ALCOA INC.
Form 10-Q
July 29, 2016

UNITED STATES

SECURITIES AND EXCHANGE COMMISSION

WASHINGTON, D.C. 20549

FORM 10-Q

(Mark One)

x **QUARTERLY REPORT PURSUANT TO SECTION 13 OR 15(d) OF THE SECURITIES EXCHANGE ACT OF 1934**

For the Quarterly Period Ended June 30, 2016

OR

¨ **TRANSITION REPORT PURSUANT TO SECTION 13 OR 15(d) OF THE SECURITIES EXCHANGE ACT OF 1934**

Commission File Number 1-3610

ALCOA INC.

(Exact name of registrant as specified in its charter)

PENNSYLVANIA	**25-0317820**
(State of incorporation)	**(I.R.S. Employer Identification No.)**
390 Park Avenue, New York, New York	**10022-4608**
(Address of principal executive offices)	**(Zip code)**

Investor Relations 212-836-2674

Office of the Secretary 212-836-2732

(Registrant s telephone number including area code)

(Former name, former address and former fiscal year, if changed since last report)

Indicate by check mark whether the registrant (1) has filed all reports required to be filed by Section 13 or 15(d) of the Securities Exchange Act of 1934 during the preceding 12 months, and (2) has been subject to such filing requirements for the past 90 days. Yes x No ¨

Indicate by check mark whether the registrant has submitted electronically and posted on its corporate Web site, if any, every Interactive Data File required to be submitted and posted pursuant to Rule 405 of Regulation S-T during the preceding 12 months. Yes x No ¨

Indicate by check mark whether the registrant is a large accelerated filer, an accelerated filer, a non-accelerated filer, or a smaller reporting company. See the definitions of large accelerated filer, accelerated filer and smaller reporting company in Rule 12b-2 of the Exchange Act.

Large accelerated filer x	Accelerated filer ¨
Non-accelerated filer ¨ (Do not check if a smaller reporting company)	Smaller reporting company ¨

Indicate by check mark whether the registrant is a shell company (as defined in Rule 12b-2 of the Exchange Act). Yes ¨ No x

As of July 22, 2016, 1,315,374,511 shares of common stock, par value $1.00 per share, of the registrant were outstanding.

PART I FINANCIAL INFORMATION

Item 1. Financial Statements.

Alcoa and subsidiaries

Statement of Consolidated Operations (unaudited)

(in millions, except per-share amounts)

	Second quarter ended June 30,		Six months ended June 30,	
	2016	**2015**	**2016**	**2015**
Sales (K)	$ 5,295	$ 5,897	$ 10,242	$ 11,716
Cost of goods sold (exclusive of expenses below)	4,216	4,663	8,257	9,106
Selling, general administrative, and other expenses (P)	286	224	546	456
Research and development expenses	39	68	81	123
Provision for depreciation, depletion, and amortization	309	319	618	640
Restructuring and other charges (D)	23	217	116	394
Interest expense	129	124	256	246
Other income, net (J)	(37)		(3)	(12)
Total costs and expenses	4,965	5,615	9,871	10,953
Income before income taxes	330	282	371	763
Provision for income taxes	152	75	182	301
Net income	178	207	189	462
Less: Net income attributable to noncontrolling interests	43	67	38	127
NET INCOME ATTRIBUTABLE TO ALCOA	$ 135	$ 140	$ 151	$ 335
AMOUNTS ATTRIBUTABLE TO ALCOA COMMON SHAREHOLDERS (L):				
Net income	$ 118	$ 123	$ 116	$ 300
Earnings per share:				
Basic	$ 0.09	$ 0.10	$ 0.09	$ 0.25
Diluted	$ 0.09	$ 0.10	$ 0.09	$ 0.24
Dividends paid per share	$ 0.03	$ 0.03	$ 0.06	$ 0.06

The accompanying notes are an integral part of the consolidated financial statements.

Alcoa and subsidiaries

Statement of Consolidated Comprehensive Income (Loss) (unaudited)

(in millions)

	Alcoa Second quarter ended June 30,		Noncontrolling interests Second quarter ended June 30,		Total Second quarter ended June 30,	
	2016	**2015**	**2016**	**2015**	**2016**	**2015**
Net income	$ 135	$ 140	$ 43	$ 67	$ 178	$ 207
Other comprehensive (loss) income, net of tax (C):						
Change in unrecognized net actuarial loss and prior service cost/benefit related to pension and other postretirement benefits	65	(4)	2	3	67	(1)
Foreign currency translation adjustments	45	197	32	32	77	229
Net change in unrealized losses/gains on available-for-sale securities	3	(2)			3	(2)
Net change in unrecognized gains/losses on cash flow hedges	(153)	434	16	(4)	(137)	430
Total Other comprehensive (loss) income, net of tax	(40)	625	50	31	10	656
Comprehensive income	$ 95	$ 765	$ 93	$ 98	$ 188	$ 863

	Six months ended June 30,		Six months ended June 30,		Six months ended June 30,	
	2016	**2015**	**2016**	**2015**	**2016**	**2015**
Net income	$ 151	$ 335	$ 38	$ 127	$ 189	$ 462
Other comprehensive income (loss), net of tax (C):						
Change in unrecognized net actuarial loss and prior service cost/benefit related to pension and other postretirement benefits	97	101	3	5	100	106
Foreign currency translation adjustments	348	(760)	139	(218)	487	(978)
Net change in unrealized losses/gains on available-for-sale securities	4				4	
Net change in unrecognized gains/losses on cash flow hedges	(233)	370	14	(4)	(219)	366
Total Other comprehensive income (loss), net of tax	216	(289)	156	(217)	372	(506)
Comprehensive income (loss)	$ 367	$ 46	$ 194	$ (90)	$ 561	$ (44)

The accompanying notes are an integral part of the consolidated financial statements.

Alcoa and subsidiaries

Consolidated Balance Sheet (unaudited)

(in millions)

	June 30, 2016	December 31, 2015
ASSETS		
Current assets:		
Cash and cash equivalents	$ 1,929	$ 1,919
Receivables from customers, less allowances of $14 in 2016 and $13 in 2015 (M)	1,595	1,340
Other receivables (M)	494	522
Inventories (F)	3,438	3,442
Prepaid expenses and other current assets	637	730
Total current assets	8,093	7,953
Properties, plants, and equipment	34,441	33,687
Less: accumulated depreciation, depletion, and amortization	19,424	18,872
Properties, plants, and equipment, net	15,017	14,815
Goodwill (E)	5,396	5,401
Investments (G)	1,466	1,685
Deferred income taxes	2,752	2,668
Other noncurrent assets (H)	3,415	3,955
Total assets	$ 36,139	$ 36,477
LIABILITIES		
Current liabilities:		
Short-term borrowings	$ 33	$ 38
Accounts payable, trade	2,665	2,889
Accrued compensation and retirement costs	810	850
Taxes, including income taxes	206	239
Other current liabilities	1,000	1,174
Long-term debt due within one year	774	21
Total current liabilities	5,488	5,211
Long-term debt, less amount due within one year	8,278	8,993
Accrued pension benefits	3,122	3,298
Accrued other postretirement benefits	2,070	2,106
Other noncurrent liabilities and deferred credits	2,652	2,738
Total liabilities	21,610	22,346

CONTINGENCIES AND COMMITMENTS (I)		
EQUITY		
Alcoa shareholders equity:		
Preferred stock	55	55
Mandatory convertible preferred stock	3	3
Common stock	1,391	1,391
Additional capital	9,877	10,019
Retained earnings	8,871	8,834
Treasury stock, at cost	(2,647)	(2,825)
Accumulated other comprehensive loss (C)	(5,215)	(5,431)
Total Alcoa shareholders equity	12,335	12,046
Noncontrolling interests	2,194	2,085
Total equity	14,529	14,131
Total liabilities and equity	$ 36,139	$ 36,477

The accompanying notes are an integral part of the consolidated financial statements.

Alcoa and subsidiaries

Statement of Consolidated Cash Flows (unaudited)

(in millions)

	Six months ended June 30, 2016	Six months ended June 30, 2015
CASH FROM OPERATIONS		
Net income	$ 189	$ 462
Adjustments to reconcile net income to cash from operations:		
Depreciation, depletion, and amortization	622	641
Deferred income taxes	(78)	(45)
Equity income, net of dividends	20	50
Restructuring and other charges (D)	116	394
Net gain from investing activities asset sales (G & J)	(28)	(28)
Net periodic pension benefit cost (N)	168	243
Stock-based compensation	55	55
Excess tax benefits from stock-based payment arrangements		(9)
Other	19	(64)
Changes in assets and liabilities, excluding effects of acquisitions, divestitures, and foreign currency translation adjustments:		
(Increase) in receivables	(218)	(200)
(Increase) in inventories	(3)	(221)
Decrease in prepaid expenses and other current assets	4	7
(Decrease) in accounts payable, trade	(243)	(130)
(Decrease) in accrued expenses	(301)	(374)
Increase in taxes, including income taxes	57	130
Pension contributions	(147)	(169)
(Increase) in noncurrent assets (I)	(215)	(352)
(Decrease) in noncurrent liabilities	(115)	(93)
CASH (USED FOR) PROVIDED FROM OPERATIONS	(98)	297
FINANCING ACTIVITIES		
Net change in short-term borrowings (original maturities of three months or less)	(5)	(4)
Additions to debt (original maturities greater than three months)	876	1,027
Payments on debt (original maturities greater than three months)	(882)	(1,037)
Proceeds from exercise of employee stock options	2	26
Excess tax benefits from stock-based payment arrangements		9
Dividends paid to shareholders	(114)	(109)
Distributions to noncontrolling interests	(84)	(71)
CASH USED FOR FINANCING ACTIVITIES	(207)	(159)
INVESTING ACTIVITIES		
Capital expenditures	(528)	(514)

Acquisitions, net of cash acquired (E)		(204)
Proceeds from the sale of assets and businesses (E & H)	549	59
Additions to investments	(8)	(50)
Sales of investments (G)	275	22
Net change in restricted cash	7	(9)
Other	15	11
CASH PROVIDED FROM (USED FOR) INVESTING ACTIVITIES	310	(685)
EFFECT OF EXCHANGE RATE CHANGES ON CASH AND CASH EQUIVALENTS	5	(19)
Net change in cash and cash equivalents	10	(566)
Cash and cash equivalents at beginning of year	1,919	1,877
CASH AND CASH EQUIVALENTS AT END OF PERIOD	$ 1,929	$ 1,311

The accompanying notes are an integral part of the consolidated financial statements.

Alcoa and subsidiaries

Statement of Changes in Consolidated Equity (unaudited)

(in millions, except per-share amounts)

	Alcoa Shareholders								
	Preferred stock	Mandatory convertible preferred stock	Common stock	Additional capital	Retained earnings	Treasury stock	Accumulated other comprehensive loss	Non-controlling interests	Total equity
Balance at March 31, 2015	$ 55	$ 3	$ 1,304	$ 9,124	$ 9,520	$ (2,841)	$ (5,591)	$ 2,269	$ 13,843
Net income					140			67	207
Other comprehensive income (C)							625	31	656
Cash dividends declared:									
Preferred-Class A @ $0.9375 per share									
Preferred-Class B @ $6.71875 per share					(17)				(17)
Common @ $0.03 per share					(38)				(38)
Stock-based compensation				29					29
Common stock issued: compensation plans				(6)		7			1
Distributions								(42)	(42)
Other								(1)	(1)
Balance at June 30, 2015	$ 55	$ 3	$ 1,304	$ 9,147	$ 9,605	$ (2,834)	$ (4,966)	$ 2,324	$ 14,638
Balance at March 31, 2016	$ 55	$ 3	$ 1,391	$ 9,856	$ 8,753	$ (2,657)	$ (5,175)	$ 2,135	$ 14,361
Net income					135			43	178
Other comprehensive (loss) income (C)							(40)	50	10
Cash dividends declared:									
Preferred-Class B @ $6.71875 per share					(17)				(17)
Stock-based compensation				29					29
Common stock issued: compensation plans				(8)		10			2

Distributions								(34)	(34)
Balance at June 30, 2016	$ 55	$ 3	$ 1,391	$ 9,877	$ 8,871	$ (2,647)	$ (5,215)	$ 2,194	$ 14,529

The accompanying notes are an integral part of the consolidated financial statements.

Alcoa and subsidiaries

Statement of Changes in Consolidated Equity (unaudited), continued

(in millions, except per-share amounts)

	Alcoa Shareholders								
	Preferred stock	Mandatory convertible preferred stock	Common stock	Additional capital	Retained earnings	Treasury stock	Accumulated other comprehensive loss	Non-controlling interests	Total equity
Balance at December 31, 2014	$ 55	$ 3	$ 1,304	$ 9,284	$ 9,379	$ (3,042)	$ (4,677)	$ 2,488	$ 14,794
Net income					335			127	462
Other comprehensive loss (C)							(289)	(217)	(506)
Cash dividends declared:									
Preferred-Class A @ $1.875 per share					(1)				(1)
Preferred-Class B @ $13.4375 per share					(34)				(34)
Common @ $0.06 per share					(74)				(74)
Stock-based compensation				55					55
Common stock issued: compensation plans				(192)		208			16
Distributions								(71)	(71)
Other								(3)	(3)
Balance at June 30, 2015	$ 55	$ 3	$ 1,304	$ 9,147	$ 9,605	$ (2,834)	$ (4,966)	$ 2,324	$ 14,638
Balance at December 31, 2015	$ 55	$ 3	$ 1,391	$ 10,019	$ 8,834	$ (2,825)	$ (5,431)	$ 2,085	$ 14,131
Net income					151			38	189
Other comprehensive income (C)							216	156	372
Cash dividends declared:									
Preferred-Class A @ $1.875 per share					(1)				(1)
Preferred-Class B @ $13.4375 per share					(34)				(34)
Common @ $0.06 per share					(79)				(79)
Stock-based compensation				55					55

Common stock issued: compensation plans				(197)		178			(19)
Distributions								(84)	(84)
Other								(1)	(1)
Balance at June 30, 2016	$ 55	$ 3	$ 1,391	$ 9,877	$ 8,871	$ (2,647)	$ (5,215)	$ 2,194	$ 14,529

The accompanying notes are an integral part of the consolidated financial statements.

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Alcoa and subsidiaries

Notes to the Consolidated Financial Statements (unaudited)

(dollars in millions, except per-share amounts)

A. Basis of Presentation The interim Consolidated Financial Statements of Alcoa Inc. and its subsidiaries (Alcoa or the Company) are unaudited. These Consolidated Financial Statements include all adjustments, consisting only of normal recurring adjustments, considered necessary by management to fairly state the Company s results of operations, financial position, and cash flows. The results reported in these Consolidated Financial Statements are not necessarily indicative of the results that may be expected for the entire year. The 2015 year-end balance sheet data was derived from audited financial statements but does not include all disclosures required by accounting principles generally accepted in the United States of America (GAAP). This Form 10-Q report should be read in conjunction with Alcoa s Annual Report on Form 10-K for the year ended December 31, 2015, which includes all disclosures required by GAAP. Certain amounts in previously issued financial statements were reclassified to conform to the current period presentation (see Note B).

B. Recently Adopted and Recently Issued Accounting Guidance

<u>Adopted</u>

On January 1, 2016, Alcoa adopted changes issued by the Financial Accounting Standards Board (FASB) to the presentation of extraordinary items. Such items are defined as transactions or events that are both unusual in nature and infrequent in occurrence, and, previously, were required to be presented separately in an entity s income statement, net of income tax, after income from continuing operations. The changes eliminate the concept of an extraordinary item and, therefore, the presentation of such items is no longer required. Notwithstanding this change, an entity is still required to present and disclose a transaction or event that is both unusual in nature and infrequent in occurrence in the notes to the financial statements. The adoption of these changes had no impact on the Consolidated Financial Statements.

On January 1, 2016, Alcoa adopted changes issued by the FASB to the analysis an entity must perform to determine whether it should consolidate certain types of legal entities. These changes (i) modify the evaluation of whether limited partnerships and similar legal entities are variable interest entities or voting interest entities, (ii) eliminate the presumption that a general partner should consolidate a limited partnership, (iii) affect the consolidation analysis of reporting entities that are involved with variable interest entities, particularly those that have fee arrangements and related party relationships, and (iv) provide a scope exception from consolidation guidance for reporting entities with interests in legal entities that are required to comply with or operate in accordance with requirements that are similar to those in Rule 2a-7 of the Investment Company Act of 1940 for registered money market funds. The adoption of these changes had no impact on the Consolidated Financial Statements.

On January 1, 2016, Alcoa adopted changes issued by the FASB to the presentation of debt issuance costs. Previously, such costs were required to be presented as a noncurrent asset in an entity s balance sheet and amortized into interest expense over the term of the related debt instrument. The changes require that debt issuance costs be presented in an entity s balance sheet as a direct deduction from the carrying value of the related debt liability. The amortization of debt issuance costs remains unchanged. The FASB issued an update to these changes based on an announcement of the staff of the U.S. Securities and Exchange Commission. This update provides an exception to the FASB changes allowing debt issuance costs related to line-of-credit arrangements to continue to be presented as an asset regardless of whether there are any outstanding borrowings under such arrangement. This additional change also was adopted by Alcoa on January 1, 2016. This adoption is required on a retrospective basis; therefore, the December 31, 2015 Consolidated Balance Sheet has been updated to conform to the June 30, 2016 presentation. As a result, $51 of debt issuance costs (previously reported in Other noncurrent assets) were reclassified to the Long-term debt, less amount due within one year line item on the December 31, 2015 Consolidated Balance Sheet.

Issued

In January 2016, the FASB issued changes to equity investments. These changes require equity investments (except those accounted for under the equity method of accounting or those that result in consolidation of the investee) to be measured at fair value with changes in fair value recognized in net income. However, an entity may choose to measure equity investments that do not have readily determinable fair values at cost minus impairment, if any, plus or minus changes resulting from observable price changes in orderly transactions for the identical or similar investment of the same issuer. Additionally, the impairment assessment of equity investments without readily determinable fair values has been simplified by requiring a qualitative assessment to identify impairment. These changes become effective for Alcoa on January 1, 2018. Management is currently evaluating the potential impact of these changes on the Consolidated Financial Statements.

In February 2016, the FASB issued changes to the accounting and presentation of leases. These changes require lessees to recognize a right of use asset and lease liability on the balance sheet for all leases with terms longer than 12 months. For leases with a term of 12 months or less, a lessee is permitted to make an accounting policy election by class of underlying asset not to recognize a right of use asset and lease liability. Additionally, when measuring assets and liabilities arising from a lease, optional payments should be included only if the lessee is reasonably certain to exercise an option to extend the lease, exercise a purchase option, or not exercise an option to terminate the lease. These changes become effective for Alcoa on January 1, 2019. Management is currently evaluating the potential impact of these changes on the Consolidated Financial Statements.

In March 2016, the FASB issued changes to employee share-based payment accounting. Currently, an entity must determine for each share-based payment award whether the difference between the deduction for tax purposes and the compensation cost recognized for financial reporting purposes results in either an excess tax benefit or a tax deficiency. Excess tax benefits are recognized in additional paid-in capital; tax deficiencies are recognized either as an offset to accumulated excess tax benefits, if any, or in the income statement. Excess tax benefits are not recognized until the deduction reduces taxes payable. The changes require all excess tax benefits and tax deficiencies related to share-based payment awards to be recognized as income tax expense or benefit in the income statement. The tax effects of exercised or vested awards should be treated as discrete items in the reporting period in which they occur. An entity also should recognize excess tax benefits regardless of whether the benefit reduces taxes payable in the current period. Additionally, the presentation of excess tax benefits related to share-based payment awards in the statement of cash flows is changed. Currently, excess tax benefits must be separated from other income tax cash flows and classified as a financing activity. The changes require excess tax benefits to be classified along with other income tax cash flows as an operating activity. Also, the changes require cash paid by an employer when directly withholding shares for tax-withholding purposes to be classified as a financing activity. Currently, there is no specific guidance on the classification in the statement of cash flows of cash paid by an employer to the tax authorities when directly withholding shares for tax-withholding purposes. Additionally, for a share-based award to qualify for equity classification it cannot partially settle in cash in excess of the employer s minimum statutory withholding requirements. The changes permit equity classification of share-based awards for withholdings up to the maximum statutory tax rates in applicable jurisdictions. These changes become effective for Alcoa on January 1, 2017. Management is currently evaluating the potential impact of these changes on the Consolidated Financial Statements.

In March 2016, the FASB issued changes eliminating the requirement for an investor to adjust an equity method investment, results of operations, and retained earnings retroactively on a step-by-step basis as if the equity method had been in effect during all previous periods that the investment had been held as a result of an increase in the level of ownership interest or degree of influence. Additionally, an entity that has an available-for-sale equity security that becomes qualified for the equity method of accounting must recognize through earnings the unrealized holding gain or loss in accumulated other comprehensive income at the date the investment becomes qualified for use of the equity method. These changes become effective for Alcoa on January 1, 2017. Management is currently evaluating the potential impact of these changes on the Consolidated Financial Statements.

In March 2016, the FASB issued changes to derivative instruments designated as hedging instruments. These changes clarify that a change in the counterparty to a derivative instrument that has been designated as a hedging instrument does not, in and of itself, require dedesignation of that hedging relationship provided that all other hedge accounting criteria continue to be met. These changes become effective for Alcoa on January 1, 2017. Management does not expect these changes to have a material impact on the Consolidated Financial Statements.

C. Accumulated Other Comprehensive Loss

The following table details the activity of the four components that comprise Accumulated other comprehensive loss for both Alcoa s shareholders and noncontrolling interests:

	Alcoa Second quarter ended June 30,		Noncontrolling Interests Second quarter ended June 30,	
	2016	2015	2016	2015
Pension and other postretirement benefits (N)				
Balance at beginning of period	$ (3,579)	$ (3,496)	$ (55)	$ (62)
Other comprehensive income (loss):				
Unrecognized net actuarial loss and prior service cost/benefit	(5)	(118)	1	3
Tax benefit	3	39		
Total Other comprehensive (loss) income before reclassifications, net of tax	(2)	(79)	1	3
Amortization of net actuarial loss and prior service cost/benefit(1)	104	115		1
Tax (expense) benefit(2)	(37)	(40)	1	(1)
Total amount reclassified from Accumulated other comprehensive loss, net of tax(8)	67	75	1	
Total Other comprehensive income (loss)	65	(4)	2	3
Balance at end of period	$ (3,514)	$ (3,500)	$ (53)	$ (59)
Foreign currency translation				
Balance at beginning of period	$ (2,109)	$ (1,803)	$ (673)	$ (601)
Other comprehensive income(3)	45	197	32	32
Balance at end of period	$ (2,064)	$ (1,606)	$ (641)	$ (569)
Available-for-sale securities				
Balance at beginning of period	$ (4)	$ 2	$	$
Other comprehensive income (loss)(4)	3	(2)		
Balance at end of period	$ (1)	$	$	$
Cash flow hedges (O)				
Balance at beginning of period	$ 517	$ (294)	$ (5)	$ (2)
Other comprehensive (loss) income:				
Net change from periodic revaluations	(225)	614	18	(5)
Tax benefit (expense)	66	(190)	(5)	1
	(159)	424	13	(4)

Total Other comprehensive (loss) income before reclassifications, net of tax				
Net amount reclassified to earnings:				
Aluminum contracts[5]	(1)	10		
Energy contracts[6]		2		
Foreign exchange contracts[5]		1		
Interest rate contracts[7]	8	1	5	
Sub-total	7	14	5	
Tax expense[2]	(1)	(4)	(2)	
Total amount reclassified from Accumulated other comprehensive income (loss), net of tax[8]	6	10	3	
Total Other comprehensive (loss) income	(153)	434	16	(4)
Balance at end of period	$ 364	$ 140	$ 11	$ (6)

	Alcoa Six months ended June 30, 2016	Alcoa Six months ended June 30, 2015	Noncontrolling Interests Six months ended June 30, 2016	Noncontrolling Interests Six months ended June 30, 2015
Pension and other postretirement benefits (N)				
Balance at beginning of period	$ (3,611)	$ (3,601)	$ (56)	$ (64)
Other comprehensive income:				
Unrecognized net actuarial loss and prior service cost/benefit	(64)	(76)	1	3
Tax benefit	26	28		
Total Other comprehensive (loss) income before reclassifications, net of tax	(38)	(48)	1	3
Amortization of net actuarial loss and prior service cost/benefit[1]	208	229	2	4
Tax expense[2]	(73)	(80)		(2)
Total amount reclassified from Accumulated other comprehensive loss, net of tax[8]	135	149	2	2
Total Other comprehensive income	97	101	3	5
Balance at end of period	$ (3,514)	$ (3,500)	$ (53)	$ (59)
Foreign currency translation				
Balance at beginning of period	$ (2,412)	$ (846)	$ (780)	$ (351)
Other comprehensive income (loss)[3]	348	(760)	139	(218)
Balance at end of period	$ (2,064)	$ (1,606)	$ (641)	$ (569)
Available-for-sale securities				
Balance at beginning of period	$ (5)	$	$	$
Other comprehensive income[4]	4			
Balance at end of period	$ (1)	$	$	$
Cash flow hedges (O)				
Balance at beginning of period	$ 597	$ (230)	$ (3)	$ (2)
Other comprehensive (loss) income:				
Net change from periodic revaluations	(342)	504	15	(5)
Tax benefit (expense)	103	(156)	(4)	1
Total Other comprehensive (loss) income before reclassifications, net of tax	(239)	348	11	(4)
Net amount reclassified to earnings:				
Aluminum contracts[5]	(6)	23		
Energy contracts[6]	1	4		
Foreign exchange contracts[5]	1	1		
Interest rate contracts[7]	8	1	5	
Nickel contracts[6]	1			

Sub-total		5		29		5		
Tax benefit (expense)[2]		1		(7)		(2)		
Total amount reclassified from Accumulated other comprehensive loss, net of tax[8]		6		22		3		
Total Other comprehensive (loss) income		(233)		370		14		(4)
Balance at end of period	$	364	$	140	$	11	$	(6)

(1) These amounts were included in the computation of net periodic benefit cost for pension and other postretirement benefits (see Note N).
(2) These amounts were included in Provision for income taxes on the accompanying Statement of Consolidated Operations.
(3) In all periods presented, there were no tax impacts related to rate changes and no amounts were reclassified to earnings.
(4) In all periods presented, unrealized and realized gains and losses related to these securities were immaterial. Realized gains and losses were included in Other income, net on the accompanying Statement of Consolidated Operations.
(5) These amounts were included in Sales on the accompanying Statement of Consolidated Operations.
(6) These amounts were included in Cost of goods sold on the accompanying Statement of Consolidated Operations.
(7) For Alcoa, $7 of the amount in both the second quarter ended and six months ended as of June 30, 2016 was included in Other income, net on the accompanying Statement of Consolidated Operations. The remaining amount in both the second quarter ended and six months ended as of June 30, 2016 and the entire amount in both the second quarter ended and six months ended as of June 30, 2015 were included in Interest expense on the accompanying Statement of Consolidated Operations. For Noncontrolling interests, the amount in both the second quarter ended and six months ended as of June 30, 2016 was included in Other income, net on the accompanying Statement of Consolidated Operations.
(8) A positive amount indicates a corresponding charge to earnings and a negative amount indicates a corresponding benefit to earnings. These amounts were reflected on the accompanying Statement of Consolidated Operations in the line items indicated in footnotes 1 through 7.

D. Restructuring and Other Charges In the second quarter and six-month period of 2016, Alcoa recorded Restructuring and other charges of $23 ($16 after-tax and noncontrolling interest) and $116 ($77 after-tax and noncontrolling interest), respectively.

Restructuring and other charges in the 2016 second quarter included $15 ($11 after-tax and noncontrolling interest) for layoff costs related to cost reduction initiatives and the planned separation of Alcoa (see Note P), including the separation of approximately 540 employees (300 in the Engineered Products and Solutions segment and 240 in the Transportation and Construction Solutions segment); $8 ($6 after-tax and noncontrolling interest) for additional net costs related to decisions made in the fourth quarter of 2015 to permanently close and demolish the Warrick (Indiana) smelter and to curtail the Wenatchee (Washington) smelter and Point Comfort (Texas) refinery (see below); a net charge of $8 ($4 after-tax and noncontrolling interest) for other miscellaneous items; and $8 ($5 after-tax and noncontrolling interest) for the reversal of a number of small layoff reserves related to prior periods.

In the 2016 six-month period, Restructuring and other charges included $86 ($56 after-tax and noncontrolling interest) for additional net costs related to decisions made in the fourth quarter of 2015 to permanently close and demolish the Warrick (Indiana) smelter and to curtail the Wenatchee (Washington) smelter and Point Comfort (Texas) refinery (see below); $34 ($25 after-tax and noncontrolling interest) for layoff costs related to cost reduction initiatives and the planned separation of Alcoa (see Note P), including the separation of approximately 1,100 employees (800 in the Engineered Products and Solutions segment, 240 in the Transportation and Construction Solutions segment, and 30 each in the Primary Metals and Global Rolled Products segments); a net charge of $8 ($4 after-tax and noncontrolling interest) for other miscellaneous items; and $12 ($8 after-tax and noncontrolling interest) for the reversal of a number of small layoff reserves related to prior periods.

In the 2016 six-month period, costs related to the closure and curtailment actions included accelerated depreciation of $70 related to the Warrick smelter as it continued to operate during the 2016 first quarter; $20 ($1 in the 2016 second quarter) for the reversal of severance costs initially recorded in the 2015 fourth quarter; and $36 ($9 in the 2016 second quarter) in other costs. Additionally in the 2016 six-month period, remaining inventories, mostly operating supplies and raw materials, were written down to their net realizable value, resulting in a charge of $5 ($3 after-tax and noncontrolling interest) ($2 ($1 after-tax and noncontrolling interest) in the 2016 second quarter), which was recorded in Cost of goods sold on the accompanying Statement of Consolidated Operations. The other costs of $36 ($9 in the 2016 second quarter) represent $27 ($10 in the 2016 second quarter) for contract termination, $7 in asset retirement obligations for the rehabilitation of a coal mine related to the Warrick smelter, and $2 ($(1) in the 2016 second quarter) in other related costs. Additional charges may be recognized in future periods related to these actions.

In the second quarter and six-month period of 2015, Alcoa recorded Restructuring and other charges of $217 ($141 after-tax and noncontrolling interest) and $394 ($299 after-tax and noncontrolling interest), respectively.

Restructuring and other charges in the 2015 second quarter included $179 ($115 after-tax and noncontrolling interest) for exit costs related to decisions to permanently shut down and demolish a smelter and a power station (see below); $18 ($10 after-tax and noncontrolling interest) for the separation of approximately 120 employees (Alumina segment) and other charges related to the decisions to temporarily curtail both a portion of the capacity (443,000 metric-tons-per-year) at the refinery in Suriname and the remaining capacity (74,000 metric-tons-per-year) at the São Luís smelter in Brazil; $16 ($13 after-tax and noncontrolling interest) for layoff costs, including the separation of approximately 390 employees (210 in the Engineered Products and Solutions segment, 150 in the Primary Metals segment, and 30 in the Global Rolled Products segment); $10 ($7 after-tax and noncontrolling interest) related to post-closing adjustments associated with two December 2014 divestitures; a net credit of $5 ($3 after-tax and noncontrolling interest) for other miscellaneous items; and $1 ($1 after-tax and noncontrolling interest) for the reversal of a few layoff reserves related to prior periods.

In the 2015 six-month period, Restructuring and other charges included the aforementioned $179 ($115 after-tax and noncontrolling interest); $159 ($149 after-tax and noncontrolling interest) related to the March 2015 divestiture of a rolling mill in Russia and post-closing adjustments associated with three December 2014 divestitures; $38 ($23 after-tax and noncontrolling interest) for the separation of approximately 800 employees (680 in the Primary Metals segment and 120 in the Alumina segment), supplier contract-related costs, and other charges associated with the aforementioned decisions to temporarily curtail certain capacity at the São Luís smelter and the refinery in Suriname; $29 ($21 after-tax and noncontrolling interest) for layoff costs, including the separation of approximately 600 employees (290 in the Engineered Products and Solutions segment, 150 in the Primary Metals segment, 60 in the Global Rolled Products segment, 50 in the Transportation and Construction Solutions segment, and 50 in Corporate); a net credit of $3 ($2 after-tax and noncontrolling interest) for other miscellaneous items; and $8 ($7 after-tax and noncontrolling interest) for the reversal of a number of small layoff reserves related to prior periods.

In the second quarter of 2015, management approved the permanent shutdown and demolition of the Poços de Caldas smelter (capacity of 96,000 metric-tons-per-year) in Brazil and the Anglesea power station (includes the closure of a related coal mine) in Australia. The entire capacity at Poços de Caldas has been temporarily idled since May 2014 and the Anglesea power station was shut down at the end of August 2015. Demolition and remediation activities related to the Poços de Caldas smelter and the Anglesea power station began in late 2015 and are expected to be completed by the end of 2026 and 2020, respectively.

The decision on the Poços de Caldas smelter was due to management s conclusion that the smelter was no longer competitive as a result of challenging global market conditions for primary aluminum, which led to the initial curtailment, that have not dissipated and higher costs. For the Anglesea power station, the decision was made because a sale process did not result in a sale and there would be imminent operating costs and financial constraints related to this site in the remainder of 2015 and beyond, including significant costs to source coal from available resources, necessary maintenance costs, and a depressed outlook for forward electricity prices. The Anglesea power station previously supplied approximately 40 percent of the power needs for the Point Henry smelter, which was closed in August 2014.

In the 2015 second quarter and six-month period, costs related to the shutdown actions included asset impairments of $86, representing the write-off of the remaining book value of all related properties, plants, and equipment; $11 for the layoff of approximately 100 employees (Primary Metals segment); and $82 in other exit costs. Additionally in the 2015 second quarter and six-month period, remaining inventories, mostly operating supplies and raw materials, were written down to their net realizable value, resulting in a charge of $4 ($2 after-tax and noncontrolling interest), which was recorded in Cost of goods sold on the accompanying Statement of Consolidated Operations. The other exit costs of $82 represent $45 in asset retirement obligations and $29 in environmental remediation, both of which were triggered by the decisions to permanently shut down and demolish the aforementioned structures in Brazil and Australia (includes the rehabilitation of a related coal mine), and $8 in supplier and customer contract-related costs.

Alcoa does not include Restructuring and other charges in the results of its reportable segments. The pretax impact of allocating such charges to segment results would have been as follows:

	Second quarter ended June 30,		**Six months ended June 30,**	
	2016	**2015**	**2016**	**2015**
Alumina	$ (1)	$ 10	$ 4	$ 17
Primary Metals	10	173	88	198
Global Rolled Products		1	2	136
Engineered Products and Solutions	9	8	17	11

Transportation and Construction Solutions	8	1	8	3
Segment total	26	193	119	365
Corporate	(3)	24	(3)	29
Total restructuring and other charges	$ 23	$ 217	$ 116	$ 394

As of June 30, 2016, approximately 730 of the 1,100 employees associated with 2016 restructuring programs, approximately 3,800 of the 5,000 employees (previously 5,200) associated with 2015 restructuring programs, and approximately 2,600 of the 2,700 employees (previously 2,870) associated with 2014 restructuring programs were separated. The total number of employees associated with both 2015 and 2014 restructuring programs was updated to reflect employees, who were initially identified for separation, accepting other positions within Alcoa and natural attrition. Most of the remaining separations for the 2016 restructuring programs and all of the remaining separations for the 2015 and 2014 restructuring programs are expected to be completed by the end of 2016.

In the 2016 second quarter and six-month period, cash payments of $9 and $11, respectively, were made against layoff reserves related to 2016 restructuring programs, $30 and $92, respectively, were made against layoff reserves related to 2015 restructuring programs, and $1 and $3, respectively, were made against layoff reserves related to 2014 restructuring programs.

Activity and reserve balances for restructuring charges were as follows:

	Layoff costs	Other exit costs	Total
Reserve balances at December 31, 2014	$ 98	$ 34	$ 132
2015:			
Cash payments	(111)	(12)	(123)
Restructuring charges	299	233	532
Other*	(60)	(231)	(291)
Reserve balances at December 31, 2015	226	24	250
2016:			
Cash payments	(107)	(22)	(129)
Restructuring charges	34	41	75
Other*	(31)	1	(30)
Reserve balances at June 30, 2016	$ 122	$ 44	$ 166

* Other includes reversals of previously recorded restructuring charges and the effects of foreign currency translation. In the 2016 six-month period, Other for layoff costs also included a reclassification of $1 in pension benefits costs, as this obligation was included in Alcoa s separate liability for pension benefits obligations (see Note N). Additionally in the 2016 six-month period, Other for other exit costs also included a reclassification of $7 in asset retirement obligations, as this liability was included in Alcoa s separate reserve for asset retirement obligations. In 2015, Other for layoff costs also included a reclassification of $35 in pension and other postretirement benefits costs, as these obligations were included in Alcoa s separate liability for pension and other postretirement benefits obligations. Additionally in 2015, Other for other exit costs also included a reclassification of the following restructuring charges: $76 in asset retirement and $86 in environmental obligations, as these liabilities were included in Alcoa s separate reserves for asset retirement obligations and environmental remediation.

The remaining reserves are expected to be paid in cash during the remainder of 2016, with the exception of approximately $25 to $30, which is expected to be paid over the next several years for ongoing site remediation work and special layoff benefit payments.

E. Acquisitions and Divestitures In April 2016, Alcoa completed the sale of the Remmele Medical business to LISI MEDICAL for $102 in cash ($99 net of transaction costs), which was included in Proceeds from the sale of assets and businesses on the accompanying Statement of Consolidated Cash Flows. This business, which was part of the RTI International Metals (RTI) acquisition (see below), manufactures precision-machined metal products for customers in the minimally invasive surgical device and implantable device markets. No gain was recorded on this transaction as the excess of the proceeds over the carrying value of the net assets of this business was reflected as a purchase price adjustment (decrease to goodwill of $44) to the preliminary allocation of the purchase price related to Alcoa s acquisition of RTI. While owned by Alcoa, the operating results and assets and liabilities of this business were included in the Engineered Products and Solutions segment. This business generated sales of approximately $20 from January 1, 2016 through the divestiture date, April 29, 2016, and, at the time of the divestiture, had approximately 330 employees. This transaction is subject to certain post-closing adjustments as defined in the sale agreement.

In July 2016, Alcoa s wholly-owned subsidiary, Alcoa Power Generating Inc., reached an agreement to sell its 215-megawatt Yadkin Hydroelectric Project (Yadkin) to ISQ Hydro Aggregator LLC. Yadkin encompasses four hydroelectric power developments (reservoirs, dams and powerhouses), known as High Rock, Tuckertown, Narrows and Falls, situated along a 38-mile stretch of the Yadkin River through the central part of North Carolina. This transaction is expected to close in the second half of 2016, subject to customary federal and state regulatory approvals. The power generated by Yadkin is primarily sold into the open market. Yadkin generated sales of approximately $20 in 2015, and had approximately 35 employees as of June 30, 2016. The carrying value of the net assets to be sold was $128 and $127 as of June 30, 2016 and December 31, 2015, respectively, which consist mostly of properties, plants, and equipment.

In March 2015, Alcoa completed the acquisition of an aerospace structural castings company, TITAL, for $204 (188) in cash (an additional $1 (1) was paid in September 2015 to settle working capital in accordance with the purchase agreement). TITAL, a privately held company with approximately 650 employees based in Germany, produces aluminum and titanium investment casting products for the aerospace and defense markets. The purpose of this acquisition is to capture increasing demand for advanced jet engine components made of titanium, establish titanium-casting capabilities in Europe, and expand existing aluminum casting capacity. The assets, including the associated goodwill, and liabilities of this business were included within Alcoa s Engineered Products and Solutions segment since the date of acquisition. Based on the preliminary allocation of the purchase price, goodwill of $118 was recorded for this transaction. In the first quarter of 2016, the allocation of the purchase price was finalized, based, in part, on the completion of a third-party valuation of certain assets acquired, resulting in a $1 reduction of the initial goodwill amount. None of the $117 in goodwill is deductible for income tax purposes and no other intangible assets were identified. This transaction is no longer subject to post-closing adjustments.

In July 2015, Alcoa completed the acquisition of RTI, a global supplier of titanium and specialty metal products and services for the commercial aerospace, defense, energy, and medical device markets, for $870 in Alcoa common stock. The preliminary allocation of the purchase price resulted in total assets of $1,752, including $240 in goodwill and $73 in intangibles, $822 in total liabilities, and $60 in additional capital. In the 2016 six-month period, Alcoa updated the estimated beginning balances of certain assets acquired, including a decrease to each of properties, plants, and equipment of $110, inventories of $48, and intangible assets of $33 and an increase to goodwill of $54. These changes were based, in part, on management s review of information from a preliminary third-party valuation and the sale of the medical device business (see above). The current allocation of the purchase price, which will be finalized in the third quarter of 2016, is subject to change upon further review by management.

F. Inventories

	June 30, 2016	December 31, 2015
Finished goods	$ 827	$ 811
Work-in-process	1,344	1,272
Bauxite and alumina	416	445
Purchased raw materials	650	720
Operating supplies	201	194
	$ 3,438	$ 3,442

At June 30, 2016 and December 31, 2015, the total amount of inventories valued on a LIFO basis was $1,335 and $1,373, respectively. If valued on an average-cost basis, total inventories would have been $567 and $559 higher at June 30, 2016 and December 31, 2015, respectively.

G. Investments A summary of unaudited financial information for Alcoa s equity investments is as follows (amounts represent 100% of investee financial information):

	Second quarter ended June 30,		Six months ended June 30,	
	2016	2015	2016	2015
Sales	$ 904	$ 971	$ 1,796	$ 1,857

Cost of goods sold	679	862	1,360	1,557
Net income (loss)	14	(45)	29	(86)

In April 2016, Alcoa s majority-owned subsidiary, Alcoa of Australia Limited (AofA), sold its 20% interest in a consortium, DBP, the owner and operator of the Dampier to Bunbury Natural Gas Pipeline (DBNGP) in Western Australia, to the only other member of the consortium, DUET Group. AofA received $145 (A$192) in cash, which was included in Sales of investments on the accompanying Statement of Consolidated Cash Flows, and recorded a gain of $27 (A$35) ($11 (A$15) after-tax and noncontrolling interest) in Other income, net on the accompanying Statement of Consolidated Operations. Prior to this transaction, AofA s 20% interest was previously classified as an equity investment on Alcoa s Consolidated Balance Sheet. As part of the transaction, AofA will maintain its current access to approximately 30% of the DBNGP transmission capacity for gas supply to its three alumina refineries in Western Australia. AofA is part of Alcoa World Alumina and Chemicals (AWAC), an unincorporated joint venture that consists of a group of companies, which are owned 60% by Alcoa and 40% by Alumina Limited of Australia.

In the 2016 six-month period, Alcoa sold various exchange-traded fixed income and equity securities held by its captive insurance company for $130, which was included in Sales of investments on the accompanying Statement of Consolidated Cash Flows, and recorded a loss of $3 ($2 after-tax) in Other income, net on the accompanying Statement of Consolidated Operations. Previously, these securities were classified as available-for-sale investments on Alcoa s Consolidated Balance Sheet and were carried at fair value with unrealized gains and losses recognized in other comprehensive income. As of June 30, 2016 and December 31, 2015, the carrying value of available-for-sale-securities was $68 and $193, respectively, which was included in Investments on the accompanying Consolidated Balance Sheet.

H. Other Noncurrent Assets In the first quarter of 2016, Alcoa received $234 in proceeds from the redemption of certain company-owned life insurance policies. In the second quarter of 2016, Alcoa liquidated additional company-owned life insurance policies for $223 in cash. Both of these amounts were included in Proceeds from the sale of assets and businesses on the accompanying Statement of Consolidated Cash Flows. As the cash received was equivalent to the cash surrender value of these policies, no gain or loss was recognized on the sales of these policies. As of June 30, 2016 and December 31, 2015, the cash surrender value of life insurance policies was $26 and $492, respectively, which was included in Other noncurrent assets on the accompanying Consolidated Balance Sheet.

I. Contingencies and Commitments

Contingencies

Litigation

On June 5, 2015, Alcoa World Alumina LLC (AWA) and St. Croix Alumina, L.L.C. (SCA) filed a complaint in Delaware Chancery Court for a declaratory judgment and injunctive relief to resolve a dispute between Alcoa and Glencore Ltd. (Glencore) with respect to claimed obligations under a 1995 asset purchase agreement between Alcoa and Glencore. The dispute arose from Glencore s demand that Alcoa indemnify it for liabilities it may have to pay to Lockheed Martin (Lockheed) related to the St. Croix alumina refinery. Lockheed had earlier filed suit against Glencore in federal court in New York seeking indemnity for liabilities it had incurred and would incur to the U.S. Virgin Islands to remediate certain properties at the refinery property and claimed that Glencore was required by an earlier, 1989 purchase agreement to indemnify it. Glencore had demanded that Alcoa indemnify and defend it in the Lockheed case and threatened to claim against Alcoa in the New York action despite exclusive jurisdiction for resolution of disputes under the 1995 purchase agreement being in Delaware. After Glencore conceded that it was not seeking to add Alcoa to the New York action, AWA and SCA dismissed their complaint in the Chancery Court case and on August 6, 2015 filed a complaint for declaratory judgment in Delaware Superior Court. AWA and SCA filed a motion for judgment on the pleadings on September 16, 2015. Glencore answered AWA s and SCA s complaint and asserted counterclaims on August 27, 2015, and on October 2, 2015 filed its own motion for judgment on the pleadings. Argument on the parties motions was held by the court on December 7, 2015, and by order dated February 8, 2016, the court granted Alcoa s motion and denied Glencore s motion, resulting in Alcoa not being liable to indemnify Glencore for the Lockheed action. The decision also leaves for pretrial discovery and possible summary judgment or trial Glencore s claims for costs and fees it incurred in defending and settling an earlier Superfund action brought against Glencore by the Government of the Virgin Islands. On February 17, 2016, Glencore filed notice of its application for interlocutory appeal of the February 8, 2016 ruling. AWA and SCA filed an opposition to that application on February 29, 2016. On March 10, 2016, the court denied Glencore s motion for interlocutory appeal and on the same day entered judgment on claims other than Glencore s claims for costs and fees it incurred in defending and settling the earlier Superfund action brought against Glencore by the Government of the Virgin Islands. On March 29, 2016, Glencore filed a withdrawal of its notice of interlocutory appeal, and on April 6, 2016, Glencore filed an appeal of the court s March 10, 2016 judgment to the Delaware Supreme Court. At this time, the Company is unable to reasonably predict the ultimate outcome for this matter.

Before 2002, Alcoa purchased power in Italy in the regulated energy market and received a drawback of a portion of the price of power under a special tariff in an amount calculated in accordance with a published resolution of the Italian Energy Authority, Energy Authority Resolution n. 204/1999 (204/1999). In 2001, the Energy Authority published another resolution, which clarified that the drawback would be calculated in the same manner, and in the same amount, in either the regulated or unregulated market.

At the beginning of 2002, Alcoa left the regulated energy market to purchase energy in the unregulated market. Subsequently, in 2004, the Energy Authority introduced regulation no. 148/2004 which set forth a different method for calculating the special tariff that would result in a different drawback for the regulated and unregulated markets. Alcoa challenged the new regulation in the Administrative Court of Milan and received a favorable judgment in 2006. Following this ruling, Alcoa continued to receive the power price drawback in accordance with the original calculation method, through 2009, when the European Commission declared all such special tariffs to be impermissible state aid. In 2010, the Energy Authority appealed the 2006 ruling to the Consiglio di Stato (final court of appeal). On December 2, 2011, the Consiglio di Stato ruled in favor of the Energy Authority and against Alcoa, thus presenting the opportunity for the energy regulators to seek reimbursement from Alcoa of an amount equal to the difference between the actual drawback amounts received over the relevant time period, and the drawback as it would have been calculated in accordance with regulation 148/2004. On February 23, 2012, Alcoa filed its appeal of the decision of the Consiglio di Stato (this appeal was subsequently withdrawn in March 2013). On March 26, 2012, Alcoa received a letter from the agency (Cassa Conguaglio per il Settore Eletrico (CCSE)) responsible for making and collecting payments on behalf of the Energy Authority demanding payment in the amount of approximately $110 (85), including interest. By letter dated April 5, 2012, Alcoa informed CCSE that it disputes the payment demand of CCSE since (i) CCSE was not authorized by the Consiglio di Stato decisions to seek payment of any amount, (ii) the decision of the Consiglio di Stato has been appealed (see above), and (iii) in any event, no interest should be payable. On April 29, 2012, Law No. 44 of 2012 (44/2012) came into effect, changing the method to calculate the drawback. On February 21, 2013, Alcoa received a revised request letter from CCSE demanding Alcoa s subsidiary, Alcoa Trasformazioni S.r.l., make a payment in the amount of $97 (76), including interest, which reflects a revised calculation methodology by CCSE and represents the high end of the range of reasonably possible loss associated with this matter of $0 to $97 (76). Alcoa rejected that demand and formally challenged it through an appeal before the Administrative Court on April 5, 2013. The Administrative Court scheduled a hearing for December 19, 2013, which was subsequently postponed until April 17, 2014, and further postponed until June 19, 2014. On that date, the Administrative Court listened to Alcoa s oral argument, and on September 2, 2014, rendered its decision. The Administrative Court declared the payment request of CCSE and the Energy Authority to Alcoa to be unsubstantiated based on the 148/2004 resolution with respect to the January 19, 2007 through November 19, 2009 timeframe. On December 18, 2014, the CCSE and the Energy Authority appealed the Administrative Court s September 2, 2014 decision; however, a date for the hearing has not been scheduled. As a result of the conclusion of the European Commission Matter on January 26, 2016 (see Note N in the Company s Annual Report on Form 10-K for the year ended December 31, 2015), management modified its outlook with respect to a portion of the pending legal proceedings related to this matter. As such, a charge of $37 (34) was recorded in Restructuring and other charges for the year ended December 31, 2015 to establish a partial reserve for this matter. At this time, the Company is unable to reasonably predict the ultimate outcome for this matter.

<u>Environmental Matters</u>

Alcoa participates in environmental assessments and cleanups at more than 100 locations. These include owned or operating facilities and adjoining properties, previously owned or operating facilities and adjoining properties, and waste sites, including Superfund (Comprehensive Environmental Response, Compensation and Liability Act (CERCLA)) sites.

A liability is recorded for environmental remediation when a cleanup program becomes probable and the costs can be reasonably estimated. As assessments and cleanups proceed, the liability is adjusted based on progress made in determining the extent of remedial actions and related costs. The liability can change substantially due to factors such as the nature and extent of contamination, changes in remedial requirements, and technological changes, among others.

Alcoa s remediation reserve balance was $606 and $604 at June 30, 2016 and December 31, 2015 (of which $49 and $50 was classified as a current liability), respectively, and reflects the most probable costs to remediate identified environmental conditions for which costs can be reasonably estimated.

In the 2016 second quarter and six-month period, the remediation reserve was increased by $6 and $13, respectively. The change in both periods was due to a net charge associated with a number of sites and was recorded in Cost of goods sold on the accompanying Statement of Consolidated Operations.

Payments related to remediation expenses applied against the reserve were $14 and $25 in the 2016 second quarter and six-month period, respectively. These amounts include expenditures currently mandated, as well as those not required by any regulatory authority or third party. In the 2016 second quarter and six-month period, the change in the reserve also reflects an increase of $6 and $11, respectively, due to the effects of foreign currency translation and an increase of $3 related to the acquisition of RTI International Metals (see Note E).

Included in annual operating expenses are the recurring costs of managing hazardous substances and environmental programs. These costs are estimated to be approximately 2% of cost of goods sold.

The following discussion provides details regarding the current status of certain significant reserves related to current or former Alcoa sites.

Massena West, NY Alcoa has an ongoing remediation project related to the Grasse River, which is adjacent to Alcoa s Massena plant site. Many years ago, it was determined that sediments and fish in the river contain varying levels of polychlorinated biphenyls (PCBs). The project, which was selected by the U.S. Environmental Protection Agency (EPA) in a Record of Decision (ROD) issued in April 2013, is aimed at capping PCB contaminated sediments with concentration in excess of one part per million in the main channel of the river and dredging PCB contaminated sediments in the near-shore areas where total PCBs exceed one part per million. At June 30, 2016 and December 31, 2015, the reserve balance associated with this matter was $232 and $234, respectively. Alcoa is in the planning and design phase, which is expected to be completed in 2017. Subsequently in 2017, the actual remediation fieldwork is expected to commence and take approximately four years. The majority of the project funding is expected to be spent between 2017 and 2021.

Sherwin, TX In connection with the sale of the Sherwin alumina refinery, which was required to be divested as part of the Reynolds merger in 2000, Alcoa agreed to retain responsibility for the remediation of the then existing environmental conditions, as well as a pro rata share of the final closure of the active bauxite residue waste disposal areas (known as the Copano facility). Alcoa s share of the closure costs is proportional to the total period of operation of the active waste disposal areas. At June 30, 2016 and December 31, 2015, the reserve balance associated with Sherwin was $30. Approximately half of the project funding is expected to be spent through 2019. The remainder is not expected to be spent in the foreseeable future as it is dependent upon the operating life of the active waste disposal areas.

East St. Louis, IL Alcoa has an ongoing remediation project related to an area used for the disposal of bauxite residue from former alumina refining operations. The project, which was selected by the EPA in a ROD issued in July 2012, is aimed at implementing a soil cover over the affected area. On November 1, 2013, the U.S. Department of Justice lodged a consent decree on behalf of the EPA for Alcoa to conduct the work outlined in the ROD. This consent decree was entered as final in February 2014 by the U.S. Department of Justice. As a result, Alcoa began construction in March 2014; the field work on this project was completed at the end of June 2016. Alcoa is now in the documentation and final reporting stage with the EPA, which will continue into 2017 when this matter will transition into a long-term inspection and monitoring program (Alcoa has a second project in East St. Louis that is separate from the matter presented herein on which Alcoa is expecting an EPA decision at some point in the remainder of 2016 any resulting liability is not expected to be material). At June 30, 2016 and December 31, 2015, the reserve balance associated with this matter was $6 and $8, respectively.

Fusina and Portovesme, Italy In 1996, Alcoa acquired the Fusina smelter and rolling operations and the Portovesme smelter, both of which are owned by Alcoa s subsidiary Alcoa Trasformazioni S.r.l. (Trasformazioni), from Alumix, an entity owned by the Italian Government. At the time of the acquisition, Alumix indemnified Alcoa for pre-existing environmental contamination at the sites. In 2004, the Italian Ministry of Environment and Protection of Land and Sea (MOE) issued orders to Trasformazioni and Alumix for the development of a clean-up plan related to soil contamination in excess of allowable limits under legislative decree and to institute emergency actions and pay natural resource damages. Trasformazioni appealed the orders and filed suit against Alumix, among others, seeking indemnification for these liabilities under the provisions of the acquisition agreement. In 2009, Ligestra S.r.l. (Ligestra), Alumix s successor, and Trasformazioni agreed to a stay of the court proceedings while investigations were conducted and negotiations advanced towards a possible settlement.

In December 2009, Trasformazioni and Ligestra reached an initial agreement for settlement of the liabilities related to Fusina while negotiations continued related to Portovesme (see below). The agreement outlined an allocation of payments to the MOE for emergency action and natural resource damages and the scope and costs for a proposed soil remediation project, which was formally presented to the MOE in mid-2010. The agreement was contingent upon final acceptance of the remediation project by the MOE. As a result of entering into this agreement, Alcoa increased the reserve by $12 in 2009 for Fusina. Based on comments received from the MOE and local and regional environmental authorities, Trasformazioni submitted a revised remediation plan in the first half of 2012; however, such revisions did not require any change to the existing reserve. In October 2013, the MOE approved the project submitted by Alcoa, resulting in no adjustment to the reserve.

In January 2014, in anticipation of Alcoa reaching a final administrative agreement with the MOE, Alcoa and Ligestra entered into a final agreement related to Fusina for allocation of payments to the MOE for emergency action and natural resource damages and the costs for the approved soil remediation project. The agreement resulted in Ligestra assuming 50% to 80% of all payments and remediation costs. On February 27, 2014, Alcoa and the MOE reached a final administrative agreement for conduct of work. The agreement includes both a soil and groundwater remediation project estimated to cost $33 (24) and requires payments of $25

(18) to the MOE for emergency action and natural resource damages. The remediation projects are slated to begin as soon as Alcoa receives final approval from the Ministry of Infrastructure. Based on the final agreement with Ligestra, Alcoa s share of all costs and payments is $17 (12), of which $9 (6) related to the damages will be paid annually over a 10-year period, which began in April 2014, and was previously fully reserved.

Separately, in 2009, due to additional information derived from the site investigations conducted at Portovesme, Alcoa increased the reserve by $3. In November 2011, Trasformazioni and Ligestra reached an agreement for settlement of the liabilities related to Portovesme, similar to the one for Fusina. A proposed soil remediation project for Portovesme was formally presented to the MOE in June 2012. Neither the agreement with Ligestra nor the proposal to the MOE resulted in a change to the reserve for Portovesme. In November 2013, the MOE rejected the proposed soil remediation project and requested a revised project be submitted. In May 2014, Trasformazioni and Ligestra submitted a revised soil remediation project that addressed certain stakeholders concerns. Alcoa increased the reserve by $3 in 2014 to reflect the estimated higher costs associated with the revised soil remediation project, as well as current operating and maintenance costs of the Portovesme site.

In October 2014, the MOE required a further revised project be submitted to reflect the removal of a larger volume of contaminated soil than what had been proposed, as well as design changes for the cap related to the remaining contaminated soil left in place and the expansion of an emergency containment groundwater pump and treatment system that was previously installed. Trasformazioni and Ligestra submitted the further revised soil remediation project in February 2015. As a result, Alcoa increased the reserve by $7 in March 2015 to reflect the increase in the estimated costs of the project. In October 2015, Alcoa received a final ministerial decree approving the February 2015 revised soil remediation project. Work on the soil remediation project commenced in the second quarter of 2016 and is expected to be completed in 2019. Alcoa and Ligestra are now working on a final groundwater remediation project, which will be submitted to the MOE for review during the second half of 2016. The ultimate outcome of this matter may result in a change to the existing reserve for Portovesme.

Baie Comeau, Quebec, Canada In August 2012, Alcoa presented an analysis of remediation alternatives to the Quebec Ministry of Sustainable Development, Environment, Wildlife and Parks (MDDEP), in response to a previous request, related to known PCBs and polycyclic aromatic hydrocarbons (PAHs) contained in sediments of the Anse du Moulin bay. As such, Alcoa increased the reserve for Baie Comeau by $25 in 2012 to reflect the estimated cost of Alcoa s recommended alternative, consisting of both dredging and capping of the contaminated sediments. In July 2013, Alcoa submitted the Environmental Impact Assessment for the project to the MDDEP. The MDDEP notified Alcoa that the project as it was submitted was approved and a final ministerial decree was issued in July 2015. As a result, no further adjustment to the reserve was required in 2015. The decree provides final approval for the project and allows Alcoa to start work on the final project design, which is expected to be completed in the second half of 2016 with construction on the project expected to begin in 2017. Completion of the final project design and bidding of the project may result in additional liability in a future period.

Mosjøen, Norway In September 2012, Alcoa presented an analysis of remediation alternatives to the Norwegian Environmental Agency (NEA) (formerly the Norwegian Climate and Pollution Agency, or Klif), in response to a previous request, related to known PAHs in the sediments located in the harbor and extending out into the fjord. As such, Alcoa increased the reserve for Mosjøen by $20 in 2012 to reflect the estimated cost of the baseline alternative for dredging of the contaminated sediments. A proposed project reflecting this alternative was formally presented to the NEA in June 2014, and was resubmitted in late 2014 to reflect changes by the NEA. The revised proposal did not result in a change to the reserve for Mosjøen.

In April 2015, the NEA notified Alcoa that the revised project was approved and required submission of the final project design before issuing a final order. Alcoa completed and submitted the final project design, which identified a need to stabilize the related wharf structure to allow for the sediment dredging in the harbor. As a result, Alcoa increased the reserve for Mosjøen by $11 in June 2015 to reflect the estimated cost of the wharf stabilization. Also in

June 2015, the NEA issued a final order approving the project as well as the final project design. In September 2015, Alcoa increased the reserve by $1 to reflect the potential need (based on prior experience with similar projects) to perform additional dredging if the results of sampling, which is required by the order, don t achieve the required cleanup levels. Project construction commenced in the first quarter of 2016 and is expected to be completed by the end of 2017.

Tax

In September 2010, following a corporate income tax audit covering the 2003 through 2005 tax years, an assessment was received as a result of Spain s tax authorities disallowing certain interest deductions claimed by a Spanish consolidated tax group owned by the Company. An appeal of this assessment in Spain s Central Tax Administrative Court by the Company was denied in October 2013. In December 2013, the Company filed an appeal of the assessment in Spain s National Court.

Additionally, following a corporate income tax audit of the same Spanish tax group for the 2006 through 2009 tax years, Spain s tax authorities issued an assessment in July 2013 similarly disallowing certain interest deductions. In August 2013, the Company filed an appeal of this second assessment in Spain s Central Tax Administrative Court, which was denied in January 2015. The Company filed an appeal of this second assessment in Spain s National Court in March 2015.

At June 30, 2016, the combined assessments total $269 (243), including interest. The Company believes it has meritorious arguments to support its tax position and intends to vigorously litigate the assessments through Spain s court system. However, in the event the Company is unsuccessful, a portion of the assessments may be offset with existing net operating losses available to the Spanish consolidated tax group. Additionally, it is possible that the Company may receive similar assessments for tax years subsequent to 2009. At this time, the Company is unable to reasonably predict an outcome for this matter.

In March 2013, Alcoa s subsidiary, Alcoa World Alumina Brasil (AWAB), was notified by the Brazilian Federal Revenue Office (RFB) that approximately $110 (R$220) of value added tax credits previously claimed are being disallowed and a penalty of 50% assessed. Of this amount, AWAB received $41 (R$82) in cash in May 2012. The value added tax credits were claimed by AWAB for both fixed assets and export sales related to the Juruti bauxite mine and São Luís refinery expansion. The RFB has disallowed credits they allege belong to the consortium in which AWAB owns an interest and should not have been claimed by AWAB. Credits have also been disallowed as a result of challenges to apportionment methods used, questions about the use of the credits, and an alleged lack of documented proof. AWAB presented defense of its claim to the RFB on April 8, 2013. If AWAB is successful in this administrative process, the RFB would have no further recourse. If unsuccessful in this process, AWAB has the option to litigate at a judicial level. Separately from AWAB s administrative appeal, in June 2015, new tax law was enacted repealing the provisions in the tax code that were the basis for the RFB assessing a 50% penalty in this matter. As such, the estimated range of reasonably possible loss is $0 to $32 (R$103), whereby the maximum end of the range represents the portion of the disallowed credits applicable to the export sales and excludes the 50% penalty. Additionally, the estimated range of disallowed credits related to AWAB s fixed assets is $0 to $36 (R$117), which would increase the net carrying value of AWAB s fixed assets if ultimately disallowed. It is management s opinion that the allegations have no basis; however, at this time, management is unable to reasonably predict an outcome for this matter.

Between 2000 and 2002, Alcoa Alumínio (Alumínio) sold approximately 2,000 metric tons of metal per month from its Poços de Caldas facility, located in the State of Minas Gerais (the State), to Alfio, a customer also located in the State. Sales in the State were exempted from value-added tax (VAT) requirements. Alfio subsequently sold metal to customers outside of the State, but did not pay the required VAT on those transactions. In July 2002, Alumínio received an assessment from State auditors on the theory that Alumínio should be jointly and severally liable with Alfio for the unpaid VAT. In June 2003, the administrative tribunal found Alumínio liable, and Alumínio filed a judicial case in the State in February 2004 contesting the finding. In May 2005, the Court of First Instance found Alumínio solely liable, and a panel of a State appeals court confirmed this finding in April 2006. Alumínio filed a special appeal to the Superior Tribunal of Justice (STJ) in Brasilia (the federal capital of Brazil) later in 2006. In 2011, the STJ (through one of its judges) reversed the judgment of the lower courts, finding that Alumínio should neither be solely nor jointly and severally liable with Alfio for the VAT, which ruling was then appealed by the State. In August 2012, the STJ agreed to have the case reheard before a five-judge panel. A decision from this panel is pending, but additional appeals are likely. At June 30, 2016, the assessment totaled $43 (R$139), including penalties and interest. While the Company believes it has meritorious defenses, the Company is unable to reasonably predict an outcome.

<u>Other</u>

In connection with the sale in 2001 of Reynolds Metals Company s (Reynolds, a subsidiary of Alcoa), alumina refinery in Gregory, Texas, Reynolds assigned an Energy Services Agreement (ESA) with Gregory Power Partners (Gregory Power) for purchase of steam and electricity by the refinery. On January 11, 2016, Sherwin Alumina Company, LLC (Sherwin), the current owner of the refinery, and one of its affiliate entities, filed bankruptcy petitions in Corpus Christi, Texas for reorganization under Chapter 11 of the Bankruptcy Code. On January 26, 2016, Gregory Power delivered notice to Reynolds that Sherwin s bankruptcy filing constitutes a breach of the ESA; on January 29, 2016, Reynolds responded that the filing does not constitute a breach.

Sherwin has indicated that it may cease operations if an acceptable, modified ESA cannot be achieved and it is not able to continue its bauxite supply agreement with a subsidiary of Noranda Aluminum Holding Corporation. If Sherwin is unable to confirm a revised plan of reorganization to continue operation of the refinery, Reynolds may face claims under the ESA or for environmental remediation at the refinery and associated properties. This matter is neither estimable nor probable; therefore, at this time, the Company is unable to reasonably predict the ultimate outcome.

In addition to the matters discussed above, various other lawsuits, claims, and proceedings have been or may be instituted or asserted against Alcoa, including those pertaining to environmental, product liability, safety and health, and tax matters. While the amounts claimed in these other matters may be substantial, the ultimate liability cannot now be determined because of the considerable uncertainties that exist. Therefore, it is possible that the Company s liquidity or results of operations in a particular period could be materially affected by one or more of these other matters. However, based on facts currently available, management believes that the disposition of these other matters that are pending or asserted will not have a material adverse effect, individually or in the aggregate, on the financial position of the Company.

Commitments

Investments

Alcoa has an investment in a joint venture for the development, construction, ownership, and operation of an integrated aluminum complex (bauxite mine, alumina refinery, aluminum smelter, and rolling mill) in Saudi Arabia. The joint venture is owned 74.9% by the Saudi Arabian Mining Company (known as Ma aden) and 25.1% by Alcoa and consists of three separate companies as follows: one each for the mine and refinery, the smelter, and the rolling mill. Alcoa accounts for its investment in the joint venture under the equity method. Capital investment in the project is expected to total approximately $10,800 (SAR 40.5 billion) and has been funded through a combination of equity contributions by the joint venture partners and project financing by the joint venture, which has been guaranteed by both partners (see below). Both the equity contributions and the guarantees of the project financing are based on the joint venture s partners ownership interests. Originally, it was estimated that Alcoa s total equity investment in the joint venture would be approximately $1,100, of which Alcoa has contributed $982, including $1 in the 2016 six-month period. Based on changes to both the project s capital investment and equity and debt structure from the initial plans, the estimated $1,100 equity contribution may be reduced. As of June 30, 2016 and December 31, 2015, the carrying value of Alcoa s investment in this project was $883 and $928, respectively.

The smelting and rolling mill companies have project financing totaling $4,227 (reflects principal repayments made through June 30, 2016), of which $1,061 represents Alcoa s share (the equivalent of Alcoa s 25.1% interest in the smelting and rolling mill companies). In conjunction with the financings, Alcoa issued guarantees on behalf of the smelting and rolling mill companies to the lenders in the event that such companies default on their debt service requirements through 2017 and 2020 for the smelting company and 2018 and 2021 for the rolling mill company (Ma aden issued similar guarantees for its 74.9% interest). Alcoa s guarantees for the smelting and rolling mill companies cover total debt service requirements of $142 in principal and up to a maximum of approximately $30 in interest per year (based on projected interest rates). At June 30, 2016 and December 31, 2015, the combined fair value of the guarantees was $4 and $7, respectively, which was included in Other noncurrent liabilities and deferred credits on the accompanying Consolidated Balance Sheet.

The mining and refining company has project financing totaling $2,232, of which $560 represents AWAC s 25.1% interest in the mining and refining company. In conjunction with the financings, Alcoa, on behalf of AWAC, issued guarantees to the lenders in the event that the mining and refining company defaults on its debt service requirements through 2019 and 2024 (Ma aden issued similar guarantees for its 74.9% interest). Alcoa s guarantees for the mining and refining company cover total debt service requirements of $120 in principal and up to a maximum of approximately $30 in interest per year (based on projected interest rates). At both June 30, 2016 and December 31, 2015, the combined fair value of the guarantees was $3, which was included in Other noncurrent liabilities and deferred credits on the accompanying Consolidated Balance Sheet. In the event Alcoa would be required to make payments under the guarantees, 40% of such amount would be contributed to Alcoa by Alumina Limited, consistent with its ownership interest in AWAC.

In 2004, AofA acquired a 20% interest in a consortium, which subsequently purchased the Dampier to Bunbury Natural Gas Pipeline (DBNGP) in Western Australia, in exchange for an initial cash investment of $17 (A$24). The investment in the DBNGP, which was classified as an equity investment, was made in order to secure a competitively priced long-term supply of natural gas to

AofA s refineries in Western Australia. AofA made additional contributions of $141 (A$176) for its share of the pipeline capacity expansion and other operational purposes of the consortium through September 2011. In late 2011, the consortium initiated a three-year equity call plan to improve its capitalization structure. This plan required AofA to contribute $39 (A$40), all of which was made through December 2014. Following the completion of the three-year equity call plan in December 2014, the consortium initiated a new equity call plan to further improve its capitalization structure. This plan required AofA to contribute $30 (A$36) through mid-2016, of which $20 (A$27) was made through March 31, 2016, including $3 (A$5) in the 2016 first quarter.

In April 2016, AofA sold its interest in the consortium (see Note G), effectively terminating its remaining obligation to make contributions under the current equity call plan. As part of the sale transaction, AofA will maintain its current access to approximately 30% of the DBNGP transmission capacity for gas supply to its three alumina refineries in Western Australia under an existing agreement to purchase gas transmission services from the DBNGP. At June 30, 2016, AofA has an asset of $275 (A$372) representing prepayments made under the agreement for future gas transmission services.

On April 8, 2015, AofA secured a new 12-year gas supply agreement to power its three alumina refineries in Western Australia beginning in July 2020. This agreement was conditional on the completion of a third-party acquisition of the related energy assets from the then-current owner, which occurred in June 2015. The terms of AofA s gas supply agreement required a prepayment of $500 to be made in two installments. The first installment of $300 was made at the time of the completion of the third-party acquisition in June 2015 and the second installment of $200 was made in April 2016. Both of these amounts were included in (Increase) in noncurrent assets on the accompanying Statement of Consolidated Cash Flows in the respective periods. At June 30, 2016 and December 31, 2015, Alcoa has an asset of $484 (A$654) and $288 (A$395), respectively, representing the respective prepayments made under this agreement, which were included in Other noncurrent assets on the accompanying Consolidated Balance Sheet.

J. Other Income, Net

	Second quarter ended June 30,		Six months ended June 30,	
	2016	**2015**	**2016**	**2015**
Equity loss	$ 15	$ 24	$ 37	$ 44
Interest income	(5)	(4)	(9)	(7)
Foreign currency (gains) losses, net	(9)	6	6	(10)
Net gain from asset sales	(30)	(28)	(28)	(28)
Net loss on mark-to-market derivative contracts (O)	8	7	9	3
Other, net	(16)	(5)	(18)	(14)
	$ (37)	$	$ (3)	$ (12)

In the 2016 second quarter and six-month period, Net gain from assets sales included a $27 gain related to the sale of an equity interest in a natural gas pipeline in Australia (see Note G). In the 2015 second quarter and six-month period, Net gain from assets sales included a $29 gain related to the sale of land around the Lake Charles, LA anode facility.

K. Segment Information The operating results of Alcoa s reportable segments were as follows (differences between segment totals and consolidated totals are in Corporate):

	Alumina	Primary Metals	Global Rolled Products	Engineered Products and Solutions	Transportation and Construction Solutions	Total
Second quarter ended June 30, 2016						
Sales:						
Third-party sales	$ 694	$ 1,119	$ 1,550	$ 1,465	$ 467	$ 5,295
Intersegment sales	300	473	29			802
Total sales	$ 994	$ 1,592	$ 1,579	$ 1,465	$ 467	$ 6,097
Profit and loss:						
Equity loss	$ (7)	$	$ (10)	$	$	$ (17)
Depreciation, depletion, and amortization	66	101	55	62	12	296
Income taxes	40		28	87	18	173
After-tax operating income (ATOI)	109	41	68	180	46	444
Second quarter ended June 30, 2015						
Sales:						
Third-party sales	$ 924	$ 1,534	$ 1,668	$ 1,279	$ 492	$ 5,897
Intersegment sales	431	562	34			1,027
Total sales	$ 1,355	$ 2,096	$ 1,702	$ 1,279	$ 492	$ 6,924
Profit and loss:						
Equity loss	$ (11)	$ (5)	$ (7)	$	$	$ (23)
Depreciation, depletion, and amortization	77	109	56	54	11	307
Income taxes	87	6	25	81	17	216
ATOI	215	67	76	165	44	567

	Alumina	Primary Metals	Global Rolled Products	Engineered Products and Solutions	Transportation and Construction Solutions	Total
Six months ended June 30, 2016						
Sales:						
Third-party sales	$ 1,239	$ 2,242	$ 2,947	$ 2,914	$ 896	$ 10,238
Intersegment sales	592	948	58			1,598
Total sales	$ 1,831	$ 3,190	$ 3,005	$ 2,914	$ 896	$ 11,836
Profit and loss:						
Equity (loss) income	$ (21)	$ 4	$ (21)	$	$	$ (38)
Depreciation, depletion, and amortization	129	203	111	127	23	593
Income taxes	45	(16)	62	165	32	288

ATOI	117	55	136	342	85	735
Six months ended June 30, 2015						
Sales:						
Third-party sales	$ 1,811	$ 3,106	$ 3,289	$ 2,536	$ 963	$ 11,705
Intersegment sales	932	1,254	70			2,256
Total sales	$ 2,743	$ 4,360	$ 3,359	$ 2,536	$ 963	$ 13,961
Profit and loss:						
Equity loss	$ (18)	$ (8)	$ (16)	$	$	$ (42)
Depreciation, depletion, and amortization	157	218	112	105	21	613
Income taxes	179	63	61	157	31	491
ATOI	436	254	130	321	82	1,223

The following table reconciles total segment ATOI to consolidated net income attributable to Alcoa:

	Second quarter ended June 30,		Six months ended June 30,	
	2016	2015	2016	2015
Total segment ATOI	$ 444	$ 567	$ 735	$ 1,223
Unallocated amounts (net of tax):				
Impact of LIFO	(10)	36	(6)	43
Metal price lag	7	(39)	8	(62)
Interest expense	(84)	(80)	(167)	(160)
Noncontrolling interests	(43)	(67)	(38)	(127)
Corporate expense	(77)	(65)	(132)	(127)
Restructuring and other charges	(15)	(159)	(76)	(320)
Other	(87)	(53)	(173)	(135)
Consolidated net income attributable to Alcoa	$ 135	$ 140	$ 151	$ 335

Items required to reconcile total segment ATOI to consolidated net income attributable to Alcoa include: the impact of LIFO inventory accounting; metal price lag; interest expense; noncontrolling interests; corporate expense (general administrative and selling expenses of operating the corporate headquarters and other global administrative facilities, along with depreciation and amortization on corporate-owned assets); restructuring and other charges; and other items, including intersegment profit eliminations, differences between tax rates applicable to the segments and the consolidated effective tax rate, and other nonoperating items such as foreign currency transaction gains/losses and interest income.

L. Earnings Per Share Basic earnings per share (EPS) amounts are computed by dividing earnings, after the deduction of preferred stock dividends declared, by the average number of common shares outstanding. Diluted EPS amounts assume the issuance of common stock for all potentially dilutive share equivalents outstanding.

The information used to compute basic and diluted EPS attributable to Alcoa common shareholders was as follows (shares in millions):

	Second quarter ended June 30,		Six months ended June 30,	
	2016	2015	2016	2015
Net income attributable to Alcoa	$ 135	$ 140	$ 151	$ 335
Less: preferred stock dividends declared	17	17	35	35
Net income available to Alcoa common shareholders basic	118	123	116	300
Add: interest expense related to convertible notes	2			
Add: dividends related to mandatory convertible preferred stock				
Net income available to Alcoa common shareholders diluted	$ 120	$ 123	$ 116	$ 300

Average shares outstanding basic	1,315	1,222	1,314	1,222
Effect of dilutive securities:				
Stock options	2	4	1	5
Stock and performance awards	11	11	11	11
Convertible notes	28			
Mandatory convertible preferred stock				
Average shares outstanding diluted	1,356	1,237	1,326	1,238

In all periods presented, 77 million share equivalents related to mandatory convertible preferred stock were not included in the computation of diluted EPS because their effect was anti-dilutive. Additionally, in the 2016 six-month period, 28 million share equivalents related to convertible notes were not included in the computation of diluted EPS because their effect was anti-dilutive

Options to purchase 25 million and 13 million shares of common stock at a weighted average exercise price of $12.73 and $14.78 per share were outstanding as of June 30, 2016 and 2015, respectively, but were not included in the computation of diluted EPS because they were anti-dilutive, as the exercise prices of the options were greater than the average market price of Alcoa s common stock.

M. Receivables Alcoa has an arrangement with three financial institutions to sell certain customer receivables without recourse on a revolving basis. The sale of such receivables is completed through the use of a bankruptcy remote special purpose entity, which is a consolidated subsidiary of Alcoa. This arrangement provides for minimum funding of $200 up to a maximum of $500 for receivables sold. The initial sale of receivables in March 2012 resulted in the setup of a deferred purchase price of $254. Alcoa has received net cash funding of $350 ($1,508 in draws and $1,158 in repayments) since the program s inception, including $100 ($200 in draws and $100 in repayments) in the 2016 six-month period.

As of June 30, 2016 and December 31, 2015, the deferred purchase price receivable was $197 and $249, respectively, which was included in Other receivables on the accompanying Consolidated Balance Sheet. The deferred purchase price receivable is reduced as collections of the underlying receivables occur; however, as this is a revolving program, the sale of new receivables will result in an increase in the deferred purchase price receivable. The net change in the deferred purchase price receivable was reflected in the (Increase) in receivables line item on the accompanying Statement of Consolidated Cash Flows. This activity is reflected as an operating cash flow because the related customer receivables are the result of an operating activity with an insignificant, short-term interest rate risk.

The gross amount of receivables sold and total cash collected under this program since its inception was $27,521 and $26,974, respectively. Alcoa services the customer receivables for the financial institutions at market rates; therefore, no servicing asset or liability was recorded.

N. Pension and Other Postretirement Benefits The components of net periodic benefit cost were as follows:

	Second quarter ended June 30,		Six months ended June 30,	
Pension benefits	**2016**	**2015**	**2016**	**2015**
Service cost	$ 41	$ 44	$ 81	$ 88
Interest cost	122	145	244	289
Expected return on plan assets	(186)	(189)	(371)	(377)
Recognized net actuarial loss	102	117	204	235
Amortization of prior service cost	4	4	8	8
Settlements*	2		2	1
Special termination benefits*		10	1	12
Net periodic benefit cost	$ 85	$ 131	$ 169	$ 256

* Except for Settlements of $2 in both the second quarter and six months ended June 30, 2016, these amounts were recorded in Restructuring and other charges on the accompanying Statement of Consolidated Operations (see Note D).

	Second quarter ended June 30,		Six months ended June 30,	
Other postretirement benefits	**2016**	**2015**	**2016**	**2015**
Service cost	$ 4	$ 4	$ 7	$ 7
Interest cost	19	23	37	46
Recognized net actuarial loss	5	5	11	9

Amortization of prior service benefit	(7)	(10)	(13)	(19)
Curtailments*		(1)		(1)
Special termination benefits*		1		1
Net periodic benefit cost	$ 21	$ 22	$ 42	$ 43

* These amounts were recorded in Restructuring and other charges on the accompanying Statement of Consolidated Operations (see Note D).

In conjunction with the annual measurement of the funded status of Alcoa s pension and other postretirement benefit plans at December 31, 2015, management elected to change the manner in which the interest cost component of net periodic benefit cost is determined in 2016 and beyond. Previously, the interest cost component was determined by multiplying the single equivalent rate and the aggregate discounted cash flows of the plans projected benefit obligations. Under the new methodology, the interest cost component is determined by aggregating the product of the discounted cash flows of the plans projected benefit obligations for each year and an individual spot rate (referred to as the spot rate approach). In the 2016 second quarter and six-month period, this change resulted in a lower interest cost component of net periodic benefit cost under the new methodology compared to the previous methodology of $24 and $48, respectively, for pension plans and $4 and $8, respectively, for other postretirement benefit plans. Management believes this new methodology, which represents a change in an accounting estimate, is a better measure of the interest cost as each year s cash flows are specifically linked to the interest rates of bond payments in the same respective year.

O. Derivatives and Other Financial Instruments

Fair Value

Fair value is defined as the price that would be received to sell an asset or paid to transfer a liability in an orderly transaction between market participants at the measurement date. The fair value hierarchy distinguishes between (i) market participant assumptions developed based on market data obtained from independent sources (observable inputs) and (ii) an entity s own assumptions about market participant assumptions developed based on the best information available in the circumstances (unobservable inputs). The fair value hierarchy consists of three broad levels, which gives the highest priority to unadjusted quoted prices in active markets for identical assets or liabilities (Level 1) and the lowest priority to unobservable inputs (Level 3). The three levels of the fair value hierarchy are described below:

Level 1 - Unadjusted quoted prices in active markets that are accessible at the measurement date for identical, unrestricted assets or liabilities.

Level 2 - Inputs other than quoted prices included within Level 1 that are observable for the asset or liability, either directly or indirectly, including quoted prices for similar assets or liabilities in active markets; quoted prices for identical or similar assets or liabilities in markets that are not active; inputs other than quoted prices that are observable for the asset or liability (e.g., interest rates); and inputs that are derived principally from or corroborated by observable market data by correlation or other means.

Level 3 - Inputs that are both significant to the fair value measurement and unobservable.

Derivatives

Alcoa is exposed to certain risks relating to its ongoing business operations, including financial, market, political, and economic risks. The following discussion provides information regarding Alcoa s exposure to the risks of changing commodity prices, interest rates, and foreign currency exchange rates.

Alcoa s commodity and derivative activities are subject to the management, direction, and control of the Strategic Risk Management Committee (SRMC), which is composed of the chief executive officer, the chief financial officer, and other officers and employees that the chief executive officer selects. The SRMC meets on a periodic basis to review derivative positions and strategy and reports to Alcoa s Board of Directors on the scope of its activities.

The aluminum, energy, interest rate, and foreign exchange contracts are held for purposes other than trading. They are used primarily to mitigate uncertainty and volatility, and to cover underlying exposures. Alcoa is not involved in trading activities for energy, weather derivatives, or other nonexchange commodity trading activities.

A number of Alcoa s aluminum, energy, and foreign exchange contracts are classified as Level 1 and an interest rate contract is classified as Level 2 under the fair value hierarchy. These energy, foreign exchange, and interest rate contracts are not material to Alcoa s Consolidated Financial Statements for all periods presented.

For the aluminum contracts classified as Level 1, the total fair value of derivatives recorded as assets and liabilities was $6 and $11, respectively, at June 30, 2016 and $8 and $58, respectively, at December 31, 2015. These contracts were entered into to either hedge forecasted sales or purchases of aluminum in order to manage the associated aluminum price risk. Certain of these contracts are designated as hedging instruments, either fair value or cash flow, and the remaining are not designated as such. Combined, Alcoa recognized a net gain of $1 and $3 in the 2016 second quarter and six-month period, respectively, and a net gain of $15 and $41 in the 2015 second quarter and six-month period, respectively, in Sales on the accompanying Statement of Consolidated Operations related to these aluminum contracts.

In addition to the Level 1 and 2 derivative instruments described above, Alcoa has ten derivative instruments classified as Level 3 under the fair value hierarchy. These instruments are composed of eight embedded aluminum derivatives, an energy contract, and an embedded credit derivative, all of which relate to energy supply contracts associated with nine smelters and three refineries. Five of the embedded aluminum derivatives and the energy contract were designated as cash flow hedging instruments and three of the embedded aluminum derivatives and the embedded credit derivative were not designated as hedging instruments.

The following section describes the valuation methodologies used by Alcoa to measure its Level 3 derivative instruments at fair value. Derivative instruments classified as Level 3 in the fair value hierarchy represent those in which management has used at least one significant unobservable input in the valuation model. Alcoa uses a discounted cash flow model to fair value all Level 3 derivative instruments. Where appropriate, the description below includes the key inputs to those models and any significant assumptions. These valuation models are reviewed and tested at least on an annual basis.

Inputs in the valuation models for Level 3 derivative instruments are composed of the following: (i) quoted market prices (e.g., aluminum prices on the 10-year London Metal Exchange (LME) forward curve and energy prices), (ii) significant other observable inputs (e.g., information concerning time premiums and volatilities for certain option type embedded derivatives and regional premiums for aluminum contracts), and (iii) unobservable inputs (e.g., aluminum and energy prices beyond those quoted in the market). For periods beyond the term of quoted market prices for aluminum, Alcoa estimates the price of aluminum by extrapolating the 10-year LME forward curve. Additionally, for periods beyond the term of quoted market prices for energy, management has developed a forward curve based on independent consultant market research. Where appropriate, valuations are adjusted for various factors such as liquidity, bid/offer spreads, and credit considerations. Such adjustments are generally based on available market evidence (Level 2). In the absence of such evidence, management s best estimate is used (Level 3). If a significant input that is unobservable in one period becomes observable in a subsequent period, the related asset or liability would be transferred to the appropriate classification (Level 1 or 2) in the period of such change (there were no such transfers in the periods presented).

Alcoa has two power contracts, each of which contain an embedded derivative that indexes the price of power to the LME price of aluminum. Additionally, Alcoa has three power contracts, each of which contain an embedded derivative that indexes the price of power to the LME price of aluminum plus the Midwest premium. The embedded derivatives in these five power contracts are primarily valued using observable market prices; however, due to the length of the contracts, the valuation models also require management to estimate the long-term price of aluminum based upon an extrapolation of the 10-year LME forward curve and/or 5-year Midwest premium curve. Significant increases or decreases in the actual LME price beyond 10 years and/or the Midwest premium beyond 5 years would result in a higher or lower fair value measurement. An increase in actual LME price and/or the Midwest premium over the inputs used in the valuation models will result in a higher cost of power and a corresponding decrease to the derivative asset or increase to the derivative liability. The embedded derivatives have been designated as cash flow hedges of forward sales of aluminum. Unrealized gains and losses were included in Other comprehensive (loss) income on the accompanying Consolidated Balance Sheet while realized gains and losses were included in Sales on the accompanying Statement of Consolidated Operations.

Also, Alcoa has a power contract (expires in September 2016 see below) separate from above that contains an LME-linked embedded derivative. The embedded derivative is valued using the probability and interrelationship of future LME prices, Australian dollar to U.S. dollar exchange rates, and the U.S. consumer price index. Significant increases or decreases in the LME price would result in a higher or lower fair value measurement. An increase in actual LME price over the inputs used in the valuation model will result in a higher cost of power and a corresponding decrease to the derivative asset. This embedded derivative did not qualify for hedge accounting treatment. Unrealized gains and losses from the embedded derivative were included in Other income, net on the accompanying Statement of Consolidated Operations while realized gains and losses were included in Cost of goods sold on the accompanying Statement of Consolidated Operations as electricity purchases were made under the contract. At the time this derivative asset was recognized, an equivalent amount was recognized as a deferred credit in Other noncurrent liabilities and deferred credits on the accompanying Consolidated Balance Sheet. This deferred credit is recognized in Other income, net on the accompanying Statement of Consolidated Operations as power is received over the life of the contract.

Additionally, Alcoa has a natural gas supply contract, which has an LME-linked ceiling. This embedded derivative is valued using probabilities of future LME aluminum prices and the price of Brent crude oil (priced on Platts), including the interrelationships between the two commodities subject to the ceiling. Any change in the interrelationship would result in a higher or lower fair value measurement. An LME ceiling was embedded into the contract price to protect against an increase in the price of oil without a corresponding increase in the price of LME. An increase in oil prices with no similar increase in the LME price would limit the increase of the price paid for natural gas. This embedded derivative did not qualify for hedge accounting treatment. Unrealized gains and losses from the embedded derivative were included in Other income, net on the accompanying Statement of Consolidated Operations while realized gains and losses were included in Cost of goods sold on the accompanying Statement of Consolidated Operations as gas purchases were made under the contract.

In the second quarter of 2016, Alcoa and the related counterparty elected to modify the pricing of an existing power contract for a smelter in the United States. This amendment contains an embedded derivative that now indexes the price of power to the LME price of aluminum plus the Midwest premium. The embedded derivative is valued using the interrelationship of future metal prices (LME base plus Midwest premium) and the amount of megawatt hours of energy needed to produce the forecasted metric tons of aluminum at the smelter. Significant increases or decreases in the metal price would result in a higher or lower fair value measurement. An increase in actual metal price over the inputs used in the valuation model will result in a higher cost of power and a corresponding increase to the derivative liability. Management elected not to qualify the embedded derivative for hedge accounting treatment. Unrealized gains and losses from the embedded derivative will be included in Other income, net on the accompanying Statement of Consolidated Operations while realized gains and losses will be included in Cost of goods sold on the accompanying Statement of Consolidated Operations as electricity purchases are made under the contract. At the time this derivative liability was recognized, an equivalent amount was recognized as a deferred charge in Other noncurrent assets on the accompanying Consolidated Balance Sheet. This deferred charge will be recognized in Other income, net on the accompanying Statement of Consolidated Operations as power is received over the life of the contract.

Furthermore, Alcoa has a power contract, which contains an embedded derivative that indexes the difference between the long-term debt ratings of Alcoa and the counterparty from any of the three major credit rating agencies. Management uses market prices, historical relationships, and forecast services to determine fair value. Significant increases or decreases in any of these inputs would result in a lower or higher fair value measurement. A wider credit spread between Alcoa and the counterparty would result in a higher cost of power and a corresponding increase in the derivative liability. This embedded derivative did not qualify for hedge accounting treatment. Unrealized gains and losses were included in Other income, net on the accompanying Statement of Consolidated Operations while realized gains and losses were included in Cost of goods sold on the accompanying Statement of Consolidated Operations as electricity purchases were made under the contract.

Finally, Alcoa has a derivative contract that will hedge the anticipated power requirements at one of its smelters once the existing power contract expires in September 2016 (see above). Beyond the term where market information is available, management has developed a forward curve, for valuation purposes, based on independent consultant market research. Significant increases or decreases in the power market may result in a higher or lower fair value measurement. Lower prices in the power market would cause a decrease in the derivative asset. The derivative contract has been designated as a cash flow hedge of future purchases of electricity. Unrealized gains and losses on this contract were recorded in Other comprehensive (loss) income on the accompanying Consolidated Balance Sheet. Once the designated hedge period begins in September 2016, realized gains and losses will be recorded in Cost of goods sold as electricity purchases are made under the power contract.

The following table presents quantitative information related to the significant unobservable inputs described above for Level 3 derivative contracts:

	Fair value at June 30, 2016*	**Unobservable input**	**Range ($ in full amounts)**
Assets:			
Embedded aluminum derivatives	$ 718	Price of aluminum beyond forward curve	Aluminum: $2,093 per metric ton in 2026 to $2,245 per metric ton in 2029 (two contracts) and $2,540 per metric ton in 2036 (one contract) Midwest premium: $0.0775 per pound in 2021 to $0.0775 per pound in 2029 (two contracts) and 2036 (one contract)
Embedded aluminum derivative	23	Interrelationship of future aluminum prices, foreign currency exchange rates, and the U.S. consumer price index (CPI)	Aluminum: $1,631 per metric ton in July 2016 to $1,637 per metric ton in September 2016 Foreign currency: A$1 = $0.74 in 2016 (July through September) CPI: 1982 base year of 100 and 236 in 2016 (July through September)

Embedded aluminum derivative	4	Interrelationship of LME price to overall energy price	Aluminum: $1,614 per metric ton in 2016 to $1,755 per metric ton in 2019
Embedded aluminum derivative		Interrelationship of future aluminum and oil prices	Aluminum: $1,631 per metric ton in 2016 to $1,710 per metric ton in 2018 Oil: $49 per barrel in 2016 to $55 per barrel in 2018
Energy contract	40	Price of electricity beyond forward curve	Electricity: $48 per megawatt hour in 2019 to $116 per megawatt hour in 2036
Liabilities:			
Embedded aluminum derivative	196	Price of aluminum beyond forward curve	Aluminum: $2,093 per metric ton in 2026 to $2,137 per metric ton in 2027
Embedded aluminum derivative	32	Interrelationship of LME price to the amount of megawatt hours of energy needed to produce the forecasted metric tons of aluminum	Aluminum: $1,631 per metric ton in 2016 to $1,729 per metric ton in 2019 Midwest premium: $0.0725 per pound in 2016 to $0.0775 per pound in 2019 Electricity: rate of 2 million megawatt hours per year
Embedded credit derivative	33	Credit spread between Alcoa and counterparty	3.45% to 3.81% (3.63% median)

* The fair value of the energy contract reflected as an asset in this table is lower by $9 compared to the respective amount reflected in the Level 3 tables presented below. This is due to the fact that this contract is in a liability position for the current portion but is in an asset position for the noncurrent portion, and is reflected as such on the accompanying Consolidated Balance Sheet. However, this derivative is reflected as a net asset in the above table for purposes of presenting the assumptions utilized to measure the fair value of the derivative instrument in its entirety.

The fair values of Level 3 derivative instruments recorded as assets and liabilities in the accompanying Consolidated Balance Sheet were as follows:

	June 30, 2016	December 31, 2015
Asset Derivatives		
Derivatives designated as hedging instruments:		
Prepaid expenses and other current assets:		
Embedded aluminum derivatives	$ 51	$ 72
Other noncurrent assets:		
Embedded aluminum derivatives	671	994
Energy contract	49	2
Total derivatives designated as hedging instruments	$ 771	$ 1,068
Derivatives not designated as hedging instruments:		
Prepaid expenses and other current assets:		
Embedded aluminum derivatives	$ 23	$ 69
Total derivatives not designated as hedging instruments	$ 23	$ 69
Total Asset Derivatives	$ 794	$ 1,137
Liability Derivatives		
Derivatives designated as hedging instruments:		
Other current liabilities:		
Embedded aluminum derivative	$ 14	$ 9
Energy contract	9	4
Other noncurrent liabilities and deferred credits:		
Embedded aluminum derivative	182	160
Total derivatives designated as hedging instruments	$ 205	$ 173
Derivatives not designated as hedging instruments:		
Other current liabilities:		
Embedded aluminum derivative	$ 8	$
Embedded credit derivative	5	6
Other noncurrent liabilities and deferred credits:		
Embedded aluminum derivative	24	
Embedded credit derivative	28	29
Total derivatives not designated as hedging instruments	$ 65	$ 35
Total Liability Derivatives	$ 270	$ 208

The following tables present a reconciliation of activity for Level 3 derivative contracts:

	Assets		Liabilities		
Second quarter ended June 30, 2016	**Embedded aluminum derivatives**	**Energy contract**	**Embedded aluminum derivative**	**Embedded credit derivative**	**Energy contract**
Opening balance April 1, 2016	$ 988	$ 6	$ 161	$ 33	$ 11
Total gains or losses (realized and unrealized) included in:					
Sales	(3)		(3)		
Cost of goods sold	(30)			(2)	
Other income, net	(4)			2	
Other comprehensive loss	(215)	37	38		(8)
Purchases, sales, issuances, and settlements*			32		
Transfers into and/or out of Level 3*					
Other	9	6			6
Closing balance June 30, 2016	$ 745	$ 49	$ 228	$ 33	$ 9
Change in unrealized gains or losses included in earnings for derivative contracts held at June 30, 2016:					
Sales	$	$	$	$	$
Cost of goods sold					
Other income, net	(4)			2	

* In the 2016 second quarter, there was an issuance of a new embedded derivative contained in an amendment to an existing power contract. There were no purchases, sales or settlements of Level 3 derivative instruments. Additionally, there were no transfers of derivative instruments into or out of Level 3.

	Assets		Liabilities		
Six months ended June 30, 2016	**Embedded aluminum derivatives**	**Energy contract**	**Embedded aluminum derivative**	**Embedded credit derivative**	**Energy contract**
Opening balance January 1, 2016	$ 1,135	$ 2	$ 169	$ 35	$ 4
Total gains or losses (realized and unrealized) included in:					
Sales	(10)		(5)		
Cost of goods sold	(61)			(3)	
Other income, net	(8)	2		1	(1)
Other comprehensive income	(336)	39	32		
Purchases, sales, issuances, and settlements*			32		
Transfers into and/or out of Level 3*					
Other	25	6			6
Closing balance June 30, 2016	$ 745	$ 49	$ 228	$ 33	$ 9
Change in unrealized gains or losses included in earnings for derivative contracts held at June 30, 2016:					

Sales	$	$	$	$	$
Cost of goods sold					
Other income, net	(8)	2		1	(1)

* In the 2016 six-month period, there was an issuance of a new embedded derivative contained in an amendment to an existing power contract. There were no purchases, sales or settlements of Level 3 derivative instruments. Additionally, there were no transfers of derivative instruments into or out of Level 3.

Derivatives Designated As Hedging Instruments   Cash Flow Hedges

For derivative instruments that are designated and qualify as cash flow hedges, the effective portion of unrealized gains or losses on the derivative is reported as a component of other comprehensive income (OCI). Realized gains or losses on the derivative are reclassified from OCI into earnings in the same period or periods during which the hedged transaction impacts earnings. Gains and losses on the derivative representing either hedge ineffectiveness or hedge components excluded from the assessment of effectiveness are recognized directly in earnings immediately.

Alcoa has five Level 3 embedded aluminum derivatives and one Level 3 energy contract that have been designated as cash flow hedges as follows.

Embedded aluminum derivatives. Alcoa has entered into energy supply contracts that contain pricing provisions related to the LME aluminum price. The LME-linked pricing features are considered embedded derivatives. Five of these embedded derivatives have been designated as cash flow hedges of forward sales of aluminum. At June 30, 2016 and December 31, 2015, these embedded aluminum derivatives hedge forecasted aluminum sales of 3,261 kmt and 3,307 kmt, respectively.

Alcoa recognized a net unrealized loss of $253 and $368 in the 2016 second quarter and six-month period, respectively, and a net unrealized gain of $616 and $518 in the 2015 second quarter and six-month period, respectively, in Other comprehensive (loss) income related to these five derivative instruments. Additionally, Alcoa reclassified a realized gain of less than $1 and $5 in the 2016 second quarter and six-month period, respectively, and a realized loss of $12 and $24 in the 2015 second quarter and six-month period, respectively, from Accumulated other comprehensive loss to Sales. Assuming market rates remain constant with the rates at June 30, 2016, a realized gain of $25 is expected to be recognized in Sales over the next 12 months.

Also, Alcoa recognized a gain of less than $1 in the 2016 six-month period (no such gain was recognized in the 2016 second quarter) and a gain of less than $1 and $1 in the 2015 second quarter and six-month period, respectively, in Other income, net related to the amount excluded from the assessment of hedge effectiveness. There was no ineffectiveness related to these five derivative instruments in the 2016 second quarter and six-month period and the 2015 second quarter and six-month period.

Energy contract. Alcoa has a derivative contract that will hedge the anticipated power requirements at one of its smelters once the existing power contract expires in September 2016. At June 30, 2016 and December 31, 2015, this energy contract hedges forecasted electricity purchases of 59,409,328 megawatt hours. Alcoa recognized an unrealized gain of $45 and $39 in the 2016 second quarter and six-month period, respectively, and an unrealized loss of $17 and $11 in the 2015 second quarter and six-month period, respectively, in Other comprehensive (loss) income. Additionally, Alcoa recognized a gain of $3 in Other income, net related to hedge ineffectiveness in the 2016 six-month period. There was no ineffectiveness related to the energy contract in the 2016 second quarter and the 2015 second quarter and six-month period.

Derivatives Not Designated As Hedging Instruments

Alcoa has three Level 3 embedded aluminum derivatives and one Level 3 embedded credit derivative that do not qualify for hedge accounting treatment. As such, gains and losses related to the changes in fair value of these instruments are recorded directly in earnings. In the second quarter of 2016 and 2015, Alcoa recognized a loss of $6 and $5, respectively, in Other income, net, of which a loss of $4 and $2, respectively, related to the embedded aluminum derivatives and a loss of $2 and $3, respectively, related to the embedded credit derivative. In the six-month period of 2016 and 2015, Alcoa recognized a loss of $9 and $2, respectively, in Other income, net, of which a loss of $8 and $1, respectively, related to the embedded aluminum derivatives and a loss of $1 and $1, respectively, related to the embedded credit derivative.

Material Limitations

The disclosures with respect to commodity prices, interest rates, and foreign currency exchange risk do not take into account the underlying commitments or anticipated transactions. If the underlying items were included in the analysis, the gains or losses on the futures contracts may be offset. Actual results will be determined by a number of factors that are not under Alcoa s control and could vary significantly from those factors disclosed.

Alcoa is exposed to credit loss in the event of nonperformance by counterparties on the above instruments, as well as credit or performance risk with respect to its hedged customers commitments. Although nonperformance is possible, Alcoa does not anticipate nonperformance by any of these parties. Contracts are with creditworthy counterparties and are further supported by cash, treasury bills, or irrevocable letters of credit issued by carefully chosen banks. In addition, various master netting arrangements are in place with counterparties to facilitate settlement of gains and losses on these contracts.

Other Financial Instruments

The carrying values and fair values of Alcoa s other financial instruments were as follows:

	June 30, 2016		December 31, 2015	
	Carrying value	**Fair value**	**Carrying value**	**Fair value**
Cash and cash equivalents	$ 1,929	$ 1,929	$ 1,919	$ 1,919
Restricted cash	30	30	37	37
Noncurrent receivables	19	19	17	17
Available-for-sale securities	68	68	193	193
Short-term borrowings	33	33	38	38
Commercial paper				
Long-term debt due within one year	774	791	21	21
Contingent payment related to an acquisition	132	132	130	130
Long-term debt, less amount due within one year	8,278	8,670	8,993	8,922

The following methods were used to estimate the fair values of other financial instruments:

Cash and cash equivalents, Restricted cash, Short-term borrowings, and Commercial paper. The carrying amounts approximate fair value because of the short maturity of the instruments. The fair value amounts for Cash and cash equivalents, Restricted cash, and Commercial paper were classified in Level 1, and Short-term borrowings were classified in Level 2.

Noncurrent receivables. The fair value of noncurrent receivables was based on anticipated cash flows, which approximates carrying value, and was classified in Level 2 of the fair value hierarchy.

Available-for-sale securities. The fair value of such securities was based on quoted market prices. These financial instruments consist of exchange-traded fixed income and equity securities, which are carried at fair value and were classified in Level 1 of the fair value hierarchy.

Contingent payment related to an acquisition. The fair value was based on the net present value of expected future cash flows and was classified in Level 3 of the fair value hierarchy.

Long-term debt due within one year and Long-term debt, less amount due within one year. The fair value was based on quoted market prices for public debt and on interest rates that are currently available to Alcoa for issuance of debt with similar terms and maturities for non-public debt. The fair value amounts for all Long-term debt were classified in Level 2 of the fair value hierarchy.

P. Proposed Separation Transaction On September 28, 2015, Alcoa announced that its Board of Directors preliminarily approved a plan to separate into two standalone, publicly-traded companies. One company will be named Alcoa Corporation and will include the Alumina and Primary Metals segments and the Warrick, IN rolling operations and the equity interest in the rolling mill at the joint venture in Saudi Arabia, both of which are currently part of the Global Rolled Products segment. Alcoa, which will be re-named Arconic Inc., will continue to own the Global Rolled Products (except for the aforementioned rolling operations to be included in the future Alcoa Corporation company), Engineered Products and Solutions, and Transportation and Construction Solutions segments.

Alcoa is targeting to complete the separation in the second half of 2016. The transaction is subject to a number of conditions, including, but not limited to, final approval by Alcoa s Board of Directors; receipt of a private letter ruling from the Internal Revenue Service regarding certain U.S. federal income tax matters relating to the transaction; receipt of an opinion of legal counsel with respect to the tax-free nature of the transaction for U.S. federal income tax purposes; and the effectiveness of a Form 10 registration statement, which was filed with the U.S. Securities and Exchange Commission on June 29, 2016. Upon completion of the separation, Alcoa shareholders will own all of the outstanding shares of the future Arconic Inc. company, and each Alcoa shareholder as of the separation record date will own a pro rata share of the outstanding shares of the future Alcoa Corporation company to be distributed (up to 19.9% of such shares may be retained by the future Arconic Inc. company). Alcoa may, at any time and for any reason until the proposed transaction is complete, abandon the separation plan or modify or change its terms. In the 2016 second quarter and six-month period, Alcoa recognized $45 ($37 after-tax) and $63 ($54 after-tax), respectively, in Selling, general administrative, and other expenses on the accompanying Statement of Consolidated Operations for costs related to the proposed separation transaction.

Q. Subsequent Events Management evaluated all activity of Alcoa and concluded that no subsequent events have occurred that would require recognition in the Consolidated Financial Statements or disclosure in the Notes to the Consolidated Financial Statements, except as described below.

On July 21, 2016, Alcoa s Board of Directors authorized both a reverse stock split of the Company s common stock at a ratio of one-for-three and a proportionate reduction in the number of authorized shares of Alcoa s common stock from 1.8 billion to 600 million. Alcoa will hold a special shareholder meeting on October 5, 2016 to seek approval of the reverse stock split and authorized share count reduction, both of which require an affirmative vote of a majority of votes cast by the shareholders entitled to vote. Alcoa is not planning to issue fractional shares as a result of the reverse stock split; therefore, cash payments in lieu of such fractional shares would be made to shareholders, as applicable. The reverse stock split would not change the proportionate equity interests or voting rights of holders of Alcoa s common stock, subject to the treatment of fractional shares. As of July 22, 2016, 1,315,374,511 shares of Alcoa s common stock were outstanding.

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Report of Independent Registered Public Accounting Firm*

To the Shareholders and Board of Directors of Alcoa Inc.

We have reviewed the accompanying consolidated balance sheet of Alcoa Inc. and its subsidiaries (Alcoa) as of June 30, 2016, and the related statements of consolidated operations, consolidated comprehensive income (loss), and changes in consolidated equity for the three-month and six-month periods ended June 30, 2016 and 2015 and the statement of consolidated cash flows for the six-month periods ended June 30, 2016 and 2015. These consolidated interim financial statements are the responsibility of Alcoa s management.

We conducted our review in accordance with the standards of the Public Company Accounting Oversight Board (United States). A review of interim financial information consists principally of applying analytical procedures and making inquiries of persons responsible for financial and accounting matters. It is substantially less in scope than an audit conducted in accordance with the standards of the Public Company Accounting Oversight Board (United States), the objective of which is the expression of an opinion regarding the financial statements taken as a whole. Accordingly, we do not express such an opinion.

Based on our review, we are not aware of any material modifications that should be made to the accompanying consolidated interim financial statements for them to be in conformity with accounting principles generally accepted in the United States of America.

We previously audited, in accordance with the standards of the Public Company Accounting Oversight Board (United States), the consolidated balance sheet as of December 31, 2015, and the related statements of consolidated operations, consolidated comprehensive loss, changes in consolidated equity, and consolidated cash flows for the year then ended (not presented herein), and in our report dated February 19, 2016, which included a paragraph that described the change in classification of current deferred income tax assets and liabilities in the consolidated balance sheet at December 31, 2015 and 2014, we expressed an unqualified opinion on those consolidated financial statements. As discussed in Note B to the accompanying consolidated interim financial statements, the Company changed the classification of debt issuance costs in the consolidated balance sheet. The accompanying December 31, 2015 consolidated balance sheet reflects this change.

/s/ PricewaterhouseCoopers LLP

PricewaterhouseCoopers LLP

Pittsburgh, Pennsylvania

July 29, 2016

* This report should not be considered a report within the meanings of Sections 7 and 11 of the Securities Act of 1933, and the independent registered public accounting firm s liability under Section 11 does not extend to it.

Item 2. Management s Discussion and Analysis of Financial Condition and Results of Operations.

(dollars in millions, except per share amounts and ingot prices; production and shipments in thousands of metric tons [kmt])

On September 28, 2015, Alcoa announced that its Board of Directors preliminarily approved a plan to separate into two standalone, publicly-traded companies. One company will be named Alcoa Corporation and will include the Alumina and Primary Metals segments and the Warrick, IN rolling operations and the equity interest in the rolling mill at the joint venture in Saudi Arabia, both of which are currently part of the Global Rolled Products segment. Alcoa, which will be re-named Arconic Inc. and will continue to own the Global Rolled Products (except for the aforementioned rolling operations to be included in the future Alcoa Corporation company), Engineered Products and Solutions, and Transportation and Construction Solutions segments.

Alcoa is targeting to complete the separation in the second half of 2016. The transaction is subject to a number of conditions, including, but not limited to, final approval by Alcoa s Board of Directors; receipt of a private letter ruling from the Internal Revenue Service regarding certain U.S. federal income tax matters relating to the transaction; receipt of an opinion of legal counsel with respect to the tax-free nature of the transaction for U.S. federal income tax purposes; and the effectiveness of a Form 10 registration statement, which was filed with the U.S. Securities and Exchange Commission on June 29, 2016. Upon completion of the separation, Alcoa shareholders will own all of the outstanding shares of the future Arconic Inc. company, and each Alcoa shareholder as of the separation record date will own a pro rata share of the outstanding shares of the future Alcoa Corporation company to be distributed (up to 19.9% of such shares may be retained by the future Arconic Inc. company). Alcoa may, at any time and for any reason until the proposed transaction is complete, abandon the separation plan or modify or change its terms.

Results of Operations

***Selected Financial Data*:**

	Second quarter ended June 30,		Six months ended June 30,	
	2016	**2015**	**2016**	**2015**
Sales	$ 5,295	$ 5,897	$ 10,242	$ 11,716
Net income attributable to Alcoa	$ 135	$ 140	$ 151	$ 335
Diluted earnings per share attributable to Alcoa common shareholders	$ 0.09	$ 0.10	$ 0.09	$ 0.24
Shipments of alumina (kmt)	2,266	2,706	4,434	5,244
Shipments of aluminum products (kmt)	1,117	1,165	2,192	2,256
Alcoa s average realized price per metric ton of primary aluminum	$ 1,849	$ 2,180	$ 1,821	$ 2,296

Net income attributable to Alcoa was $135, or $0.09 per diluted share, in the 2016 second quarter compared with $140, or $0.10 per share, in the 2015 second quarter, and $151, or $0.09 per share, in the 2016 six-month period compared with $335, or $0.24 per share, in the 2015 six-month period. The decrease in results of $5 in the 2016 second quarter and $184 in the 2016 six-month period was principally related to lower pricing in all operations and costs related to the planned separation of Alcoa. These negative impacts were mostly offset in the 2016 second quarter and partially offset in the 2016 six-month period by net productivity improvements and lower restructuring-related charges.

Sales declined $602, or 10%, in the 2016 second quarter and $1,474, or 13%, in the 2016 six-month period compared to the same periods in 2015. In both periods, the decrease was largely attributable to a lower average realized price for aluminum and alumina in the upstream operations; unfavorable pricing in the midstream and downstream operations; lower volume in the upstream operations; the absence of sales related to capacity that was closed or curtailed in the upstream operations (see Primary Metals in Segment Information below); and lower energy sales. These negative impacts were somewhat offset by the addition of sales from recently acquired businesses (see Engineered Products and Solutions in Segment Information below), higher bauxite sales, and higher volume in the midstream operations. Additionally, unfavorable product mix in the midstream operations contributed to the decline in the 2016 second quarter.

Cost of goods sold (COGS) as a percentage of Sales was 79.6% in the 2016 second quarter and 80.6% in the 2016 six-month period compared with 79.1% in the 2015 second quarter and 77.7% in the 2015 six-month period. The percentage was negatively impacted in both periods by a lower average realized price for aluminum and alumina in the upstream operations and unfavorable pricing in the midstream and downstream operations, mostly offset in the 2016 second quarter and partially offset in the 2016 six-month period by net productivity improvements across all segments.

Selling, general administrative, and other expenses (SG&A) increased $62 and $90 in the 2016 second quarter and six-month period, respectively, compared to the corresponding periods in 2015. In both periods, the increase was principally due to costs related to the planned separation of Alcoa ($45 second quarter and $63 six months) (see above) and new SG&A related to inorganic growth in the Engineered Products and Solutions segment ($17 second quarter and $36 six months). The negative impacts in the 2016 six-month period were slightly offset by a decrease in various expenses. SG&A as a percentage of Sales increased from 3.8% in the 2015 second quarter to 5.4% in the 2016 second quarter, and from 3.9% in the 2015 six-month period to 5.3% in the 2016 six-month period.

Research and development expenses (R&D) declined $29, or 43%, in the 2016 second quarter and $42, or 34%, in the 2016 six-month period compared with the same periods in 2015. The decrease in both periods was primarily driven by lower spending related to both the upgrade of a Micromill in San Antonio, TX, which was completed in 2015, for the Global Rolled Products segment and inert anode and carbothermic technology for the Primary Metals segment.

Provision for depreciation, depletion, and amortization (DD&A) declined $10, or 3%, in the 2016 second quarter and $22, or 3%, in the 2016 six-month period compared to the corresponding periods in 2015. In both periods, the decrease was mostly the result of favorable foreign currency movements due to a stronger U.S. dollar, particularly against the Brazilian real and Australian dollar, and the absence of or lower DD&A related to capacity reductions in the upstream operations that occurred in June 2015 through March 2016. These positive impacts were mostly offset by new DD&A associated with the July 2015 acquisition of RTI International Metals.

Restructuring and other charges were $23 ($16 after-tax and noncontrolling interest) and $116 ($77 after-tax and noncontrolling interest) in the 2016 second quarter and six-month period, respectively.

In the 2016 second quarter, Restructuring and other charges included $15 ($11 after-tax and noncontrolling interest) for layoff costs related to cost reduction initiatives and the planned separation of Alcoa (see above), including the separation of approximately 540 employees (300 in the Engineered Products and Solutions segment and 240 in the Transportation and Construction Solutions segment); $8 ($6 after-tax and noncontrolling interest) for additional net costs related to decisions made in the fourth quarter of 2015 to permanently close and demolish the Warrick (Indiana) smelter and to curtail the Wenatchee (Washington) smelter and Point Comfort (Texas) refinery (see below); a net charge of $8 ($4 after-tax and noncontrolling interest) for other miscellaneous items; and $8 ($5 after-tax and noncontrolling interest) for the reversal of a number of small layoff reserves related to prior periods.

In the 2016 six-month period, Restructuring and other charges included $86 ($56 after-tax and noncontrolling interest) for additional net costs related to decisions made in the fourth quarter of 2015 to permanently close and demolish the Warrick (Indiana) smelter and to curtail the Wenatchee (Washington) smelter and Point Comfort (Texas) refinery (see below); $34 ($25 after-tax and noncontrolling interest) for layoff costs related to cost reduction initiatives and the planned separation of Alcoa (see above), including the separation of approximately 1,100 employees (800 in the Engineered Products and Solutions segment, 240 in the Transportation and Construction Solutions segment, and 30 each in the Primary Metals and Global Rolled Products segments); a net charge of $8 ($4 after-tax and noncontrolling interest) for other miscellaneous items; and $12 ($8 after-tax and noncontrolling interest) for the reversal of a number of small layoff reserves related to prior periods.

In the 2016 six-month period, costs related to the closure and curtailment actions included accelerated depreciation of $70 related to the Warrick smelter as it continued to operate during the 2016 first quarter; $20 ($1 in the 2016 second quarter) for the reversal of severance costs initially recorded in the 2015 fourth quarter; and $36 ($9 in the 2016 second quarter) in other costs. Additionally in the 2016 six-month period, remaining inventories, mostly operating supplies and raw materials, were written down to their net realizable value, resulting in a charge of $5 ($3 after-tax and noncontrolling interest) ($2 ($1 after-tax and noncontrolling interest) in the 2016 second quarter), which was recorded in COGS. The other costs of $36 ($9 in the 2016 second quarter) represent $27 ($10 in the 2016 second quarter) for contract termination, $7 in asset retirement obligations for the rehabilitation of a coal mine related to the Warrick smelter, and $2 ($(1) in the 2016 second quarter) in other related costs. Additional charges may be recognized in future periods related to these actions.

Restructuring and other charges were $217 ($141 after-tax and noncontrolling interest) and $394 ($299 after-tax and noncontrolling interest) in the 2015 second quarter and six-month period, respectively.

In the 2015 second quarter, Restructuring and other charges included $179 ($115 after-tax and noncontrolling interest) for exit costs related to decisions to permanently shut down and demolish a smelter and a power station (see below); $18 ($10 after-tax and noncontrolling interest) for the separation of approximately 120 employees (Alumina segment) and other charges related to the decisions to temporarily curtail both a portion of the capacity (443 kmt-per-year) at the refinery in Suriname and the remaining capacity (74 kmt-per-year) at the São Luís smelter in Brazil; $16 ($13 after-tax and noncontrolling interest) for layoff costs, including the separation of approximately 390 employees (210 in the Engineered Products and Solutions segment, 150 in the Primary Metals segment, and 30 in the Global Rolled Products segment); $10 ($7 after-tax and noncontrolling interest) related to post-closing adjustments associated with two December 2014 divestitures; a net credit of $5 ($3 after-tax and noncontrolling interest) for other miscellaneous items; and $1 ($1 after-tax and noncontrolling interest) for the reversal of a few layoff reserves related to prior periods.

In the 2015 six-month period, Restructuring and other charges included the aforementioned $179 ($115 after-tax and noncontrolling interest); $159 ($149 after-tax and noncontrolling interest) related to the March 2015 divestiture of a rolling mill in Russia and post-closing adjustments associated with three December 2014 divestitures; $38 ($23 after-tax and noncontrolling interest) for the separation of approximately 800 employees (680 in the Primary Metals segment and 120 in the Alumina segment), supplier contract-related costs, and other charges associated with the aforementioned decisions to temporarily curtail certain capacity at the São Luís smelter and the refinery in Suriname; $29 ($21 after-tax and noncontrolling interest) for layoff costs, including the separation of approximately 600 employees (290 in the Engineered Products and Solutions segment, 150 in the Primary Metals segment, 60 in the Global Rolled Products segment, 50 in the Transportation and Construction Solutions segment, and 50 in Corporate); a net credit of $3 ($2 after-tax and noncontrolling interest) for other miscellaneous items; and $8 ($7 after-tax and noncontrolling interest) for the reversal of a number of small layoff reserves related to prior periods.

In the 2015 second quarter, management approved the permanent shutdown and demolition of the Poços de Caldas smelter (capacity of 96 kmt-per-year) in Brazil and the Anglesea power station (includes the closure of a related coal mine) in Australia. The entire capacity at Poços de Caldas has been temporarily idled since May 2014 and the Anglesea power station was shut down at the end of August 2015. Demolition and remediation activities related to the Poços de Caldas smelter and the Anglesea power station began in late 2015 and are expected to be completed by the end of 2026 and 2020, respectively.

The decision on the Poços de Caldas smelter was due to management s conclusion that the smelter was no longer competitive as a result of challenging global market conditions for primary aluminum, which led to the initial curtailment, that have not dissipated and higher costs. For the Anglesea power station, the decision was made because a sale process did not result in a sale and there would be imminent operating costs and financial constraints related to this site in the remainder of 2015 and beyond, including significant costs to source coal from available resources, necessary maintenance costs, and a depressed outlook for forward electricity prices. The Anglesea power station previously supplied approximately 40 percent of the power needs for the Point Henry smelter, which was closed in August 2014.

In the 2015 second quarter and six-month period, costs related to the shutdown actions included asset impairments of $86, representing the write-off of the remaining book value of all related properties, plants, and equipment; $11 for the layoff of approximately 100 employees (Primary Metals segment); and $82 in other exit costs. Additionally in the 2015 second quarter and six-month period, remaining inventories, mostly operating supplies and raw materials, were written down to their net realizable value, resulting in a charge of $4 ($2 after-tax and noncontrolling interest), which was recorded in COGS. The other exit costs of $82 represent $45 in asset retirement obligations and $29 in environmental remediation, both of which were triggered by the decisions to permanently shut down and demolish the aforementioned structures in Brazil and Australia (includes the rehabilitation of a related coal mine), and $8 in supplier and customer contract-related costs.

Alcoa does not include Restructuring and other charges in the results of its reportable segments. The pretax impact of allocating such charges to segment results would have been as follows:

	Second quarter ended June 30,		Six months ended June 30,	
	2016	2015	2016	2015
Alumina	$ (1)	$ 10	$ 4	$ 17
Primary Metals	10	173	88	198
Global Rolled Products		1	2	136
Engineered Products and Solutions	9	8	17	11
Transportation and Construction Solutions	8	1	8	3
Segment total	26	193	119	365
Corporate	(3)	24	(3)	29
Total restructuring and other charges	$ 23	$ 217	$ 116	$ 394

As of June 30, 2016, approximately 730 of the 1,100 employees associated with 2016 restructuring programs, approximately 3,800 of the 5,000 employees (previously 5,200) associated with 2015 restructuring programs, and approximately 2,600 of the 2,700 employees (previously 2,870) associated with 2014 restructuring programs were separated. The total number of employees associated with both 2015 and 2014 restructuring programs was updated to reflect employees, who were initially identified for separation, accepting other positions within Alcoa and natural attrition. Most of the remaining separations for the 2016 restructuring programs and all of the remaining separations for the 2015 and 2014 restructuring programs are expected to be completed by the end of 2016.

In the 2016 second quarter and six-month period, cash payments of $9 and $11, respectively, were made against layoff reserves related to 2016 restructuring programs, $30 and $92, respectively, were made against layoff reserves related to 2015 restructuring programs, and $1 and $3, respectively, were made against layoff reserves related to 2014 restructuring programs.

Interest expense increased $5, or 4%, in the 2016 second quarter and $10, or 4%, in the 2016 six-month period compared to the corresponding periods in 2015. The increase in both periods was mainly due to a lower amount of capitalized interest.

Other income, net was $37 in the 2016 second quarter and $3 in the 2016 six-month period compared with less than $1 in the 2015 second quarter and $12 in the 2015 six-month period, respectively.

The change of $37 in the 2016 second quarter was mainly the result of a gain on the sale of an equity interest in a natural gas pipeline in Australia ($27), net favorable foreign currency movements ($15), a benefit for an arbitration recovery related to a 2010 fire at the Iceland smelter ($14), and a smaller equity loss related to Alcoa s share of the joint venture in Saudi Arabia. These items were somewhat offset by the absence of a gain on the sale of land around the Lake Charles, LA anode facility ($29).

In the 2016 six-month period, the change of $9 was primarily due to the absence of a gain on the sale of land around the Lake Charles, LA anode facility ($29) and net unfavorable foreign currency movements ($16). These items were mostly offset by a gain on the sale of an equity interest in a natural gas pipeline in Australia ($27) and a benefit for an arbitration recovery related to a 2010 fire at the Iceland smelter ($14).

The effective tax rate was 46.1% and 26.6% for the second quarter of 2016 and 2015, respectively, and 49.1% and 39.4% for the 2016 and 2015 six-month periods, respectively.

Alcoa s estimated annual effective tax rate for 2016 was 51.6% as of June 30, 2016. This rate differs from the U.S. federal statutory rate of 35% primarily due to the tax cost associated with the redemption of $457 in company-owned life insurance policies, which generated a gain for income tax purposes as the tax basis of these policies was less than the redemption amount, and an unfavorable impact associated with costs (including $39 of the $63 incurred in the 2016 six-month period plus an additional forecast of such costs for the remainder of the year) related to the planned separation of Alcoa (see above) that are nondeductible for income tax purposes, somewhat offset by foreign income taxed in lower rate jurisdictions.

For the 2016 six-month period, the Provision for income taxes is composed of three components as follows: (i) the application of the estimated annual effective tax rate for 2016 of 51.6% to pretax income of $371, (ii) a net discrete income tax benefit of $1 for a number of small items, and (iii) a favorable impact of $9 related to the interim period treatment of operational losses in certain foreign jurisdictions for which no tax benefit was recognized (expected to reverse by the end of 2016).

For the 2016 second quarter, the Provision for income taxes is composed of three components as follows: (i) the difference between the application of the estimated annual 2016 effective tax rate as of June 30, 2016 of 51.6% to pretax income for the 2016 six-month period of $371 and the application of the estimated annual 2016 effective tax rate as of March 31, 2016 of 59.5% to pretax income for the 2016 three-month period of $41, (ii) a discrete income tax benefit of $5 for one item, and (iii) a favorable impact of $11 related to the interim period treatment of operational losses in certain foreign jurisdictions for which no tax benefit was recognized (expected to reverse by the end of 2016).

Alcoa s estimated annual effective tax rate for 2015 was 33.9% as of June 30, 2015. This rate differs from the U.S. federal statutory rate of 35% primarily due to foreign income taxed in lower rate jurisdictions, mostly offset by a loss on the sale of a rolling mill in Russia for which no tax benefit was recognized.

For the 2015 six-month period, the Provision for income taxes is composed of three components as follows: (i) the application of the estimated annual effective tax rate for 2015 of 33.9% to pretax income of $763, (ii) a net discrete income tax charge of $34 (see below) and a net discrete income tax benefit of $5 for a number of small items, and (iii) an unfavorable impact of $14 related to the interim period treatment of operational losses in certain foreign jurisdictions for which no tax benefit was recognized (impact reversed by the end of 2015).

For the 2015 second quarter, the Provision for income taxes is composed of three components as follows: (i) the difference between the application of the estimated annual 2015 effective tax rate as of June 30, 2015 of 33.9% to pretax income for the 2015 six-month period of $763 and the application of the estimated annual 2015 effective tax rate as of March 31, 2015 of 32.8% to pretax income for the 2015 three-month period of $481, (ii) a net discrete income tax benefit of $4 for a number of small items, and (iii) a favorable impact of $21 related to the interim period treatment of operational losses in certain foreign jurisdictions for which no tax benefit was recognized (impact reversed by the end of 2015).

In the first quarter of 2015, Alcoa World Alumina and Chemicals (AWAC see Net income attributable to noncontrolling interests below for a description) recognized an $83 discrete income tax charge (increased to $85 in the 2015 second quarter) for a valuation allowance on certain deferred tax assets in Suriname, which were related mostly to employee benefits and tax loss carryforwards. Alcoa also had a $50 deferred tax liability (increased to $51 in the 2015 second quarter) related to its 60%-share of these deferred tax assets that was written off as a result of the valuation allowance recognized by AWAC.

Net income attributable to noncontrolling interests was $43 in the 2016 second quarter and $38 in the 2016 six-month period compared with $67 in the 2015 second quarter and $127 in the 2015 six-month period. These amounts were virtually all related to Alumina Limited of Australia s ownership interest in AWAC, which is an unincorporated joint venture that consists of a group of companies, all of which are owned 60% by Alcoa and 40% by Alumina Limited of Australia (Alcoa consolidates AWAC for financial reporting purposes). In the 2016 second quarter and six-month period, AWAC generated lower income compared to the same periods in 2015.

In both periods, the change in AWAC s results was mainly driven by a decline in operating results (see below), partially offset by the absence of restructuring charges related to the permanent closure of the Anglesea power station and coal mine (see Restructuring and other charges above) and a $27 ($8 was noncontrolling interest s share) gain on the sale of an equity interest in a natural gas pipeline in Australia, and, in the 2016 six-month period only, the absence of an $85 ($34 was noncontrolling interest s share) discrete income tax charge for a valuation allowance on certain deferred tax assets (see Income taxes above).

The decrease in AWAC s operating results in both periods was largely due to a lower average realized alumina price and an unfavorable impact related to the curtailment of the Point Comfort refinery, somewhat offset by net productivity improvements and net favorable foreign currency movements (see Alumina in Segment Information below).

Segment Information

Alumina

	Second quarter ended June 30,		Six months ended June 30,	
	2016	2015	2016	2015
Alumina production (kmt)	3,316	3,977	6,646	7,910
Third-party alumina shipments (kmt)	2,266	2,706	4,434	5,244
Alcoa s average realized price per metric ton of alumina	$ 304	$ 337	$ 277	$ 341
Alcoa s average cost per metric ton of alumina*	$ 235	$ 246	$ 229	$ 248
Third-party sales	$ 694	$ 924	$ 1,239	$ 1,811
Intersegment sales	300	431	592	932
Total sales	$ 994	$ 1,355	$ 1,831	$ 2,743
ATOI	$ 109	$ 215	$ 117	$ 436

* Includes all production-related costs, including raw materials consumed; conversion costs, such as labor, materials, and utilities; depreciation, depletion, and amortization; and plant administrative expenses.

Alumina production decreased 17% in the 2016 second quarter and 16% in the 2016 six-month period compared with the corresponding periods in 2015. In both periods, the decline was largely attributable to lower production at the Point Comfort (Texas) refinery (see below) and the absence of production at the Suralco (Suriname) refinery (see below).

In March 2015, management initiated a 12-month review of 2,800 kmt in refining capacity for possible curtailment (partial or full), permanent closure or divestiture. This review was part of management s target to lower Alcoa s refining operations on the global alumina cost curve to the 21st percentile (currently 23rd) by the end of 2016. As part of this review, in 2015, management decided to curtail the remaining operating capacity at both the Suralco (1,330 kmt-per-year) and Point Comfort (2,010 kmt-per-year) refineries. The curtailment of the capacity at Suralco and Point Comfort was completed by the end of November 2015 and June 2016 (375 kmt-per-year was completed by the end of December 2015), respectively. While management has completed this specific review of Alcoa s refining capacity, analysis of portfolio optimization in light of changes in the marketplace that may occur at any given time is ongoing.

Third-party sales for the Alumina segment decreased 25% and 32% in the 2016 second quarter and six-month period, respectively, compared to the same periods in 2015. The decline in both periods was primarily due to a 10% (second quarter) and 19% (six months) decrease in average realized price and a 16% (second quarter) and 15% (six months) decline in volume, slightly offset by an increase in bauxite sales. In both periods, the change in average realized price was mostly driven by a drop in the average alumina index price.

Intersegment sales decreased 30% in the 2016 second quarter and 36% in the 2016 six-month period compared with the corresponding periods in 2015 due to a lower average realized price and lower demand from the Primary Metals segment. The lower demand in both periods was caused by the absence of (second quarter) and lower (six months) shipments to the Warrick (Indiana) smelter (closed in the first quarter of 2016) and the absence of shipments to both the Wenatchee (Washington) smelter (curtailed in the fourth quarter of 2015) and the São Luís (Brazil) smelter (curtailed in the second quarter of 2015).

ATOI for this segment declined $106 and $319 in the 2016 second quarter and six-month period, respectively, compared to the same periods in 2015. In both periods, the decrease was principally related to the previously mentioned lower average realized alumina price and an unfavorable impact related to the curtailment of the Point Comfort refinery. These negative impacts were somewhat offset by net productivity improvements and net favorable foreign currency movements due to a stronger U.S. dollar, especially against the Australian dollar and Brazilian real.

In the 2016 third quarter (comparison with the 2015 third quarter), alumina production will reflect the absence of approximately 680 kmt due to the curtailment of the Point Comfort and Suralco refineries. Additionally, net productivity improvements are anticipated in this segment.

Primary Metals

	Second quarter ended June 30,		Six months ended June 30,	
	2016	2015	2016	2015
Aluminum production (kmt)	595	701	1,250	1,412
Third-party aluminum shipments (kmt)	565	630	1,140	1,219
Alcoa s average realized price per metric ton of aluminum*	$ 1,849	$ 2,180	$ 1,821	$ 2,296
Alcoa s average cost per metric ton of aluminum**	$ 1,793	$ 2,169	$ 1,798	$ 2,192
Third-party sales	$ 1,119	$ 1,534	$ 2,242	$ 3,106
Intersegment sales	473	562	948	1,254
Total sales	$ 1,592	$ 2,096	$ 3,190	$ 4,360
ATOI	$ 41	$ 67	$ 55	$ 254

* Average realized price per metric ton of aluminum includes three elements: a) the underlying base metal component, based on quoted prices from the LME; b) the regional premium, which represents the incremental price over the base LME component that is associated with the physical delivery of metal to a particular region (e.g., the Midwest premium for metal sold in the United States); and c) the product premium, which represents the incremental price for receiving physical metal in a particular shape (e.g., billet, slab, rod, etc.) or alloy.

** Includes all production-related costs, including raw materials consumed; conversion costs, such as labor, materials, and utilities; depreciation and amortization; and plant administrative expenses.

At June 30, 2016, Alcoa had 778 kmt of idle capacity on a base capacity of 3,133 kmt. Both idle capacity and base capacity were unchanged compared to March 31, 2016.

In March 2015, management initiated a 12-month review of 500 kmt in smelting capacity for possible curtailment (partial or full), permanent closure or divestiture. This review was part of management s target to lower Alcoa s smelting operations on the global aluminum cost curve to the 38th percentile (currently 43rd) by the end of 2016. As part of this review, in 2015, management decided to curtail the remaining operating capacity at both the São Luís smelter (74 kmt-per-year) in Brazil and at the Wenatchee smelter (143 kmt-per-year) in Washington and to permanently close the Warrick smelter (269 kmt-per-year) in Indiana. The curtailment of capacity at São Luís and Wenatchee was completed in April 2015 and by the end of December 2015, respectively, and the permanent closure of Warrick was completed by the end of March 2016. Previously under this review (November 2015), management decided to curtail the remaining capacity at the Intalco smelter in Washington by the end of June 2016; however, in May 2016, Alcoa reached agreement on a new power contract that will help improve the competiveness of the smelter, resulting in the termination of the planned curtailment. While management has completed this specific review of Alcoa s smelting capacity, analysis of portfolio optimization in light of changes in the marketplace that may occur at any given time is ongoing.

Aluminum production decreased 15% and 11% in the 2016 second quarter and six-month period, respectively, compared with the corresponding periods in 2015. In both periods, the decline was the result of the absence of (second quarter) and lower (six months) production at the Warrick smelter and the absence of production at the Wenatchee smelter. The absence of production at the São Luís smelter also contributed to the decrease in the 2016 six-month period.

Third-party sales for the Primary Metals segment declined 27% in the 2016 second quarter and 28% in the 2016 six-month period compared to the same periods in 2015. The decrease in both periods was mainly attributable to a 15% (second quarter) and 21% (six months) drop in average realized price, the absence of sales (approximately $80-second quarter and approximately $180-six months) from the Wenatchee and São Luís smelters that were curtailed, and lower energy sales in Brazil, due to both a decline in energy prices and a weaker Brazilian real. Lower volume in the remaining smelter portfolio also contributed to the decrease in the 2016 second quarter. The negative impacts in the 2016 six-month period were slightly offset by higher volume in the remaining smelter portfolio.

In both periods, the change in average realized price was driven by a 13% (second quarter) and 15% (six months) lower average LME price (on 15-day lag) and lower regional premiums, which dropped by an average of 35% (second quarter) and 52% (six months) in the United States and Canada, 35% (second quarter) and 56% (six months) in Europe, and 47% (second quarter) and 64% (six months) in the Pacific region.

Intersegment sales declined 16% and 24% in the 2016 second quarter and six-month period, respectively, compared with the corresponding periods in 2015 principally due to a decrease in average realized price. Lower demand from the Global Rolled Products and Transportation and Construction Solutions segments also contributed to the decline in the 2016 six-month period.

ATOI for this segment decreased $26 in the 2016 second quarter and $199 in the 2016 six-month period compared to the same periods in 2015. The decline in both periods was primarily driven by both the previously mentioned lower average realized aluminum price and lower energy sales. These negative impacts were mostly offset in the 2016 second quarter and partially offset in the 2016 six-month period by lower costs for alumina and net productivity improvements.

In the 2016 third quarter (comparison with the 2015 third quarter), aluminum production will be approximately 100 kmt lower as a result of the closure of the Warrick smelter and the curtailment of the Wenatchee smelter. Also, third-party sales will reflect the absence of approximately $50 due to the Wenatchee curtailment. Additionally, net productivity improvements are anticipated in this segment.

Global Rolled Products

	Second quarter ended June 30,		Six months ended June 30,	
	2016	2015	2016	2015
Third-party aluminum shipments (kmt)	480	462	913	894
Alcoa s average realized price per metric ton of aluminum*	$ 3,227	$ 3,608	$ 3,226	$ 3,679
Third-party sales	$ 1,550	$ 1,668	$ 2,947	$ 3,289
Intersegment sales	29	34	58	70
Total sales	$ 1,579	$ 1,702	$ 3,005	$ 3,359
ATOI	$ 68	$ 76	$ 136	$ 130

* Generally, average realized price per metric ton of aluminum includes two elements: a) the price of metal (the underlying base metal component plus a regional premium see the footnote to the table in Primary Metals above for a description of these two components), and b) the conversion price, which represents the incremental price over the metal price component that is associated with converting primary aluminum into sheet and plate. In this circumstance, the metal price component is a pass-through to this segment s customers with limited exception (e.g., fixed-priced contracts, certain regional premiums).

Third-party sales for the Global Rolled Products segment decreased 7% and 10% in the 2016 second quarter and six-month period, respectively, compared with the corresponding periods in 2015. In both periods, the decline was mainly caused by unfavorable pricing due to a decrease in metal prices (both LME and regional premium components) and unfavorable product mix. These negative impacts were somewhat offset in the 2016 second quarter and slightly offset in the 2016 six-month period by overall higher volume. The absence of sales ($23) from a rolling mill in Russia that was divested in March 2015 also contributed to the decline in the 2016 six-month period. The overall higher volume in both periods was mainly the result of increased demand in the can sheet packaging and automotive markets, somewhat offset by lower demand in a number of other markets.

ATOI for this segment decreased $8 in the 2016 second quarter and increased $6 in the 2016 six-month period compared to the same periods in 2015.

The decline in the 2016 second quarter was principally due to costs ($17) of converting the Warrick (Indiana) rolling mill into a cold metal plant due to the permanent closure of Alcoa s Warrick smelter in the first quarter of 2016 (see Primary Metals above), overall lower volume, and unfavorable pricing in the global can sheet packaging market. These negative impacts were mostly offset by net productivity improvements across all businesses.

In the 2016 six-month period, the improvement was primarily related to net productivity improvements across all businesses. This positive impact was mostly offset by costs ($20) of converting the Warrick rolling mill into a cold metal plant due to the permanent closure of Alcoa s Warrick smelter in the first quarter of 2016 (see Primary Metals above), unfavorable pricing in the global can sheet packaging market, and overall lower volume.

In the 2016 third quarter (comparison with the 2015 third quarter), stronger demand in the automotive market is anticipated as automotive sheet shipments are expected to increase approximately 50%, which will be supplied mainly from Alcoa s Davenport, IA facility, as well as the Tennessee facility that continues to ramp-up production. Also, lower demand in the aerospace market due to inventory destocking and model transition, lower North America build rates in the commercial transportation market, and pricing pressure in the can sheet packaging market are all expected. Additionally, net productivity improvements across all businesses within this segment are anticipated while additional costs ($15) related to the conversion of the Warrick smelter into a cold metal plant are expected.

Engineered Products and Solutions

	Second quarter ended June 30,		Six months ended June 30,	
	2016	**2015**	**2016**	**2015**
Third-party sales	$ 1,465	$ 1,279	$ 2,914	$ 2,536
ATOI	$ 180	$ 165	$ 342	$ 321

In April 2016, Alcoa completed the sale of the Remmele Medical business to LISI MEDICAL. This business, which was part of Alcoa s acquisition of RTI International Metals in July 2015, manufactures precision-machined metal products for customers in the minimally invasive surgical device and implantable device markets. While owned by Alcoa, the operating results and assets and liabilities of this business were included in the Engineered Products and Solutions segment. This business generated sales of approximately $20 from January 1, 2016 through the divestiture date, April 29, 2016, and, at the time of the divestiture, had approximately 330 employees.

Third-party sales for the Engineered Products and Solutions segment increased 15% in both the 2016 second quarter and six-month period compared with the corresponding periods in 2015. The improvement in both periods was mostly due to the third-party sales ($187-second quarter and $404-six months) of two businesses (TITAL and RTI International Metals), primarily aerospace-related, that were acquired in March 2015 and July 2015, respectively. Additionally, in both periods, overall higher volume in this segment s organic businesses contributed to the increase but were offset by unfavorable pricing in the aerospace market. The overall higher volume in both periods was largely attributable to the industrial gas turbine market, partially offset by lower volume in the commercial transportation market.

ATOI for this segment improved $15 in the 2016 second quarter and $21 in the 2016 six-month period compared to the same periods in 2015. In both periods, the increase was principally the result of net productivity improvements across all businesses and a positive contribution from inorganic growth, mostly offset by unfavorable price/product mix and higher costs (both start-up and ongoing) related to growth projects (e.g., the aerospace expansion at the La Porte, IN plant and the aluminum-lithium capacity expansion at the Lafayette, IN plant).

In the 2016 third quarter (comparison with the 2015 third quarter), demand in the commercial aerospace market is expected to improve due to an increase in the production of jet engines and the ramp-up of new aircraft models; however, an increase in pricing pressure is forecasted. Also, an overall improvement in the industrial gas turbine market is expected due to strength in North America, partially offset by softness in Europe. Additionally, net productivity improvements across all businesses within this segment are anticipated.

Transportation and Construction Solutions

	Second quarter ended June 30,		Six months ended June 30,	
	2016	2015	2016	2015
Third-party sales	$ 467	$ 492	$ 896	$ 963
ATOI	$ 46	$ 44	$ 85	$ 82

Third-party sales for the Transportation and Construction Solutions segment decreased 5% and 7% in the 2016 second quarter and six-month period, respectively, compared with the corresponding periods in 2015. The decline in both periods was mostly due to lower volume related to the heavy-duty truck component of the commercial transportation market in North America, somewhat offset by higher volume in the building and construction market. The absence of sales to customers in the automotive market (wheels for passenger vehicles), as a result of a prior year decision by Alcoa to no longer participate in such market, and unfavorable foreign currency movements, principally caused by a weaker Brazilian real, also contributed to the decrease in the 2016 six-month period.

ATOI for this segment improved $2 in the 2016 second quarter and $3 in the 2016 six-month period compared to the same periods in 2015. In both periods, the increase was principally the result of net productivity improvements across all businesses, mostly offset by overall lower volume and general cost increases.

In the 2016 third quarter (comparison with the 2015 third quarter), the non-residential building and construction market is expected to improve in both North America and Europe. Also, the heavy-duty truck component of the commercial transportation market in North America is expected to decline based on higher inventory levels and lower customer orders, while improvements in Europe and Asia Pacific are anticipated. Additionally, net productivity improvements are anticipated in this segment.

Reconciliation of ATOI to Consolidated Net Income Attributable to Alcoa

Items required to reconcile total segment ATOI to consolidated net income attributable to Alcoa include: the impact of LIFO inventory accounting; metal price lag; interest expense; noncontrolling interests; corporate expense (general administrative and selling expenses of operating the corporate headquarters and other global administrative facilities, along with depreciation and amortization on corporate-owned assets); restructuring and other charges; and other items, including intersegment profit eliminations, differences between tax rates applicable to the segments and the consolidated effective tax rate, and other nonoperating items such as foreign currency transaction gains/losses and interest income.

The following table reconciles total segment ATOI to consolidated net income attributable to Alcoa:

	Second quarter ended June 30,		Six months ended June 30,	
	2016	2015	2016	2015
Total segment ATOI	$ 444	$ 567	$ 735	$ 1,223
Unallocated amounts (net of tax):				
Impact of LIFO	(10)	36	(6)	43
Metal price lag	7	(39)	8	(62)
Interest expense	(84)	(80)	(167)	(160)
Noncontrolling interests	(43)	(67)	(38)	(127)

Corporate expense	(77)	(65)	(132)	(127)
Restructuring and other charges	(15)	(159)	(76)	(320)
Other	(87)	(53)	(173)	(135)
Consolidated net income attributable to Alcoa	$ 135	$ 140	$ 151	$ 335

The changes in the reconciling items between total segment ATOI and consolidated net income attributable to Alcoa for the 2016 second quarter and six-month period compared with the corresponding periods in 2015 (unless otherwise noted) consisted of:

a change in the Impact of LIFO, mostly due to an increase in the price of aluminum (driven by higher base metal prices (LME), slightly offset by lower regional premiums) at June 30, 2016 indexed to December 31, 2015 for the 2016 second quarter and six-month period compared to a decrease in the price of aluminum (both lower base metal prices (LME) and regional premiums) at June 30, 2015 indexed to December 31, 2014 for the 2015 second quarter and six-month period (overall, the price of aluminum in the 2016 second quarter and six-month period was lower compared with the 2015 second quarter and six-month period);

a change in Metal price lag, the result of an increase in the price of aluminum (see Impact of LIFO above) at June 30, 2016 indexed to December 31, 2015 for the 2016 second quarter and six-month period compared to a decrease in the price of aluminum (see Impact of LIFO above) at June 30, 2015 indexed to December 31, 2014 for the 2015 second quarter and six-month period (Metal price lag describes the timing difference created when the average price of metal sold differs from the average cost of the metal when purchased by Alcoa s midstream and downstream operations. In general, when the price of metal increases, metal price lag is favorable, and when the price of metal decreases, metal price lag is unfavorable);

an increase in Interest expense, mainly caused by a lower amount of capitalized interest;

a change in Noncontrolling interests, due to the change in results of AWAC, principally driven by a decline in operating results, partially offset by the absence of restructuring charges related to the permanent closure of the Anglesea power station and coal mine and a $27 ($8 was noncontrolling interest s share) gain on the sale of an equity interest in a natural gas pipeline in Australia, and, in the 2016 six-month period only, the absence of an $85 ($34 was noncontrolling interest s share) discrete income tax charge for a valuation allowance on certain deferred tax assets;

an increase in Corporate expense, primarily attributable to costs related to the planned separation of Alcoa ($37 second quarter and $54 six months), mostly offset by a decrease in various expenses;

a decrease in Restructuring and other charges due to fewer portfolio actions; and

a change in Other, largely the result of an unfavorable tax impact resulting from the difference between Alcoa s consolidated estimated annual effective tax rate and the tax rates applicable to the segments and the absence of a gain on the sale of land around the Lake Charles, LA anode facility ($19), somewhat offset in the 2016 second quarter and partially offset in the 2016 six-month period by a gain on the sale of an equity interest in a natural gas pipeline in Australia ($19) and a benefit for an arbitration recovery related to a 2010 fire at the Iceland smelter ($12), as well as an unfavorable and a favorable tax impact related to the interim period treatment of losses in certain foreign jurisdictions for which no tax benefit was recognized ($10 second quarter and $23 six months), respectively, and the absence of a net discrete income tax charge for a valuation allowance on certain deferred tax assets ($34 six months only) impacted the change in Other.

Environmental Matters

See the Environmental Matters section of Note I to the Consolidated Financial Statements in Part I Item 1 of this Form 10-Q.

Liquidity and Capital Resources

Cash From Operations

Cash used for operations was $98 in the 2016 six-month period compared with cash provided from operations of $297 in the same period of 2015. The decline in cash from operations of $395 was principally due to lower operating results (net income plus net add-back for noncash transactions in earnings), somewhat offset by a positive change in both noncurrent assets of $137 and working capital of $84.

The favorable change in noncurrent assets was mostly related to a $100 smaller prepayment made under a natural gas supply agreement in Australia (see below).

The components of the positive change in working capital were as follows:

- an unfavorable change of $18 in receivables;
- a positive change of $218 in inventories, largely attributable to lower purchases in the downstream operations;
- a negative change of $3 in prepaid expenses and other current assets;
- an unfavorable change of $113 in accounts payable, trade, principally the result of timing of payments;
- a favorable change of $73 in accrued expenses, primarily due to lower payments for employee incentive compensation and higher customer deposits; and

a negative change of $73 in taxes, including income taxes, mostly driven by a lower level of pretax income.
On April 8, 2015, Alcoa s majority-owned subsidiary, Alcoa of Australia Limited (AofA), which is part of AWAC, secured a new 12-year gas supply agreement to power its three alumina refineries in Western Australia beginning in July 2020. This agreement was conditional on the completion of a third-party acquisition of the related energy assets from the then-current owner, which occurred in June 2015. The terms of AofA s gas supply agreement required a prepayment of $500 to be made in two installments. The first installment of $300 was made at the time of the completion of the third-party acquisition in June 2015 and the second installment of $200 was made in April 2016.

Financing Activities

Cash used for financing activities was $207 in the 2016 six-month period, an increase of $48 compared with $159 in the corresponding period of 2015.

The use of cash in the 2016 six-month period was primarily due to $882 in payments on debt, mostly related to the repayment of borrowings under certain revolving credit facilities (see below), $114 in dividends paid to shareholders, and $84 in cash paid to the noncontrolling interest in AWAC, Alumina Limited of Australia. These items were mostly offset by $876 in additions to debt, virtually all of which was the result of borrowings under certain revolving credit facilities (see below).

In the 2015 six-month period, the use of cash was primarily due to $1,037 in payments on debt, mostly related to the repayment of borrowings under certain revolving credit facilities, $109 in dividends paid to shareholders, and $71 in cash paid to the noncontrolling interest in AWAC, Alumina Limited of Australia. These items were mostly offset by $1,027 in additions to debt, virtually all of which was the result of borrowings under certain revolving credit facilities, and $26 in proceeds from employee exercises of 2.9 million stock options at a weighted average exercise price of $8.99 (not in millions).

At the end of 2015, Alcoa had nine revolving credit facilities (excluding its Five-Year Revolving Credit Facility), each with a different financial institution, providing a combined borrowing capacity of $990 and expiration dates ranging from February 2016 through September 2017. In the first quarter of 2016, three credit facilities ($350 combined capacity) that were due to expire in either February or March 2016 were extended to February 2017 or September 2016, respectively.

The purpose of any borrowings under these credit arrangements is to provide for working capital requirements and for other general corporate purposes. The covenants contained in all these arrangements are the same as Alcoa s Five-Year Revolving Credit Agreement (see the Financing Activities section of Liquidity and Capital Resources included in Management s Discussion and Analysis of Financial Condition and Results of Operations in Alcoa s 2015 Form 10-K).

Within each of the first and second quarters of 2016, Alcoa borrowed and repaid $435 under the respective credit arrangements. The weighted-average interest rate and weighted-average days outstanding of the respective borrowings during the first and second quarters of 2016 were 1.87% and 1.82%, respectively, and 57 days and 78 days, respectively.

Alcoa s cost of borrowing and ability to access the capital markets are affected not only by market conditions but also by the short- and long-term debt ratings assigned to Alcoa s debt by the major credit rating agencies.

On March 31, 2016, Moody s Investor Service (Moody s) affirmed the following ratings for Alcoa: long-term debt at Ba1 and short-term debt at Speculative Grade Liquidity Rating-1. Additionally, Moody s changed the current outlook from rating under review to negative. On June 30, 2016, Moody s maintained the current outlook as negative based on the filing of a Form 10 registration statement related to the planned separation of Alcoa.

On April 21, 2016, Fitch affirmed the following ratings for Alcoa: long-term debt at BB+ and short-term debt at B. Additionally, Fitch changed the current outlook from positive to evolving. On July 7, 2016, Fitch changed the current outlook from evolving to stable based on the filing of a Form 10 registration statement related to the planned separation of Alcoa.

On April 29, 2016, Standard and Poor s Ratings Service (S&P) affirmed the following ratings for Alcoa: long-term debt at BBB- and short-term debt at A-3. Additionally, S&P maintained the current outlook as stable.

Investing Activities

Cash provided from investing activities was $310 in the 2016 six-month period compared with cash used for investing activities of $685 in the 2015 six-month period, resulting in an increase in cash provided of $995.

In the 2016 six-month period, the source of cash was mainly due to $549 in proceeds from the sale of assets and businesses, mostly related to $457 in proceeds from the redemption of company-owned life insurance policies and $102 in proceeds ($99 net of transaction costs) from the sale of the Remmele Medical business (see Engineered Products and Solutions in Segment Information above), which was part of Alcoa s acquisition of RTI International Metals in July 2015; and $275 in sales of investments, composed of $145 for an equity interest in a natural gas pipeline in Australia and $130 for fixed income and equity securities held by Alcoa s captive insurance company. These items were partially offset by $528 in capital expenditures, 31% of which related to growth projects, including the aerospace expansion (thick plate stretcher) at the Davenport, IA plant.

The use of cash in the 2015 six-month period was mainly due to $514 in capital expenditures, 45% of which related to growth projects, including the aerospace expansion at the La Porte, IN plant, the automotive expansion at the Alcoa, TN plant, the aerospace expansion (thick plate stretcher) at the Davenport, IA plant, the aerospace expansion (isothermal press) at the Savannah, GA plant (Firth Rixson), and the specialty foil expansion at the Itapissuma plant in Brazil; and $204 (net of cash acquired) for the acquisition of TITAL. These items were slightly offset by $59 in proceeds from the sale of assets and businesses, composed of a sale of land around the Lake Charles, LA anode facility and post-closing adjustments related to an ownership stake in a smelter, four rolling mills, and an ownership stake in a bauxite mine/alumina refinery divested between December 2014 and March 2015.

Recently Adopted and Recently Issued Accounting Guidance

See Note B to the Consolidated Financial Statements in Part I Item 1 of this Form 10-Q.

Forward-Looking Statements

This report contains statements that relate to future events and expectations and, as such, constitute forward-looking statements within the meaning of the Private Securities Litigation Reform Act of 1995. Forward-looking statements include those containing such words as anticipates, believes, could, estimates, expects, forecasts, goal, in outlook, plans, projects, seeks, sees, should, targets, will, would, or other words of similar meaning. that reflect Alcoa s expectations, assumptions, or projections about the future, other than statements of historical fact, are forward-looking statements, including, without limitation, forecasts concerning global demand growth for aluminum, supply/demand balances, and growth of the aerospace, automotive, and other end markets; statements regarding targeted financial results or operating performance; statements about Alcoa s strategies, outlook, and business and financial prospects; and statements regarding the separation transaction. These statements reflect beliefs and assumptions that are based on Alcoa s perception of historical trends, current conditions and expected future developments, as well as other factors management believes are appropriate in the circumstances. Forward-looking statements are subject to a number of risks, uncertainties and other factors, and are not guarantees of future performance. Important factors that could cause actual results to differ materially from those expressed or implied in the forward-looking statements include, but are not limited to: (a) uncertainties as to the timing of the separation and whether it will be completed; (b) the possibility that various closing conditions for the separation may not be satisfied; (c) the impact of the separation on the businesses of Alcoa; (d) the risk that the businesses will not be separated successfully or such separation may be more difficult, time-consuming or costly than expected, which could result in additional demands on Alcoa s resources, systems, procedures and controls, disruption of its ongoing business and diversion of management s attention from other business concerns; (e) material adverse changes in aluminum industry conditions, including global supply and demand conditions and fluctuations in London Metal Exchange-based prices and premiums, as applicable, for primary aluminum, alumina, and other products, and fluctuations in indexed-based and spot prices for alumina; (f) deterioration in global economic and financial market conditions generally; (g) unfavorable changes in the markets served by Alcoa; (h) the impact of changes in foreign currency exchange rates on costs and results; (i) increases in energy costs; (j) the inability to achieve the level of revenue growth, cash generation, cost savings, improvement in profitability and margins, fiscal discipline, or strengthening of competitiveness and operations

anticipated from restructuring programs and productivity improvement, cash sustainability, technology advancements (including, without limitation, advanced aluminum alloys, Alcoa Micromill, and other materials and processes), and other initiatives; (k) Alcoa s inability to realize expected benefits, in each case as planned and by targeted completion dates, from acquisitions, divestitures, facility closures, curtailments, or expansions, or international joint ventures; (l) political, economic, and regulatory risks in the countries in which Alcoa operates or sells products; (m) the outcome of contingencies, including legal proceedings, government or regulatory investigations, and environmental remediation; (n) the impact of cyber attacks and potential information technology or data security breaches; and (o) the other risk factors summarized in Alcoa s Form 10-K for the year ended December 31, 2015, including under Part I, Item 1A thereof, and in the following sections of this report: Note I and the Derivatives section of Note O to the Consolidated Financial Statements; and the discussion included above under Segment Information. Alcoa disclaims any intention or obligation to update publicly any forward-looking statements, whether in response to new information, future events, or otherwise, except as required by applicable law. Market projections are subject to the risks discussed above and other risks in the market.

Item 3. Quantitative and Qualitative Disclosures about Market Risk.

See the Derivatives section of Note O to the Consolidated Financial Statements in Part I Item 1 of this Form 10-Q.

Item 4. Controls and Procedures.

(a) Evaluation of Disclosure Controls and Procedures

Alcoa s Chief Executive Officer and Chief Financial Officer have evaluated the Company s disclosure controls and procedures, as defined in Rules 13a-15(e) and 15d-15(e) of the Securities Exchange Act of 1934, as of the end of the period covered by this report, and they have concluded that these controls and procedures are effective.

(b) Changes in Internal Control over Financial Reporting

There have been no changes in internal control over financial reporting during the second quarter of 2016, that have materially affected, or are reasonably likely to materially affect, the Company s internal control over financial reporting.

PART II OTHER INFORMATION

Item 1. Legal Proceedings.

Environmental Matters

As previously reported, in 1996, Alcoa acquired the Fusina, Italy smelter and rolling operations and the Portovesme, Italy smelter, both of which are owned by Alcoa s subsidiary, Alcoa Trasformazioni S.r.l. (Trasformazioni) from Alumix, an entity owned by the Italian Government. Alcoa also acquired the extrusion plants located in Feltre and Bolzano, Italy. At the time of the acquisition, Alumix indemnified Alcoa for pre-existing environmental contamination at the sites. In 2004, the Italian Ministry of Environment and Protection of Land and Sea (MOE) issued orders to Trasformazioni and Alumix for the development of a clean-up plan related to soil contamination in excess of allowable limits under legislative decree and to institute emergency actions and pay natural resource damages. On April 5, 2006, Trasformazioni s Fusina site was also sued by the MOE and Minister of Public Works (MOPW, and collectively with the MOE, the Ministers) in the Civil Court of Venice for an alleged liability for environmental damages, in parallel with the orders already issued by the MOE. Trasformazioni appealed the orders, defended the civil case for environmental damages and filed suit against Alumix, as discussed below. Similar issues also existed with respect to the Bolzano and Feltre plants, based on orders issued by local authorities in 2006. Most, if not all, of the underlying activities occurred during the ownership of Alumix, the governmental entity that sold the Italian plants to Alcoa.

As noted above, in response to the 2006 civil suit by the MOE and MOPW, Trasformazioni filed suit against Alumix claiming indemnification under the original acquisition agreement, but brought that suit in the Court of Rome due to jurisdictional rules. In June 2008, the parties (Alcoa and now Ligestra S.r.l. (Ligestra), the successor to Alumix) signed a preliminary agreement by which they have committed to pursue a settlement. The Court of Rome accepted the request, and postponed the Court s expert technical assessment, reserving its ability to schedule the deadline depending on the development of negotiations. Alcoa and Ligestra agreed to a settlement in December 2008 with respect to the Feltre site. Ligestra paid the sum of 1.08 million euros and Alcoa committed to clean up the site. Further postponements were granted by the Court of Rome, and the next hearing is scheduled for December 20, 2016.

In the meantime, Trasformazioni and Ligestra reached a preliminary agreement for settlement of the liabilities related to Fusina, allocating 80% and 20% of the remediation costs to Ligestra and Alcoa, respectively. In January 2014, a final agreement with Ligestra was signed, and on February 5, 2014, Alcoa signed a final agreement with the MOE and MOPW settling all environmental issues at the Fusina site. As set out in the agreement between Alcoa and Ligestra, those two parties will share the remediation costs and environmental damages claimed by the MOE and MOPW. The remediation project filed by Alcoa and Ligestra has been approved by the MOE. See the caption Fusina and Portovesme, Italy under the Environmental Matters section of Note I to the Consolidated Financial Statements in Part I Item 1 of this Form 10-Q. To provide time for settlement with Ligestra, the MOE and Alcoa jointly requested and the Civil Court of Venice has granted a series of postponements of hearings in the Venice trial, assuming that the case will be closed. Following the settlement, the parties caused the Court to dismiss the proceedings. The proceedings were, however, restarted in April 2015 by the MOE and MOPW because the Ministers had not ratified the settlement of February 5, 2014. The settlement was ratified earlier in 2016 and the Venice Court case was dismissed on July 5, 2016.

Alcoa and Ligestra have signed a similar agreement relating to the Portovesme site. However, that agreement was contingent upon final acceptance of the proposed soil remediation project for Portovesme that was rejected by the MOE in the fourth quarter of 2013. Alcoa submitted a revised proposal in May 2014 and a further revised proposal in February 2015, in agreement with Ligestra. The MOE issued a ministerial decree approving the final project in October 2015. Work on the soil remediation project commenced in the second quarter of 2016 and is expected to be completed in 2019. Alcoa and Ligestra are now working on a final groundwater remediation project, which is expected to be submitted to the MOE for review during the second half of 2016. Alcoa is unable to reasonably predict an outcome or to estimate a range of reasonably possible loss beyond what is described in the caption Fusina and Portovesme, Italy under the Environmental Matters section of Note I to the Consolidated Financial Statements in Part I Item 1 of this Form 10-Q because certain costs of groundwater remediation are not yet determined and the MOE has substantial discretion in defining the extent and duration of the remediation program. Alcoa and Ligestra have settled an allocation of the cost for groundwater remediation, subject to a cap, over which the agreement is null and void.

Other Matters

On May 27, 2016, Alcoa filed a complaint in the Delaware Court of Chancery seeking a declaratory judgment on an expedited basis to forestall what the complaint alleges are continuing threats by Alumina Limited of Australia (Alumina Limited) and certain related parties to attempt to interfere with Alcoa s proposed separation transaction (see Management s Discussion and Analysis of Financial Condition and Results of Operations in Part I Item 2 of this Form 10-Q). Alumina Limited has claimed that it has certain consent and other rights under certain agreements governing Alcoa World Alumina and Chemicals, a global joint venture between Alcoa and Alumina Limited, in connection with the proposed separation transaction. Alcoa believes Alumina Limited s claims are without merit and is seeking a declaratory judgment that Alumina Limited and its related parties do not have such consent and other rights. On June 17, 2016, Alumina filed its answer and counterclaims. Among other things, Alumina asserts that it has rights of consent regarding the separation, that the separation triggers various first option rights, and that it is entitled to a proportionate share of offtake or marketing rights as a result of the separation. Trial date has been set for September 20, 2016. At this time, the Company is unable to reasonably predict the ultimate outcome for this matter.

Item 4. Mine Safety Disclosures.

The information concerning mine safety violations or other regulatory matters required by Section 1503(a) of the Dodd-Frank Wall Street Reform and Consumer Protection Act and Item 104 of Securities and Exchange Commission Regulation S-K (17 CFR 229.104) is included in Exhibit 95 of this report, which is incorporated herein by reference.

Item 6. Exhibits.

10(a).	2013 Alcoa Stock Incentive Plan, as Amended and Restated, incorporated by reference to Exhibit 10(a) to the Company s Current Report on Form 8-K dated May 11, 2016
10(b).	Alcoa Internal Revenue Code 162(m) Compliant Annual Cash Incentive Compensation Plan, as Amended and Restated, incorporated by reference to Exhibit 10(b) to the Company s Current Report on Form 8-K dated May 11, 2016
10(c).	Terms and Conditions for Restricted Stock Units under the 2013 Alcoa Stock Incentive Plan, effective July 22, 2016
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15.	Letter regarding unaudited interim financial information
31.	Certifications pursuant to Section 302 of the Sarbanes-Oxley Act of 2002
32.	Certification pursuant to Section 906 of the Sarbanes-Oxley Act of 2002
95.	Mine Safety Disclosure
101.INS	XBRL Instance Document
101.SCH	XBRL Taxonomy Extension Schema Document
101.CAL	XBRL Taxonomy Extension Calculation Linkbase Document
101.DEF	XBRL Taxonomy Extension Definition Linkbase Document
101.LAB	XBRL Taxonomy Extension Label Linkbase Document
101.PRE	XBRL Taxonomy Extension Presentation Linkbase Document

SIGNATURES

Pursuant to the requirements of the Securities Exchange Act of 1934, the Registrant has duly caused this report to be signed on its behalf by the undersigned thereunto duly authorized.

	Alcoa Inc.
July 29, 2016 Date	By /s/ WILLIAM F. OPLINGER William F. Oplinger Executive Vice President and Chief Financial Officer (Principal Financial Officer)
July 29, 2016 Date	By /s/ ROBERT S. COLLINS Robert S. Collins Vice President and Controller (Principal Accounting Officer)

EXHIBIT INDEX

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