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## Management Discussion and Analysis for Business Operation

### For the year ended December 31, 2013

#### 1. Executive Summary

For the year ended 2013, the Consolidated Financial Statement recorded a net profit of Baht 4,731 million, an increase of Baht 429 million (+10%) from net profit in 2012, which was Baht 4,303 million. The net profit attributable to the equity owners of the Company amounted Baht 4,653 million and earnings per share of Baht 3.38.

An increase in net profit was from the 13% increase in Revenue from sale of goods and rendering of services. In 2013, Consolidated Revenue from sale of goods and rendering of services was Baht 186,514 million, increased from Baht 165,246 million in 2012. Refinery business reported an average crude run of 99.34 thousand barrel per day, increased from 73.71 thousand barrel per day in 2012. In addition, the Company and its subsidiaries recognized an insurance compensation of Baht 1,589 million from the incident at Crude Distillation Unit (CDU3) in 2012 and flood prevention indemnity in 2011.

Total sales volume was 7,002 million litres, 20% increase from the Year 2012 which was 5,827 million litres. There were sales volume growths of 10% in retail market and 59% in industrial market.

Revenues from Solar Power business was Baht 1,463 million, an increase of Baht 1,085 million (+287%) from 2012. In 2013, Solar Power Plant Phase 1 (PPA of 38 MW) operated full year and Phase 2 (PPA of 32 MW) commercially operated in March and April of 2013 respectively.

Consolidated EBITDA in 2013 was Baht 9,348 million, an increase of Baht 1,578 million (+20%) from 2012 which was at Baht 7,770 million.

- **Refinery and Biofuel Business** generated EBITDA of Baht 6,568 million, an increase of Baht 1,004 million (+18%) from 2012. The average crude run increased by 35% and total sales volume increased by 20%. The Company reported a Market GRM of 5.76 \$/BBL, a decrease from 8.34 \$/BBL in 2012. Reasons of a decreasing in Market GRM were from a decline in the Company's major products crack spreads and an increase in fuel oil volume from temporary shutdown of Hydrocracking unit.

There was a Baht 1,189 million (1.06 \$/BBL) gain from inventory (include Inventory Hedging) in 2013, whereas there was a Baht 711 million (-0.84 \$/BBL) loss from inventory in 2012. Gain from GRM hedging transaction was Baht 800 million (0.71 \$/BBL) in 2013 whereas there was a Baht 686 million (0.81 \$/BBL) gain from GRM hedging transaction in 2012. There was a Baht 923 million loss from foreign currencies forward contract in 2013, whereas in 2012 there was a Baht 746 million gain from foreign currencies forward contract.



For Biofuel Business, average daily production rate was 0.34 million litre, an increase from a daily production rate of 0.31 million litre in 2012.

- **Marketing Business** generated EBITDA of Baht 1,383 million, a decrease of Baht 400 million (-22%) from 2012. Total marketing sales volumes was 5,005 million litre, an increase of 436 million litre (+10%) from last year. The 10% volume growths applied to both retail and industrial market. However, total Marketing Margin was 0.53 Baht per litre, dropped 19% from last year. Retail margin decreased 16% and industrial margin decreased 33%. The main reasons were cost increased from the using of ethanol produced from cassava, which had higher cost when compared to ethanol produced from molasses, and the intense industrial market competition in diesel product as other major oil producers sold the product locally instead of export.
- **Solar Power Business** generated EBITDA of Baht 1,396 million, an increase of Baht 974 million (+231%) from 2012, as Solar Power Plant Phase 1 (PPA of 38 MW) operated full year and from the commercially operated of Solar Power Plant Phase 2 (PPA of 32 MW) at Ayutthaya province and Chaiyaphum province in March and April 2013 respectively.

The Consolidated Financial Statement recorded Net Profit of Baht 4,731 million. Net Profit attributable to the owners of the Company was Baht 4,653 million or earnings per share of Baht 3.38, an increase from a net profit of Baht 4,273 million or earnings per share of Baht 3.10 in 2012.



The Company and its subsidiaries' operating results are summarized as below;

Unit: Million Baht

	Q4 2013	Q4 2012	YoY (%)	Q3 2013	QoQ (%)	2013	2012	YoY (%)
Revenue from sale of goods and rendering of services	48,064	43,952	9%	46,062	4%	186,514	165,246	13%
Cost of sale of goods and rendering of services	-45,620	-41,906	9%	-43,471	5%	-177,472	-158,083	12%
<b>Gross Profit</b>	<b>2,444</b>	<b>2,045</b>	<b>19%</b>	<b>2,591</b>	<b>-6%</b>	<b>9,041</b>	<b>7,163</b>	<b>26%</b>
<b>EBITDA</b>	<b>1,810</b>	<b>2,037</b>	<b>-11%</b>	<b>2,564</b>	<b>-29%</b>	<b>9,348</b>	<b>7,770</b>	<b>20%</b>
<i>EBITDA (Refinery and Biofuel Business)<sup>1/</sup></i>	<i>1,276</i>	<i>1,593</i>	<i>-20%</i>	<i>1,838</i>	<i>-31%</i>	<i>6,568</i>	<i>5,564</i>	<i>18%</i>
<i>EBITDA (Marketing Business)<sup>2/</sup></i>	<i>120</i>	<i>278</i>	<i>-57%</i>	<i>354</i>	<i>-66%</i>	<i>1,383</i>	<i>1,783</i>	<i>-22%</i>
<i>EBITDA (Solar Power Business)<sup>3/</sup></i>	<i>415</i>	<i>166</i>	<i>150%</i>	<i>372</i>	<i>12%</i>	<i>1,396</i>	<i>422</i>	<i>231%</i>
Depreciation and Amortization	(712)	(710)	0%	(705)	1%	(2,777)	(2,454)	13%
Gain (loss) on foreign exchange	(111)	43	N/A	95	N/A	132	346	-62%
Net reversal of allowance for loss from impairment of assets	54	239	-78%	(3)	N/A	24	295	-92%
Finance costs	(255)	(274)	-7%	(299)	-15%	(1,064)	(940)	13%
Income tax expense	(68)	(190)	-64%	(278)	-76%	(932)	(715)	30%
Profit attributable to Non-controlling interests	29	(1)	N/A	14	107%	78	30	160%
<b>Net Profit</b>	<b>718</b>	<b>1,146</b>	<b>-37%</b>	<b>1,374</b>	<b>-48%</b>	<b>4,731</b>	<b>4,303</b>	<b>10%</b>
Total equity attributed to owners of the company	<b>688</b>	<b>1,147</b>	<b>-40%</b>	<b>1,359</b>	<b>-49%</b>	<b>4,653</b>	<b>4,273</b>	<b>9%</b>
<b>Basic earnings (loss) per share (Baht)</b>	<b>0.50</b>	<b>0.83</b>	<b>-40%</b>	<b>0.99</b>	<b>-49%</b>	<b>3.38</b>	<b>3.10</b>	<b>9%</b>

1/ EBITDA from Refinery Business, Bangchak Biofuel Co., Ltd. and share of profit from Ubon Bio Ethanol Co, Ltd. The figure included Gain (Loss) from crude and product oil hedging contract and Gain (loss) from foreign currencies forward contract

2/ EBITDA from Marketing Business and Bangchak Greenet Co.,Ltd.

3/ EBITDA from Solar Power Plant Business, Bangchak Solar Energy Co.,Ltd. and its subsidiaries

Sales volume in each market category of the Company

Unit: Million Litre

	Q4 2013	Q4 2012	YoY (%)	Q3 2013	QoQ (%)	2013	2012	YoY (%)
<b>Marketing Business</b>								
Retail	754	706	7%	725	4%	2,935	2,679	10%
Industrial	542	490	11%	492	10%	2,070	1,890	10%
<b>Total</b>	<b>1,295</b>	<b>1,196</b>	<b>8%</b>	<b>1,216</b>	<b>7%</b>	<b>5,005</b>	<b>4,569</b>	<b>10%</b>
<b>Wholesale Business</b>								
PTT	171	161	6%	160	7%	638	540	18%
Export	206	164	25%	298	-31%	1,039	518	101%
Others	115	74	56%	59	95%	319	201	59%
<b>Total</b>	<b>492</b>	<b>399</b>	<b>23%</b>	<b>517</b>	<b>-5%</b>	<b>1,996</b>	<b>1,259</b>	<b>59%</b>
<b>Total Sales Volume</b>	<b>1,787</b>	<b>1,595</b>	<b>12%</b>	<b>1,733</b>	<b>3%</b>	<b>7,002</b>	<b>5,827</b>	<b>20%</b>



## **Summary of The Company and its subsidiaries' operating results**

### **Comparison of Q4/2013 and Q4/2012 operating results**

In Q4/2013, Consolidated Financial Statement recorded Revenue from sale of goods and rendering of services of Baht 48,064 million, an increase of Baht 4,112 million (+9%) when compared to Q4/2012. Revenue increased from increases in refinery crude run, total sales volumes growth, and subsidiaries' revenues growth.

- Refinery Business had average crude run of 101.17 thousand barrel per day, 20% increase from average crude run of 84.64 thousand barrel per day in Q4/2012. Crude Run in Q4/2012 was low as there was a shutdown of crude distillation unit (CDU3).
- Marketing Business recorded an 8% increase in sales volumes, from 11% growth in industrial market and 7% growth in retail market when compared to same period last year.
- Biofuel Business recorded average daily production rate of 0.35 million litre, a 6% increase when compared to the same period last year, and a 13% growth in B100 sales volumes from Q4/2012.
- Solar Power Business had a 284% increase in total electricity generation when compared to same period last year, mainly from commercial operation of Solar Power Plant Phase 2.

Total EBITDA was Baht 1,810 million, 11% decreased from Q4/2012. Reasons of decreases were from a decrease in Market GRM, as the Company's major products crack spread declined. The Company had a Baht 418 million loss from foreign currencies forward contract, whereas in Q4/2012 there was a Baht 199 million gain from foreign currencies forward contract. Decrease in EBITDA also resulted from a 26% dropped in total marketing margin, as the Company cooperated with government's policy of using ethanol produced from cassava, which had higher cost when compared to ethanol produced from molasses, and an intense industrial market competition in diesel product as other major oil producers sold the product locally instead of export.

The Consolidated Financial Statement recorded Net profit of Baht 718 million. Net Profit attributable to the owners of the Company was Baht 688 million, a decrease of Baht 459 million (-40%) from Q4/2012 which was at Baht 1,147 million. Earnings per share was 0.50 Baht, compared to 0.83 Baht in Q4/2012.

### **Comparison of Q4/2013 and Q3/2013 operating results**

In Q4/2013, Consolidated Financial Statement recorded Revenue increase of Baht 2,002 million (+4%) when compared to Q3/2013. Revenue increased from increases in refinery crude run, total sales volumes growth, and subsidiaries' revenues growth.

- Refinery Business had average crude run of 101.17 thousand barrel per day, 1% increase from average crude run of 100.61 thousand barrel per day in Q3/2013.
- Marketing Business recorded a 7% increase in sales volumes, from 10% growth in industrial market and 4% growth in retail market when compared to same period last year.
- Biofuel Business recorded average daily production rate of 0.35 million litre, 6% increase when compared to previous quarter, which was at 0.33 million litre per day, and a 10% growth in B100 sales volumes from Q4/2012.



- Solar Power Business had an 8% increase in total electricity generation when compared to previous quarter.

Total EBITDA was Baht 1,810 million, 29% decreased from Q3/2013. Market GRM increased 4% from previous quarter as crack spreads of Company's major products increased. GRM Hedging transaction gain in Q4/2013 was 54% higher than previous quarter's figure, but inventory gain in Q4/2013 was 33% less than previous quarter's figure. The Company had a Baht 418 million loss from foreign currencies forward contract, whereas in Q3/2013 there was a Baht 51 million loss from foreign currencies forward contract.

Total marketing margin in Q4/2013 dropped as oil prices fluctuated and impacted retail price adjustment mechanism.

The Consolidated Financial Statement recorded Net profit of Baht 718 million. Net Profit attributable to the owners of the Company was Baht 688 million, a decrease of Baht 671 million (-49%) from Q3/2013.



Company's projects status are shown as follow:

Project	Details	Progress
<b>1. Refinery Business Project</b>		
1.1 Tail Gas Treating Unit	The project helps decreasing the emission level of Sulfur Dioxide from the Sulfur Recovery Unit. The total project value is approximately USD 37 million.	Project Completed and operated since the end of 2014.
<b>2. Marketing Business Project</b>		
2.1 Gasohol Promotion Project	The project aims to promote and expand the use of gasohol through increasing numbers of E20 and E85 service stations, including sales promotion through gasohol club card.	In 2013, the Company had an average monthly sales volume of 26.05 million litres for E20 product and of 7.70 million litres for E85 product. The number of E20 service stations and E85 service stations were 678 and 102 stations, respectively.
2.2 BigC Mini in Bangchak Service Stations	The cooperation between the Company and BigC. BigC has invested and operated BigC Mini convenient stores in Bangchak Service Stations. Bangchak has received benefits in terms of revenue sharing. The cooperation also has brought in new customer base for Bangchak Service Stations	At the end of 2013, there were 62 branches of BigC Mini in Bangchak Service Stations. Target in 2014 is to have BigC Mini 150 branches in Bangchak Service Stations.



Project	Details	Progress
<b>3. Renewable Energy Business Project</b>		
3.1 Electricity Generation from Solar Energy – Solar Power Plant Phase3	<p>There are 5 sites of solar power plant with a total power purchase agreement (PPA) of 48 MW supplied to Provincial Electricity Authority (PEA). The projects were constructed by two EPC contractors, details as shown below:</p> <ol style="list-style-type: none"> <li>1. Three projects in Buriram province and Prachin Buri province (Total PPA of 32 MW) were constructed by the Consortium of CHINA TRIUMPH INTERNATIONAL ENGINEERING COMPANY LIMITED and SOLARTRON PUBLIC COMPANY LIMITED.</li> <li>2. Two projects in Chaiyaphum province and Nakhon Ratchasima province (Total PPA of 16MW) were constructed by the Consortium of GUNKUL ENGINEERING PUBLIC COMPANY LIMITED and TRINA SOLAR ENERGY DEVELOPMENT PTE LIMITED.</li> </ol>	<p>The projects have started construction in October 2013. Targeted Project Commercial Operation Dates (COD) are as shown below:</p> <ol style="list-style-type: none"> <li>1. Prakhonchai, Buriram province (PPA of 8 MW) is expected to COD in April 2014.</li> <li>2. Nong Ki, Buriram province (PPA of 8 MW) is expected to COD in April 2014.</li> <li>3. Dan Khun Thot, Nakhon Ratchasima province (PPA of 8 MW) is expected to COD in April 2014.</li> <li>4. Hua-Ta-Lay, Chaiyaphum province (PPA of 8 MW) is expected to COD in June 2014.</li> <li>5. Kabin Buri, Prachinburi province (PPA of 16 MW) is expected to COD in August 2014.</li> </ol>



**Financial related activities in 2013 are shown as follow:**

	Details	Progress
1. Company Credit Rating	TRIS rating is the Company's credit rating agency since 2008	In year 2012, the Company was rated stable A- rating on 20 December 2013
2. Long – term Loan from financial institutions		
2.1 Long – term loan of the Company	The Company had restructured its debt profile in 2013. In July 2013, the Company made a partial early repayment of Baht 5,500 million of the balance of the long – term loan. Later the Company had entered into a 5 year long-term loan agreement amounted USD 200 million (equivalent to Baht 6,501 million referred to foreign exchange rate at the end of year 2012) for future investment purpose.	The Company had drawdown the USD200 million loan in December 2013.
2.2 Long – term loan of Bangchak Solar Energy Co., Ltd.	Bangchak Solar Energy Co.,Ltd. had entered into 10 year and 18 year credit facility agreements amounted Baht 1,885 million for Solar Power Plant Phase 2 Construction.	Bangchak Solar Energy Co.,Ltd. had utilized credit facilities in 2013.
3. Dividend Policy	The Company's dividend policy is to pay dividend of not less than 30 percent of net profit of Consolidated financial statements after deduction of allocation of legal reserve (with additional conditions)	In 1Q2013, the Company announced dividend payment of baht 0.90 per share for the operation period from 1 July 2012 until 31 December 2012.  In 3Q2013, the Company announced interim dividend payment of baht 0.60 per share for the operation period from 1 January 2013 until 30 June 2013.





## 2. Performance Summary

### 2.1 Crude Oil Price Situation

In the fourth quarter of 2013, the average of Dubai crude oil price was \$106.81, rose by only \$0.51 from an average of the third quarter of 2013. Main factors to support Dubai crude oil prices were supply concern from civil unrest in Libya as Libyan crude oil export fell to 90,000 barrels per day (bpd), compared to a normal capacity of 1.4 million bpd. Moreover, there was the civil unrest in Egypt, Syria, Iraq, South Sudan, North Africa and Yemen which resulted in increased supply disruption. However, these supply disruption from several countries above had been released softly at the end of the fourth quarter. Positive economic data to support the Dubai crude oil prices was the robust U.S. manufacturing activity index in September which was the two and a half year high level. IMF forecasted that U.S. gross domestic product (GDP) growth rate in Q3 was estimated on a two year-high of 4.1%, rising from last estimation of 3.6% and compared to 2.5% in Q2. As U.S. economic data shown improvement, the U.S. Federal Reserve (Fed) decided to start to reduce its \$85 billion-a-month bond-buying program to the level of \$75 billion-a-month, affecting riskier global assets including commodities, particularly U.S. crude oil benchmark and U.S. dollar.

However, Dubai crude oil prices had been pressured by a 16-day-partial shutdown of U.S. government in October 2013 after facing problems of budget overcame and unsolved nation's debt ceiling crisis. This impacted to nearly one million workers going without pay and also cut energy demand in U.S. This affected overall U.S. economy in the beginning of fourth quarter 2013. Moreover, another factor to pressure Dubai crude oil prices was a lower tension over Iran's nuclear program continued to ease. The talk between Iran and P5+1 (United States, Britain, France, Russia, China and Germany) in Geneva in November made a progress of interim agreement whereby Iran has been freezing some parts of nuclear program including the development of suspension of EU and the U.S. sanctions on insurance for 6 months, in exchanging for limited easing of some sanctions which significantly affected its economy. As one of records, Iran's exports have been limited around 1 million barrels per day since 2012 because of tightening sanctions. Overview crude oil stock in U.S. had been increased in Q4 because many refineries near Mexican Gulf had not yet came back from maintenance, together with a slower demand in Europe. In addition, European Central Bank (ECB) announced a decrease in interest rate to the lowest level of 0.25% from 0.5%, aiming to stimulate future European economy.



For comparison of Dubai crude oil price in 2013 to 2012, there was a price decrease by 3.6\$/BBL as Non-OPEC supply, especially North America and Canada, rose by 1 million barrel during a year-round. Also, a trend of Iraq's oil production and oil exports had continuously gone up, when compared to 2012. On the other hand, the global demand growth rate was increased at a slower rate than supply growth. Finally, the world economic growth in 2013, especially in U.S. and emerging markets, was at slower level when compared to last year.

### **Crack Spreads Analysis**

The average of Mogas/Dubai crack spread in Q4/2013 was 9.18\$/barrel, compared to the average of 12.63\$/barrel in the previous quarter. The higher exports from China, Taiwan, India and Saudi Arabia pressured Mogas/Dubai crack spread in the early fourth quarter. As one of records, Sinopec and PetroChina had more export quota for gasoline in Q4, compared to Q3. Taiwan CPC and Formosa's refineries were back from turnaround resulted in more term-contract gasoline export. There was higher arbitrage from Europe to Asia due to a lower domestic demand in European countries during winter. These factors had a drawback in Mogas/Dubai crack in Q4. On the other hand, there were some factors supporting the Mogas/Dubai crack spread. Demand in Indonesia was improved because of a 120,000 bpd Balongan refinery turnaround during a period of mid-October to mid-November and South Korea had exported less as its decreased crude run rates.

For comparison of Mogas/Dubai crack spread in 2013 and 2012, the Mogas/Dubai spread slightly decreased by 0.82\$/barrel in 2013. It was from a higher than expect supply increase especially from China, while U.S. and European demand had been decreased significantly during winter. However, there were some advantages for gasoline crack in 2013 including unplanned shutdowns of Taiwan Formosa refinery, India Reliance refinery and Japan Idemitsu Kosan's refinery that cut gasoline production and gasoline exports.

The average Jet Fuel (Kerosene)/Dubai crack spread in the Q4/2013 was 17.31\$/barrel, compared to an average of 16.96 \$/barrel in the previous quarter. The Jet Fuel (Kerosene)/Dubai crack spread was stronger from a higher demand of jet fuel and heating oil from North Asia, especially in Japan and China during winter. However Jet Fuel (Kerosene)/Dubai crack spread got pressure by more export from Taiwan.

For comparison Jet Fuel (Kerosene)/Dubai crack spread, the spread had decreased by only 0.34 \$/barrel in 2013, compared to 2012, resulting from more supply from Taiwan, South Korea, India and Japan in the second quarter of 2013. Moreover, the arbitrage from Asia to Europe had been



weakening due to slow European economics. On demand side, there was lower jet fuel uses in transportation and travel sectors in 2013, compared to 2012.

The Gasoil/Dubai crack spread was 17.70\$/barrel in Q4/2013, compared to 17.39\$/barrel in the previous quarter. The Gasoil/Dubai spread was supported by Saudi Arabia's increase in the beginning of fourth quarter, a period of Islamic pilgrimage (the Hajj). Also, there were more demand in Asian countries in winter and several refineries were during their maintenance period, especially in Indonesia. Moreover, Japan and India's exports were dropped. Japan turned to produce more kerosene and less gasoil. India gasoil supply fell during end of Q4, due to higher domestic demand and a preparation for refinery maintenance in January 2014. Market expected that Qingdao pipeline blast could affect China's short supply. Supply from Taiwan was expected to fall after unplanned shutdown of Taiwan Formosa's refinery. In contrast, partial operation of SATROP's 400,000 bpd new refinery in Saudi Arabia since September 2013 led to an increase in supply.

For comparison of Gasoil/Dubai crack spread, the spread had slightly increased by 0.72\$/barrel in 2013, compared to 2012. This was from more demand in winter, especially cold weather in U.S. at the end of Q4/2013. However, some drawbacks of gasoil spread were from Indonesia and India's currency depreciation and decreased government subsidies in some Asian countries.

The average Fuel Oil/Dubai crack spread was -10.40\$/barrel in Q4/2013, compared to an average of -10.57\$/barrel in the previous quarter. Fuel Oil/Dubai spread had been slightly strong as fuel oil stock in Singapore continuously fell for many weeks in October 2013. Moreover, the arbitrage fuel oil from west to Asia decreased because there was transportation cost increase and refineries maintenance season in the U.S. and European. Demand of fuel oil for marine and electricity production in December, especially in Japan and South Korea, increased. On the supply side, India's gasoil exports dropped as it was refineries maintenance period. In contrast, there were some negative factors to pressure gasoil spread such as more exports from SATORP's new refinery in Saudi Arabia, more supply from Russia and Europe's refineries as they were back from maintenance.

In 2013 Fuel Oil/Dubai crack spread decreased by 4.68\$/barrel from 2012. This was because of arbitrage in flow to Asia whereas fuel oil demand in Japan decreased as they switched from fuel oil to LNG and coal. Chinese teapot refineries and bunker demand declined due to China's economic slowdown. However, positive factor for Fuel Oil/Dubai crack spread was from robust fuel oil tenders which hit a year-high level in November 2013.



The table of oil prices and crack spreads comparison

Unit: USD/bbl

	Q4	Q4	YoY (%)	Q3	QoQ	2013			2012			YoY (%)
	2013	2012		2013	(%)	MAX	MIN	AVG	MAX	MIN	AVG	
<b>DB</b>	<b>106.81</b>	<b>107.53</b>	<b>-0.67%</b>	<b>106.20</b>	<b>0.57%</b>	<b>113.65</b>	<b>96.74</b>	<b>105.45</b>	<b>124.20</b>	<b>89.10</b>	<b>109.05</b>	<b>-3.30%</b>
UNL95/DB	9.18	13.40	-31.47%	12.63	-27.32%	24.88	5.63	13.55	23.39	6.52	14.37	-5.71%
IK/DB	17.31	19.26	-10.13%	16.97	2.00%	23.96	13.2	17.40	23.24	12.12	17.75	-1.97%
GO/DB	17.70	17.51	1.09%	17.39	1.78%	22.43	13.77	17.82	22.41	12.58	17.10	4.21%
FO/DB	-10.40	-8.93	-16.45%	-10.57	1.61%	-0.75	-14.85	-8.01	5.47	-13.42	-3.33	-140.54%

Note: In 2012, GO/DB based on Gasoil 0.50% sulfur and the GO/DB has changed the based to Gasoil 0.05% sulfur in 2013



## 2.2 Refinery Business and Biofuel Business

In 2013, Refinery Business and Biofuel Business recorded an EBITDA of Baht 6,568 million, an increase of Baht 1,004 million (+18%) from 2012 which was at Baht 5,564 million. The Company also recognized its share of profit of associated company (Ubon Bio Ethanol Co., Ltd.) of Baht 34 million.

### 2.2.1 Refinery Business

Refinery Business	Q4 2013	Q4 2012	YoY (%)	Q3 2013	QoQ (%)	2013	2012	YoY (%)
Average Crude Run (KBD)	101.17	84.64	20%	100.61	1%	99.34	73.71	35%
Utilization Rate (%)	84%	71%	20%	84%	1%	83%	61%	35%
Average FX (THB/USD)	31.87	30.82	3%	31.61	1%	30.86	31.22	-1%

Unit: Million Baht

	Q4 2013	Q4 2012	YoY (%)	Q3 2013	QoQ (%)	2013	2012	YoY (%)
Market GRM	1,429	2,558	-44%	1,380	4%	6,441	7,026	-8%
GRM Hedging	353	288	23%	230	54%	800	686	17%
Gain/(Loss) from Inventory (include inventory hedging)	622	-643	N/A	926	-33%	1,189	-711	N/A
<b>Total GRM</b>	<b>2,404</b>	<b>2,203</b>	<b>9%</b>	<b>2,535</b>	<b>-5%</b>	<b>8,429</b>	<b>7,002</b>	<b>20%</b>
<b>EBITDA</b>	<b>1,154</b>	<b>1,582</b>	<b>-27%</b>	<b>1,776</b>	<b>-35%</b>	<b>6,217</b>	<b>5,403</b>	<b>15%</b>

Unit: USD/bbl

	Q4 2013	Q4 2012	YoY (%)	Q3 2013	QoQ (%)	2013	2012	YoY (%)
Market GRM <sup>1/</sup>	4.82	10.66	-55%	4.72	2%	5.76	8.34	-31%
GRM Hedging	1.19	1.20	-1%	0.78	53%	0.71	0.81	-12%
Gain/(Loss) from Inventory (include inventory hedging)	2.10	-2.68	N/A	3.17	-34%	1.06	-0.84	N/A
<b>Total GRM</b>	<b>8.10</b>	<b>9.18</b>	<b>-12%</b>	<b>8.67</b>	<b>-7%</b>	<b>7.53</b>	<b>8.31</b>	<b>-9%</b>

Note: 1. Calculation of percentage change in USD may differ from Thai Baht as there is no impact of currency movement



### **Comparison of Q4/2013 and Q4/2012 operating results**

Refinery Business had average crude run of 101.17 thousand barrel per day, 20% increase from average crude run of 84.64 thousand barrel per day in Q4/2012. Crude Run in Q4/2012 was low as there was a shutdown of crude distillation unit (CDU3).

Market GRM of Q4/2013 was at 4.82 \$/BBL, a 55% decrease from Q4/2012 as the Company's major products crack spreads declined, especially UNL95/DB which decreased 4.22 \$/BBL as lower demand in Asia (which were from currency depreciations and decrease in governments oil subsidies in Indonesia, Malaysia, and India) and FO/DB crack spread 1.47 \$/BBL decrease from demand dropped in Asia and arbitrage in-flow increased to Asia.

The Company had a Baht 353 million gain (+23%) from GRM Hedging and a Baht 622 million inventory gain. As there was a substantial depreciation of Thai Baht currency in Q4/2013, the Company had a Baht 418 million loss from foreign currencies forward contract, whereas in Q4/2012 there was a Baht 119 million gain from foreign currencies forward contract.

In Q4/2013, the Refinery Business has recorded an EBITDA of Baht 1,154 million, a decrease of 27% from Q4/2012.

### **Comparison of Q4/2013 and Q3/2013 operating results**

Refinery Business had average crude run of 101.17 thousand barrel per day, 1% increase from average crude run of 100.61 thousand barrel per day in Q3/2013.

Market GRM of Q4/2013 was at 4.82 \$/BBL, a 2% increase from Q3/2013 as crack spreads of Company's major products increased, except for UNL95/DB which declined significantly. However, products crack spreads started to increase in the late of Q4/2013.

Refinery Business recorded a 35% decline of EBITDA from Q3/2013. GRM Hedging transaction gain in Q4/2013 was 54% higher than previous quarter's figure, but inventory gain in Q4/2013 was recorded at Baht 622 million, a 33% decrease from inventory gain in Q3/2013 which was at Baht 926 million. As there was a depreciation of Thai Baht currency in Q4/2013, the Company had a Baht 418 million loss from foreign currencies forward contract, whereas in Q3/2013 there was a Baht 51 million loss from foreign currencies forward contract.

### **Comparison of 2013 and 2012 operating results**

In 2013, Refinery's average crude run was recorded at 99.34 thousand barrel per day, an increase from 73.71 thousand barrel per day in 2012, as in 2012 there was refinery shutdowns from annual maintenance and from incident of Crude Distillation Unit (CDU) no.3. In 2013, there was a temporary shutdown of Hydrocracking Unit (HCU).

Market GRM was recorded at Baht 6,441 million, a 8% decrease from 2012 which was at Baht 7,026 million. Market GRM was recorded at 5.76 \$/BBL, a 31% decrease from 2012 which was at 8.34\$/BBL, as there was a decline in Company's major products crack spreads, especially FO/DB, and UNL95/DB, impacting



from supply of new refinery in the region. There was a significant drop in FO/DB from -3.33 \$/BBL in 2012 to -8.01 \$/BBL in 2013. The Company also had an increase in fuel oil volume from temporary shutdown of Hydrocracking unit.

There was a Baht 1,189 million (1.06 \$/BBL) gain from inventory (include Inventory Hedging) in 2013, whereas there was a Baht 711 million (-0.84 \$/BBL) loss from inventory in 2012. Gain from GRM hedging transaction was Baht 800 million (0.71 \$/BBL) in 2013 whereas there was a Baht 686 million (0.81 \$/BBL) gain from GRM hedging transaction in 2012. As there was a substantial depreciation of Thai Baht currency in second half of 2013, the Company had a Baht 923 million loss from foreign currencies forward contract, whereas in 2012 there was a Baht 746 million gain from foreign currencies forward contract. Refinery business also recognized insurance compensation of Baht 1,518 million from the incident at Crude Distillation Unit (CDU3) in 2012.

Therefore, in 2013 the Company had total GRM of Baht 8,429 million (7.53 \$/BBL) and EBITDA of Baht 6,217 million, a 15% increase from Baht 5,403 million in 2012.

Note: the Company had changed the calculations of Gain/Loss from GRM Hedging transaction and Gain/Loss from inventory by excluding impacts of Gain/Loss from foreign currencies forward contract, therefore the figures represented here is not the same with the figures shown in Annual Report 2012.

## 2.2.2 Biofuel Business

Biofuel Business	Q4	Q4	YoY (%)	Q3	QoQ (%)	2013	2012	YoY (%)
	2013	2012		2013				
Average Daily Production Rate (Million litre/ day)	0.35	0.33	6%	0.33	6%	0.34	0.31	10%
Utilization Rate*	98%	93%	5%	93%	5%	95%	87%	9%
B100 Sales Volume (Million litre)	42.42	37.69	13%	38.48	10%	166.30	142.28	17%

Note: In 2012, nameplate capacity was 0.30 million litre/day, and in 2013 nameplate capacity was 0.36 million litre/day. The utilization rate in the table was calculated based on average daily production rate of each period compared to nameplate capacity of 0.36 million litre/day.

### Comparison of Q4/2013 and Q4/2012 operating results

In Q4/2013 Biofuel Business by Bangchak Biofuel Co., Ltd had total sales revenue of Baht 1,263 million, an increase of Baht 311 million (+33%) from Q4/2012. The average daily production rate was at 0.35 million litre per day (+6%) and the total sales volume of B100 was recorded at 42.42 million litre, an increase of 13% from Q4/2012. The margin per unit was increased from an increase in average B100 price when compared to average B100 in Q4/2012. There was an inventory gain of Baht 66 million compared to an inventory loss of Baht 52 million in Q4/2012. EBITDA in Q4/2013 was Baht 119 million, an increase of Baht 102 million from Q4/2012.



### **Comparison of Q4/2013 and Q3/2013 operating results**

In Q4/2013 there was an increase in total sales revenue of Baht 243 million (+24%) from the previous quarter. The average daily production rate increased by 6% and the total sales volume of B100 increased 3.93 million litre (+10%) from Q3/2013.

Average margin per unit increased from an increase in B100 price. The inventory gain was recorded at Baht 66 million in Q4/2013 compared to Baht 34 million in the previous quarter.

In Q4/2013 there was EBITDA of Baht 119 million, an increase of Baht 51 million from Q3/2013.

### **Comparison of 2013 and 2012 operating results**

In 2013, Biofuel Business recorded total sales revenue of Baht 4,401 million, a decreased of Baht 42 million from 2012. The decrease was from the decline in average B100 price in 2013 when compared to average B100 price in 2012, though there was an increase in total sales volume. Total sales volume of B100 was recorded at 166.30 million litre, an increase of 17% from last year.

The average production rate in 2013 was 0.34 million litre per day, an increase from an average production rate of 0.31 million litre per day in 2012. The margin per unit was increased from 1) a decline in B100 cost as it was in line with a decline in B100 price and 2) the inventory management. There was inventory gain of Baht 160 million compared to Baht 16 million in 2012.

In 2013 Biofuel Business has an EBITDA of Baht 345 million, an increase of Baht 161 million from previous year.





### 2.3 Marketing Business and Bangchak Green Net Co., Ltd.

Sales volume in each market category of Marketing Business

Unit: Million Litre

Marketing Business	Q4	Q4	YoY (%)	Q3	QoQ (%)	2013	2012	YoY (%)
	2013	2012		2013				
Retail	753.73	705.95	7%	724.61	4%	2,935.02	2,678.83	10%
Industrial	541.67	490.11	11%	491.64	10%	2,070.09	1,889.83	10%
<b>Total</b>	<b>1,295.39</b>	<b>1,196.06</b>	<b>8%</b>	<b>1,216.25</b>	<b>7%</b>	<b>5,005.11</b>	<b>4,568.67</b>	<b>10%</b>

Sales volume in each product category of Marketing Business

Unit: Million Litre

	Q4	Q4	YoY (%)	Q3	QoQ (%)	2013	2012	YoY (%)
	2013	2012		2013				
Diesel	711.71	656.29	8%	617.64	15%	2,701.49	2,435.95	11%
Gasoline	345.07	312.98	10%	341.40	1%	1,309.27	1,146.62	14%
<i>UNL 91</i>	13.92	82.81	-83%	12.35	13%	33.19	341.89	-90%
<i>Gasohol 91</i>	130.43	110.21	18%	131.81	-1%	524.62	408.31	28%
<i>Gasohol 95</i>	87.93	54.52	61%	87.97	-0.04%	346.39	197.57	75%
<i>Gasohol E20</i>	81.41	54.87	48%	82.76	-2%	312.65	173.17	81%
<i>Gasohol E85</i>	31.37	10.57	197%	26.51	18%	92.42	25.68	260%
Jet Fuel	164.10	161.27	2%	178.69	-8%	694.77	707.93	-2%
Fuel Oil	42.46	54.29	-22%	50.42	-16%	189.31	227.42	-17%
LPG	14.09	2.09	575%	15.46	-9%	46.69	14.11	231%
Lubricant	17.48	8.74	100%	12.36	41%	62.04	34.07	82%
Others	0.48	0.40	20%	0.28	71%	1.53	2.57	-40%

The table below shows detail of Marketing Margin

Unit: Baht/Litre

	Q4	Q4	YoY (%)	Q3	QoQ (%)	2013	2012	YoY (%)
	2013	2012		2013				
Retail Margin	0.71	0.91	-22%	0.76	-7%	0.73	0.87	-16%
Industrial Margin	0.19	0.30	-37%	0.20	-6%	0.23	0.34	-33%
<b>Total</b>	<b>0.49</b>	<b>0.66</b>	<b>-26%</b>	<b>0.53</b>	<b>-8%</b>	<b>0.53</b>	<b>0.65</b>	<b>-19%</b>



#### **Comparison of Q4/2013 and Q4/2012 operating results**

In Q4/2013, Total Sales Volumes by Marketing Business increased 8%, an increase in Industrial Sales Volumes 11% and Retail Sales Volumes 7% when compared to Q4/2012, from the ability to increase sales volume to support a higher crude run of Refinery Business.

Volumes increase was mainly from the volume sales of Diesel and Gasoline products from the government's policy of First Car Owner Tax Redemption. Gasohol E85 sales volume had a 197% growth from the Company's expansion of E85 service stations, together with an increasing number of Gasohol E85 vehicles and from the lower price of Gasohol E85 product when compared to other Gasohol products.

Total Marketing Margin was decreased 26% when compared to Q4/2012. Retail Margin was decreased 22%. Main reason was cost increased from the using of ethanol produced from cassava, which had higher cost when compared to ethanol produced from molasses. Industrial Margin was decreased 39% from the intense industrial market competition in diesel product as other major oil producers sold the product locally instead of export.

In Q4/2013, EBITDA of Marketing Business was recorded Baht of 120 million, a decrease of 57% when compared to the same period last year.

#### **Comparison of Q4/2013 and Q3/2013 operating results**

In Q4/2013, Total Sales Volumes increased 7% when compared to Q3/2013 from the seasonal effect. Total Marketing Margin was slightly dropped from Q3/2013 as oil prices fluctuated impacting retail price adjustment mechanism.

In Q4/2013, EBITDA of Marketing Business was recorded Baht of 120 million, a decreased of 66% when compared to the previous quarter.

#### **Comparison of 2013 and 2012 operating results**

In 2013, Total Sales Volumes by Marketing Business was 5,005.11 million litre, an increase of 10% when compared to 2012. Retail Sales Volumes and Industrial Sales Volumes grew at similar rate of 10 from the ability to increase sales volume to support a higher crude run of Refinery Business, together with the Company's network expansion plan and a continuous service station quality improvement policy. Volumes increase was mainly from Diesel and Gasoline products, with growth of 11% in Diesel and 14% in Gasoline. UNL91 sales volumes decreased by the Government Policy of discontinue selling 91-octane petrol since January 2013, while Gasohol products sales volumes increased 59% when compared to 2012.

In 2013, there was an expansion of E20 and E85 service stations. The number of E20 service station was 678 stations, increase of 97 stations from 2012, and the number of E85 service station was 102 stations, increase of 51 stations from previous year.



Total Marketing Margin was at 0.53 Baht per litre, a decrease of 19% from previous year. The Retail Margin decreased by 16%. Main reasons were cost increased from the using of ethanol produced from cassava, which had higher cost when compared to ethanol produced from molasses, and from oil prices fluctuated impacting retail price adjustment mechanism. Industrial margin was decreased 33% from a price competition of Diesel in industrial market as other major oil producers sold the product locally instead of export.

In 2013, EBITDA of Marketing Business was recorded of Baht 1,383 million, a decrease of 22% from the previous year.

#### 2.4 Solar Power Plant Business

##### Production Capacity and Solar Irradiation of Solar Power Plant Phase 1

	Q4 2013	Q4 2012	YoY (%)	Q3 2013	QoQ (%)	2013	2012	YoY (%)
Electricity Generation (Million kWh)	17.32	15.98	8%	15.72	10%	66.88	32.97	103%
Irradiation (kW/m2)	4.72	4.54	4%	4.85	-3%	5.07	5.03	1%

##### Electricity Generation and Solar Irradiation of Solar Power Plant Phase 2

	Q4 2013	Q4 2012	YoY (%)	Q3 2013	QoQ (%)	2013	2012	YoY (%)
Electricity Generation (Million kWh)	19.57	-	-	18.36	7%	59.83	-	-
Irradiation (kW/m2)	4.92	-	-	4.94	-0.47%	5.26	-	-

##### Total Electricity Generation of Solar Power Plant of Phase 1 and Phase 2

	Q4 2013	Q4 2012	YoY (%)	Q3 2013	QoQ (%)	2013	2012	YoY (%)
Electricity Generation (Million kWh)	36.88	15.98	131%	34.08	8%	126.71	32.97	284%

Solar Power Plant Phase 1 (PPA of 38 MW), partially operated in April 2012 and fully operated in July 2012. In 2013, Solar Power Plant Phase 1 had a total electricity generation of 66.88 M kWh, an increase of 103% from 2012 which was at 32.97 M kWh. Average Solar Irradiation was 5.07 kW/m2/day in 2013, compared to 5.03 kW/m2/day in 2012.

Solar Power Business Phase 2 (PPA of 32 MW), at Bamnet Narong, Chaiyaphum Province and Bang Pa Han, Ayutthaya Province, operated on 6<sup>th</sup> March 2013 and 5<sup>th</sup> April 2013, respectively. In 2013, Solar Power Plant Phase 2 had a total electricity generation of 59.83 M kWh and average solar irradiation of 5.26 kW/m2/day



In 2013, both phases of Solar Power Plant Business recorded a total Revenue of Baht 1,463 million, an increase of 287% from 2012 which was at Baht 378 million. And total EBITDA of Baht 1,396 million, an increase of 231% from 2012 which was at Baht 423 million. (note: Revenue comparison did not include other revenues, such as Revenue from Indemnity of Business Interruption. In 2012 Solar Power Plant Business Phase 1 had Revenue from Indemnity of Business Interruption amounted Baht 73 million.)



### 3. Analysis of the Financial Position of the Company and its subsidiaries (Consolidated)

Unit: Million Baht

Financial Position	31 December 2013		31 December 2012		Δ
Current assets	36,568	51%	37,107	52%	-539
Investments in associates	757	1%	723	1%	+34
Property, plant and equipment	31,771	44%	29,919	42%	+1,851
Other non-current assets	3,294	5%	3,104	4%	+190
<b>Total assets</b>	<b>72,389</b>	<b>100%</b>	<b>70,853</b>	<b>100%</b>	<b>+1,536</b>
Current liabilities	15,282	21%	18,218	26%	-2,935
Long-term borrowings (including current portion of long-term loans)	20,830	29%	19,022	27%	+1,807
Other non-current liabilities	1,297	2%	1,290	2%	+7
<b>Total liabilities</b>	<b>37,408</b>	<b>52%</b>	<b>38,530</b>	<b>54%</b>	<b>-1,122</b>
Total equity attributable to owners of the Company	34,731	48%	32,143	45%	+2,588
Non-controlling interests	250	0.35%	180	0.25%	+70
<b>Total equity</b>	<b>34,981</b>	<b>48%</b>	<b>32,323</b>	<b>46%</b>	<b>+2,658</b>
<b>Total liabilities and equity</b>	<b>72,389</b>	<b>100%</b>	<b>70,853</b>	<b>100%</b>	<b>+1,536</b>

#### Assets

As of December 31, 2013, Total Assets of the Company and its subsidiaries were Baht 72,389 million, an increase of Baht 1,536 million when compared to the end of 2012 which was Baht 70,853 million. The changes in assets were mainly from:

- Cash as of December 31, 2013 was Baht 6,527 million; decreased by Baht 1,478 million. (Details are stated under Analysis of the Cash Flow Statement, Section 4))
- Current investments of Baht 731 million; increase of Baht 718 million from 2012; mainly from Short-term deposits with financial institutions.
- Trade Accounts Receivable of Baht 8,660 million, increased by Baht 923 million which increased from both local and export trade accounts receivable.
- Other Receivables of Baht 694 million, decreased by Baht 464 million, mainly from decreased of Insurance Compensation Receivable, Receivable from oil hedging contracts and Prepaid expenses.
- Inventory was Baht 17,092 million, decreased by Baht 2,083 million which was from a volume decrease in crude oil and finished oil products' inventory.
- Oil Fuel Fund subsidies receivable was Baht 1,664 million; increased by Baht 1,003 million, mainly from Oil Fuel Fund subsidies for Gasohol E85, E20 and LPG.



- Other Current Assets was Baht 1,199 million, increased by Baht 1,003 million, mainly from an increase in Value Added Tax Receivable.
- Property, plant and equipment were Baht 31,771 million, increased by Baht 1,851 million, mainly from assets of Solar Power Plant Phase 2 (PPA of 32 MW) and Tail Gas Treating Unit. Depreciation and amortization amount in 2013 was Baht 2,613 million.

#### **Liabilities**

As of December 31, 2013, Total Liabilities of the Company and its subsidiaries were Baht 37,408 million, decreased by Baht 1,122 million from the end of 2012. The changes in liabilities were mainly from:

- Trade Accounts Payable was Baht of 11,534 million, decreased by Baht 2,166 million, mainly from the crude oil and petroleum products transaction between the Company and PTT Plc. In addition, there was a high amount of Trade Accounts Payable at the end of 2012 due to the year-end public holiday.
- Other Payables were Baht 2,362 million, decreased by Baht 428 million which were mainly from decrease in accrued expenses and contractor's payments due.
- Long-term loans from financial institutions and Debentures (including current portion of long-term loans) was Baht 20,830 million, increased by Baht 1,807 million. The Company had entered into a 5 year long-term loan agreement amounted USD 200 million (equivalent to Baht 6,501 million) for future investment purpose, and Bangchak Solar Energy Co., Ltd had drawdown loan of Baht 1,788 million for Solar Power Plant Phase 2 Construction. The Company and subsidiaries had made total repayment of Baht 6,434 million, including the Company's partial early repayment of Baht 5,500 million of the balance of the long – term loan.

#### **Equities**

As of December 31, 2013, Consolidated Total Equity was Baht 34,981 million, increased by Baht 2,658 million from 2013 Net Profit of Baht 4,731 million and dividend paid of Baht 2,074 million. Consolidated book value was Baht 25.22 per share.



#### 4. Analysis of the Cash Flows Statement of the Company and its subsidiaries (Consolidated)

In 2013, the Company and its subsidiaries had net cash received from operating activities of Baht 5,451 million, net cash used in investing activities of Baht 5,507 million and net cash used in financing activities of Baht 1,422 million. As a result, there was a net decrease in cash and cash equivalents of Baht 1,478 million. Cash and cash equivalents on 1 January, 2013 was Baht 8,006 million, when accounted for all activities, cash and cash equivalents as of December 31, 2013 was Baht 6,527 million.

Details of cash received and used are as follows:

Unit: Million Baht

Cash Flows	31 December 2013	31 December 2012
Net cash received from operating activities	5,451	11,633
Net cash used in investing activities	(5,507)	(5,285)
Net cash used in financing activities	(1,422)	(2,364)
<b>Net increase (decrease) in cash and cash equivalents</b>	<b>(1,478)</b>	<b>3,985</b>
Cash and cash equivalents at 1 January	8,006	4,021
<b>Cash and cash equivalents at 31 December</b>	<b>6,527</b>	<b>8,006</b>

Cash received and used details are as follows:

1. The Company and its subsidiaries had net cash received from operating activities of Baht 5,451 million, mainly from
  - Net cash received from operating activities of Baht 9,828 million which was from Net Profit of Baht 4,731 million and added back Non-Cash Expenses of Baht 3,101 million, Finance Costs and Income Tax of Baht 1,996 million.
  - Cash used in the operating assets of Baht 110 million, mainly from a decrease in Inventory of Baht 2,080 million, Trade Account Receivable increased of Baht 883 million, Other Receivables decreased of Baht 533 million and Other Assets increased of Baht 1,840 million.
  - Cash used in operating liabilities of Baht 3,010 million, mainly from a decrease in Trade Accounts Payable of Baht 2,222 million, Other Payables decreased of Baht 488 million and Accrued Expenses decreased of Baht 299 million.
  - Income Tax Paid of Baht 1,257 million
2. Net cash used in investing activities of Baht 5,507 million, mainly from
  - Investment in property, plant and equipment of Baht 4,546 million which were mainly from assets of Solar Power Plant Phase 2 and Tail Gas Treating Unit.
  - Current investment of Baht 718 million from Short-term deposits at financial institutions



- Investment in Other Assets of Baht 328 million
  - Interest income of Baht 85 million
3. Net cash used in financing activities of Baht 1,422 million, mainly from
- Proceeds from long-term loan of Baht 8,185 million, which were from the Company's long-term USD 200 million loan (Baht of 6,397 million) and Bangchak Solar Energy Co., Ltd's long-term loans of Baht 1,788 million.
  - Repayment of Baht 6,434 million for long-term loans, including the Company's partial early repayment of Baht 5,500 million
  - Finance costs paid of Baht 1,099 million
  - Dividend paid of Baht 2,074 million





## 5. Financial Ratios (Consolidated)

	Q4 2013	Q4 2012	Δ	Q3 2013	Δ	2013	2012	Δ
<b>Profitability Ratios (%)</b>								
EBITDA Margin	3.77%	4.67%	-0.90%	5.57%	-1.80%	5.01%	4.70%	0.31%
Profit Margin	1.49%	2.61%	-1.11%	2.98%	-1.49%	2.54%	2.60%	-0.07%
Return on Equity (ROE) <sup>1/</sup>	13.92%	13.81%	0.11%	15.72%	-1.80%	13.92%	13.81%	0.11%
Return on Assets (ROA)	9.39%	8.99%	0.40%	10.68%	-1.29%	9.39%	8.99%	0.40%

	31-Dec-13	31-Dec-12	Δ
<b>Liquidity Ratios (times)</b>			
Current Ratio	2.24	1.93	0.31
Quick Ratio	1.19	0.93	0.26
<b>Financial Policy Ratios (times)</b>			
DSCR <sup>2/</sup>	4.68 <sup>2/</sup>	5.07	-0.39
Interest bearing debt to Equity <sup>1/</sup>	0.60	0.59	0.01
Net Interest bearing debt to Equity <sup>1/</sup>	0.39	0.34	0.05

1/ Total equity attributable to owners of the Company

2/ DSCR in 2013 was excluded prepayment loan of Baht 5,500 million

Note: We have changed the calculation in ROE, ROA, and DSCR from those in Annual Report of 2012.

- We have defined our "return" used in the formula of ROA and ROE according to the SET Manual Guides – Financial Ratios section.
- We have changed our numerator for DSCR from "Adjusted EBITDA" to be "EBITDA".  
(note: Adjusted EBITDA is defined as EBITDA that excludes impact from inventory gain or loss.)
- ROE, ROA are annualized figures.



### **Financial Ratios Calculation**

▪ EBITDA Margin (%)	=	EBITDA / Revenue from sale of goods and rendering of services
▪ Profit Margin (%)	=	Profit attributable to owners of the Company / Revenue from sale of goods and rendering of services
▪ Return on Equity (%)	=	Profit attributable to owners of the Company (Yearly) / Total Equity attributable to owners of the Company (Average)
▪ Return on Assets (%)	=	EBIT (Yearly) / Total Asset (Average)
▪ Current Ratio (times)	=	Current Asset / Current Liabilities
▪ Quick Ratio (times)	=	(Current Asset – Inventory) / Current Liabilities
▪ DSCR	=	EBITDA (Yearly) / (Paid for long-term debt + Financial cost)
▪ Interest Bearing Debt to Equity (times)	=	(Current portion of short-term and long-term loans from financial institutions + Debentures) / Total equity attributable to owners of the Company
▪ Net Interest bearing debt to Equity	=	(Current portion of short-term and long-term loans from financial institutions + Debentures – Cash and cash equivalents – Current investments) / Total equity attributable to owners of the Company

Note:

1/ Average Total Equity attributable to owners of the Company

- Yearly = (Total Equity attributable to owners of the Company of the year before + Total Equity attributable to owners of the Company of this year) / 2

- Quarterly = (Total Equity attributable to owners of the Company of the quarter of the year before + Total Equity attributable to owners of the Company the quarter this year) / 2

2/ Average Total Assets

- Yearly = (Total Assets of the year before + Total Assets of the Company of this year) / 2

- Quarterly = (Total Assets of the Company of the quarter of the year before + Total Assets of the Company the quarter this year) / 2

3/ The numerator of ROE is defined as the Profit attributable to owners of the Company and have to be annualized.

4/ The numerator of ROA is defined as EBIT and have to be annualized.



## 6. Environment Management Accounting (EMA)

Having the environmental concerns and social responsibilities, the Company has prepared the environmental management accounting report since 2005. The environmental cost accounting helps the Company to keep track with the information which is useful for enhancing the environmental management effectiveness, and resource utilization. The Environmental Cost Accounting report covers refinery business unit, Bangchak and Bang Pa-in Oil distribution Centre.

Unit: Million Baht

	2013	2012	Δ%
<b>Material Costs of Product Outputs</b>			
: Consist of crude oil, ethanol, bio-diesel, chemical, energy and utilities in production	140,053	106,068	32%
<b>Material Costs of Non-Product Outputs</b>			
: Consist of slop and sludge oil, waste water, chemical surplus	118	269	-56%
<b>Waste and Emission Control Costs</b>			
: Consist of maintenance cost of environmental control equipment and depreciation and other fees	184	211	-13%
<b>Prevention and Other Environmental Management Costs</b>			
: Consist of monitoring and measurement cost, environmental management system expenses	11	6	82%
<b>Benefit from by-product and waste recycling</b>			
: The revenue realization from liquid sulfur, glycerin, waste paper	(16)	(24)	35%
<b>Total Expenses</b>	<b>140,351</b>	<b>106,531</b>	<b>32%</b>

Environmental costs in 2013, in total, increased by Baht 33,811 million (+32%) from 2012. 99% of the cost were Material Costs of Product Outputs; such cost increased Baht 33,985 million (+32%) from the higher average crude run in 2013 at 99.34 KBD when compared to the 2012 crude run at 73.71 KBD. Lower crude run level in 2012 was from Refinery's shutdowns for annual maintenance and incident at CDU 3). Material costs of non-product outputs and Waste and Emission Control Costs decreased of Baht 151 million (-56%) and Baht 28 million (-13%), respectively. Prevention and Other Environmental Management Costs increased Baht 5 million (+82%) from plant fence line around the refinery boundary. Benefit from by – product and waste recycling decreased Baht 8 million (-35%) from a decrease in iron and aluminum scraps.