



Management's Discussion and Analysis

For the operating results of 2Q2018

Global Green Chemicals Public Company Limited

## Executive Summary

In 2Q2018, Domestic palm oil production has increased as well as in other countries, consequence to lower Crude Palm Oil (CPO) prices and Crude Palm Kernel Oil (CPKO) prices than that of 2Q2017. Under these circumstances, the government has maintained B7 mandate in this quarter, comparing to the mandate of B5 and pushed to B7 on May 8<sup>th</sup>, 2017. For Natural Fatty Alcohols (FA) market, in 2Q2018, Natural FA price was being more competitive to Synthetic FA price and supply of Natural FA was a bit dwindled due to few producers in China cut their production.

From above reasons, GGC had Methyl Ester (ME) sales volume of 90,100 tons, increased by 4,221 tons or up by 5% yoy, and FA sales volume of 30,209 tons, grew higher by 2,566 tons or up 9% yoy.

The company revenue were posted of THB 4,236 million in 2Q2018, decreased by THB 590 million or down 12% yoy because the products price were soft following CPO and CPKO price. Consequently, the company reported EBITDA of THB 137 million (down 40% yoy) because FA EBITDA margin was decreased from lower Market P2F margin. However, the company recognized profit of THB 27 million from investments in the Thai Ethoxylate Company Limited (TEX) which producing Fatty Alcohol Ethoxylate (Derivative product of FA), and was also benefited from the THB depreciation from 31.2 THB/USD in Apr 2018 to 33.2 THB/USD in Jun 2018 (depreciated by 6%). Consequently, the company posted net profit exclude extraordinary item for the period of THB 67 million, decreased by 6% yoy.

As the company disclosed NEWS to SET about the issues in the procurement process of raw materials on 29 Jun 2018 and 31 Jul 2018, the company recorded expenses from raw materials derogation amounting to THB 2,004 million and tax income from deferred tax assets from such provision amounting to THB 84 million. As a result the company had net loss for 2Q/2018 for THB 1,853 million.

As of 30 Jun 2018, The company has total assets of THB 12,842 million which comprised of cash and short-term investment amounted to THB 4,038 million; with total liabilities of THB 3,762 million; and total equities of THB 9,080 million. In this regard, The Company is still in a strong financial position with low Debt to Equity ratio and high current ratio.

## Operating Performance

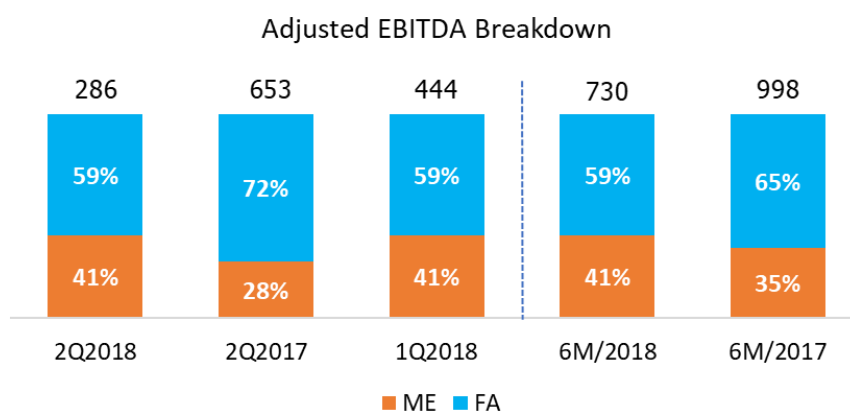
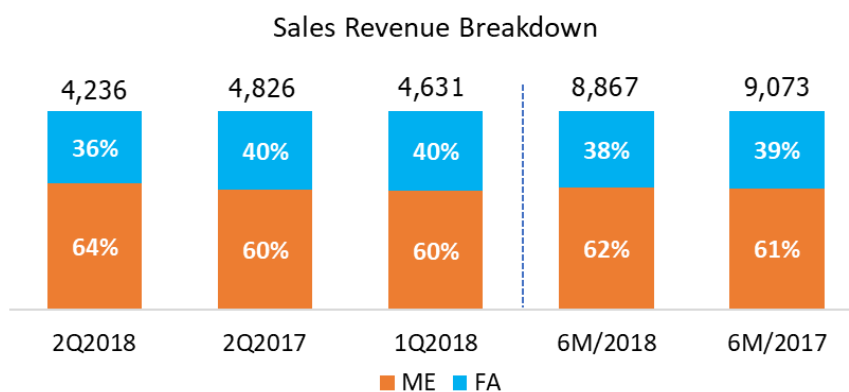
Exhibit 1 : Consolidated Company's Performance

UNIT: M THB	2Q2018	2Q2017	% yoy	1Q2018	% qoq	6M/2018	6M/2017	% yoy
Sales Revenue	4,236	4,826	-12%	4,631	-9%	8,867	9,073	-2%
EBITDA	137	228	-40%	211	-35%	348	540	-36%
EBITDA Margin (%)	3.2%	4.7%	-1.5%	4.6%	-1.4%	3.9%	6.0%	-2.1%
Stock Gain/(Loss) & NRV	-149	-425	-65%	-233	-36%	-382	-458	-17%
Adjusted EBITDA <sup>(1)</sup>	286	653	-56%	444	-36%	730	998	-27%
Adjusted EBITDA Margin (%)	6.8%	13.5%	-6.7%	9.6%	-2.8%	8.2%	11.0%	-2.8%
Net Profit ex. Extra item	67	71	-6%	64	5%	131	216	-39%
Extra item net of tax <sup>(2)</sup>	-1,920					-1,920		
Net Profit	-1,853	71	-2710%	64	-2995%	-1,789	216	-928%
EPS (THB/share)	-1.81	0.08	-2363%	0.06	-3117%	-1.75	0.26	-773%

Note : (1) Adjusted EBITDA refers to EBITDA excluding impact of Stock Gain/(Loss) and NRV

(2) Extra items were expenses from raw materials derogation amounting to THB 2,004 million net of tax income from deferred tax assets amounting to THB 84 million.

Exhibit 2 : Sales Revenue and Adjusted EBITDA breakdown by business unit comparison of 2Q2018 vs. 2Q2017 vs. 1Q2018 vs. 6M/2018 vs. 6M/2017 (million THB)



## Market Overview by business

### Methyl Ester (ME or B100)

#### Exhibit 3: Product and Feedstock Prices

Average Price	2Q2018	2Q2017	% yoy	1Q2018	% qoq	6M/2018	6M/2017	% yoy
B100 (THB/litre) <sup>(1)</sup>	25.03	29.74	-16%	24.66	2%	24.85	31.97	-22%
B100 (THB/kg.) <sup>(2)</sup>	28.94	34.38	-16%	28.51	2%	28.73	36.96	-22%
CPO (THB/kg.) <sup>(3)</sup>	20.78	25.84	-20%	20.34	2%	20.56	28.31	-27%
EPPO P2F (THB/kg) <sup>(4)</sup>	5.13	4.95	4%	5.14	0%	5.13	5.06	1%
Biodiesel Mandate	B7	B5, B7		B7		B7	B5, B7	

Note : (1) Reference Price of EPPO

(2) Conversion ratio: 0.865 Tons = 1,000 Liters

(3) Reference Price of DIT

(4) Market ME Price - Mixed Feedstock according to EPPO's B100 formula

An average of the 2Q2018 CPO (CPO-DIT) price was at 20.78 THB/kg, being lower than 2Q2017 CPO price by 5.06 THB/kg or down 20% yoy. This was led by domestic palm oil inventory surplus more than 400,000 tons in 2Q2018, while, in the past, Thailand used to have an average palm oil inventory level of 200,000 - 250,000 tons. For ME domestic demand in 2Q2018, it is estimated approximately at 339,000 tons, increased by 21,000 tons or up 7% yoy, which was resulted from mandate of B7 that has been applied since May 8<sup>th</sup>, 2017. As CPO price dropped in 2Q2018, ME price was reported at 28.94 THB/kg, decreased by 5.44 THB/kg or down 16% yoy.

On qoq basis, CPO price in 2Q2018 was improved by 0.44 THB/kg to 20.78 THB/kg. As a result, ME price in 2Q2018 was at 28.94 THB/kg, increased by 0.43 THB/kg. On the demand side, ME domestic demand in 2Q2018 declined by 36,000 tons or 10% qoq to 339,000 tons from 1Q2018's, mainly due to lower diesel consumption from transportation sector in rainy season.

In 2Q2018, EPPO P2F (the difference between EPPO ME price and mixed feedstock prices) was a bit increased by 0.18 THB/kg yoy due to higher Methanol price which is a part of ME EPPO Price formula. On the qoq basis, EPPO P2F was flat.

For 6M/2018 vs. 6M/2017, CPO price was declined due to increasing of palm production and stock, EPPO P2F was also increased due to higher of Methanol price.

## Fatty Alcohols

Exhibit 4 : Products and Feedstocks' prices

Average Price (USD per ton)	2Q2018	2Q2017	% yoy	1Q2018	% qoq	6M/2018	6M/2017	% yoy
Natural FA <sup>(1)</sup>								
- Short Chain	3,845	3,318	16%	3,618	6%	3,731	3,264	14%
- Mid Cut	1,402	1,802	-22%	1,796	-22%	1,599	2,154	-26%
- Long Chain	1,310	1,336	-2%	1,271	3%	1,291	1,389	-7%
Average Natural FA <sup>(2)</sup>	1,570	1,783	-12%	1,784	-12%	1,677	2,013	-17%
CPKO <sup>(3)</sup>	921	999	-8%	1,138	-19%	1,029	1,258	-18%
FA Market P2F	465	584	-20%	419	11%	442	504	-12%

Note : (1) Reference Price of ICIS

(2) Average price of Fatty Alcohols with production proportion: Short Chain 8% Mid Cut 62% and Long Chain 30%

(3) Reference Price of Malaysian Palm Oil Board (MPOB)

CPKO MPOB price in 2Q2018 was at 921 USD/ton, decreased by 78 USD/ton or 8% yoy and decreased by 217 USD/ton or 19% qoq. This was due to the fact that palm oil production was flooded into market after El nino effect elapsed, which consequence to the continuous growth of palm oil inventory. Furthermore, some countries have raised import duties for palm oil which have diminished market demand.

Natural FA demand improved from 2Q2017, mainly due to downward pricing trend of Natural FA to be lower than Synthetic FA because of downward pricing trend of CPKO. In addition, Natural FA supply was a bit tight because few producers in China reduced their utilization due to CPKO price volatility. Whereas, the demand in this quarter was higher qoq, primarily after the low seasonal demand from Chinese New Year.

FA Market P2F in 2Q2018 was at 465 USD/ton, decreased by 119 USD/ton or 20% yoy because CPKO price in Q2/2017 was sharply drop while Natural FA price was slower declined than CPKO. Comparing to 1Q2018, Market P2F of FA was improved by 46 USD/ton or up 11% qoq, attributable to the supply and demand situation.

For 6M/2018 vs. 6M/2017, CPKO price was declined due to increasing of palm production and stock and, FA Market P2F was also declined.

## Operating Performance by business unit

### Methyl Ester (ME) Business Unit Operating Performance

#### Exhibit 5 : Keys Operating Performance of ME Business Unit

	2Q2018	2Q2017	% yoy	1Q2018	% qoq	6M/2018	6M/2017	% yoy
Utilization (%) <sup>(1)</sup>	108%	106%	2%	119%	-11%	113%	96%	17%
Sales Volume (ton)	90,100	85,879	5%	102,754	-12%	192,854	155,084	24%
Sales Volume (M litre) <sup>(2)</sup>	104	99	5%	119	-13%	223	179	25%
Sales Revenue (M THB)	2,690	2,903	-7%	2,774	-3%	5,464	5,546	-1%
EBITDA (M THB)	106	65	63%	163	-35%	269	196	37%
EBITDA margin (%)	3.9%	2.2%	1.7%	5.9%	-2.0%	4.9%	3.5%	1.4%
Stock G/L & NRV (M THB)	-10	-117	-91%	-17	-41%	-27	-149	-82%
Adjusted EBITDA (M THB) <sup>(3)</sup>	116	182	-36%	180	-36%	296	345	-14%
Adjusted EBITDA Margin (%)	4.3%	6.3%	-2.0%	6.5%	-2.2%	5.4%	6.2%	-0.8%

Note : (1) Nameplate Capacity 300,000 Tons per year

(2) Conversion ratio: 0.865 Tons = 1,000 Liters

(3) Adjusted EBITDA refers to EBITDA excluding impact of Stock Gain/(Loss) and NRV

#### Operating performance comparison between 2Q2018 vs. 2Q2017

In 2Q2018, the company reported ME revenue of THB 2,690 million (down 7% yoy) resulting from ME price drop follow CPO price softness, though the company had higher ME sale volume of 5% yoy due to biodiesel mandate B7 vs. B5 and B7 in 2Q2017. And as a result of CPO price softness, the company could source less competitive CPO price, and also had stock loss & NRV of THB 10 million while in 2Q2017 the company had got stock loss & NRV of THB 117 million due to rapidly declined of CPO price. As a result, the company reported EBITDA of THB 106 million (up 63% yoy), and had Adjusted EBITDA of THB 116 million (down 36% yoy).

#### Operating performance comparison between 2Q2018 vs. 1Q2018

The company's ME revenue was decreased by 3% qoq, because the company was able to sell ME sale volume of 90,100 tons which was less than 1Q2018 by 12% mainly due to raining season and no additional ME sale volume that government asking fuel traders M.7 for collaboration to stock more of ME inventory. Therefore, the company reported EBITDA of THB 106 million declined by 35% qoq. In addition, the company recognized lower stock loss & NRV than previous quarter by THB 7 million due to slowing pace of downward trend of CPO prices. Therefore, the company had Adjusted EBITDA of ME, THB 116 million (down 36% qoq).

### Operating performance comparison between 6M2018 vs. 6M2017

In 6M2018, the company reported ME revenue of THB 5,464 million (down 1% yoy) resulting from ME price drop follow CPO price softness, though the company had higher ME sale volume of 24% yoy due to biodiesel mandate B7 vs. B5 and B7 in 6M2017 and the government asking fuel traders M.7 for collaboration to stock more of ME inventory in 1Q2018. And as a result of CPO price softness, the company could source less competitive CPO price, and also had got stock loss & NRV of THB 27 million while in 6M2017 the company had got stock loss & NRV of THB 149 million due to rapidly declined of CPO price. As a result, the company reported EBITDA of THB 269 million (up 37% yoy), and had Adjusted EBITDA of THB 296 million (down 14% yoy).

### Fatty Alcohol (FA) Business Unit Operating Performance

*Exhibit 6 : Keys Operating Performance of FA Business Unit*

	2Q2018	2Q2017	% yoy	1Q2018	% qoq	6M/2018	6M/2017	% yoy
Utilization (%)	120%	113%	7%	101%	19%	110%	101%	9%
Sales Volume (Ton)	30,209	27,643	9%	24,235	25%	54,444	47,533	15%
Revenue from Sales (M THB)	1,546	1,923	-20%	1,857	-17%	3,403	3,527	-4%
EBITDA (M THB)	31	163	-81%	48	-35%	79	343	-77%
EBITDA margin(%)	2.0%	8.5%	-6.5%	2.6%	-0.6%	2.3%	9.7%	-7.4%
Stock G/L & NRV (M THB)	-139	-308	-55%	-216	-36%	-355	-309	15%
Adjusted EBITDA (M THB) <sup>(1)</sup>	170	471	-64%	264	-36%	434	652	-33%
Adjusted EBITDA Margin (%)	11.0%	24.5%	-13.5%	14.2%	-3.2%	12.8%	18.5%	-5.7%

Note : (1) Adjusted EBITDA refers to EBITDA excluding impact of Stock Gain/(Loss) and NRV

### Operating performance comparison between 2Q2018 vs. 2Q2017

FA revenues recorded THB 1,546 million in 2Q2018 (down 20% yoy), attributed to Natural FA prices drop follow CPKO price movement though the company was able to sell FA sales volume of 30,209 tons (up 9% yoy). In addition, the company recorded stock loss & NRV of THB 139 million, pressured by downward trend of CPKO prices. As a result, EBITDA were recorded at THB 31 million (down 81% yoy), while Adjusted EBITDA were recorded at THB 170 million (down 64% yoy) which reflected to lower FA Market P2F.

### Operating performance comparison between 2Q2018 vs. 1Q2018

On qoq basis, 2Q2018 FA sales revenues was posted THB 1,546 million (down 17% qoq) attributed to Natural FA prices drop follow CPKO price movement and lessen of trading good revenue, though the company was able to sell FA sales volume of 30,209 tons (up 25% yoy). However, the company recognized

stock loss & NRV of THB 139 million decreased 36% qoq. In summary, the company reported EBITDA of THB 31 million (down 35% qoq) and Adjusted EBITDA of THB 170 million (down 36% qoq).

#### [Operating performance comparison between 6M2018 vs. 6M2017](#)

FA revenues recorded THB 3,403 million in 6M/2018 (down 4% yoy), attributed to Natural FA prices drop follow CPKO price movement though the company was able to sell FA sales volume of 54,444 tons (up 15% yoy). In addition, the company recorded stock loss & NRV of THB 355 million (up 15% yoy), pressured by downward trend of CPKO prices. As a result, EBITDA was recorded at THB 79 million (down 77% yoy), while Adjusted EBITDA was recorded at THB 434 million (down 33% yoy).



**Consolidated Profit & Loss statement**

Exhibit 7 : Consolidated Profit &amp; Loss Statement comparison of 2Q2018, 2Q2017 and 1Q2018

	2Q2018		2Q2017		yoy		1Q2018		qoq	
	MB	%	MB	%	MB	%	MB	%	MB	%
<b>Sale Revenue</b>	4,236	100	4,826	100	(590)	(12)	4,631	100	(395)	(9)
Feedstock	(3,285)	(78)	(3,540)	(73)	255	(7)	(3,522)	(76)	237	(7)
Net Realizable Value (NRV)	0	-	(19)	(0)	19	(100)	2	0	(2)	(100)
<b>Product to Feed Margin</b>	<b>951</b>	<b>22</b>	<b>1,267</b>	<b>26</b>	<b>(316)</b>	<b>(25)</b>	<b>1,111</b>	<b>24</b>	<b>(160)</b>	<b>(14)</b>
Variable Costs	(485)	(11)	(421)	(9)	(64)	15	(495)	(11)	10	(2)
Fixed Costs	(130)	(3)	(137)	(3)	7	(5)	(126)	(3)	(4)	3
Stock Gain/(Loss)	(149)	(4)	(407)	(8)	258	(63)	(235)	(5)	86	(37)
SG&A	(83)	(2)	(85)	(2)	2	(2)	(72)	(2)	(11)	15
Other Income	33	1	11	0	22	200	28	1	5	18
<b>EBITDA</b>	<b>137</b>	<b>3</b>	<b>228</b>	<b>5</b>	<b>(91)</b>	<b>(40)</b>	<b>211</b>	<b>5</b>	<b>(74)</b>	<b>(35)</b>
Depreciation and Amortization	(133)	(3)	(141)	(3)	8	(6)	(139)	(3)	6	(4)
<b>EBIT</b>	<b>4</b>	<b>0</b>	<b>87</b>	<b>2</b>	<b>(83)</b>	<b>(95)</b>	<b>72</b>	<b>2</b>	<b>(68)</b>	<b>(94)</b>
Net Financial Costs	(8)	(0)	(15)	(0)	7	(47)	(5)	(0)	(3)	60
FX Gain/Loss <sup>(1)</sup>	44	1	(26)	(1)	70	(269)	(27)	(1)	71	(263)
Share of Profit/(Loss) from investment	27	1	16	0	11	69	20	0	7	35
Income Tax Expenses	0	-	9	0	(9)	(100)	4	0	(4)	(100)
<b>Net Profit bef extra items</b>	<b>67</b>	<b>2</b>	<b>71</b>	<b>1</b>	<b>(4)</b>	<b>(6)</b>	<b>64</b>	<b>1</b>	<b>3</b>	<b>5</b>
Extra item net of tax <sup>(2)</sup>	(1,920)	(45)	-	-	(1,920)	na.	-	-	(1,920)	na.
<b>Net Profit after extra items</b>	<b>(1,853)</b>	<b>(44)</b>	<b>71</b>	<b>1</b>	<b>(1,924)</b>	<b>(2,710)</b>	<b>64</b>	<b>1</b>	<b>(1,917)</b>	<b>(2,995)</b>

Notes : (1) Including Gain/(Loss) from FX and Derivatives

(2) Extra items were expenses from raw materials derogation amounting to THB 2,004 million net of tax income from deferred tax assets amounting to THB 84 million.

Exhibit 8 : Consolidated Profit &amp; Loss Statement comparison of 6M2018 and 6M2017

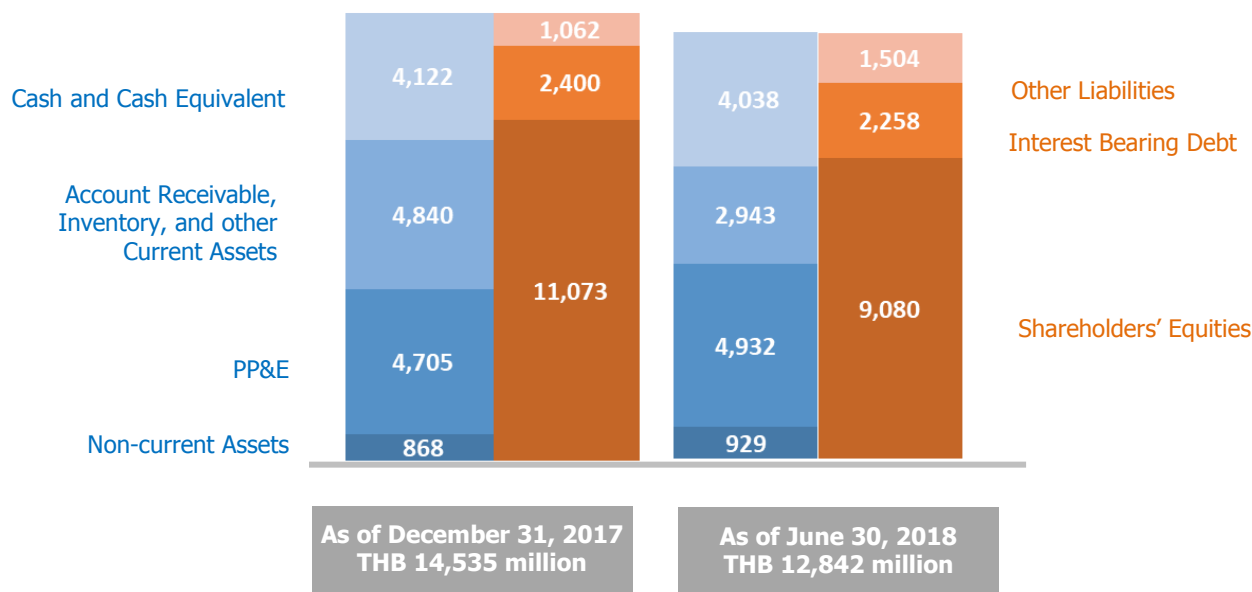
	6M2018		6M2017		yoy	
	MB	%	MB	MB	%	MB
Sale Revenue	8,867	100	9,073	100	(206)	(2)
Feedstock	(6,807)	(77)	(6,886)	(76)	79	(1)
Net Realizable Value (NRV)	2	0	(19)	(0)	21	(111)
<b>Product to Feed Margin</b>	<b>2,062</b>	<b>23</b>	<b>2,168</b>	<b>24</b>	<b>(106)</b>	<b>(5)</b>
Variable Costs	(980)	(11)	(776)	(9)	(204)	26
Fixed Costs	(256)	(3)	(276)	(3)	20	(7)
Stock Gain/(Loss)	(384)	(4)	(440)	(5)	56	(13)
SG&A	(155)	(2)	(155)	(2)	-	-
Other Income	61	1	21	0	40	190
<b>EBITDA</b>	<b>348</b>	<b>4</b>	<b>540</b>	<b>6</b>	<b>(192)</b>	<b>(36)</b>
Depreciation and Amortization	(272)	(3)	(278)	(3)	6	(2)
<b>EBIT</b>	<b>76</b>	<b>1</b>	<b>261</b>	<b>3</b>	<b>(185)</b>	<b>(71)</b>
Net Financial Costs	(13)	(0)	(37)	(0)	24	(65)
FX Gain/Loss <sup>(1)</sup>	17	0	(51)	(1)	68	(133)
Share of Profit/(Loss) from investment	47	1	46	1	1	2
Income Tax Expenses	4	0	(3)	(0)	7	(233)
<b>Net Profit bef extra items</b>	<b>131</b>	<b>1</b>	<b>216</b>	<b>2</b>	<b>(85)</b>	<b>(39)</b>
Extra item net of tax <sup>(2)</sup>	(1,920)	(22)	-	-	(1,920)	na.
<b>Net Profit after extra items</b>	<b>(1,789)</b>	<b>(20)</b>	<b>216</b>	<b>2</b>	<b>(2,005)</b>	<b>(928)</b>

Notes : (1) Including Gain/(Loss) from FX and Derivatives

(2) Extra items were expenses from raw materials derogation amounting to THB 2,004 million net of tax income from deferred tax assets amounting to THB 84 million.

## Statement of Financial Position

Exhibit 9 : Consolidated Financial Position as of June 30, 2018 and as of December 31, 2017



### Assets

As of Jun 30, 2018, the company had total assets of THB 12,842 million, decreased from Dec 31, 2017 by THB 1,693 million due to reasons as follow:

- a decrease from current assets of THB 1,982 million, which was mainly due to decreasing of account receivable of THB 579 million as a result of ME and FA Sales volume declined from end of last year and Natural FA price declined; a decreasing of inventory of THB 1,253 million from expenses from raw materials derogation;

- an increase of non-current assets of THB 289 million, which was mainly due to increasing of PP&E value of THB 536 million which came from investment in ME2 project, offsetting by depreciation of PP&E of THB 235 million.

### Liabilities

As of Jun 30, 2018, the company had total liabilities of THB 3,762 million, increased from Dec 31, 2017 by THB 300 million or 9%, mainly attributable to increasing of higher accounts payable and decreasing of long term loan from financial institution.

### Shareholder's equities

As of Jun 30, 2018, the company had total shareholders' equities of THB 9,080 million, decreased from Dec 31, 2017 by THB 1,993 million or 18% due to 6M/2018 net loss.

### Statement of Cash Flows

As of Jun 30, 2018 the company had cash and cash equivalent THB 4,038 million decreased from Dec 31, 2017 by THB 84 million. The company had cash from operating activities of THB 745 million which included 1) cash from net profit before extra item of THB 131 million , and other operating activities of THB 607 million which attributable to a decrease from accounts receivable; 2) Cash flow spent for investing activities of THB 483 million , which was spent on obtaining PP&E for THB 543 million, mainly due to investment in ME2 project and receiving of dividend from TEX amounting to THB 91 million ; and 3) Cash Flow spent for financing activities of THB 384 million , which was from annual dividend payment, long-term loan principal repayment and interest payment.

### Key Financial Ratios

Exhibit 10 : Key Financial Ratios comparison of 2Q2018 vs. 2Q2017 vs. 1Q2018

	2Q2018	2Q2017	1Q2018
Current ratio(x)	4.0	7.0	7.5
EBITDA to sales revenue(%)	3.2	4.7	4.6
Net profit to sales revenue(%)	(43.7)	1.5	1.4
Return on total assets(%)	(10.5)	4.6	3.0
Return on equity(%)	(14.1)	6.5	4.0
Debt to equity(x)	0.4	0.3	0.3
Interest bearing debt to equity(x)	0.2	0.2	0.2
Interest bearing debt to EBITDA(x)	2.4	2.2	2.3

<b>Notes :</b> Current Ratio(Times)	=	Current assets divided by current liabilities
EBITDA to sales revenue(%)	=	EBITDA divided by sales revenue
Net Profit to sales revenue(%)	=	Net profit divided by sales revenue
Return on total assets(%)	=	Net profit divided by average total assets
Return on equity(%)	=	Net profit divided by average equities attributable to owners of the company
Debt to equity(Times)	=	Total debt divided by shareholders' equities
Interest bearing debt to equity(Times)	=	Interest bearing debt divided by shareholders' equities
Interest bearing debt to EBITDA(Times)	=	Interest bearing debt divided by EBITDA