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## Management's Discussion and Analysis for Business Operations

### For the three-month period ended June 30, 2011

#### 1. Executive Summary

For the Second Quarter of 2011, the Consolidated Financial Statements recorded a net profit of Baht 3,021 million (EPS = 2.33 Baht per share) which can be summarized in below table

(Unit: Million Baht)	Q2 2011	Q2 2010	Q1 2011	% Change YoY	% Change QoQ
Sale Revenues	42,906	32,958	35,759	30.18%	19.99%
EBITDA	4,183	1,223	2,351	242.03%	77.92%
Net Profit	3,021	432	1,424	599.31%	112.15%
EPS (Baht)	2.33	0.37	1.14	529.73%	104.39%

For the Second Quarter of 2011, Net Profit increased by 599.31% from the same period of last year because of higher GRM, higher utilization rate and inventory gain. Moreover the Company also received the compensation from PQI contractor and a tax benefit from projects complying with BOI's criteria for reducing environmental impact and energy saving.

Progress summary of investment projects of the Company

Project	Details	Progress
<b>1. Product Quality Improvement Project</b>		
1.1 Gasoline EURO IV Project	To improve gasoline quality to meet with the EURO IV standard following the new regulation of the Ministry of Energy which will be legally effective on January 2012	The project progress has reached 80% of completion. It is expected to be completed in October 2011 and will be ready for the test run of the equipment/ machine



<b>2. Marketing Business Expansion Project</b>		
2.1 Gasohol Promotion Project	To promote and expand the use of gasohol through the increasing service stations of E20 and E85, including the sales promotion through the gasohol club card	As of the end of quarter 2, the Company's sales volume of E20 was around 10 million litres per month and sales volume of E85 was around 300,000 litres per month through 399 service stations of E20 and 17 service stations of E85.
<b>3. Renewable Energy Development Project</b>		
3.1 Solar-cell power generation plant – Solar Farm Phase 1	Installed capacity of 38 MW consisting of : <ul style="list-style-type: none"> <li>● 8 MW will be sold to the PEA</li> <li>● 30 MW will be sold to the EGAT</li> </ul>	The Commercial Operation Date (COD) of the 8 MW-installed capacity sold to the PEA will be in August 2011 and the COD of the 30 MW-installed capacity is expected to be in November 2011
3.2 Ethanol Project (Ubon Bio Ethanol Co., Ltd. /UBE)	Produce ethanol with the capacity of 400,000 litres per day. It also includes the manufacturing of cassava starch and biogas. The Company holds 21.28% of shares.	Under construction which is expected to be completed and start its COD in October 2012
3.3 Ethanol Project (Thai Agro Energy Public Co., Ltd. /TAE)	Produce ethanol with capacity of 165,000 litres per day from molasses and 200,000 litres per day from cassava.	The company has signed the Share Sale and Purchase Agreement with Lanna Resources Plc. in acquiring TAE share

## **2. Oil Price Situation**

The crude oil price in the Second Quarter of 2011 was highly fluctuated. The average crude oil price had increased from the First Quarter of 2011 by USD 10 per barrel. The main factors to support the oil price during the beginning of the quarter consisted of the election problem in Nigeria; the unrest in the Middle East and North Africa, as well as the improved economic indicators of the US which helped increased the oil demand.



However, in the beginning of May, the oil price had decreased due to the pressure of the profit taking of the investors and the concern over the public debt crisis in Europe. In addition, the IEA had announced to release 60 million barrels of oil from the emergency stocks to alleviate the problems of the supply disruption due to the civil conflict in Libya.

Toward the end of the Second Quarter of 2011, the oil price had increased. Goldman Sachs and Morgan Stanley had increased the forecasted crude oil price which was in accordance with the rising demand trend. The OPEC group also announced its decision to remain its oil production quota at 24.85 million barrels per day. In addition, the concern over the public debt of Europe had been eased due to the resolution of the Greece's Parliament to approve a five-year austerity plan, leading Greece to receive the financial support from the EU and the IMF. All the afore mentioned facts were main factors affecting the movement of oil prices through this quarter.

The table of oil prices comparison

Unit: USD/BBL

Price	Q2 2011			2010	2011	Changes	
	MAX	MIN	AVG (A)	AVG Q2 (B)	AVG Q1 (C)	(A)-(B)	(A)-(C)
DB	119.61	101.11	110.57	87.36	100.52	+23.21	+10.05
UNL95/DB	22.18	10.31	14.20	9.46	12.59	+4.74	+1.61
GO/DB	24.16	15.55	19.51	11.29	18.40	+8.22	+1.11
IK/DB	24.40	16.67	20.44	11.72	20.33	+8.72	+0.11
FO/DB	-4.34	-13.69	-8.57	-6.73	-8.69	-1.84	+0.12



### 3. Operating Result

#### 3.1 Summary of the Operating Results on consolidated basis

Statements of income	Quarter		Changes	Jan - June	
	Q2/2011	Q2/2010	+ / (-)	2011	2010
Revenue from sale of goods and rendering of services	42,906	32,958	+9,948	78,665	66,938
Cost of sale of goods and rendering of services	(38,967)	(31,678)	+7,289	(71,387)	(64,089)
<b>Gross Profit</b>	<b>3,939</b>	<b>1,280</b>	<b>+2,659</b>	<b>7,278</b>	<b>2,849</b>
Gain (loss) from crude and product oil price hedging contract	(277)	148	-425	(861)	173
Gain (loss) on foreign exchange	(319)	91	-410	(368)	310
Other income / expense	1,014	100	+914	1,285	270
Selling, General & Administrative Expense	(804)	(774)	+30	(1,686)	(1,484)
<b>Profit before finance costs and income tax expense</b>	<b>3,553</b>	<b>845</b>	<b>+2,708</b>	<b>5,647</b>	<b>2,118</b>
Financial costs	(136)	(229)	-93	(336)	(438)
Income tax expense	(389)	(174)	+215	(838)	(453)
<b>Net Profit / (Loss)</b>	<b>3,028</b>	<b>442</b>	<b>+2,586</b>	<b>4,473</b>	<b>1,228</b>
· Non-controlling interests	7	10	-3	28	21
· Equity holders of the Company	<b>3,021</b>	<b>432</b>	<b>+2,589</b>	<b>4,445</b>	<b>1,206</b>

#### Revenues

- For the First Half of 2011, revenues from sale of goods and rendering of services of the Company and its subsidiaries were Baht 78,665 million, comprised of the Company's revenues of Baht 77,824 million, Bangchak Green Net Company Limited (BGN)'s revenues of Baht 11,265 million and Bangchak Bio Fuel Company Limited (BBF)'s revenues of Baht 1,281 million. However, there was connected transaction of Baht 11,705 million which mostly associates with the sale transactions from the Company to BGN.



- For the Second Quarter 2011, revenues from sale of goods and rendering of services of the Company and its subsidiaries were Baht 42,906 million, comprised of the Company's revenues of Baht 42,442 million, Bangchak Green Net Company Limited (BGN)'s revenues of Baht 5,820 million and Bangchak Bio Fuel Company Limited (BBF)'s revenues of Baht 598 million adjusted by the connected transaction of Baht 5,954 million.

#### Cost of sale of goods and rendering of services

- For the First Half of 2011, cost of sale of goods and rendering of services of Consolidated Income Statement was Baht 71,387 million, comprising of the Company's costs of Baht 70,994 million, Bangchak Green Net Company Limited (BGN)'s costs of Baht 10,902 million and Bangchak Bio Fuel Company Limited (BBF)'s costs of Baht 1,150 million adjusted by connected transaction of Baht 11,659 million, which mostly was cost of sales of oil finished products among the Company and subsidiaries.
- For the Second Quarter 2011, cost of sale of goods and rendering of services of Consolidated Income Statement was Baht 38,967 million, comprising of the Company's costs of Baht 38,662 million, Bangchak Green Net Company Limited (BGN)'s costs of Baht 5,643 million and Bangchak Bio Fuel Company Limited (BBF)'s costs of Baht 592 million adjusted by connected transaction of Baht 5,929 million.

#### Net Profit

- For the First Half of 2011, the Consolidated Financial Statements recorded a net profit of Baht 4,473 million, which was the Company's net profit of Baht 4,436 million, Bangchak Green Net Company Limited (BGN)'s net profit of Baht 23 million and Bangchak Bio Fuel Company Limited (BBF)'s net profit of Baht 79 million but taking out the profit attributed to Non-Controlling interests of Baht 28 million, the remaining net profit to equity holders of the Company was Baht 4,445 million (EPS 3.50 Baht.)
- For the Second Quarter of 2011, the Consolidated Financial Statements recorded a net profit of Baht 3,028 million, which was the Company's net profit of Baht 2,999 million, Bangchak Green Net Company Limited (BGN)'s net profit of Baht 6 million and Bangchak Bio Fuel Company Limited (BBF)'s net profit of Baht 22 million but



taking out the profit attributed to Non-Controlling interests of Baht 7 million, the remaining net profit to equity holders of the Company was Baht 3,021 million (EPS 2.33 Baht.)

### **3.2 Analysis of the Company's Operating Results**

- For the Second Quarter of 2011, the Company has a Total Gross Integrated Margin-GIM (Gross Refining Margin-GRM and Marketing Margin-MKM) of USD 14.48 per barrel. An average crude run was 98.2 KBD increasing from 80.5 KBD in the second quarter of 2010. In this quarter, the Company's total product distribution (excluding crude oil and lubricant) was at an average of 108.02 thousand barrels per day, compared to 98.80 thousand barrels per day of same period last year. Sales through marketing business were 74.32 KBD. The Company's sales volume through service stations and industrial market increased by 16.77%, Export increased by 35.95%. Sales through PTT increased by 30.01%. However the sales volume through Jobber and others decreased.
- The revenue from sales (exclude rental rights and transportation revenues) increased by Baht 9,758 million, or increased by 29.98% due to the rise in average oil price comparing to that of last year which was around 20.18% and sales volume also increased by 8.83%. Other income had increased by Baht 846 million because the Company received the compensation from PQI contractor amount of Baht 918 million
- Cost of sale of goods and rendering of services/ Expense :
  - The cost of sale of goods increased by Baht 6,947 million or by 22.45% because of an increase in costs of crude oil, which was in the same direction of the increase in revenue from sales.
  - Loss from crude and product oil price hedging contract of Baht 277 million as analyzed in GRM Analysis Section;
  - Loss of Baht 319 million on foreign exchange. Part of it was a Mark-to-Market effect of USD 200 million Loan in which the Company had swapped the Thai Baht Loan to USD Loan (Cross Currency Swap), according to Company's policy of Natural Hedge to protect the business from exchange rate fluctuations impact.



- The Company received a tax benefit from investing in the projects that reduce environmental impact and save the energy worth of Baht 640 million. Therefore, for the First Half of 2011, the Company has the effective tax rate around 15.72%
- For the Second Quarter of 2011, The Company's net profit was Baht 2,999 million increasing from the same period of last year by Baht 2,563 million. The Company's base performance EBITDA was Baht 2,843 million. When combined with Baht 277 million losses from oil hedging transaction and Baht 1,549 million gain from inventory effect, total accounting EBITDA was Baht 4,115 million. The breakdown EBITDA by business units comparing second quarter of 2011 to second quarter of 2010 was summarized as follows:

(Unit: Million Baht)

	Q1 2011	Q1 2010	Δ	
			+ / (-)	%
■ Base Performance EBITDA	2,843	1,246	+1,597	+128.17
- Refinery business	2,426	851	+1,575	+185.08
- Marketing business	417	395	+22	+5.57
■ Gain (loss) from oil hedging	(277)	148	-425	N/A
■ Gain (loss) from inventory	1,549	(233)	+1,782	N/A
■ Total Accounting EBITDA	4,115	1,161	+2,954	+254.43
- Refinery business	3,698	766	+2,932	+382.77
- Marketing business	417	395	+22	+5.57

- **Refinery Business**

- For the Second Quarter of 2011, the Refinery Business's Base Performance EBITDA was Baht 2,426 million, an increase of Baht 1,575 million from EBITDA of the same period of last year. Total accounting EBITDA of Refinery business was Baht 3,698 million, an increase of Baht 2,932 million from the same period of last year. The Refinery Business has a Total GRM of USD 12.00 per barrel, compared to USD 5.10 per barrel in the Second Quarter of 2010. In this quarter, an average



crude run was 98.2 KBD increasing from 80.5 KBD in the Second Quarter of 2010.

GRM analysis was summarized as follows:

Unit: USD/BBL

GRM from	Q1 2011	Q1 2010	Changing +/-
Base GRM	7.32	5.46	+1.86
GRM Hedging	-0.53	0.63	-1.16
Inventory Gain/(Loss) (Include Inventory Hedging)	5.21	-0.99	+6.20
Total	12.00	5.10	+6.90

**Base GRM** The Base GRM was at high level due to the growth of the finished products demand, particularly the diesel, due to the recovery of the world's economy. As a result, the spreads of all finished products to crude except the fuel oil had increased. The spreads of the oil finished products and the benchmark crude are as follows:

Unit: USD/BBL

	Q1 2011	Q1 2010	Changing +/-
UNL95/DB	14.20	9.46	+4.74
IK/DB	20.44	11.72	+8.72
GO/DB	19.51	11.29	+8.22
FO/DB	-8.57	-6.73	-1.84

**Inventory Effect** The Company had an inventory gain (include Inventory hedging) of USD 5.21 per barrel in the Second Quarter of 2011. Because of the shift up of the annual maintenance, the Company still had the reserved crude stock at lower cost than the global crude oil price in the Second Quarter. However, there was GRM Hedging Loss of USD 0.53 per barrel because the spreads of finished products and crude oil in the second quarter of 2011 were higher than the company's hedged levels.





- **Marketing Business**

- For the Second Quarter of 2011, Marketing Business had the gross profit margin of Baht 666 million increasing from Baht 561 million during the same period of last year. EBITDA from the Marketing Business was Baht 417 million, increasing from EBITDA of the same period of last year at Baht 395 million. The Company's Marketing Margin was at Baht 0.50 per litre (equivalent to USD 2.61 per barrel) which was lower when compared to last year's marketing margin of Baht 0.59 per litre (equivalent to USD 2.90 per barrel). The sales volume through the Marketing Business in this quarter had increased from 65.1 thousand barrels per day to 74.3 thousand barrels per day. The Company's market share through service stations in the First Half of 2011 was at 13.5%, ranked the third place.

- **Operating Results by business**

(Unit: Million Baht)

	Q2/2011	Q2/2010	Δ	
			+ / (-)	%
<b>Production</b>				
● Refinery Business (KBD)	98.2	80.5	+17.7	+21.99
● Biodiesel Business B100 (KL/Day)	207.0	203.5	+3.5	+1.72
<b>Revenue from sale of goods &amp; service</b>				
● Refinery Business	41,642	31,989	+9,653	+30.18
● Marketing Business	30,391	23,631	+6,760	+28.61
● Biodiesel Business (B100)	598	522	+76	+14.56
● Connected transaction	-29,725	-23,184	-6,541	N/A
<b>EBITDA</b>				
● Refinery Business	3,698	10,841	-7,143	+382.77
● Marketing Business	417	1,460	-1,043	+5.57
● Biodiesel Business (B100)	42	54	-12	-12.22
<b>Net Profit</b>				
● Refinery Business	2,750	232	+2518	+1,095.65
● Marketing Business	249	206	+43	+20.87
● Biodiesel Business (B100)	22	33	-11	-33.33



#### 4. Analysis of the Financial Position as of June 30, 2011 compared with December 31, 2010

Unit: Million Baht

<b>Balance Sheet</b>	<b>30 June 2011</b>		<b>31 December 2010</b>	
	<b>Consolidated</b>	<b>Company</b>	<b>Consolidated</b>	<b>Company</b>
□ Total Assets, Million Baht	64,337	63,227	58,413	57,139
□ Total Liabilities, Million Baht	34,825	34,070	35,632	34,713
□ Total Equity, Million Baht	29,512	29,157	22,780	22,426

Remark : The figures shown in the table for 2011 and 2010 were adjusted to the new accounting standard which has been applied since 1 January 2011.

##### 4.1 Assets

- At the end of June 2011, Total Assets of the Company and its subsidiaries were Baht 64,337 million, which comprised of the Company's total assets of Baht 63,227 million, Bangchak Green Net Company Limited (BGN)'s total assets of Baht 794 million, Bangchak Bio Fuel Company Limited (BBF)'s total assets of Baht 1,271 million and Bangchak Solar Energy (BSE)'s total assets of Baht 150 million adjusted by connected transactions of Baht 1,105 million which was mainly Trade Account Receivable-BGN and BBF of Baht 720 million.
- The Company's Total Assets at the end of June 2011 compared to the end of 2010 increased by Baht 6,088 million or increased by 10.65%. The changes of assets were mainly from cash decreased by Baht 6,216 million (Detail is mentioned under Cash Flow Analysis Section), Net Accounts Receivable increased by Baht 1,038 million from the increasing sales, the inventories increased by Baht 5,862 million from the increasing oil price and the non-current assets increased by Baht 2,559 million from the investments in associates and subsidiaries.

##### 4.2 Liabilities

- At the end of June 2011, Total Liabilities of the Company and its subsidiaries were Baht 34,825 million, which comprised of the Company's total liabilities of Baht 34,070 million, Bangchak Green Net Company Limited (BGN)'s total liabilities of Baht 750 million, Bangchak Bio Fuel Company Limited (BBF)'s total



liabilities of Baht 752 million adjusted by connected transactions of Baht 747 million which mostly associates with the sale transactions between the Company and BGN worth of Baht 720 million.

- The Company's Total Liabilities at the end of June 2011 compared to the end of 2010 decreased by Baht 643 million. The changes of liabilities were mainly from the short-term loans increased by Baht 5,900 million, the repayment of the long-term loan of Baht 4,296 million resulting from the Loan Condition Restructure, the long-term loans drawdown of Baht 2,280 million for Solar Farm Project, the conversion of convertible debenture (CD-DR) to common share worth of Baht 1,834 million, Accounts Payable decreased by Baht 1,275 million and the other current-liabilities decreased by Baht 1,565 million.

#### **4.3 Equity**

- At the end of June 2011, the Consolidated Total Equity was Baht 29,512 million, which comprised of the Company's total equity of Baht 29,157 million, Bangchak Green Net Company Limited (BGN)'s total equity of Baht 44 million, Bangchak Bio Fuel Company Limited (BBF)'s total equity of Baht 519 million and Bangchak Solar Energy (BSE)'s total equity of Baht 150 million adjusted by connected transactions of Baht 358 million.
- The Company's Total Equity as of 30 June 2011 was Baht 29,157 million increased by Baht 6,731 million from the end of 2010. The changes in the Company's Equity were as follow;
  - The Company's net profit for the first half of 2011 was Baht 4,463 million.
  - The dividend paid to the Company's shareholders was in a total of Baht 687 million.
  - The holders of the CD-DR had exercised conversion into common shares worth Baht 1,249 million at conversion price of Baht 14.30 per common share.
  - PTT had exercised conversion CD-PTT worth Baht 585 million to common shares at conversion price of Baht 14 per common share.
  - The holders of BCP-W1 had exercised their right to purchase common shares at exercise price of Baht 18 per common share, totaling 63 million shares.



- The above mentioned CD conversion and warrant exercising led to an increase of the common shares by 193 million shares at par of Baht 1 per share, leading to an increase of Baht 193 million of the issued and paid up capital and an increase of Baht 2,789 million of the share premium.
- Therefore, as of June 30, 2011, the Company's equities were at a total of Baht 29,157 million, accounting for the book value of Baht 21.28 per share. The Company still has CDDR which can be converted into 4,753,147 common shares with the full dilution of 0.35% of the total shares.

## 5. Analysis of the Cash Flows Statement

Unit: Million Baht

	Consolidated	Company
Cash flows from operating activities	6,982	6,801
Cash used for operating assets and liabilities	(13,985)	(13,874)
Net cash used in operating activities	(7,003)	(7,073)
Net cash used in investing activities	(3,109)	(3,152)
Net cash received from financing activities	3,921	4,010
<b>Net increase (decrease) in cash and cash equivalents</b>	<b>(6,191)</b>	<b>(6,216)</b>
Cash and cash equivalents at 1 January 2011	9,109	8,504
<b>Cash and cash equivalents at 30 June 2011</b>	<b>2,918</b>	<b>2,288</b>

- For the first 6 month of 2011, the Company and its subsidiaries had Beginning Cash and Cash Equivalents of total Baht 9,109 million. During the period, Net Cash decreased from the utilizing in various activities by Baht 6,191 million, of which Baht 7,003 million was used in operating activities and Baht 3,109 million was used in Investing Activities while Baht 3,921 million were received from Financing Activities. Hence, Cash and Cash Equivalents as shown in the Consolidated Financial Statements at the end of June 2011 were Baht 2,918 million.



- The Company's cash flow came from cash beginning balance of Baht 8,504 million. During the period, the Company's cash and equivalent to cash decreased by Baht 6,216 million from the following activities:
  - The Company's cash from operation was at Baht 6,801 million
  - The Company paid cash of Baht 13,874 million for the operating assets and liabilities, mostly for the increase of inventory by Baht 5,862 million, the increase of the accounts receivable by Baht 1,038 million, the increase of the compensation from the Oil Fund by Baht 2,383 million, and the increase of other assets by Baht 717 million.
  - Accounts payable decreased by Baht 1,583 million, debt and other accrued expenses decreased by Baht 1,670 million.
  - The Company used Baht 3,152 million of cash in investment activities, such as additional investment in fixed assets-equipments worth Baht 2,323 million, share payment of Baht 150 million in subsidiaries, and share payment of Baht 763 million in affiliated companies, while receiving the dividend of Baht 84 million from Bangchak Bio Fuel Company Limited.
  - The Company received Baht 4,010 of cash from financing activities, such as the short-term loan drawdown worth Baht 5,900 million, long-term loan repayment of Baht 4,296 million resulting from the Loan Condition Restructure, and dividend payment of Baht 687 million to the Company's shareholders, and receiving Baht 1,148 million of cash from the right exercising of BCP-W1.

Therefore, as of the end of the Second Quarter of 2011, the Company's cash and cash equivalents decreased by Baht 6,216 million from the end of 2010 when the Company's cash was at Baht 8,504 million, leading to the ending cash of Baht 2,288 million.



## 6. Financial Ratio

	Q2 2011		Q2 2010	
	Consolidated	Company	Consolidated	Company
☐ Net Profit Margin, %	7.06	7.07	1.34	1.32
☐ Earning Per Share, Baht/Share	2.33	2.31	0.37	0.37
☐ Return on Equity-ROE, %	11.12	11.09	1.65	1.67
☐ ROE (excluding inventory effect), %	7.49	7.43	2.77	2.76
☐ Current Ratio , Times	1.92	1.92	1.83	1.84
☐ Debt to Equity, Times	0.73	0.72	0.86	0.85
☐ Book Value, Baht/Share	21.43	21.28	19.22	19.06

## 7. Environmental Cost Accounting

Having the environmental concerns and social responsibilities, since 2005, the Company has prepared the environmental management accounting report (production line) and also published in the Annual Sustainability Report. The environmental cost accounting helps the Company to keep track of related information, which is useful for enhancing the environmental management effectiveness, and resource utilization. The report for the Second Quarter of 2011 compared to same period of last year is summarized hereunder.

(Unit : Million Baht)	Q1 2011	Q1 2010	Change +/-
<b>Material Costs of Product Outputs</b> : Consist of crude oil, ethanol, bio-diesel, chemical, energy and utilities in production	31,872.20	20,674.63	+11,197.57
<b>Material Costs of Non-Product Outputs</b> : Consist of slop and sludge oil, waste water, chemical surplus	27.67	38.47	-10.80
<b>Waste and Emission Control Costs</b> : Consist of maintenance cost of environmental control equipments and depreciation and other fees	40.04	24.87	+15.18



(Unit : Million Baht)	Q1 2011	Q1 2010	Change +/-
<b>Prevention and Other Environmental Management Costs</b> : Consist of monitoring and measurement cost, environmental management system expenses	1.60	1.66	-0.06
<b>Benefit from by-product and waste recycling</b> : The revenue realization from liquid sulfur, glycerin, waste paper	-6.45	-4.88	+1.57

From the above table, the environmental expense in the second quarter of 2011 as a whole, increased from the second quarter of 2010 around Baht 11,201 million, or increased by 54.01%. Most of which, more than 99%, were the Material Costs of Product Outputs because the crude oil price had increased substantially in 2011 and in this quarter the average crude run also increased to 98.2 KBD which was higher than the average production capacity of the Second Quarter of last year by 17.7 KBD. However, the Material Costs of Non-Product Outputs decreased from the Second Quarter of last year by approximately Baht 10.8 million, or decreased by 28.07% due to the decrease of the slop oil which was in accordance with the decrease of the frequency of distillation unit maintenance. On the other hand, the expense for pollution controller equipment increased by 61.03%, most of which came from the depreciation of the equipment. Also, the expense for environmental protection remained almost unchanged from 2010. In addition, the revenue increased by 32.17% due to the increase of the distribution of liquid sulfur, paper, and scrap, as well as an additional revenue from the distribution of waste from production process for recycling such as lubricant, battery, and scraps of wood.