

ALCOA INC.
Form 10-K
February 19, 2015

UNITED STATES
SECURITIES AND EXCHANGE COMMISSION
WASHINGTON, D.C. 20549
FORM 10-K

☒ ANNUAL REPORT PURSUANT TO SECTION 13 OR 15(d) OF

THE SECURITIES EXCHANGE ACT OF 1934

For The Fiscal Year Ended December 31, 2014

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
(State of incorporation)

25-0317820
(I.R.S. Employer Identification No.)

390 Park Avenue, New York, New York 10022-4608

(Address of principal executive offices) (Zip code)

Registrant's telephone numbers:

Investor Relations----- (212) 836-2674

Office of the Secretary----- (212) 836-2732

Securities registered pursuant to Section 12(b) of the Act:

Title of each class
Common Stock, par value \$1.00 per share
Depository Shares, each representing a 1/10 th ownership interest in a share of 5.375% Class B Mandatory Convertible Preferred Stock, Series 1, par value \$1.00 per share

Name of each exchange on which registered
New York Stock Exchange
New York Stock Exchange

Securities registered pursuant to Section 12(g) of the Act: None

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Indicate by check mark if the registrant is a well-known seasoned issuer, as defined in Rule 405 of the Securities Act. Yes ☐ No ☒.

Indicate by check mark if the registrant is not required to file reports pursuant to Section 13 or Section 15(d) of the Exchange Act. Yes ☐ No ☒.

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 ☒ No ☐.

Indicate by check mark whether the registrant has submitted electronically and posted on its corporate Website, if any, every Interactive Data File required to be submitted and posted pursuant to Rule 405 of Regulation S-T (§232.405 of this chapter) during the preceding 12 months (or for such shorter period that the registrant was required to submit and post such files). Yes ☒ No ☐.

Indicate by check mark if disclosure of delinquent filers pursuant to Item 405 of Regulation S-K is not contained herein, and will not be contained, to the best of registrant's knowledge, in definitive proxy or information statements incorporated by reference in Part III of this Form 10-K or any amendment to this Form 10-K. ☒

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 ☒ Accelerated filer ☐ Non-accelerated filer ☐ 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 ☒.

The aggregate market value of the outstanding common stock, other than shares held by persons who may be deemed affiliates of the registrant, as of the last business day of the registrant's most recently completed second fiscal quarter was approximately \$17 billion. As of February 13, 2015, there were 1,222,248,058 shares of common stock, par value \$1.00 per share, of the registrant outstanding.

Documents incorporated by reference.

Part III of this Form 10-K incorporates by reference certain information from the registrant's definitive Proxy Statement for its 2015 Annual Meeting of Shareholders to be filed pursuant to Regulation 14A (Proxy Statement).

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Note on Incorporation by Reference

In this Form 10-K, selected items of information and data are incorporated by reference to portions of the Proxy Statement. Unless otherwise provided herein, any reference in this report to disclosures in the Proxy Statement shall constitute incorporation by reference of only that specific disclosure into this Form 10-K.

PART I

Item 1. Business.

General

Formed in 1888, Alcoa Inc. is a Pennsylvania corporation with its principal office in New York, New York. In this report, unless the context otherwise requires, Alcoa or the Company means Alcoa Inc. and all subsidiaries consolidated for the purposes of its financial statements.

The Company's Internet address is <http://www.alcoa.com>. Alcoa makes available free of charge on or through its website its annual report on Form 10-K, quarterly reports on Form 10-Q, current reports on Form 8-K, and amendments to those reports filed or furnished pursuant to Section 13(a) or 15(d) of the Securities Exchange Act of 1934 as soon as reasonably practicable after the Company electronically files such material with, or furnishes it to, the Securities and Exchange Commission (SEC). The information on the Company's Internet site is not a part of, or incorporated by reference in, this annual report on Form 10-K. The SEC maintains an Internet site that contains these reports at <http://www.sec.gov>.

Forward-Looking Statements

This report contains (and oral communications made by Alcoa may contain) 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, estimates, expects, forecast, hopes, outlook, projects, should, target, likely result, or other words of similar meaning. All statements 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 aluminum industry growth or other trend projections, anticipated financial results or operating performance, and statements about Alcoa's strategies, objectives, goals, targets, outlook, and business and financial prospects. Forward-looking statements are subject to a number of known and unknown risks, uncertainties and other factors and are not guarantees of future performance. Actual results, performance or outcomes may differ materially from those expressed in or implied by those forward-looking statements. For a discussion of some of the specific factors that may cause Alcoa's actual results to differ materially from those projected in any forward-looking statements, see the following sections of this report: Part I, Item 1A. (Risk Factors), Part II, Item 7. (Management's Discussion and Analysis of Financial Condition and Results of Operations), including the disclosures under Segment Information and Critical Accounting Policies and Estimates, and Note N and the Derivatives Section of Note X to the Consolidated Financial Statements in Part II, Item 8. (Financial Statements and Supplementary Data). 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.

Overview

Alcoa is a global leader in lightweight metals engineering and manufacturing. Alcoa's innovative, multi-material products, which include aluminum, titanium, and nickel, are used worldwide in aircraft, automobiles, commercial transportation, packaging, building and construction, oil and gas, defense, consumer electronics, and industrial applications.

Alcoa is also the world leader in the production and management of primary aluminum, fabricated aluminum, and alumina combined, through its active participation in all major aspects of the industry: technology, mining, refining, smelting, fabricating, and recycling. Aluminum is a commodity that is traded on the London Metal Exchange (LME) and priced daily. Sales of primary aluminum and alumina represent approximately 40% of Alcoa's revenues. The price of aluminum influences the operating results of Alcoa.

Alcoa is a global company operating in 30 countries. Based upon the country where the point of sale occurred, the United States and Europe generated 51% and 27%, respectively, of Alcoa's sales in 2014. In addition, Alcoa has investments and operating activities in, among others, Australia, Brazil, China, Guinea, Iceland, Russia, and Saudi Arabia, all of which present opportunities for substantial growth. Governmental policies, laws and regulations, and other economic factors, including inflation and fluctuations in foreign currency exchange rates and interest rates, affect the results of operations in these countries.

Alcoa's operations consist of four worldwide reportable segments: Alumina, Primary Metals, Global Rolled Products, and Engineered Products and Solutions.

Description of the Business

Information describing Alcoa's businesses can be found on the indicated pages of this report:

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The following tables and related discussion of the Company's Bauxite Interests, Alumina Refining and Primary Aluminum Facilities and Capacities, Global Rolled Products, Engineered Products and Solutions and Corporate Facilities provide additional description of Alcoa's businesses. The Alumina segment primarily consists of a series of affiliated operating entities referred to as Alcoa World Alumina and Chemicals (AWAC). Alcoa owns 60% and Alumina Limited owns 40% of these individual entities. For more information on AWAC, see Exhibit Nos. 10(a) through 10(f)(1) to this report.	

Bauxite Interests

Aluminum is one of the most plentiful elements in the earth's crust and is produced primarily from bauxite, an ore containing aluminum in the form of aluminum oxide, commonly referred to as alumina. Aluminum is made by extracting alumina from bauxite and then removing oxygen from the alumina. Alcoa processes most of the bauxite that it mines into alumina. The Company obtains bauxite from its own resources and from those belonging to the AWAC enterprise, located in the countries listed in the table below, as well as pursuant to both long-term and short-term contracts and mining leases. During 2014, Alcoa consumed 40.8 million metric tons (mt) from AWAC and its own resources and 8.2 million mt from entities in which the Company has an equity interest. In addition, AWAC sold 1.6 million mt of bauxite to third parties. Tons of bauxite are reported as bone dry metric tons (bdmt) unless otherwise stated. See the glossary of bauxite mining related terms at the end of this section.

The Company has access to large bauxite deposit areas with mining rights that extend in most cases more than 20 years from the date of this report. For purposes of evaluating the amount of bauxite that will be available to supply as

feedstock to its refineries, the Company considers both estimates of bauxite resources as well as calculated bauxite reserves. Bauxite resources represent deposits for which tonnage, densities, shape, physical characteristics, grade and mineral content can be estimated with a reasonable level of confidence based on the amount of exploration sampling and testing information gathered through appropriate techniques from locations such as outcrops, trenches, pits, workings and drill holes. Bauxite reserves represent the economically mineable part of resource deposits, and include diluting materials and allowances for losses, which may occur when the material is mined. Appropriate assessments and studies have been carried out to define the reserves, and include consideration of and modification by realistically assumed mining, metallurgical, economic, marketing, legal, environmental, social and governmental factors. Alcoa employs a conventional approach (including additional drilling with successive tightening of the drill grid) with customized techniques to define and characterize its various bauxite deposit types allowing Alcoa to confidently establish the extent of its bauxite resources and their ultimate conversion to reserves.

The table below only includes the amount of proven and probable reserves controlled by the Company. While the level of reserves may appear low in relation to annual production levels, they are consistent with historical levels of reserves for the Company's mining locations. Given the Company's extensive bauxite resources, the abundant supply of bauxite globally and the length of the Company's rights to bauxite, it is not cost-effective to invest the significant resources necessary to establish bauxite reserves that reflect the total size of the bauxite resources available to the Company. Rather, bauxite resources are upgraded annually to reserves as needed by the location. Detailed assessments are progressively undertaken within a proposed mining area and mine activity is then planned to achieve a uniform quality in the supply of blended feedstock to the relevant refinery. Alcoa believes its present sources of bauxite on a global basis are sufficient to meet the forecasted requirements of its alumina refining operations for the foreseeable future.

Bauxite Resource Development Guidelines

Alcoa has developed best practice guidelines for bauxite reserve and resource classification at its operating bauxite mines. Alcoa's reserves are declared in accordance with Alcoa's internal guidelines as administered by the Alcoa Ore Reserves Committee (AORC). The reported ore reserves set forth in the table below are those that Alcoa estimates could be extracted economically with current technology and in current market conditions. Alcoa does not use a price for bauxite, alumina, or aluminum to determine its bauxite reserves. The primary criteria for determining bauxite reserves are the feed specifications required by the customer alumina refinery. In addition to these specifications, a number of modifying factors have been applied to differentiate bauxite reserves from other mineralized material. Alcoa mining locations have annual in-fill drilling programs designed to progressively upgrade the reserve and resource classification of their bauxite.

Alcoa Bauxite Interests, Share of Reserves and Annual Production¹

Country	Project	Owners Mining Rights (%) Entitlement)	Expiration Date of Mining Rights	Probable Reserves (million bdmt)	Proven Reserves (million bdmt)	Available Alumina Content (%) AvAl ₂ O ₃	Reactive Silica Content (%) R _x SiO ₂	2014 Annual Production (million bdmt)
Australia	Darling Range Mines ML1SA	Alcoa of Australia Limited (AofA) ² (100%)	2024	43.1	117.8	33.1	0.9	31.4
Brazil	Poços de Caldas	Alcoa Alumínio S.A. (Alumínio) ³ (100%)	2020 ⁴	0.1	1.3	40.0	4.8	0.5
	Juruti ⁴		2100 ⁴	7.8	26.0	47.8	4.2	4.8
	RN101, RN102, RN103, RN104, #34	Alcoa World Alumina Brasil Ltda. (AWA Brasil) ² (100%)						
Suriname	Coermotibo and Onverdacht	Suriname Aluminum Company, L.L.C. (Suralco) ² (55%) N.V. Alcoa Minerals of Suriname (AMS) ⁵ (45%)	2033 ⁶	2.2	-	39.0	4.7	2.7
Equity interests:								
Brazil	Trombetas	Mineração Rio do Norte S.A. (MRN) ⁷ (18.2%)	2046 ⁴	3.1	12.8	49.4	4.6	3.3
Guinea	Boké		2038 ⁹	40.1	21.7	TAl ₂ O ₃ ₁₀	TSiO ₂ ¹⁰	3.4
Kingdom of Saudi Arabia	Al Ba'itha	Compagnie des Bauxites de Guinée (CBG) ⁸ (22.95%) Ma'aden Bauxite & Alumina Company (25.1%) ¹¹	2037	33.8	19.7	49.5 TAA ¹²	1.7 TSiO ₂ ¹²	0.2
						49.4	8.7	

¹ This table shows only the AWAC and/or Alcoa share (proportion) of reserve and annual production tonnage.

² This entity is part of the AWAC group of companies and is owned 60% by Alcoa and 40% by Alumina Limited.

³ Alumínio is owned 100% by Alcoa.

⁴ Brazilian mineral legislation does not establish the duration of mining concessions. The concession remains in force until the exhaustion of the deposit. The Company estimates that (i) the concessions at Poços de Caldas will last at least until 2020, (ii) the concessions at Trombetas will last until 2046 and (iii) the concessions at Juruti will last until 2100. Depending, however, on actual and future needs, the rate at which the deposits are exploited and government approval is obtained, the concessions may be extended to (or expire at) a later (or an earlier) date.

⁵ Alcoa World Alumina LLC (AWA LLC) owns 100% of N.V. Alcoa Minerals of Suriname (AMS). Suralco and AMS are parts of the AWAC group of companies which are owned 60% by Alcoa and 40% by Alumina Limited.

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- ⁶ The mining rights in the Onverdacht and Coermotibo areas where Suralco has active mines extend until 2033. Bauxite within these areas will likely be exhausted in the near future. During 2015, Suralco will be mining from both reserves and resources. Alcoa has decided not to develop a mine at the Nassau Plateau based on current refinery cost and market conditions.

- ⁷ Alumínio holds an 8.58% total interest, AWA Brasil holds a 4.62% total interest and AWA LLC holds a 5% total interest in MRN. MRN is jointly owned with affiliates of Rio Tinto Alcan Inc., Companhia Brasileira de Alumínio, Companhia Vale do Rio Doce, BHP Billiton Plc (BHP Billiton) and Norsk Hydro. Alumínio, AWA Brasil, and AWA LLC purchase bauxite from MRN under long-term supply contracts.
- ⁸ AWA LLC owns a 45% interest in Halco (Mining), Inc. (Halco). Halco owns 100% of Boké Investment Company, a Delaware company, which owns 51% of CBG. The Guinean Government owns 49% of CBG, which has the exclusive right through 2038 to develop and mine bauxite in certain areas within a 10,000 square-mile concession in northwestern Guinea.
- ⁹ AWA LLC has a bauxite purchase contract with CBG that expires in 2029. Before that expiration date, AWA LLC expects to negotiate an extension of the contract as CBG will have concession rights until 2038. The CBG concession can be renewed beyond 2038 by agreement of the Government of Guinea and CBG should more time be required to commercialize the remaining economic bauxite within the concession.
- ¹⁰ Guinea Boké: CBG prices bauxite and plans the mine based on the bauxite qualities of total alumina (TA_2O_3) and total silica ($TSiO_2$).
- ¹¹ Ma'aden Bauxite & Alumina Company is a joint venture owned by Saudi Arabian Mining Company (Ma'aden) (74.9%) and AWA Saudi Limited (25.1%). AWA Saudi Limited is part of the AWAC group of companies and is owned 60% by Alcoa and 40% by Alumina Limited.
- ¹² Kingdom of Saudi Arabia Al Ba'itha: Bauxite reserves and mine plans are based on the bauxite qualities of total available alumina (TAA) and total silica ($TSiO_2$).
- Qualifying statements relating to the table above:

Australia Darling Range Mines: Huntly and Willowdale are the two active mines in the Darling Range of Western Australia. The mineral lease issued by the State of Western Australia to Alcoa is known as ML1SA and its term extends to 2024. The lease can be renewed for an additional twenty-one year period to 2045. The declared reserves are as of December 31, 2014. The amount of reserves reflect the total AWAC share. Additional resources are routinely upgraded by additional exploration and development drilling to reserve status. The Huntly and Willowdale mines supply bauxite to three local AWAC alumina refineries.

Brazil Poços de Caldas: Declared reserves are as of December 31, 2014. Tonnage is total Alcoa share. Additional resources are being upgraded to reserves as needed.

Brazil Juruti RN101, RN102, RN103, RN104, #34: Declared reserves are as of December 31, 2014. All reserves are on Capianga Plateau. Declared reserves are total AWAC share. Declared reserve tonnages and the annual production tonnage are washed product tonnages. The Juruti mine's operating license is periodically renewed.

Suriname Suralco: The declared reserves are as of December 31, 2014.

Kingdom of Saudi Arabia Al Ba'itha: The Al Ba'itha Mine began production during 2014. Declared reserves are as of December 31, 2014, and based on the SRK reserves update report issued in April 2014. The proved reserves have been decremented for 2014 mine production. The declared reserves are located in the South Zone of the Az Zabirah Bauxite Deposit. The reserve tonnage in this declaration is AWAC share only (25.1%).

Brazil Trombetas-MRN: Declared reserves have been estimated by MRN for December 31, 2014. The CP Report for December 31, 2014 will be issued on February 28, 2015. Declared and annual production tonnages reflect the total for Alumínio and AWAC shares (18.2%). Declared tonnages are washed product tonnages.

Guinea Boké-CBG: The CP Report for December 31, 2014 reserves is expected to be issued in March 2015. The declared reserves are based on export quality bauxite reserves. Declared tonnages reflect only the AWAC share of CBG's reserves. Annual production tonnage is reported based on AWAC's 22.95% share. Declared reserves quality is

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reported based on total alumina (Al_2O_3) and total silica (SiO_2) because CBG export bauxite is sold on this basis. Additional resources are being routinely drilled and modeled to upgrade to reserves as needed.

The following table provides additional information regarding the Company's bauxite mines:

Mine & Location	Means of		Title,		Type of		Facilities,	
	Access	Operator	Lease or Options	History	Mine Mineralization Style	Power Source	Use & Condition	
Australia Darling Range; Huntly and Willowdale.	Mine locations accessed by roads. Ore is transported to refineries by long distance conveyor and rail.	Alcoa	Mining lease from the Western Australia Government. ML1SA. Expires in 2024.	Mining began in 1963.	Open-cut mines. Bauxite is derived from the weathering of Archean granites and gneisses and Precambrian dolerite.	Electrical energy from natural gas is supplied by the refinery.	Infrastructure includes buildings for administration and services; workshops; power distribution; water supply; crushers; long distance conveyors.	
Brazil Poços de Caldas. Closest town is Poços de Caldas, MG, Brazil.	Mine locations are accessed by road. Ore transport to the refinery is by road.	Alcoa	Mining licenses from the Government of Brazil and Minas Gerais. Company claims and third-party leases. Expire in 2020.	Mining began in 1965.	Open-cut mines. Bauxite derived from the weathering of nepheline syenite and phonolite.	Commercial grid power.	Mines and facilities are operating. Mining offices and services are located at the refinery. Numerous small deposits are mined by contract miners and the ore is trucked to either the refinery stockpile or intermediate stockpile area.	
Brazil Juruti Closest town is Juruti located on the Amazon River.	The mine's port at Juruti is located on the Amazon River and accessed by ship. Ore is transported from the mine site to the port by Company owned rail.	Alcoa	Mining licenses from the Government of Brazil and Pará. Mining rights do not have a legal expiration date. See footnote 4 to the table above.	The Juruti deposit was systematically evaluated by Reynolds Metals Company beginning in 1974. Alcoa merged Reynolds into the Company in 2000.	Open-cut mines. Bauxite derived from weathering during the Tertiary of Cretaceous fine to medium grained feldspathic sandstones.	Electrical energy from fuel oil is generated at the mine site. Commercial grid power at the port.	Mines and facilities are operating. At the mine site: Fixed plant facilities for crushing and washing the ore; mine services offices and workshops; power generation; water supply; stockpiles; rail sidings.	
			Operating licenses for the mine, washing plant and RR have been renewed with validity until 2018.	Alcoa then executed a due diligence program and expanded the exploration area.	The deposits are covered by the Belterra clays.		At the port: Mine and rail administrative offices and services; port control facilities with stockpiles and ship loader.	

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Suriname Coermotibo and Onverdacht. Mines are located in the districts of Para and Marowijne.	The mines are accessed by road. Ore is delivered to the refinery by road from the Onverdacht area and by river barge from the Coermotibo area.	Alcoa	Operating license for the port remains valid until the government agency formalizes the renewal. Brokopondo Concession from the Government of Suriname. Concessions formerly owned by a BHP Billiton (BHP) subsidiary that was a 45% joint venture partner in the Surinamese bauxite mining and alumina refining joint ventures. AWA LLC acquired that subsidiary in 2009. After the acquisition of the subsidiary, its name was changed to N.V. Alcoa Minerals of Suriname.	Mining began in 2009. Alcoa became active in Suriname in 1916 with the founding of the Suriname Bauxite Company. Bauxite was first exported in 1922. The Brokopondo Agreement was signed in 1958. As noted, Suralco bought the bauxite and alumina interests of a BHP subsidiary from BHP in 2009.	Open-cut mines. At one of the mines, the overburden is dredged and mining progresses with conventional open-cut methods. The protoliths of the bauxite have been completely weathered. The bauxite deposits are mostly derived from the weathering of Tertiary Paleogene arkosic sediments. In some places, the bauxite overlies Precambrian granitic and gneissic rocks which have been deeply weathered to saprolite. Bauxitization likely occurred during the middle to late Eocene Epoch.	Commercial grid power.	Mine and port facilities are operating. In the Onverdacht mining areas, the bauxite is mined and transported to the refinery by truck. In the Coermotibo mining areas, the bauxite is mined, stockpiled and then transported to the refinery by barge. Some of the ore is washed in a small beneficiation plant located in the Coermotibo area. The main mining administrative offices, services, workshops and laboratory are located at the refinery in Paranam. The ore is crushed at Paranam and fed into the refining process. The mines and washing plant are operating.
				Expires in 2033.			

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		Title,		Type of		Facilities,	
Means of		Lease or		Mine		Use &	
Mine & Location	Access	Operator	Options	History	Mineralization Style	Power Source	Condition
Brazil MRN Closest town is Trombetas in the State of Pará, Brazil.	The mine and port areas are connected by sealed road and company owned rail. Washed ore is transported to Porto Trombetas by rail. Trombetas is accessed by river and by air at the airport.	MRN	Mining rights and licenses from the Government of Brazil. Concession rights expire in 2046.	Mining began in 1979. Major expansion in 2003.	Open-cut mines. Bauxite derived from weathering during the Tertiary of Cretaceous fine to medium grained feldspathic sandstones. The deposits are covered by the Belterra clays.	MRN generates its own electricity from fuel oil.	Ore mined from several plateaus is crushed and transported to the washing plant by long-distance conveyors. The washing plant is located in the mining zone. Washed ore is transported to the port area by company-owned and operated rail. At Porto Trombetas the ore is loaded onto customer ships berthed in the Trombetas River. Some ore is dried and the drying facilities are located in the port area. Mine planning and services and mining equipment workshops are located in the mine zone. The main administrative, rail and port control offices and various workshops are located in the port area. MRN's main housing facilities, the city, are located near the port.
Guinea CBG Closest town to the mine is Sangaredi.	The mine and port areas are connected by	CBG	CBG Lease expires in 2038. The lease is renewable in 25-year increments. CBG's	Construction began in 1969.	Open-cut mines. The bauxite deposits within the CBG lease are of two	The company generates its own electricity from fuel oil at both Kamsar and Sangaredi.	The mines, port and all facilities are operating. Mine offices, workshops, power generation and water supply for the mine and company mine city are located at Sangaredi.

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Closest town to the	sealed road and	rights are specified within the Basic Agreement and	First export ore shipment was in	general types.			The main administrative offices, port control, railroad control, workshops, power generation and water supply are located in Kamsar. Ore is crushed, dried and exported from Kamsar. CBG has company cities within both Kamsar and Sangaredi.
port is Kamsar. The CBG Lease is located within the	company-operated rail. Ore is transported to the	Amendment 1 to the	1973.	TYPE 1: In-situ laterization of Ordovician and Devonian plateau sediments locally intruded by dolerite dikes and sills.			
Boké, Telimele and	port at Kamsar by rail. There are air	Basic Agreement with the Government of Guinea.					
Gaoual	strips near both the						The mines, railroad, driers, port and other facilities are operating.
administrative	mine and port.						
regions.	These are not operated by the company.			TYPE 2: Sangaredi type deposits are derived from clastic deposition of material eroded from the Type 1 laterite deposits and possibly some of the prooliths from the TYPE 1 plateaus deposits.			
Kingdom of Saudi Arabia	The mine and refinery are	Ma'aden Bauxite & Alumina Company	The current mining lease will expire in 2037.	The initial discovery and delineation of bauxite resources was carried out between 1979 and 1984.	Open-cut mine.	The company generates	The mine includes fixed plants for crushing and train loading; workshops and ancillary services; power plant; and water supply.
Mine. Qibah is the closest regional centre to the mine, located in the	connected by road and rail. Ore is transported to the refinery at Ras Al Khair by rail.				Bauxite occurs as a paleolaterite profile	electricity at the mine site from fuel oil.	
Qassim province.				The southern zone of the Az Zabirah deposit was granted to Ma'aden in 1999.	developed at an angular unconformity		There is a company village with supporting facilities. Mining operations commenced in 2014.
				Construction of the mine was 83% complete by year-end 2014. Bauxite production began during the second quarter of 2014.	between underlying late Triassic to early Cretaceous sediments (parent rock sequence		
					Biyadh Formation) and the overlying late Cretaceous		
					Wasia Formation (overburden sequence).		

Kingdom of Saudi Arabia Joint Venture

In December 2009, Alcoa and Saudi Arabian Mining Company (Ma'aden) entered into a joint venture to develop a fully integrated aluminum complex in the Kingdom of Saudi Arabia. In its initial phases, the complex includes a bauxite mine with an initial

capacity of 4 million bdmtpy; an alumina refinery with an initial capacity of 1.8 million mtpy; an aluminum smelter with an initial capacity of ingot, slab and billet of 740,000 mtpy; and a rolling mill with initial capacity of 380,000 mtpy. The mill will produce a variety of sheet products.

The refinery, smelter and rolling mill are located within the Ras Al Khair industrial zone on the east coast of the Kingdom of Saudi Arabia. First hot metal from the smelter was produced on December 12, 2012, and the smelter produced 600,000 mt in 2014. Since mid-2014, the smelter has been operating at full capacity.

The first hot coil from the rolling mill was produced in the fourth quarter of 2013. The mine's first bauxite was shipped in the second quarter of 2014 and construction of the mine was 83% complete at year end. The refinery became fully operational and produced its first alumina from Saudi Arabia bauxite in the fourth quarter of 2014.

Total capital investment is expected to be approximately \$10.8 billion (SAR 40.5 billion). Ma'aden owns a 74.9% interest in the joint venture. Alcoa owns a 25.1% interest in the smelter and rolling mill, with the AWAC group holding a 25.1% interest in the mine and refinery. For additional information regarding the joint venture, see the Equity Investments section of Note I to the Consolidated Financial Statements in Part II, Item 8. (Financial Statements and Supplementary Data).

Jamaica – Jamalco

In December 2014, AWAC completed the sale of its 55% ownership stake in the Jamalco bauxite mine to Noble Group Ltd. after receiving all regulatory approvals. AWAC will continue as Jamalco's managing operator for three years under a compensated service agreement and employees remain employed by Jamalco.

Glossary of Bauxite Mining Related Terms

Term	Abbreviation	Definition
Alcoa Ore Reserves Committee	AORC	The group within Alcoa, which is comprised of Alcoa geologists and engineers, that specifies the guidelines by which bauxite reserves and resources are classified. These guidelines are used by Alcoa managed mines.
Alumina	Al_2O_3	A compound of aluminum and oxygen. Alumina is extracted from bauxite using the Bayer Process. Alumina is a raw material for smelters to produce aluminum metal.
AORC Guidelines		The Alcoa guidelines used by Alcoa managed mines to classify reserves and resources. These guidelines are issued by the Alcoa Ore Reserves Committee (AORC).
Available alumina content	AvAl_2O_3	The amount of alumina extractable from bauxite using the Bayer Process.
Bauxite		The principal raw material (rock) used to produce alumina. Bauxite is refined using the Bayer Process to extract alumina.
Bayer Process		The principal industrial means of refining bauxite to produce alumina.
Bone dry metric ton	bdmmt	Tonnage reported on a zero moisture basis.
Coermotibo		The mining area in Suriname containing the deposits of Bushman Hill, CBO Explo, Lost Hill and Remnant.
Competent Persons Report	CP Report	JORC compliant Reserves and Resources Report.
Juruti RN101, RN102, RN103, RN104, #34		Mineral claim areas in Brazil associated with the Juruti mine, within which Alcoa has the mining operating licenses issued by the state.

Term	Abbreviation	Definition
MLISA		The Mineral lease issued by the State of Western Australia to Alcoa. Alcoa mines located at Huntly and Willowdale operate within MLISA.
Onverdacht		The mining area in Suriname containing the deposits of Kaaimangrasi, Klaverblad, Lelydorp I and Sumau I.
Open-cut mine		The type of mine in which an excavation is made at the surface to extract mineral ore (bauxite). The mine is not underground and the sky is viewable from the mine floor.
Probable reserve		That portion of a reserve, i.e. bauxite reserve, where the physical and chemical characteristics and limits are known with sufficient confidence for mining and to which various mining modifying factors have been applied. Probable reserves are at a lower confidence level than proven reserves.
Proven reserve		That portion of a reserve, i. e. bauxite reserve, where the physical and chemical characteristics and limits are known with high confidence and to which various mining modifying factors have been applied.
Reactive silica	RxSiO ₂	The amount of silica contained in the bauxite that is reactive within the Bayer Process.
Reserve		That portion of mineralized material, i.e. bauxite, that Alcoa has determined to be economically feasible to mine and supply to an alumina refinery.
Resources		Resources are bauxite occurrences and/or concentrations of economic interest that are in such form, quality and quantity that are reasonable prospects for economic extraction.
Silica	SiO ₂	A compound of silicon and oxygen.
Total alumina content	TAI ₂ O ₃	The total amount of alumina in bauxite. Not all of this alumina is extractable or available in the Bayer Process.
Total available alumina	TAA	The total amount of alumina extractable from bauxite by the Bayer Process. This term is commonly used when there is a hybrid or variant Bayer Process that will refine the bauxite.
Total silica	TSiO ₂	The total amount of silica contained in the bauxite.

Alumina Refining Facilities and Capacity

Alcoa is the world's leading producer of alumina. Alcoa's alumina refining facilities and its worldwide alumina capacity are shown in the following table:

Alcoa Worldwide Alumina Refining Capacity

			Alcoa	
			Nameplate Capacity ¹	Consolidated Capacity ²
Country	Facility	Owners (% of Ownership)	(000 MTPY)	(000 MTPY)
Australia	Kwinana	AofA ³ (100%)	2,190	2,190
	Pinjarra	AofA (100%)	4,234	4,234
	Wagerup	AofA (100%)	2,555	2,555
Brazil	Poços de Caldas	Alumínio ⁴ (100%)	390 ⁵	390

			Alcoa	
Country	Facility	Owners	Nameplate Capacity ¹ (000 MTPY)	Consolidated Capacity ² (000 MTPY)
		(% of Ownership)		
	São Luís (Alumar)	AWA Brasil ³ (39%)		
		Rio Tinto Alcan Inc. ⁶ (10%)		
		Alumínio (15%)		
		BHP Billiton ⁶ (36%)	3,500	1,890
Spain	San Ciprián	Alúmina Española, S.A. ³ (100%)	1,500 ⁷	1,500
Suriname	Suralco	Suralco ³ (55%) AMS ⁸ (45%)	2,207 ⁹	2,207
United States	Point Comfort, TX	AWA LLC ³ (100%)	2,305 ¹⁰	2,305
TOTAL			18,881	17,271

¹ Nameplate Capacity is an estimate based on design capacity and normal operating efficiencies and does not necessarily represent maximum possible production.

² The figures in this column reflect Alcoa's share of production from these facilities. For facilities wholly-owned by AWAC entities, Alcoa takes 100% of the production.

³ This entity is part of the AWAC group of companies and is owned 60% by Alcoa and 40% by Alumina Limited.

⁴ This entity is owned 100% by Alcoa.

⁵ As a result of the decision to fully curtail the Poços de Caldas smelter, management initiated a reduction in alumina production at this refinery. The capacity that is operating at this refinery is producing at an approximately 45% output level.

⁶ The named company or an affiliate holds this interest.

⁷ The capacity that is operating at this refinery is producing at an approximately 95% output level.

⁸ AWA LLC owns 100% of N.V. Alcoa Minerals of Suriname (AMS). AWA LLC is part of the AWAC group of companies and is owned 60% by Alcoa and 40% by Alumina Limited.

⁹ The Suralco alumina refinery has approximately 876,000 mtpy of idle capacity. Additionally, the capacity that is operating at this refinery is producing at an approximately 85% output level.

¹⁰ The Point Comfort alumina refinery has approximately 340,000 mtpy of idle capacity. As of December 31, 2014, Alcoa had approximately 1,216,000 mtpy of idle capacity against total Alcoa Consolidated Capacity of 17,271,000 mtpy.

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In December 2014, AWAC completed the sale of its 55% ownership stake in the Jamalco alumina refinery to Noble Group Ltd. after receiving all regulatory approvals. As noted above, AWAC will continue as Jamalco's managing operator for three years under a compensated service agreement and employees remain employed by Jamalco.

As noted above, Alcoa and Ma'aden have been developing an alumina refinery in the Kingdom of Saudi Arabia. Initial capacity of the refinery will be 1.8 million mtpy. As noted above, the refinery became fully operational and produced its first alumina from Saudi Arabia bauxite in the fourth quarter of 2014. For additional information regarding the joint venture, see the Equity Investments section of Note I to the Consolidated Financial Statements in Part II, Item 8. (Financial Statements and Supplementary Data).

In November 2005, AWA LLC and Rio Tinto Alcan Inc. signed a Basic Agreement with the Government of Guinea that sets forth the framework for development of a 1.5 million mtpy alumina refinery in Guinea. In 2006, the Basic Agreement was approved by the Guinean National Assembly and was promulgated into law. The Basic Agreement was originally set to expire in November 2008, but was extended to November 2015. Pre-feasibility studies were completed in 2008. Additional feasibility study work was completed in 2012. Alcoa continued its evaluation of the project in 2014.

In September 2006, Alcoa received environmental approval from the Government of Western Australia for expansion of the Wagerup alumina refinery to a maximum capacity of 4.7 million mtpy, a potential increase of over 2 million mtpy. This approval had a term of 5 years and included environmental conditions that must be satisfied before Alcoa could seek construction approval for the project. The project was suspended in November 2008 due to global economic conditions and the unavailability of a secure long-term energy supply in Western Australia. These constraints continue and as such the project remains under suspension. In May 2012, the Government of Western Australia granted Alcoa a 5 year extension of the original environmental approval. There were no material developments in 2014.

In 2008, AWAC signed a cooperation agreement with Vietnam National Coal-Minerals Industries Group (Vinacomin) in which they agreed to conduct a joint feasibility study of the Gia Nghia bauxite mine and alumina refinery project located in Vietnam's Central Highlands. The cooperation between AWAC and Vinacomin on Gia Nghia is subject to approval by the Government of Vietnam. If established, the Gia Nghia venture is expected to be 51% owned by Vinacomin, 40% by AWAC and 9% by others. There were no material developments in 2014.

Primary Aluminum Facilities and Capacity

The Company's primary aluminum smelters and their respective capacities are shown in the following table:

Alcoa Worldwide Smelting Capacity

			Alcoa	
			Consolidated	
Country	Facility	Owners (% Of Ownership)	Nameplate Capacity¹ (000 MTPY)	Capacity² (000 MTPY)
Australia	Portland	AofA (55%)		
		CITIC ³ (22.5%)		
Brazil	Poços de Caldas São Luís (Alumar)	Marubeni ³ (22.5%)	358	197 ^{4,5}
		Alumínio (100%)	96	96 ⁶
		Alumínio (60%)		
Canada	Baie Comeau, Québec Bécancour, Québec	BHP Billiton ³ (40%)	447	268 ⁶
		Alcoa (100%)	280 ⁷	280
		Alcoa (74.95%)		
Iceland	Deschambault, Québec Fjarðaál	Rio Tinto Alcan Inc. ⁸ (25.05%)	413	310
		Alcoa (100%)	260	260
		Alcoa (100%)	344	344
Norway	Lista Mosjøen	Alcoa (100%)	94	94
		Alcoa (100%)	188	188
		Alcoa (100%)	93 ⁹	93
Spain	Avilés La Coruña San Ciprián	Alcoa (100%)	87 ⁹	87
		Alcoa (100%)	228	228
		Alcoa (100%)	269	269
United States	Evansville, IN (Warrick)	Alcoa (100%)	269	269
	Massena West, NY	Alcoa (100%)	130	130
	Rockdale, TX	Alcoa (100%)	191 ¹⁰	191
	Ferndale, WA (Intalco)	Alcoa (100%)	279 ¹¹	279
	Wenatchee, WA	Alcoa (100%)	184 ¹²	184
TOTAL			3,941	3,497

¹ Nameplate Capacity is an estimate based on design capacity and normal operating efficiencies and does not necessarily represent maximum possible production.

² The figures in this column reflect Alcoa's share of production from these facilities.

³ The named company or an affiliate holds this interest.

- ⁴ This figure includes the minority interest of Alumina Limited in the Portland facility, which is owned by AofA. From this facility, Alcoa takes 100% of the production allocated to AofA.
- ⁵ The Portland smelter has approximately 30,000 mtpy of idle capacity.
- ⁶ In 2013, Alcoa temporarily curtailed 34,000 mtpy at the Poços de Caldas smelter and 97,000 mtpy at the Alumar smelter. In the first quarter of 2014, management initiated the temporary curtailment of the remaining 62,000 mtpy at the Poços de Caldas smelter and an additional 85,000 mtpy at the Alumar smelter. The process of curtailing this additional capacity began in March 2014 and was completed by the end of May 2014. In the 2014 third quarter, an additional 12,000 mtpy was curtailed at the Alumar smelter.
- ⁷ In mid-May 2013, in connection with the announcement of a revised modernization plan schedule for the Baie-Comeau smelter, Alcoa stated that it would permanently close the plant's two Soderberg potlines. The closure, which was completed in August 2013, involved 105,000 mtpy of capacity and was part of the 460,000 mtpy of smelting capacity Alcoa announced was under review in May 2013.
- ⁸ Owned through Rio Tinto Alcan Inc.'s interest in Pechiney Reynolds Québec, Inc., which is owned by Rio Tinto Alcan Inc. and Alcoa.
- ⁹ The Avilés and La Coruña smelters have approximately 64,000 mtpy of idle capacity combined.
- ¹⁰ The Rockdale smelter has been fully curtailed since the end of 2008.
- ¹¹ The Intalco smelter has approximately 49,000 mtpy of idle capacity.
- ¹² The Wenatchee smelter has approximately 41,000 mtpy of idle capacity.
- As of December 31, 2014, Alcoa had approximately 665,000 mtpy of idle capacity against total Alcoa Consolidated Capacity of 3,497,000 mtpy.

In May 2013, Alcoa announced that management would review 460,000 mtpy of smelting capacity over a 15-month period for possible curtailment. This review was aimed at maintaining Alcoa's competitiveness despite falling aluminum prices and would focus on the highest-cost smelting capacity and those plants that have long-term risk due to factors such as energy costs or regulatory uncertainty. As part of this review during the remainder of 2013, management initiated the permanent shutdown of 146,000 mtpy of combined capacity at the Baie Comeau smelter (see footnote 7 above) and the Massena East smelter in New York, as well as a temporary curtailment of 131,000 mtpy of capacity in Brazil (see footnote 6 above). All of these actions were completed in 2013.

In June 2013, Alcoa announced its intention to permanently close the Fusina, Italy smelter. The closure was in addition to the 460,000 mtpy of operating smelting capacity that the company announced was under review in May 2013.

During the first quarter of 2014, the Company initiated three additional actions, resulting in the permanent shutdown of 274,000 mtpy of capacity and the temporary curtailment of 147,000 mtpy of capacity. The permanent shutdowns were comprised of the remaining capacity (84,000 mtpy) at the Massena East smelter and the full capacity (190,000 mtpy) at the Point Henry smelter in Australia. The remaining capacity of the Massena East smelter represented two Soderberg potlines that were no longer competitive. This shutdown was completed by the end of the 2014 first quarter. For the Point Henry smelter, the Company determined that the smelter had no prospect of becoming financially viable. The shutdown of the Point Henry smelter was completed in August 2014.

In the third quarter of 2014, management approved the permanent shutdown of the Portovesme smelter (150,000 mtpy) in Italy, which has been idle since November 2012. This decision was made because the fundamental reasons that made the Portovesme smelter uncompetitive remained unchanged, including the lack of a viable long-term power solution.

In the fourth quarter of 2014, Alcoa sold its 50.3% interest (115,000 mtpy) in the Mount Holly smelter in Goose Creek, South Carolina, to Century Aluminum Company.

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As a result of the above-described actions, the Massena East, Mount Holly, Point Henry and Portovesme smelters have not been included in the table above.

As noted above, Alcoa and Ma'aden have developed an aluminum smelter in the Kingdom of Saudi Arabia. The smelter has an initial capacity of ingot, slab and billet of 740,000 mtpy. First hot metal was produced on December 12, 2012, and the smelter produced 600,000 mt in 2014. Since mid-2014, the smelter has been operating at full capacity.

In November 2014, Alcoa completed the sale of an aluminum rod plant located in Bécancour, Québec, Canada to Sural Laminated Products. This facility takes molten aluminum and shapes it into the form of a rod, which is used by customers primarily for the transportation of electricity. In conjunction with this transaction, Alcoa entered into a multi-year agreement with Sural Laminated Products to supply molten aluminum for the rod plant.

In 2014, Alcoa and the Brunei Economic Development Board agreed to extend for four years an existing Memorandum of Understanding (MOU) to enable more detailed studies into the feasibility of establishing a modern, gas-powered aluminum smelter in Brunei Darussalam to follow a period of strategic assessment of global market conditions.

In 2007, Alcoa and Greenland Home Rule Government entered into an MOU regarding cooperation on a feasibility study for an aluminum smelter with a 360,000 mtpy capacity in Greenland. The MOU also encompasses a hydroelectric power system and related infrastructure improvements, including a port. In November 2014, following new elections in Greenland, the new parliament began a review of framework legislation affecting large scale developmental projects. Once completed, the impact of the review on the economic feasibility of the proposed integrated hydro system-aluminum smelter will be evaluated.

Global Rolled Products

The principal business of the Company's Global Rolled Products segment is the production and sale of aluminum plate, sheet, and specialty foil. This segment includes sheet and plate used in aerospace, automotive, brazing, commercial transportation, consumer electronics, building and construction and other industrial markets. This segment also includes rigid container sheet, which is sold directly to customers in the food and beverage packaging markets.

The Company's \$300 million expansion of its Tennessee Operations continued and the \$300 million expansion of its Davenport Works, Iowa plant was completed in 2014. Both expansions will support the manufacture of high strength aluminum automotive sheet. Also in 2014, Alcoa announced a \$190 million investment at its Davenport Works facility to expand its product offerings in the aerospace and industrial markets through the installation of technology that will enhance the performance of thick aluminum and aluminum-lithium plate in various applications such as wing ribs and fuselage frames. Construction on the project will begin in 2015 with first customer production expected to begin in 2017.

Also in 2014, Alcoa announced a \$40 million investment in its Itapissuma, Brazil rolling mill to increase production of specialty foils for aseptic and flexible packages. Initial work for the expansion is underway and commissioning is expected to begin in 2016.

In December 2014, Alcoa sold its facilities in Amorebieta and Alicante (Spain) and Castelsarrasin (France), as well as the associated research and development facility in Alicante to Atlas Holdings LLC.

Alcoa permanently closed its two rolling mills in Australia located in Geelong, Victoria and in Yennora, New South Wales in the fourth quarter of 2014. The two rolling mills served the domestic and Asian can sheet markets, which have been impacted by excess capacity.

In September 2014, Alcoa announced a long-term contract to supply aluminum sheet and plate products to Boeing, the world's largest aerospace company and leading manufacturer of commercial jetliners and defense, space and security systems. The multiyear contract, valued at more than \$1 billion, is the largest ever between the two companies.

In September 2014, Alcoa and China Power Investment Corporation (CPI) temporarily suspended joint venture activities undertaken by the joint venture, which the parties had established in 2012, so that CPI could focus on its merger with the State Nuclear Power Technology Corporation. This includes suspension of the integration of three Alcoa businesses (a facility in Kunshan, China that manufactures brazing sheet; a facility in Qinhuangdao, China that manufactures beverage can sheet and sheet for commercial transportation; and a fastener facility in Suzhou, China). The joint venture company, Alcoa CPI Aluminum Investment Co. Ltd, is majority owned by Alcoa and headquartered in Shanghai, China.

In December 2014, Alcoa unveiled breakthrough manufacturing technology, the Alcoa Micromill™, that will manufacture the most advanced aluminum sheet on the market. The Alcoa-patented Micromill process changes the microstructure of the metal, allowing the production of an aluminum alloy for automotive applications that has 40 percent greater formability and 30 percent greater strength than the incumbent aluminum used today while meeting stringent automotive surface quality requirements. Additionally, automotive parts made with Micromill material will be twice as formable and at least 30 percent lighter than parts made from high strength steel. The Micromill will enable the next generation of automotive aluminum products, and equip Alcoa to capture growing demand.

As noted above, Alcoa and Ma'aden have developed a rolling mill in the Kingdom of Saudi Arabia. The rolling mill, which is 74 acres under one roof, is operational and will manufacture a variety of sheet products.

In 2014, Alcoa bought out the 30% interest in the Kunshan brazing sheet facility for \$28 million from its partner, Shanxi Yuncheng Engraving Group, and the parties terminated the joint venture in August 2014. Alcoa also reached agreement on the terms of sale for its remaining minority interest (17.96%) in Yunnan Xaoxin Aluminum Foil joint venture for approximately \$15 million. The sale is awaiting approval by the China Securities Regulatory Commission.

Global Rolled Products Principal Facilities

Owners ¹			
Country	Location	(% Of Ownership)	Products
Brazil	Itapissuma	Alcoa (100%)	Specialty Foil
China	Kunshan	Alcoa (100%)	Sheet and Plate
	Qinhuangdao ²	Alcoa (100%)	Sheet and Plate
Hungary	Székesfehérvár	Alcoa (100%)	Sheet and Plate/Slabs
Italy	Fusina	Alcoa (100%)	Sheet and Plate
Russia	Belaya Kalitva	Alcoa (100%)	Sheet and Plate
	Samara	Alcoa (100%)	Sheet and Plate
United Kingdom	Birmingham	Alcoa (100%)	Plate
United States	Davenport, IA	Alcoa (100%)	Sheet and Plate
	Danville, IL	Alcoa (100%)	Sheet and Plate
	Newburgh, IN	Alcoa (100%)	Sheet
	Hutchinson, KS	Alcoa (100%)	Sheet and Plate
	Lancaster, PA	Alcoa (100%)	Sheet and Plate
	Alcoa, TN	Alcoa (100%)	Sheet
	Texarkana, TX	Alcoa (100%)	Sheet and Plate ³
	San Antonio, TX	Alcoa (100%)	Micromill

¹ Facilities with ownership described as Alcoa (100%) are either leased or owned by the Company.

² Leased property or partially leased property.

³ The Texarkana rolling mill facility has been idle since September 2009 due to a continued weak outlook in common alloy markets.

Engineered Products and Solutions

This segment represents Alcoa's downstream operations and includes titanium, super alloy investment, and aluminum castings; fasteners; aluminum wheels; integrated aluminum structural systems; architectural extrusions; and forgings and hard alloy extrusions. These products, which are used in the aerospace, automotive, building and construction, commercial transportation, power generation, and industrial markets, are sold directly to customers and through distributors.

Alcoa completed the acquisition of Firth Rixson, a global leader in aerospace jet engine components, in fourth quarter 2014. In addition to manufacturing jet engine rings, Firth Rixson manufactures a full range of forged complex shapes and is a supplier of integrated nickel ingot. Firth Rixson has five locations in the United States (Rochester, NY; Fontana, CA; Rancho Cucamonga, CA; Verdi, NV, and Savannah, GA) and eight locations outside of the United States (United Kingdom, Hungary and China).

In December 2014, Alcoa announced a definitive agreement to acquire TITAL, a privately held company based in Germany. TITAL is a leader in titanium and aluminum structural castings for aircraft engines and airframes. In addition, TITAL is a leader in process technology. The deal is expected to close in first quarter 2015.

Also in December 2014, Alcoa announced plans to double its high-technology coating capacity at its Whitehall, Michigan facility. The \$17 million investment will position the Company to further capture growing demand for advanced jet engine parts. In 2014, Alcoa commenced an expansion at its Hampton, Virginia facility to create the capability to employ a new process technology that improves jet engine blades. This \$25 million investment will add equipment for a new production line and modify existing machinery to produce the blades. It is expected to be complete by the fourth quarter of 2015.

In 2014, Alcoa completed construction of a \$100 million greenfield facility adjacent to its Lafayette, Indiana plant, which expands Alcoa's aluminum lithium capabilities. The facility can produce more than 20,000 mt of aluminum lithium and is capable of casting round and rectangular ingot for rolled, extruded, and forged applications. Alcoa completed expanding aluminum lithium production at its Technical Center in Alcoa Center, PA in the third quarter of 2012. In June 2013, Alcoa also completed its expansion at its Kitts Green plant in the United Kingdom, creating additional aluminum lithium casting capacity.

Also in 2014, Alcoa broke ground on its \$100 million aerospace expansion at its La Porte, Indiana facility where it will produce nickel-based superalloy jet engine parts. The new 320,000-square-foot facility will expand Alcoa's reach from structural engine components for business and regional jets to large commercial aircraft, including narrow- and wide-body and military airplanes. Construction is expected to be complete by the fourth quarter of 2015.

Alcoa invested \$13 million to expand its wheel manufacturing plant in Europe, to meet growing demand for its lightweight, durable, low-maintenance aluminum truck wheels. Construction on the production line expansion began in January 2014, and was completed on schedule in January 2015.

Alcoa and VSMPO-AVISMA Corporation signed a cooperation agreement in October 2013, which will allow the companies to meet growing demand for high-end titanium and aluminum products for aircraft manufacturers worldwide. Once operational, the new joint venture will focus on manufacturing high-end aerospace products, such as landing gear and forged wing components, at Alcoa's plant in Samara, Russia. The definitive Shareholders' Agreement was executed by the parties on July 16, 2014, and the deal is expected to close in 2015, with the joint venture expected to become operational in 2016.

As discussed above, the joint venture between Alcoa and CPI, which the parties created in November 2012 to produce high-end fabricated aluminum products in China, is currently suspended.

In July 2014, Alcoa announced a 10-year, \$1.1 billion agreement with Pratt & Whitney, a division of United Technologies Corp., for state-of-the-art jet engine components.

Engineered Products and Solutions Principal Facilities

Owners¹			
Country	Facility	(% Of Ownership)	Products
Australia	Oakleigh	Alcoa (100%)	Fasteners
Canada	Georgetown, Ontario ²	Alcoa (100%)	Aerospace Castings
	Laval, Québec	Alcoa (100%)	Aerospace Castings
	Lethbridge, Alberta	Alcoa (100%)	Architectural Products
	Pointe Claire, Québec	Alcoa (100%)	Architectural Products
	Vaughan, Ontario ²	Alcoa (100%)	Architectural Products
	Suzhou ²	Alcoa (100%)	Fasteners and Rings
China	Suzhou ²	Alcoa (100%)	Fasteners and Rings
France	Dives-sur-Mer	Alcoa (100%)	Aerospace and Industrial Gas Turbine Castings
	Evron	Alcoa (100%)	Aerospace and Specialty Castings
	Gennevilliers	Alcoa (100%)	Aerospace and Industrial Gas Turbine Castings
	Guérande ²	Alcoa (100%)	Architectural Products
	Lézat-sur-Lèze ²	Alcoa (100%)	Architectural Products
	Merxheim ²	Alcoa (100%)	Architectural Products
	Montbrison	Alcoa (100%)	Fasteners
	St. Cosme-en-Vairais ²	Alcoa (100%)	Fasteners
	Toulouse	Alcoa (100%)	Fasteners
	Us-par-Vigny	Alcoa (100%)	Fasteners
	Vendargues ²	Alcoa (100%)	Architectural Products
	Hannover ²	Alcoa (100%)	Extrusions
	Hildesheim-Bavenstedt ²	Alcoa (100%)	Fasteners
Germany	Iserlohn	Alcoa (100%)	Architectural Products
	Kelkheim ²	Alcoa (100%)	Fasteners
	Eger	Alcoa (100%)	Forgings
	Nemesvámos	Alcoa (100%)	Fasteners
Hungary	Székesfehérvár	Alcoa (100%)	Aerospace and Industrial Gas Turbine Castings and Forgings
	Jōetsu City ²	Alcoa (100%)	Forgings
	Nomi	Alcoa (100%)	Aerospace and Industrial Gas Turbine Castings
Netherlands	Harderwijk ²	Alcoa (100%)	Architectural Products
Mexico	Ciudad Acuña ²	Alcoa (100%)	Aerospace Castings/Fasteners
	Monterrey	Alcoa (100%)	Forgings
Morocco	Casablanca ²	Alcoa (100%)	Fasteners
	Casablanca ²	Alcoa (67%)	Architectural Products
		Ahmed Hattabi (33%)	
Russia	Belaya Kalitva ³	Alcoa (100%)	Extrusions and Forgings
	Samara ³	Alcoa (100%)	Extrusions and Forgings
South Korea	Kyoungnam	Alcoa (100%)	Extrusions
Spain	Irutzu ²	Alcoa (100%)	Architectural Products

Owners ¹			
Country	Facility	(% Of Ownership)	Products
United Kingdom	Darley Dale	Alcoa (100%)	Forgings
	Ecklesfield	Alcoa (100%)	Ingot Castings
	Exeter ²	Alcoa (100%)	Aerospace and Industrial Gas Turbine Castings and Alloy
	Glossop	Alcoa (100%)	Ingot Castings
	Ickles	Alcoa (100%)	Ingot Castings
	Leicester ²	Alcoa (100%)	Fasteners
	Meadow Hall	Alcoa (100%)	Forgings
	Provincial Park	Alcoa (100%)	Forgings
	Redditch ²	Alcoa (100%)	Fasteners
	River Don	Alcoa (100%)	Forgings
	Runcorn	Alcoa (100%)	Architectural Products
	Telford	Alcoa (100%)	Fasteners
United States	Springdale, AR ²	Alcoa (100%)	Architectural Products
	Chandler, AZ	Alcoa (100%)	Extrusions
	Tucson, AZ ²	Alcoa (100%)	Fasteners
	Carson, CA ²	Alcoa (100%)	Fasteners
	City of Industry, CA ²	Alcoa (100%)	Fasteners
	Fontana, CA	Alcoa (100%)	Rings
	Fullerton, CA ²	Alcoa (100%)	Fasteners
	Newbury Park, CA	Alcoa (100%)	Fasteners
	Rancho Cucamonga, CA	Alcoa (100%)	Rings
	Savannah, GA	Alcoa (100%)	Forgings
	Sylmar, CA	Alcoa (100%)	Fasteners
	Torrance, CA	Alcoa (100%)	Fasteners
	Visalia, CA	Alcoa (100%)	Architectural Products
	Branford, CT	Alcoa (100%)	Aerospace Coatings
	Winsted, CT	Alcoa (100%)	Aerospace Machining
	Eastman, GA	Alcoa (100%)	Architectural Products
	Lafayette, IN	Alcoa (100%)	Extrusions
	LaPorte, IN	Alcoa (100%)	Aerospace and Industrial Gas Turbine Castings
	Baltimore, MD ²	Alcoa (100%)	Extrusions
	Whitehall, MI	Alcoa (100%)	Aerospace/Industrial Gas Turbine Castings Coatings/Ti Alloy and Specialty Products
	Dover, NJ	Alcoa (100%)	Aerospace and Industrial Gas Turbine Castings and Alloy
	Kingston, NY ²	Alcoa (100%)	Fasteners
	Massena, NY	Alcoa (100%)	Extrusions
	Rochester, NY	Alcoa (100%)	Rings
	Verdi, NV	Alcoa (100%)	Rings
	Barberton, OH	Alcoa (100%)	Forgings/Ingot Castings
	Chillicothe, OH	Alcoa (100%)	Forgings
	Cleveland, OH	Alcoa (100%)	Forgings
	Alcoa Center, PA	Alcoa (100%)	Ingot Castings

Owners¹

Country	Facility	(% Of Ownership)	Products
	Bloomsburg, PA	Alcoa (100%)	Architectural Products
	Cranberry, PA	Alcoa (100%)	Architectural Products
	Morristown, TN ²	Alcoa (100%)	Aerospace and Industrial Gas Turbine Ceramic Products
	Denton, TX ²	Alcoa (100%)	Forgings
	Waco, TX ²	Alcoa (100%)	Fasteners
	Wichita Falls, TX	Alcoa (100%)	Aerospace and Industrial Gas Turbine Castings
	Hampton, VA ²	Alcoa (100%)	Aerospace and Industrial Gas Turbine Castings

¹ Unless otherwise noted, facilities with ownership described as Alcoa (100%) are owned by the Company.

² Leased property or partially leased property.

³ The operating results of this facility are reported in the Global Rolled Products segment.

Corporate Facilities

The Latin American soft alloy extrusions business is reported in Corporate Facilities. For more information, see Note Q to the Consolidated Financial Statements in Part II, Item 8. (Financial Statements and Supplementary Data).

Latin American Extrusions Facilities**Owners¹**

Country	Facility	(% Of Ownership)	Products
Brazil	Itapissuma	Alcoa (100%)	Extrusions
	Utinga	Alcoa (100%)	Extrusions
	Tubarão	Alcoa (100%)	Extrusions

¹ Facilities with ownership described as Alcoa (100%) are owned by the Company.

Sources and Availability of Raw Materials

The major raw materials purchased in 2014 for each of the Company's reportable segments are listed below.

Alumina

Bauxite
Caustic soda
Electricity
Fuel oil
Lime (CaO)
Natural gas

Primary Metals

Alloying materials
Alumina
Aluminum fluoride

Global Rolled Products

Alloying materials
Aluminum scrap
Coatings
Electricity
Natural gas
Primary aluminum (ingot, billet, P1020, high purity)
Steam

Engineered Products and Solutions

Alloying materials
Electricity
Natural gas

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Calcined petroleum coke
Cathode blocks
Electricity
Liquid pitch
Natural gas

Nickel
Primary aluminum (ingot, billet, P1020, high purity)
Resin
Stainless Steel
Steel
Titanium

Generally, other materials are purchased from third-party suppliers under competitively priced supply contracts or bidding arrangements. The Company believes that the raw materials necessary to its business are and will continue to be available.

For each metric ton of alumina produced, Alcoa consumes the following amounts of the identified raw material inputs (approximate range across relevant facilities):

Raw Material	Units	Consumption per MT of Alumina
Bauxite	mt	2.2 3.7
Caustic soda	kg	62 117
Electricity	kWh	200 260 (global average of 230)
Fuel oil and natural gas	GJ	6.3 11.6
Lime (CaO)	kg	7 58

For each metric ton of aluminum produced, Alcoa consumes the following amounts of the identified raw material inputs (approximate range across relevant facilities):

Raw Material	Units	Consumption per MT of Aluminum
Alumina	mt	1.92 ±0.02
Aluminum fluoride	kg	16.5 ±6.5
Calcined petroleum coke	mt	0.37 ±0.02
Cathode blocks	mt	0.006 ±0.002
Electricity	kWh	12900 17000
Liquid pitch	mt	0.10 ±0.03
Natural gas	mcf	3.5 ±1.5

Explanatory Note: Certain aluminum produced by Alcoa also includes alloying materials. Because of the number of different types of elements that can be used to produce Alcoa's various alloys, providing a range of such elements would not be meaningful. With the exception of a very small number of internally used products, Alcoa produces its alloys in adherence to an Aluminum Association standard. The Aluminum Association, of which Alcoa is an active member, uses a specific designation system to identify alloy types. In general, each alloy type has a major alloying element other than aluminum but will also have other constituents as well, but of lesser amounts.

Energy

Employing the Bayer Process, Alcoa refines alumina from bauxite ore. Alcoa then produces aluminum from the alumina by an electrolytic process requiring substantial amounts of electric power. Energy accounts for approximately 21% of the Company's total alumina refining production costs. Electric power accounts for approximately 26% of the Company's primary aluminum production costs. Alcoa generates approximately 25% of the power used at its smelters worldwide and generally purchases the remainder under long-term arrangements. The paragraphs below summarize the sources of power and the long-term power arrangements for Alcoa's smelters and refineries.

North America Electricity

The Deschambault, Baie Comeau, and Bécancour smelters in Québec purchased electricity under existing contracts that expired on December 31, 2014. These were replaced by new long-term contracts with Hydro-Québec executed in October 2014 (Deschambault and Baie Comeau smelters) and December 2014 (Bécancour smelter), both of which will expire on December 31, 2029. Upon expiration, Alcoa will have the option of extending the term of the new Baie

Comeau contract to February 23, 2036. The smelter located in Baie Comeau, Québec purchases approximately 74% of its power needs under the Hydro-Québec contract, and the remainder from a 40% owned hydroelectric generating company, Manicouagan Power Limited Partnership.

The Company's wholly-owned subsidiary, Alcoa Power Generating Inc. (APGI), generates approximately 35% of the power requirements for Alcoa's smelters operating in the U.S. The Company purchases power under long-term contracts. APGI owns and operates the Yadkin hydroelectric project, consisting of four dams in North Carolina, and the Warrick coal-fired power plant located in Indiana.

For several years, APGI has been pursuing a new long-term license for the Yadkin hydroelectric project from the Federal Energy Regulatory Commission (FERC). In 2007, APGI filed with FERC a Relicensing Settlement Agreement signed by a majority of interested stakeholders that broadly resolved open issues. The National Environmental Policy Act process is complete, with a final environmental impact statement having been issued in April 2008. The remaining requirement for relicensing was the issuance by North Carolina of the required water quality certification under Section 401 of the Clean Water Act. North Carolina's Department of Environment and Natural Resources (DENR) issued a Section 401 water quality certification on May 7, 2009, but it was appealed and then stayed. In September 2012, APGI filed a new application for a 401 certificate seeking a fresh review of its application. However, on August 2, 2013, the State of North Carolina filed suit in state court seeking a declaratory ruling that it, not APGI, owns the Yadkin riverbed beneath the hydroelectric project as well as a portion of the project dams. Upon the filing of the lawsuit, the DENR denied APGI's 401 certificate, asserting that it cannot review the application given the dispute over ownership of the lands and the project. APGI has appealed that denial in the administrative court of North Carolina and has also informed FERC of the appeal, a necessary step to demonstrate that the relicensing proceeding remains pending before FERC. APGI removed the riverbed lawsuit to federal court in 2013. On November 20, 2014, the court denied APGI's motion for summary judgment and partially granted and partially denied North Carolina's motion for partial summary judgment. A pre-trial conference was held on February 2, 2015. The court has ordered trial to commence on April 21, 2015.

Pending completion of the relicensing process, APGI received year-to-year license renewals from FERC starting in May 2008, and will continue to operate under annual licenses until a new Section 401 certification is issued and the FERC relicensing process is complete. Since the permanent closure of the Badin, North Carolina smelter, power generated from APGI's Yadkin system is largely being sold to an affiliate, Alcoa Power Marketing LLC, and then the wholesale market.

APGI generates substantially all of the power used at the Company's Warrick, Indiana smelter using nearby coal reserves. Since May 2005, Alcoa has owned the nearby Friendsville, Illinois coal reserves, with the Friendsville Mine being operated by Vigo Coal Company, Inc. The Friendsville Mine is producing approximately one million tons of coal per year. In June 2011, the Red Brush West Mine, owned by Alcoa and operated by Vigo Coal, was opened and produced approximately 60,000 tons per month over an eighteen-month period, but operation ceased in 2013. In the second quarter of 2013, Liberty Mine, also owned by Alcoa and operated by Vigo Coal, began producing coal and is operating at a level of approximately one million tons per year. Friendsville and Liberty Mines together combine to supply 95% of the power plant's future needs. The balance of the coal used is royalty coal or purchased coal from the Illinois basin.

In the State of Washington, Alcoa's Wenatchee smelter operates under a contract with Chelan County Public Utility District (Chelan PUD) under which Alcoa receives approximately 26% of the hydropower output of Chelan PUD's Rocky Reach and Rock Island dams.

Starting on January 1, 2013, the Intalco smelter began receiving physical power from the Bonneville Power Administration (BPA) pursuant to a new contract executed between Alcoa and BPA, under which Alcoa receives physical power at the Northwest Power Act mandated industrial firm power (IP) rate through September 30, 2022.

Prior to 2007, power for the Rockdale smelter in Texas was historically supplied from Company-owned generating units and units owned by Luminant Generation Company LLC (formerly TXU Generation Company LP) (Luminant), both of which used lignite supplied by the Company's Sandow Mine. Upon completion of lignite mining in the Sandow Mine in 2005, lignite supply transitioned to the formerly Alcoa-owned Three Oaks Mine. The Company retired its three wholly-owned generating units at Rockdale (Sandow Units 1, 2 and 3) in late 2006, and transitioned to an arrangement under which Luminant is to supply all of the Rockdale smelter's electricity requirements under a long-term power contract that does not expire until at least the end of 2038, with the parties having the right to terminate the contract after 2013 if there has been an unfavorable change in law or after 2025 if the cost of the electricity exceeds the market price. In August 2007, Luminant and Alcoa closed on the definitive agreements under which Luminant has constructed and operates a new circulating fluidized bed power plant (Sandow Unit 5) adjacent to the existing Sandow Unit 4 and, in September 2007, on the sale of Three Oaks Mine to Luminant. Concurrent with entering into the agreements under which Luminant constructed and operates Sandow Unit 5, Alcoa and Luminant entered into a power purchase agreement whereby Alcoa purchased power from Luminant. That Sandow Unit 5 power purchase agreement was terminated by Alcoa, effective December 1, 2010. In June 2008, Alcoa temporarily idled half of the capacity at the Rockdale smelter and in November 2008 curtailed the remainder of Rockdale's smelting capacity. In late 2011, Alcoa announced that it would permanently close two of the six idled potlines at its Rockdale, Texas smelter. Demolition and remediation activities related to these actions began in the first half of 2012 and were completed in 2013. On April 29, 2014, Luminant Generation LLC, Luminant Mining Company LLC, Sandow Power Company LLC and their affiliated debtors filed petitions under Chapter 11 of the U.S. Bankruptcy Code with the U.S. Bankruptcy Court for the District of Delaware. As of the date of this report, the debtors have not yet filed proposed plans of reorganization and have not yet moved to assume or reject the Sandow Unit 4 agreement or certain other related agreements with the Company.

In the Northeast, the Massena West smelter in New York receives physical power from the New York Power Authority (NYPA) pursuant to a contract between Alcoa and NYPA, which expires in 2045. The contract was amended in January 2011 to provide Alcoa with additional time to complete the design and engineering work for its Massena East modernization plan, and further amended in March 2014 to provide for the temporary relinquishment of certain quantities of power by Alcoa following permanent closure of the remaining two Soderberg potlines at the Massena East smelter in March 2014. Implementation of the Massena East modernization plan is subject to further approval of the Alcoa Board of Directors.

Australia Electricity

In 2014 the Company concluded it would permanently close the Point Henry smelter, coinciding with the expiration of the electricity contract with the State Electricity Commission of Victoria (SECV). AofA's Anglesea power station continues to operate and sells electricity into the National Electricity Market (NEM) after successfully being registered as a scheduled market generator in August 2014. The Portland smelter continues to purchase electricity from the SECV under a contract with Alcoa Portland Aluminium Pty Ltd, a wholly-owned subsidiary of AofA, that extends to 2016. Upon the expiration of this contract, the Portland smelter will purchase power from the NEM variable spot market. In March 2010, AofA and Eastern Aluminium (Portland) Pty Ltd separately entered into a fixed for floating swap contract with AGL Energy in order to manage their exposure to the variable energy rates from the NEM. The fixed for floating swap contract with AGL for the Point Henry smelter was terminated in 2013. The fixed for floating swap contract with Loy Yang Power for the Portland smelter commences from the date of expiration of the current contract with the SECV and continues until December 2036.

Brazil Electricity

Since May 2014 (after full curtailment of the Poços de Caldas smelter and two of three lines of the Alumar smelter), the remaining smelting capacity at Alumar has been supplied by self-generation. The excess generation capacity has been sold into the market since then (around 350 MW).

Alumínio owns a 25.74% stake in Consórcio Machadinho, which is the owner of the Machadinho hydroelectric power plant located in southern Brazil.

Alumínio has a 42.18% interest in Energética Barra Grande S.A.(BAESA), which built the Barra Grande hydroelectric power plant in southern Brazil.

Alumínio also has a 34.97% share in Serra do Facão Energia S.A. (SEFAC), which built the Serra do Facão hydroelectric power plant in the southeast of Brazil, which began commercial generation in July 2010. Alumínio's share of the Serra do Facão output is currently being sold into the market.

Alumínio is also participating in the Estreito hydropower project in northern Brazil, through Estreito Energia S.A. (an Alumínio wholly owned company) holding a 25.49% stake in Consórcio Estreito Energia, which is the owner of the hydroelectric power plant.

Consortia in which Alumínio participates have received concessions for the Pai Querê hydropower project in southern Brazil (Alumínio's share is 35%). Development of this concession has not yet begun.

Europe Electricity

Alcoa's smelters at San Ciprián, La Coruña and Avilés, Spain purchase electricity under bilateral power contracts that commenced on January 1, 2013. The contracts for San Ciprián and Avilés smelters each have a four-year term (expiring December 31, 2016). The contract for the La Coruña smelter, which expired on December 31, 2014, has been extended for an additional year (expiring December 31, 2015).

Prior to the establishment of power supply under the bilateral contracts, Alcoa was supplied under a regulated power tariff. On January 25, 2007, the European Commission (EC) announced that it had opened an investigation to establish whether the regulated electricity tariffs granted by Spain comply with European Union (EU) state aid rules. Alcoa operated in Spain for more than ten years under a power supply structure approved by the Spanish Government in 1986, an equivalent tariff having been granted in 1983. The investigation was limited to the year 2005 and it is focused both on the energy-intensive consumers and the distribution companies. It is Alcoa's understanding that the Spanish tariff system for electricity is in conformity with all applicable laws and regulations, and therefore no state aid is present in that tariff system. On February 4, 2014, the EC announced a decision in this matter stating that the electricity tariffs granted by Spain for year 2005 do not constitute unlawful state aid. Due to the high cost position of the La Coruña and Avilés smelters, combined with rising raw material costs and falling aluminum prices, in early January 2012, Alcoa announced its intentions to partially and temporarily curtail its La Coruña and Avilés, Spain smelters. The partial curtailments were completed in the first half of 2012. As a result of a modification to the load interruptibility regime currently in place in the Spanish power market, in the first quarter of 2013, Alcoa restarted a portion (25,000 mpy combined for Avilés and La Coruña) of the capacity previously curtailed in the first half of 2012 to meet the requirements of the modified interruptibility regime. See the Management's Discussion and Analysis of Financial Condition and Results of Operations section for more information.

A competitive bidding mechanism to allocate interruptibility rights in Spain was settled during 2014 to be applied starting from January 1, 2015. The first auction process to allocate rights took place in November 2014, where Alcoa secured 275MW of interruptibility rights for the 2015 period for the San Ciprián smelter. A second auction process took place in December 2014, where Alcoa secured an additional 100MW of interruptibility rights for the 2015 period for the San Ciprián smelter (20x5MW), 120MW for the La Coruña smelter (24x5MW) and 110MW for the Avilés smelter (22x5MW).

Alcoa owns two smelters in Norway, Lista and Mosjøen, which have long-term power arrangements in place that continue until the end of 2019.

Iceland Electricity

Alcoa's Fjarðaál smelter in eastern Iceland began operation in 2007. Central to those operations is a forty-year power contract under which Landsvirkjun, the Icelandic national power company, built the Kárahnjúkar dam and hydropower project, and supplies competitively priced electricity to the smelter. In late 2009, Iceland imposed two new taxes on power intensive industries, both for a period of three years, from 2010 through 2012. One tax is based on energy consumption; the other is a pre-payment of certain other charges, and will be recoverable starting in 2018. In 2012, Iceland extended the energy consumption tax through 2015.

Spain Natural Gas

In order to facilitate the full conversion of the San Ciprian, Spain alumina refinery from fuel oil to natural gas, in October 2013, Alumina Española SA (AE) and Gas Natural Transporte SDG SL (GN) signed a take or pay gas pipeline utilization agreement. Pursuant to that agreement, the ultimate shareholders of AE, Alcoa Inc. and Alumina Limited, have agreed to guarantee the payment of AE's contracted gas pipeline utilization over the four years of the commitment period in the event AE fails to do so, each shareholder being responsible for its respective proportionate share (i.e., 60/40). Such commitment will come into force six months after the gas pipeline is put into operation by GN. The gas pipeline was completed in January 2015 and the refinery has switched to natural gas consumption for 100% of its needs.

Three supply contracts were signed in 2014 for the supply of natural gas to the San Ciprián, Spain alumina refinery during 2015 period with Endesa, Union Fenosa Gas and BP, expiring by April 2016, December 2015 and December 2015, respectively. Pursuant to those agreements, Alcoa Inversiones España, S.L. and Alumina Limited have agreed to guarantee the payment of AE's obligations under the Endesa contract over the contract length, each shareholder being responsible for its respective proportionate share (i.e., 60/40). In the same way, Aluminio Español, S.A. and Alumina Limited have agreed to guarantee the payment of AE's obligations under the Union Fenosa Gas and BP contract over those contracts' respective lengths, with each entity being responsible for its proportionate share (i.e., 60/40).

North America Natural Gas

In order to supply its refinery and smelters in the U.S. and Canada, Alcoa generally procures natural gas on a competitive bid basis from a variety of sources including producers in the gas production areas and independent gas marketers. For Alcoa's larger consuming locations in Canada and the U.S., the gas commodity and the interstate pipeline transportation are procured to provide increased flexibility and reliability. Contract pricing for gas is typically based on a published industry index or New York Mercantile Exchange (NYMEX) price. The Company may choose to reduce its exposure to NYMEX pricing by hedging a portion of required natural gas consumption.

Australia Natural Gas

Alcoa holds a 20% equity interest in the Dampier-to-Bunbury natural gas pipeline (this interest was purchased in October 2004). This pipeline transports gas from the northwest gas fields to Alcoa's alumina refineries and other users in the Southwest of Western Australia. Alcoa uses gas to co-generate steam and electricity for its alumina refining processes at the Kwinana, Pinjarra and Wagerup refineries. More than 90% of Alcoa's gas requirements for the remainder of the decade are secured under long-term contracts. Alcoa is considering multiple supply options to replace expiring contracts, including investing directly in projects that have the potential to deliver cost-based gas.

Energy Facilities

The following table sets forth the electricity generation capacity and 2014 generation of facilities in which the Company has an ownership interest:

Alcoa Consolidated Capacity			
Country	Facility	(MW)¹	2014 Generation (MWh)
Australia	Anglesea	150	1,183,527
Brazil	Barra Grande	156	1,803,245
	Estreito	157	1,334,943
	Machadinho	119	1,801,779
	Serra do Facão	60	302,954
	Manicouagan	132	1,165,161
Canada	Afobaka	189	806,428
Suriname	Warrick	524	4,590,359
United States	Yadkin	215	794,933
TOTAL		1,702	13,783,329

¹ The Consolidated Capacity of the Brazilian energy facilities is the assured energy that is approximately 55% of hydropower plant nominal capacity.

Patents, Trade Secrets and Trademarks

The Company believes that its domestic and international patent, trade secret and trademark assets provide it with a significant competitive advantage. The Company's rights under its patents, as well as the products made and sold under them, are important to the Company as a whole and, to varying degrees, important to each business segment. The patents owned by Alcoa generally concern particular products or manufacturing equipment or techniques. Alcoa's business as a whole is not, however, materially dependent on any single patent, trade secret or trademark. As a result of product development and technological advancement, the Company continues to pursue patent protection in jurisdictions throughout the world. At the end of 2014, the Company's worldwide patent portfolio consisted of approximately 831 pending patent applications and 1,981 granted patents.

The Company has a number of trade secrets, mostly regarding manufacturing processes and material compositions that give many of its businesses important advantages in their markets. The Company continues to strive to improve those processes and generate new material compositions that provide additional benefits.

The Company also has a number of domestic and international registered trademarks that have significant recognition within the markets that are served. Examples include the name Alcoa and the Alcoa symbol for aluminum products, Howmet metal castings, Hucasteners, Kawneer® building panels and Dura-Bright® wheels with easy-clean surface treatments. The Company's rights under its trademarks are important to the Company as a whole and, to varying degrees, important to each business segment.

Competitive Conditions

Alcoa is subject to highly competitive conditions in all aspects of its aluminum and non-aluminum businesses. Competitors include a variety of both U.S. and non-U.S. companies in all major markets. Price, quality, and service are the principal competitive factors in Alcoa's markets. Where aluminum products compete with other materials such as steel and plastics for automotive and building applications; magnesium, titanium, composites, and plastics for aerospace and defense applications aluminum's diverse characteristics, particularly its strength, light weight, recyclability, and flexibility are also significant factors. Alcoa's technology, technical expertise, and innovation in multi-materials and in specialized alloys provide Alcoa a competitive advantage in certain markets and/or for certain

products. For Alcoa's segments that market products under Alcoa's brand names, brand recognition, and brand loyalty also play a role. In addition Alcoa's competitive position depends, in part, on the Company's access to an economical power supply to sustain its operations in various countries.

Research and Development

Alcoa, a light metals technology leader, engages in research and development programs that include process and product development, and basic and applied research. Expenditures for research and development (R&D) activities were \$218 million in 2014, \$192 million in 2013, and \$197 million in 2012.

During 2014, the Company continued to work on new developments for a number of strategic projects in all business segments. The Company also developed a portfolio of foundry alloys primarily for next generation automotive engine and suspension applications.

The Company continued its progress leveraging new science and technologies in 2014. For example, a new, higher strength wheel alloy (MagnaForce) was developed for next generation wheels, as was the development and deployment of a more corrosion resistant, more environmentally friendly Dura-Bright EVO surface treatment. In addition, the Company launched in 2014 the Ultra ONE™ wheel, a commercial truck wheel using the MagnaForce™ alloy.

In the Global Rolled Products segment, the Company continued its progress leveraging new science and technologies in 2014. For example, the Company publicly disclosed the development of a high speed continuous casting and rolling technology for aluminum sheet named the Micromill. This technology converts molten metal to a full coil in 20 minutes versus current typical times of 20 days for traditional ingot based processes. In addition, significant product attributes can be improved through this process including higher strengths, formability and corrosion resistance.

A number of products were commercialized in 2014 including new fasteners, aluminum lithium (Al-Li), new brazing sheet alloys for stationary and automotive applications and more traditional 7xxx series alloys for various aerospace applications including the world's largest aluminum forming, which is the complete armored undercarriage of future transport vehicles termed the monolithic hull. The Company has also continued to externally license technology including the Alcoa 951 pretreatment technology (an enabler for adhesive bonding of aluminum-intensive vehicles), shaping technology, and Colorkast products for the consumer electronics market.

Environmental Matters

Information relating to environmental matters is included in Note N to the Consolidated Financial Statements under the caption "Environmental Matters" on pages 125-128. Approved capital expenditures for new or expanded facilities for environmental control are approximately \$120 million for 2015 and \$180 million for 2016.

Employees

Total worldwide employment at the end of 2014 was approximately 59,000 employees in 30 countries. About 37,000 of these employees are represented by labor unions. The Company believes that relations with its employees and any applicable union representatives generally are good.

In the U.S., approximately 9,600 employees are represented by various labor unions. The largest of these is the master collective bargaining agreement between Alcoa and the United Steelworkers (USW). On June 6, 2014, the USW ratified a new five-year labor agreement covering approximately 6,100 employees at 11 U.S. locations; the previous labor agreement expired on May 15, 2014. There are 16 other collective bargaining agreements in the U.S. with varying expiration dates. On a regional basis, collective bargaining agreements with varying expiration dates cover approximately 15,500 employees in Europe and Russia, 11,400 employees in North America, 5,600 employees in Central and South America, 3,500 employees in Australia, and 1,200 employees in China.

Executive Officers of the Registrant

The names, ages, positions and areas of responsibility of the executive officers of the Company as of February 19, 2015 are listed below.

Robert S. Collins, 48, Vice President and Controller. Mr. Collins was elected to his current position in October 2013. He served as Assistant Controller from May 2009 to October 2013. Prior to his role as Assistant Controller, Mr. Collins was Director of Financial Transactions and Policy, providing financial accounting support for Alcoa's transactions in global mergers, acquisitions and divestitures. Before joining Alcoa in 2005, Mr. Collins worked in the audit and mergers and acquisitions practices at PricewaterhouseCoopers LLP for 14 years.

Roy C. Harvey, 40, Executive Vice President, Human Resources and Environment, Health, Safety and Sustainability. Mr. Harvey was elected to his current position effective June 24, 2014. From July 2013 to June 2014, he was Chief Operating Officer for Global Primary Products, where he focused on the day-to-day operations of Alcoa's aluminum smelters, alumina refineries and bauxite mines worldwide. Prior to that, Mr. Harvey was Chief Financial Officer for Global Primary Products from December 2011 to July 2013. In addition to these roles, Mr. Harvey served as Director of Investor Relations, interfacing with securities analysts and investors globally on Alcoa's performance and strategic direction, from September 2010 to November 2011 and was Director of Corporate Treasury from January 2010 to September 2010. Mr. Harvey joined Alcoa in 2002 as a business analyst for Global Primary Products in Knoxville, Tennessee. In 2005, he moved to the São Luis Plant in Brazil, as cashhouse manager in the smelter and then as the plant controller. In 2007, he became plant manager for the San Ciprián, Spain, smelter and a year later was named Director of Finance and Business Integration for Global Primary Products Europe.

Olivier M. Jarrault, 53, Executive Vice President Alcoa and Group President, Engineered Products and Solutions. Mr. Jarrault was elected an Alcoa Executive Vice President effective January 21, 2011 and was named Group President of Engineered Products and Solutions effective January 1, 2011. He served as Chief Operating Officer of Engineered Products and Solutions from February 2010 to January 1, 2011. Mr. Jarrault joined Alcoa in 2002 when Alcoa acquired Fairchild Fasteners from The Fairchild Corporation. He served as President of Alcoa Fastening Systems from 2002 to February 2010. He was elected a Vice President of Alcoa in November 2006.

Klaus Kleinfeld, 57, Director, Chairman of the Board and Chief Executive Officer. Mr. Kleinfeld was elected to Alcoa's Board of Directors in November 2003 and became Chairman on April 23, 2010. He has been Chief Executive Officer of Alcoa since May 8, 2008. He was President and Chief Executive Officer from May 8, 2008 to April 23, 2010. He was President and Chief Operating Officer of Alcoa from October 1, 2007 to May 8, 2008. Mr. Kleinfeld was President and Chief Executive Officer of Siemens AG, the global electronics and industrial conglomerate, from January 2005 to June 2007. He served as Deputy Chairman of the Managing Board and Executive Vice President of Siemens AG from 2004 to January 2005. He was President and Chief Executive Officer of Siemens Corporation, the U.S. arm of Siemens AG, from 2002 to 2004.

Kay H. Meggers, 50, Executive Vice President Alcoa and Group President, Global Rolled Products. Mr. Meggers was elected an Alcoa Executive Vice President in December 2011. He was named Group President, Global Rolled Products effective November 14, 2011. Before his most recent appointment, he led Alcoa's Business Excellence/ Corporate Strategy resource unit and was also responsible for overseeing Alcoa's Asia-Pacific region. He joined Alcoa in February 2010 as Vice President, Corporate Initiatives, a position responsible for planning and coordinating major strategic initiatives from enhancing technology and innovation as part of the Alcoa Technology Advantage program to spearheading growth strategies for China and Brazil. He was elected a Vice President of Alcoa in June 2011. Before joining Alcoa, Mr. Meggers was Senior Vice President at Siemens U.S. Building Technologies Division and served for three years as Business Unit Head of Building Automation. In 2006, he served for nine months as Division Head of Fire Safety, also part of Siemens U.S. Building Technologies Division. Between 2002 and 2005, he served as Vice President of Strategic Planning at Siemens U.S.

William F. Oplinger, 48, Executive Vice President and Chief Financial Officer. Mr. Oplinger was elected to his current position effective April 1, 2013. Since joining Alcoa in 2000, Mr. Oplinger has held key corporate positions in financial analysis and planning and as director of investor relations. He also has held key positions in the Global Primary Products business, including as controller, operational excellence director, chief financial officer and chief operating officer. As chief operating officer of Alcoa's Global Primary Products business from December 2011 to March 2013, Mr. Oplinger was responsible for the day-to-day operations of the business' global network of aluminum smelters, refineries and mines.

Audrey Strauss, 67, Executive Vice President, Chief Legal Officer and Secretary. Ms. Strauss was elected to her current position upon joining Alcoa in May 2012. Prior to joining Alcoa, she was a senior litigation partner from 1990 to 2012 at Fried Frank Harris Shriver and Jacobson LLP (Fried Frank), a law firm based in New York. Prior to her practice at Fried Frank, Ms. Strauss served in the U.S. Attorney's office for the Southern District of New York from 1975 to 1982, where she was Chief Appellate Attorney and Chief of the Fraud Unit.

Robert G. Wilt, 47, Executive Vice President Alcoa and Group President, Global Primary Products. Mr. Wilt was elected to his current position effective June 1, 2013. From January 2013 to May 2013, he was Chief Operating Officer for Global Primary Products, responsible for that business' day-to-day operations. Prior to that, Mr. Wilt was President of Global Primary Products for the US Region from September 2009 to December 2012. In addition to these roles, Mr. Wilt has held other key positions in the Global Primary Products business, including as Vice President of Operational Excellence for U.S. Primary Products and as Vice-President, Energy Development for Global Primary Products. Since joining Alcoa in July 1999, he has also worked in line positions as the Works Manager at Wenatchee Works in Washington, and as Carbon Plant Manager at Tennessee Operations.

The Company's executive officers are elected or appointed to serve until the next annual meeting of the Board of Directors (held in conjunction with the annual meeting of shareholders) except in the case of earlier death, retirement, resignation or removal.

Item 1A. Risk Factors.

Alcoa's business, financial condition and results of operations may be impacted by a number of factors. In addition to the factors discussed elsewhere in this report, the following risks and uncertainties could materially harm its business, financial condition or results of operations, including causing Alcoa's actual results to differ materially from those projected in any forward-looking statements. The following list of significant risk factors is not all-inclusive or necessarily in order of importance. Additional risks and uncertainties not presently known to Alcoa or that Alcoa currently deems immaterial also may materially adversely affect us in future periods.

The aluminum industry and aluminum end-use markets are highly cyclical and are influenced by a number of factors, including global economic conditions.

The aluminum industry generally is highly cyclical, and Alcoa is subject to cyclical fluctuations in global economic conditions and aluminum end-use markets. Alcoa sells many products to industries that are cyclical, such as the commercial construction and transportation industries, and the demand for its products is sensitive to, and quickly impacted by, demand for the finished goods manufactured by its customers in these industries, which may change as a result of changes in the general U.S. or worldwide economy, currency exchange rates, energy prices or other factors beyond its control. The demand for aluminum is highly correlated to economic growth. For example, the European sovereign debt crisis had an adverse effect on European supply and demand for aluminum and aluminum products. The Chinese market is a significant source of global demand for commodities, including aluminum. A sustained slowdown in China's economic growth and aluminum demand that is not offset by increased aluminum demand in emerging economies, such as India, Brazil, and several South East Asian countries, or the combined slowdown of other markets, could have an adverse effect on the global supply and demand for aluminum and aluminum prices.

While Alcoa believes that the long-term prospects for aluminum and aluminum products are positive, the Company is unable to predict the future course of industry variables or the strength, pace or sustainability of the global economic recovery and the effects of government intervention. Negative economic conditions, such as another major economic downturn, a prolonged recovery period, or disruptions in the financial markets, could have a material adverse effect on Alcoa's business, financial condition or results of operations.

Alcoa could be materially adversely affected by declines in aluminum prices, including global, regional and product-specific prices.

The overall price of primary aluminum consists of several components: 1) the underlying base metal component, which is typically based on quoted prices from the London Metal Exchange (LME); 2) the regional premium, which comprises 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 3) the product premium, which represents the incremental price for receiving physical metal in a particular shape (e.g., coil, billet, slab, rod, etc.) or alloy. Each of the above three components has its own drivers of variability. The LME price is typically driven by macroeconomic factors, global supply and demand of aluminum (including expectations for growth and contraction and the level of global inventories), and financial investors. Regional premiums tend to vary based on the supply of and demand for metal in a particular region and associated transportation costs. Product premiums generally are a function of supply and demand for a given primary aluminum shape and alloy combination in a particular region. Speculative trading in aluminum and the influence of hedge funds and other financial institutions participating in commodity markets have also increased in recent years, contributing to higher levels of price volatility. In 2014, the LME price of aluminum reached a high of \$2,089 per metric ton and a low of \$1,634 per metric ton. High LME inventories, or the release of substantial inventories into the market, could lead to a reduction in the price of aluminum. Declines in the LME price have had a negative impact on Alcoa's results of operations. Additionally, Alcoa's results could be adversely affected by decreases in regional premiums that participants in the physical metal market pay for immediate delivery of aluminum. Although regional premiums have reached levels substantially higher than historical averages during 2013 and 2014, new LME warehousing rules (see risk factor entitled "New LME warehousing rules could cause aluminum prices to decrease.") or other factors may cause these premiums to decrease, which would have a negative impact on the Company's results of operations. A sustained weak LME aluminum pricing environment, deterioration in LME aluminum prices, or a decrease in regional premiums or product premiums could have a material adverse effect on Alcoa's business, financial condition, and results of operations or cash flow.

New LME warehousing rules could cause aluminum prices to decrease.

In 2013, the LME announced new rules scheduled to take effect on April 1, 2014 that would require LME warehouses, under certain conditions, to deliver out more aluminum than they take in. Although a court in the United Kingdom ruled in March 2014 that the LME's consultation process in developing the new rules had been unfair and unlawful, in October 2014, a court of appeal in the United Kingdom upheld the LME's consultation process as being fair. The new warehousing rules, which took effect on February 1, 2015, could cause an increase in the supply of aluminum to enter the physical market and may cause regional delivery premiums, product premiums and LME aluminum prices to fall. Decreases in regional delivery and product premiums, decreases in LME aluminum prices and increases in the supply of aluminum could have a material adverse effect on Alcoa's business, financial condition, and results of operations or cash flow.

Alcoa may not be able to realize the expected benefits from its strategy of transforming its portfolio by growing its value-add business and by creating a lower cost, competitive commodity business by optimizing its portfolio.

Alcoa is continuing to execute on its strategy of transforming its portfolio by growing its value-add business to capture profitable growth as a lightweight metals innovation leader and by creating a lower cost, competitive commodity business by optimizing its portfolio. It is investing in its value-add manufacturing and engineering businesses to capture growth opportunities in strong end markets like automotive and aerospace. Alcoa is also building out its value-add businesses, including by introducing innovative new products and technology solutions, and investing in

expansions of value-add capacity. Alcoa's growth projects include the joint venture with Ma'aden in Saudi Arabia; the automotive expansions in Davenport, Iowa and Alcoa, Tennessee; the aluminum lithium capacity expansion in Lafayette, Indiana, at the Alcoa Technical Center in Pennsylvania and at the Kitts Green plant in the United Kingdom; and the expansion in aerospace capabilities in La Porte, Indiana, Hampton, Virginia and Davenport, Iowa. From time to time, Alcoa also pursues growth opportunities that are strategically aligned with its objectives, such as the acquisition of the Firth Rixson business (completed in November 2014) and the announced acquisition of TITAL (expected to close in the first quarter of 2015). In addition, Alcoa is optimizing its rolling mill portfolio as part of its strategy for profitable growth in the midstream business. At the same time, the Company is creating a competitive commodity business by taking decisive actions to lower the cost base of its upstream operations, closing, selling or curtailing high-cost global smelting capacity, optimizing alumina refining capacity, and pursuing the sale of its interest in certain other operations.

Alcoa has made, and may continue to plan and execute, acquisitions and divestitures and take other actions to grow or streamline its portfolio. Although management believes that its strategic actions will be beneficial to Alcoa, there is no assurance that anticipated benefits will be realized. Adverse factors may prevent Alcoa from realizing the benefits of its growth projects, including unfavorable global economic conditions, currency fluctuations, or unexpected delays in target timelines. Acquisitions present significant challenges and risks, including the effective integration of the business into the Company and unanticipated costs and liabilities, and the Company may be unable to manage acquisitions successfully. Alcoa may face barriers to exit from unprofitable businesses or operations, including high exit costs or objections from various stakeholders. In addition, Alcoa may retain unforeseen liabilities for divested entities if the buyer fails to honor all commitments. There can be no assurance that acquisitions and divestitures will be undertaken or completed in their entirety as planned or that they will be beneficial to Alcoa.

Market-driven balancing of global aluminum supply and demand may be disrupted by non-market forces or other impediments to production closures.

In response to market-driven factors relating to the global supply and demand of aluminum, Alcoa has curtailed portions of its aluminum production. Certain other aluminum producers have independently undertaken to make cuts in production as well. However, the existence of non-market forces on global aluminum industry capacity, such as political pressures in certain countries to keep jobs or to maintain or further develop industry self-sufficiency, may prevent or delay the closure or curtailment of certain producers' smelters, irrespective of their position on the industry cost curve. Other production cuts may be impeded by long-term contracts to buy power or raw materials. If industry overcapacity persists due to the disruption by such non-market forces on the market-driven balancing of the global supply and demand of aluminum, the resulting weak pricing environment and margin compression may adversely affect the operating results of aluminum producers, including Alcoa.

Alcoa's operations consume substantial amounts of energy; profitability may decline if energy costs rise or if energy supplies are interrupted.

Alcoa's operations consume substantial amounts of energy. Although Alcoa generally expects to meet the energy requirements for its alumina refineries and primary aluminum smelters from internal sources or from long-term contracts, certain conditions could negatively affect Alcoa's results of operations, including the following:

significant increases in electricity costs rendering smelter operations uneconomic;

significant increases in fuel oil or natural gas prices;

unavailability of electrical power or other energy sources due to droughts, hurricanes or other natural causes;

unavailability of energy due to energy shortages resulting in insufficient supplies to serve consumers;

interruptions in energy supply or unplanned outages due to equipment failure or other causes;

curtailment of one or more refineries or smelters due to the inability to extend energy contracts upon expiration or to negotiate new arrangements on cost-effective terms or due to the unavailability of energy at competitive rates; or

curtailment of one or more smelters due to a regulatory authority's determination that power supply interruptibility rights granted to Alcoa under an interruptibility regime in place under the laws of the country in which the smelter is located do not comply with the regulatory authority's state aid rules, thus rendering the smelter operations that had been relying on such country's interruptibility regime uneconomic.

If events such as those listed above were to occur, the resulting high energy costs or the disruption of an energy source or the requirement to repay all or a portion of the benefit Alcoa received under a power supply interruptibility regime could have a material adverse effect on Alcoa's business and results of operations.

Alcoa's profitability could be adversely affected by increases in the cost of raw materials or by significant lag effects of decreases in commodity or LME-linked costs.

Alcoa's results of operations are affected by changes in the cost of raw materials, including energy, carbon products, caustic soda and other key inputs, as well as freight costs associated with transportation of raw materials to refining and smelting locations. Alcoa may not be able to fully offset the effects of higher raw material costs or energy costs through price increases, productivity improvements or cost reduction programs. Similarly, Alcoa's operating results are affected by significant lag effects of declines in key costs of production that are commodity or LME-linked. For example, declines in the LME-linked costs of alumina and power during a particular period may not be adequate to offset sharp declines in metal price in that period. Increases in the cost of raw materials or decreases in input costs that are disproportionate to concurrent sharper decreases in the price of aluminum could have a material adverse effect on Alcoa's operating results.

Alcoa is exposed to fluctuations in foreign currency exchange rates and interest rates, as well as inflation, and other economic factors in the countries in which it operates.

Economic factors, including inflation and fluctuations in foreign currency exchange rates and interest rates, competitive factors in the countries in which Alcoa operates, and continued volatility or deterioration in the global economic and financial environment could affect Alcoa's revenues, expenses and results of operations. Changes in the valuation of the U.S. dollar against other currencies, particularly the Australian dollar, Brazilian real, Canadian dollar, Euro and Norwegian kroner, may affect Alcoa's profitability as some important inputs are purchased in other currencies, while the Company's upstream products are generally sold in U.S. dollars. In addition, although a strong U.S. dollar helps Alcoa's near-term profitability, over a longer term, a strong U.S. dollar may have an unfavorable impact to Alcoa's position on the global aluminum cost curve due to Alcoa's U.S. smelting portfolio. As the U.S. dollar strengthens, the cost curve shifts down for smelters outside the U.S. but costs for Alcoa's U.S. smelting portfolio may not decline.

Alcoa may not be able to successfully realize goals established in each of its four business segments, at the levels or by the dates targeted for such goals.

Alcoa established targets for each of its four major business segments, including the following:

by 2016, driving the alumina business further down the industry cost curve into the 21st percentile;

by 2016, driving the aluminum business further down the industry cost curve into the 38th percentile;

by 2016, increasing the revenues of the Global Rolled Products segment, while improving margins that meet or exceed average historical levels, by \$1.0 billion, with 90% expected to be generated from innovation and share gains; and

by 2016, increasing the revenues of the Engineered Products and Solutions segment, while improving margins that exceed historical levels, by \$1.2 billion, with 75% expected to be generated from innovation and share gains.

For more information regarding Alcoa's targets, see Management Review of 2014 and Outlook for the Future in Part II, Item 7. (Management's Discussion and Analysis of Financial Condition and Results of Operations) of this report. There can be no assurance that any of these targets or other goals will be completed as anticipated. Market conditions or other factors may prevent Alcoa from accomplishing its goals at the levels or by the dates targeted, if at all, and failure to do so may have a material adverse effect on its business, financial condition, results of operations or the market price of its securities.

Alcoa faces significant competition, which may have an adverse effect on profitability.

As discussed in Part I, Item 1. (Business - Competitive Conditions) of this report, the markets for Alcoa's aluminum and non-aluminum products are highly competitive. Alcoa's competitors include a variety of both U.S. and non-U.S. companies in all major markets, including some that are subsidized. In addition, aluminum competes with other materials, such as steel, plastics, composites, ceramics, and glass, among others, for various applications in Alcoa's key markets. New product offerings or new technologies in the marketplace may compete with or replace Alcoa products. The willingness of customers to accept substitutes for the products sold by Alcoa, the ability of large customers to exert leverage in the marketplace to affect the pricing for fabricated aluminum products, and technological advancements or other developments by or affecting Alcoa's competitors or customers could affect Alcoa's results of operations. In addition, Alcoa's competitive position depends, in part, on the Company's ability to leverage its innovation expertise across its businesses and key end markets and, in the case of its upstream businesses, having access to an economical power supply to sustain its operations in various countries.

A downgrade of Alcoa's credit ratings could limit Alcoa's ability to obtain future financing, increase its borrowing costs, increase the pricing of its credit facilities, adversely affect the market price of its securities, trigger letter of credit or other collateral postings, or otherwise impair its business, financial condition, and results of operations.

Standard and Poor's Ratings Services currently rates Alcoa's long-term debt BBB-, the lowest level of investment grade rating, with a negative ratings outlook (ratings and outlook were affirmed on April 23, 2014). In May 2013, Moody's Investors Service downgraded Alcoa's long-term debt rating from Baa3 to Ba1, which is below investment grade, and changed the outlook from rating under review to stable. In April 2014, Fitch Ratings downgraded Alcoa's rating from BBB- to BB+, a below investment grade rating, and changed the outlook from negative to stable. There can be no assurance that one or more of these or other rating agencies will not take further negative actions with respect to Alcoa's ratings. Increased debt levels, adverse aluminum market or macroeconomic conditions, a deterioration in the Company's debt protection metrics, a contraction in the Company's liquidity, or other factors could potentially trigger such actions. A rating agency may lower, suspend or withdraw entirely a rating or place it on negative outlook or watch if, in that rating agency's judgment, circumstances so warrant.

As a result of the Moody's downgrade, certain counterparties have required Alcoa to post letters of credit or cash collateral, and the cost of issuance of new public debt and commercial paper has increased. For more information regarding the effects of the Moody's downgrade on the Company's liquidity, see Management's Discussion and Analysis of Financial Condition and Results of Operations - Liquidity and Capital Resources - Financing Activities in this report. The Company does not believe that Alcoa's financing activities were significantly impacted by the Fitch downgrade. However, any further downgrade of Alcoa's credit ratings by one or more rating agencies could adversely impact the market price of Alcoa's securities, adversely affect existing financing (for example, a downgrade by Standard and Poor's or a further downgrade by Moody's would subject Alcoa to higher costs under Alcoa's Five-Year Revolving Credit Agreement and certain of its other revolving credit facilities), limit access to the capital (including commercial paper) or credit markets or otherwise adversely affect the availability of other new financing on favorable terms, if at all, result in more restrictive covenants in agreements governing the terms of any future indebtedness that the Company incurs, increase the cost of borrowing or fees on undrawn credit facilities, result in vendors or counterparties seeking collateral or letters of credit from Alcoa, or otherwise impair Alcoa's business, financial condition and results of operations.

Cyber attacks and security breaches may threaten the integrity of Alcoa's intellectual property and other sensitive information, disrupt its business operations, and result in reputational harm and other negative consequences that could have a material adverse effect on its financial condition and results of operation.

Alcoa faces global cybersecurity threats, which may range from uncoordinated individual attempts to sophisticated and targeted measures, known as advanced persistent threats, directed at the Company. Cyber attacks and security breaches may include, but are not limited to, attempts to access information, computer viruses, denial of service and other electronic security breaches.

The Company believes that it faces a heightened threat of cyber attacks due to the industries it serves, the locations of its operations and its technological innovations. The Company has experienced cybersecurity attacks in the past, including breaches of its information technology systems in which information was taken, and may experience them in the future, potentially with more frequency or sophistication. Based on information known to date, past attacks have not had a material impact on Alcoa's financial condition or results of operations. However, due to the evolving nature of cybersecurity threats, the scope and impact of any future incident cannot be predicted. While the Company continually works to safeguard its systems and mitigate potential risks, there is no assurance that such actions will be sufficient to prevent cyber attacks or security breaches that manipulate or improperly use its systems or networks, compromise confidential or otherwise protected information, destroy or corrupt data, or otherwise disrupt its operations. The occurrence of such events could negatively impact Alcoa's reputation and its competitive position and could result in litigation with third parties, regulatory action, loss of business, potential liability and increased remediation costs, any of which could have a material adverse effect on its financial condition and results of operations. In addition, such attacks or breaches could require significant management attention and resources, and result in the diminution of the value of the Company's investment in research and development.

Joint ventures and other strategic alliances may not be successful.

Alcoa participates in joint ventures and has formed strategic alliances and may enter into other similar arrangements in the future. For example, in December 2009, Alcoa formed a joint venture with Ma'aden, the Saudi Arabian Mining Company, to develop a fully integrated aluminum complex (including a bauxite mine, alumina refinery, aluminum smelter and rolling mill) in the Kingdom of Saudi Arabia. Although the Company has, in connection with the Saudi Arabia joint venture and its other existing joint ventures and strategic alliances, sought to protect its interests, joint ventures and strategic alliances inherently involve special risks. Whether or not Alcoa holds majority interests or maintains operational control in such arrangements, its partners may:

have economic or business interests or goals that are inconsistent with or opposed to those of the Company;

exercise veto rights so as to block actions that Alcoa believes to be in its or the joint venture's or strategic alliance's best interests;

take action contrary to Alcoa's policies or objectives with respect to its investments; or

as a result of financial or other difficulties, be unable or unwilling to fulfill their obligations under the joint venture, strategic alliance or other agreements, such as contributing capital to expansion or maintenance projects.

There can be no assurance that Alcoa's joint ventures or strategic alliances will be beneficial to Alcoa, whether due to the above-described risks, unfavorable global economic conditions, increases in construction costs, currency fluctuations, political risks, or other factors.

Alcoa's business and growth prospects may be negatively impacted by limits in its capital expenditures.

Alcoa requires substantial capital to invest in growth opportunities and to maintain and prolong the life and capacity of its existing facilities. For 2015, generating positive cash flow from operations that will exceed capital spending continues to be an Alcoa target. Insufficient cash generation or capital project overruns may negatively impact Alcoa's

ability to fund as planned its sustaining and return-seeking capital projects. Over the long term, Alcoa's ability to take advantage of improved aluminum or other market conditions or growth opportunities in its midstream and downstream businesses may be constrained by earlier capital expenditure restrictions, which could adversely affect the long-term value of its business and the Company's position in relation to its competitors.

Alcoa may also need to address commercial and political issues in relation to its reductions in capital expenditures in certain of the jurisdictions in which it operates. If Alcoa's interest in its joint ventures is diluted or it loses key concessions, its growth could be constrained. Any of the foregoing could have a material adverse effect on the Company's business, results of operations, financial condition and prospects.

Alcoa's global operations expose the Company to risks that could adversely affect Alcoa's business, financial condition, operating results or cash flows.

Alcoa has operations or activities in numerous countries and regions outside the United States, including Brazil, China, Europe, Guinea, Russia, and the Kingdom of Saudi Arabia. The Company's global operations are subject to a number of risks, including:

economic and commercial instability risks, including those caused by sovereign and private debt default, corruption, and changes in local government laws, regulations and policies, such as those related to tariffs and trade barriers, taxation, exchange controls, employment regulations and repatriation of earnings;

geopolitical risks such as political instability, civil unrest, expropriation, nationalization of properties by a government, imposition of sanctions, renegotiation or nullification of existing agreements, mining leases and permits;

war or terrorist activities;

major public health issues such as an outbreak of a pandemic or epidemic (such as Sudden Acute Respiratory Syndrome, Avian Influenza, H7N9 virus, or the Ebola virus), which could cause disruptions in Alcoa's operations or workforce;

difficulties enforcing intellectual property and contractual rights in certain jurisdictions; and

unexpected events, including fires or explosions at facilities, and natural disasters.

While the impact of any of the foregoing factors is difficult to predict, any one or more of them could adversely affect Alcoa's business, financial condition, operating results or cash flows. Existing insurance arrangements may not provide protection for the costs that may arise from such events.

An adverse decline in the liability discount rate, lower-than-expected investment return on pension assets and other factors could affect Alcoa's results of operations or amount of pension funding contributions in future periods.

Alcoa's results of operations may be negatively affected by the amount of expense Alcoa records for its pension and other postretirement benefit plans, reductions in the fair value of plan assets and other factors. U.S. generally accepted accounting principles (GAAP) require that Alcoa calculate income or expense for the plans using actuarial valuations.

These valuations reflect assumptions about financial market and other economic conditions, which may change based on changes in key economic indicators. The most significant year-end assumptions used by Alcoa to estimate pension or other postretirement benefit income or expense for the following year are the discount rate applied to plan liabilities and the expected long-term rate of return on plan assets. In addition, Alcoa is required to make an annual measurement of plan assets and liabilities, which may result in a significant charge to shareholders equity. For a discussion regarding how Alcoa's financial statements can be affected by pension and other postretirement benefits accounting policies, see Critical Accounting Policies and Estimates Pension and Other Postretirement Benefits in Part II, Item 7. (Management's Discussion and Analysis of Financial Condition and Results of Operations) and Note W to the

Consolidated Financial Statements Pension and Other Postretirement Benefits in Part II, Item 8. (Financial Statements and Supplementary Data). Although GAAP expense and pension funding contributions are impacted by different regulations and requirements, the key economic factors that affect GAAP expense would also likely affect the amount of cash or securities Alcoa would contribute to the pension plans.

Potential pension contributions include both mandatory amounts required under federal law and discretionary contributions to improve the plans funded status. The Moving Ahead for Progress in the 21st Century Act (MAP-21), enacted in 2012, provided temporary relief for employers like Alcoa who sponsor defined benefit pension plans related to funding contributions under the Employee Retirement Income Security Act of 1974 by allowing the use of a 25-year average discount rate within an upper and lower range for purposes of determining minimum funding obligations. On August 8, 2014, the Highway and Transportation Funding Act (HATFA) was signed into law. HATFA extended the relief provided by MAP-21 and modified the interest rates that had been set by MAP-21. Alcoa believes that the relief provided by HATFA will moderately reduce the cash flow sensitivity of the Company's U.S. pension plans' funded status to potential declines in discount rates over the next several years. However, higher than expected pension contributions due to a decline in the plans' funded status as a result of declines in the discount rate or lower-than-expected investment returns on plan assets could have a material negative effect on the Company's cash flows. Adverse capital market conditions could result in reductions in the fair value of plan assets and increase the Company's liabilities related to such plans, adversely affecting Alcoa's liquidity and results of operations.

Unanticipated changes in our tax provisions or exposure to additional tax liabilities could affect Alcoa's future profitability.

Alcoa is subject to income taxes in both the United States and various non-U.S. jurisdictions. Its domestic and international tax liabilities are dependent upon the distribution of income among these different jurisdictions. Changes in applicable domestic or foreign tax laws and regulations, or their interpretation and application, including the possibility of retroactive effect, could affect the Company's tax expense and profitability. Alcoa's tax expense includes estimates of additional tax that may be incurred for tax exposures and reflects various estimates and assumptions. The assumptions include assessments of future earnings of the Company that could impact the valuation of its deferred tax assets. The Company's future results of operations could be adversely affected by changes in the effective tax rate as a result of a change in the mix of earnings in countries with differing statutory tax rates, changes in the overall profitability of the Company, changes in tax legislation and rates, changes in generally accepted accounting principles, changes in the valuation of deferred tax assets and liabilities, the results of tax audits and examinations of previously filed tax returns or related litigation and continuing assessments of its tax exposures. Corporate tax reform and tax law changes continue to be analyzed in the United States and in many other jurisdictions. Significant changes to the U.S. corporate tax system in particular could have a substantial impact, positive or negative, on Alcoa's effective tax rate, cash tax expenditures, and deferred tax assets and liabilities.

Union disputes and other employee relations issues could adversely affect Alcoa's financial results.

A significant portion of Alcoa's employees are represented by labor unions in a number of countries under various collective bargaining agreements with varying durations and expiration dates. For more information, see Employees in Part I, Item 1. (Business) of this report. While Alcoa was previously successful in renegotiating the master collective bargaining agreement with the United Steelworkers (the most recent renegotiation having taken place in June 2014), Alcoa may not be able to satisfactorily renegotiate that agreement or other collective bargaining agreements in the U.S. and other countries when they expire. In addition, existing collective bargaining agreements may not prevent a strike or work stoppage at Alcoa's facilities in the future. Alcoa may also be subject to general country strikes or work stoppages unrelated to its business or collective bargaining agreements. Any such work stoppages (or potential work stoppages) could have a material adverse effect on Alcoa's financial results.

Alcoa could be adversely affected by changes in the business or financial condition of a significant customer or customers.

A significant downturn or deterioration in the business or financial condition of a key customer or customers supplied by Alcoa could affect Alcoa's results of operations in a particular period. Alcoa's customers may experience delays in the launch of new products, labor strikes, diminished liquidity or credit unavailability, weak demand for their products, or other difficulties in their businesses. If Alcoa is not successful in replacing business lost from such customers, profitability may be adversely affected.

Alcoa may not be able to successfully develop and implement technology initiatives.

Alcoa is working on new developments for a number of strategic projects in all business segments, including advanced smelting process technologies such as inert anode and carbothermic technology, alloy development, engineered finishes and product design, high speed continuous casting and rolling technology, and other advanced manufacturing technologies. For more information on Alcoa's research and development programs, see Research and Development in Part I, Item 1. (Business) of this report. There can be no assurance that such developments or technologies will be commercially feasible or beneficial to Alcoa.

Alcoa's human resource talent pool may not be adequate to support the Company's growth.

Alcoa's existing operations and development projects require highly skilled executives and staff with relevant industry and technical experience. The inability of the Company or the industry to attract and retain such people may adversely impact Alcoa's ability to adequately meet project demands and fill roles in existing operations. Skills shortages in engineering, technical service, construction and maintenance contractors and other labor market inadequacies may also impact activities. These shortages may adversely impact the cost and schedule of development projects and the cost and efficiency of existing operations.

Alcoa may not realize expected benefits from its productivity and cost-reduction initiatives.

Alcoa has undertaken, and may continue to undertake, productivity and cost-reduction initiatives to improve performance and conserve cash, including new procurement strategies for raw materials, such as backward integration and non-traditional sourcing from numerous geographies, deployment of company-wide business process models, such as Alcoa's degrees of implementation process in which ideas are executed in a disciplined manner to generate savings, and overhead cost reductions. There is no assurance that these initiatives will be successful or beneficial to Alcoa or that estimated cost savings from such activities will be realized.

Alcoa may be exposed to significant legal proceedings, investigations or changes in U.S. federal, state or foreign law, regulation or policy.

Alcoa's results of operations or liquidity in a particular period could be affected by new or increasingly stringent laws, regulatory requirements or interpretations, or outcomes of significant legal proceedings or investigations adverse to Alcoa. The Company may experience a change in effective tax rates or become subject to unexpected or rising costs associated with business operations or provision of health or welfare benefits to employees due to changes in laws, regulations or policies. The Company is also subject to a variety of legal compliance risks. These risks include, among other things, potential claims relating to product liability, health and safety, environmental matters, intellectual property rights, government contracts, taxes, and compliance with U.S. and foreign export laws, anti-bribery laws, competition laws and sales and trading practices. Alcoa could be subject to fines, penalties, damages (in certain cases, treble damages), or suspension or debarment from government contracts.

While Alcoa believes it has adopted appropriate risk management and compliance programs to address and reduce these risks, the global and diverse nature of its operations means that these risks will continue to exist, and additional legal proceedings and contingencies may arise from time to time. In addition, various factors or developments can lead

the Company to change current estimates of liabilities or make such estimates for matters previously not susceptible of reasonable estimates, such as a significant judicial ruling or judgment, a significant settlement, significant regulatory developments or changes in applicable law. A future adverse ruling or settlement or unfavorable changes in laws, regulations or policies, or other contingencies that the Company cannot predict with certainty could have a material adverse effect on the Company's results of operations or cash flows in a particular period. For additional information regarding the legal proceedings involving the Company, see the discussion in Part I, Item 3. (Legal Proceedings) of this report and in Note N to the Consolidated Financial Statements in Part II, Item 8. (Financial Statements and Supplementary Data).

Alcoa is subject to a broad range of health, safety and environmental laws and regulations in the jurisdictions in which it operates and may be exposed to substantial costs and liabilities associated with such laws and regulations.

Alcoa's operations worldwide are subject to numerous complex and increasingly stringent health, safety and environmental laws and regulations. The costs of complying with such laws and regulations, including participation in assessments and cleanups of sites, as well as internal voluntary programs, are significant and will continue to be so for the foreseeable future. Environmental laws may impose cleanup liability on owners and occupiers of contaminated property, including past or divested properties, regardless of whether the owners and occupiers caused the contamination or whether the activity that caused the contamination was lawful at the time it was conducted. Environmental matters for which Alcoa may be liable may arise in the future at its present sites, where no problem is currently known, at previously owned sites, sites previously operated by the Company, sites owned by its predecessors or sites that it may acquire in the future. Compliance with environmental, health and safety legislation and regulatory requirements may prove to be more limiting and costly than the Company anticipates. Alcoa's results of operations or liquidity in a particular period could be affected by certain health, safety or environmental matters, including remediation costs and damages related to certain sites. Additionally, evolving regulatory standards and expectations can result in increased litigation and/or increased costs, all of which can have a material and adverse effect on earnings and cash flows.

Climate change, climate change legislation or regulations and greenhouse effects may adversely impact Alcoa's operations and markets.

Energy is a significant input in a number of Alcoa's operations. There is growing recognition that consumption of energy derived from fossil fuels is a contributor to global warming.

A number of governments or governmental bodies have introduced or are contemplating legislative and regulatory change in response to the potential impacts of climate change. There is also current and emerging regulation, such as the mandatory renewable energy target in Australia, Québec's transition to a cap and trade system with compliance required beginning 2013, the European Union Emissions Trading Scheme and the United States clean power plan for existing power plants, proposed on June 18, 2014. Alcoa will likely see changes in the margins of greenhouse gas-intensive assets and energy-intensive assets as a result of regulatory impacts in the countries in which the Company operates. These regulatory mechanisms may be either voluntary or legislated and may impact Alcoa's operations directly or indirectly through customers or Alcoa's supply chain. Inconsistency of regulations may also change the attractiveness of the locations of some of the Company's assets. Assessments of the potential impact of future climate change legislation, regulation and international treaties and accords are uncertain, given the wide scope of potential regulatory change in countries in which Alcoa operates. The Company may realize increased capital expenditures resulting from required compliance with revised or new legislation or regulations, costs to purchase or profits from sales of, allowances or credits under a cap and trade system, increased insurance premiums and deductibles as new actuarial tables are developed to reshape coverage, a change in competitive position relative to industry peers and changes to profit or loss arising from increased or decreased demand for goods produced by the Company and indirectly, from changes in costs of goods sold.

The potential physical impacts of climate change on the Company's operations are highly uncertain, and will be particular to the geographic circumstances. These may include changes in rainfall patterns, shortages of water or other

natural resources, changing sea levels, changing storm patterns and intensities, and changing temperature levels. These effects may adversely impact the cost, production and financial performance of Alcoa's operations.

Item 1B. Unresolved Staff Comments.

None.

Item 2. Properties.

Alcoa's principal office is located at 390 Park Avenue, New York, New York 10022-4608. Alcoa's corporate center is located at 201 Isabella Street, Pittsburgh, Pennsylvania 15212-5858. The Alcoa Technical Center for research and development is located at 100 Technical Drive, Alcoa Center, Pennsylvania 15069-0001.

Alcoa leases some of its facilities; however, it is the opinion of management that the leases do not materially affect the continued use of the properties or the properties' values.

Alcoa believes that its facilities are suitable and adequate for its operations. Although no title examination of properties owned by Alcoa has been made for the purpose of this report, the Company knows of no material defects in title to any such properties. See Notes A and H to the financial statements for information on properties, plants and equipment.

Alcoa has active plants and holdings under the following segments and in the following geographic areas:

ALUMINA

Bauxite: See the tables and related text in the **Bauxite Interests** section on pages 2-9 of this report.

Alumina: See the table and related text in the **Alumina Refining Facilities and Capacity** section on pages 9-11 of this report.

PRIMARY METALS

See the table and related text in the **Primary Aluminum Facilities and Capacity** section on pages 11-13 of this report.

GLOBAL ROLLED PRODUCTS

See the table and related text in the **Global Rolled Products Facilities** section on page 13-14 of this report.

ENGINEERED PRODUCTS AND SOLUTIONS

See the table and related text in the **Engineered Products and Solutions Facilities** section on pages 14-18 of this report.

CORPORATE

See the table and related text in the **Corporate Facilities** section on page 18 of this report.

Item 3. Legal Proceedings.

In the ordinary course of its business, Alcoa is involved in a number of lawsuits and claims, both actual and potential.

Litigation

Alba-Related Matters

Derivative Actions

As previously reported, on July 21, 2008, the Teamsters Local #500 Severance Fund and the Southeastern Pennsylvania Transportation Authority filed a shareholder derivative suit in the civil division of the Court of Common Pleas of Allegheny County, Pennsylvania against certain officers and directors of Alcoa claiming breach of fiduciary duty, gross mismanagement, and other violations. This derivative action stemmed from the civil litigation brought by Aluminium Bahrain B.S.C. (Alba) against Alcoa, Alcoa World Alumina LLC (AWA), Victor Phillip Dahdaleh, and others, and the subsequent investigation of Alcoa by the U.S. Department of Justice (DOJ) and the Securities and Exchange Commission (SEC) with respect to Alba's claims. See Note N to the Consolidated Financial Statements under the caption Alba Matter on pages 120-122 for a description of that litigation and investigation. This derivative action claimed that the defendants caused or failed to prevent the matters alleged in the Alba lawsuit. The director defendants filed a motion to dismiss on November 21, 2008. On September 3, 2009, a hearing was held on Alcoa's motion and, on October 12, 2009, the court issued its order denying Alcoa's motion to dismiss but finding that a derivative action during the conduct of the DOJ investigation and pendency of the underlying complaint by Alba would be contrary to the interest of shareholders and, therefore, stayed the case until further order of the court.

As previously reported, on March 6, 2009, the Philadelphia Gas Works Retirement Fund filed a shareholder derivative suit in the civil division of the Court of Common Pleas of Philadelphia County, Pennsylvania. This action was brought against certain officers and directors of Alcoa claiming breach of fiduciary duty and other violations and was based on the allegations made in the previously disclosed civil litigation brought by Alba against Alcoa, AWA, Victor Phillip Dahdaleh, and others, and the subsequent investigation of Alcoa by the DOJ and the SEC with respect to Alba's claims. This derivative action claims that the defendants caused or failed to prevent the conduct alleged in the Alba lawsuit. On August 7, 2009, the director and officer defendants filed an unopposed motion to coordinate the case with the Teamsters Local #500 suit, described immediately above, in the Allegheny County Common Pleas Court. The Allegheny County court issued its order consolidating the case on September 18, 2009. Thereafter, on October 31, 2009, the court assigned this action to the Commerce and Complex Litigation division of the Allegheny County Court of Common Pleas and on November 20, 2009, the court granted defendants' motion to stay all proceedings in the Philadelphia Gas action until the earlier of the court lifting the stay in the Teamsters derivative action or further order of the court in this action.

As previously reported, on June 19, 2012, Catherine Rubery (plaintiff) filed a shareholder derivative suit in the United States District Court for the Western District of Pennsylvania against William Rice, Victor Dahdaleh and current and former members of the Alcoa Board of Directors (collectively, defendants) claiming breach of fiduciary duty and corporate waste. This derivative action stemmed from the previously disclosed civil litigation brought by Alba against Alcoa, and the subsequent investigation of Alcoa by the DOJ and the SEC. This derivative action claims that defendants caused or failed to prevent illegal bribes of foreign officials, failed to implement an internal controls system to prevent bribes from occurring and wasted corporate assets by paying improper bribes and incurring substantial legal liability. Furthermore, plaintiff sought an order of contribution and indemnification from defendants.

On October 1, 2014, the Alcoa Board of Directors approved a settlement-in-principle of the three pending derivative actions described above stemming from the previously disclosed civil litigation brought by Alba against Alcoa, AWA, Victor Dahdaleh, and others, and the subsequent investigation of Alcoa by the DOJ and SEC with respect to Alba's claims. The settlement of the derivative actions was preliminarily approved by the court on October 22, 2014. On January 20, 2015, following a hearing, the court formally approved the settlement, entering its order of judgment approving the resolution and noting its findings in its conference notes both entered on January 20, 2015. This settlement, for an immaterial amount, resolves all derivative claims against the current and former officers and members of the Alcoa Board of Directors named as defendants as well as William Rice stemming from the Alba allegations.

Italian Energy Matter

As previously reported, 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 Elettrico (CCSE)) responsible for making and collecting payments on behalf of the Energy Authority demanding payment in the amount of approximately \$110 million (85 million), 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 million (76 million), 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 million (76 million). Alcoa has rejected that demand and has 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 this 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. At this time, the Company is unable to reasonably predict an outcome for this matter.

European Commission Matters

As previously reported, in July 2006, the European Commission (EC) announced that it had opened an investigation to establish whether an extension of the regulated electricity tariff granted by Italy to some energy-intensive industries complied with European Union (EU) state aid rules. The Italian power tariff extended the tariff that was in force until December 31, 2005 through November 19, 2009 (Alcoa had been incurring higher power costs at its smelters in Italy subsequent to the tariff end date through the end of 2012). The extension was originally through 2010, but the date was changed by legislation adopted by the Italian Parliament effective on August 15, 2009. Prior to expiration of the tariff in 2005, Alcoa had been operating in Italy for more than 10 years under a power supply structure approved by the EC in 1996. That measure provided a competitive power supply to the primary aluminum industry and was not considered state aid from the Italian Government. The EC's announcement expressed concerns about whether Italy's extension of the tariff beyond 2005 was compatible with EU legislation and potentially distorted competition in the European market of primary aluminum, where energy is an important part of the production costs.

On November 19, 2009, the EC announced a decision in this matter stating that the extension of the tariff by Italy constituted unlawful state aid, in part, and, therefore, the Italian Government is to recover a portion of the benefit Alcoa received since January 2006 (including interest). The amount of this recovery was to be based on a calculation prepared by the Italian Government (see below). In late 2009, after discussions with legal counsel and reviewing the bases on which the EC decided, including the different considerations cited in the EC decision regarding Alcoa's two smelters in Italy, Alcoa recorded a charge of \$250 million (173 million), which included \$20 million (14 million) to write off a receivable from the Italian Government for amounts due under the now expired tariff structure and \$230 million (159 million) to establish a reserve. On April 19, 2010, Alcoa filed an appeal of this decision with the General Court of the EU (see below). Prior to 2012, Alcoa was involved in other legal proceedings related to this matter that separately sought the annulment of the EC's July 2006 decision to open an investigation alleging that such decision did not follow the applicable procedural rules and requested injunctive relief to suspend the effectiveness of the EC's November 19, 2009 decision. However, the decisions by the General Court, and subsequent appeals to the European Court of Justice, resulted in the denial of these remedies.

In June 2012, Alcoa received formal notification from the Italian Government with a calculated recovery amount of \$375 million (303 million); this amount was reduced by \$65 million (53 million) for amounts owed by the Italian Government to Alcoa, resulting in a net payment request of \$310 million (250 million). In a notice published in the Official Journal of the European Union on September 22, 2012, the EC announced that it had filed an action against the Italian Government on July 18, 2012 to compel it to collect the recovery amount (on October 17, 2013, the European Court of Justice ordered Italy to so collect). On September 27, 2012, Alcoa received a request for payment in full of the \$310 million (250 million) by October 31, 2012. Following discussions with the Italian Government regarding the timing of such payment, Alcoa paid the requested amount in five quarterly installments of \$69 million (50 million) beginning in October 2012 through December 2013. Notwithstanding the payments made, Alcoa's estimate of the most probable loss of the ultimate outcome of this matter and the low end of the range of reasonably possible loss, which is \$193 million (159 million) to \$369 million (303 million), remains the \$193 million (159 million) recorded in 2009 (the U.S. dollar amount reflects the effects of foreign currency movements since 2009). Alcoa no longer has a reserve for this matter; instead, Alcoa has a noncurrent asset reflecting the excess of the total of the five payments made to the Italian Government over the reserve recorded in 2009. At December 31, 2014, the noncurrent asset was \$111 million (91 million) (this does not include the \$64 million (53 million) for amounts owed by the Italian Government to Alcoa mentioned above).

On October 16, 2014, Alcoa received notice from the General Court of the EU that its April 19, 2010 appeal of the EC's November 19, 2009 decision was denied. On December 27, 2014, Alcoa filed an appeal of the General Court's October 16, 2014 ruling to the European Court of Justice. A decision by the European Court of Justice in this matter could take up to two years or longer.

Environmental Matters

Alcoa is involved in proceedings under the Comprehensive Environmental Response, Compensation and Liability Act, also known as Superfund (CERCLA) or analogous state provisions regarding the usage, disposal, storage or treatment of hazardous substances at a number of sites in the U.S. The Company has committed to participate, or is engaged in negotiations with federal or state authorities relative to its alleged liability for participation, in clean-up efforts at several such sites. The most significant of these matters, including the remediation of the Grasse River in Massena, NY, are discussed in the Environmental Matters section of Note N to the Consolidated Financial Statements under the caption Environmental Matters on pages 125-128.

As previously reported, in August 2005, Dany Lavoie, a resident of Baie Comeau in the Canadian Province of Québec, filed a Motion for Authorization to Institute a Class Action and for Designation of a Class Representative against Alcoa Canada Ltd., Alcoa Limitée, Societe Canadienne de Metaux Reynolds Limitée and Canadian British Aluminum in the Superior Court of Québec in the District of Baie Comeau. Plaintiff seeks to institute the class action on behalf of a putative class consisting of all past, present and future owners, tenants and residents of Baie Comeau's St. Georges

neighborhood. He alleges that defendants, as the present and past owners and operators of an aluminum smelter in Baie Comeau, have negligently allowed the emission of certain contaminants from the smelter, specifically Polycyclic Aromatic Hydrocarbons or PAHs, that have been deposited on the lands and houses of the St. Georges neighborhood and its environs causing damage to the property of the putative class and causing health concerns for those who inhabit that neighborhood. Plaintiff originally moved to certify a class action, sought to compel additional remediation to be conducted by the defendants beyond that already undertaken by them voluntarily, sought an injunction against further emissions in excess of a limit to be determined by the court in consultation with an independent expert, and sought money damages on behalf of all class members. In May 2007, the court authorized a class action suit to include only people who suffered property damage or personal injury damages caused by the emission of PAHs from the smelter. In September 2007, plaintiffs filed the claim against the original defendants, which the court had authorized in May. Alcoa has filed its Statement of Defense and plaintiffs filed an Answer to that Statement. Alcoa also filed a Motion for Particulars with respect to certain paragraphs of plaintiffs' Answer and a Motion to Strike with respect to certain paragraphs of plaintiffs' Answer. In late 2010, the Court denied these motions. The Soderberg smelting process that plaintiffs allege to be the source of emissions of concern have ceased operations and are being dismantled. No further formal court proceedings or discovery has occurred, while technical advisors nominated by agreement of the parties confer on potential health impacts of prior emissions. This protocol has been agreed to by the parties who have also advised the court regarding the process. The plaintiffs have not quantified the damages sought. Without such amount and given the various damages alleged, at this stage of the proceeding the Company is unable to reasonably predict an outcome or to estimate a range of reasonably possible loss.

As previously reported, in October 2006, in *Barnett, et al. v. Alcoa and Alcoa Fuels, Inc.*, Warrick Circuit Court, County of Warrick, Indiana; 87-C01-0601-PL-499, forty-one plaintiffs sued Alcoa Inc. and a subsidiary, asserting claims similar to those asserted in *Musgrave v. Alcoa, et al.*, Warrick Circuit Court, County of Warrick, Indiana; 87-C01-0601-CT-006. In November 2007, Alcoa Inc. and its subsidiary filed a motion to dismiss the Barnett cases. In October 2008, the Warrick County Circuit Court granted Alcoa's motions to dismiss, dismissing all claims arising out of alleged occupational exposure to wastes at the Squaw Creek Mine, but in November 2008, the trial court clarified its ruling, indicating that the order does not dispose of plaintiffs' personal injury claims based upon alleged recreational or non-occupational exposure. Plaintiffs also filed a second amended complaint in response to the court's orders granting Alcoa's motion to dismiss. On July 7, 2010, the court granted the parties' joint motions for a general continuance of trial settings. Discovery in this matter remains stayed. The Company is unable to reasonably predict an outcome or to estimate a range of reasonably possible loss because plaintiffs have merely alleged that their medical condition is attributable to exposure to materials at the Squaw Creek Mine but no further information is available due to the discovery stay.

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.) 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 (MOE) issued orders to Alcoa Trasformazioni S.r.l. 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, Alcoa Trasformazioni S.r.l.'s Fusina site was also sued by the MOE and Minister of Public Works (MOPW) in the Civil Court of Venice for an alleged liability for environmental damages, in parallel with the orders already issued by the MOE. Alcoa Trasformazioni S.r.l. 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, Alcoa Trasformazioni S.r.l. 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 fix 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 fixed for July 15, 2015. In the meantime, Alcoa Trasformazioni S.r.l. 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 Note N to the Consolidated Financial Statements under the caption "Fusina and Portovesme, Italy" on page 127. 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.

Alcoa and Ligestra have signed a similar agreement relating to the Portovesme site. However, that agreement is 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 intends to submit a further revised proposal in February 2015, in agreement with Ligestra. Alcoa is unable to reasonably predict an outcome or to estimate a range of reasonably possible loss beyond what is described in Footnote N to the Consolidated Financial Statements for several reasons. First, the MOE has approved the remediation plan for Fusina only and certain costs relating to the remediation are not yet fixed. In connection with the proposed plan for Portovesme, the Company understands that the MOE has substantial discretion in defining what must be managed under the Italian soils law. The availability of appropriate landfills must also be considered as well as the nature of these sites. As a result, the scope and cost of the final remediation plan remain uncertain for Portovesme. In addition, even though the plan was rejected by the MOE and the settlement with Ligestra relating to Portovesme has become void, Alcoa should be held responsible only for its share of pollution. However, the area is impacted by many sources of pollution, as well as historical pollution. Consequently, the allocation of liabilities would need a very complex technical evaluation by the authorities that has not yet been performed.

As previously reported, on November 30, 2010, Alcoa World Alumina Brasil Ltda. (AWAB) received notice of a lawsuit that had been filed by the public prosecutors of the State of Pará in Brazil in November 2009. The suit names AWAB and the State of Pará, which, through its Environmental Agency, had issued the operating license for the Company's new bauxite mine in Juruti. The suit concerns the impact of the project on the region's water system and alleges that certain conditions of the original installation license were not met by AWAB. In the lawsuit, plaintiffs requested a preliminary injunction suspending the operating license and ordering payment of compensation. On April 14, 2010, the court denied plaintiffs' request. AWAB presented its defense in March 2011, on grounds that it was in compliance with the terms and conditions of its operating license, which included plans to mitigate the impact of the project on the region's water system. In April, 2011, the State of Pará defended itself in the case asserting that the operating license contains the necessary plans to mitigate such impact, that the State monitors the performance of AWAB's obligations arising out of such license, that the licensing process is valid and legal, and that the suit is meritless. The Company's position is that any impact from the project had been fully repaired when the suit was filed. The Company also believes that Jará Lake has not been affected by any project activity and any evidence of pollution from the project would be unreliable. Following the preliminary injunction, the plaintiffs took no further action until October 2014, when in response to the court's request and as required by statute, they restated the original allegations in the lawsuit. The Company is not certain whether or when the action will proceed. Given that this proceeding is in its preliminary stage and the current uncertainty in this case, the Company is unable to reasonably predict an outcome or to estimate a range of reasonably possible loss.

As previously reported, by an amended complaint filed April 21, 2005, Alcoa Global Fasteners, Inc. was added as a defendant in Orange County Water District (OCWD) v. Northrop Corporation, et al., civil action 04cc00715 (Superior Court of California, County of Orange). OCWD alleges contamination or threatened contamination of a drinking water aquifer by Alcoa, certain of the entities that preceded Alcoa at the same locations as property owners and/or operators, and other current and former industrial and manufacturing businesses that operated in Orange County in past decades. OCWD seeks to recover the cost of aquifer remediation and attorney's fees. Trial on statutory, non-jury claims commenced on February 10, 2012, and continued through September 2012 when the case was submitted to the court for decision. On December 11, 2012, the court issued its tentative ruling in the matter dismissing plaintiff OCWD's remaining statutory claims against all defendants. The court's tentative ruling also invited further briefing on the decision and it is subject to modification. On January 21, 2013, defendants filed a joint brief responding to ten specific questions posed by the court's tentative ruling. The joint brief argued that the court should make further findings of fact and law in favor of the defendants in response to the ten questions. Alcoa Global Fasteners, Inc. also filed a separate brief on two of the questions arguing that the court should determine that it is neither a cause of ground water contamination nor a cause of plaintiffs' incurred costs. Remaining in the case at this time are common law trespass and nuisance claims for a Phase II trial which has not been scheduled. OCWD has asserted a total remedy cost of at least \$150 million plus attorneys' fees; however, the amount in controversy at this stage is limited to sums already expended by the OCWD, approximately \$4 million. The court has indicated that it is not likely to grant the OCWD's request for declaratory relief as to future sums the OCWD expends. On February 28, 2013, the court held a hearing on its tentative Statement of Decision finding that OCWD had not met its burden on the element of causation and, following that hearing, on May 10, 2013, issued a supplemental tentative decision, finding that plaintiff had not met its burden of proof. On that date, the court ordered defendants to submit a proposed statement of decision, followed by filing of objections and counter-proposed statement of decision by the plaintiff and responses by the defendants. All filings were completed by September 23, 2013 at which time the matter was submitted to the court for final decision. On October 29, 2013, the court issued its final Statement of Decision (SOD) which resolved the statutory law liability claims of the Phase I trial favorably to Alcoa and the other Phase I trial defendants. The plaintiff and the trial defendants disagree on the consequences of the SOD and the Phase I trial on the remaining two tort claims of nuisance and trespass. On December 19, 2013, the court held a Case Management Conference and approved the parties' proposed briefing schedule regarding remaining issues. On June 20, 2014, following the full briefing by the parties, the trial court entered final judgment in favor of Alcoa and the other trial defendants on the remaining tort claims. On August 18, 2014, the OCWD filed a notice of appeal of the judgment with the Superior Court of the County of Orange. No briefing has yet been submitted.

St. Croix Proceedings

Josephat Henry. As previously reported, in September 1998, Hurricane Georges struck the U.S. Virgin Islands, including the St. Croix Alumina, L.L.C. (SCA) facility on the island of St. Croix. The wind and rain associated with the hurricane caused material at the location to be blown into neighboring residential areas. SCA undertook or arranged various cleanup and remediation efforts. The Division of Environmental Protection (DEP) of the Department of Planning and Natural Resources (DPNR) of the Virgin Islands Government issued a Notice of Violation that Alcoa has contested. In February 1999, certain residents of St. Croix commenced a civil suit in the Territorial Court of the Virgin Islands seeking compensatory and punitive damages and injunctive relief for alleged personal injuries and property damages associated with bauxite or red dust from the SCA facility. The suit, which has been removed to the District Court of the Virgin Islands (the Court), names SCA, Alcoa and Glencore Ltd. as defendants, and, in August 2000, was accorded class action treatment. The class was defined to include persons in various defined neighborhoods who suffered damages and/or injuries as a result of exposure during and after Hurricane Georges to red dust and red mud blown during Hurricane Georges. All of the defendants have denied liability, and discovery and other pretrial proceedings have been underway since 1999. Plaintiffs' expert reports claim that the material blown during Hurricane Georges consisted of bauxite and red mud, and contained crystalline silica, chromium, and other substances. The reports further claim, among other things, that the population of the six subject neighborhoods as of the 2000 census (a total of 3,730 people) has been exposed to toxic substances through the fault of the defendants, and hence will be able to show entitlement to lifetime medical monitoring as well as other compensatory and punitive relief. These opinions have been contested by the defendants' expert reports, that state, among other things, that plaintiffs were not exposed to

the substances alleged and that in any event the level of alleged exposure does not justify lifetime medical monitoring. Alcoa and SCA turned over this matter to their insurance carriers who have been providing a defense. Glencore Ltd. is jointly defending the case with Alcoa and SCA and has a pending motion to dismiss. In June 2008, the Court granted defendants' joint motion to decertify the original class of plaintiffs, and certified a new class as to the claim of ongoing nuisance, insofar as plaintiffs seek cleanup, abatement, or removal of the red mud currently present at the facility. (The named plaintiffs had previously dropped their claims for medical monitoring as a consequence of the court's rejection of plaintiffs' proffered expert opinion testimony). The Court expressly denied certification of a class as to any claims for remediation or cleanup of any area outside the facility (including plaintiffs' property). The new class could seek only injunctive relief rather than monetary damages. Named plaintiffs, however, could continue to prosecute their claims for personal injury, property damage, and punitive damages. In August 2009, in response to defendants' motions, the Court dismissed the named plaintiffs' claims for personal injury and punitive damages, and denied the motion with respect to their property damage claims. In September 2009, the Court granted defendants' motion for summary judgment on the class plaintiffs' claim for injunctive relief. In October 2009, plaintiffs appealed the Court's summary judgment order dismissing the claim for injunctive relief and in March 2011, the U.S. Court of Appeals for the Third Circuit dismissed plaintiffs' appeal of that order. In September 2011, the parties reached an oral agreement to settle the remaining claims in the case which would resolve the personal property damage claims of the 12 remaining individual plaintiffs. On March 12, 2012, final judgment was entered in the District Court for the District of the Virgin Islands. Alcoa's share of the settlement is fully insured. On March 23, 2012, plaintiffs filed a notice of appeal of numerous non-settled matters, including but not limited to discovery orders, Daubert rulings, summary judgment rulings, as more clearly set out in the settlement agreement/release between the parties. Plaintiffs' appellate brief was filed in the Third Circuit Court on January 4, 2013, together with a motion seeking leave to file a brief of excess length. The court has suspended the remainder of the briefing schedule, including the date for Alcoa's reply brief, until it rules on plaintiffs' motion to file its brief of excess length. The Third Circuit Court of Appeals issued a new scheduling order regarding briefing in the matter. The matter has been fully briefed with plaintiffs' brief filed on November 25, 2013 and the matter is now before the court. On July 10, 2014, the Third Circuit Court of Appeals affirmed the dismissal by the district court and the case is now concluded. There will be no further reporting of this matter.

Abednego. As previously reported, on January 14, 2010, Alcoa was served with a complaint involving approximately 2,900 individual persons claimed to be residents of St. Croix who are alleged to have suffered personal injury or property damage from Hurricane Georges or winds blowing material from the property since the time of the hurricane. This complaint, *Abednego, et al. v. Alcoa, et al.* was filed in the Superior Court of the Virgin Islands, St. Croix Division. The complaint names as defendants the same entities as were sued in the February 1999 action earlier described and have added as a defendant the current owner of the alumina facility property. In February 2010, Alcoa and SCA removed the case to the federal court for the District of the Virgin Islands. Subsequently, plaintiffs filed motions to remand the case to territorial court as well as a third amended complaint, and defendants have moved to dismiss the case for failure to state a claim upon which relief can be granted. On March 17, 2011, the court granted plaintiffs' motion to remand to territorial court. Thereafter, Alcoa filed a motion for allowance of appeal. The motion was denied on May 18, 2011. The parties await assignment of the case to a trial judge.

Phillip Abraham. As previously reported, on March 1, 2012, Alcoa was served with a complaint involving approximately 200 individual persons claimed to be residents of St. Croix who are alleged to have suffered personal injury or property damage from Hurricane Georges or winds blowing material from the property since the time of the hurricane in September 1998. This complaint, *Abraham, et al. v. Alcoa, et al.* alleges claims essentially identical to those set forth in the *Abednego v. Alcoa* complaint. The matter was originally filed in the Superior Court of the Virgin Islands, St. Croix Division, on March 30, 2011. By motion filed March 12, 2012, Alcoa sought dismissal of this complaint on several grounds, including failure to timely serve the complaint and being barred by the statute of limitations. That motion is still pending.

Other Matters

As previously reported, along with various asbestos manufacturers and distributors, Alcoa and its subsidiaries as premises owners are defendants in several hundred active lawsuits filed on behalf of persons alleging injury

predominantly as a result of occupational exposure to asbestos at various Company facilities. In addition, an Alcoa subsidiary company has been named, along with a large common group of industrial companies, in a pattern complaint where the Company's involvement is not evident. Since 1999, several thousand such complaints have been filed. To date, the subsidiary has been dismissed from almost every case that was actually placed in line for trial. Alcoa, its subsidiaries and acquired companies, all have had numerous insurance policies over the years that provide coverage for asbestos based claims. Many of these policies provide layers of coverage for varying periods of time and for varying locations. Alcoa has significant insurance coverage and believes that its reserves are adequate for its known asbestos exposure related liabilities. The costs of defense and settlement have not been and are not expected to be material to the results of operations, cash flows, and financial position of the Company.

As previously reported, in November 2006, in *Curtis v. Alcoa Inc.*, Civil Action No. 3:06cv448 (E.D. Tenn.), a class action was filed by plaintiffs representing approximately 13,000 retired former employees of Alcoa or Reynolds Metals Company and spouses and dependents of such retirees alleging violation of the Employee Retirement Income Security Act (ERISA) and the Labor-Management Relations Act by requiring plaintiffs, beginning January 1, 2007, to pay health insurance premiums and increased co-payments and co-insurance for certain medical procedures and prescription drugs. Plaintiffs alleged these changes to their retiree health care plans violated their rights to vested health care benefits. Plaintiffs additionally alleged that Alcoa had breached its fiduciary duty to plaintiffs under ERISA by misrepresenting to them that their health benefits would never change. Plaintiffs sought injunctive and declaratory relief, back payment of benefits, and attorneys' fees. Alcoa had consented to treatment of plaintiffs' claims as a class action. During the fourth quarter of 2007, following briefing and argument, the court ordered consolidation of the plaintiffs' motion for preliminary injunction with trial, certified a plaintiff class, and bifurcated and stayed the plaintiffs' breach of fiduciary duty claims. Trial in the matter was held over eight days commencing September 22, 2009 and ending on October 1, 2009 in federal court in Knoxville, TN before the Honorable Thomas Phillips, U.S. District Court Judge.

On March 9, 2011, the court issued a judgment order dismissing plaintiffs' lawsuit in its entirety with prejudice for the reasons stated in its Findings of Fact and Conclusions of Law. On March 23, 2011, plaintiffs filed a motion for clarification and/or amendment of the judgment order, which sought, among other things, a declaration that plaintiffs' retiree benefits are vested subject to an annual cap and an injunction preventing Alcoa, prior to 2017, from modifying the plan design to which plaintiffs are subject or changing the premiums and deductibles that plaintiffs must pay. Also on March 23, 2011, plaintiffs filed a motion for award of attorneys' fees and expenses. On June 11, 2012, the court issued its memorandum and order denying plaintiffs' motion for clarification and/or amendment to the original judgment order. On July 6, 2012, plaintiffs filed a notice of appeal of the court's March 9, 2011 judgment. On July 12, 2012, the trial court stayed Alcoa's motion for assessment of costs pending resolution of plaintiffs' appeal. The appeal was docketed in the United States Court of Appeals for the Sixth Circuit as case number 12-5801. On August 29, 2012, the trial court dismissed plaintiffs' motion for attorneys' fees without prejudice to refiling the motion following the resolution of the appeal at the Sixth Circuit Court of Appeals. On May 9, 2013, the Sixth Circuit Court of Appeals issued an opinion affirming the trial court's denial of plaintiffs' claims for lifetime, uncapped retiree healthcare benefits. Plaintiffs filed a petition for rehearing on May 22, 2013 to which Alcoa filed a response on June 7, 2013. On September 12, 2013, the Sixth Circuit Court of Appeals denied plaintiffs' petition for rehearing. On December 17, 2013 the United States Supreme Court docketed the plaintiffs' petition for writ of certiorari to the Sixth Circuit Court of Appeals as *Charles Curtis, et al., Individually and on Behalf of All Others Similarly Situated, Petitioners v. Alcoa Inc., et al.*, Docket No.13-728. Alcoa's opposition to this petition was filed on January 16, 2014 and Petitioners filed their reply on January 29, 2014. On February 24, 2014, the Supreme Court denied plaintiffs' petition. The Supreme Court's refusal to hear the matter ended the substantive litigation and affirmed Alcoa's collectively bargained cap on the Company's contributions to union retiree medical costs.

The trial court then considered Alcoa's request for an award of costs, which had been stayed pending resolution of the appeal, and the plaintiffs' request for attorneys' fees, which had been dismissed without prejudice to refiling following resolution of the appeal. By order dated June 26, 2014, the trial court denied plaintiff's petition for award of attorneys' fees and expenses. Thereafter, the plaintiffs and Alcoa agreed to dismiss their respective petitions for fees and costs. This case has been fully resolved.

As previously reported, on August 2, 2013, the State of North Carolina, by and through its agency, the North Carolina Department of Administration, filed a lawsuit against Alcoa Power Generating, Inc. in Superior Court, Wake County, North Carolina (Docket No. 13-CVS-10477). The lawsuit asserts ownership of certain submerged lands and hydropower generating structures situated at Alcoa's Yadkin Hydroelectric Project (the Yadkin Project), including the submerged riverbed of the Yadkin River throughout the Yadkin Project and a portion of the hydroelectric dams that Alcoa owns and operates pursuant to a license from the Federal Energy Regulatory Commission. The suit seeks declaratory relief regarding North Carolina's alleged ownership interests in the riverbed and the dams and further declaration that Alcoa has no right, license or permission from North Carolina to operate the Yadkin Project. By notice filed on September 3, 2013, Alcoa removed the matter to the U.S. District Court for the Eastern District of North Carolina (Docket No. Civil Action No. 5:13-cv-633). By motion filed September 3, 2013, the Yadkin Riverkeeper sought permission to intervene in the case. On September 25, 2013, Alcoa filed its answer in the case and also filed its opposition to the motion to intervene by the Yadkin Riverkeeper. The Court denied the State's Motion to Remand and initially permitted the Riverkeeper to intervene although the Riverkeeper has now voluntarily withdrawn as an intervening party and will participate as amicus. The parties filed a Joint Rule 26(f) Report and Discovery Plan which was modified by the Court on January 8, 2014. The order provided that the case would be ready for trial on October 31, 2014 and provided a schedule for discovery and other pretrial activity. On July 21, 2014, the parties each filed a motion for summary judgment. The Court has not issued a ruling on those motions. On November 20, 2014, the Court denied Alcoa's motion for summary judgment and denied in part and granted in part the State of North Carolina's motions for summary judgment. The Court held that under North Carolina law, the burden of proof as to title to property is shifted to a private party opposing a state claim of property ownership. The Court held a pre-trial conference on February 2, 2015. The court has ordered trial to commence on April 21, 2015. At this time, the Company is unable to reasonably predict an outcome for this matter.

As previously reported, 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 expects to file an appeal of this second assessment in Spain's National Court in March 2015.

The combined assessments (remeasured for a tax rate change enacted in November 2014) total \$277 million (€ 228 million). 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.

As previously reported, between 2000 and 2002, 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 Brasília (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 December 31, 2014, the assessment totaled \$49 million (R\$130 million), including penalties and interest. While the Company believes it has meritorious defenses, the Company is unable to reasonably predict an outcome.

Other Contingencies

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.

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 Regulation S-K (17 CFR 229.104) is included in Exhibit 95 of this report, which is incorporated herein by reference.

PART II**Item 5. Market for Registrant's Common Equity, Related Stockholder Matters and Issuer Purchases of Equity****Securities.**

The Company's common stock is listed on the New York Stock Exchange where it trades under the symbol AA. The Company's quarterly high and low trading stock prices and dividends per common share for 2014 and 2013 are shown below.

Quarter	2014			2013		
	High	Low	Dividend	High	Low	Dividend
First	\$ 12.97	\$ 9.82	\$ 0.03	\$ 9.37	\$ 8.30	\$ 0.03
Second	15.18	12.34	0.03	8.88	7.71	0.03
Third	17.36	14.56	0.03	8.68	7.63	0.03
Fourth	17.75	13.71	0.03	10.77	7.82	0.03
Year	17.75	9.82	\$ 0.12	10.77	7.63	\$ 0.12

The number of holders of record of common stock was approximately 10,472 as of February 17, 2015.

Stock Performance Graph

The following graph compares the most recent five-year performance of Alcoa's common stock with (1) the Standard & Poor's 500 Index and (2) the Standard & Poor's 500 Materials Index, a group of 29 companies categorized by Standard & Poor's as active in the materials market sector. Such information shall not be deemed to be filed.

As of December 31,	2009	2010	2011	2012	2013	2014
Alcoa Inc.	\$ 100	\$ 96	\$ 55	\$ 56	\$ 69	\$ 103
S&P 500® Index	100	115	117	136	180	205
S&P 500® Materials Index	100	122	110	127	159	170

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Source: Research Data Group, Inc. (www.researchdatagroup.com/S&P.htm)

Issuer Purchases of Equity Securities

Period	Total Number of Shares Purchased (a)	Average Price Paid Per Share	Total Number of Shares Purchased as Part of Publicly Announced Repurchase Plans or Programs	Maximum Number of Shares that May Yet Be Purchased Under the Plans or Programs
January 1 - January 31, 2014	3,754	\$ 11.36	-	-
February 1 - February 28, 2014	-	-	-	-
March 1 - March 31, 2014	-	-	-	-
Total for quarter ended March 31, 2014	3,754	\$ 11.36	-	-
April 1 - April 30, 2014	-	-	-	-
May 1 - May 31, 2014	-	-	-	-
June 1 - June 30, 2014	-	-	-	-
Total for quarter ended June 30, 2014	-	-	-	-
July 1 - July 31, 2014	-	-	-	-
August 1 - August 31, 2014	-	-	-	-
September 1 - September 30, 2014	-	-	-	-
Total for quarter ended September 30, 2014	-	-	-	-
October 1 - October 31, 2014	-	-	-	-
November 1 - November 30, 2014	-	-	-	-
December 1 - December 31, 2014	2,075	\$ 17.45	-	-
Total for quarter ended December 31, 2014	2,075	\$ 17.45	-	-

- (a) This column includes the deemed surrender of existing shares of Alcoa common stock to the Company by stock-based compensation plan participants to satisfy the exercise price of employee stock options at the time of exercise. These surrendered shares are not part of any publicly announced share repurchase program.

Item 6. Selected Financial Data.

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

For the year ended December 31,	2014	2013	2012	2011	2010
Sales	\$ 23,906	\$ 23,032	\$ 23,700	\$ 24,951	\$ 21,013
Amounts attributable to Alcoa common shareholders:					
Income (loss) from continuing operations	\$ 268	\$ (2,285)	\$ 191	\$ 614	\$ 262
Loss from discontinued operations	-	-	-	(3)	(8)
Net income (loss)	\$ 268	\$ (2,285)	\$ 191	\$ 611	\$ 254
Earnings per share attributable to Alcoa common shareholders:					
Basic:					
Income (loss) from continuing operations	\$ 0.21	\$ (2.14)	\$ 0.18	\$ 0.58	\$ 0.25
Loss from discontinued operations	-	-	-	(0.01)	-
Net income (loss)	\$ 0.21	\$ (2.14)	\$ 0.18	\$ 0.57	\$ 0.25
Diluted:					
Income (loss) from continuing operations	\$ 0.21	\$ (2.14)	\$ 0.18	\$ 0.55	\$ 0.25
Loss from discontinued operations	-	-	-	-	(0.01)
Net income (loss)	\$ 0.21	\$ (2.14)	\$ 0.18	\$ 0.55	\$ 0.24
Shipments of alumina (kmt)	10,652	9,966	9,295	9,218	9,246
Shipments of aluminum products (kmt)	4,794	4,994	5,197	5,037	4,757
Alcoa's average realized price per metric ton of primary aluminum	\$ 2,405	\$ 2,243	\$ 2,327	\$ 2,636	\$ 2,356
Cash dividends declared per common share	\$ 0.12	\$ 0.12	\$ 0.12	\$ 0.12	\$ 0.12
Total assets	37,399	35,742	40,179	40,120	39,293
Total debt	8,852	8,319	8,829	9,371	9,165
Cash provided from operations	1,674	1,578	1,497	2,193	2,261
Capital expenditures	1,219	1,193	1,261	1,287	1,015

The data presented in the Selected Financial Data table should be read in conjunction with the information provided in Management's Discussion and Analysis of Financial Condition and Results of Operations in Part II Item 7 and the Consolidated Financial Statements in Part II Item 8 of this Form 10-K.

Item 7. 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])

Overview**Our Business**

Alcoa is a global leader in lightweight metals engineering and manufacturing. Alcoa's innovative, multi-material products, which include aluminum, titanium, and nickel, are used worldwide in aircraft, automobiles, commercial transportation, packaging, building and construction, oil and gas, defense, consumer electronics, and industrial applications.

Alcoa is also the world leader in the production and management of primary aluminum, fabricated aluminum, and alumina combined, through its active participation in all major aspects of the industry: technology, mining, refining, smelting, fabricating, and recycling. Aluminum is a commodity that is traded on the London Metal Exchange (LME) and priced daily. Sales of primary aluminum and alumina represent approximately 40% of Alcoa's revenues. The price of aluminum influences the operating results of Alcoa.

Alcoa is a global company operating in 30 countries. Based upon the country where the point of sale occurred, the United States and Europe generated 51% and 27%, respectively, of Alcoa's sales in 2014. In addition, Alcoa has investments and operating activities in, among others, Australia, Brazil, China, Guinea, Iceland, Russia, and Saudi Arabia, all of which present opportunities for substantial growth. Governmental policies, laws and regulations, and other economic factors, including inflation and fluctuations in foreign currency exchange rates and interest rates, affect the results of operations in these countries.

Management Review of 2014 and Outlook for the Future

In 2014, growth in global aluminum demand reached 7%, which was consistent with management's projection at the end of 2013. The LME price of aluminum remained relatively stable compared to 2013; however, regional premiums increased substantially, significantly benefitting the smelting portion of Alcoa's upstream operations. The refining portion of the upstream operations continued to make progress in shifting customer pricing away from the LME aluminum price to a mixture of alumina pricing index and spot pricing. Additionally, the midstream and downstream operations continued to grow revenue through innovations and share gains. Cost headwinds continued to be a challenge; however, management was able to more than offset these with net productivity improvements across all operations. Alcoa also realized the benefit of a stronger U.S. dollar in 2014 compared to 2013. As a result of all of the foregoing, each of Alcoa's operations achieved improved results over 2013.

Separately from the 2014 operational results, management initiated a number of portfolio actions during the year. In the upstream operations, following similar actions taken in 2013, smelting capacity of 424 kmt was permanently closed (of which 150 kmt was previously curtailed) and 159 kmt was temporarily curtailed, which in turn led to the temporary curtailment of 200 kmt in refining capacity. Additionally, in the midstream operations, 200 kmt of can sheet capacity was permanently closed. Management also completed the divestiture of four operations within the upstream and midstream operations that were no longer part of the strategic direction of Alcoa. These included a majority ownership interest in both a mining and refining joint venture and a smelter and wholly-owned interests in three rolling mills and an aluminum rod plant. From a growth perspective, Alcoa completed the acquisition of an aerospace business and entered into an agreement to purchase another, both of which will enhance the portfolio of Alcoa's downstream operations.

Management continued its focus on liquidity and cash flows, generating incremental improvements in procurement efficiencies, overhead rationalization, working capital, and disciplined capital spending. This focus and the related results enabled Alcoa to end 2014 with a strengthened balance sheet.

The following financial information reflects certain key measures of Alcoa's 2014 results:

Sales of \$23,906 and Net income of \$268, or \$0.21 per diluted share;

Total segment after-tax operating income of \$2,043, an increase of 68% from 2013;

Cash from operations of \$1,674, reduced by pension plan contributions of \$501;

Capital expenditures of \$1,219, under \$1,500 for the fifth consecutive year;

Cash on hand at the end of the year of \$1,877, in excess of \$1,400 for the sixth consecutive year;

Increase in total debt of \$533, but a decline of \$1,726 since 2008; and

Debt-to-capital ratio of 37.4%, a decrease of 70 basis points from 2013.

In 2015, management is projecting continued growth (increase of 7%) in the global consumption of primary aluminum, consistent with that of the last three years, led by China at an estimated 10%. All other regions in the world are expected to have positive growth in aluminum demand over 2013, including North America at an estimated 5%. After considering forecasted added production, along with few industry-wide capacity curtailments, management anticipates a balanced aluminum market. For alumina, growth in global consumption is estimated to be 6%, and supply is expected to slightly exceed overall demand due to added production in China, as well as other parts of the world.

Management also anticipates improved market conditions for value-added products in the aerospace, automotive, building and construction, packaging, and industrial gas turbine global end markets, despite declines in certain regions, while the commercial transportation global end market is expected to be flat.

Aerospace is expected to be driven by large commercial aircraft due to an eight-year order backlog, as well as strength in orders for regional jets. For automotive, growth is anticipated in both the United States, due to the replacement of older vehicles, low borrowing rates, and the decline in gasoline prices, and China, due to new clean air legislation and a continued increase in the percentage of the population driving automobiles. In building and construction, awarded nonresidential contracts are up once again in North America while the decline in Europe continues. For packaging, growth in China and Europe, mainly driven by the penetration of aluminum in the growing beer segment and the continued conversion from steel cans to aluminum cans, respectively, is expected to more than offset a slight decrease in North America. Industrial gas turbines are expected to see growth as a result of new demand for high technology turbines and upgrades of existing turbines. In commercial transportation, strong production in North America, underpinned by significant order backlog, is expected to be offset by weakness in Europe, including from the impact of sanctions on Russia.

On a company-wide basis, management has established and is committed to achieving the following specific goals in 2015:

generating incremental savings over those realized in 2014 from procurement, overhead, and working capital programs;

generating cash from operations that will exceed capital spending by a minimum of \$500; and

maintaining a debt-to-EBITDA ratio between 2.25 and 2.75.

Looking ahead over the next two years, management will focus on the 2016 strategic targets that were set at the end of 2013. These targets include lowering Alcoa's refining and smelting operations on the respective global cost curves to the 21st (from 27th) and 38th (from 43rd) percentiles, respectively. Additionally, the targets include driving revenue growth, while improving margins that meet or exceed historical levels, in the midstream (increase of \$1,000) and downstream (increase of \$1,200) operations, of which 90% and 75%, respectively, is expected to be generated from innovation and share gains. The following describes the progress made on these targets in 2014 as well as future expectations.

At December 31, 2014, Alcoa's refining operations were at the 25th percentile, a two-percentage point improvement, and its smelting operations were at the 43rd percentile on the respective cost curves. In 2014, actions taken to improve Alcoa's position on the cost curve for both refining and smelting operations included productivity improvements, both new initiatives as well as the full realization of those implemented in 2013. Additionally, for the refining operations, Alcoa curtailed approximately 200 kmt of high-cost capacity and increased production by approximately 200 kmt from low-cost capacity. The smelting operations also permanently closed 274 kmt of high cost capacity in Australia and the United States. While the benefits of these actions can be seen in Alcoa's improved position on the refining cost curve at the end of 2014, the benefits in the smelting operations were offset by the strong U.S. dollar.

Other actions taken in 2014 to help drive a lower position on the respective cost curves include the sales of ownership interests in a mining and refining joint venture in Jamaica and a smelter in the United States. The sales of these operations occurred late in 2014; therefore, management expects to realize the benefits of divesting this high-cost capacity in 2015. Also in late 2014, the refining operations

completed the conversion of the fuel source from fuel oil to natural gas at a refinery in Spain and the smelting operations renewed power contracts at each of the three smelters in Canada, all of which are expected to yield significant cost savings beginning in 2015. Additionally, as previously mentioned, Alcoa has initiatives to drive further productivity improvements during 2015. Furthermore, the smelter and the refinery at the joint venture in Saudi Arabia are fully operational and are expected to provide a two-percentage point reduction on each of the respective cost curves by the end of 2016.

In 2014, the midstream and downstream operations generated revenue of \$7,351 and \$6,006, respectively, representing an increase of \$245 and \$273 (\$81 was related to an acquisition see below), respectively, compared to the 2013 baselines. The increase related to the midstream operations was mostly due to rising demand for aluminum sheet from the U.S. automotive end market as a result of changing emission regulations. A significant portion of this demand is being met by Alcoa's Davenport, IA rolling mill facility, which completed an expansion to meet this demand in January 2014. For the downstream operations, the increase (excluding the acquisition) was largely attributable to higher demand for both Alcoa's fasteners and jet engine components products from the commercial aerospace end market and Alcoa's aluminum wheels in the commercial transportation end market.

Beyond the improvement in 2014, revenue growth for both the midstream and downstream operations is expected from multiple sources. In mid 2014, Alcoa entered into two \$1,000 multi-year supply agreements with two major customers, one to supply aluminum sheet and plate from the midstream operations and the other to supply jet engine components from the downstream operations. Additionally, the midstream operations anticipate positive contributions from both the Davenport facility, as production continues to ramp-up to serve growing demand, and Alcoa's Tennessee rolling mill facility, which expects to complete an expansion to meet automotive demand in 2015. Likewise, the downstream operations expect favorable results from projects completed in late 2014 or expected to be completed in 2015 to meet growing demand in both the aerospace and commercial transportation end markets. These projects include an expansion of aluminum lithium capabilities in Lafayette, IN, expansions in LaPorte, IN and Hampton, VA to provide nickel-based super alloy structural components and airfoil blades for jet engines, and an expansion at a facility in Hungary to double production of aluminum wheels.

Separately from the organic growth described above, Alcoa acquired an aerospace jet engine components company, Firth Rixson, in November 2014. Firth Rixson generated approximately \$970 of revenue in 2014 (of which \$81 was reflected in Alcoa's Statement of Consolidated Income) and is expected to generate approximately \$1,600 of revenue by 2016. See Engineered Products and Solutions in Segment Information under Results of Operations below.

Results of Operations

Earnings Summary

Net income attributable to Alcoa for 2014 was \$268, or \$0.21 per diluted share, compared with Net loss attributable to Alcoa of \$2,285, or \$2.14 per share, in 2013. The improvement in results of \$2,553 was primarily due to the absence of all of the following: an impairment of goodwill, a discrete income tax charge for valuation allowances on certain deferred tax assets, and charges for the resolution of a legal matter. Other significant changes in results included the following: higher energy sales, a higher average realized price for primary aluminum, net productivity improvements, and net favorable foreign currency movements. These other changes were mostly offset by higher charges related to a number of portfolio actions (e.g., capacity reductions, divestitures, acquisitions), higher overall input costs, and an unfavorable change in income taxes due to higher operating results.

Net loss attributable to Alcoa for 2013 was \$2,285, or \$2.14 per share, compared with Net income attributable to Alcoa of \$191, or \$0.18 per share, in 2012. The decrease in results of \$2,476 was mostly due to an impairment of goodwill, a discrete income tax charge for valuation allowances on certain deferred tax assets, and charges for the resolution of a legal matter. Other significant changes in results included the following: a lower average realized price for aluminum in the upstream and midstream businesses, higher input costs across three of the four segments, the absence of a gain on the sale of U.S. hydroelectric power assets, and restructuring and other charges related to the permanent shutdown

of smelter capacity. These other changes were mostly offset by net productivity improvements, net favorable foreign currency movements, the absence of both a net charge for certain environmental remediation matters and a charge for the civil portion of a legal matter, and stronger volumes in three of the four segments.

Sales Sales for 2014 were \$23,906 compared with sales of \$23,032 in 2013, an improvement of \$874, or 4%. The increase was mainly the result of higher volumes in the midstream, downstream, and alumina portion of the upstream operations, higher energy sales resulting from excess power due to curtailed smelter capacity, increased buy/resell activity for primary aluminum, and a higher average realized price for primary aluminum. These items were partially offset by lower primary aluminum volumes, including those related to curtailed and shutdown smelter capacity, and unfavorable price/product mix in the midstream operations.

Sales for 2013 were \$23,032 compared with sales of \$23,700 in 2012, a decline of \$668, or 3%. The decrease was primarily due to lower primary aluminum volumes, including those related to curtailed and shutdown smelter capacity, a decline in the average realized price for primary aluminum, driven by lower London Metal Exchange (LME) prices, and unfavorable pricing in the midstream segment due to a decrease in metal prices. These items were somewhat offset by higher volumes in the alumina portion of the upstream operations and the midstream and downstream operations.

Cost of Goods Sold COGS as a percentage of Sales was 80.1% in 2014 compared with 83.7% in 2013. The percentage was positively impacted by net productivity improvements across all segments, both the previously mentioned higher energy sales and higher average realized price for primary aluminum, net favorable foreign currency movements due to a stronger U.S. dollar, lower costs for caustic and carbon, and the absence of costs related to a planned maintenance outage in 2013 at a power plant in Australia. These items were partially offset by higher costs for bauxite, energy, and labor, write-offs of inventory related to the decisions to permanently shut down certain smelter and rolling mill capacity (difference of \$58 see Restructuring and Other Charges below), and costs related to a new labor agreement that covers employees at 10 locations in the United States (see below).

On June 6, 2014, the United Steelworkers ratified a new five-year labor agreement covering approximately 6,100 employees at 10 U.S. locations; the previous labor agreement expired on May 15, 2014. In 2014, as a result of the preparation for and ratification of the new agreement, Alcoa recognized \$18 (\$12 after-tax) in COGS for, among other items, business contingency costs and a one-time signing bonus for employees. Additionally, as a result of the provisions of the new labor agreement, a significant plan amendment was adopted by one of Alcoa's U.S. pension plans. Accordingly, this plan was required to be remeasured, which resulted in a \$13 decrease to 2014 net periodic benefit cost.

COGS as a percentage of Sales was 83.7% in 2013 compared with 86.1% in 2012. The percentage was positively impacted by net productivity improvements across all segments, the absence of a net charge for five environmental remediation matters (\$194), net favorable foreign currency movements due to a stronger U.S. dollar, and a positive impact related to the March 2012 fire at the cast house in Massena, NY (insurance recovery in 2013 plus the absence of business interruption and repair costs that occurred in 2012). These items were partially offset by the previously mentioned realized price impacts and higher input costs, including those related to bauxite mining and a planned maintenance outage at a power plant.

Selling, General Administrative, and Other Expenses SG&A expenses were \$995, or 4.2% of Sales, in 2014 compared with \$1,008, or 4.4% of Sales, in 2013. The decline of \$13 was due to decreases in various expenses, including legal and consulting fees and contract services, mostly offset by costs associated with an acquisition of an aerospace business (\$42 see Engineered Products and Solutions in Segment Information below) and higher stock-based compensation expense.

SG&A expenses were \$1,008, or 4.4% of Sales, in 2013 compared with \$997, or 4.2% of Sales, in 2012. The increase of \$11 was principally the result of higher labor costs, partially offset by a decrease in professional expenses and contract services and lower bad debt expense.

Research and Development Expenses R&D expenses were \$218 in 2014 compared with \$192 in 2013 and \$197 in 2012. The increase in 2014 as compared to 2013 was primarily caused by spending related to an upgrade of a Micromill in San Antonio, TX for the Global Rolled Products segment and additional spending related to inert anode and carbothermic technology for the Primary Metals segment. The decrease in 2013 as compared to 2012 was mainly driven by lower spending related to inert anode and carbothermic technology for the Primary Metals segment and other various projects, mostly offset by spending related to an upgrade of a Micromill in San Antonio, TX for the Global Rolled Products segment. The Micromill upgrade is expected to be completed by the end of 2015 and, as a result, the Micromill will develop and qualify aluminum products for the automotive end market.

Provision for Depreciation, Depletion, and Amortization The provision for DD&A was \$1,371 in 2014 compared with \$1,421 in 2013. The decrease of \$50, or 4%, was principally the result of net favorable foreign currency movements due to a stronger U.S. dollar, particularly against the Australian dollar and Brazilian real, and a reduction in expense related to the permanent shutdown of smelter capacity in Australia, Canada, the United States, and Italy that occurred at different points during both 2013 and 2014 (see Primary Metals in Segment Information below). These items were somewhat offset by new DD&A associated with both the acquisition of an aerospace business in November 2014 (see Engineered Products and Solutions in Segment Information below) and assets placed into service in January 2014 related to the completed automotive expansion at the Davenport, IA plant.

The provision for DD&A was \$1,421 in 2013 compared with \$1,460 in 2012. The decrease of \$39, or 3%, was mostly due to net favorable foreign currency movements due to a stronger U.S. dollar, particularly against the Australian dollar and Brazilian real; a reduction in expense related to the permanent shutdown of smelter capacity in Canada, the United States, and Italy that occurred mid-2013 (see Primary Metals in Segment Information below); and the absence of expense due to the divestiture of U.S. hydroelectric power assets in late 2012 (see Primary Metals in Segment Information below). These items were slightly offset by new depreciation associated with a hydroelectric power project in Brazil (Machadinho). In early 2013, there was a change in the legal structure of the entity that owned the project resulting in Alcoa recording its 30.99% share of the project's assets directly, whereas in 2012, Alcoa's share was recorded as an equity method investment.

Impairment of Goodwill In 2013, Alcoa recognized an impairment of goodwill in the amount of \$1,731 (\$1,719 after noncontrolling interest) related to the annual impairment review of the Primary Metals segment (see Goodwill in Critical Accounting Policies and Estimates below).

Restructuring and Other Charges Restructuring and other charges for each year in the three-year period ended December 31, 2014 were comprised of the following:

	2014	2013	2012
Asset impairments	\$ 406	\$ 116	\$ 40
Net loss on divestitures of businesses	332	-	-
Layoff costs	259	201	47
Resolution of a legal matter	-	391	85
Other	199	82	21
Reversals of previously recorded layoff and other exit costs	(28)	(8)	(21)
Restructuring and other charges	\$ 1,168	\$ 782	\$ 172

Layoff costs were recorded based on approved detailed action plans submitted by the operating locations that specified positions to be eliminated, benefits to be paid under existing severance plans, union contracts or statutory requirements, and the expected timetable for completion of the plans.

2014 Actions. In 2014, Alcoa recorded Restructuring and other charges of \$1,168 (\$703 after-tax and noncontrolling interest), which were comprised of the following components: \$693 (\$443 after-tax and noncontrolling interest) for exit costs related to decisions to permanently shut down and demolish three smelters and two rolling mills (see below); \$332 (\$163 after-tax and noncontrolling interest) for the divestitures of four operations (see Alumina, Primary Metals,

and Global Rolled Products in Segment Information below); \$68 (\$45 after-tax and noncontrolling interest) for the temporary curtailment of two smelters and a related production slowdown at one refinery (see below); \$51 (\$36 after-tax and noncontrolling interest) for layoff costs, including the separation of approximately 1,120 employees (550 in the Engineered Products and Solutions segment, 45 in the Global Rolled Products segment, 60 in the Alumina and Primary Metals segments combined, and 465 in Corporate); \$34 (\$26 after-tax) for asset impairments related to prior capitalized costs for a modernization project at a smelter in Canada that is no longer being pursued; a net charge of \$18 (\$11 after-tax and noncontrolling interest) for other miscellaneous items, including \$2 (\$2 after-tax) for asset impairments and accelerated depreciation; and \$28 (\$21 after-tax and noncontrolling interest) for the reversal of a number of layoff reserves related to prior periods, including those associated with a smelter in Italy due to changes in facts and circumstances (see below).

In early 2014, management approved the permanent shutdown and demolition of the remaining capacity (84 kmt-per-year) at the Massena East smelter in New York and the full capacity (190 kmt-per-year) at the Point Henry smelter in Australia. The capacity at Massena East was fully shut down by the end of March 2014 and the Point Henry smelter was fully shut down in August 2014. Demolition and remediation activities related to both the Massena East and Point Henry smelters began in late 2014 and are expected to be completed by the end of 2020 and 2018, respectively.

The decisions on the Massena East and Point Henry smelters were part of a 15-month review of 460 kmt of smelting capacity initiated by management in May 2013 (see 2013 Actions below) for possible curtailment. Through this review, management determined that the remaining capacity of the Massena East smelter was no longer competitive and the Point Henry smelter had no prospect of becoming financially viable. Management also initiated the temporary curtailment of the remaining capacity (62 kmt-per-year) at the Poços de Caldas smelter and additional capacity (85 kmt-per-year) at the São Luís smelter, both in Brazil. These curtailments were completed by the end of May 2014. As a result of these curtailments, 200 kmt-per-year of production at the Poços de Caldas refinery was reduced by the end of June 2014.

Also in early 2014, management approved the permanent shutdown of Alcoa's two rolling mills in Australia, Point Henry and Yennora. This decision was made due to the significant impact of excess can sheet capacity in both Australia and Asia. The two rolling mills had a combined can sheet capacity of 200 kmt-per-year and were closed by the end of 2014. Demolition and remediation activities related to the two rolling mills will begin in 2015 and are expected to be completed by the end of 2018.

Additionally, in August 2014, management approved the permanent shutdown and demolition of the capacity (150 kmt-per-year) at the Portovesme smelter in Italy, which had been idle since November 2012. This decision was made because the fundamental reasons that made the Portovesme smelter uncompetitive remained unchanged, including the lack of a viable long-term power solution. Demolition and remediation activities related to the Portovesme smelter will begin in 2015 and are expected to be completed by the end of 2019.

In 2014, costs related to the shutdown and curtailment actions included \$208 for the layoff of approximately 1,790 employees (1,210 in the Primary Metals segment, 470 in the Global Rolled Products segment, 80 in the Alumina segment, and 30 in Corporate), including \$26 in pension costs; accelerated depreciation of \$204 related to the three facilities in Australia as they continued to operate during 2014; asset impairments of \$166 representing the write-off of the remaining book value of all related properties, plants, and equipment; and \$183 in other exit costs. Additionally in 2014, remaining inventories, mostly operating supplies and raw materials, were written down to their net realizable value, resulting in a charge of \$67 (\$47 after-tax and noncontrolling interest), which was recorded in Cost of goods sold on Alcoa's Statement of Consolidated Operations. The other exit costs represent \$95 in asset retirement obligations and \$42 in environmental remediation, both of which were triggered by the decisions to permanently shut down and demolish the aforementioned structures in Australia, Italy, and the United States, and \$46 in other related costs, including supplier and customer contract-related costs.

As of December 31, 2014, approximately 2,185 of the 2,910 employees were separated. The remaining separations for the 2014 restructuring programs are expected to be completed by the end of 2015. In 2014, cash payments of \$141 were made against layoff reserves related to the 2014 restructuring programs.

2013 Actions. In 2013, Alcoa recorded Restructuring and other charges of \$782 (\$585 after-tax and noncontrolling interests), which were comprised of the following components: \$391 (\$305 after-tax and noncontrolling interest) related to a legal matter; \$245 (\$183 after-tax) for exit costs related to the permanent shutdown and demolition of certain structures at three smelter locations (see below); \$87 (\$61 after-tax and noncontrolling interests) for layoff costs, including the separation of approximately 1,110 employees (340 in the Primary Metals segment, 260 in the Engineered Products and Solutions segment, 250 in the Global Rolled Products segment, 85 in the Alumina segment, and 175 in Corporate), of which 590 relates to a global overhead reduction program, and \$9 in pension plan settlement charges related to previously separated employees; \$25 (\$17 after-tax) in net charges, including \$12 (\$8 after-tax) for asset impairments, related to retirements and/or the sale of previously idled structures; \$25 (\$13 after-tax and noncontrolling interests) for asset impairments related to the write-off of capitalized costs for projects no longer being pursued due to the market environment; a net charge of \$17 (\$12 after-tax and noncontrolling interests) for other miscellaneous items, including \$3 (\$2 after-tax) for asset impairments; and \$8 (\$6 after-tax and noncontrolling interests) for the reversal of a number of small layoff reserves related to prior periods.

In May 2013, management approved the permanent shutdown and demolition of two potlines (capacity of 105 kmt-per-year) that utilize Soderberg technology at the Baie Comeau smelter in Québec, Canada (remaining capacity of 280 kmt-per-year composed of two prebake potlines) and the full capacity (44 kmt-per-year) at the Fusina smelter in Italy. Additionally, in August 2013, management approved the permanent shutdown and demolition of one potline (capacity of 41 kmt-per-year) that utilizes Soderberg technology at the Massena East smelter in New York (remaining capacity of 84 kmt-per-year composed of two Soderberg potlines). The aforementioned Soderberg lines at Baie Comeau and Massena East were fully shut down by the end of September 2013 while the Fusina smelter was previously temporarily idled in 2010. Demolition and remediation activities related to all three facilities began in late 2013 and are expected to be completed by the end of 2015 for Massena East and by the end of 2017 for both Baie Comeau and Fusina.

The decisions on the Soderberg lines for Baie Comeau and Massena East were part of a 15-month review of 460 kmt of smelting capacity initiated by management in May 2013 for possible curtailment, while the decision on the Fusina smelter was in addition to the capacity being reviewed. Factors leading to all three decisions were in general focused on achieving sustained competitiveness and included, among others: lack of an economically viable, long-term power solution (Italy); changed market fundamentals; other existing idle capacity; and restart costs.

In 2013, exit costs related to the shutdown actions included \$114 for the layoff of approximately 550 employees (Primary Metals segment), including \$83 in pension costs; accelerated depreciation of \$58 (Baie Comeau) and asset impairments of \$18 (Fusina and Massena East) representing the write-off of the remaining book value of all related properties, plants, and equipment; and \$55 in other exit costs. Additionally in 2013, remaining inventories, mostly operating supplies and raw materials, were written down to their net realizable value resulting in a charge of \$9 (\$6 after-tax), which was recorded in Cost of goods sold on Alcoa's Statement of Consolidated Operations. The other exit costs represent \$48 in asset retirement obligations and \$5 in environmental remediation, both of which were triggered by the decisions to permanently shut down and demolish these structures, and \$2 in other related costs.

As of December 31, 2014, approximately 1,440 of the 1,530 employees (previously 1,660) were separated. The total number of employees associated with the 2013 restructuring programs was updated to reflect employees, who were initially identified for separation, accepting other positions within Alcoa and natural attrition. The remaining separations for the 2013 restructuring programs are expected to be completed by the end of 2015. In 2014 and 2013, cash payments of \$39 and \$33, respectively, were made against layoff reserves related to the 2013 restructuring programs.

2012 Actions. In 2012, Alcoa recorded Restructuring and other charges of \$172 (\$106 after-tax and noncontrolling interests), which were comprised of the following components: \$85 (\$33 after-tax and noncontrolling interest) related to the civil portion of a legal matter; \$47 (\$29 after-tax and noncontrolling interests) for the layoff of approximately 800 employees (390 in the Engineered Products and Solutions segment, 250 in the Primary Metals segment, 85 in the Alumina segment, and 75 in Corporate), including \$10 (\$7 after-tax) for the layoff of an additional 170 employees

related to the previously reported smelter curtailments in Spain; \$30 (\$30 after-tax) in asset impairments and \$6 (\$6 after-tax) for lease and contract termination costs due to a decision to exit the lithographic sheet business in Bohai, China; \$11 (\$11 after-tax) in costs to idle the Portovesme smelter; \$10 (\$8 after-tax) in other asset impairments; a net charge of \$4 (\$4 after-tax and noncontrolling interests) for other miscellaneous items; and \$21 (\$15 after-tax and noncontrolling interests) for the reversal of a number of layoff reserves related to prior periods, including \$10 (\$7 after-tax) related to the smelters in Spain. The reversal related to the smelters in Spain was due to lower than expected costs based on agreements with employee representatives and the government, as well as a reduction of 55 in the number of layoffs due to the anticipation of the restart of a portion of the previously curtailed capacity based on an agreement with the Spanish government that will provide interruptibility rights (i.e. compensation for power interruptions when grids are overloaded) to the smelters during 2013 (see Primary Metals in Segment Information below). A portion of this reversal relates to layoff costs recorded at the end of 2011 and a portion of this reversal relates to layoff costs recorded during 2012 (see above).

As of December 31, 2013, the separations associated with 2012 restructuring programs were essentially complete. In 2014, 2013, and 2012, cash payments of \$3, \$17, and \$16, respectively, were made against layoff reserves related to the 2012 restructuring programs.

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:

	2014	2013	2012
Alumina	\$ 287	\$ 11	\$ 3
Primary Metals	553	295	20
Global Rolled Products	266	15	43
Engineered Products and Solutions	19	27	13
Segment total	1,125	348	79
Corporate	43	434	93
Total restructuring and other charges	\$ 1,168	\$ 782	\$ 172

Interest Expense Interest expense was \$473 in 2014 compared with \$453 in 2013. The increase of \$20, or 4%, was principally caused by lower capitalized interest (\$43), largely due to the progress completed at the aluminum complex in Saudi Arabia, and fees paid associated with the execution and termination of a 364-day senior unsecured bridge term loan facility related to the acquisition of an aerospace business (\$13 see Engineered Products and Solutions in Segment Information below). These items were partially offset by a 3% lower average debt level and lower amortization of debt-related costs due to the conversion of convertible notes. The lower average debt level was mostly attributable to lower outstanding long-term debt due to the March 2014 conversion of \$575 in 5.25% Convertible Notes and the June 2013 repayment of \$422 in 6.00% Notes, partially offset by the September 2014 issuance of \$1,250 in 5.125% Notes.

Interest expense was \$453 in 2013 compared with \$490 in 2012. The decrease of \$37, or 8%, was primarily due to a 7% lower average debt level, which was mostly attributable to lower outstanding long-term debt due to the June 2013 repayment of \$422 in 6.00% Notes and payments associated with the loans supporting growth projects in Brazil.

Other Expenses (Income), net Other expenses, net was \$47 in 2014 compared with Other income, net of \$25 in 2013. The change of \$72 was mostly due to an unfavorable change in mark-to-market derivative aluminum contracts (\$42), net unfavorable foreign currency movements (\$34), a higher equity loss related to Alcoa's share of the joint venture in Saudi Arabia due to start-up costs of the entire complex, including restart costs for one of the smelter potlines that was previously shut down due to a period of instability, and a smaller improvement in the cash surrender value of company-owned life insurance. These items were somewhat offset by a gain on the sale of (i) a mining interest in Suriname (\$28) and (ii) an equity investment in a China rolling mill (\$14).

Other income, net was \$25 in 2013 compared with \$341 in 2012. The change of \$316 was mainly the result of the absence of a gain on the sale of U.S. hydroelectric power assets (\$320; see Primary Metals in Segment Information below). Also, a higher equity loss (\$40) related to Alcoa's share of the joint venture in Saudi Arabia due to start-up costs and a shutdown of one of the two smelter potlines due to a period of instability was partially offset by net favorable foreign currency movements (\$28).

Income Taxes Alcoa's effective tax rate was 64.4% (provision on income) in 2014 compared with the U.S. federal statutory rate of 35%. The effective tax rate differs from the U.S. federal statutory rate mainly due to restructuring charges related to operations in Italy (no tax benefit) and Australia (benefit at a lower tax rate) (see Restructuring and Other Charges above), a \$52 (\$31 after noncontrolling interest) discrete income tax charge related to a tax rate change in Brazil (see below), a loss on the sale of three rolling mills in Europe (no tax benefit) (see Global Rolled Products in Segment Information below), and a \$27 (\$16 after noncontrolling interest) discrete income tax charge for the remeasurement of certain deferred tax assets of a subsidiary in Spain due to a November 2014 enacted tax rate change (from 30% in 2014 to 28% in 2015 to 25% in 2016). These items were somewhat offset by foreign income taxed in lower rate jurisdictions and a \$9 discrete income tax benefit for the release of a valuation allowance related to operations in Germany due to the initiation of a tax planning strategy.

In December 2011, one of Alcoa's subsidiaries in Brazil applied for a tax holiday related to its expanded mining and refining operations. During 2013, the application was amended and re-filed and, separately, a similar application was filed for another one of the Company's subsidiaries in Brazil. The deadline for the Brazilian government to deny the application was July 11, 2014. Since Alcoa did not receive notice that its applications were denied, the tax holiday took effect automatically on July 12, 2014. As a result, the tax rate for these subsidiaries decreased significantly (from 34% to 15.25%), resulting in future cash tax savings over the 10-year holiday period (retroactively effective as of January 1, 2013). Additionally, a portion of one of the subsidiaries' net deferred tax asset that reverses within the holiday period was remeasured at the new tax rate (the net deferred tax asset of the other subsidiary was not remeasured since it could still be utilized against the subsidiary's future earnings not subject to the tax holiday). This remeasurement resulted in a decrease to that subsidiary's net deferred tax asset and a noncash charge to earnings of \$52 (\$31 after noncontrolling interest).

Alcoa's effective tax rate was 23.6% in 2013 (provision on a loss) compared with the U.S. federal statutory rate of 35%. The effective tax rate differs (by (58.6)% points) from the U.S. federal statutory rate primarily due to a \$1,731 impairment of goodwill (see Impairment of Goodwill above) and a \$209 charge for a legal matter (see Restructuring and Other Charges above) that are nondeductible for income tax purposes, a \$372 discrete income tax charge for valuation allowances on certain deferred tax assets in Spain and the United States (see Income Taxes in Critical Accounting Policies and Estimates below), restructuring charges related to operations in Canada (benefit at a lower tax rate) and Italy (no tax benefit) (see Restructuring and Other Charges above), and a \$9 discrete income tax charge related to prior year taxes in Spain and Australia. These items were slightly offset by an \$18 discrete income tax benefit related to new U.S. tax legislation (see below).

On January 2, 2013, the American Taxpayer Relief Act of 2012 was signed into law and reinstated various expired or expiring temporary business tax provisions through 2013. Two specific temporary business tax provisions that expired in 2011 and impacted Alcoa are the look-through rule for payments between related controlled foreign corporations and the research and experimentation credit. The expiration of these two provisions resulted in Alcoa recognizing a higher income tax provision of \$18 in 2012. As tax law changes are accounted for in the period of enactment, Alcoa recognized an \$18 discrete income tax benefit in 2013 related to the 2012 tax year to reflect the extension of these provisions. Beginning on January 1, 2014, these two provisions once again expired. On December 19, 2014, the Tax Increase Prevention Act of 2014 was signed into law, which retroactively extended for one year (i.e. calendar year 2014) a number of the tax provisions that expired at the end of 2013, including the two specific aforementioned provisions. For tax years beginning after December 31, 2014, these two provisions once again expire. Absent a retroactive extension enacted in 2015, Alcoa would recognize a higher income tax provision of \$12 in 2015.

Alcoa's effective tax rate was 50.0% (provision on income) in 2012 compared with the U.S. federal statutory rate of 35%. The effective tax rate differs from the U.S. federal statutory rate principally due to the tax impact from the gain

recognized on the sale of U.S. hydroelectric power assets (see Primary Metals in Segment Information below) and an \$8 discrete income tax charge related to prior year U.S. taxes on certain depletable assets, slightly offset by a \$13 discrete income tax benefit related to a change in the legal structure of an investment.

Management anticipates that the effective tax rate in 2015 will be between 30% and 35%. However, changes in the current economic environment, tax legislation or rate changes, currency fluctuations, ability to realize deferred tax assets, and the results of operations in certain taxing jurisdictions may cause this estimated rate to fluctuate.

Noncontrolling Interests Net loss attributable to noncontrolling interests was \$91 in 2014 compared with Net income attributable to noncontrolling interests of \$41 in 2013 and Net loss attributable to noncontrolling interests of \$29 in 2012. These amounts were virtually all related to the results of Alcoa World Alumina and Chemicals (AWAC), which is owned 60% by Alcoa and 40% by Alumina Limited.

In 2014, AWAC generated a smaller loss compared to 2013 mainly driven by the absence of a \$384 charge for a legal matter (see below) and improved operating results, mostly offset by restructuring and other charges associated with both the decision to permanently shut down the Point Henry smelter in Australia (see Restructuring and Other Charges above) and the divestiture of an ownership interest in a mining and refining joint venture in Jamaica (see Alumina in Segment Information below) and a combined \$79 (\$32 was noncontrolling interest's share) discrete income tax charge related to a tax rate change in both Brazil and Spain (see Income Taxes above). The improvement in AWAC's operating results was principally due to net favorable foreign currency movements and net productivity improvements, partially offset by an increase in input costs. Even though AWAC generated an overall loss in both 2014 and 2013, the noncontrolling interest's share resulted in income in 2013 due to the manner in which the charges and costs related to a legal matter were allocated (see below).

In 2013, AWAC generated a higher loss compared to 2012 primarily related to a \$384 charge for a legal matter, partially offset by improved operating results and the absence of an \$85 charge related to the civil portion of the same legal matter. The increase in AWAC's operating results was largely driven by net favorable foreign currency movements and net productivity improvements, somewhat offset by an increase in input costs. Even though AWAC generated an overall loss in both 2013 and 2012, the noncontrolling interest's share resulted in income in 2013 due to the manner in which the charges and costs related to the legal matter were allocated. A description of how these charges for this legal matter impacted Noncontrolling interests follows.

The noncontrolling interest's share of AWAC's charge for a legal matter in 2013 and 2012 was \$58 (related to the aforementioned \$384) and \$34 (related to the aforementioned \$85), respectively. In 2012, the \$34 was based on the 40% ownership interest of Alumina Limited, while, in 2013, the \$58 was based on 15%. The application of a different percentage was due to the criteria in a 2012 allocation agreement between Alcoa and Alumina Limited related to this legal matter being met. Additionally, the \$34 charge, as well as costs related to this legal matter, was retroactively adjusted to reflect the terms of the allocation agreement, resulting in a credit to Noncontrolling interests of \$41 in 2013. In summary, Noncontrolling interests included a charge of \$17 and \$34 related to this legal matter in 2013 and 2012, respectively.

Segment Information

Alcoa's operations consist of four worldwide reportable segments: Alumina, Primary Metals, Global Rolled Products, and Engineered Products and Solutions. Segment performance under Alcoa's management reporting system is evaluated based on a number of factors; however, the primary measure of performance is the after-tax operating income (ATOI) of each segment. Certain items such as the impact of LIFO inventory accounting; 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, the results of the soft alloy extrusions business in Brazil, and other nonoperating items such as foreign currency transaction gains/losses and interest income are excluded from segment ATOI.

ATOI for all reportable segments totaled \$2,043 in 2014, \$1,217 in 2013, and \$1,357 in 2012. The following information provides shipments, sales, and ATOI data for each reportable segment, as well as certain production, realized price, and average cost data, for each of the three years in the period ended December 31, 2014. See Note Q to the Consolidated Financial Statements in Part II Item 8 of this Form 10-K for additional information.

Alumina

	2014	2013	2012
Alumina production (kmt)	16,606	16,618	16,342
Third-party alumina shipments (kmt)	10,652	9,966	9,295
Alcoa's average realized price per metric ton of alumina	\$ 324	\$ 328	\$ 327
Alcoa's average cost per metric ton of alumina*	\$ 282	\$ 295	\$ 310
Third-party sales	\$ 3,509	\$ 3,326	\$ 3,092
Intersegment sales	1,941	2,235	2,310
Total sales	\$ 5,450	\$ 5,561	\$ 5,402
ATOI	\$ 370	\$ 259	\$ 90

* 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.

This segment represents a portion of Alcoa's upstream operations and consists of the Company's worldwide refinery system, including the mining of bauxite, which is then refined into alumina. Alumina is mainly sold directly to internal and external smelter customers worldwide or is sold to customers who process it into industrial chemical products. A portion of this segment's third-party sales are completed through the use of agents, alumina traders, and distributors. More than half of Alcoa's alumina production is sold under supply contracts to third parties worldwide, while the remainder is used internally by the Primary Metals segment.

In December 2014, Alcoa's majority-owned subsidiary, AWAC, completed the sale of its ownership stake in Jamalco, a bauxite mine and alumina refinery joint venture in Jamaica, to Noble Group Ltd. Jamalco was 55% owned by a subsidiary of AWAC, and, while owned by AWAC, 55% of both the operating results and assets and liabilities of this joint venture were included in the Alumina segment. As it relates to AWAC's previous 55% ownership stake, the refinery (AWAC's share of the capacity was 779 kmt-per-year) generated sales (third-party and intersegment) of approximately \$200 in 2013, and the refinery and mine combined, at the time of divestiture, had approximately 500 employees. See Restructuring and Other Charges in Results of Operations above.

In 2014, alumina production decreased by 12 kmt compared to 2013. The decline was mainly driven by lower production at the Poços de Caldas (Brazil), Jamalco (Jamaica), and San Ciprian (Spain) refineries, mostly offset by higher production at every other refinery in the global system. The Poços de Caldas refinery started to reduce production in early 2014 in response to management's decision to fully curtail the Poços de Caldas smelter by the end of May 2014 (see Primary Metals below). As a result, management reduced the alumina production at the Poços de Caldas refinery by approximately 200 kmt-per-year by mid-2014. This reduction was replaced by an increase in production at lower cost refineries within Alcoa's global system. Additionally, the decrease at the refinery in Jamaica was due to the absence of production for one month as a result of the sale of the ownership stake in Jamalco.

In 2013, alumina production increased by 276 kmt compared to 2012. The improvement was mostly the result of higher production in the Atlantic refinery system, primarily at the Point Comfort, TX refinery.

Third-party sales for the Alumina segment improved 6% in 2014 compared with 2013, primarily related to a 7% improvement in volume.

Third-party sales for this segment increased 8% in 2013 compared with 2012, largely attributable to an increase of 7% in volume and positive impacts from moving customer contracts to alumina index pricing and spot pricing, somewhat offset by a decrease in contractual LME-based pricing (fewer sales subject to LME pricing and lower average LME prices for those sales subject to LME pricing).

Intersegment sales for the Alumina segment decreased 13% in 2014 compared with 2013 and declined 3% in 2013 compared with 2012. The decrease in both periods was mostly the result of lower demand from the Primary Metals segment.

ATOI for the Alumina segment improved \$111 in 2014 compared with 2013, mostly due to net favorable foreign currency movements due to a stronger U.S. dollar, especially against the Australian dollar, net productivity improvements, and a gain on the sale of a mining interest in Suriname (\$18). These positive impacts were partially offset by higher input costs, including natural gas (particularly higher prices in Australia), bauxite (mainly due to a new mining site in Suriname), and labor and maintenance, all of which were somewhat offset by lower costs for caustic; and a higher equity loss due to start-up costs of the bauxite mine and refinery in Saudi Arabia.

ATOI for this segment increased \$169 in 2013 compared with 2012, mainly caused by net favorable foreign currency movements due to a stronger U.S. dollar, especially against the Australian dollar, and net productivity improvements. These positive impacts were somewhat offset by cost increases for bauxite due to a new mining site in Suriname and a crusher equipment move in Australia, rising natural gas prices in Australia, and higher maintenance costs in Australia and Latin America.

In 2015, alumina production will be approximately 700 kmt lower due to the sale of the interest in the Jamaica refinery. Also, the continued shift towards alumina index and spot pricing is expected to average 75% of third-party shipments. Additionally, net productivity improvements are anticipated and lower energy costs are expected in Spain due to the conversion of the fuel source at the refinery from fuel oil to natural gas. Furthermore, the refinery in Saudi Arabia is expected to produce 1,100 kmt (276 kmt is Alcoa's share) of alumina, as it became fully operational at the end of 2014.

Primary Metals

	2014	2013	2012
Aluminum production (kmt)	3,125	3,550	3,742
Third-party aluminum shipments (kmt)	2,534	2,801	3,056
Alcoa's average realized price per metric ton of aluminum*	\$ 2,405	\$ 2,243	\$ 2,327
Alcoa's average cost per metric ton of aluminum**	\$ 2,252	\$ 2,201	\$ 2,287
Third-party sales	\$ 6,800	\$ 6,596	\$ 7,432
Intersegment sales	2,931	2,621	2,877
Total sales	\$ 9,731	\$ 9,217	\$ 10,309
ATOI	\$ 594	\$ (20)	\$ 309

* 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.

This segment represents a portion of Alcoa's upstream operations and consists of the Company's worldwide smelter system. Primary Metals receives alumina, mostly from the Alumina segment, and produces primary aluminum used by Alcoa's fabricating businesses, as well as sold to external customers and traders. Results from the sale of aluminum powder, scrap, and excess power are also included in this segment, as well as the results of aluminum derivative contracts and buy/resell activity. Primary aluminum produced by Alcoa and used internally is transferred to other segments at prevailing market prices. The sale of primary aluminum represents approximately 90% of this segment's third-party sales. Buy/resell activity occurs when this segment purchases metal and resells such metal to external customers or the midstream and downstream segments in order to maximize smelting system efficiency and to meet customer requirements.

In November 2014, Alcoa completed the sale of an aluminum rod plant located in Bécancour, Québec, Canada to Sural Laminated Products. This facility takes molten aluminum and shapes it into the form of a rod, which is used by customers primarily for the transportation of electricity. While owned by Alcoa, the operating results and assets and liabilities of this plant were included in the Primary Metals segment. In conjunction with this transaction, Alcoa entered into a multi-year agreement with Sural Laminated Products to supply molten aluminum for the rod plant. The aluminum rod plant generated sales of approximately \$200 in 2013 and, at the time of divestiture, had approximately 60 employees. See Restructuring and Other Charges in Results of Operations above.

In December 2014, Alcoa completed the sale of its 50.33% ownership stake in the Mt. Holly smelter located in Goose Creek, South Carolina to Century Aluminum Company. While owned by Alcoa, 50.33% of both the operating results and assets and liabilities related to the smelter were included in the Primary Metals segment. As it relates to Alcoa's previous 50.33% ownership stake, the smelter (Alcoa's share of the capacity was 115 kmt-per-year) generated sales of approximately \$280 in 2013 and, at the time of divestiture, had approximately 250 employees. See Restructuring and Other Charges in Results of Operations above.

In November 2012, Alcoa completed the sale of its 351-megawatt Tapoco Hydroelectric Project (Tapoco) to Brookfield Renewable Energy Partners for \$597 in cash. Alcoa recognized a gain of \$320 (\$173 after-tax) in Other income, net on the Statement of Consolidated Operations, of which a gain of \$426 (\$275 after-tax) was reflected in the Primary Metals segment and a loss of \$106 (\$102 after-tax) was reflected in Corporate. The amount in Corporate represents the write-off of goodwill and capitalized interest related to Tapoco that were not included in the assets of the Primary Metals segment. Tapoco is a four-station hydroelectric project located on the Little Tennessee and Cheoah Rivers in eastern Tennessee and western North Carolina. The transaction included four generating stations and dams, 86 miles of transmission lines, and approximately 14,500 acres of land associated with and surrounding Tapoco. The power generated by Tapoco was primarily consumed by Alcoa's smelter in Tennessee, which was temporarily idled in 2009 and permanently shut down in 2011. Since 2009, the power generated from Tapoco was sold into the open market.

At December 31, 2014, Alcoa had 665 kmt of idle capacity on a base capacity of 3,497 kmt. In 2014, idle capacity increased 10 kmt compared to 2013 due to the temporary curtailment of 159 kmt combined at two smelters in Brazil, mostly offset by the permanent closure of the Portovesme smelter in Italy (150 kmt-per-year). Base capacity declined 540 kmt between December 31, 2014 and 2013 due to the permanent closure of a smelter in Australia and two remaining potlines at a smelter in the United States (274 kmt combined) and the previously mentioned permanent shutdown of the Portovesme smelter and the sale of Alcoa's ownership stake in the Mt. Holly smelter (see above). A detailed description of each of these actions follows.

At December 31, 2013, Alcoa had 655 kmt of idle capacity on a base capacity of 4,037 kmt. In 2013, idle capacity increased 64 kmt compared to 2012 mostly due to the temporary curtailment of 131 kmt combined at two smelters in Brazil, partially offset by the permanent closure of the Fusina smelter in Italy (44 kmt-per-year) and the restart of a portion (27 kmt combined) of the capacity that was temporary curtailed in 2012 related to the Avilés and La Coruña smelters in Spain. Base capacity declined 190 kmt between December 31, 2013 and 2012 due to the permanent closure of three potlines combined at smelters in Canada and in the United States (146 kmt combined) and the previously mentioned permanent shutdown of the Fusina smelter. A detailed description of each of these actions follows.

The restarts in Spain occurred in order to meet the requirements of the modified interruptibility regime in the Spanish power market. In December 2012, the Spanish Government issued a Ministerial Order that modified the interruptibility regime previously in place in the Spanish power market. The interruptibility regime allowed certain industrial customers who were willing to be subject to temporary interruptions in the supply of power to sell interruption rights to the high voltage transmission system operator. In January 2013, Alcoa applied for and was granted rights to sell interruption services under the modified regime from its San Ciprian, Avilés, and La Coruña smelters in Spain. The commitment was taken for a one-year period, which was subsequently extended until December 2014. In September 2014, Spanish regulation imposed a budget cap on the revenues associated with the sale of interruption services resulting in higher energy costs for the three smelters during the last three months of 2014. In late 2014, a new market-

based interruptibility regime replaced the previously regulated interruptibility regime resulting in a competitive auction process to allocate interruptibility rights in Spain for calendar year 2015. Through this process, Alcoa was able to secure the sale of enough interruptibility rights to operate all three smelters in Spain at competitive energy prices during 2015 (the structure of the energy market in Spain subsequent to 2015 is unknown).

In May 2013, Alcoa announced that management would review 460 kmt of smelting capacity over a 15-month period for possible curtailment. This review was aimed at maintaining Alcoa's competitiveness despite falling aluminum prices and would focus on the highest-cost smelting capacity and those plants that have long-term risk due to factors such as energy costs or regulatory uncertainty.

As part of this review, also in May 2013, management approved the permanent shutdown and demolition of two potlines (105 kmt-per-year) that utilize Soderberg technology at the Baie Comeau smelter in Quebec, Canada. Additionally, in August 2013, management approved the permanent shutdown and demolition of one potline (41 kmt-per-year) that utilizes Soderberg technology at the Massena East, NY plant. The shutdown of these three lines was completed by the end of September 2013. The Baie Comeau smelter has a remaining capacity of 280 kmt-per-year composed of two prebake potlines and the Massena East smelter had a remaining capacity of 84 kmt-per-year composed of two Soderberg potlines (see below).

Also in August 2013 as part of this review, management initiated the temporary curtailment of 97 kmt at the São Luís smelter and 31 kmt at the Poços de Caldas smelter, both in Brazil. This action was also completed by the end of September 2013. An additional 3 kmt was temporarily curtailed at the Poços de Caldas smelter by the end of 2013.

The review of the remaining 183 kmt of smelting capacity was completed during 2014. Also, during 2014, an additional 250 kmt of smelting capacity was included in the review.

In early 2014, management initiated three additional actions resulting in the permanent shutdown of an additional 274 kmt of capacity and the temporary curtailment of an additional 147 kmt of capacity.

The permanent shutdowns were comprised of the remaining capacity (84 kmt-per-year) at the Massena East smelter and the full capacity (190 kmt-per-year) at the Point Henry smelter in Australia. The remaining capacity of the Massena East smelter represented two Soderberg potlines that were no longer competitive. This shutdown was completed by the end of March 2014. For Point Henry, management determined that the smelter had no prospect of becoming financially viable. The shutdown of the Point Henry smelter was completed in August 2014.

The temporary curtailments were comprised of the remaining capacity (62 kmt-per-year) at the Poços de Caldas smelter and additional capacity (85 kmt-per-year) at the São Luís smelter. The process of curtailing this additional capacity began in March 2014 and was completed by the end of May 2014. An additional 12 kmt was temporarily curtailed at the São Luís smelter during the remainder of 2014.

Separate from the review, in June 2013, management decided to permanently close the Fusina smelter as the underlying conditions that led to the idling of the smelter in 2010 had not fundamentally changed, including low aluminum prices and the lack of an economically viable, long-term power solution. In August 2014, management approved the permanent shutdown of the Portovesme smelter, which had been idle since November 2012. This decision was made because the fundamental reasons that made the Portovesme smelter uncompetitive remained unchanged, including the lack of a viable long-term power solution.

See Restructuring and Other Charges in Results of Operations above for a description of the associated charges related to all of the above actions.

In 2014, aluminum production decreased by 425 kmt, mostly due to lower and/or the absence of production at the five smelters impacted by the 2013 and 2014 capacity reductions described above.

In 2013, aluminum production declined by 192 kmt, mainly the result of the absence of production at the Portovesme smelter (fully curtailed at the end of 2012), the temporary curtailment of capacity at two smelters in Brazil (see above), and the permanent shutdown of three potlines combined at smelters in Canada and in the United States (see above).

Third-party sales for the Primary Metals segment increased 3% in 2014 compared with 2013, mainly due to higher energy sales in Brazil resulting from excess power due to curtailed smelter capacity, higher buy/resell activity, and a 7% increase in average realized aluminum price, mostly offset by lower volumes, including from the five smelters impacted by the 2013 and 2014 capacity reductions. The change in average realized price was driven by higher regional premiums, which increased by an average of 84% in the United States and Canada and 56% in Europe.

Third-party sales for this segment declined 11% in 2013 compared with 2012, primarily due to lower volumes, including from the curtailed smelters in Italy, Spain, and Brazil and the permanent shutdown of certain capacity in Canada and the United States. Also contributing to the decrease was a 4% decline in average realized prices, somewhat offset by higher energy sales related to excess power, mostly in Brazil, and favorable product mix. The change in realized prices was driven by an 8% lower average LME price (on 15-day lag), somewhat offset by higher regional premiums, including an average of 12% in the United States and Canada and 13% in Europe.

Intersegment sales for the Primary Metals segment improved 12% in 2014 compared with 2013, principally due to an increase in realized prices, driven by higher regional premiums, and higher demand from the midstream and downstream businesses. Intersegment sales for this segment declined 9% in 2013 compared with 2012, mainly the result of a decrease in both realized prices, driven by a lower LME price, and demand from the midstream and downstream businesses.

ATOI for the Primary Metals segment climbed \$614 in 2014 compared with 2013, principally related to a higher average realized aluminum price; the previously mentioned energy sales in Brazil; net productivity improvements; net favorable foreign currency movements due to a stronger U.S. dollar against all major currencies; lower costs for carbon and alumina; and the absence of costs related to a planned maintenance outage in 2013 at a power plant in Australia. These positive impacts were slightly offset by an unfavorable impact associated with the 2013 and 2014 capacity reductions described above, including a write-off of inventory related to the decisions to permanently shut down the Portovesme, Point Henry, and Massena East smelters (\$44), and higher costs for energy (particularly in Spain see above), labor, and maintenance.

ATOI for this segment decreased \$329 in 2013 compared with 2012, primarily caused by a decline in realized prices, the absence of a gain on the sale of Tapoco (see above), higher costs for labor and transportation, a higher equity loss related to the joint venture in Saudi Arabia due to start-up costs and a shutdown of one of the two potlines due to a period of instability, and costs related to a planned maintenance outage at the Anglesea power plant in Australia. These negative impacts were somewhat offset by lower costs for carbon and energy, net productivity improvements, net favorable foreign currency movements due to a stronger U.S. dollar against most major currencies, favorable product mix, and a positive impact (insurance recovery in 2013 plus the absence of business interruption and repair costs that occurred in 2012) related to the March 2012 fire at the Massena West cast house (\$36).

In 2015, aluminum production will be approximately 270 kmt lower due to the sale of the ownership stake in the Mt. Holly smelter and the shutdown and curtailment actions described above. Also, energy sales in Brazil will be negatively impacted by approximately \$100 due to a decline in energy prices. Additionally, net productivity improvements are anticipated and the smelter in Saudi Arabia is expected to provide a positive contribution to ATOI, as it became fully operational in mid 2014. Furthermore, lower energy costs in Canada are anticipated due to new power contracts executed in late 2014.

Global Rolled Products

	2014	2013	2012
Third-party aluminum shipments (kmt)	1,964	1,905	1,867
Alcoa's average realized price per metric ton of aluminum	\$ 3,743	\$ 3,730	\$ 3,953
Third-party sales	\$ 7,351	\$ 7,106	\$ 7,378
Intersegment sales	185	178	163
Total sales	\$ 7,536	\$ 7,284	\$ 7,541
ATOI	\$ 312	\$ 252	\$ 346

This segment represents Alcoa's midstream operations, whose principal business is the production and sale of aluminum plate and sheet. A small portion of this segment's operations relate to foil produced at one plant in Brazil. This segment includes rigid container sheet (RCS), which is sold directly to customers in the packaging and consumer market and is used to produce aluminum beverage cans. Seasonal increases in RCS sales are generally experienced in the second and third quarters of the year. Approximately one-half of the third-party shipments in this segment consist of RCS. This segment also includes sheet and plate used in the aerospace, automotive, commercial transportation, building and construction, and industrial products (mainly used in the production of machinery and equipment and consumer durables) end markets, which is sold directly to customers and through distributors. While the customer base for flat-rolled products is large, a significant amount of sales of RCS, sheet, and plate is to a relatively small number of customers.

In February 2014, management approved the permanent shutdown of Alcoa's two rolling mills in Australia, Point Henry and Yennora. This decision was made due to the significant impact of excess can sheet capacity in both Australia and Asia. The two rolling mills had a combined can sheet capacity of 200 kmt-per-year and were closed by the end of 2014. See Restructuring and Other Charges in Results of Operations above for a description of the associated charges.

In December 2014, Alcoa completed the sale of three rolling mills located in Spain (Alicante and Amorebieta) and France (Castelsarrasin) to a subsidiary of Atlas Holdings LLC. While owned by Alcoa, the operating results and assets and liabilities of the rolling mills were included in the Global Rolled Products segment. In conjunction with this transaction, Alcoa entered into a multi-year agreement with the buyer to supply aluminum for the rolling mills. The rolling mills combined generated sales of approximately \$500 in 2013 and, at the time of divestiture, had approximately 750 employees. See Restructuring and Other Charges in Results of Operations above.

Third-party sales for the Global Rolled Products segment improved 3% in 2014 compared with 2013, principally caused by increased demand, somewhat offset by unfavorable price/product mix related to the packaging, aerospace, and industrial products end markets. Volume improvements were mostly driven by the automotive and commercial transportation end markets.

Third-party sales for this segment declined 4% in 2013 compared with 2012, primarily driven by unfavorable pricing, mostly due to a decrease in metal prices, and unfavorable product mix, partially offset by increased demand. Volume improvements were mostly due to the packaging, automotive, and building and construction end markets, partially offset by a decline in the industrial products end market (especially in North America).

ATOI for the Global Rolled Products segment improved \$60 in 2014 compared with 2013, mainly the result of net productivity improvements across most businesses, a positive impact from the timing lag in metal prices (i.e., this segment realized a lower average cost of metal purchased compared to the average metal price realized in sales due to its rising trend during 2014), and overall higher volumes. These items were partially offset by unfavorable price/product mix related to the packaging, aerospace, and industrial products end markets; higher input costs, including energy, labor, maintenance, and transportation; a write-off of inventory related to the decision to permanently shut down the Point Henry and Yennora rolling mills (\$9); a larger equity loss due to start-up costs related to the rolling

mill at the joint venture in Saudi Arabia; and costs (business continuity and contract specific) related to a new labor agreement that covers employees at three rolling mills in the United States (\$4) (see Cost of Goods Sold in Results of Operations above).

ATOI for this segment declined \$94 in 2013 compared with 2012, primarily attributable to a combination of unfavorable pricing and product mix; higher input costs, including metal premiums, energy, and labor; and a negative impact from the timing lag in metal prices (i.e., this segment realized a lower average metal price in sales compared to the average cost of the metal purchased). These items were partially offset by net productivity improvements across most businesses.

In 2015, demand in the automotive end market is expected to remain strong and the automotive expansion at the Davenport, IA facility will continue to ramp-up to serve the growing demand for aluminum-intensive vehicles. Also, pricing pressure due to continued oversupply in both the packaging and industrial products end markets is expected. Additionally, Third-party sales will decline by approximately \$1,000 due to the divestiture and closure of five rolling mills (see above). Furthermore, net productivity improvements are anticipated while higher research and development costs are anticipated as Alcoa develops and qualifies products from a new Micromill production process.

Engineered Products and Solutions

	2014	2013	2012
Third-party aluminum shipments (kmt)	246	229	222
Third-party sales	\$ 6,006	\$ 5,733	\$ 5,525
ATOI	\$ 767	\$ 726	\$ 612

This segment represents Alcoa's downstream operations and includes titanium, aluminum, and super alloy investment castings; fasteners; aluminum wheels; integrated aluminum structural systems; architectural extrusions; and forgings and hard alloy extrusions. These products, which are used in the aerospace, automotive, building and construction, commercial transportation, power generation, and industrial products end markets, are sold directly to customers and through distributors.

On November 19, 2014, after satisfying all customary closing conditions and receiving the required regulatory approvals, Alcoa completed the acquisition of Firth Rixson, a global leader in aerospace jet engine components. Firth Rixson manufactures rings, forgings, and metal products for the aerospace end market, as well as other markets requiring highly engineered material applications. This business generated sales of approximately \$970 in 2014 and has 13 operating facilities in the United States, United Kingdom, Europe, and Asia employing approximately 2,400 people combined. The purpose of this acquisition is to strengthen Alcoa's aerospace business and position the Company to capture additional aerospace growth with a broader range of high-growth, value-add jet engine components. Alcoa expects Third-party sales of the Firth Rixson business to increase to \$1,600 and \$2,000 by 2016 and 2019, respectively. In executing its integration plan for Firth Rixson, Alcoa expects to realize annual cost savings of more than \$100 by 2019 due to synergies derived from procurement and productivity improvements, optimizing internal metal supply, and leveraging Alcoa's global shared services. This transaction is expected to be neutral to earnings in 2015 and accretive thereafter. The operating results and assets and liabilities of Firth Rixson were included within the Engineered Products and Solutions segment since the date of acquisition. Third-party sales and ATOI of Firth Rixson from the acquisition date through December 31, 2014 were \$81 and \$(12), respectively.

In December 2014, Alcoa signed a definitive agreement to acquire TITAL, a privately held company based in Germany. TITAL's business is composed primarily of aluminum and titanium investment casting products for the aerospace and defense end 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 transaction is subject to customary closing conditions and regulatory approvals and is expected to close by the end of March 2015. At that time, TITAL will be included within the Engineered Products and Solutions segment. TITAL generated sales of approximately \$100 in 2013 and has approximately 650 employees.

Third-party sales for the Engineered Products and Solutions segment increased 5% in 2014 compared with 2013, primarily due to higher volumes and the acquisition of Firth Rixson (see above). The higher volumes were mostly related to the commercial transportation and aerospace (commercial) end markets, somewhat offset by lower volumes in the industrial gas turbine end market.

Third-party sales for this segment improved 4% in 2013 compared with 2012, largely attributable to higher volumes related to the aerospace end market.

ATOI for the Engineered Products and Solutions segment climbed \$41 in 2014 compared with 2013, mainly due to net productivity improvements across all businesses and overall higher volumes, partially offset by higher costs, primarily labor, and unfavorable product mix.

ATOI for this segment rose \$114 in 2013 compared with 2012, principally the result of net productivity improvements across all businesses and the previously mentioned volume impact, somewhat offset by higher costs, including labor and research and development expenses, and unfavorable price/product mix.

In 2015, the commercial aerospace end market is expected to remain strong, driven by significant order backlog, while improvement in the industrial gas turbine end market is anticipated as the market moves towards higher value-add products. Also, the building and construction end market is expected to improve through growth in North America for the non-residential sector but will be somewhat offset by overall weakness in Europe. Additionally, stronger North America build rates in the commercial transportation end market will be offset by declines in Europe and China. Furthermore, Third-party sales are expected to grow significantly due to the acquisition of Firth Rixson and the planned acquisition of TITAL (see above) and net productivity improvements across existing and newly-acquired businesses are anticipated.

Reconciliation of ATOI to Consolidated Net Income (Loss) Attributable to Alcoa

Items required to reconcile total segment ATOI to consolidated net income (loss) attributable to Alcoa include: the impact of LIFO inventory accounting; 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, the results of the soft alloy extrusions business in Brazil, 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 (loss) attributable to Alcoa:

	2014	2013	2012
Total segment ATOI	\$ 2,043	\$ 1,217	\$ 1,357
Unallocated amounts (net of tax):			
Impact of LIFO	(54)	52	20
Interest expense	(308)	(294)	(319)
Noncontrolling interests	91	(41)	29
Corporate expense	(294)	(284)	(282)
Impairment of goodwill	-	(1,731)	-
Restructuring and other charges	(894)	(607)	(142)
Other	(316)	(597)	(472)
Consolidated net income (loss) attributable to Alcoa	\$ 268	\$ (2,285)	\$ 191

The significant changes in the reconciling items between total segment ATOI and consolidated net income (loss) attributable to Alcoa for 2014 compared with 2013 consisted of:

a change in the Impact of LIFO, mostly due to higher prices for aluminum, driven by both higher LME levels and regional premiums (increase in price at December 31, 2014 indexed to December 31, 2013 compared to a decrease in price at December 31, 2013 indexed to December 31, 2012), and the absence of significant reductions in LIFO inventory quantities, which caused a partial liquidation of the lower cost LIFO inventory base in 2013 (income of \$17 in 2013);

an increase in Interest expense, primarily the result of lower capitalized interest (\$28) and fees paid associated with the execution and termination of a 364-day senior unsecured bridge term loan facility related to an acquisition of an aerospace business (\$8), partially offset by a 3% lower average debt level and lower amortization of debt-related costs due to the conversion of convertible notes;

a change in Noncontrolling interests, due to the change in results of AWAC, mainly driven by restructuring and other charges associated with both the decision to permanently shut down the Point Henry smelter in Australia and the divestiture of an ownership interest in a mining and refining joint venture in Jamaica and a discrete income tax charge related to a tax rate change in both Brazil and Spain (\$32 combined), partially offset by improved operating results and the absence of a charge for a legal matter (\$17);

an increase in Restructuring and other charges, principally caused by higher costs related to decisions to permanently shut down and/or temporarily curtail refinery, smelter and/or rolling mill capacity and a net loss on the divestiture of four operations, partially offset by the absence of a charge for a legal matter (\$322); and

a change in Other, largely attributable to the absence of a discrete income tax charge for valuation allowances on certain deferred tax assets in Spain and the United States (\$372), slightly offset by a discrete income tax charge related to a tax rate change in both Brazil and Spain (\$79 combined).

The significant changes in the reconciling items between total segment ATOI and consolidated net (loss) income attributable to Alcoa for 2013 compared with 2012 consisted of:

a change in the Impact of LIFO, mostly due to lower prices for aluminum, driven by lower LME prices (a larger decrease in price at December 31, 2013 indexed to December 31, 2012 compared to the decrease in price at December 31, 2012 indexed to December 31, 2011), and significant reductions in LIFO inventory quantities, which caused a partial liquidation of the lower cost LIFO inventory base (income of \$17);

a decrease in Interest expense, principally caused by a 7% lower average debt level, which was largely attributable to lower outstanding long-term debt due to the June 2013 repayment of \$422 in 6.00% Notes and payments associated with the loans supporting growth projects in Brazil;

a change in Noncontrolling interests, mainly due to improved operating results of AWAC, primarily driven by net favorable foreign currency movements and net productivity improvements, somewhat offset by an increase in input costs, and a favorable change in charges allocated to Noncontrolling interests related to a legal matter (see Noncontrolling Interests in Earnings Summary above);

an Impairment of goodwill related to the annual impairment review of the Primary Metals segment (see Goodwill in Critical Accounting Policies and Estimates below);

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an increase in Restructuring and other charges, mostly the result of a charge for a legal matter (\$322) and exit costs related to the permanent shutdown and demolition of certain structures at three smelter locations (\$183), slightly offset by the absence of a charge for the civil portion of a legal matter (\$67); and

a change in Other, primarily due to a discrete income tax charge for valuation allowances on certain deferred tax assets in Spain and the United States (\$372), partially offset by the absence of both a net charge for five environmental remediation matters (\$129) and a charge for the write-off of goodwill and capitalized interest related to the 2012 sale of U.S. hydroelectric power assets that were not included in the assets of the Primary Metals segment (\$102).

Environmental Matters

See the Environmental Matters section of Note N to the Consolidated Financial Statements in Part II Item 8 of this Form 10-K.

Liquidity and Capital Resources

Alcoa maintains a disciplined approach to cash management and strengthening of its balance sheet. In 2014, as in the prior five years, management initiated actions to significantly improve Alcoa's cost structure and liquidity, providing the Company with the ability to operate effectively. Such actions include procurement efficiencies and overhead rationalization to reduce costs, working capital initiatives to yield significant cash improvements, and maintaining a sustainable level of capital expenditures. In 2015, this approach will continue with the ultimate goal of generating cash from operations that exceeds capital expenditures by a minimum of \$500.

Along with the foregoing actions, cash provided from operations and financing activities is expected to be adequate to cover Alcoa's operational and business needs over the next 12 months. For an analysis of long-term liquidity, see Contractual Obligations and Off-Balance Sheet Arrangements below.

At December 31, 2014, cash and cash equivalents of Alcoa were \$1,877, of which \$800 was held outside the United States. Alcoa has a number of commitments and obligations related to the Company's growth strategy in foreign jurisdictions, resulting in the need for cash outside the United States. As such, management does not have a current expectation of repatriating cash held in foreign jurisdictions.

Cash from Operations

Cash provided from operations in 2014 was \$1,674 compared with \$1,578 in 2013. The increase of \$96, or 6%, was due to higher operating results (net income plus net add-back for noncash transactions in earnings) and a positive change in noncurrent assets of \$134, mostly offset by a negative change associated with working capital of \$620, a negative change in noncurrent liabilities of \$251, and higher pension contributions of \$39.

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

an unfavorable change of \$171 in receivables, primarily related to higher customer sales;

a negative change of \$380 in inventories, largely attributable to inventory build for the ramp-up of automotive production at the Davenport, IA plant and customer requirements related to smelters that have been curtailed or shut down in 2014;

an unfavorable change of \$16 in prepaid expenses and other current assets;

a negative change of \$70 in accounts payable, trade, principally the result of timing of payments;

an unfavorable change of \$33 in accrued expenses, mainly caused by \$139 in higher payments for layoff and other exit costs associated with restructuring actions and an \$88 payment to the United States government due to the resolution of a legal matter (see below), partially offset by the absence of \$148 (109) in payments to the Italian government related to a November 2009 European Commission decision on electricity pricing for certain energy-intensive industries; and

a positive change of \$50 in taxes, including income taxes, mostly driven by higher pretax income.

The higher pension contributions of \$39 were principally driven by special termination benefits of \$86 for employees affected by the 2013 shutdown of capacity at a smelter in Canada.

On August 8, 2014, the Highway and Transportation Funding Act (HATFA) was signed into law by the United States government. HATFA, in part, provides temporary relief for employers who sponsor defined benefit pension plans

related to funding contributions under the Employee Retirement Income Security Act of 1974. Specifically, HATFA modifies the interest rates that had been set in 2012 by the Moving Ahead for Progress in the 21st Century Act. This relief had an immediate impact on the calculation of the then remaining funding contributions in 2014, resulting in a reduction of \$100 in minimum required pension funding.

In 2014, Alcoa World Alumina LLC, a majority-owned subsidiary of Alcoa, and Alcoa Inc. paid a combined \$88 to the United States government due to the resolution of a legal matter (paid on January 22, 2014). Additionally, another \$74 will be paid in each of the four subsequent years, 2015 (paid on January 9 and 23, 2015) through 2018.

Cash provided from operations in 2013 was \$1,578 compared with \$1,497 in 2012. The increase of \$81, or 5%, was due to higher operating results (net loss plus net add back for noncash impacts to earnings) and lower pension contributions of \$99, mostly offset by a negative change associated with all of the following: working capital of \$235, noncurrent assets of \$162, and noncurrent liabilities of \$128.

The lower pension contributions of \$99 were principally driven by a change in minimum funding obligations for U.S. pension plans due to enacted legislation in 2012 (see below).

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

an unfavorable change of \$245 in receivables;

a negative change of \$71 in inventories, principally due to a lower LIFO reserve;

a favorable change of \$53 in prepaid expenses and other current assets, mostly caused by the sale of excess carbon credits in Australia;

a positive change of \$338 in accounts payable, trade, principally the result of timing of payments, including a policy change in Alcoa's vendor payment process;

an unfavorable change of \$252 in accrued expenses, largely attributable to a decrease in deferred revenue and payments made to the Italian Government (see below); and

a negative change of \$58 in taxes, including income taxes.

The unfavorable change in noncurrent assets was mostly related to an increase in deferred mining costs in Australia and the absence of value-added tax receipts in Brazil. The negative change in noncurrent liabilities was largely attributable to the absence of a net increase in the environmental reserve of \$194 related to five remediation matters.

In June 2012, Alcoa received formal notification from the Italian Government requesting a net payment of \$310 (250) related to a November 2009 European Commission decision on electricity pricing for smelters. Alcoa commenced payment of the requested amount in five quarterly installments of \$69 (50) beginning in October 2012 through December 2013.

On July 6, 2012, the Moving Ahead for Progress in the 21st Century Act (MAP-21) was signed into law by the United States government. MAP-21, in part, provides temporary relief for employers who sponsor defined benefit pension plans related to funding contributions under the Employee Retirement Income Security Act of 1974. Specifically, MAP-21 allows for the use of a 25-year average interest rate within an upper and lower range for purposes of determining minimum funding obligations instead of an average interest rate for the two most recent years. This relief had an immediate impact on the calculation of the then remaining funding contributions in 2012, resulting in a reduction of \$130 in minimum required pension funding. In 2013, this relief resulted in a reduction of \$250 in minimum required pension funding.

On October 9, 2012, Alcoa World Alumina LLC, a majority-owned subsidiary of Alcoa, paid \$42.5 to the plaintiff of the civil portion of a legal matter pursuant to a settlement agreement. The remaining \$42.5 was paid on October 9, 2013.

Financing Activities

Cash provided from financing activities was \$2,250 in 2014 compared with cash used for financing activities of \$679 and \$798 in 2013 and 2012, respectively.

The source of cash in 2014 was mostly driven by \$2,878 in additions to debt, virtually all of which was the result of \$1,238 in net proceeds from the issuance of new senior debt securities used for the acquisition of an aerospace business (see below) and \$1,640 in borrowings under certain revolving credit facilities (see below); net proceeds of \$1,211 from the issuance of mandatory convertible preferred stock related to the aforementioned acquisition; and \$150 in proceeds from employee exercises of 17.3 million stock options at a weighted average exercise price of \$8.70 (not in millions). These items were somewhat offset by \$1,723 in payments on debt, mostly related to \$1,640 for the repayment of borrowings under certain revolving credit facilities (see below), and \$161 in dividends paid to shareholders.

The use of cash in 2013 was primarily due to \$2,317 in payments on debt, mainly related to \$1,850 for the repayment of borrowings under certain credit facilities (see below), a \$422 early repayment of 6.00% Notes due July 2013, and \$27 for previous borrowings on the loans supporting the Estreito hydroelectric power project in Brazil; \$132 in dividends paid to shareholders; and net cash paid to noncontrolling interests of \$97, most of which relates to Alumina Limited's share of AWAC. These items were partially offset by \$1,852 in additions to debt, virtually all of which was the result of borrowings under certain credit facilities (see below).

The use of cash in 2012 was principally the result of \$1,489 in payments on debt, mainly related to \$600 for the repayment of borrowings under certain credit facilities (see below), \$322 for the repayment of 6% Notes due 2012 as scheduled, \$280 for the repayment of short-term loans to support the export operations of a subsidiary in Brazil, and \$272 for previous borrowings on the loans supporting the São Luís refinery expansion, Juruti bauxite mine development, and Estreito hydroelectric power project in Brazil; a change of \$224 in commercial paper; and \$131 in dividends paid to shareholders. These items were partially offset by \$972 in additions to debt, due to \$600 in borrowings under certain credit facilities (see below), \$280 in short-term loans to support the export operations of a subsidiary in Brazil, and \$92 in borrowings under loans that support the Estreito hydroelectric power project in Brazil; and net cash received from noncontrolling interests of \$76, all of which relates to Alumina Limited's share of AWAC.

On July 25, 2014, Alcoa entered into a Five-Year Revolving Credit Agreement (the "Credit Agreement") with a syndicate of lenders and issuers named therein. The Credit Agreement provides a \$4,000 senior unsecured revolving credit facility (the "Credit Facility"), the proceeds of which are to be used to provide working capital or for other general corporate purposes of Alcoa. Subject to the terms and conditions of the Credit Agreement, Alcoa may from time to time request increases in lender commitments under the Credit Facility, not to exceed \$500 in aggregate principal amount, and may also request the issuance of letters of credit, subject to a letter of credit sublimit of \$1,000 under the Credit Facility.

The Credit Facility matures on July 25, 2019, unless extended or earlier terminated in accordance with the provisions of the Credit Agreement. Alcoa may make two one-year extension requests during the term of the Credit Facility, with any extension being subject to the lender consent requirements set forth in the Credit Agreement. Under the provisions of the Credit Agreement, Alcoa will pay a fee of 0.25% (based on Alcoa's long-term debt ratings as of December 31, 2014) of the total commitment per annum to maintain the Credit Facility.

The Credit Facility is unsecured and amounts payable under it will rank *pari passu* with all other unsecured, unsubordinated indebtedness of Alcoa. Borrowings under the Credit Facility may be denominated in U.S. dollars or euros. Loans will bear interest at a base rate or a rate equal to LIBOR, plus, in each case, an applicable margin based on the credit ratings of Alcoa's outstanding senior unsecured long-term debt. The applicable margin on base rate loans and LIBOR loans will be 0.50% and 1.50% per annum, respectively, based on Alcoa's long-term debt ratings as of December 31, 2014. Loans may be prepaid without premium or penalty, subject to customary breakage costs.

The Credit Agreement replaces Alcoa's Five-Year Revolving Credit Agreement, dated as of July 25, 2011 (the "Former Credit Agreement"), which was scheduled to mature on July 25, 2017. The Former Credit Agreement, which had a total capacity of \$3,750 and was undrawn, was terminated effective July 25, 2014.

The Credit Agreement includes covenants substantially similar to those in the Former Credit Agreement, including, among others, (a) a leverage ratio, (b) limitations on Alcoa's ability to incur liens securing indebtedness for borrowed money, (c) limitations on Alcoa's ability to consummate a merger, consolidation or sale of all or substantially all of its assets, and (d) limitations on Alcoa's ability to change the nature of its business. As of December 31, 2014, Alcoa was in compliance with all such covenants.

The obligation of Alcoa to pay amounts outstanding under the Credit Facility may be accelerated upon the occurrence of an Event of Default as defined in the Credit Agreement. Such Events of Default include, among others, (a) Alcoa's failure to pay the principal of, or interest on, borrowings under the Credit Facility, (b) any representation or warranty of Alcoa in the Credit Agreement proving to be materially false or misleading, (c) Alcoa's breach of any of its covenants contained in the Credit Agreement, and (d) the bankruptcy or insolvency of Alcoa.

There were no amounts outstanding at December 31, 2014 and no amounts were borrowed during 2014 under the Credit Facility. There were no amounts outstanding at December 31, 2013 and no amounts were borrowed during 2014 and 2013 related to the Former Credit Agreement.

In addition to the Credit Agreement above, Alcoa entered into a number of credit agreements between 2012 and 2014 for additional liquidity. As of December 31, 2014, these arrangements provide a combined borrowing capacity of \$1,040, of which \$740 is due to expire in 2015 and \$300 is due to expire in 2016.

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 the Credit Agreement (see above).

In 2014, 2013, and 2012, Alcoa borrowed and repaid \$1,640, \$1,850, and \$600, respectively, under the respective credit arrangements. The weighted-average interest rate and weighted-average days outstanding of the respective borrowings during 2014, 2013, and 2012 were 1.54%, 1.57%, and 1.89%, respectively, and 67 days, 213 days, and 260 days, respectively.

In February 2014, Alcoa's automatic shelf registration statement filed with the Securities and Exchange Commission expired. On July 11, 2014, Alcoa filed a new shelf registration statement, which was amended on July 25, 2014 and became effective on July 30, 2014, for up to \$5,000 of securities on an unallocated basis for future issuance. As of December 31, 2014, \$2,500 in securities were issued under the new shelf registration statement.

In September 2014, Alcoa completed two public securities offerings under its shelf registration statement for (i) \$1,250 of 25 million depositary shares, each representing a 1/10th interest in a share of Alcoa's 5.375% Class B Mandatory Convertible Preferred Stock, Series 1, par value \$1 per share, liquidation preference \$500 per share (the "Mandatory Convertible Preferred Stock"), and (ii) \$1,250 of 5.125% Notes due 2024 (the "2024 Notes"). The net proceeds of the offerings were used to finance the cash portion of the acquisition of Firth Rixson (see Engineered Products and Solutions in Segment Information above).

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 May 29, 2013, Moody's Investors Service (Moody's) downgraded the following ratings for Alcoa: long-term debt from Baa3 to Ba1 and short-term debt from Prime-3 to Speculative Grade Liquidity Rating-1. Additionally, Moody's changed the current outlook from rating under review to stable.

The following is a summary of Alcoa's liquidity position as it relates to the ratings downgrade by Moody's.

Cash and letters of credit. As a result of the ratings downgrade by Moody's, certain power companies and counterparties to derivative contracts required Alcoa to post letters of credit and cash collateral, respectively, in the

amount of \$167 and \$18, respectively, in June 2013. Since that time, the amount of letters of credit posted decreased by \$10 and the amount of cash collateral posted declined by \$8. Other vendors and third-parties may require Alcoa to post additional letters of credit and/or cash collateral in future periods.

Outstanding debt. Alcoa's outstanding debt as of December 31, 2014 totaled \$8,852 (excludes commercial paper - see below). It is important to note that, due to this downgrade, the issuance of new public debt in the U.S. capital markets may be more difficult as the investor population may be smaller and the cost of the debt may be higher. In September 2014, Alcoa was able to raise enough capital to issue the 2024 Notes (see above) without any difficulty; however, the cost of the 2024 Notes was higher than it would have been had Alcoa not been downgraded. Except for the foregoing, there were no ramifications to Alcoa as a result of the ratings downgrade and interest payments and fees related to the outstanding debt remain unchanged.

Revolving credit facilities. Alcoa has a \$4,000 revolving credit facility that expires in July 2019 (see above) and ten other revolving credit facilities totaling \$1,040 (see above). This \$5,040 of borrowing capacity was also unaffected by the ratings downgrade, including the margins that would be applicable to any borrowings, and remains available for use by Alcoa at its discretion.

Commercial paper. During the period since the downgrade, Alcoa was able to issue the desired level of commercial paper to support operations without difficulty. At the time of the downgrade, the spreads on commercial paper increased slightly, however, by one to three basis points, which did not result in a significant change to Alcoa's total interest costs. While Alcoa expects it can continue to issue commercial paper, there is no assurance about the amount or cost at which it could issue commercial paper.

On April 11, 2014, Fitch Ratings (Fitch) downgraded the following ratings for Alcoa: long-term debt from BBB- to BB+ and short-term debt from F3 to B. Additionally, Fitch changed the current outlook from negative to stable. As of December 31, 2014, this downgrade did not have a significant impact on Alcoa's financing activities, including its ability to access the capital markets. The descriptions for outstanding debt and revolving credit facilities above remain unchanged as a result of the Fitch downgrade. Also, Alcoa is in full compliance with the project financing requirements for the Madaden-Alcoa joint venture project in Saudi Arabia, and did not need to post collateral as a result of the ratings downgrade.

On April 23, 2014, Standard and Poor's Ratings Services (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 negative.

On June 26, 2014, Moody's, Fitch, and S&P each issued statements that the respective ratings and outlook for Alcoa were not affected by Alcoa's then-planned acquisition of an aerospace business, Firth Rixson, for \$2,850 in cash and stock.

On September 16, 2014, Fitch and S&P issued a rating of B+ and BB, respectively, to Alcoa's Mandatory Convertible Preferred Stock. Additionally, on September 17, 2014, Moody's, Fitch, and S&P each issued statements that the respective existing debt ratings and outlook for Alcoa were assigned to the 2024 Notes.

Investing Activities

Cash used for investing activities was \$3,460 in 2014 compared with \$1,290 in 2013 and \$759 in 2012.

The use of cash in 2014 was principally due to \$2,385 (net of cash acquired) for the acquisition of an aerospace business (see Engineered Products and Solutions in Segment Information above); \$1,219 in capital expenditures (includes costs related to environmental control in new and expanded facilities of \$129), 40% of which related to growth projects, including the automotive expansions at the Alcoa, TN and Davenport, IA fabrication plants, the aerospace expansion at the La Porte, IN plant, the aluminum-lithium capacity expansion at the Lafayette, IN plant, and the specialty foil expansion at the Itapissuma plant in Brazil; and \$195 in additions to investments, including equity

contributions of \$120 related to the aluminum complex joint venture in Saudi Arabia and the purchase of \$49 in equities and fixed income securities held by Alcoa's captive insurance company. These items were slightly offset by \$253 in proceeds from the sale of assets and businesses, largely attributable to the sale of an ownership stake in a bauxite mine and refinery in Jamaica (see Alumina in Segment Information above), an ownership stake in a smelter in the United States (see Primary Metals in Segment Information above), three rolling mills in Spain and France combined (see Global Rolled Products in Segment Information above), and a rod plant in Canada (see Primary Metals in Segment Information above); and \$57 in sales of investments, mostly related to \$42 in combined proceeds from the sale of a mining interest in Suriname and an equity investment in a China rolling mill.

The use of cash in 2013 was primarily due to \$1,193 in capital expenditures (includes costs related to environmental control in new and expanded facilities of \$143), 34% of which related to growth projects, including the automotive expansion at the Davenport, IA fabrication plant, the aluminum-lithium capacity expansion at the Lafayette, IN plant, and the automotive sheet expansion at the Alcoa, TN plant; and \$293 in additions to investments, including equity contributions of \$171 related to the aluminum complex joint venture in Saudi Arabia and the purchase of \$54 in equities and fixed income securities held by Alcoa's captive insurance company. These items were slightly offset by a net change in restricted cash of \$170, mostly related to the release of funds to be used for capital expenditures of the automotive expansion at the Davenport, IA fabrication plant (see Noncash Financing and Investing Activities below).

The use of cash in 2012 was mainly due to \$1,261 in capital expenditures (includes costs related to environmental control in new and expanded facilities of \$153), 33% of which related to growth projects, including the automotive expansion at the Davenport, IA fabrication plant and the Estreito hydroelectric power project; and \$300 in additions to investments, principally for the equity contributions of \$253 related to the aluminum complex joint venture in Saudi Arabia. These items were somewhat offset by \$615 in proceeds from the sale of assets, mostly the result of \$597 received for the sale of U.S. hydroelectric power assets (see Primary Metals in Segment Information above), and a net change in restricted cash of \$87, principally related to the release of funds to be used for capital expenditures of the automotive expansion at the Davenport, IA fabrication plant (see Noncash Financing and Investing Activities below).

Noncash Financing and Investing Activities

In early 2014, holders of \$575 principal amount of Alcoa's 5.25% Convertible Notes due March 15, 2014 (the 2014 Notes) exercised their option to convert the 2014 Notes into 89 million shares of Alcoa common stock. The conversion rate for the 2014 Notes was 155.4908 shares of Alcoa's common stock per \$1,000 (in full dollars) principal amount of notes, equivalent to a conversion price of \$6.43 per share. The difference between the \$575 principal amount of the 2014 Notes and the \$89 par value of the issued shares increased Additional capital on Alcoa's Consolidated Balance Sheet. This transaction was not reflected in Alcoa's Statement of Consolidated Cash Flows as it represents a noncash financing activity.

In late 2014, Alcoa paid \$2,995 (net of cash acquired) to acquire an aerospace business, Firth Rixson (see Engineered Products and Solutions in Segment Information above). A portion of this consideration was paid through the issuance of 37 million shares in Alcoa common stock valued at \$610. The issuance of common stock was not reflected in the Statement of Consolidated Cash Flows as it represents a noncash investing activity.

In August 2012, Alcoa received a loan of \$250 for the purpose of financing all or part of the cost of acquiring, constructing, reconstructing, and renovating certain facilities at Alcoa's rolling mill plant in Davenport, IA. Because this loan can only be used for this purpose, the net proceeds of \$248 were classified as restricted cash. Since restricted cash is not part of cash and cash equivalents, this transaction was not reflected in the Statement of Consolidated Cash Flows as it represents a noncash activity. As funds were expended for the project, the release of the cash was reflected as both an inflow on the Net change in restricted cash line and an outflow on the Capital expenditures line in the Investing Activities section of the Statement of Consolidated Cash Flows. At December 31, 2013 and 2012, Alcoa had \$13 and \$171, respectively, of restricted cash remaining related to this transaction. In 2014, the remaining funds were expended on the project.

Contractual Obligations and Off-Balance Sheet Arrangements

Contractual Obligations. Alcoa is required to make future payments under various contracts, including long-term purchase obligations, financing arrangements, and lease agreements. Alcoa also has commitments to fund its pension plans, provide payments for other postretirement benefit plans, and fund capital projects. As of December 31, 2014, a summary of Alcoa's outstanding contractual obligations is as follows (these contractual obligations are grouped in the same manner as they are classified in the Statement of Consolidated Cash Flows in order to provide a better understanding of the nature of the obligations and to provide a basis for comparison to historical information):

	Total	2015	2016-2017	2018-2019	Thereafter
Operating activities:					
Energy-related purchase obligations	\$ 16,429	\$ 1,488	\$ 2,752	\$ 2,548	\$ 9,641
Raw material purchase obligations	7,260	2,430	1,148	941	2,741
Other purchase obligations	1,405	170	303	305	627
Operating leases	853	205	303	180	165
Interest related to total debt	4,318	500	975	822	2,021
Estimated minimum required pension funding	1,945	485	725	735	-
Other postretirement benefit payments	2,110	230	440	440	1,000
Layoff and other restructuring payments	132	113	15	4	-
Deferred revenue arrangements	166	20	41	40	65
Uncertain tax positions	44	-	-	-	44
Financing activities:					
Total debt	8,846	83	795	1,815	6,153
Dividends to shareholders	-	-	-	-	-
Investing activities:					
Capital projects	1,312	777	460	75	-
Equity contributions	46	46	-	-	-
Payments related to acquisitions	150	-	32	118	-
Totals	\$ 45,016	\$ 6,547	\$ 7,989	\$ 8,023	\$ 22,457

Obligations for Operating Activities

Energy-related purchase obligations consist primarily of electricity and natural gas contracts with expiration dates ranging from 1 year to 33 years. Raw material obligations consist mostly of bauxite (relates to Alcoa's bauxite mine interests in Guinea and Brazil), caustic soda, alumina, aluminum fluoride, calcined petroleum coke, cathode blocks, and various metals with expiration dates ranging from less than 1 year to 18 years. Other purchase obligations consist principally of freight for bauxite and alumina with expiration dates ranging from 1 to 17 years. Many of these purchase obligations contain variable pricing components, and, as a result, actual cash payments may differ from the estimates provided in the preceding table. Operating leases represent multi-year obligations for certain land and buildings, alumina refinery process control technology, plant equipment, vehicles, and computer equipment.

Interest related to total debt is based on interest rates in effect as of December 31, 2014 and is calculated on debt with maturities that extend to 2042. The effect of outstanding interest rate swaps, which are accounted for as fair value hedges, was included in interest related to total debt. As of December 31, 2014, these hedges effectively convert the interest rate from fixed to floating on \$200 of debt through 2018. As the contractual interest rates for certain debt and interest rate swaps are variable, actual cash payments may differ from the estimates provided in the preceding table.

Estimated minimum required pension funding and postretirement benefit payments are based on actuarial estimates using current assumptions for discount rates, long-term rate of return on plan assets, rate of compensation increases, and health care cost trend rates, among others. The minimum required contributions for pension funding are estimated to be \$485 for 2015, \$375 for 2016, \$350 for 2017, \$375 for 2018, and \$360 for 2019. These expected pension contributions reflect the impacts of the Pension Protection Act of 2006, the Worker, Retiree, and Employer Recovery

Act of 2008, the Moving Ahead for Progress in the 21st Century Act, and the Highway and Transportation Funding Act of 2014. The estimated decline in pension contributions assumes that all actuarial assumptions are realized and remain the same in the future. Other postretirement benefit payments are expected to approximate \$220 to \$230 annually for years 2015 through 2019 and \$200 annually for years 2020 through 2024. Such payments will be slightly offset by subsidy receipts related to Medicare Part D, which are estimated to be approximately \$15 to \$20 annually for years 2015 through 2024. Alcoa has determined that it is not practicable to present pension funding and other postretirement benefit payments beyond 2019 and 2024, respectively.

Layoff and other restructuring payments expected to be paid within one year primarily relate to severance costs. Amounts scheduled to be paid beyond one year are related to lease termination costs, ongoing site remediation work, and special separation benefit payments.

Deferred revenue arrangements require Alcoa to deliver alumina and sheet and plate to certain customers over the specified contract period (through 2027 for an alumina contract and through 2020 for a sheet and plate contract). While these obligations are not expected to result in cash payments, they represent contractual obligations for which the Company would be obligated if the specified product deliveries could not be made.

Uncertain tax positions taken or expected to be taken on an income tax return may result in additional payments to tax authorities. The amount in the preceding table includes interest and penalties accrued related to such positions as of December 31, 2014. The total amount of uncertain tax positions is included in the *Thereafter* column as the Company is not able to reasonably estimate the timing of potential future payments. If a tax authority agrees with the tax position taken or expected to be taken or the applicable statute of limitations expires, then additional payments will not be necessary.

Obligations for Financing Activities

Total debt amounts in the preceding table represent the principal amounts of all outstanding debt, including short-term borrowings and long-term debt. Maturities for long-term debt extend to 2042.

Alcoa has historically paid quarterly dividends on its preferred and common stock. Including dividends on preferred stock, Alcoa paid \$161 in dividends to shareholders during 2014. This amount includes dividends related to a new class of preferred stock issued in September 2014 (see Financing Activities in Liquidity and Capital Resources above). Because all dividends are subject to approval by Alcoa's Board of Directors, amounts are not included in the preceding table unless such authorization has occurred. There were \$19 of preferred stock dividends approved to be paid on January 1, 2015; however, Alcoa paid the dividends on December 30, 2014. As of December 31, 2014, there were 1,216,663,661 shares of outstanding common stock and 546,024 and 2,500,000 shares of outstanding Class A and Class B preferred stock, respectively. The annual Class A and Class B preferred stock dividends are at the rate of \$3.75 and \$26.8750 per share, respectively, and the annual common stock dividend is \$0.12 per share.

Obligations for Investing Activities

Capital projects in the preceding table only include amounts approved by management as of December 31, 2014. Funding levels may vary in future years based on anticipated construction schedules of the projects. It is expected that significant expansion projects will be funded through various sources, including cash provided from operations. Total capital expenditures are anticipated to be approximately \$1,400 in 2015.

Equity contributions represent Alcoa's committed investment related to a joint venture in Saudi Arabia. Alcoa is a participant in a joint venture to develop a new aluminum complex in Saudi Arabia, comprised of a bauxite mine, alumina refinery, aluminum smelter, and rolling mill, which requires the Company to contribute approximately \$1,100. As of December 31, 2014, Alcoa has made equity contributions of \$952. 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. The timing of the amounts included in the preceding table may vary based on changes in anticipated construction schedules of the project.

Payments related to acquisitions are based on provisions in certain acquisition agreements that state additional funds are due to the seller from Alcoa if the businesses acquired achieve stated financial and operational thresholds. Amounts are only presented in the preceding table if it is has been determined that payment is more likely than not to occur. In connection with the 2005 acquisition of two fabricating facilities in Russia, Alcoa could be required to make contingent payments of approximately \$50 through 2015, but are not included in the preceding table as they have not met such standard. Separately, in conjunction with the acquisition of an aerospace business, Firth Rixson, (see Engineered Products and Solutions in Segment Information above), Alcoa entered into an earn-out agreement, which states that Alcoa will make earn-out payments up to an aggregate maximum amount of \$150 through 2020. The amounts in the preceding table represent Alcoa's best estimate of when the payments may be made.

Off-Balance Sheet Arrangements. At December 31, 2014, Alcoa has maximum potential future payments for guarantees issued on behalf of a third party of \$596. These guarantees expire at various times between 2017 and 2024 and relate to project financing for the aluminum complex in Saudi Arabia. Alcoa also has outstanding bank guarantees related to tax matters, outstanding debt, workers compensation, environmental obligations, energy contracts, and customs duties, among others. The total amount committed under these guarantees, which expire at various dates between 2015 and 2022 was \$394 at December 31, 2014.

Alcoa has outstanding letters of credit primarily related to workers' compensation, energy contracts, and leasing obligations. The total amount committed under these letters of credit, which automatically renew or expire at various dates, mostly in 2015, was \$354 at December 31, 2014. Alcoa also has outstanding surety bonds primarily related to tax matters, contract performance, workers compensation, environmental-related matters, and customs duties. The total amount committed under these bonds, which automatically renew or expire at various dates, mostly in 2015, was \$203 at December 31, 2014.

Critical Accounting Policies and Estimates

The preparation of the Consolidated Financial Statements in accordance with accounting principles generally accepted in the United States of America requires management to make certain judgments, estimates, and assumptions regarding uncertainties that affect the amounts reported in the Consolidated Financial Statements and disclosed in the accompanying Notes. Areas that require significant judgments, estimates, and assumptions include accounting for derivatives and hedging activities; environmental and litigation matters; asset retirement obligations; the testing of goodwill, equity investments, and properties, plants, and equipment for impairment; estimating fair value of businesses to be divested; pension plans and other postretirement benefits obligations; stock-based compensation; and income taxes.

Management uses historical experience and all available information to make these judgments, estimates, and assumptions, and actual results may differ from those used to prepare the Company's Consolidated Financial Statements at any given time. Despite these inherent limitations, management believes that Management's Discussion and Analysis of Financial Condition and Results of Operations and the Consolidated Financial Statements and accompanying Notes provide a meaningful and fair perspective of the Company.

A summary of the Company's significant accounting policies is included in Note A to the Consolidated Financial Statements in Part II Item 8 of this Form 10-K. Management believes that the application of these policies on a consistent basis enables the Company to provide the users of the Consolidated Financial Statements with useful and reliable information about the Company's operating results and financial condition.

Derivatives and Hedging. Derivatives are held for purposes other than trading and are part of a formally documented risk management program. For derivatives designated as fair value hedges, Alcoa measures hedge effectiveness by formally assessing, at least quarterly, the historical high correlation of changes in the fair value of the hedged item and the derivative hedging instrument. For derivatives designated as cash flow hedges, Alcoa measures hedge effectiveness by formally assessing, at least quarterly, the probable high correlation of the expected future cash flows of the hedged item and the derivative hedging instrument. The ineffective portions of both types of hedges are recorded in sales or

other income or expense in the current period. If the hedging relationship ceases to be highly effective or it becomes probable that an expected transaction will no longer occur, future gains or losses on the derivative instrument are recorded in other income or expense.

Alcoa accounts for interest rate swaps related to its existing long-term debt and hedges of firm customer commitments for aluminum as fair value hedges. As a result, the fair values of the derivatives and changes in the fair values of the underlying hedged items are reported in other current and noncurrent assets and liabilities in the Consolidated Balance Sheet. Changes in the fair values of these derivatives and underlying hedged items generally offset and are recorded each period in sales or interest expense, consistent with the underlying hedged item.

Alcoa accounts for hedges of foreign currency exposures and certain forecasted transactions as cash flow hedges. The fair values of the derivatives are recorded in other current and noncurrent assets and liabilities in the Consolidated Balance Sheet. The effective portions of the changes in the fair values of these derivatives are recorded in other comprehensive income and are reclassified to sales, cost of goods sold, or other income or expense in the period in which earnings are impacted by the hedged items or in the period that the transaction no longer qualifies as a cash flow hedge. These contracts cover the same periods as known or expected exposures, generally not exceeding five years.

If no hedging relationship is designated, the derivative is marked to market through earnings.

Cash flows from derivatives are recognized in the Statement of Consolidated Cash Flows in a man