

# RATCH



RATCHABURI  
ELECTRICITY GENERATING  
HOLDING PCL.



## CIMB 10<sup>th</sup> Annual Asia Pacific Leaders' Conference

*London : 1-2 November 2012*



# Content

- Industry Overview
- Company Overview
- Financial Performance
- Prospect
- Annexure

# Industry Overview

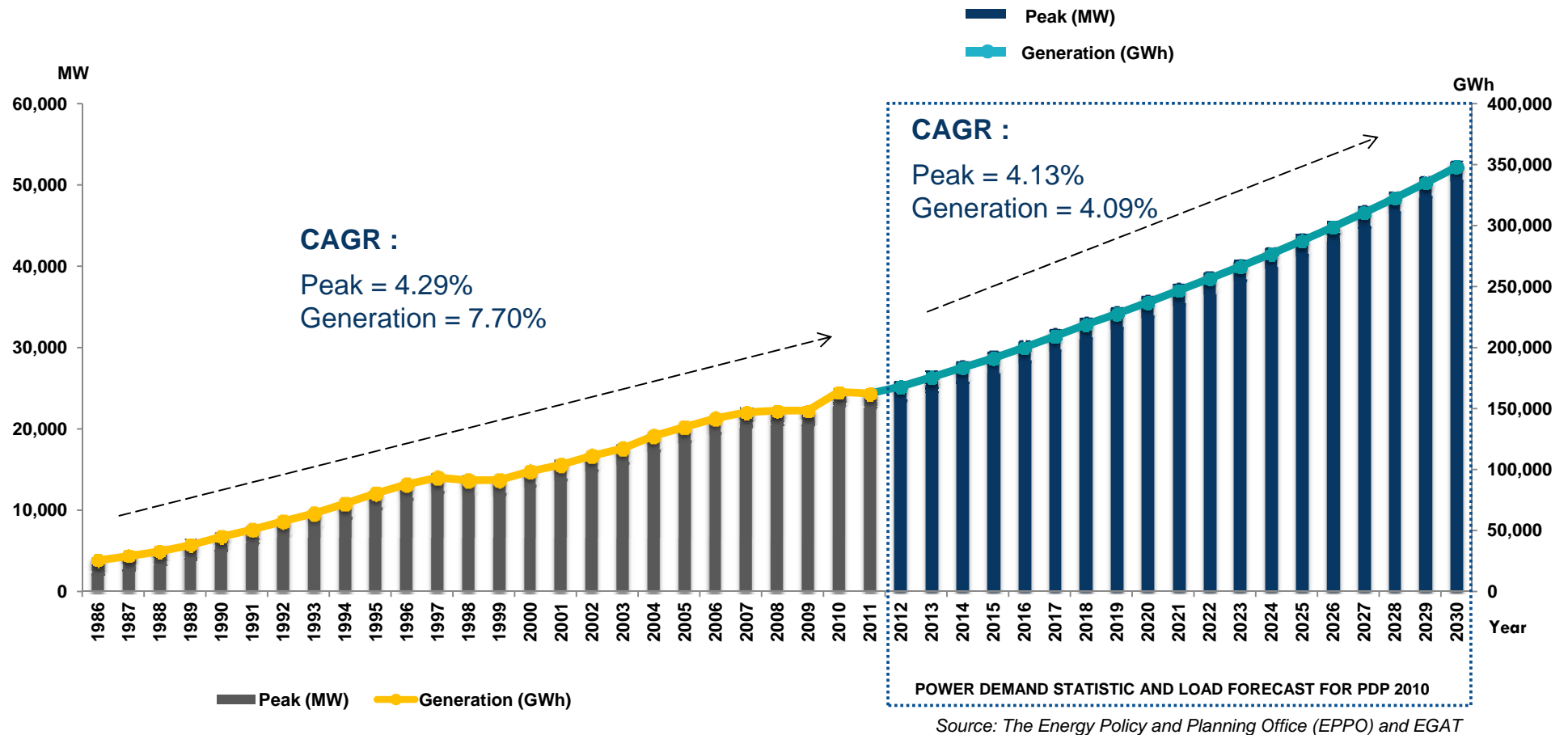
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RATCHABURI  
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# Power Industry

## Peak & Energy Generation

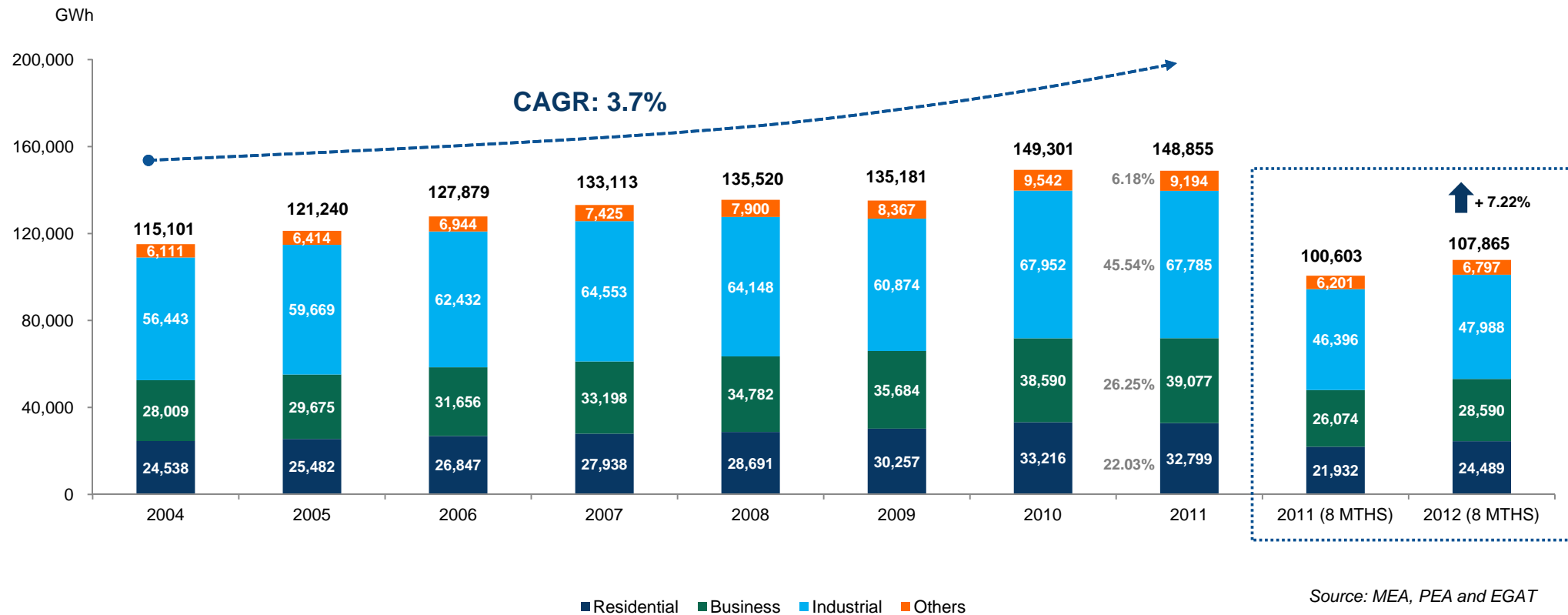


In 2012: Peak generation was 26,121 MW in April, increased 8.8% from peak period last year and total energy generation has increased 10.56% yoy

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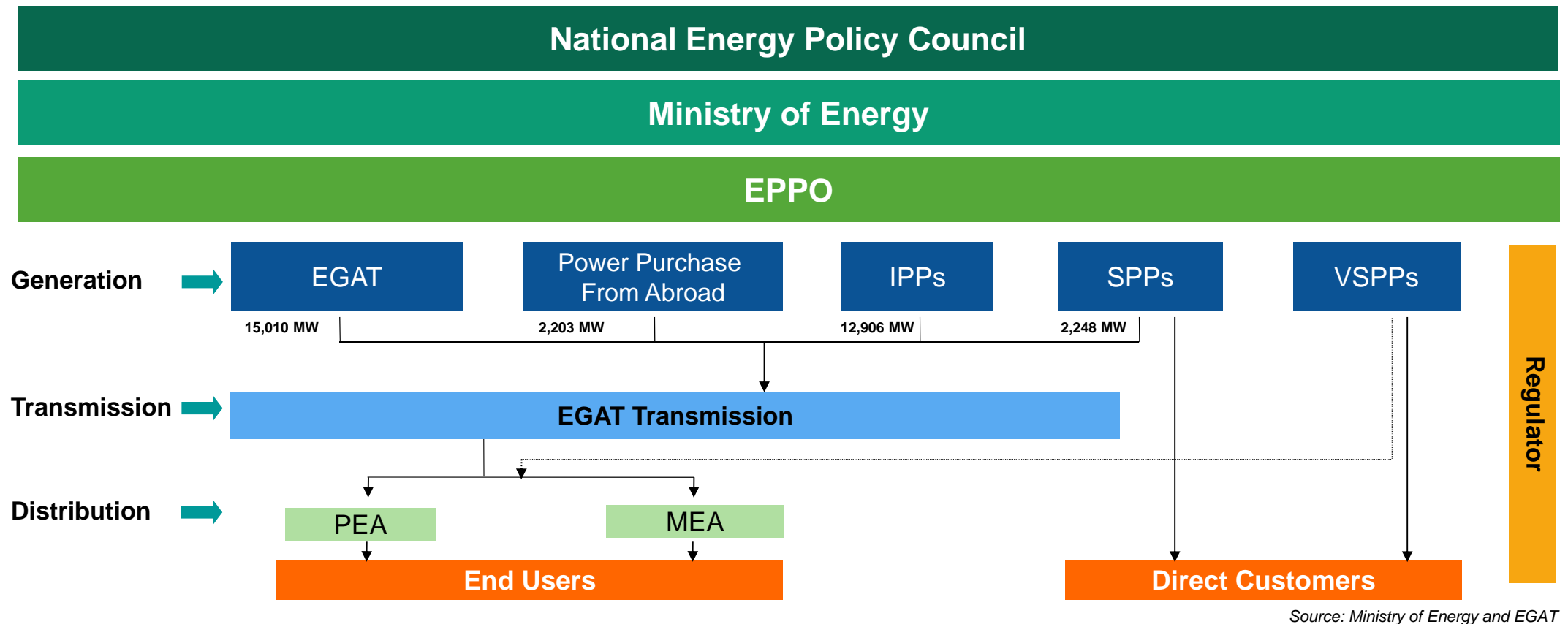
# Power Industry

## Electricity Consumption



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# Regulatory Environment : Thailand's Electricity Sector



## National Energy Policy Council

MOE's primary committee for setting country's energy policies to be proposed to Cabinet

## Energy Policy and Planning Office : EPPO

Dept. under MOE, responsible for studying and analyzing energy policies to be presented to NEPC

## Electricity Generation Authority of Thailand : EGAT

- The state enterprise which is the primary electricity generator and exclusive power purchaser from IPPs, REGCO, KEGCO, RATCHGEN and the government power purchaser from SPPs
- Transmission network is owned and operated by EGAT
- EGAT plans, operates and controls the least-cost dispatch of generated power from its power plants, as well as from private power plants

## Independent Power Producer : IPP

IPP scheme was introduced in 1994 (obligated to sell all electricity to EGAT)

## Small Power Producer : SPP

SPP scheme was introduced in 1992 (allowed to sell electricity either to EGAT or industrial users)

## Very Small Power Producers : VSPPs

VSPPs were introduced in 2002 to promote non-conventional sources & renewable energy

**Provincial Electricity Authority / Metropolitan Electricity Authority : PEA / MEA**  
MEA and PEA are the state enterprises responsible for electricity distribution

# Company Overview

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# Company Overview

- RATCH , was founded on 7 March 2000 through a *spin-off of EGAT* assets , and was listed on the Stock Exchange of Thailand in October 2000. Following the IPO, EGAT remains the single largest shareholder (45%).
- RATCH is still to date, *the largest IPP in Thailand* with aggregate installed capacity of 5.3 GW.
  - 14% of Thailand's total installed capacity → 4.4 GW.
  - The largest power investor in Lao PDR → 0.2 GW in operation (0.9 GW in pipeline).
  - The first Thailand's power investor in Australia with a total capacity of 0.7 GW.

## Credit's Ratings

*“BBB+”* with stable outlook by *STANDARD&POOR’S*

*“Baa1”* with stable outlook by *Moody’s*

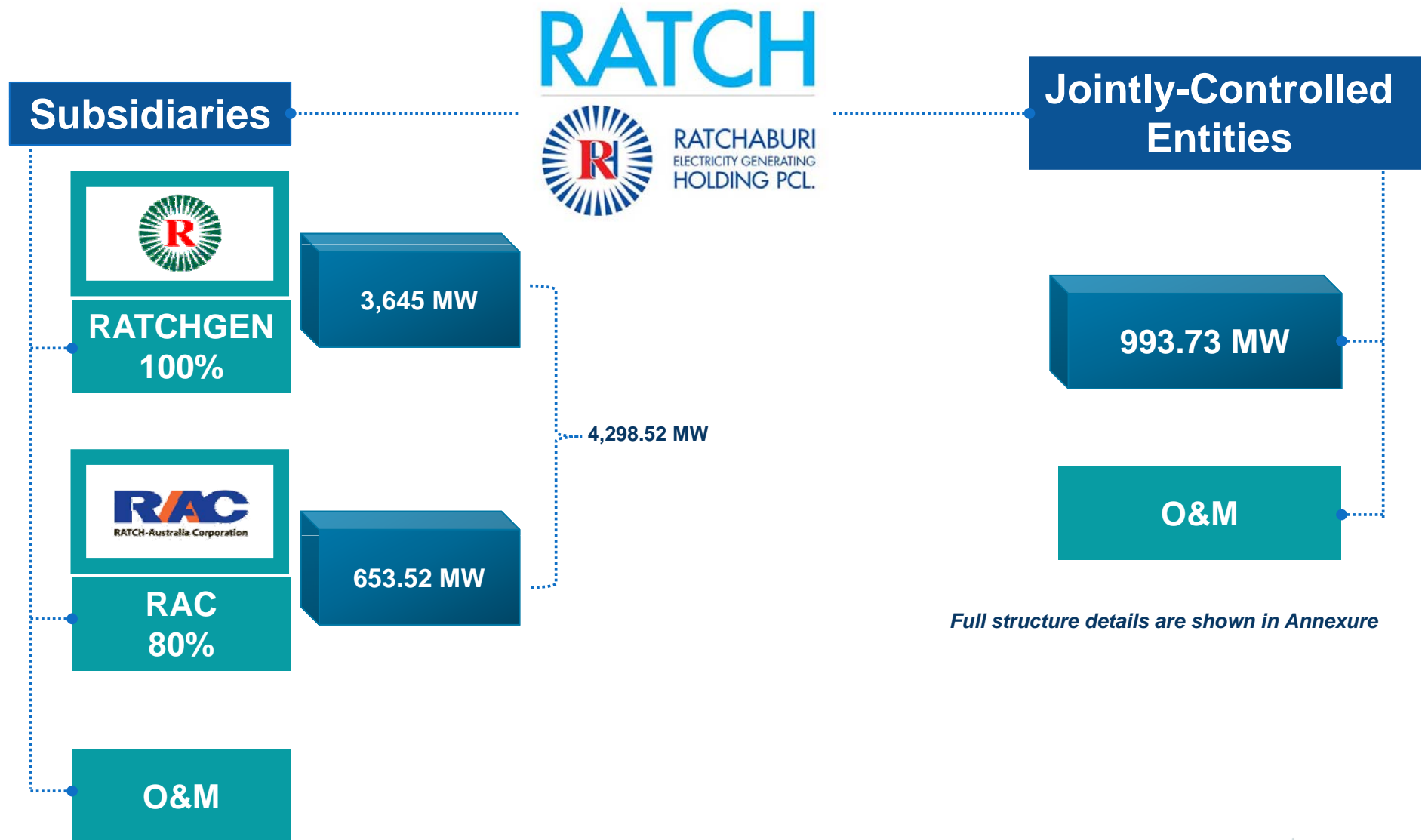
*“AA”* with stable outlook by *TRIS* (local credit rating company)

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# RATCH simplified corporate structure

As of 2012

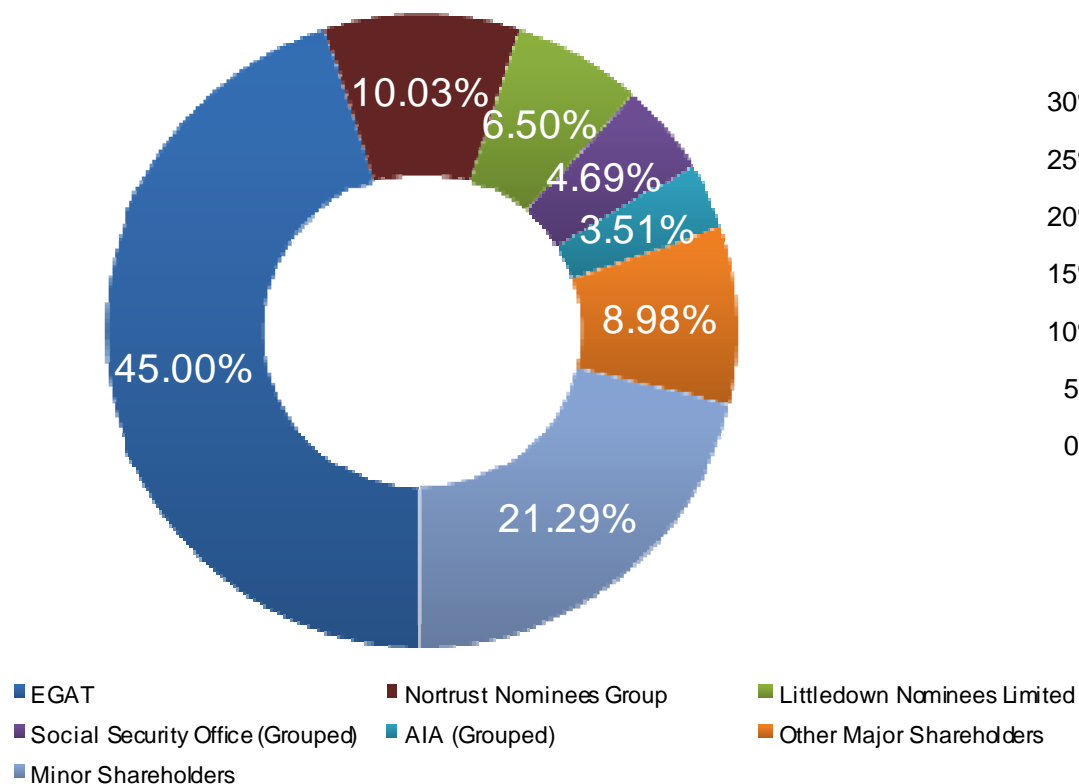


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# Shareholder Information

## Major Shareholders

As of September 5, 2012

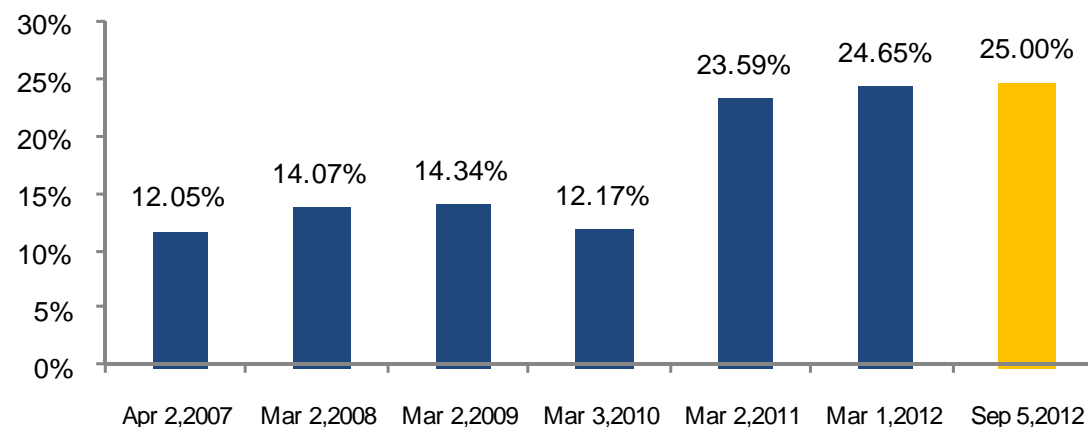


### Other Major Shareholder consisted of

- Thai NVDR 2.89%
- Bangkok Life Assurance 2.07%
- Krungsri Asset Management (Grouped) 1.83%
- State Street Bank (Grouped) 1.17%
- The Bank of New York (Grouped) 1.02%

## Foreign Shareholders

Data are as of AGM closing date in each respective year

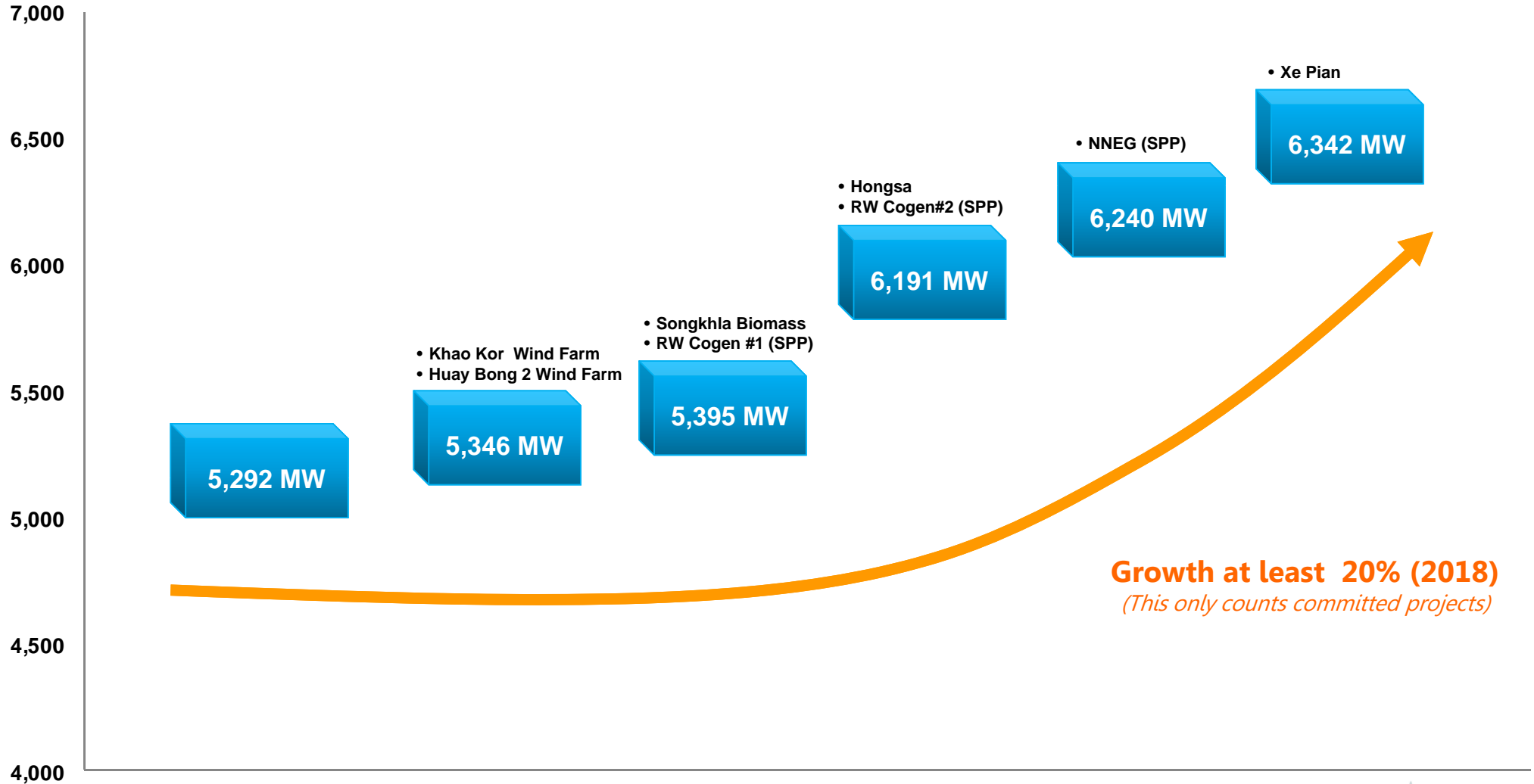


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# Overview of RATCH projects

## Ongoing Projects

Unit : MW



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In Operation		
Company	Effective Shareholding	RATCH's Capacity Stake (MW)
<b><u>Thailand</u></b>		
RATCHGEN	100.00%	3,645
TECO	50.00%	350
RPCL	25.00%	350
Pratu Tao-A + Expansion	100.00%	2.65
Sao Thian-A	100.00%	3.60
Solarta	49.00%	16.78
Solar Power	40.00%	7.20
Huay Bong 3	20.00%	20.70
<b><u>Laos</u></b>		
NN2	25.00%	153.75
EDL-Generation	10.108%	89.05
<b><u>Australia</u></b>		
RAC	80.00%	653.52
		<b>5,292.25</b>

*Total Capacity by 2018 : **6,342.12 MW***

Under Construction		
Company	Effective Shareholding	RATCH's Capacity Stake (MW)
<b><u>Thailand</u></b>		
Huay Bong 2	20.00%	20.70
<b><u>Laos</u></b>		
Hongsas	40.00%	751.20
		<b>771.90</b>

Under development		
Company	Effective Shareholding	RATCH's Capacity Stake (MW)
<b><u>Thailand</u></b>		
Khao Kor	55.18%	33.11
Songkhla Biomass	40.00%	3.96
RW Cogen #1 -2	40.00%	89.60
NNEG	40.00%	48.80
<b><u>Laos</u></b>		
Xe Pian	25.00%	102.50
		<b>277.97</b>

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# Portfolio by core business and locations

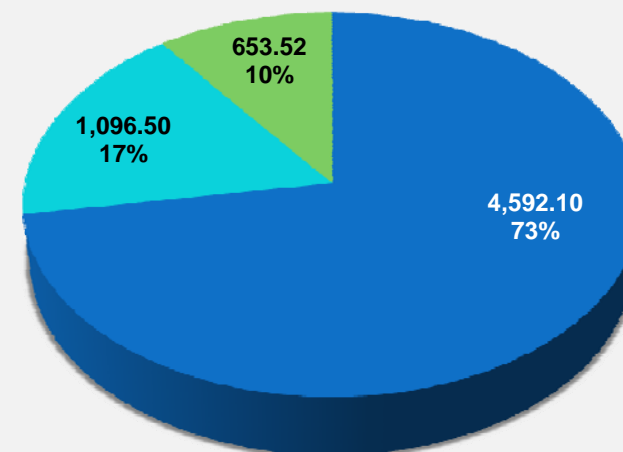
## I Power Generation II Renewable Energy III Related Business

End of 2012 Unit : MW

Location	Power Generation				Renewable Energy		Grand Total
	Gas	Coal	Hydro	Capital Investment	Wind	Solar	
Thailand	4,351.25	-	-	-	20.70	23.98	4,395.93
Laos	-	-	153.75	89.05	-	-	242.80
Australia	455.52	144.00	-	-	54.00	-	653.52
<b>Total</b>	<b>4,806.77</b>	<b>144.00</b>	<b>153.75</b>	<b>89.05</b>	<b>74.70</b>	<b>23.98</b>	<b>5,292.25</b>

Project from 2013 to 2018 Unit : MW

Location	Power Generation			Renewable Energy		Grand Total
	Gas (SPP)	Coal	Hydro	Wind	Biomass	
Thailand	138.40	-	-	53.81	3.96	196.17
Laos	-	751.20	102.50	-	-	853.70
<b>Total</b>	<b>138.40</b>	<b>751.20</b>	<b>102.50</b>	<b>53.81</b>	<b>3.96</b>	<b>1,049.87</b>



■ Thailand ■ Laos ■ Australia

Total capacity by the end of 2018 = 6,342.12MW

## III Related Business

- RATCH-LAO Services Co., Ltd
- Chubu Ratchaburi Electric Services Co., Ltd
- RATCH O&M Co., Ltd

✓ Operations and maintenance

Sukhothai Energy Co., Ltd

✓ Service of flared gas quality improvement

EGAT Diamond Service Co., Ltd

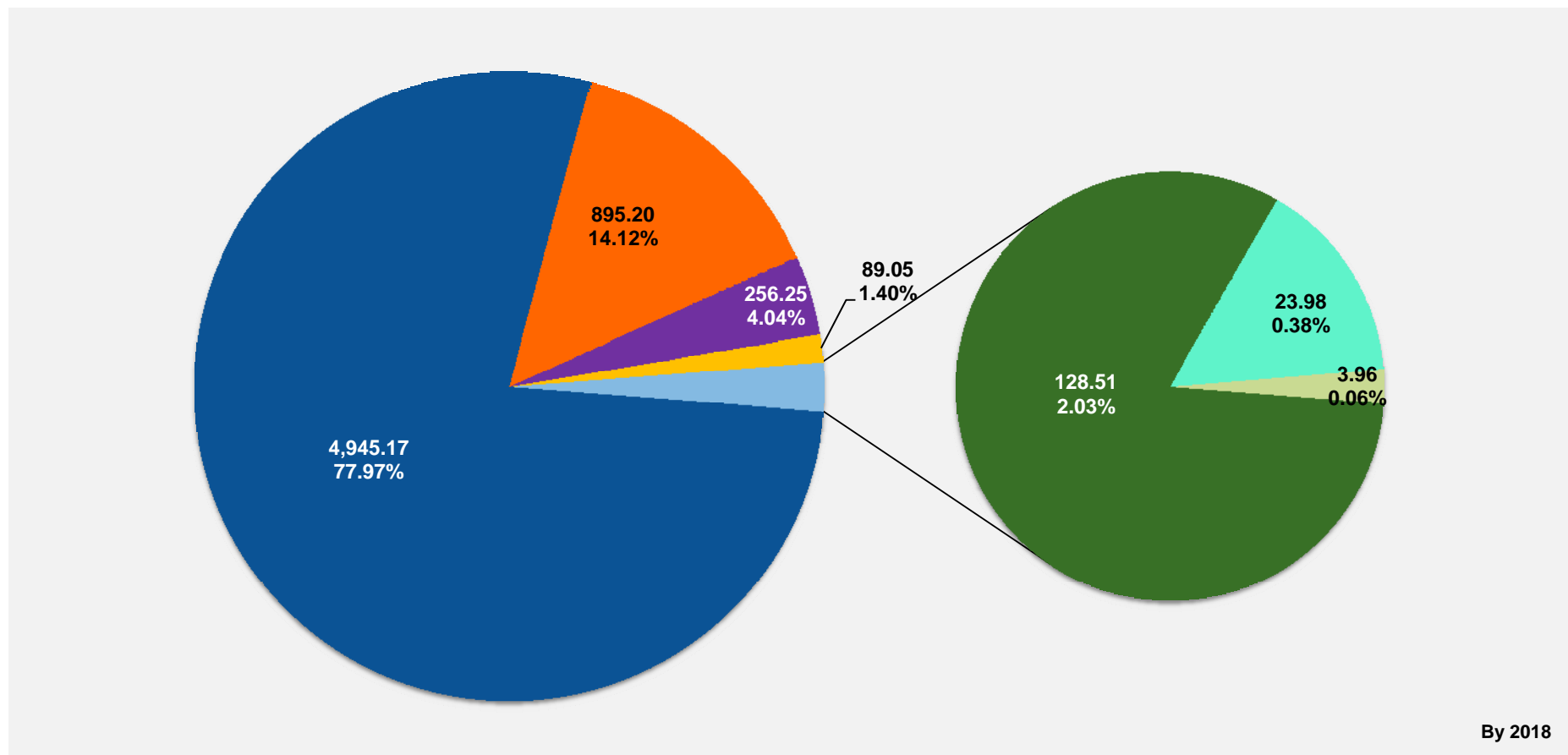
✓ Gas turbine maintenance

- Phu Fai Mining Co., Ltd
- Songkhla Biofuel Co., Ltd

✓ Fuel Supply

# Portfolio by Type of Fuel

Unit : MW

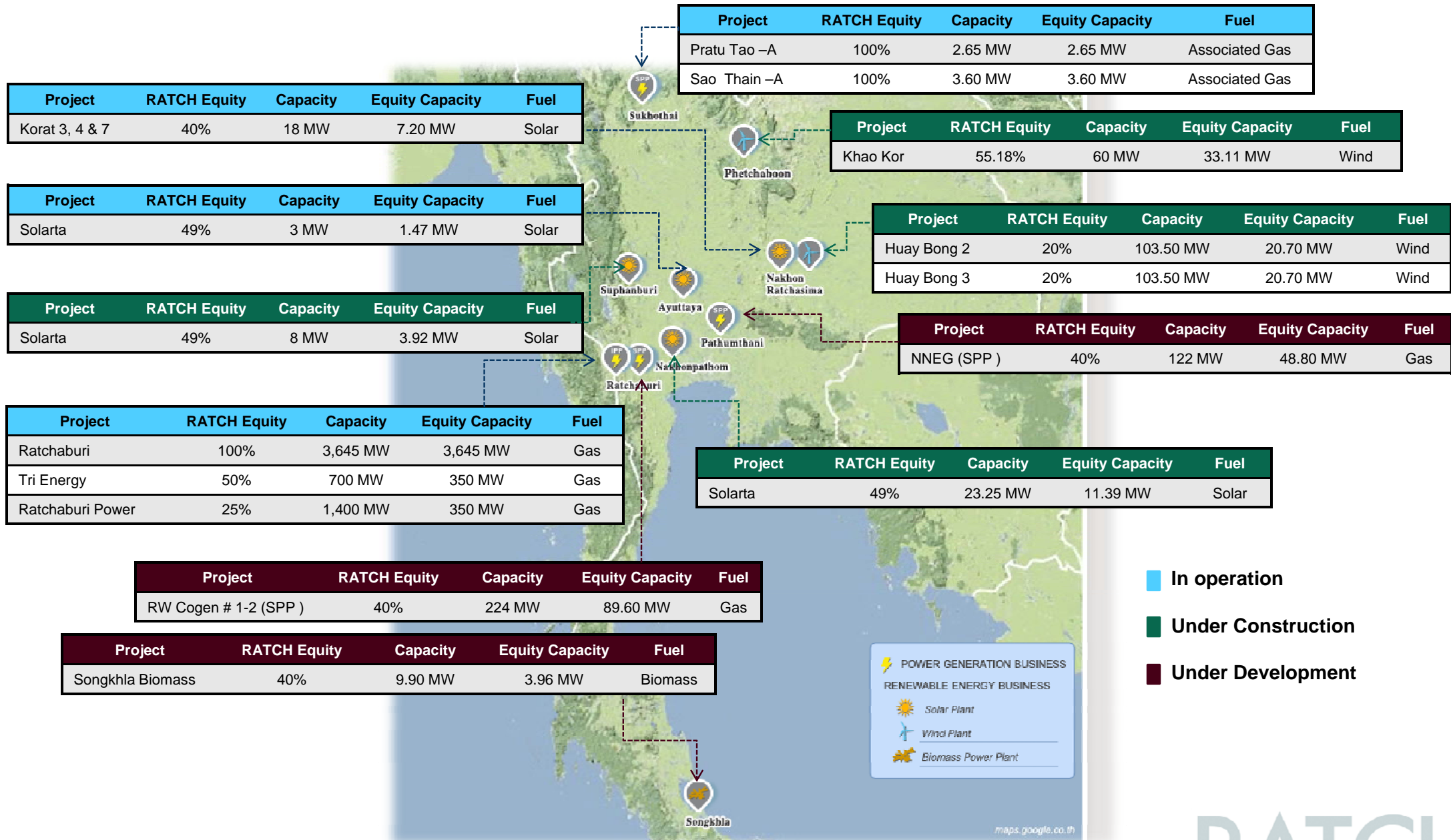


By 2018

■ Gas ■ Coal ■ Hydro ■ Capital Investment ■ Wind ■ Solar ■ Biomass

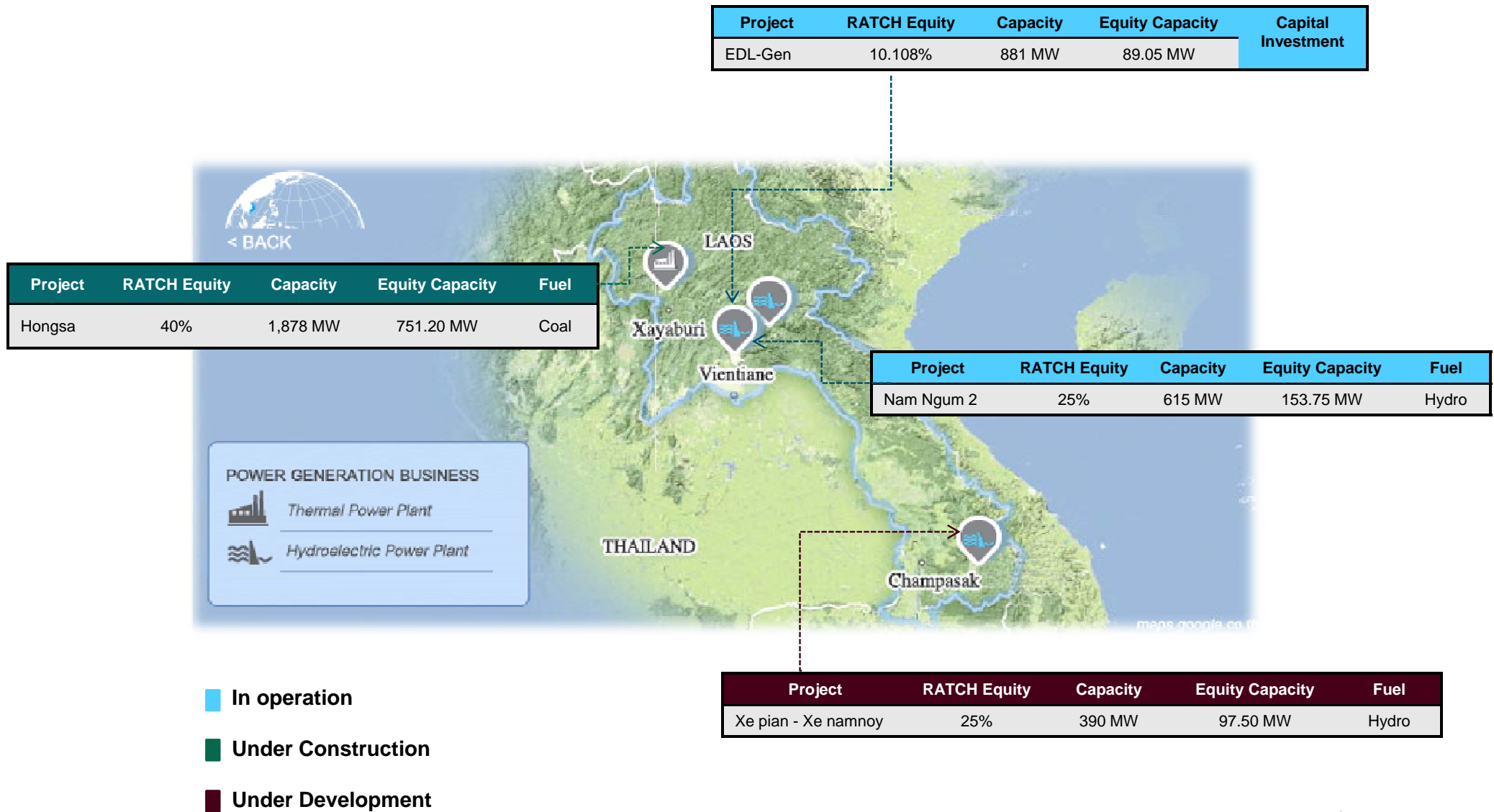
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# Asset Portfolio : Thailand



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# Asset Portfolio : Laos

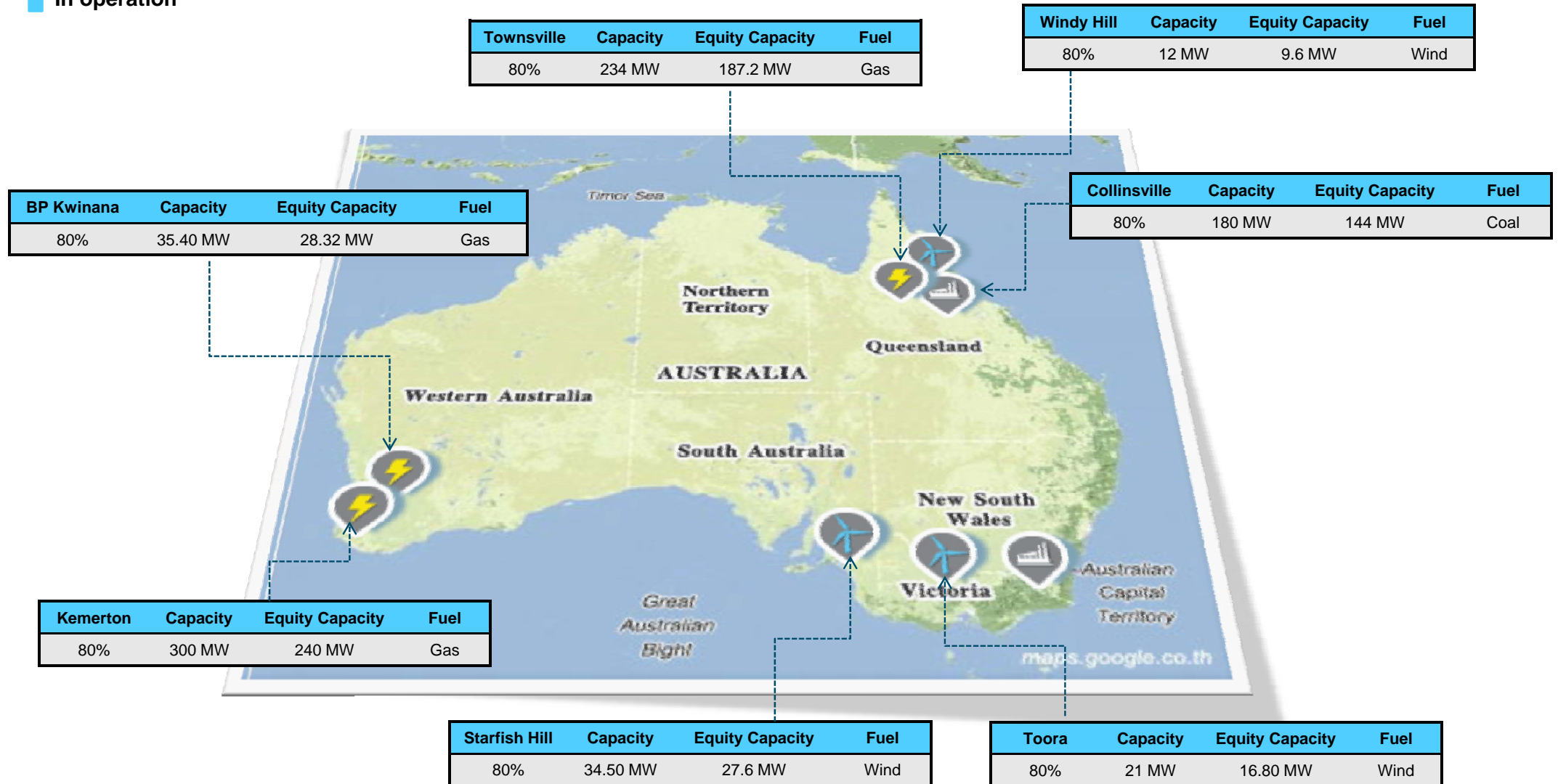


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# Asset Portfolio : Australia

■ In operation



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# Financial Performance

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# Financial Performance

## ■ Statements of Comprehensive Income

Unit : in Million Baht	2Q12	1Q12	Diff 1Q12&2Q12	% 1Q12&2Q12
<b>Revenues</b>	<b>17,354.99</b>	<b>12,014.87</b>	<b>5,340.12</b>	<b>44.45</b>
<b>Cost &amp; Expenses</b>	<b>(13,780.46)</b>	<b>(9,117.64)</b>	<b>(4,662.82)</b>	<b>51.14</b>
<b>Gross Profit</b>	<b>3,574.53</b>	<b>2,897.23</b>	<b>677.30</b>	<b>23.38</b>
<i>Share of profit of jointly-controlled entities and associates included gain (loss) on exchange rate</i>	255.82	106.01	149.81	141.32
<b>EBITDA</b>	<b>3,830.35</b>	<b>3,003.24</b>	<b>827.11</b>	<b>27.54</b>
<i>Gain (Loss) on exchange rate of subsidiaries</i>	(245.28)	446.18	(691.46)	(154.97)
<b>EBITDA included gain (loss) from associated</b>	<b>3,585.07</b>	<b>3,449.42</b>	<b>135.65</b>	<b>3.93</b>
<i>Gain on disposal of long-term investment</i>	783.68	-	783.68	n.a.
<i>Gain on termination of power purchase agreement</i>	1,069.44	-	1,069.44	n.a.
<i>Depreciation &amp; Amortisation</i>	(1,054.96)	(1,073.05)	18.09	(1.69)
<b>EBIT</b>	<b>4,383.23</b>	<b>2,376.37</b>	<b>2,006.86</b>	<b>84.45</b>
<b>Finance costs</b>	<b>(592.72)</b>	<b>(618.90)</b>	<b>26.18</b>	<b>(4.23)</b>
<b>Income tax expense</b>	<b>(134.25)</b>	<b>(230.60)</b>	<b>96.35</b>	<b>(41.78)</b>
Profit for the period	3,656.26	1,526.87	2,129.39	139.46
<i>Non-controlling interests</i>	359.32	(48.52)	407.84	(840.56)
<b>Profit for the period: Equity holders of the Company</b>	<b>3,296.94</b>	<b>1,575.39</b>	<b>1,721.55</b>	<b>109.28</b>

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# Financial Performance

## ■ Statements of Comprehensive Income

Unit : in Million Baht	1H12	1H11	Diff 1H12&1H11	% 1H12&1H11
<b>Revenues</b>	<b>29,369.86</b>	<b>19,485.06</b>	<b>9,884.80</b>	<b>50.73</b>
<b>Cost &amp; Expenses</b>	<b>(22,898.10)</b>	<b>(14,345.93)</b>	<b>(8,552.17)</b>	<b>59.61</b>
<b>Gross Profit</b>	<b>6,471.76</b>	<b>5,139.13</b>	<b>1,332.63</b>	<b>25.93</b>
<i>Share of profit of jointly-controlled entities and associates included gain (loss) on exchange rate</i>	<i>361.83</i>	<i>810.15</i>	<i>(448.32)</i>	<i>(55.34)</i>
<b>EBITDA</b>	<b>6,833.59</b>	<b>5,949.28</b>	<b>884.31</b>	<b>14.86</b>
<i>Gain (Loss) on exchange rate of subsidiaries</i>	<i>200.90</i>	<i>(37.49)</i>	<i>238.39</i>	<i>(653.88)</i>
<b>EBITDA included gain (loss) from associated</b>	<b>7,034.49</b>	<b>5,911.78</b>	<b>1,122.71</b>	<b>18.99</b>
<i>Gain on disposal of long-term investment</i>	<i>783.68</i>	<i>-</i>	<i>783.68</i>	<i>n.a.</i>
<i>Gain on termination of power purchase agreement</i>	<i>1,069.44</i>	<i>-</i>	<i>1,069.44</i>	<i>n.a.</i>
<i>Depreciation &amp; Amortisation</i>	<i>(2,128.01)</i>	<i>(1,394.52)</i>	<i>(733.49)</i>	<i>52.60</i>
<b>EBIT</b>	<b>6,759.60</b>	<b>4,517.26</b>	<b>2,242.34</b>	<b>49.64</b>
<b>Finance costs</b>	<b>(1,211.62)</b>	<b>(310.85)</b>	<b>(900.77)</b>	<b>289.78</b>
<b>Income tax expense</b>	<b>(364.85)</b>	<b>(1,120.98)</b>	<b>756.13</b>	<b>(67.45)</b>
Profit for the period	5,183.13	3,085.43	2,097.70	67.99
<i>Non-controlling interests</i>	<i>310.80</i>	<i>(2.44)</i>	<i>313.24</i>	<i>n.a.</i>
<b>Profit for the period: Equity holders of the Company</b>	<b>4,872.33</b>	<b>3,087.87</b>	<b>1,784.46</b>	<b>57.79</b>

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# Financial Performance

## ■ Statements of Comprehensive Income

Unit : in Million Baht	2Q12	2Q11	Diff 2Q12&2Q11	% 2Q12 & 2Q11
<b>Revenues</b>	<b>17,354.99</b>	<b>11,199.42</b>	<b>6,155.57</b>	<b>54.96</b>
<b>Cost &amp; Expenses</b>	<b>(13,780.46)</b>	<b>(8,432.22)</b>	<b>(5,348.24)</b>	<b>63.43</b>
<b>Gross Profit</b>	<b>3,574.53</b>	<b>2,767.20</b>	<b>807.33</b>	<b>29.17</b>
<i>Share of profit of jointly-controlled entities and associates included gain (loss) on exchange rate</i>	<i>255.82</i>	<i>624.51</i>	<i>(368.69)</i>	<i>(59.04)</i>
<b>EBITDA</b>	<b>3,830.35</b>	<b>3,391.71</b>	<b>438.64</b>	<b>12.93</b>
<i>Gain (Loss) on exchange rate of subsidiaries</i>	<i>(245.28)</i>	<i>(58.50)</i>	<i>(186.78)</i>	<i>319.26</i>
<b>EBITDA included gain (loss) from associated</b>	<b>3,585.07</b>	<b>3,333.21</b>	<b>251.86</b>	<b>7.56</b>
<i>Gain on disposal of long-term investment</i>	<i>783.68</i>	<i>-</i>	<i>783.68</i>	<i>n.a.</i>
<i>Gain on termination of power purchase agreement</i>	<i>1,069.44</i>	<i>-</i>	<i>1,069.44</i>	<i>n.a.</i>
<i>Depreciation &amp; Amortisation</i>	<i>(1,054.96)</i>	<i>(653.60)</i>	<i>(401.36)</i>	<i>61.41</i>
<b>EBIT</b>	<b>4,383.23</b>	<b>2,679.61</b>	<b>1,703.62</b>	<b>63.58</b>
<b>Finance costs</b>	<b>(592.72)</b>	<b>(140.07)</b>	<b>(452.66)</b>	<b>323.17</b>
<b>Income tax expense</b>	<b>(134.25)</b>	<b>(648.97)</b>	<b>514.72</b>	<b>(79.31)</b>
Profit for the period	3,656.26	1,890.57	1,765.69	93.39
<i>Non-controlling interests</i>	<i>359.32</i>	<i>(1.15)</i>	<i>360.47</i>	<i>n.a.</i>
<b>Profit for the period: Equity holders of the Company</b>	<b>3,296.94</b>	<b>1,891.72</b>	<b>1,405.22</b>	<b>74.28</b>

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# Financial Performance

## ■ Statements of Financial Position

Unit : in Million Baht	June 12	Dec 11	Diff	%
<b>Assets</b>				
Current Assets	25,115.18	19,131.67	5,983.51	31.28
Investment in Jointly-controlled entities/Associate	13,695.48	13,387.53	307.95	2.30
Property, plant & equipments	47,773.03	50,148.22	(2,375.19)	(4.74)
Others Assets	13,827.34	14,674.42	(847.08)	(5.77)
<b>Total Assets</b>	<b>100,411.03</b>	<b>97,341.84</b>	<b>3,069.19</b>	<b>3.15</b>
<b>Liabilities</b>				
Loans from Financial Institutions & Debentures	34,598.13	39,321.47	(4,723.34)	(12.01)
Other Liabilities	13,647.89	9,535.89	4,112.00	43.12
<b>Total Liabilities</b>	<b>48,246.02</b>	<b>48,857.36</b>	<b>(611.34)</b>	<b>(1.25)</b>
<b>Equity</b>				
Issued and paid-up share capital	16,031.78	16,031.78	-	-
Other components of equity	(79.94)	(225.25)	145.31	64.51
Retained earnings	35,325.13	32,120.30	3,204.83	9.98
<b>Total equity attributable to owners of the Company</b>	<b>51,276.97</b>	<b>47,926.83</b>	<b>3,350.14</b>	<b>6.99</b>
Non-controlling interests	888.04	557.65	330.39	59.25
<b>Total Equity</b>	<b>52,165.01</b>	<b>48,484.48</b>	<b>3,680.53</b>	<b>7.59</b>
<b>Total Liabilities &amp; Equity</b>	<b>100,411.03</b>	<b>97,341.84</b>	<b>3,069.19</b>	<b>3.15</b>

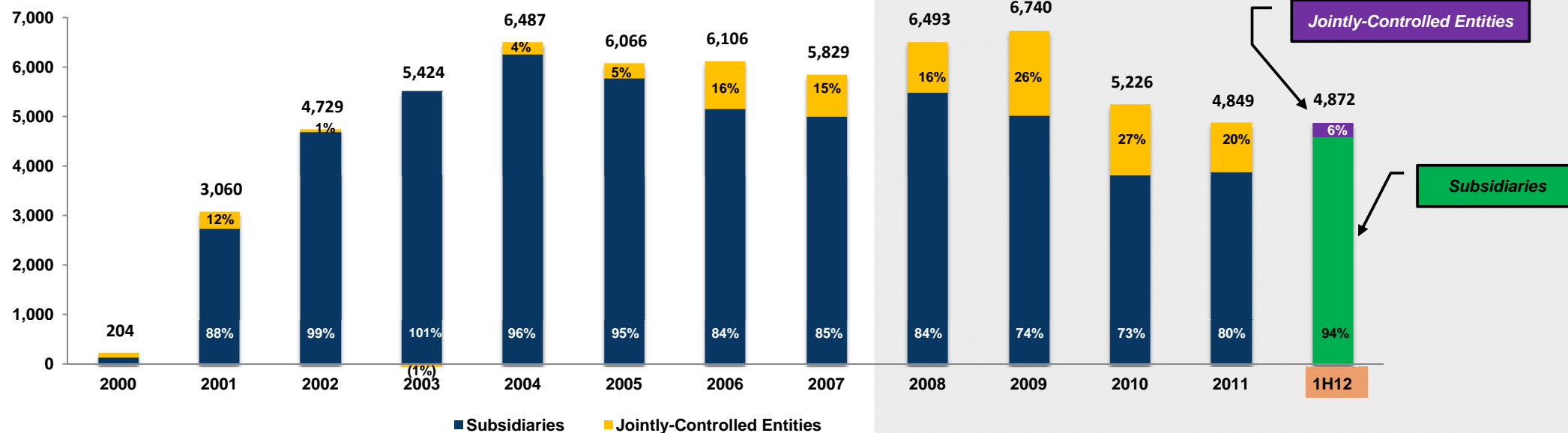
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# Financial Performance

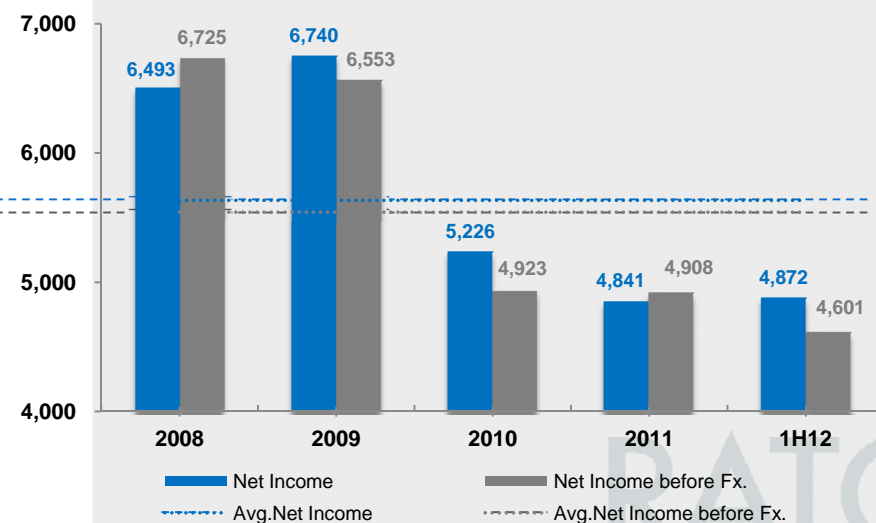
## Net Income Breakdown

Unit: Million Baht

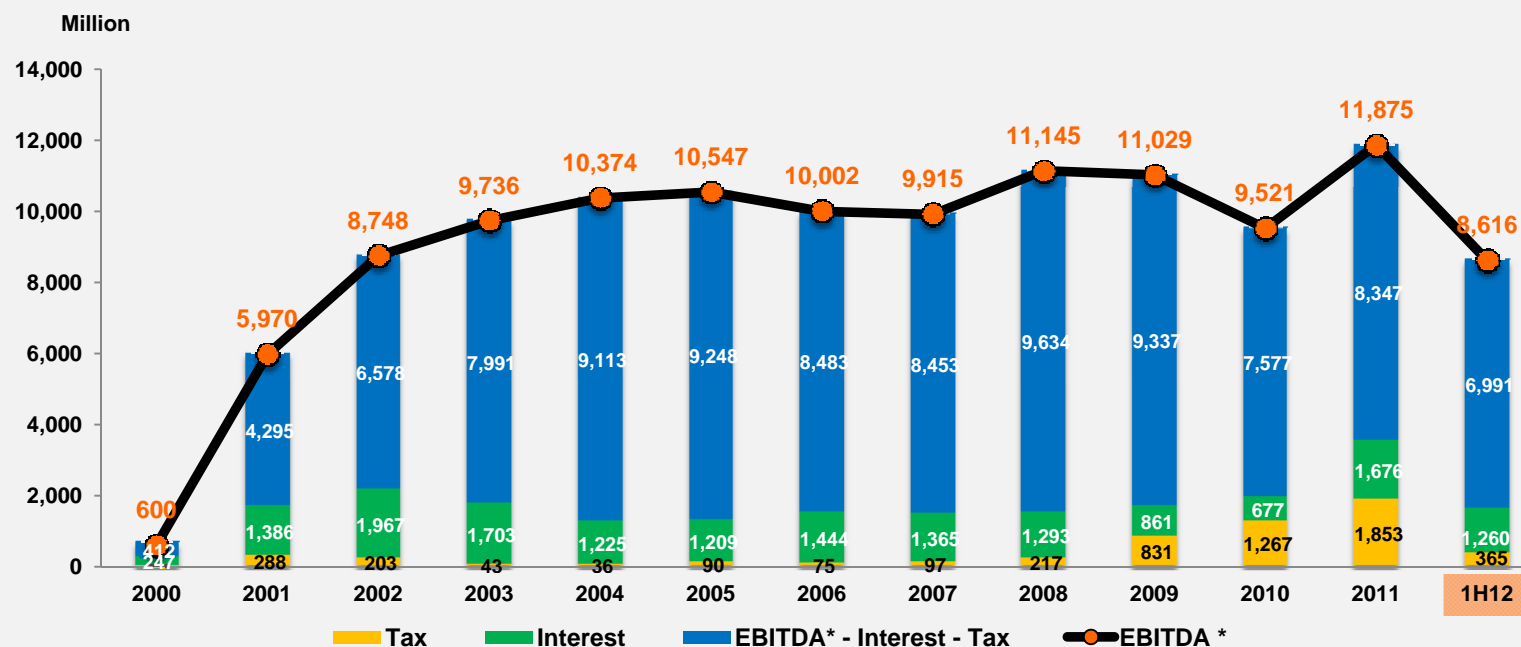
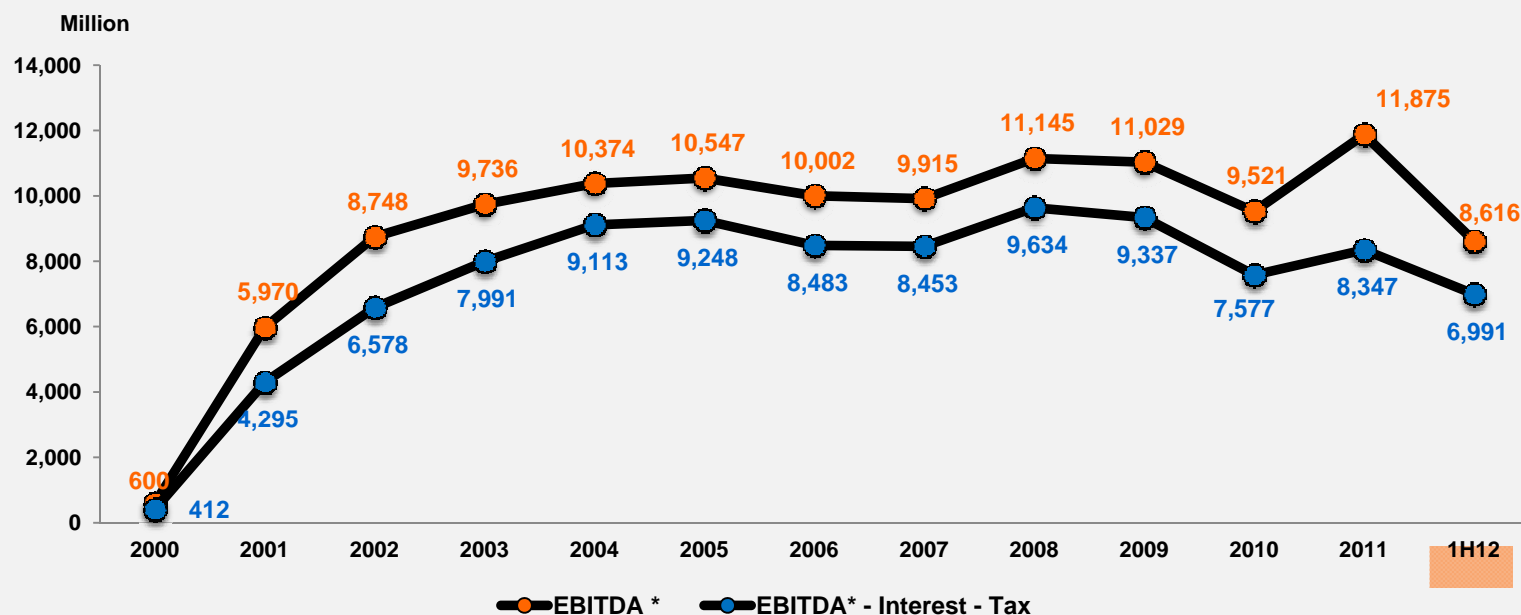


Avg. Net Income = 5,634 MB

Avg. Net Income before FX = 5,542 MB



# EBITDA\* - Interest - Tax



\* EBITDA included share of profit of jointly-controlled entities and associates

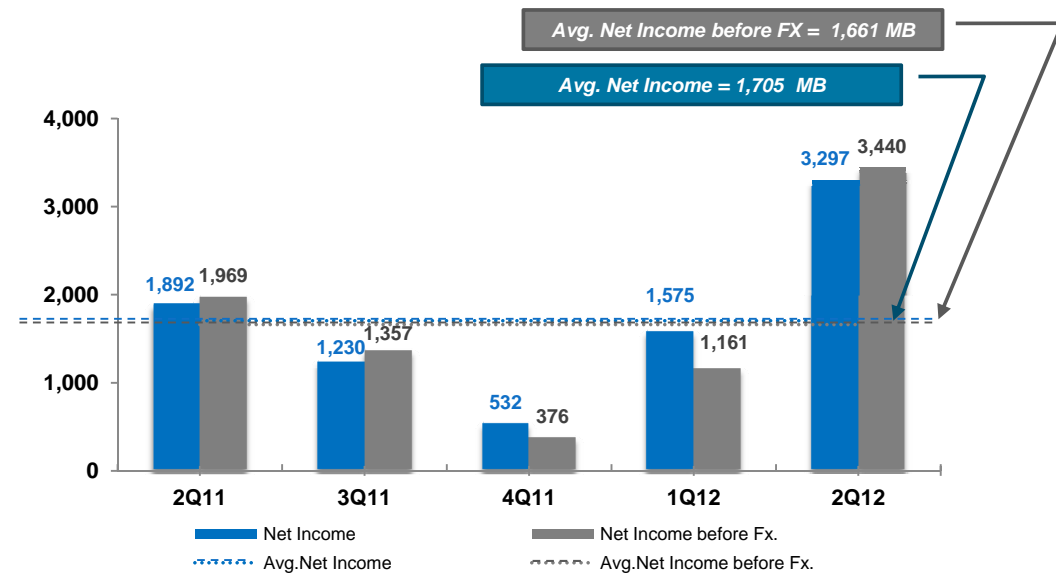
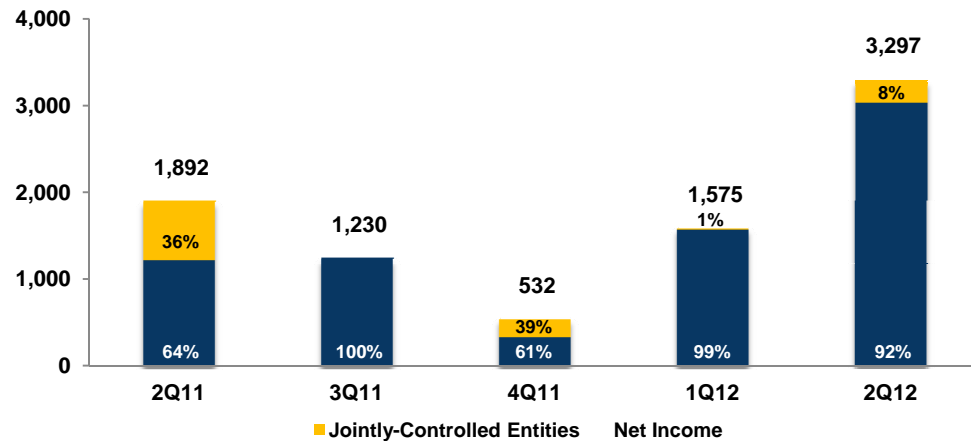
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# Financial Performance

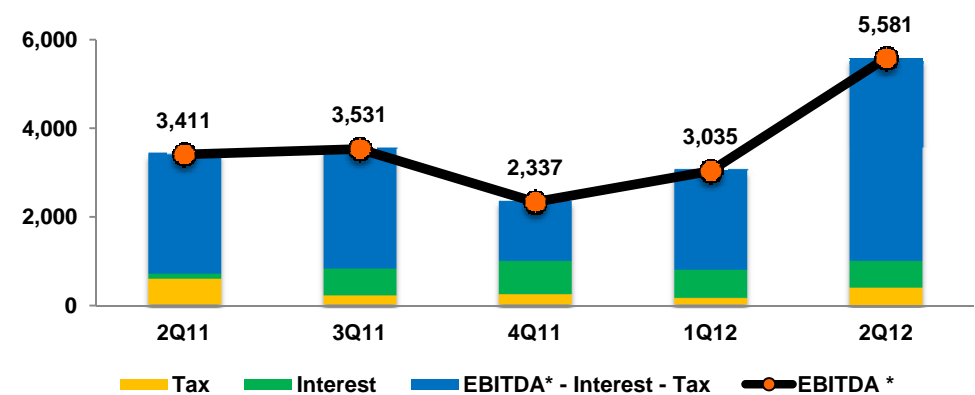
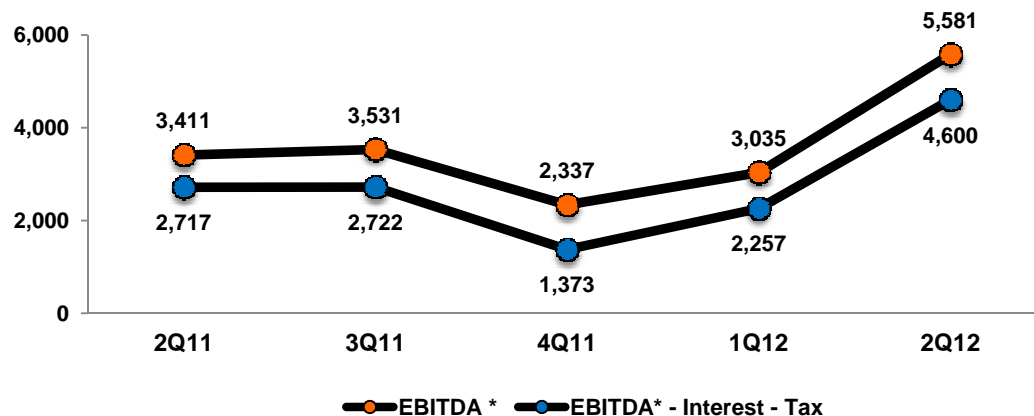
## Net Income Breakdown (Quarter)

Unit: Million Baht



## EBITDA - Interest - Tax (Quarter)

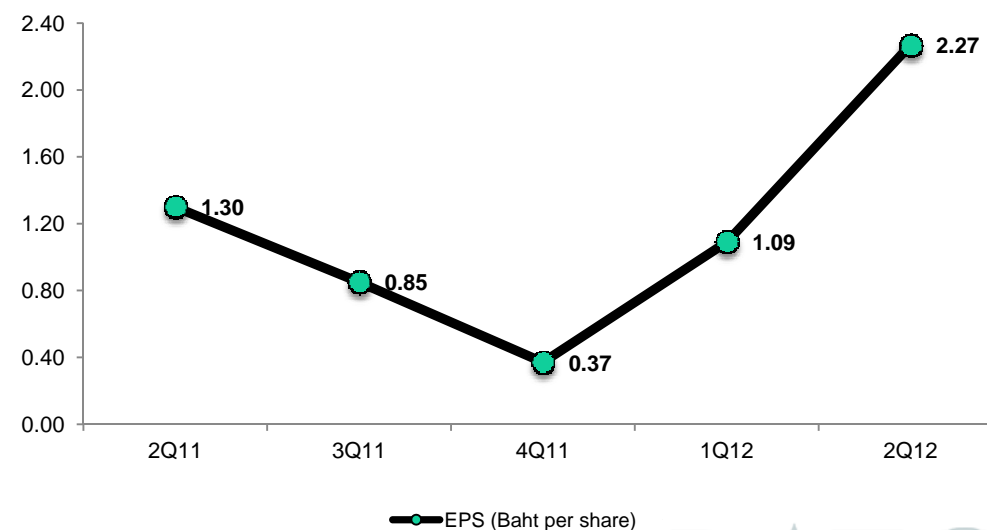
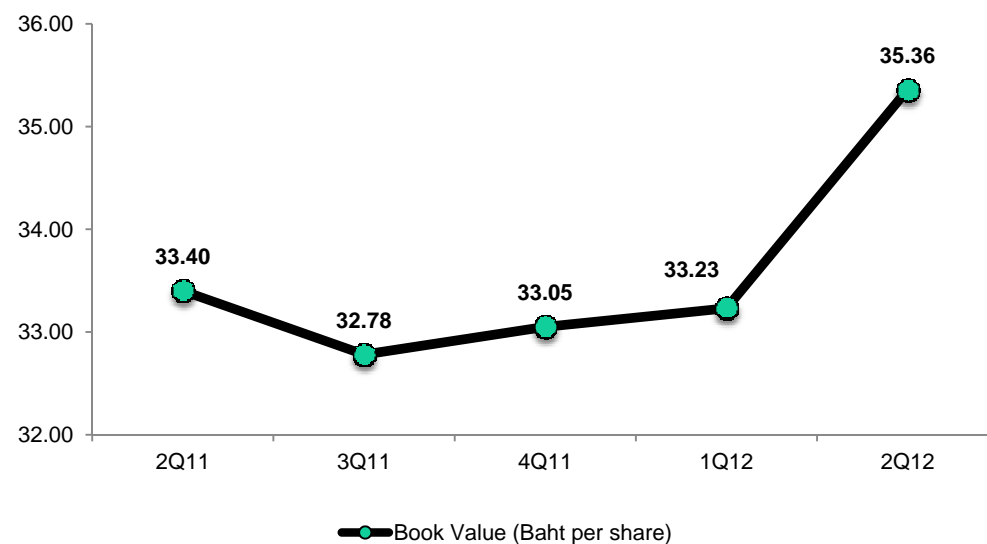
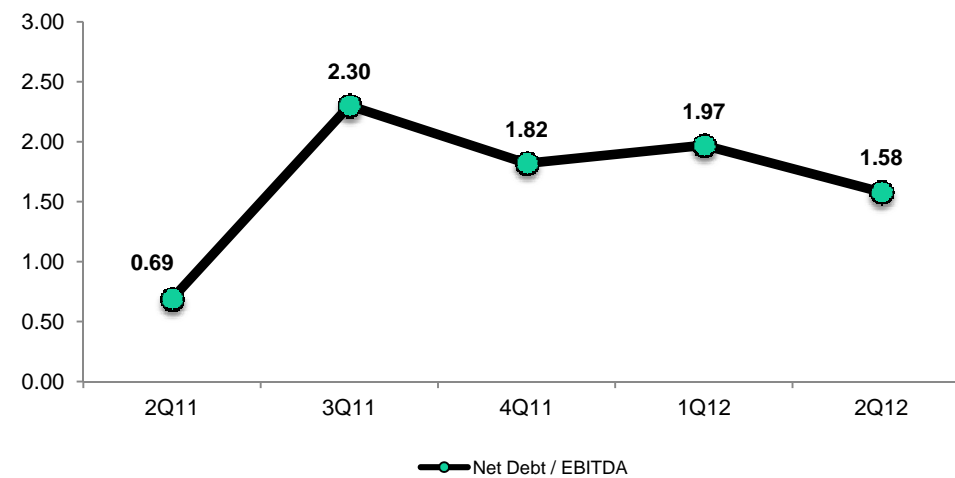
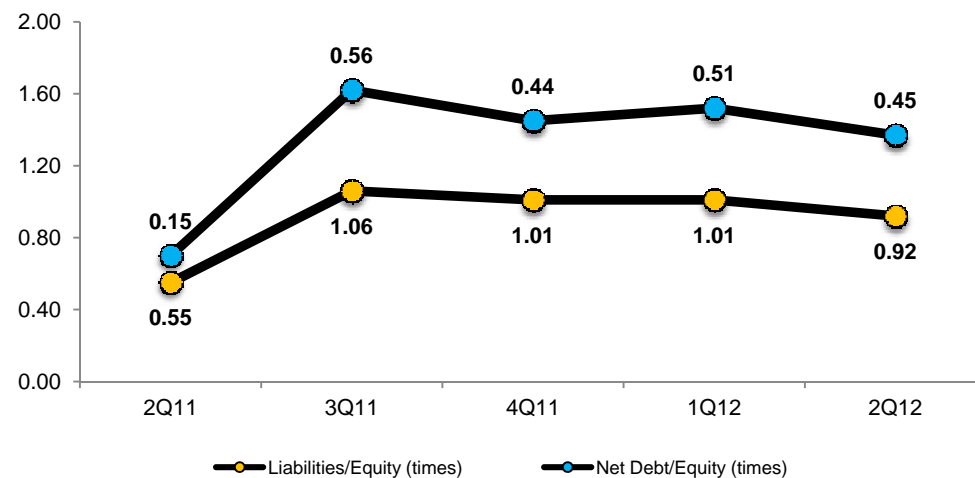
Unit: Million Baht



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# Financial Performance

## Financial Ratios

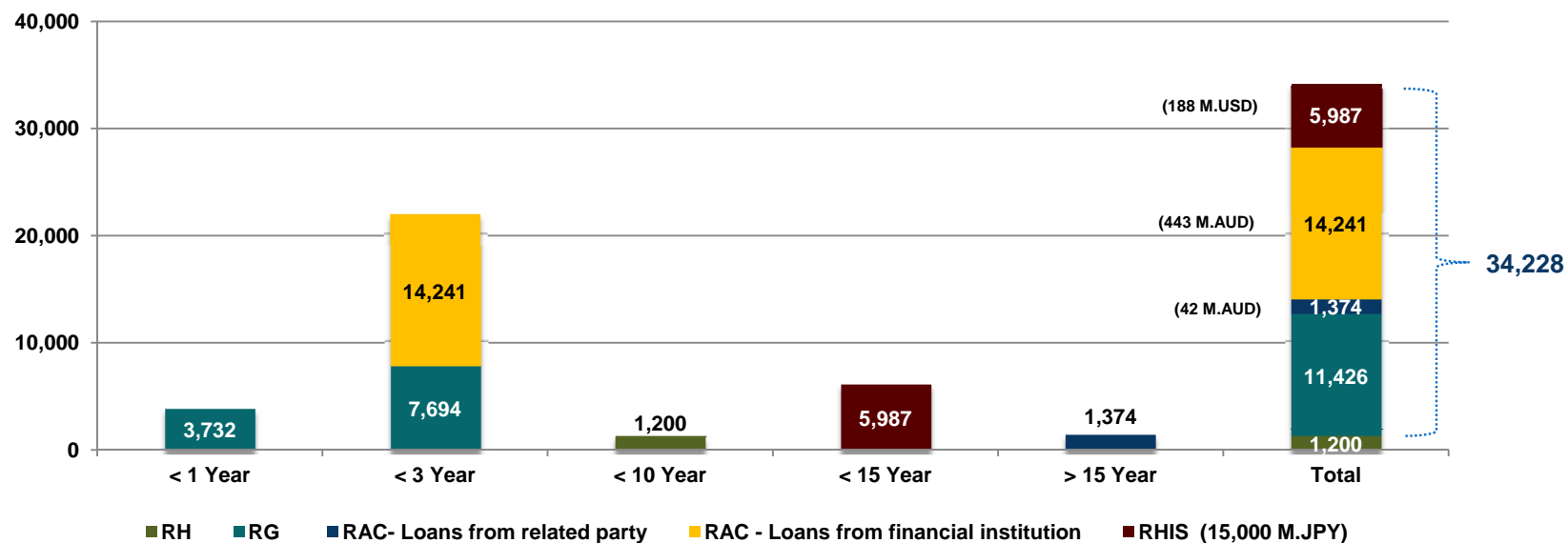


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# Debt Profile

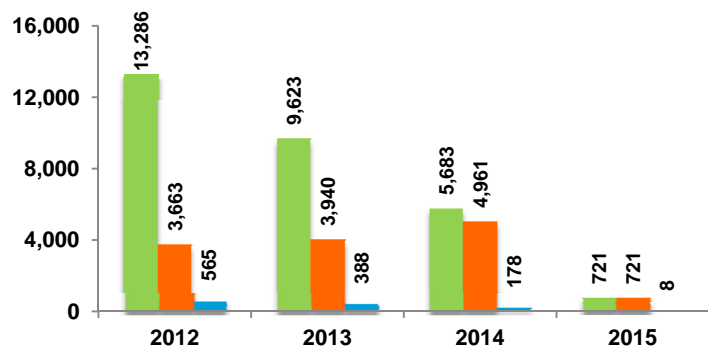
## Debt Profile as of June 30, 2012

Unit: Million Baht



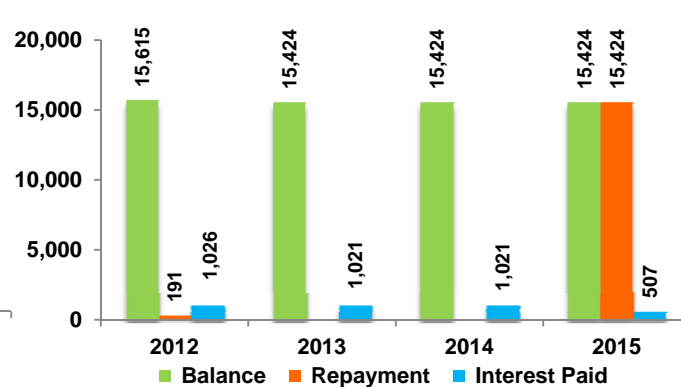
### RG - Debenture

Unit: Million Baht



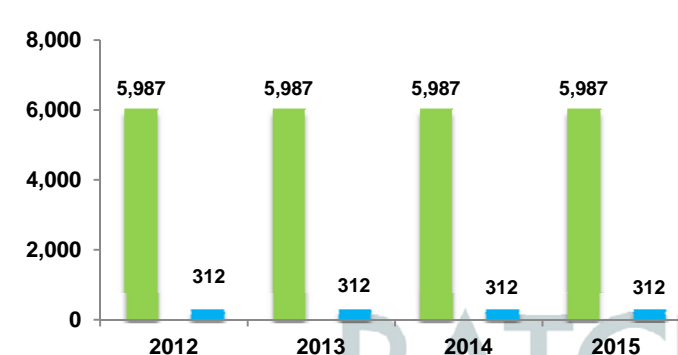
### RAC – Loan (from related party & financial institution)

Unit: Million Baht



### RHIS – JPY Bond

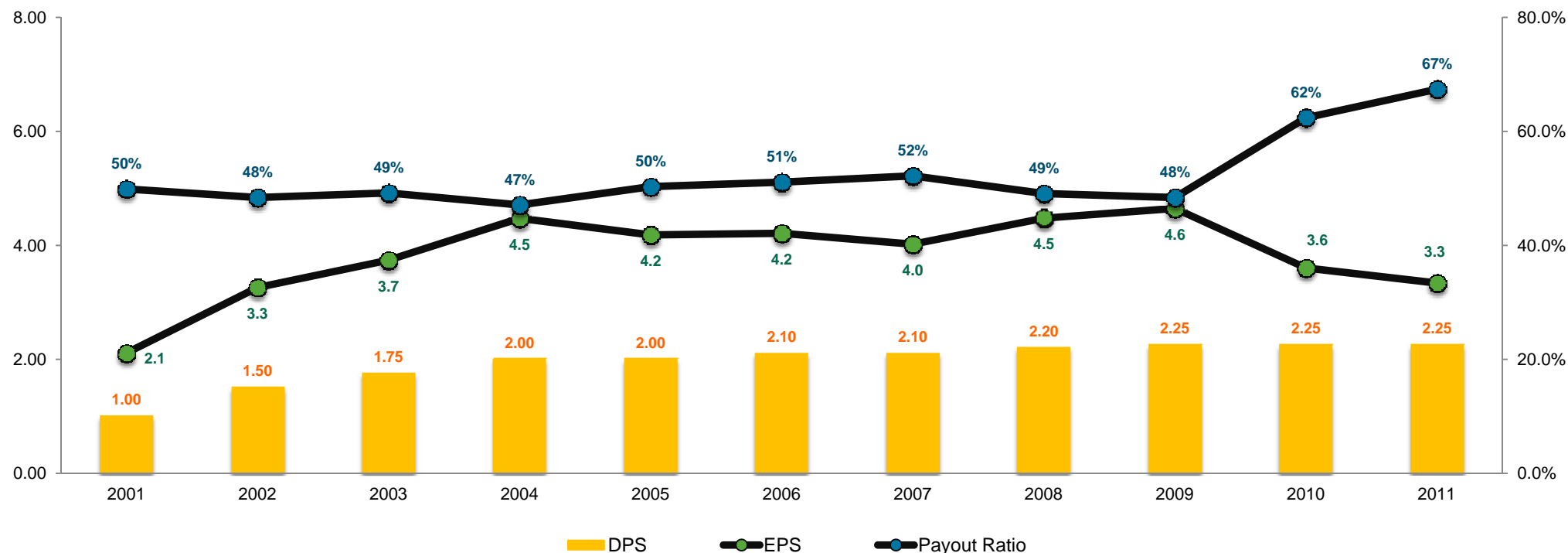
Unit: Million Baht



# Financial Performance

## EPS / DPS & Payout Ratio

Baht per Share



*The interim dividend for the first half of 2012 was paid at 1.10 Baht per share on September 14, 2012.*

### Dividend Policy :

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

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# Prospect

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RATCHABURI  
ELECTRICITY GENERATING  
HOLDING PCL.

# Prospect

## Myanmar – Dawei Power Plant Project



**RATCH** signed MOU with ITALIAN-THAI Development Co., Ltd. (ITD) which was awarded to develop the Dawei Power Plant Project in Myanmar. RATCH and ITD now have ongoing feasibility studies in 4,000 MW power plant development to supply electricity in Dawei industrial estate.

## Cambodia – Koh Kong Project

**RATCH** has purchased 50 percent stake of total shares issued of KK Power Co., Ltd. which was granted by the government of Cambodia the right of developing and operating the 1,800 MW coal-fired power plant in Cambodia.



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# Annexure

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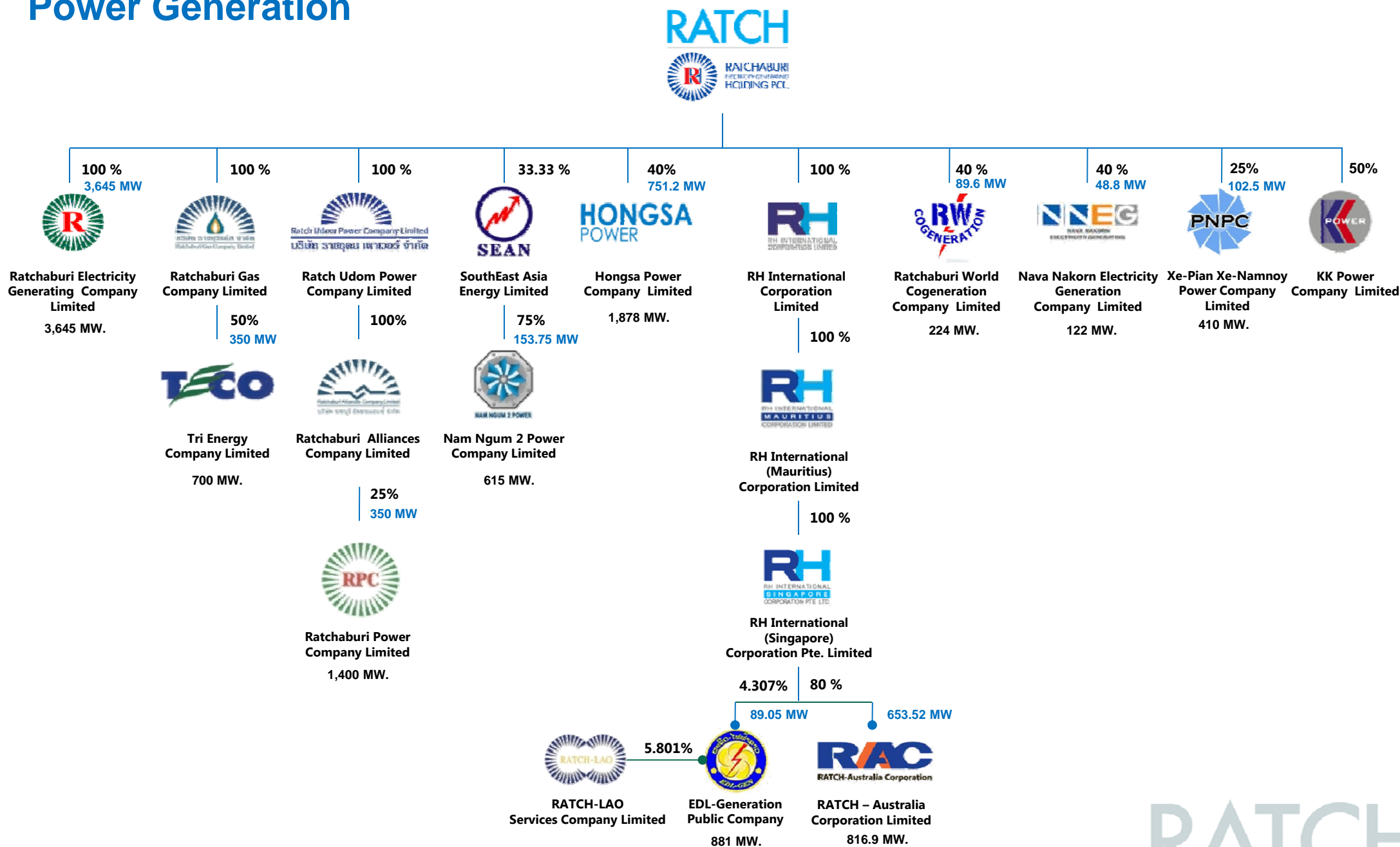
# RATCH Company Structure

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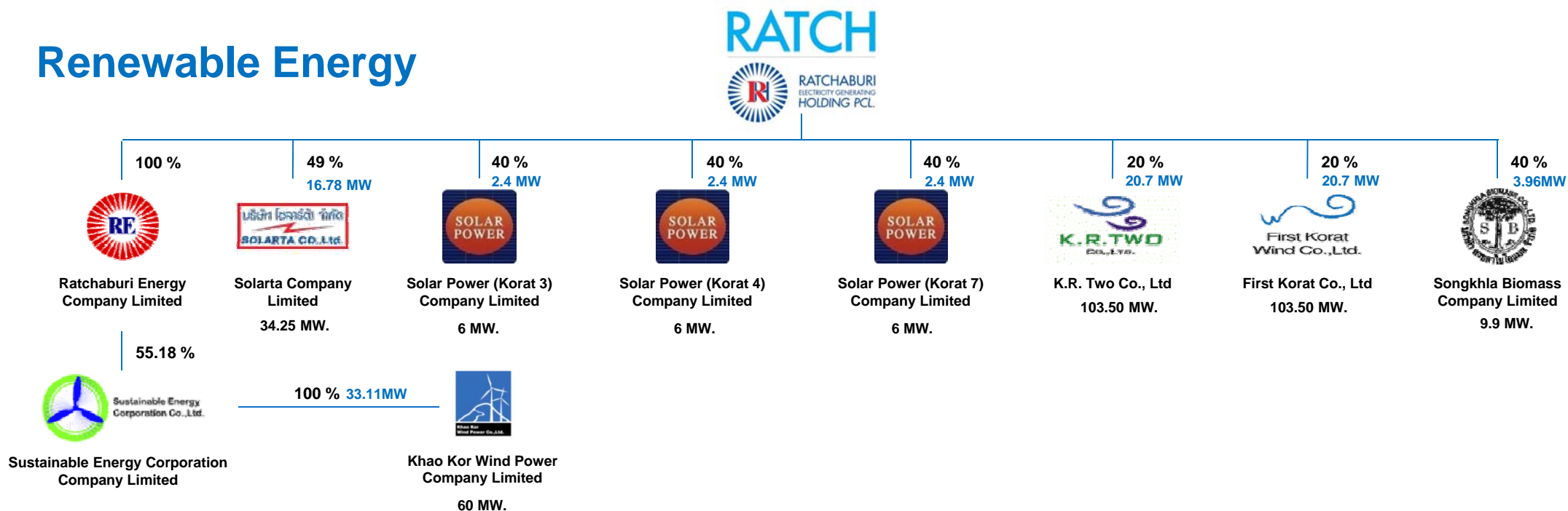
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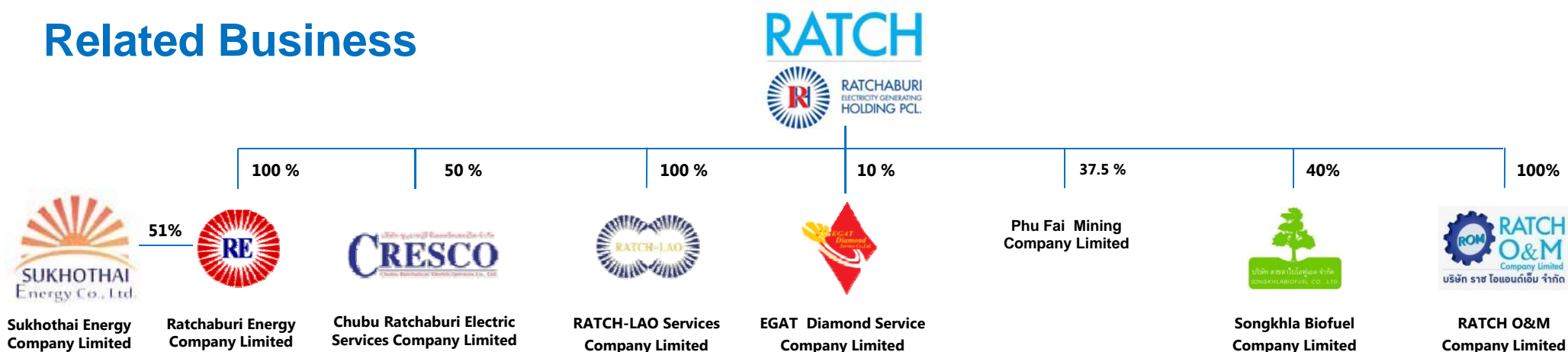
# Power Generation



# Renewable Energy



# Related Business



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# RATCH Projects

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# Projects in Operation

## ■ IPP in Thailand



**Ratchaburi Power Plant (RATCHGEN)**

Location	Ratchaburi Province
Technology	Thermal & Combined Cycle
Total Capacity	3,645 MW (holds 100%)
PPA	25-Year
COD	<ul style="list-style-type: none"> <li>• TH#1-2 : 31 Oct 2000</li> <li>• CCGT #1-2 : 18 Apr 2002</li> <li>• CCGT#3 : 1 Nov 2002</li> </ul>
Partner	RG holds 100%



**Tri Energy Power Plant (TECO)**

Location	Ratchaburi Province
Technology	Combined Cycle
Total Capacity	700 MW (350 MW holds 50 %)
PPA	20-Year
COD	In 2000
Partner	Chevron Thailand Energy Company I holds 50 %



**Ratchaburi Power Plant (RPCL)**

Location	Ratchaburi Province
Technology	Combined Cycle
Total Capacity	1,400 MW (350 MW holds 50 %)
PPA	25-Year
COD	In 2008
Partner	<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>

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# Projects in Operation

## ■ IPP in Laos



### Num Ngum 2 Hydroelectric Power Plant (NN2)

Location	Lao PDR
Technology	Hydro Power Plant
Total Capacity	615 MW (153.76 MW holds 25%)
PPA	27-Year
IOD / COD	In 2011 / In 2013
Partner	<ul style="list-style-type: none"> <li>• <b>SEAN*</b> holds 75%</li> <li>• GOL holds 25%</li> </ul>

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

- RATCH holds 33.33%
- Bangkok Expressway PCL holds 16.67%
- CH. Karnchang holds 38%
- P.T. Construction & Irrigation 5.33%
- Shlapak Development Company holds 5.33%
- Team Consulting Engineering and Management 1.34%

## ■ SPP in Thailand



### 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	SPP Non-Firm 5-Year
COD	November 2012
Project Cost	THB 6,500 Million
Debt to Equity	70 : 30
Partner	<ul style="list-style-type: none"> <li>• RATCH holds 20%</li> <li>• Aeolus Power holds 60%</li> <li>• Chubu Electric Power Korat, BV holds 20%</li> </ul>

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# Projects in Operation

## ■ VSPP in Thailand



### Pratu Tao-A & Pratu Tao-A (Expansion)

Location	Sukhothai Province
Technology	Gas Engine
Total Capacity	2.65 MW (holds 100%)
PPA	5-Year (Automatic Renewal)
COD	In 2007 / 2010
Partner	RE holds 100%



### Sao Thian-A Project

Location	Sukhothai Province
Technology	Gas Engine
Total Capacity	3.6 MW (holds 100%)
PPA	5-Year (Automatic Renewal)
COD	In 2012
Partner	RE holds 100%



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

Location	Nakorn Ratchasima Province
Technology	Solar Power
Total Capacity	18 MW (7.2 MW holds 40%)
PPA	5-Year (Automatic Renewal)
COD	<ul style="list-style-type: none"> <li>Korat 3: 9 March 2012</li> <li>Korat 4: 14 May 2012</li> <li>Korat 7: 30 May 2012</li> </ul>
Partner	<ul style="list-style-type: none"> <li>RATCH holds 40%</li> <li>Solar Power holds 60%</li> </ul>



### Solarta Power Project

Location	Ayutthaya Province
Technology	Solar Power Generation
Total Capacity	34.25MW (16.78 MW holds 49%)
PPA	5-Year (Automatic Renewal)
COD	<ul style="list-style-type: none"> <li>Ayutthaya Province : 7 April 2011</li> <li>Suphan Buri Province : In 2012</li> <li>Nakon Pathom Province : In 2012</li> </ul>
Partner	<ul style="list-style-type: none"> <li>RATCH holds 49%</li> <li>Yanhee Power holds 51%</li> </ul>

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# Projects **in Operation**

## ■ Power Plant in Australia : Gas



### Townsville

Location	North Queensland
Technology	Combined Cycle Gas Turbine
Total Capacity	234 MW (187.20 MW holds 80%)

All output sold under a 20 year PPA to AGL / Arrow, expiring in 2025



### Kemerton

Location	Western Australia
Technology	Open Cycle Gas / Diesel Turbine
Total Capacity	300 MW (240 MW holds 80%)

All capacity sold under a 25 Year PPA to Verve Energy, expiring in 2030



### BP Kwinana

Location	Western Australia
Technology	Co-generation
Total Capacity	35 MW (28.32 MW holds 80%)

Energy and Services Agreement (ESA) with BP and a PPA (power only) with Verve Energy, both expiring in 2021

## ■ Power Plant in Australia : Coal



### Collinsville

Location	Queensland
Technology	Black coal fired
Total Capacity	180 MW (144 MW holds 80%)

All output sold under PPA to CS Energy, expiring in 2016

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# Projects **in Operation**

## ■ Power Plant in Australia : Wind



### Starfish Hill

Location	South Australia
Commissioned	In 2003
Total Capacity	34.5 MW (27.60 MW holds 80%)
Contracting Party	Merchant



### Toora

Location	Victoria
Commissioned	In 2002
Total Capacity	21 MW (16.80 MW holds 80%)
Contracting Party	Energy Australia, expiry date in 2012



### Windy Hill

Location	Queensland
Commissioned	In 2000
Total Capacity	12 MW (9.60 MW holds 80%)
Contracting Party	Ergon Energy, expiry date in 2015

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# Projects **under Construction**

## ■ IPP in Laos



### Hongsa Thermal Project

Location	Lao PDR
Technology	Lignite-Fired
Total Capacity	1,878 MW (751.2 MW holds 40%)
PPA	25-Year
Expected COD	In 2015
Project Cost	USD 3,710 Million
Debt to Equity	75 : 25
Partner (Power Plant )	<ul style="list-style-type: none"> <li>• RATCH holds 40%</li> <li>• Banpu Power holds 40%</li> <li>• Lao PDR holds 20%</li> </ul>
Partner (Phu Fai Mining)	<ul style="list-style-type: none"> <li>• RATCH holds 37.5%</li> <li>• Banpu Power holds 37.5%</li> <li>• Lao PDR holds 25%</li> </ul>

## ■ SPP in Thailand



### 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	SPP Non-Firm 5-Year
Expected COD	1Q13
Project Cost	THB 6,100 Million
Debt to Equity	70 : 30
Partner	<ul style="list-style-type: none"> <li>• RATCH holds 20%</li> <li>• Aeolus Power holds 60%</li> <li>• Chubu Electric Power Korat, BV holds 20%</li> </ul>

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# Projects under Development

## ■ SPP in Thailand

### Khao Kor Wind Farm Project

Location	Phetchabun Province
Technology	Wind-Turbine
Total Capacity	60 MW (33.11 MW holds 55.18%)
PPA	SPP Non-Firm 5-Year
Expected COD	In 2013
Project Cost	THB 4,100 Million
Debt to Equity	70 : 30
Partner	<ul style="list-style-type: none"> <li>• RE holds 55.18%</li> <li>• Wind Energy holds 34.16%</li> <li>• DEMCO holds 10.66%</li> </ul>

### Ratchaburi World Cogeneration (RW Cogen)

Location	Ratchaburi Province
Technology	Cogeneration
Total Capacity	224 MW (89.60 MW holds 40%)
PPA	25-Year
Expected COD	In 2014
Project Cost	THB 10,620 Million
Debt to Equity	75 : 25
Partner	<ul style="list-style-type: none"> <li>• RATCH holds 40%</li> <li>• Majoe Sharholder Group of Thai Agri Food PCL holds 60%</li> </ul>

### Nava Nakhon Electricity Generating (NNEG)

Location	Pathum Thani Province
Technology	Cogeneration
Total Capacity	122 MW (48.80 MW holds 40%)
PPA	25-Year
Expected COD	In 2016
Project Cost	THB 6,000 Million
Debt to Equity	75 : 25
Partner	<ul style="list-style-type: none"> <li>• RATCH holds 40%</li> <li>• PTT holds 30%</li> <li>• Nava Nakhon holds 30%</li> </ul>

## ■ VSPP in Thailand

### Songkhla Biomass Power Project

Location	Songkhla Province
Technology	Thermal Power Plant
Total Capacity	9.9 MW (3.96 MW holds 40%)
PPA	5-Year (Automatic Renewal)
Expected COD	In 2014
Project Cost	THB 820 Million
Debt to Equity	75 : 25
Partner	<ul style="list-style-type: none"> <li>• RATCH holds 40%</li> <li>• Precise Power Producer holds 40%</li> <li>• Assiddeek Saving Cooperative holds 20%</li> </ul>

## ■ IPP in Laos

### Xe Pian - Xe Namnoy Project

Location	Lao PDR
Technology	Hydro Power Plant
Total Capacity	390 MW (97.5 MW holds 25%)
PPA	Negotiating PPA with EGAT
Expected COD	In 2018
Project Cost	USD 830 Million
Debt to Equity	70 : 30
Partner	<ul style="list-style-type: none"> <li>• RATCH holds 25%</li> <li>• SK Engineering holds 26%</li> <li>• Korea Western Power holds 25%</li> <li>• Lao PDR holds 24%</li> </ul>

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# PDP 2010 (Revision 3)

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# Recently approved Power Development Plan (Revision 3) reflects the higher power generation capacity demand

## Summary of changes in PDP 2010 (Revision 3)

Unit: MW

Power generation capacity 2012-2030	Revision 2 (27 April 2012)	Revision 3 (June 2012)
Power generation capacity 2012	32,744	32,395
<b>New power generation (2012-2030)</b>	<b>53,874</b>	<b>55,130</b>
Retired power capacity	(17,061)	(16,839)
<b>Ending power capacity 2030</b>	<b>69,557</b>	<b>70,686</b>

## New power generation capacity during 2012-2030 by Fuel Type

Unit: MW

Type of Fuel	Revision 2	Revision 3	Change	% Change
Renewable Energy	4,433	9,481	5,048	113.87
Cogeneration	8,319	6,476	(1,843)	(22.15)
Gas-fired power	18,400	25,451	7,051	38.32
Coal-fired power	7,740	4,400	(3,340)	(43.15)
Nuclear	4,000	2,000	(2,000)	(50.00)
Gas Turbine	-	750	750	-
Import	10,982	6,572	(4,410)	(40.16)
<b>Total</b>	<b>53,874</b>	<b>55,130</b>	<b>1,256</b>	<b>2.33</b>

# PPA

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# PPA Tariff Structure

- The PPA Tariff has two main components to cover fixed and variable generation costs called Availability Payments (“AP”) & Energy Payments (“EP”) respectively

$$\text{Monthly Revenue} = \text{Availability Payment} + \text{Energy Payment}$$

## Availability Payment Covers

- Debt financing cost ; Principal and Interest
- Fx/Inflation Adjustment
- After tax return on equity
- Major maintenance costs (Parts and Labor )
- Fixed operating and maintenance cost
- Fixed general and administration costs
- Insurance premium costs
- Taxes

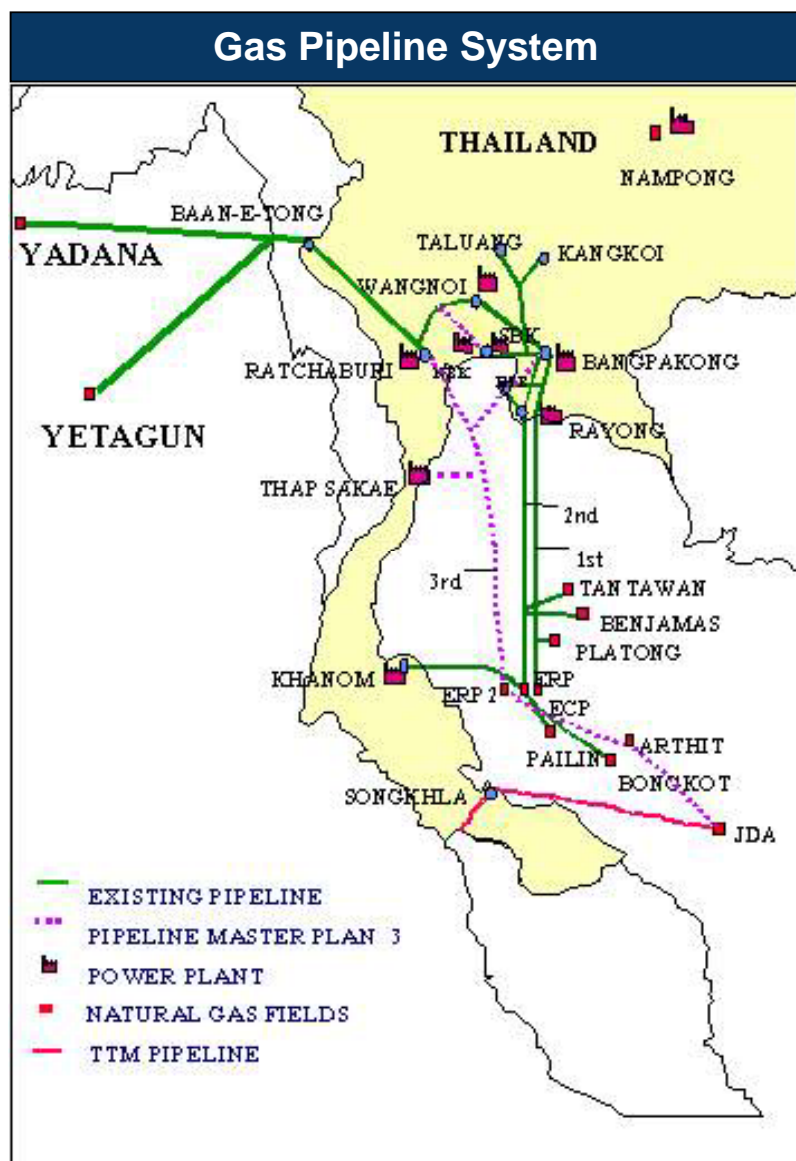
## Energy Payment Covers

- Cost of fuel
- Variable operations and maintenance cost (VOM)
- With inflation indexation and pass through mechanism

- Availability Payment (Baht/MW/month) is payable irrespective of whether electricity is dispatched or not as long as plants are available at agreed capacity (EAF)
- Energy Payment (Baht/MWh) - includes fuel costs and variable operation and maintenance costs with inflation indexation and pass through mechanism (based on actual energy dispatch)
- Such structure eliminates FUEL RISK , FX RISK, INFLATION RISK and Demand/Supply RISK

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# Gas Sales Agreement



- Natural gas supplied by PTT will be sourced from gas fields in Myanmar.
- Aggregate proven reserves of 7 trillion cubic feet exceeds gas consumption over PPA term.
- Terms of the GSA will be requirement-based with PTT subject to reasonable endeavors obligation.
- EGAT will be responsible for minimum take-or-pay obligation with PTT under Ratchaburi Master Gas Sales Agreement (“RMGSA”).
- EGAT is obligated to make Availability Payments to RATCHGEN regardless of availability of fuel

## Information on Gas Pipeline

Route	Pipeline length (kms)	Pipeline diameter (Inches)
YADANA – BAAN E TONG	409.6	36
YETAGUN - BAAN E TONG	272	24
BAAN E TONG – RATCHABURI	238	42

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## 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.

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