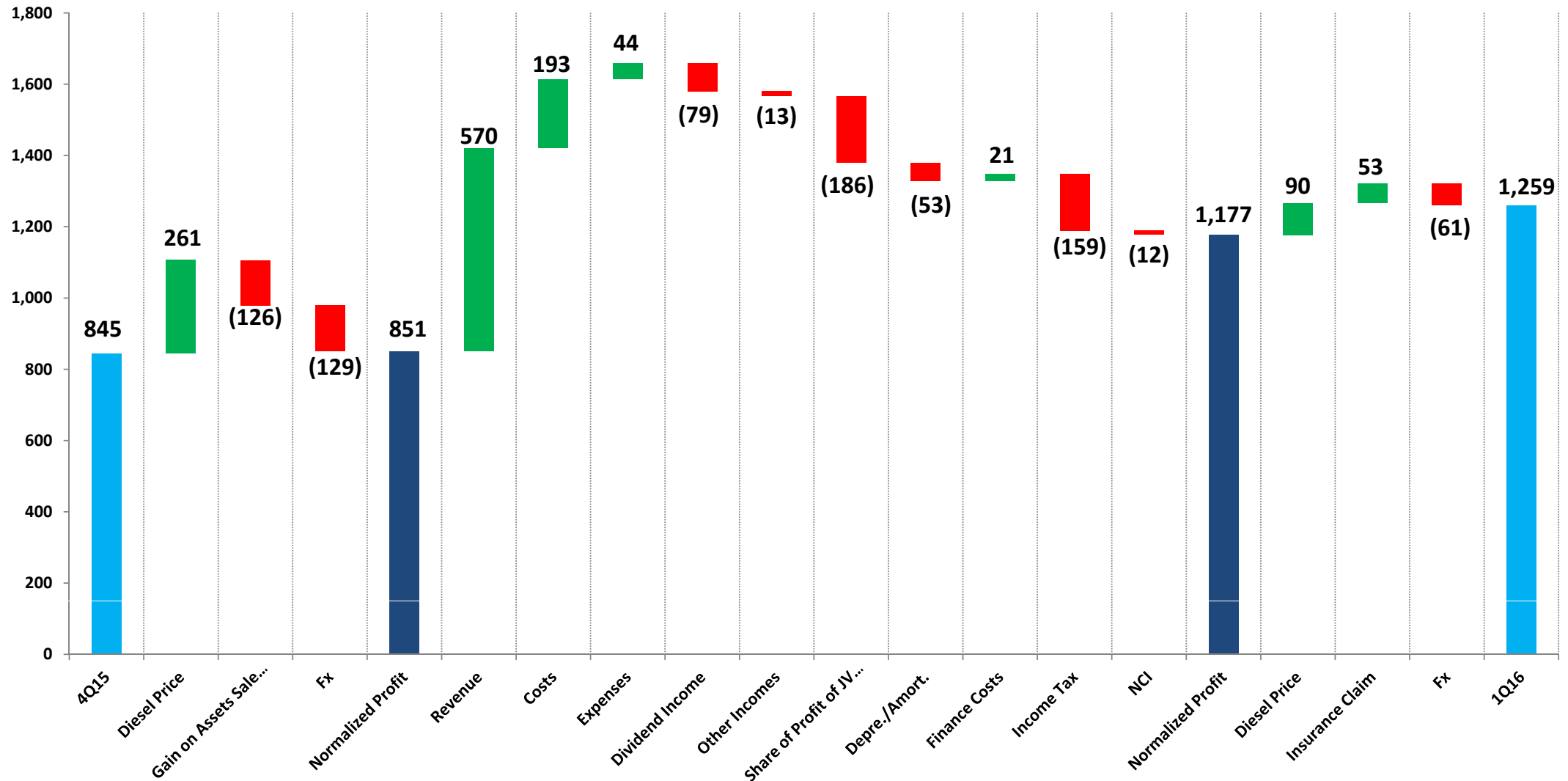
## EBITDA Growth YoY



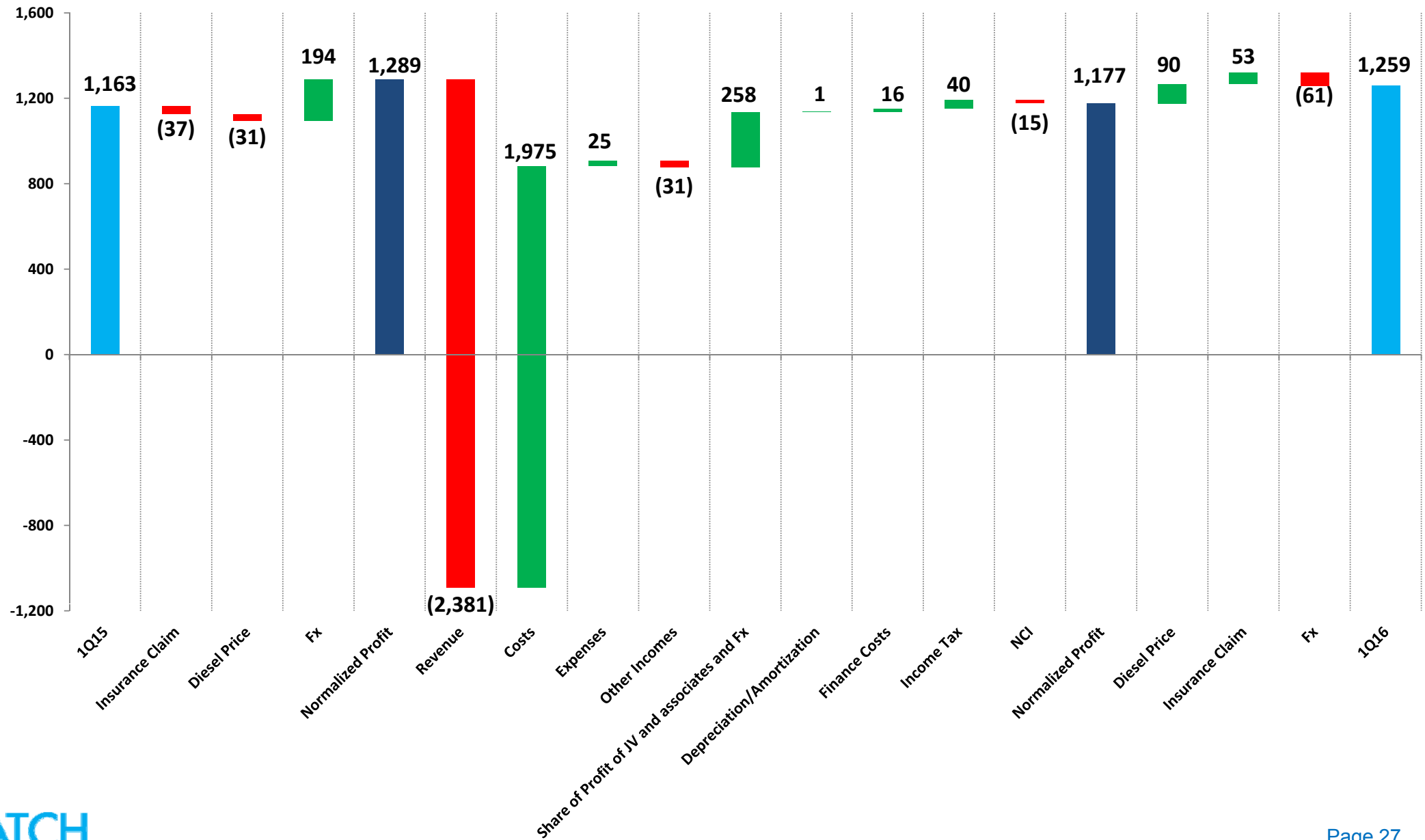
# Net Profit Growth QoQ



Unit: Million Baht



# Net Profit Growth YoY



# Statements of Financial Position



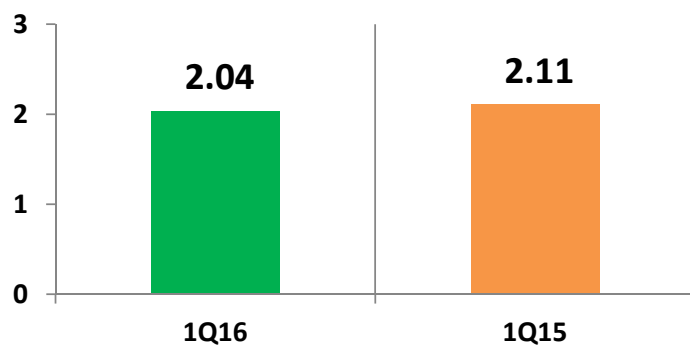
As of 31 March 2016

Total Assets	Million Baht	Total Liabilities & Equity	Million Baht
<b><u>Assets</u></b>		<b><u>Liabilities</u></b>	
Cash and cash equivalents	5,376.05	Loans from Related party, Financial Institutions & Debentures	22,643.01
Current investments	2,100.00	Other liabilities	7,440.35
Current Assets	8,504.01	Total Liabilities	30,083.36
Investment in Jointly-controlled entities/Associates/Others	29,271.76	<b><u>Equity</u></b>	
Financial lease receivables	27,423.24	Issued and paid-up share capital	16,031.78
Property, plant & equipments	13,854.68	Other components of equity	(1,406.70)
Other assets	5,585.61	Retained earnings	47,210.26
		<b>Total equity attributable to owners of the Company</b>	<b>61,835.34</b>
		Non-controlling interests	196.65
<b>Total Assets</b>	<b>92,115.35</b>	<b>Total Liabilities &amp; Equity</b>	<b>92,115.35</b>

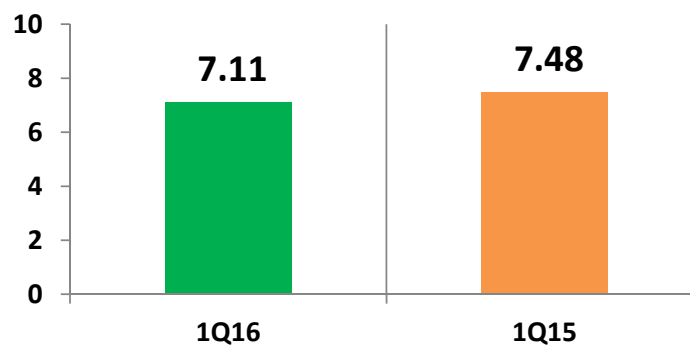
# Financial Ratios\*



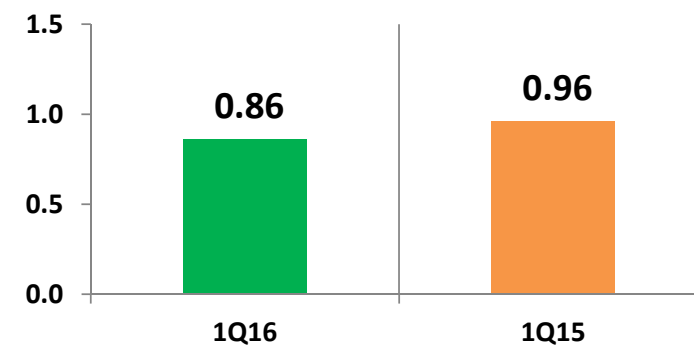
Current ratios (times)



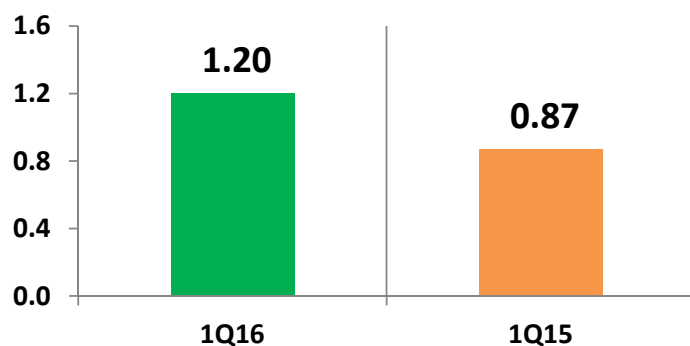
ROE (%)



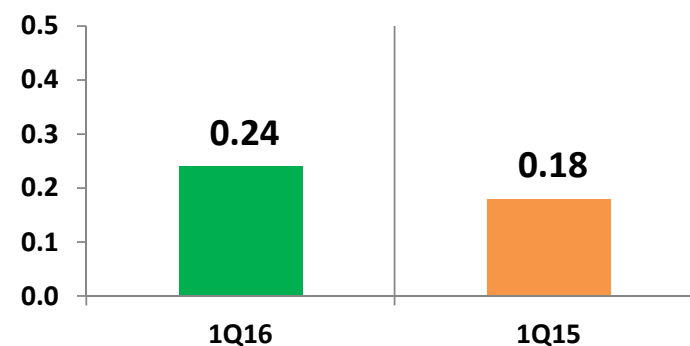
EPS (Baht per share)



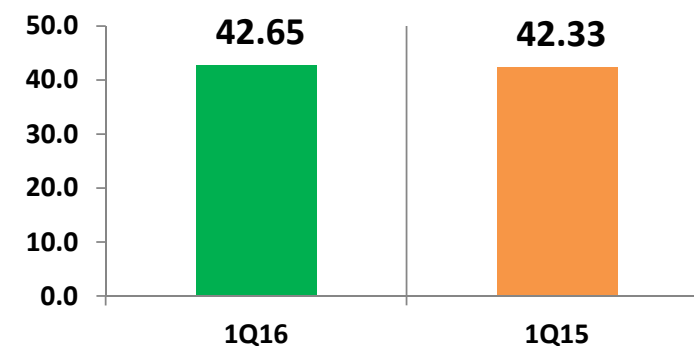
Net debt to EBITDA\*\* (times)



Net debt/Equity (times)



Book Value per share (Baht)



# Agenda



## Appendix

*Operating Performance*

*Financial Performance*

*RATCH Projects*

# RATCHGEN Operating Performance



<i>Fuel Consumption</i>			
By Type of Power Plant		1Q16	1Q15
Fuel Consumption (TH#1-2)			
- Gas	Million MMBTU	8.32	7.53
- Heavy Oil	Million Liters	73.51	0.31
Fuel Consumption (CCGT#1-3)			
- Gas	Million MMBTU	22.05	24.25
- Diesel	Million Liters	3.74	0.14
Gas Price (Average) Baht/MMBTU		259.95	319.17
Heavy Oil Price (Average) Baht/Liter		7.31	12.41
Diesel Oil Price (Average) Baht/Liter		24.72	25.59

# RATCHGEN Operating Performance




<b><i>Net Generation (GWh)</i></b>		
<b>By Type of Power Plant</b>	<b>1Q16</b>	<b>1Q15</b>
<b>Net Generation (TP#1-2) (GWh)</b>	<b>1,127.98</b>	<b>765.22</b>
- By Gas (GWh)	837.36	764.05
- By Heavy Oil (GWh)	290.62	1.17
<b>Net Generation (CCGT#1-3) (GWh)</b>	<b>3,105.06</b>	<b>3,373.63</b>
- By Gas (GWh)	3,089.14	3,373.63
- By Diesel (GWh)	15.92	-
<b>Total Net Generation (GWh)</b>	<b>4,233.04</b>	<b>4,138.85</b>





## Actual Outage




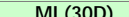






## Planned Outage at Ratchaburi Power Plant in 2015


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)
	CCGT-21											12	CI (13D)
	CCGT-22											12	CI (13D)
RG	CCST-30				26	MO (47D)	11						
	CCGT-31					30	CI (9D)	7					
	CCGT-32	1	CI (15D)	15									
RG	Thermal-1										4	MI (40D)	12
RG	Thermal-1											15	MI (40D)
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		
	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			15	CI (15D)  30								
	CCGT-12 - CCTE												
RPCL	CCST-10												
	CCGT-11												4
	CCGT-12												4
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



## Appendix

*Operating Performance*

*Financial Performance*

*RATCH Projects*

# Revenues



Unit : in Million Baht		1Q16	1Q15	Diff	%
<b>Sales</b>		<b>12,010.36</b>	<b>14,261.17</b>	<b>(2,250.81)</b>	<b>(15.78)</b>
AP	- RG/TECO	842.02	1,225.00	(382.98)	(31.26)
	- RAC	423.00	400.47	22.53	5.63
EP (Fuel)	- RG/TECO	10,568.38	12,510.71	(1,942.33)	(15.53)
	- RAC	176.96	109.23	67.73	62.01
	- Flared Gas	-	15.76	(15.76)	(100.00)
<b>Revenue from financial leases - RG/TECO</b>		<b>1,168.23</b>	<b>1,304.46</b>	<b>(136.23)</b>	<b>(10.44)</b>
<b>Revenue from Rendering of services</b>		<b>65.99</b>	<b>59.65</b>	<b>6.34</b>	<b>10.63</b>
<b>Management service income</b>		<b>68.08</b>	<b>61.69</b>	<b>6.39</b>	<b>10.36</b>
<b>Dividend Income</b>		<b>-</b>	<b>-</b>	<b>-</b>	<b>-</b>
<b>Interest Income</b>		<b>48.07</b>	<b>92.82</b>	<b>(44.75)</b>	<b>(48.21)</b>
<b>Other Incomes (exc. Extraordinary items)</b>		<b>23.79</b>	<b>16.40</b>	<b>7.39</b>	<b>(45.06)</b>
<b>Total Revenues</b>		<b>13,384.52</b>	<b>15,796.19</b>	<b>(2,411.67)</b>	<b>(15.27)</b>

# Share of profit from jointly-controlled entities



Unit : in Million Baht	1Q16	1Q15	Diff	%
RPCL	133.36	196.93	(63.57)	(32.28)
SEAN	76.77	62.48	14.29	22.87
HPC	(91.42)	(170.56)	79.14	46.40
CRESCO	16.91	4.46	12.45	279.15
SOLARTA	45.14	46.15	(1.01)	(2.19)
KORAT 3,4,7	22.13	20.13	2.00	9.94
FKW	32.45	27.95	4.50	16.10
KR2	27.93	22.57	5.36	23.75
KWINANA	21.52	17.04	4.48	26.29
PNPC	(5.00)	(12.15)	7.15	58.85
RW COGEN	58.97	(1.76)	60.73	N/A
NNEG	(6.48)	(11.88)	5.40	45.45
Others	17.70	(3.17)	20.87	N/A
<b>Total Share of profit from jointly-controlled entities</b>	<b>349.98</b>	<b>198.19</b>	<b>151.79</b>	<b>76.59</b>

# Share of profit from jointly-controlled entities



EXCL.FX	Unit : in Million Baht	1Q16	1Q15	Diff	%
	RPCL	108.01	178.98	(70.97)	(39.65)
	SEAN	41.03	43.51	(2.48)	(5.70)
	HPC	37.23	(176.89)	214.12	121.05
	CRESCO	15.69	2.79	12.90	462.37
	SOLARTA	45.13	46.15	(1.02)	(2.21)
	KORAT 3,4,7	22.13	20.13	2.00	9.94
	FKW	32.45	27.94	4.51	16.14
	KR2	27.93	22.53	5.40	23.97
	KWINANA	21.52	17.04	4.48	26.29
	PNPC	(2.02)	(8.31)	6.29	75.69
	RW COGEN	58.85	(1.77)	60.62	N/A
	NNEG	(8.91)	(9.25)	0.34	3.68
	Others	18.64	(3.17)	21.81	N/A
	<b>Total Share of profit from jointly-controlled entities</b>	<b>417.68</b>	<b>159.68</b>	<b>258.00</b>	<b>161.57</b>

# Cost and Expenses



Unit : in Million Baht	1Q16	1Q15	Diff	%
Cost of Sale and rendering of services	11,328.00	13,303.21	(1,975.21)	(14.85)
– Fuel Cost : RG/ TECO	10,399.78	12,376.11	(1,976.33)	(15.97)
– Fuel Cost : RAC	6.03	7.76	(1.73)	(22.29)
– Fuel Cost : Flared Gas	-	2.51	(2.51)	(100.00)
– Operation & Maintenance	378.85	407.61	(28.76)	(7.06)
– Repairing Expense (CSA)	263.81	242.04	21.77	8.99
– Spare parts	63.55	89.26	(25.71)	(28.80)
– Insurance Premium	119.42	93.20	26.22	28.13
– Standby Charge	55.30	41.60	13.70	32.93
– Others	41.26	43.12	(1.86)	(4.31)
Selling and Admin- Expenses	337.12	361.89	(24.77)	(6.84)
<b>Total Cost and Expenses*</b>	<b>11,665.12</b>	<b>13,665.10</b>	<b>(1,999.98)</b>	<b>(14.64)</b>

\*excluding depreciation & amortization

# Gain (Loss) From Foreign Exchange Rate



Unit : in Million Baht	1Q16	1Q15
Gain (Loss) from Foreign Exchange Rate	(61.21)	(194.48)

<b>The Company and Subsidiaries</b>	<b>6.49</b>	<b>(232.99)</b>
- RH	(67.52)	(16.01)
- RH Inter	19.83	(225.53)
- RG / RE / RL	54.18	8.55

<b>Jointly-controlled entities and Associates</b>	<b>(67.70)</b>	<b>38.51</b>
- SEAN (33.33%)	35.74	18.97
- RPCL (25%)	25.35	17.95
- HPC (40%)	(128.65)	6.33
- PNPC (40%)	(2.98)	(3.84)
- Others (CRESCO, RW Cogen, FKW,KR2,NNEG,Solarta, RICI)	2.84	(0.90)

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



## Appendix

*Operating Performance*

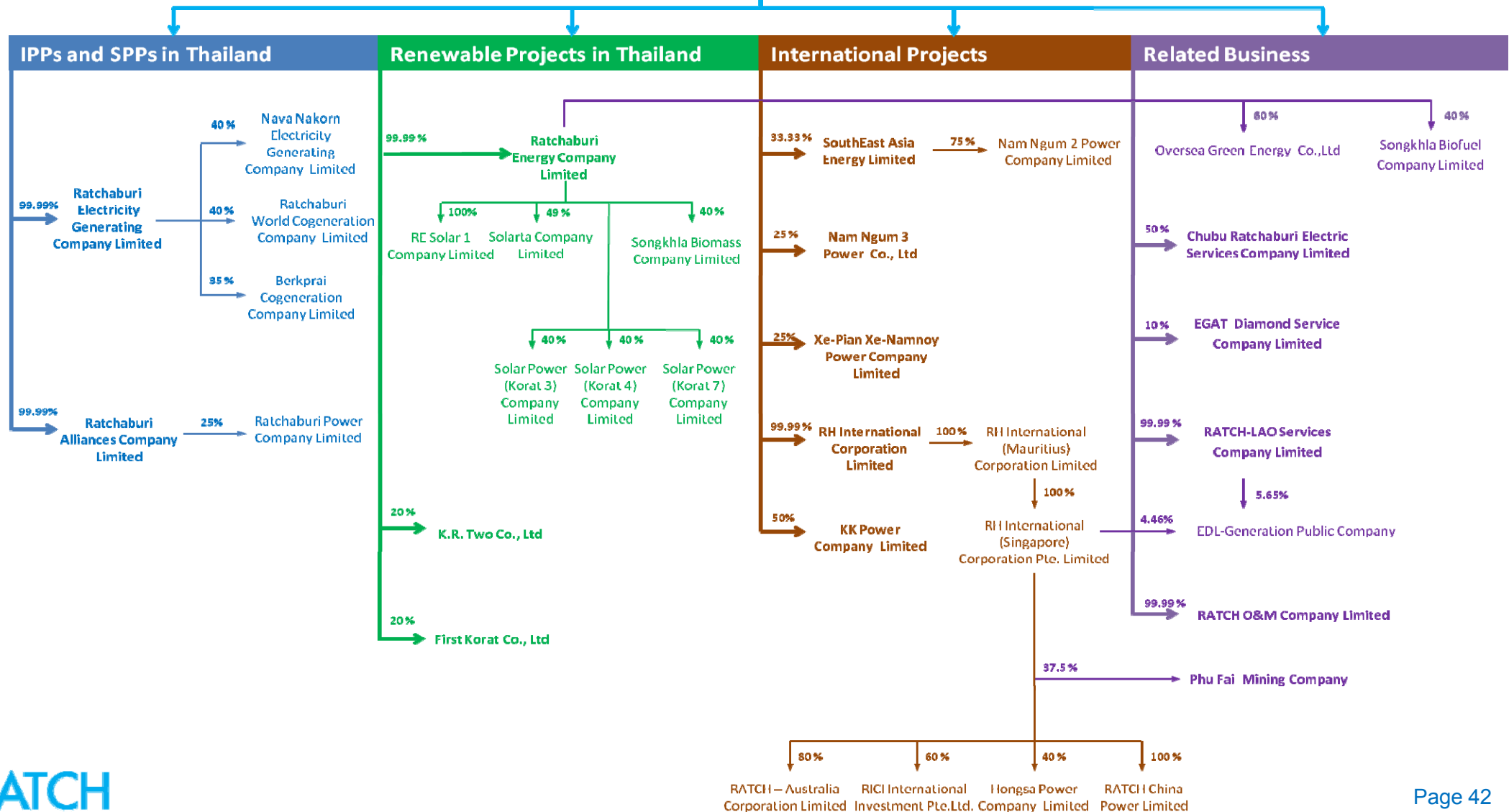
*Financial Performance*

*RATCH Projects*

# New Company Structure



as of February 2016



# 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%

# IPPs and SPPs in Thailand



**In Operation**

## 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%

## 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

### Partner

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

# IPPs and SPPs in Thailand



**Under Construction**

## Partner

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

## Nava Nakhon Electricity Generating (NNEG)



### Location

Pathum Thani Province

### Technology

Cogeneration

### Total Capacity

132 MW (52.80 MW holds 40%)

### PPA

25-Year

### Progress

98% as of March 2016  
Expected COD : June 2016

### Project Cost

THB 6,000 Million

### Debt to Equity

75 : 25

## 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 holds 65%

**Under Development**

# 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



## 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

899 MW (90.89 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

44.11% as of March 2016

### Project Cost

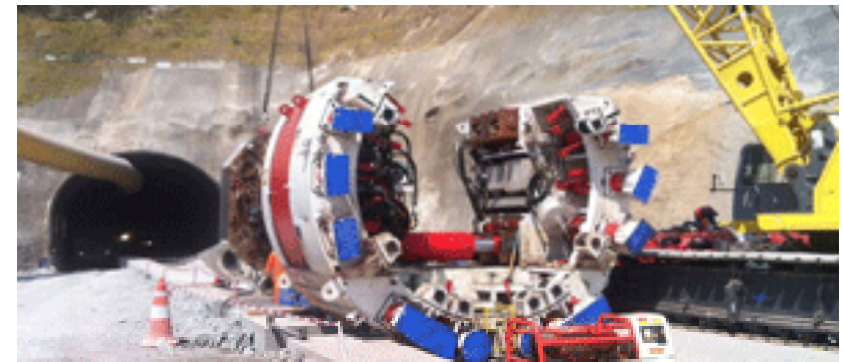
USD 1,020 Million

### 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

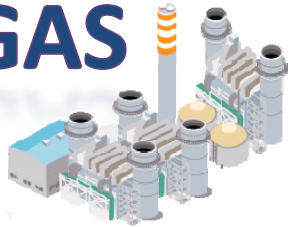
75 : 25



# International Projects



## GAS



**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



## 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



## NUCLEAR



Under Development

### 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.