## Solution Parther

## 4Q 2018 Business Results <br> \& Outlook



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The business results currently under audit review are presented here for investors' convenience. Hence, please be advised that some of their contents may be altered in the course of audit.

The business results are subject to the K-IFRS(Korea International Financial Reporting Standards).

Forecasts and projections contained in this material are based on current business environments and management's strategies. Please note it may differ from actual results, due to uncertainties including changes in the future business environment and recalibration of strategy.

## 2018 Business Results



## 4Q 2018 Business Results

|  | 2017 |  |  |  |  |  | (Unit:KRW bn) |
| :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: |
|  |  | 2018 |  |  |  | YoY | QoQ |
|  | 4Q | 1Q | 2Q | 3Q | 4Q |  |  |
| Sales | 6,432 | 6,554 | 7,052 | 7,235 | 7,343 | +14.2\% | +1.5\% |
| $\begin{aligned} & \text { OP } \\ & \text { (\%) } \end{aligned}$ | $\begin{array}{r} 615 \\ 9.6 \% \end{array}$ | $\begin{array}{r} 651 \\ 9.9 \% \end{array}$ | $\begin{array}{r} 703 \\ 10.0 \% \end{array}$ | $\begin{array}{r} 602 \\ 8.3 \% \end{array}$ | $\begin{array}{r} 290 \\ 3.9 \% \end{array}$ | -52.9\% | -51.9\% |
| EBITDA <br> (\%) | $\begin{array}{r} 972 \\ 15.1 \% \end{array}$ | $\begin{gathered} 1,006 \\ 15.3 \% \end{gathered}$ | $\begin{gathered} 1,065 \\ 15.1 \% \end{gathered}$ | $\begin{array}{r} 975 \\ 13.5 \% \end{array}$ | $\begin{array}{r} 684 \\ 9.3 \% \end{array}$ | -29.6\% | -29.9\% |
| Pre-tax Income (\%) | $\begin{array}{r} 434 \\ 6.7 \% \end{array}$ | $\begin{array}{r} 653 \\ 10.0 \% \end{array}$ | $\begin{array}{r} 644 \\ 9.1 \% \end{array}$ | $\begin{array}{r} 485 \\ 6.7 \% \end{array}$ | $\begin{array}{r} 158 \\ 2.1 \% \end{array}$ | -63.7\% | -67.5\% |
| Net Income (\%) | $\begin{array}{r} 338 \\ 5.3 \% \end{array}$ | $\begin{array}{r} 553 \\ 8.4 \% \end{array}$ | $\begin{array}{r} 493 \\ 7.0 \% \end{array}$ | $\begin{array}{r} 347 \\ 4.8 \% \end{array}$ | $\begin{array}{r} 127 \\ 1.7 \% \end{array}$ | -62.6\% | -63.5\% |

## 4Q 2018 Business Results

## Balance Sheet

## Financial Ratios

|  |  |  |  |  |
| :--- | ---: | ---: | ---: | ---: | (Unit:KRW tn)


|  | 2016 | 2017 | 2018 | YoY |
| :--- | ---: | ---: | ---: | ---: |
| Debt / Equity | $20.6 \%$ | $18.6 \%$ | $30.7 \%$ | $+12.1 \% p$ |
| Net Debt / <br> Equity | $4.9 \%$ | $1.6 \%$ | $16.0 \%$ | $+14.4 \% p$ |
| Interest <br> Coverage <br> Ratio (x) | 25.9 | 29.3 | 16.6 | -12.7 |
| ROE | $9.4 \%$ | $13.3 \%$ | $9.0 \%$ | $-4.3 \% p$ |
| ROA | $6.6 \%$ | $8.9 \%$ | $5.6 \%$ | $-3.3 \% p$ |

※ ROE: Annualized net profit / Avg of beginning \& ending shareholders' equity ROA: Annualized net profit / Avg of beginning \& ending assets

## Results \& Outlook by Business

| Sales | 4,297 | 4,359 | 4,671 | 4,649 | (Unit:KRW bn) $4.357$ |
| :---: | :---: | :---: | :---: | :---: | :---: |
|  |  |  | 30\% | 30\% |  |
| ■ NCC/PO | 28\% | 28\% |  |  | 27\% |
| - PVC/Plasticizer | 12\% | 13\% | 13\% | 13\% | 14\% |
| - ABS | 26\% | 26\% | 29\% | 28\% | 28\% |
| - EP | 7\% | 7\% | 8\% | 8\% | 7\% |
| - Acrylate/SAP | 9\% | 9\% | 10\% | 10\% | 11\% |
| Rubber/ | 9\% | 9\% | 10\% | 11\% | 12\% |
| Speciaity Polymers | 4Q 17 | 1Q 18 | 2Q 18 | 3Q 18 | 4Q 18 |
| Operating Profit <br> (\%) | $\begin{gathered} 634 \\ (14.7 \%) \end{gathered}$ | $\begin{gathered} 637 \\ (14.6 \%) \end{gathered}$ | $\begin{gathered} 705 \\ (15.1 \%) \end{gathered}$ | $\begin{gathered} 548 \\ (11.8 \%) \end{gathered}$ | $\begin{gathered} 242 \\ (5.6 \%) \end{gathered}$ |

[Analysis]

- Decreased profitability due to decline in demand and lagging impact of feedstock
- Relatively solid profitability in PVC and Acrylate/SAP
[Outlook]
- Despite uncertainties of demand, the profitability is expected to gradually improve because of the stabilization in feedstock price


## Results \& Outlook by Business


[Analysis]

- Energy Solution: Posted the highest quarterly sales with increased sales in EV battery
- I\&E Materials: Increased revenue due to seasonality despite decreased profitability caused by decline in price
[Outlook]
- Energy Solution: Sales and profitability are expected to grow in 2019 while $1^{\text {st }}$ half would be slowed down
- I\&E Materials: Profitability is expected to improve due to converting to premium products


## Results \& Outlook by Business



## [Analysis]

- Life Sciences: Increased sales due to expansion of sales in YVOIRE and Eupenta
- Farm Hannong: Increased YoY sales due to expansion of exports
[Outlook]
- Life Sciences: Increases sales of major products and strengthens R\&D of new drug development
- Farm Hannong: Profitability is expected to improve due to converting to premium products


## 2019 Business Outlook


※ Business outlook and CAPEX are based on our business plan, and may differ from actual results, due to changes in business environment and strategies.
The difference between total sales and total sales by business is intra-company transactions, sales in common business, etc.

| LG CHEM | 2016 |  |  |  |  | 2017 |  |  |  |  | 2018 |  |  |  |  |
| :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: |
|  | 10 | 2Q | 3Q | 4Q |  | $1 Q$ | 2Q | 3Q | 4Q |  | 1Q | 2Q | 3Q | 4Q |  |
| Sales | 4,874 | 5,219 | 5,054 | 5,512 | 20,659 | 6,487 | 6,382 | 6,397 | 6,432 | 25,698 | 6,554 | 7,052 | 7,235 | 7,343 | 28,183 |
| Operating Profits | 458 | 613 | 460 | 462 | 1,992 | 797 | 727 | 790 | 615 | 2,929 | 651 | 703 | 602 | 290 | 2,246 |
| (\%) | 9.4\% | 11.7\% | 9.1\% | 8.4\% | 9.6\% | 12.3\% | 11.4\% | 12.3\% | 9.6\% | 11.4\% | 9.9\% | 10.0\% | 8.3\% | 3.9\% | 8.0\% |
| EBITDA | 780 | 946 | 797 | 805 | 3,327 | 1,151 | 1,074 | 1,137 | 972 | 4,335 | 1,006 | 1,065 | 975 | 684 | 3,730 |
| (\%) | 16.0\% | 18.1\% | 15.8\% | 14.6\% | 16.0\% | 17.8\% | 16.8\% | 17.8\% | 15.1\% | 16.9\% | 15.3\% | 15.1\% | 13.5\% | 9.3\% | 13.2\% |
| Basic Materials \& Chemicals | 3,512 | 3,653 | 3,525 | 3,758 | 14,447 | 4,495 | 4,319 | 4,316 | 4,297 | 17,427 | 4,359 | 4,671 | 4,649 | 4,357 | 18,036 |
| NCC/PO | 1,156 | 1,221 | 1,131 | 1,161 | 4,669 | 1,362 | 1,291 | 1,246 | 1,323 | 5,222 | 1,326 | 1,401 | 1,386 | 1,183 | 5,296 |
| PVC/Plasticizer | 489 | 508 | 496 | 542 | 2,035 | 588 | 572 | 560 | 568 | 2,288 | 605 | 596 | 611 | 622 | 2,434 |
| ABS | 877 | 920 | 867 | 948 | 3,611 | 1,216 | 1,185 | 1,261 | 1,214 | 4,876 | 1,233 | 1,357 | 1,304 | 1,209 | 5,102 |
| EP | 298 | 299 | 304 | 308 | 1,210 | 332 | 307 | 357 | 347 | 1,343 | 347 | 372 | 374 | 341 | 1,434 |
| Acrylate/SAP | 345 | 331 | 357 | 391 | 1,424 | 435 | 427 | 425 | 420 | 1,706 | 427 | 468 | 477 | 495 | 1,868 |
| Rubber/ Specialty Polymer | 347 | 374 | 370 | 408 | 1,499 | 563 | 537 | 467 | 424 | 1,991 | 420 | 478 | 497 | 508 | 1,903 |
| Operating Profits | 466 | 649 | 517 | 506 | 2,139 | 734 | 686 | 755 | 634 | 2,808 | 637 | 705 | 548 | 242 | 2,131 |
| (\%) | 13.3\% | 17.8\% | 14.7\% | 13.5\% | 14.8\% | 16.3\% | 15.9\% | 17.5\% | 14.7\% | 16.1\% | 14.6\% | 15.1\% | 11.8\% | 5.6\% | 11.8\% |
| Energy Solutions | 814 | 809 | 879 | 1,059 | 3,562 | 999 | 1,120 | 1,189 | 1,253 | 4,561 | 1,245 | 1,494 | 1,704 | 2,077 | 6,520 |
| Operating Profits | -0 | -31 | -14 | -4 | -49 | -10 | 8 | 18 | 14 | 29 | 2 | 27 | 84 | 96 | 209 |
| (\%) | -0.0\% | -3.9\% | -1.6\% | -0.3\% | -1.4\% | -1.0\% | 0.7\% | 1.5\% | 1.1\% | 0.6\% | 0.2\% | 1.8\% | 4.9\% | 4.6\% | 3.2\% |
| I\&E Materials | 627 | 650 | 641 | 739 | 2,656 | 725 | 747 | 787 | 801 | 3,061 | 759 | 765 | 847 | 902 | 3,273 |
| Operating Profits | -8 | -15 | -16 | -16 | -55 | 29 | 23 | 41 | 18 | 112 | -10 | -22 | 12 | -9 | -28 |
| (\%) | -1.3\% | -2.2\% | -2.5\% | -2.2\% | -2.1\% | 4.0\% | 3.1\% | 5.2\% | 2.2\% | 3.6\% | -1.3\% | -2.9\% | 1.4\% | -0.9\% | -0.9\% |
| Life Sciences | 120 | 131 | 135 | 147 | 532 | 129 | 135 | 139 | 148 | 552 | 131 | 151 | 135 | 158 | 575 |
| Operating Profits | 17 | 11 | 10 | 9 | 47 | 21 | 19 | 13 | 1 | 54 | 7 | 16 | 13 | 14 | 50 |
| (\%) | 14.3\% | 8.1\% | 7.5\% | 6.4\% | 8.9\% | 15.9\% | 14.0\% | 9.5\% | 0.6\% | 9.7\% | 5.3\% | 10.5\% | 9.8\% | 8.6\% | 8.6\% |
| Farm Hannong | 242 | 189 | 87 | 50 | 568 | 254 | 186 | 97 | 68 | 604 | 237 | 188 | 92 | 83 | 600 |
| Operating Profits | 39 | -2 | -20 | -31 | -15 | 50 | 14 | -10 | -19 | 36 | 45 | 11 | -19 | -23 | 15 |
| (\%) | 15.9\% | -1.2\% | -23.3\% | -61.1\% | -2.6\% | 19.8\% | 7.3\% | -10.0\% | -27.9\% | 5.9\% | 19.2\% | 6.1\% | -20.4\% | -27.3\% | 2.6\% |

## Appendix



## Appendix

|  | 2016 |  |  |  |  | 2017 |  |  |  |  | 2018 |  |  |  |  |
| :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: |
|  | 1Q | 2Q | 3Q | 4Q |  | 1Q | 2Q | 3Q | 4Q |  | 1Q | 2Q | 3Q | 4Q |  |
| Sales | 4,874 | 5,219 | 5,054 | 5,512 | 20,659 | 6,487 | 6,382 | 6,397 | 6,432 | 25,698 | 6,554 | 7,052 | 7,235 | 7,343 | 28,183 |
| Cost of Sales | 3,940 | 4,074 | 4,091 | 4,490 | 16,595 | 5,073 | 5,011 | 4,940 | 5,110 | 20,135 | 5,212 | 5,580 | 5,868 | 6,177 | 22,837 |
| Gross Profit(\%) | 934 | 1,145 | 963 | 1,022 | 4,064 | 1,414 | 1,371 | 1,457 | 1,322 | 5,564 | 1,342 | 1,472 | 1,367 | 1,166 | 5,346 |
|  | 19.2\% | 21.9\% | 19.0\% | 18.5\% | 19.7\% | 21.8\% | 21.5\% | 22.8\% | 20,6\% | 21.6\% | 20.5\% | 20.9\% | 18.9\% | 15.9\% | 19.0\% |
| SG\&A Expenses | 477 | 532 | 503 | 561 | 2,072 | 617 | 644 | 667 | 707 | 2,635 | 691 | 768 | 765 | 876 | 3,100 |
| Operating Profit (\%) | 458 | 613 | 460 | 462 | 1,992 | 797 | 727 | 790 | 615 | 2,929 | 651 | 703 | 602 | 290 | 2,246 |
|  | 9.4\% | 11.7\% | 9.1\% | 8.4\% | 9.6\% | 12.3\% | 11.4\% | 12.3\% | 9.6\% | 11.4\% | 9.9\% | 10.0\% | 8.3\% | 3.9\% | 8.0\% |
| Other non-operating income(expenses) | (35) | (112) | - (81) | (104) | (332) | (99) | 3 | (87) | (181) | (365) | 2 | (59) | (117) | (132) | (306) |
| Income before tax | 423 | 500 | 379 | 358 | 1,660 | 698 | 730 | 702 | 434 | 2,564 | 653 | 644 | 485 | 158 | 1,940 |
| Net Income | 338 | 376 | 297 | 270 | 1,281 | 548 | 590 | 546 | 338 | 2,022 | 553 | 493 | 347 | 127 | 1,519 |
| EPS(Unit:KRW) | 4,619 | 5,124 | 4,019 | 3,655 | 17,417 | 6,936 | 7,531 | 6,799 | 4,101 | 25,367 | 6,934 | 6,234 | 4,481 | 1,568 | 19,217 |

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|  | 2016 |  |  |  | 2017 |  |  |  | 2018 |  |  |  |
| :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: |
|  | 1Q | 2Q | 3Q | 4Q | 1Q | 2Q | 3Q | 4Q | 1Q | 2Q | 3Q | 4Q |
| Assets | 18,860 | 19,826 | 20,040 | 20,487 | 22,171 | 22,671 | 23,708 | 25,041 | 26,416 | 27,399 | 28,419 | 28,944 |
| Cash and Equivalents | 3,164 | 2,649 | 2,878 | 2,207 | 1,909 | 2,107 | 2,400 | 2,779 | 3,132 | 2,830 | 3,333 | 2,557 |
| A/R | 3,077 | 3,199 | 3,178 | 3,534 | 3,961 | 4,184 | 4,523 | 4,449 | 4,709 | 5,146 | 4,949 | 4,381 |
| Inventory | 2,285 | 2,657 | 2,717 | 2,965 | 3,250 | 3,086 | 3,187 | 3,353 | 3,784 | 3,950 | 4,404 | 4,290 |
| Tangible / Intangible Assets | 9,327 | 10,133 | 10,042 | 10,512 | 11,773 | 11,954 | 12,130 | 13,035 | 13,366 | 13,936 | 14,074 | 15,845 |
| Liabilities | 5,754 | 6,362 | 6,367 | 6,436 | 7,265 | 7,137 | 7,586 | 8,703 | 9,905 | 10,391 | 11,162 | 11,622 |
| A/P | 1,163 | 1,328 | 1,407 | 1,723 | 1,808 | 1,609 | 1,756 | 2,015 | 1,999 | 2,156 | 2,541 | 2,166 |
| Short-term debts | 2,350 | 2,953 | 2,890 | 2,213 | 2,175 | 1,454 | 1,361 | 1,451 | 1,593 | 1,903 | 2,037 | 1,613 |
| Long-term debts | 313 | 336 | 397 | 678 | 972 | 1,869 | 1,915 | 1,594 | 2,643 | 3,211 | 3,262 | 3,708 |
| Shareholders' Equity | 13,106 | 13,464 | 13,672 | 14,051 | 14,906 | 15,535 | 16,122 | 16,339 | 16,510 | 17,009 | 17,257 | 17,322 |
| Liabilities/Equity (\%) | 43.9\% | 47.3\% | 46.6\% | 45.8\% | 48.7\% | 45.9\% | 47.1\% | 53.3\% | 60.0\% | 61.1\% | 64.7\% | 67.1\% |
| Net debt to equity ratio(\%) | -3.8\% | 4.8\% | 3.0\% | 4.9\% | 8.3\% | 7.8\% | 5.4\% | 1.6\% | 6.7\% | 13.4\% | 11.4\% | 16.0\% |
| BPS (Unit:KRW) | 175,790 | 181,095 | 183,868 | 188,597 | 188,859 | 196,894 | 203,952 | 206,544 | 208,363 | 214,535 | 217,500 | 218,227 |

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## Appendix

|  | 2016 |  |  |  |  | 2017 |  |  |  |  | 2018 |  |  |  |  |
| :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: |
|  | 1Q | 2Q | 3Q | 4Q |  | 1Q | 2Q | 3Q | 4Q |  | 1Q | 2Q | 3Q | 4Q |  |
| Cash at Beginning of Period | 2,694 | 3,164 | 2,649 | 2,878 | 2,694 | 2,207 | 1,909 | 2,107 | 2,400 | 2,207 | 2,779 | 3,132 | 2,830 | 3,333 | 2,779 |
| Operating / Investing Activities | 434 | -94 | 89 | 95 | 524 | 0 | 442 | 350 | 546 | 1,337 | -831 | -662 | 289 | -798 | -2,001 |
| Operating Profits | 458 | 613. | 460 | 462 | 1,992 | 797 | 727 | 790 | 615 | 2,929 | 651 | 703 | 602 | 290 | 2,246 |
| Depreciation | 322 | 333 | 337 | 343 | 1,335 | 355 | 347 | 347 | 357 | 1,406 | 355 | 362 | 373 | 394 | 1,484 |
| Working Capital | 205 | 17 | 54 | -328 | -52 | -462 | -258 | -294 | 168 | -845 | -707 | -446 | 128 | 326 | -699 |
| Investing Activities | -326 | -750 | -416 | -500 | -1,993 | -223 | -514 | -571 | -315 | -1,623 | -867 | -744 | -905 | -1,610 | -4,126 |
| Income taxes paid etc. | -224 | -306 | -345 | 117 | -758 | -466 | 139 | 77 | -279 | -529 | -262 | -537 | 91 | -198 | -907 |
| Financing Activities | 40 | -417 | 153 | -784 | -1,007 | -271 | -262 | -72 | -132 | -737 | 1,170 | 369 | 238 | 17 | 1,794 |
| Debts | 4 | -52 | -2 | -556 | -606 | -474 | 177 | -47 | -232 | -575 | 1,191 | 878 | 186 | -3 | 2,252 |
| Dividends | - | -347 | - | - | -347 | - | -386 | - | - | -386 | - | -460 | -32 | -2 | -494 |
| Cash at End of Period | 3,164 | 2,649 | 2,878 | 2,207 | 2,207 | 1,909 | 2,107 | 2,400 | 2,779 | 2,779 | 3,132 | 2,830 | 3,333 | 2,557 | 2,557 |

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## Appendix



## Appendix

## Ethylene / PE Demand Supply

## Ethylene


(Source: IHS)

Polyethylene
(Unit : million tons)

60\%

Demand (Global)
Demand (NEA)


Demand/Supply (Global,\%)
Demand/Supply (NEA,\%)

## Appendix

## Quarterly Price Trends

(Unit : USD/MT)
(Unit : USD/MT)


- The prices are average price of CFR FE Asia for general grade in each product group.


## Appendix

(Unit : USD/MT)


Jan Feb Mar Apr May Jun Jul Aug Sep Oct Nov Dec 2018
$\simeq$ Naphtha $\simeq$ Ethylene $\simeq$ Propylene $\longrightarrow$ HDPE(Film) $\simeq$ LDPE

## NCC/PO



Jan Feb Mar Apr May Jun Jul Aug Sep Oct Nov Dec 2018


PVC/
Plasticizer

Acrylate/SAP
Rubber/Specialty Polymers

- The prices are average price of CFR FE Asia for general grade in each product group.


## Thank you



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