

Table 1 - Reconciliation of Segment Information to Consolidated Financial Information

Millions of Dollars	2017					2018				
	Q1	Q2	Q3	Q4	Total	Q1	Q2	Q3	Q4	Total
Sales and other operating revenues:										
Olefins & Polyolefins - Americas	\$ 2,509	\$ 2,444	\$ 2,347	\$ 2,704	\$ 10,004	\$ 2,646	\$ 2,542	\$ 2,770	\$ 2,450	\$ 10,408
Olefins & Polyolefins - EAI	2,510	2,486	2,640	2,582	10,218	2,960	2,900	2,643	2,335	10,838
Intermediates & Derivatives	2,150	2,014	2,077	2,231	8,472	2,343	2,584	2,509	2,152	9,588
Advanced Polymer Solutions	712	751	731	728	2,922	838	833	1,039	1,314	4,024
Refining	1,353	1,713	1,670	2,112	6,848	2,257	2,569	2,499	1,832	9,157
Technology	120	107	98	125	450	115	182	171	115	583
Other/Eliminations	(924)	(1,112)	(1,047)	(1,347)	(4,430)	(1,392)	(1,404)	(1,476)	(1,322)	(5,594)
Continuing Operations	<u>\$ 8,430</u>	<u>\$ 8,403</u>	<u>\$ 8,516</u>	<u>\$ 9,135</u>	<u>\$ 34,484</u>	<u>\$ 9,767</u>	<u>\$ 10,206</u>	<u>\$ 10,155</u>	<u>\$ 8,876</u>	<u>\$ 39,004</u>
Operating income (loss):										
Olefins & Polyolefins - Americas	\$ 544	\$ 713	\$ 473	\$ 652	\$ 2,382	\$ 629	\$ 543	\$ 572	\$ 507	\$ 2,251
Olefins & Polyolefins - EAI	322	454	367	165	1,308	281	245	141	15	682
Intermediates & Derivatives	269	270	329	334	1,202	408	569	431	308	1,716
Advanced Polymer Solutions	94	120	117	74	405	114	112	48	55	329
Refining	(70)	(21)	10	59	(22)	15	58	38	(139)	(28)
Technology	50	39	36	58	183	46	100	88	50	284
Other	1	2	—	(1)	2	1	(1)	(1)	(2)	(3)
Continuing Operations	<u>\$ 1,210</u>	<u>\$ 1,577</u>	<u>\$ 1,332</u>	<u>\$ 1,341</u>	<u>\$ 5,460</u>	<u>\$ 1,494</u>	<u>\$ 1,626</u>	<u>\$ 1,317</u>	<u>\$ 794</u>	<u>\$ 5,231</u>
Depreciation and amortization:										
Olefins & Polyolefins - Americas	\$ 116	\$ 106	\$ 104	\$ 107	\$ 433	\$ 106	\$ 109	\$ 111	\$ 116	\$ 442
Olefins & Polyolefins - EAI	51	51	54	54	210	56	52	50	50	208
Intermediates & Derivatives	69	68	69	73	279	73	72	71	71	287
Advanced Polymer Solutions	10	8	7	10	35	8	9	22	30	69
Refining	40	44	49	44	177	46	46	45	55	192
Technology	10	9	11	10	40	10	12	10	11	43
Continuing Operations	<u>\$ 296</u>	<u>\$ 286</u>	<u>\$ 294</u>	<u>\$ 298</u>	<u>\$ 1,174</u>	<u>\$ 299</u>	<u>\$ 300</u>	<u>\$ 309</u>	<u>\$ 333</u>	<u>\$ 1,241</u>
EBITDA: ^(a)										
Olefins & Polyolefins - Americas	\$ 706	\$ 833	\$ 591	\$ 769	\$ 2,899	\$ 756	\$ 671	\$ 704	\$ 631	\$ 2,762
Olefins & Polyolefins - EAI	442	597	599	289	1,927	419	355	262	127	1,163
Intermediates & Derivatives	339	339	402	410	1,490	486	642	504	379	2,011
Advanced Polymer Solutions	104	128	124	82	438	123	121	70	86	400
Refining	(30)	25	58	104	157	63	104	84	(84)	167
Technology	60	48	47	68	223	56	113	98	61	328
Other	(4)	—	—	4	—	10	4	10	12	36
Continuing Operations	<u>\$ 1,617</u>	<u>\$ 1,970</u>	<u>\$ 1,821</u>	<u>\$ 1,726</u>	<u>\$ 7,134</u>	<u>\$ 1,913</u>	<u>\$ 2,010</u>	<u>\$ 1,732</u>	<u>\$ 1,212</u>	<u>\$ 6,867</u>
Capital, turnarounds and IT deferred spending:										
Olefins & Polyolefins - Americas	\$ 201	\$ 178	\$ 161	\$ 201	\$ 741	\$ 242	\$ 311	\$ 247	\$ 279	\$ 1,079
Olefins & Polyolefins - EAI	37	24	34	68	163	58	40	58	92	248
Intermediates & Derivatives	77	107	79	69	332	68	80	100	161	409
Advanced Polymer Solutions	11	9	14	21	55	15	10	16	21	62
Refining	84	79	21	29	213	36	45	47	122	250
Technology	7	6	8	11	32	8	9	12	19	48
Other	4	4	1	2	11	2	1	2	4	9
Continuing Operations	<u>\$ 421</u>	<u>\$ 407</u>	<u>\$ 318</u>	<u>\$ 401</u>	<u>\$ 1,547</u>	<u>\$ 429</u>	<u>\$ 496</u>	<u>\$ 482</u>	<u>\$ 698</u>	<u>\$ 2,105</u>

(a) See Table 7 for the reconciliation of EBITDA to net income.

Table 2 - Selected Segment Operating Information

	2017					2018				
	Q1	Q2	Q3	Q4	Total	Q1	Q2	Q3	Q4	Total
Olefins and Polyolefins - Americas										
<i>Volumes (million pounds)</i>										
Ethylene produced	2,486	2,606	2,088	2,442	9,622	2,470	2,481	2,482	2,484	9,917
Propylene produced	597	821	671	724	2,813	617	601	747	817	2,782
Polyethylene sold	1,533	1,404	1,454	1,468	5,859	1,463	1,443	1,448	1,390	5,744
Polypropylene sold	543	528	511	496	2,077	505	510	493	451	1,959
<i>Benchmark Market Prices</i>										
West Texas Intermediate crude oil (USD per barrel)	51.78	48.15	48.20	55.30	50.85	62.94	67.99	69.71	59.09	64.93
Light Louisiana Sweet ("LLS") crude oil (USD per barrel)	53.39	50.17	51.67	60.94	54.02	65.84	73.14	74.27	66.57	69.96
Houston Ship Channel natural gas (USD per million BTUs)	2.96	3.14	2.92	2.87	2.97	3.12	2.88	2.97	3.84	3.20
U.S. weighted average cost of ethylene production (cents/pound)	11.8	12.5	16.1	16.2	14.2	14.8	15.5	20.7	17.3	17.1
U.S. ethylene (cents/pounds)	33.1	31.9	31.9	33.5	32.6	30.3	26.4	30.1	29.9	29.2
U.S. polyethylene [high density] (cents/pound)	57.3	59.0	60.7	67.5	61.1	62.7	63.0	62.0	61.0	62.2
U.S. propylene (cents/pound)	47.2	41.0	41.7	49.0	44.7	53.0	52.0	60.0	50.7	53.9
U.S. polypropylene [homopolymer] (cents/pound)	66.2	59.0	60.2	68.7	63.5	73.0	74.3	83.0	73.7	76.0
Olefins and Polyolefins - Europe, Asia, International										
<i>Volumes (million pounds)</i>										
Ethylene produced	1,022	1,069	1,046	927	4,064	1,016	1,031	912	662	3,621
Propylene produced	598	632	620	557	2,407	608	632	545	388	2,173
Polyethylene sold	1,421	1,370	1,525	1,359	5,675	1,445	1,452	1,309	1,269	5,475
Polypropylene sold	1,597	1,415	1,626	1,420	6,058	1,682	1,602	1,454	1,427	6,165
<i>Benchmark Market Prices (€0.01 per pound)</i>										
Western Europe weighted average cost of ethylene production	22.7	17.6	18.9	25.3	21.1	22.4	28.9	29.4	21.4	25.5
Western Europe ethylene	46.2	47.1	44.2	47.0	46.1	48.3	50.0	51.5	50.0	49.9
Western Europe polyethylene [high density]	58.2	59.5	56.6	57.4	57.9	56.2	55.2	55.3	54.0	55.2
Western Europe propylene	37.0	39.3	36.4	39.5	38.1	41.9	44.0	47.2	46.7	45.0
Western Europe polypropylene [homopolymer]	56.3	60.1	57.4	59.1	58.2	59.3	58.8	59.6	58.1	59.0
Intermediates and Derivatives										
<i>Volumes (million pounds unless otherwise indicated)</i>										
Propylene oxide and derivatives	786	748	793	830	3,157	798	850	807	737	3,192
Intermediate Chemicals:										
Ethylene oxide and derivatives	292	297	275	296	1,160	279	306	324	279	1,188
Styrene monomer	1,002	955	919	867	3,743	917	991	923	933	3,764
Acetyls	825	672	715	744	2,956	537	821	863	786	3,007
Oxyfuels and Related Products:										
TBA intermediates	383	332	359	378	1,452	412	403	365	309	1,489
MTBE/ETBE (million gallons)	239	263	289	293	1,084	253	293	292	266	1,104
<i>Benchmark Market Margins (cents per gallon)</i>										
MTBE - Northwest Europe	49.5	67.3	59.8	35.9	52.9	58.0	63.3	53.3	45.4	55.0
Advanced Polymer Solutions										
<i>Volumes (million pounds)</i>										
Compounding & Solutions	638	619	590	600	2,447	637	618	792	1,052	3,099
Advanced Polymers	235	238	242	211	926	242	271	246	226	985
Refining										
<i>Volumes (thousands of barrels per day)</i>										
Heavy crude oil processing rates	193	265	240	245	236	252	259	232	184	231
<i>Benchmark Market Margins</i>										
Light crude oil - 2-1-1	11.86	13.26	16.71	12.30	13.54	12.62	15.03	13.15	8.33	12.35
Light crude oil - Maya differential	8.78	6.28	5.10	7.96	7.02	8.10	10.91	8.28	2.56	7.50

Source: LYB and third party consultants

Note: Benchmark market prices for U.S. and Western Europe polyethylene and polypropylene reflect discounted prices. Volumes presented represent third party sales of selected key products.

Table 3 - Unaudited Income Statement Information

Millions of dollars	2017					2018				
	Q1	Q2	Q3	Q4	Total	Q1	Q2	Q3	Q4	Total
Sales and other operating revenues	\$ 8,430	\$ 8,403	\$ 8,516	\$ 9,135	\$ 34,484	\$ 9,767	\$ 10,206	\$ 10,155	\$ 8,876	\$ 39,004
Cost of sales	6,991	6,601	6,939	7,528	28,059	8,012	8,290	8,499	7,728	32,529
Selling, general and administrative expenses ^(a)	204	200	218	237	859	233	261	309	326	1,129
Research and development expenses	25	25	27	29	106	28	29	30	28	115
Operating income	1,210	1,577	1,332	1,341	5,460	1,494	1,626	1,317	794	5,231
Income from equity investments	81	78	81	81	321	96	68	89	36	289
Interest expense, net ^(b)	(201)	(91)	(89)	(86)	(467)	(80)	(76)	(76)	(83)	(315)
Other income, net ^(c)	30	29	114	6	179	24	16	17	49	106
Income from continuing operations before income taxes ^{(b)(c)}	1,120	1,593	1,438	1,342	5,493	1,534	1,634	1,347	796	5,311
Provision for (benefit from) income taxes ^(d)	315	459	380	(556)	598	303	(21)	232	99	613
Income from continuing operations ^(e)	805	1,134	1,058	1,898	4,895	1,231	1,655	1,115	697	4,698
Loss from discontinued operations, net of tax	(8)	(4)	(2)	(4)	(18)	—	(1)	(2)	(5)	(8)
Net income ^(e)	797	1,130	1,056	1,894	4,877	1,231	1,654	1,113	692	4,690
Redeemable noncontrolling interests dividends	—	—	—	—	—	—	—	—	(2)	(2)
Net loss attributable to non-controlling interests	—	1	1	—	2	—	—	—	—	—
Net income attributable to Company shareholders ^(d)	\$ 797	\$ 1,131	\$ 1,057	\$ 1,894	\$ 4,879	\$ 1,231	\$ 1,654	\$ 1,113	\$ 690	\$ 4,688

(a) The third and fourth quarters of 2018 include a pre-tax charges of \$53 million and \$20 million, respectively, for acquisition-related transaction and integration costs associated with our acquisition of A. Schulman.

(b) Includes pre-tax charges totaling \$113 million in the first quarter of 2017 related to the redemption of \$1,000 million aggregate principal amount of our then outstanding 5% Senior Notes due 2019.

(c) Includes a pre-tax gain of \$36 million in the fourth quarter of 2018 on the sale of our carbon black subsidiary in France. Includes a pre-tax gain of \$31 million in the first quarter of 2017 on the sale of a portion of our Lake Charles, Louisiana site, which was used as a logistics terminal, and a pre-tax gain of \$108 million in the third quarter of 2017 on the sale of our interest in Geosel.

(d) The fourth quarter of 2017 includes an \$819 million non-cash tax benefit related to the lower federal income tax rate resulting from the U.S. Tax Cuts and Jobs Act enacted in December 2017. The second quarter of 2018 includes a \$346 million benefit related to \$288 million of previously unrecognized tax benefits and the release of \$58 million of associated accrued interest.

(e) The first quarter of 2017 includes after-tax charges totaling \$106 million related to the redemption of \$1,000 million aggregate principal amount of our then outstanding 5% Senior Notes due 2019. The third quarter of 2017 includes a \$103 million after-tax gain on the sale of our interest in Geosel. The fourth quarter of 2017 includes an \$819 million non-cash tax benefit discussed above. The third quarter of 2018 includes a \$42 million after-tax charge for acquisition-related transaction and integration costs associated with our acquisition of A. Schulman.

Table 4 - Charges (Benefits) Included in Net Income

<u>Millions of Dollars (except share data)</u>	2017					2018				
	Q1	Q2	Q3	Q4	Total	Q1	Q2	Q3	Q4	Total
Pretax charges (benefits):										
Tax benefit due to change in tax law from the U.S. Tax Cuts and Jobs Act	\$ —	\$ —	\$ —	\$ (819)	\$ (819)	\$ —	\$ —	\$ —	\$ —	\$ —
Tax benefit from release of previously unrecognized tax benefits and associated accrued interest	—	—	—	—	—	—	(346)	—	—	(346)
Acquisition-related costs - A. Schulman	—	—	—	—	—	—	—	53	20	73
Charges and premiums related to redemption of debt	113	—	—	—	113	—	—	—	—	—
Gain on sale of interest in Geosel	—	—	(108)	—	(108)	—	—	—	—	—
Total pretax charges (benefits)	113	—	(108)	(819)	(814)	—	(346)	53	20	(273)
Provision for (benefit from) income taxes related to these items	(7)	—	5	—	(2)	—	—	(11)	(5)	(16)
After-tax effect of net charges (benefits)	\$ 106	\$ —	\$ (103)	\$ (819)	\$ (816)	\$ —	\$ (346)	\$ 42	\$ 15	\$ (289)
Effect on diluted earnings per share	\$ (0.26)	\$ —	\$ 0.26	\$ 2.07	\$ 2.05	\$ —	\$ 0.88	\$ (0.11)	\$ (0.04)	\$ 0.74

Table 5 - Unaudited Cash Flow Information

<u>Millions of dollars</u>	2017					2018				
	Q1	Q2	Q3	Q4	Total	Q1	Q2	Q3	Q4	Total
Net cash provided by operating activities ^(a)	\$ 678	\$ 1,560	\$ 1,486	\$ 1,482	\$ 5,206	\$ 1,006	\$ 1,727	1,441	\$ 1,297	\$ 5,471
Net cash used in investing activities ^(b)	(541)	(513)	(200)	(502)	(1,756)	(189)	(400)	(2,312)	(658)	(3,559)
Net cash used in financing activities ^(a)	(537)	(822)	(832)	(668)	(2,859)	(520)	(745)	(977)	(766)	(3,008)

(a) In the second quarter of 2017, the early adoption of ASU 2016-15, *Statement of Cash Flows (Topic 230): Classification of Certain Cash Receipts and Cash Payments* resulted in the reclassification of cash flows related to debt extinguishment costs incurred in the first quarter of 2017 from operating to financing activities cash flows.

(b) Also in the second quarter of 2017, the early retrospective adoption of ASU 2016-18, *Statement of Cash Flows: Restricted Cash* requires the inclusion of restricted cash and restricted cash equivalents in the cash and cash equivalents balances in our Statement of Cash Flows. The third quarter of 2018 includes a cash outflow of \$1,776 million for the acquisition of A. Schulman, net of cash acquired and a liability deemed as a component of the purchase price.

Table 6 - Unaudited Balance Sheet Information

<u>Millions of dollars</u>	<u>March 31,</u> <u>2017</u>	<u>June 30,</u> <u>2017</u>	<u>September 30,</u> <u>2017</u>	<u>December 31,</u> <u>2017</u>	<u>March 31,</u> <u>2018</u>	<u>June 30,</u> <u>2018</u>	<u>September 30,</u> <u>2018</u>	<u>December 31,</u> <u>2018</u>
Cash and cash equivalents	\$ 485	\$ 734	\$ 1,204	\$ 1,523	\$ 1,840	\$ 2,384	\$ 521	\$ 332
Restricted cash	1	6	7	5	—	2	11	69
Short-term investments	1,176	1,278	1,295	1,307	1,042	933	944	892
Accounts receivable, net	3,292	3,086	3,275	3,539	3,859	3,889	4,087	3,503
Inventories	3,875	4,007	4,177	4,217	4,257	4,096	4,596	4,515
Prepaid expenses and other current assets	852	964	1,104	1,147	1,070	1,045	1,224	1,255
Total current assets	<u>9,681</u>	<u>10,075</u>	<u>11,062</u>	<u>11,738</u>	<u>12,068</u>	<u>12,349</u>	<u>11,383</u>	<u>10,566</u>
Property, plant and equipment, net	10,361	10,551	10,737	10,997	11,249	11,310	12,022	12,477
Investments and long-term receivables:								
Investment in PO joint ventures	409	423	428	420	424	429	440	469
Equity investments	1,672	1,595	1,644	1,635	1,767	1,599	1,688	1,611
Other investments and long-term receivables	20	18	19	17	22	22	20	23
Goodwill	531	559	570	570	578	562	1,819	1,814
Intangible assets, net	517	499	480	568	567	528	982	965
Other assets	577	398	303	261	221	224	342	353
Total assets	<u>\$ 23,768</u>	<u>\$ 24,118</u>	<u>\$ 25,243</u>	<u>\$ 26,206</u>	<u>\$ 26,896</u>	<u>\$ 27,023</u>	<u>\$ 28,696</u>	<u>\$ 28,278</u>
Current maturities of long-term debt	\$ 2	\$ 2	\$ 3	\$ 2	\$ 5	\$ 974	\$ 984	\$ 5
Short-term debt	611	561	381	68	77	76	214	885
Accounts payable	2,627	2,317	2,735	2,895	3,010	3,095	3,555	3,087
Accrued liabilities	1,139	1,251	1,493	1,812	1,506	1,306	1,489	1,536
Total current liabilities	<u>4,379</u>	<u>4,131</u>	<u>4,612</u>	<u>4,777</u>	<u>4,598</u>	<u>5,451</u>	<u>6,242</u>	<u>5,513</u>
Long-term debt	8,419	8,496	8,531	8,549	8,531	7,490	7,471	8,497
Other liabilities	2,130	2,253	2,326	2,275	2,350	1,805	2,017	1,897
Deferred income taxes ^(a)	2,353	2,370	2,447	1,655	1,688	1,674	1,774	1,975
Redeemable noncontrolling interests	—	—	—	—	—	—	123	116
Stockholders' equity	6,462	6,866	7,326	8,949	9,728	10,602	11,044	10,257
Non-controlling interests	25	2	1	1	1	1	25	23
Total liabilities and stockholders' equity	<u>\$ 23,768</u>	<u>\$ 24,118</u>	<u>\$ 25,243</u>	<u>\$ 26,206</u>	<u>\$ 26,896</u>	<u>\$ 27,023</u>	<u>\$ 28,696</u>	<u>\$ 28,278</u>

(a) Deferred income taxes at December 31, 2017 reflects an \$819 million favorable adjustment related to the lower federal income tax rate resulting from the U.S. Tax Cuts and Jobs Act.

Non-GAAP Reconciliations

Table 7 - Reconciliation of Net Income To EBITDA

	Year Ended	Three Months Ended				Year Ended	Three Months Ended				Year Ended
	December 31, 2016	March 31, 2017	June 30, 2017	September 30, 2017	December 31, 2017	December 31, 2017	March 31, 2018	June 30, 2018	September 30, 2018	December 31, 2018	December 31, 2018
Millions of dollars											
Net income ^{(a)(b)}	\$ 3,837	\$ 797	\$ 1,130	\$ 1,056	\$ 1,894	\$ 4,877	\$ 1,231	\$ 1,654	\$ 1,113	\$ 692	\$ 4,690
Loss from discontinued operations, net of tax	10	8	4	2	4	18	—	1	2	5	8
Income from continuing operations ^{(a)(b)}	3,847	805	1,134	1,058	1,898	4,895	1,231	1,655	1,115	697	4,698
Provision for (benefit from) income taxes ^(b)	1,386	315	459	380	(556)	598	303	(21)	232	99	613
Depreciation and amortization	1,064	296	286	294	298	1,174	299	300	309	333	1,241
Interest expense, net ^(c)	305	201	91	89	86	467	80	76	76	83	315
EBITDA ^(d)	\$ 6,602	\$ 1,617	\$ 1,970	\$ 1,821	\$ 1,726	\$ 7,134	\$ 1,913	\$ 2,010	\$ 1,732	\$ 1,212	\$ 6,867

- (a) The year ended December 31, 2016 includes a \$78 million after-tax gain related to the sale of our wholly owned subsidiary in Argentina. The first quarter of 2017 includes after-tax charges totaling \$106 million related to the redemption of \$1,000 million aggregate principal amount of our then outstanding 5% Senior Notes due 2019. The third quarter of 2017 includes an after-tax gain of \$103 million on the sale of our interest in Geosel. The third and fourth quarters of 2018 include after-tax charges for acquisition-related transaction and integration costs associated with our acquisition of A. Schulman of \$42 million and \$15 million, respectively.
- (b) The fourth quarter of 2017 includes an \$819 million non-cash tax benefit related to the lower federal income tax rate resulting from the U.S. Tax Cuts and Jobs Act enacted in December 2017. The second quarter of 2018 includes a \$346 million non-cash benefit from the release of unrecognized tax benefits and associated accrued interest.
- (c) Includes pre-tax charges totaling \$113 million in the first quarter of 2017 related to the redemption of \$1,000 million aggregate principal amount of our then outstanding 5% Senior Notes due 2019.
- (d) The year ended December 31, 2016 includes a \$78 million pre-tax gain related to the sale of our wholly owned subsidiary in Argentina. Third quarter 2017 EBITDA includes a pre-tax gain of \$108 million on the sale of our interest in Geosel. The third and fourth quarters of 2018 EBITDA include pre-tax charges for acquisition-related transaction and integration costs associated with our acquisition of A. Schulman of \$53 million and \$20 million, respectively.

Table 8 - Reconciliation of Diluted EPS Excluding Certain Tax Adjustments to Diluted EPS

	Year Ended	Three Months Ended	Year Ended	Three Months Ended			Year Ended	
	December 31, 2016	December 31, 2017	December 31, 2017	March 31, 2018	June 30, 2018	September 30, 2018	December 31, 2018	
Diluted earnings per share excluding adjustments	\$ 9.13	\$ 2.72	\$ 10.16	\$ 3.11	\$ 3.34	\$ 2.96	\$ 1.83	\$ 11.27
Non-cash benefit due to change in tax law from the U.S. Tax Cuts and Jobs Act	—	2.07	2.07	—	—	—	—	—
Non-cash benefit from the settlement of prior-year tax positions	—	—	—	—	0.88	—	—	0.88
Acquisition-related costs - A. Schulman	—	—	—	—	—	(0.11)	(0.04)	(0.14)
Diluted earnings per share	<u>\$ 9.13</u>	<u>\$ 4.79</u>	<u>\$ 12.23</u>	<u>\$ 3.11</u>	<u>\$ 4.22</u>	<u>\$ 2.85</u>	<u>\$ 1.79</u>	<u>\$ 12.01</u>

Table 9 - EBITDA by Segment

Millions of dollars	Three Months Ended				Year Ended	Three Months Ended				Year Ended
	March 31, 2017	June 30, 2017	September 30, 2017	December 31, 2017	December 31, 2017	March 31, 2018	June 30, 2018	September 30, 2018	December 31, 2018	December 31, 2018
EBITDA:										
Olefins & Polyolefins - Americas	\$ 706	\$ 833	\$ 591	\$ 769	\$ 2,899	\$ 756	\$ 671	\$ 704	\$ 631	\$ 2,762
Olefins & Polyolefins - EAI	442	597	599	289	1,927	419	355	262	127	1,163
Intermediates & Derivatives	339	339	402	410	1,490	486	642	504	379	2,011
Advanced Polymer Solutions	104	128	124	82	438	123	121	70	86	400
Refining	(30)	25	58	104	157	63	104	84	(84)	167
Technology	60	48	47	68	223	56	113	98	61	328
Other	(4)	—	—	4	—	10	4	10	12	36
Continuing Operations	<u>\$ 1,617</u>	<u>\$ 1,970</u>	<u>\$ 1,821</u>	<u>\$ 1,726</u>	<u>\$ 7,134</u>	<u>\$ 1,913</u>	<u>\$ 2,010</u>	<u>\$ 1,732</u>	<u>\$ 1,212</u>	<u>\$ 6,867</u>

Table 10 - Components of Cash and Liquid Investments and Total Liquidity

<u>Millions of dollars</u>	<u>December 31, 2017</u>	<u>September 30, 2018</u>	<u>December 31, 2018</u>
Cash and cash equivalents and restricted cash	\$ 1,528	\$ 532	\$ 401
Short-term investments	1,307	944	892
Repurchase agreements	570	550	544
Cash and liquid investments	3,405	2,026	1,837
Availability under Senior Revolving Credit Facility	2,500	2,360	1,688
Availability under U.S. Receivables Facility	900	900	829
Total liquidity	\$ 6,805	\$ 5,286	\$ 4,354

Table 11 - Schedule of Spending for Dividends and Share Repurchases

	Three Months Ended				Year Ended	Three Months Ended				Year Ended
	March 31, 2017	June 30, 2017	September 30, 2017	December 31, 2017	December 31, 2017	March 31, 2018	June 30, 2018	September 30, 2018	December 31, 2018	December 31, 2018
Millions of Dollars										
Dividends	\$ 343	\$ 361	\$ 356	\$ 355	\$ 1,415	\$ 395	\$ 392	\$ 389	\$ 378	\$ 1,554
Repurchases of ordinary shares	160	410	296	—	866	119	351	331	1,053	1,854
Total	<u>\$ 503</u>	<u>\$ 771</u>	<u>\$ 652</u>	<u>\$ 355</u>	<u>\$ 2,281</u>	<u>\$ 514</u>	<u>\$ 743</u>	<u>\$ 720</u>	<u>\$ 1,431</u>	<u>\$ 3,408</u>

Table 12 - Calculation of Free Cash Flow Yield

<u>Millions of Dollars (except share data)</u>	<u>Year Ended December 31, 2018</u>
Net cash provided by operating activities	\$ 5,471
Less:	
Capital expenditures	2,105
Free cash flow	\$ 3,366
Market capital:	
Common stock outstanding	375,696,661
Closing share price, end of period	\$ 83.16
Market capital	\$ 31,243
Free cash flow yield	<u>10.8%</u>

Table 13 - Calculation of LYB Return on Invested Capital

<u>Millions of Dollars</u>	<u>Years Ended</u>		
	<u>December 31, 2016</u>	<u>December 31, 2017</u>	<u>December 31, 2018</u>
Income from continuing operations		\$ 4,895	\$ 4,698
Less:			
Tax benefit due to change in tax law from U.S. Tax Cuts and Jobs Act		819	
Non-cash tax settlement (2Q18)			346
Add:			
Interest expense, net		467	315
Effective tax rate (excluding tax benefits)		25.8%	18%
Interest expense, net, after tax		347	258
Adjusted income from continuing operations		4,423	4,610
Divided by:			
Average invested capital:			
Property, plant & equipment, net	10,137	10,997	12,477
Current assets	9,599	11,738	10,566
Less:			
Current liabilities	4,540	4,777	5,513
Cash and cash equivalents	875	1,523	332
	14,321	16,435	17,198
Average invested capital		15,378	16,817
Return on invested capital		29%	27%