

The Element of **Possibility**[™]

2nd Quarter Earnings

Alcoa Corporation

July 17, 2019



Cautionary statement regarding forward-looking statements

This presentation contains statements that relate to future events and expectations and as such constitute forward-looking statements within the meaning of the Private Securities Litigation Reform Act of 1995. Forward-looking statements include those containing such words as “anticipates,” “believes,” “could,” “estimates,” “expects,” “forecasts,” “goal,” “intends,” “may,” “outlook,” “plans,” “projects,” “seeks,” “sees,” “should,” “targets,” “will,” “would,” or other words of similar meaning. All statements by Alcoa Corporation that reflect expectations, assumptions or projections about the future, other than statements of historical fact, are forward-looking statements, including, without limitation, forecasts concerning global demand growth for bauxite, alumina, and aluminum, and supply/demand balances; statements, projections or forecasts of future or targeted financial results or operating performance; statements about strategies, outlook, and business and financial prospects; and statements about return of capital. These statements reflect beliefs and assumptions that are based on Alcoa Corporation’s perception of historical trends, current conditions, and expected future developments, as well as other factors that management believes are appropriate in the circumstances. Forward-looking statements are not guarantees of future performance and are subject to known and unknown risks, uncertainties, and changes in circumstances that are difficult to predict. Although Alcoa Corporation believes that the expectations reflected in any forward-looking statements are based on reasonable assumptions, it can give no assurance that these expectations will be attained and it is possible that actual results may differ materially from those indicated by these forward-looking statements due to a variety of risks and uncertainties. Such risks and uncertainties include, but are not limited to: (a) material adverse changes in aluminum industry conditions, including global supply and demand conditions and fluctuations in London Metal Exchange-based prices and premiums, as applicable, for primary aluminum and other products, and fluctuations in indexed-based and spot prices for alumina; (b) deterioration in global economic and financial market conditions generally and which may also affect Alcoa Corporation’s ability to obtain credit or financing upon acceptable terms; (c) unfavorable changes in the markets served by Alcoa Corporation; (d) the impact of changes in foreign currency exchange and tax rates on costs and results; (e) increases in energy costs or uncertainty of energy supply; (f) declines in the discount rates used to measure pension liabilities or lower-than-expected investment returns on pension assets, or unfavorable changes in laws or regulations that govern pension plan funding; (g) the inability to achieve improvement in profitability and margins, cost savings, cash generation, revenue growth, fiscal discipline, or strengthening of competitiveness and operations anticipated from operational and productivity improvements, cash sustainability, technology advancements, and other initiatives; (h) the inability to realize expected benefits, in each case as planned and by targeted completion dates, from acquisitions, divestitures, facility closures, curtailments, restarts, expansions, or joint ventures; (i) political, economic, trade, legal, and regulatory risks in the countries in which Alcoa Corporation operates or sells products; (j) labor disputes and/or work stoppages; (k) the outcome of contingencies, including legal proceedings, government or regulatory investigations, and environmental remediation; (l) the impact of cyberattacks and potential information technology or data security breaches; and (m) the other risk factors discussed in Item 1A of Alcoa Corporation’s Form 10-K for the fiscal year ended December 31, 2018 and other reports filed by Alcoa Corporation with the U.S. Securities and Exchange Commission (SEC). Alcoa Corporation disclaims any obligation to update publicly any forward-looking statements, whether in response to new information, future events or otherwise, except as required by applicable law. Market projections are subject to the risks described above and other risks in the market.

Important information (continued)



Non-GAAP financial measures

Some of the information included in this presentation is derived from Alcoa's consolidated financial information but is not presented in Alcoa's financial statements prepared in accordance with accounting principles generally accepted in the United States of America (GAAP). Certain of these data are considered "non-GAAP financial measures" under SEC rules. Alcoa Corporation believes that the presentation of non-GAAP financial measures is useful to investors because such measures provide both additional information about the operating performance of Alcoa Corporation and insight on the ability of Alcoa Corporation to meet its financial obligations by adjusting the most directly comparable GAAP financial measure for the impact of, among others, "special items" as defined by the Company, non-cash items in nature, and/or nonoperating expense or income items. The presentation of non-GAAP financial measures is not intended to be a substitute for, and should not be considered in isolation from, the financial measures reported in accordance with GAAP. Reconciliations to the most directly comparable GAAP financial measures and management's rationale for the use of the non-GAAP financial measures can be found in the appendix to this presentation.

Financial presentation information

As of January 1, 2019, the Company changed its accounting method for valuing certain inventories from last-in, first-out (LIFO) to average cost. The effects of the change in accounting principle have been retrospectively applied to all prior periods presented. See Exhibit 99.2 to the Company's Form 8-K filed with the Securities and Exchange Commission (SEC) on April 17, 2019, which illustrates the effects of the change in accounting principle to 2018 interim and full year financial information.

Glossary of terms

A glossary of abbreviations and defined terms used throughout this presentation can be found in the appendix.

Roy Harvey

President and Chief Executive Officer



Continuing actions to improve the business



2Q19 Financial results and business review

2Q19 Financial results

- Net loss of \$402 million, or \$2.17 per share; excluding special items, adjusted net loss of \$2 million, or \$0.01 per share
- Adjusted EBITDA excluding special items of \$455 million
- Cash balance of \$0.8 billion on June 30

Business review

- Two serious injuries in quarter; continuing to strengthen safety programs
- Divested minority interest in Saudi rolling mill and auto sheet plant
- Labor progress made: agreed to six-year contracts at Baie Comeau (May 31) and Bécancour (July 2) smelters; Bécancour restart to begin July 26
- Deschambault smelter creep project announced with government support
- Signed conditional agreement July 5 to divest Avilés and La Coruña plants
- Expect aluminum market to remain in deficit, inventory drawdown continues

William Oplinger

Executive Vice President and Chief Financial Officer



Revenue flat as volume, energy sales offset price slip



Quarterly income statement

<i>M, Except realized prices and per share amounts</i>	2Q18	1Q19	2Q19	Prior Year Change	Sequential Change
Realized primary aluminum price (\$/mt)	\$2,623	\$2,219	\$2,167	\$(456)	\$(52)
Realized alumina price (\$/mt)	\$467	\$385	\$376	\$(91)	\$(9)
Revenue	\$3,579	\$2,719	\$2,711	\$(868)	\$(8)
Cost of goods sold	2,753	2,180	2,189	(564)	9
SG&A and R&D expenses	73	91	75	2	(16)
Adjusted EBITDA	753	448	447	(306)	(1)
Depreciation, depletion and amortization	192	172	174	(18)	2
Other expenses, net	9	41	50	41	9
Interest expense	32	30	30	(2)	-
Restructuring and other charges	231	113	370	139	257
Tax provision	158	150	116	(42)	(34)
Net income (loss)	131	(58)	(293)	(424)	(235)
Less: Net income attributable to noncontrolling interest	121	141	109	(12)	(32)
Net income (loss) attributable to Alcoa Corporation	\$10	\$(199)	\$(402)	\$(412)	\$(203)
Diluted earnings (loss) per share	\$0.05	\$(1.07)	\$(2.17)	\$(2.22)	\$(1.10)
Diluted shares outstanding ¹	188.7	185.3	185.5	(3.2)	0.2

1. For 1Q19 and 2Q19, share equivalents related to employee stock-based compensation were excluded from Diluted shares outstanding as impact was anti-dilutive given a net loss.

Special items total \$400M, primarily MRC rolling divestiture



Breakdown of special items by income statement classification – gross basis

<i>M, Except per share amounts</i>	2Q18	1Q19	2Q19	Description of significant <u>2Q19</u> special items
Net income (loss) attributable to Alcoa Corporation	\$10	\$(199)	\$(402)	
Diluted earnings (loss) per share	\$0.05	\$(1.07)	\$(2.17)	
Special items	\$211	\$156	\$400	
<i>Cost of goods sold</i>	30	17	8	<i>USW master agreement negotiation and Becancour lockout related costs</i>
<i>SG&A</i>	-	2	-	
<i>Restructuring and other charges</i>	231	113	370	<i>MRC divestiture and Baie Comeau pension redesign</i>
<i>Interest expense</i>	3	-	-	
<i>Other expenses (income), net</i>	6	(9)	-	
<i>Tax provision</i>	(46)	33	22	<i>Taxes on special items and other tax adjustments</i>
<i>Noncontrolling interest</i>	(13)	-	-	<i>Partner share of special items</i>
Adjusted net income (loss) attributable to Alcoa Corporation	\$221	\$(43)	\$(2)	
Adjusted diluted earnings (loss) per share	\$1.17	\$(0.23)	\$(0.01)	

Adjusted net loss \$2 million, adjusted EPS \$(0.01)



Quarterly income statement excluding special items

M, Except realized prices and per share amounts

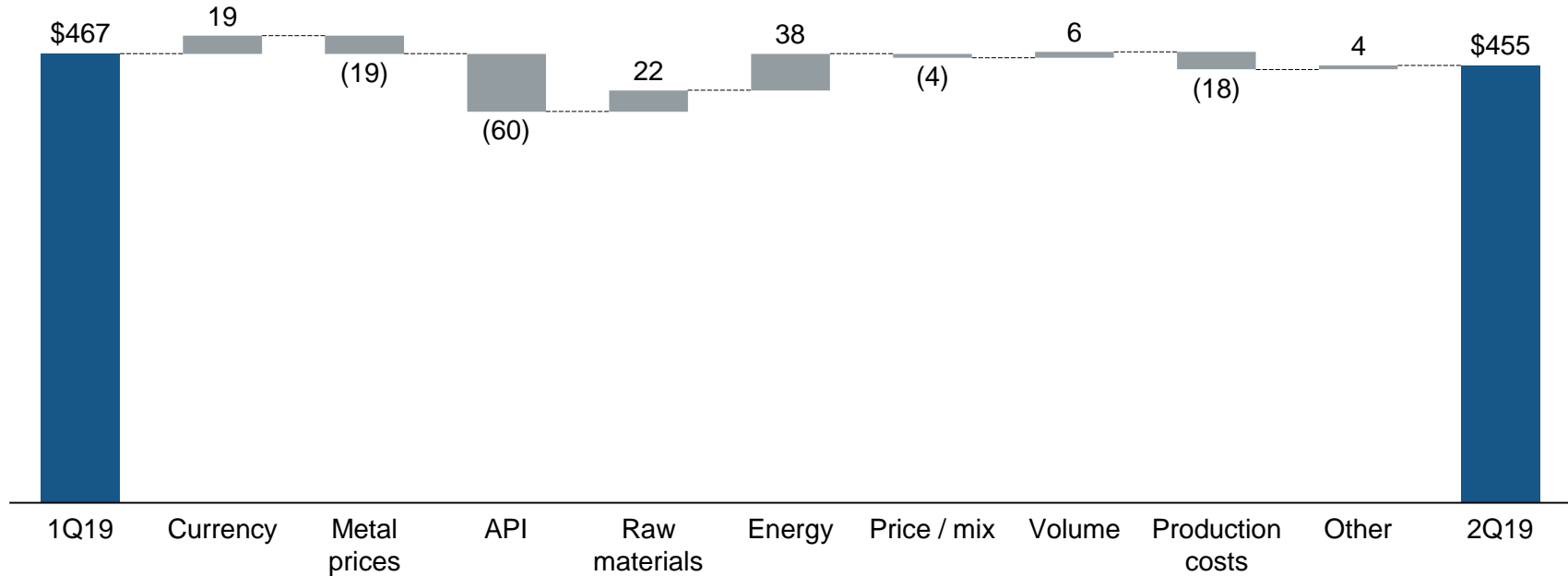
	2Q18	1Q19	2Q19
Realized primary aluminum price (\$/mt)	\$2,623	\$2,219	\$2,167
Realized alumina price (\$/mt)	\$467	\$385	\$376
Revenue	\$3,579	\$2,719	\$2,711
Cost of goods sold	2,723	2,163	2,181
COGS % of Revenue	76.1%	79.6%	80.5%
SG&A and R&D expenses	73	89	75
SG&A and R&D % of Revenue	2.0%	3.3%	2.8%
Adjusted EBITDA	783	467	455
Depreciation, depletion and amortization	192	172	174
Other expenses, net	3	50	50
Interest expense	29	30	30
Tax provision	204	117	94
Operational tax rate	36.4%	54.5%	46.5%
Adjusted net income	355	98	107
Less: Net income attributable to noncontrolling interest	134	141	109
Adjusted net income (loss) attributable to Alcoa Corporation	\$221	\$(43)	\$(2)
Adjusted diluted earnings (loss) per share	\$1.17	\$(0.23)	\$(0.01)
Diluted shares outstanding	188.7	185.3	185.5

Prior Year Change	Sequential Change
\$(456)	\$(52)
\$(91)	\$(9)
\$(868)	\$(8)
(542)	18
4.4% pts.	0.9% pts.
2	(14)
0.8% pts.	(0.5)% pts.
(328)	(12)
(18)	2
47	-
1	-
(110)	(23)
10.1% pts.	(8.0)% pts.
(248)	9
(25)	(32)
\$(223)	\$41
\$(1.18)	\$0.22
(3.2)	0.2

Favorable energy, raw materials offset alumina price drop



Adjusted EBITDA excluding special items sequential changes, \$M

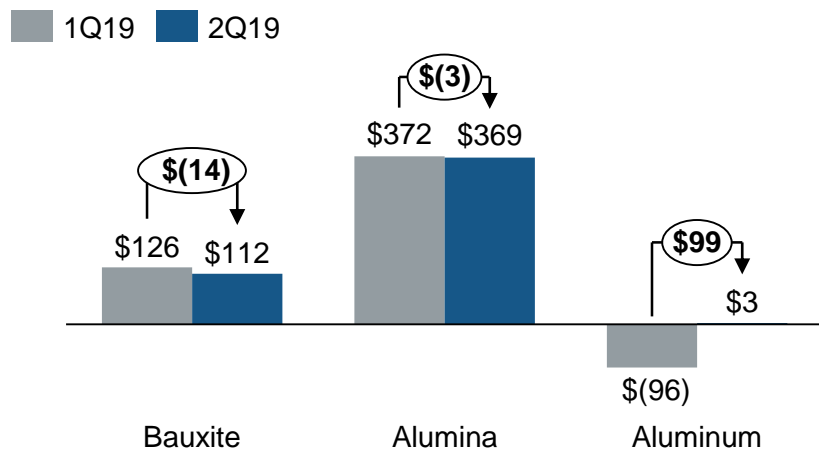


Aluminum recovering; Alumina steady; Bauxite off slightly



Adjusted EBITDA excluding special items breakdown

Segment information, \$M



2Q19 Segment Adj.
EBITDA Margin %

35.8%

28.2%

0.2%

Change vs. 1Q19,
Margin %

-6.1% pts.

-0.1% pts.

+5.7% pts.

Total Adjusted EBITDA information, \$M

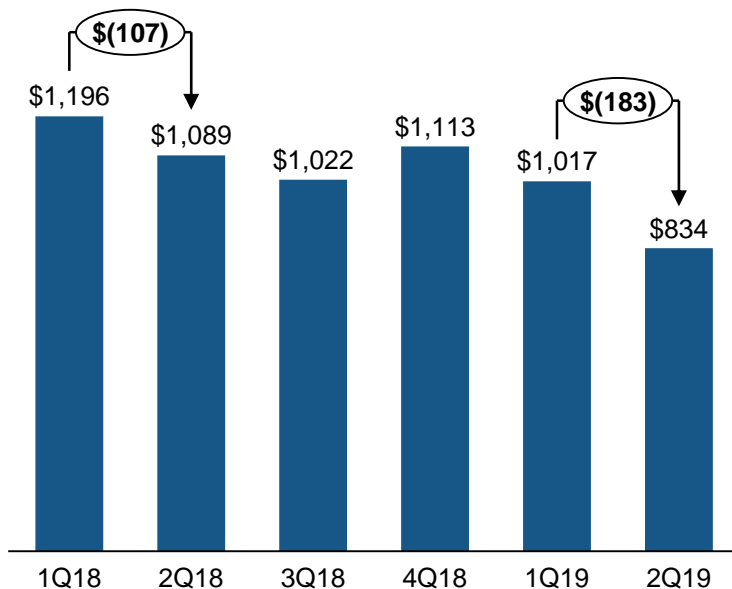
	1Q19	2Q19	Change
Segment total	\$402	\$484	\$82
Transformation	2	3	1
Intersegment eliminations	86	(1)	(87)
Other corporate	(23)	(31)	(8)
Total Adjusted EBITDA	\$467	\$455	\$(12)

One time payments cause cash balance decline



Balance sheet and cash review

Quarter ending cash balance, \$M



Key metrics as of June 30, 2019

2Q19 Days working capital	1H19 Annualized return on capital
31 Days	5.0%
1H19 Sustaining capital expenditures	1H19 Return-seeking capital expenditures
\$112M	\$46M
Alcoa proportional adjusted net debt	1H19 Free cash flow less net NCI distributions
\$3.4B	\$(173)M

FY19 Key metrics

Income statement excl. special items impacts		
	1H19 Actual	FY19 Outlook
Bauxite shipments (Mdmt)	23.2	47.0 – 48.0
Alumina shipments (Mmt)	6.7	13.6 – 13.7
Aluminum shipments (Mmt)	1.4	2.8 – 2.9
Transformation (adj. EBITDA impacts)	\$5M	\$(5) – \$0M
Intersegment elims. (adj. EBITDA impacts)	\$85M	Varies
Other corporate (adj. EBITDA impacts)	\$(54)M	~ \$(120)M
Depreciation, depletion and amortization	\$346M	~ \$700M
Non-operating pension/OPEB expense	\$59M	~ \$115M
Interest expense	\$60M	~ \$120M
Operational tax rate ¹	50.6%	~ 55% – 65% ¹
Net income of noncontrolling interest	\$250M	40% of AWAC NI

Cash flow impacts		
	1H19 Actual	FY19 Outlook
Minimum required pension/all OPEB funding	\$108M	~ \$300M
Additional pension funding	-	Will vary based on market conditions and cash availability
Discretionary debt repayment	-	
Stock repurchases	-	
Return-seeking capital expenditures ²	\$46M	~ \$120M
Sustaining capital expenditures ²	\$112M	~ \$290M
Payment of prior year income taxes	\$372M	~ \$360M ³
Current period cash taxes	\$183M	Varies ¹
Environmental and ARO payments ⁴	\$53M	\$110 – \$120M
Impact of restructuring and other charges	\$142M	TBD

Note: Additional market sensitivities and business information included in appendix.

1. Estimate will vary with market conditions and jurisdictional profitability.
2. AWAC portion of FY19 Outlook: ~45% of return-seeking capital expenditures, and ~55% of sustaining capital expenditures.
3. Net of pending tax refunds.
4. As of June 30, 2019, the environmental remediation reserve balance was \$271M and the ARO liability was \$634M.

Roy Harvey

President and Chief Executive Officer

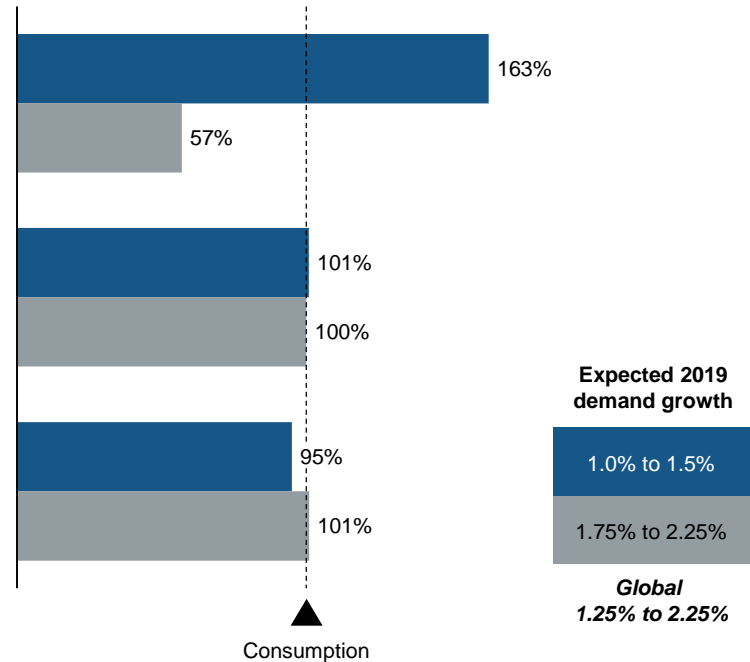


Aluminum projected to be in deficit in 2019

Projected 2019 market balances, Mmt

	Global	Regional	
Third-party Bauxite	13 to 17 Surplus	98 to 100	World ex-China
		(85) to (83)	China
Smelter Grade Alumina	0.5 to 1.3 Surplus	0.4 to 0.8	World ex-China
		0.1 to 0.5	China
Primary Aluminum	(1.4) to (1.0) Deficit	(1.5) to (1.3)	World ex-China
		0.1 to 0.3	China

Global production as a percentage of consumption

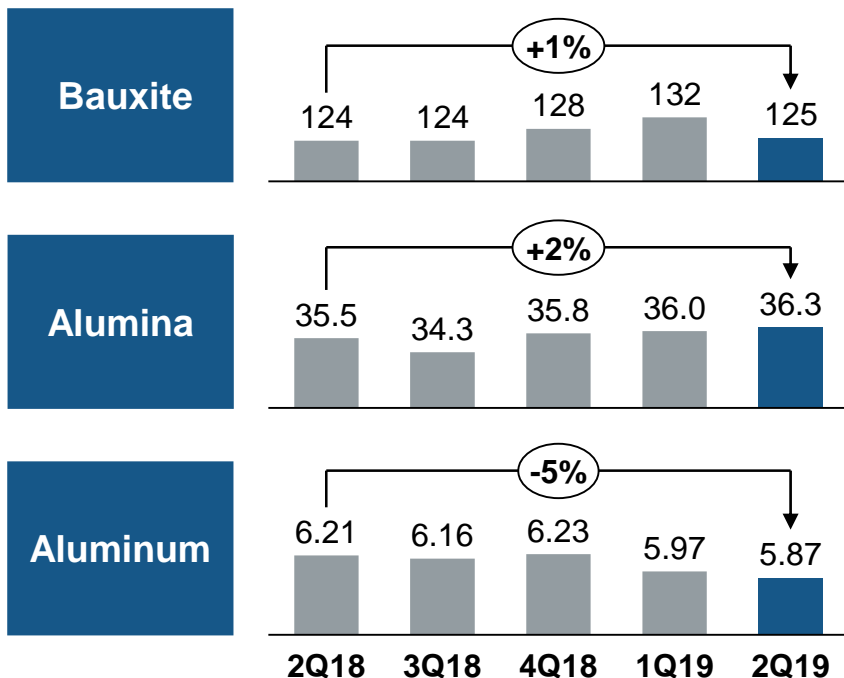


Strengthening the Company



Production update and improvement update

Average daily production, kmt



Actions and improvements

- Completed major crusher overhaul at Willowdale mine
- Record quarterly production by current refinery portfolio; completing residue filtration project, boiler upgrades, and key maintenance activities
- Reviewing major debottlenecking projects for largest refineries in Western Australia and Brazil
- Divested entire 25.1% interest in Saudi rolling and auto sheet mill; retained 25.1% interests in mine, refinery and smelter
- Implemented plans for Deschambault smelter production increase with government support
- Reached two new competitive labor agreements at Baie Comeau and Bécancour smelters; Bécancour restart process begins July 26, 2019
- Signed conditional agreement on July 5 to divest Avilés and La Coruña plants

Executing strategic priorities to drive improvements

Strategic priorities and focus areas

Execute strategic priorities



Prepare for the future

- Continue progress on safety and environment
- Maintain trajectory on operational improvements
- Deliver lower raw material prices to earnings
- Complete Avilés and La Coruña process
- Execute safe and cost effective restart of Bécancour
- Develop and commercialize disruptive and sustainable processes and products
- Review assets for current, future competitiveness
- Strengthen balance sheet, be positioned to provide consistent stockholder returns

Questions?

Alcoa Corporation



Appendix



2Q19 Financial summary



Three months ending June 30, 2019, excluding special items

\$M	Bauxite	Alumina	Aluminum ^{3,4}	Transformation	Intersegment eliminations	Other corporate	Alcoa Corporation
Total revenue	\$313	\$1,309	\$1,761	\$24	\$(696)	-	\$2,711
Third-party revenue	\$67	\$864	\$1,757	\$23	-	-	\$2,711
Adjusted EBITDA ¹	\$112	\$369	\$3	\$3	\$(1)	\$(31)	\$455
<i>Adjusted EBITDA margin %</i>	<i>35.8%</i>	<i>28.2%</i>	<i>0.2%</i>				<i>16.8%</i>
Depreciation, depletion and amortization	\$27	\$55	\$85	\$1	-	\$6	\$174
Other expenses / (income), net ²	-	\$(3)	\$17	-	-	\$36	\$50
Interest expense							\$30
Provision for income taxes							\$94
Adjusted net income							\$107
Net income attributable to noncontrolling interest							\$109
Adjusted net income (loss) attributable to Alcoa Corp.							\$(2)

1. Includes the Company's proportionate share of earnings from equity investments in certain bauxite mines, hydroelectric generation facilities, and an aluminum smelter located in Brazil, Canada, and/or Guinea.
2. Amounts for Alumina and Aluminum represent the Company's proportionate share of earnings from its equity investment in the Saudi Arabian joint venture.
3. Flat-rolled aluminum shipments, revenue and adjusted EBITDA were 0.09 Mmt, \$332M and \$15M, respectively.
4. Third-party energy sales volume, revenue and adjusted EBITDA in Brazil were 1.07 GWh, \$60M and \$35M, respectively.

2Q19 Adjusted EBITDA drivers by segment



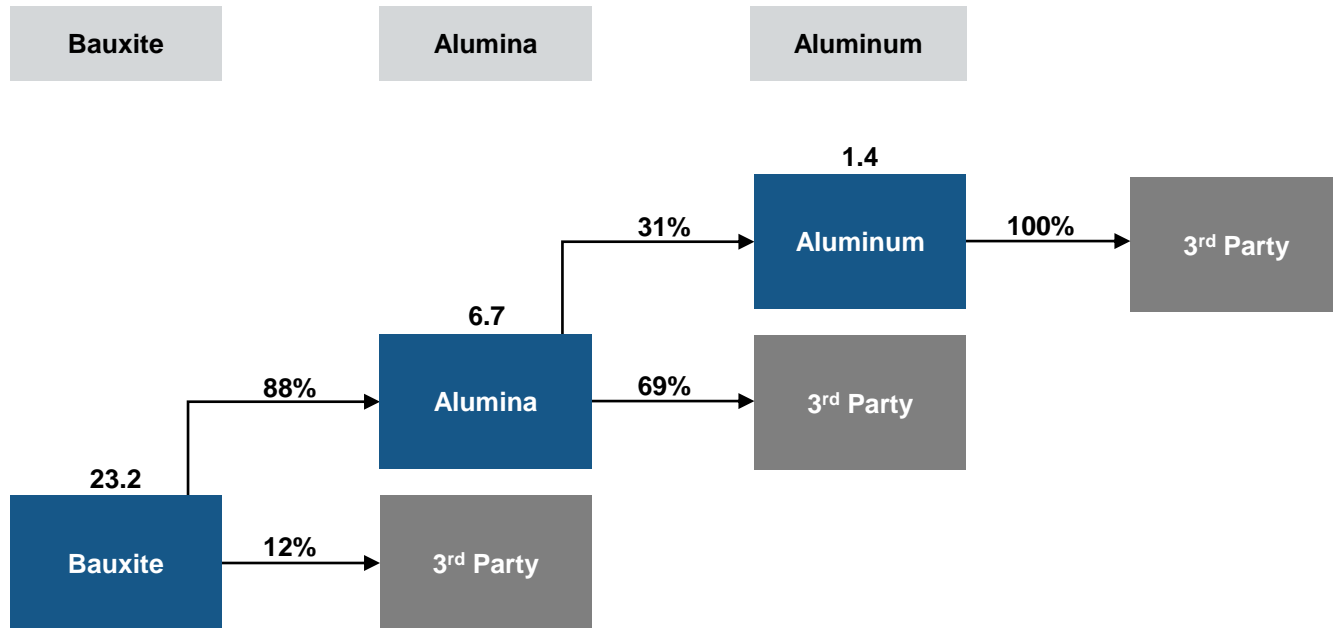
Adjusted EBITDA excl. special items sequential changes by segment, \$M

Segment	Adj. EBITDA 1Q19	Currency	Metal prices	API	Raw materials	Energy	Price/mix	Volume	Production costs	Other	Adj. EBITDA 2Q19
Bauxite	\$126	2	-	-	-	-	2	(1)	(8)	(9)	\$112
Alumina	\$372	12	-	(33)	17	2	(2)	8	(14)	7	\$369
Aluminum	\$(96)	5	(19)	25	5	36	(4)	(1)	4	48	\$3
Segment Total	\$402	19	(19)	(8)	22	38	(4)	6	(18)	46	\$484

Aluminum value chain



1H19 Alcoa product shipments by segment, Mmt

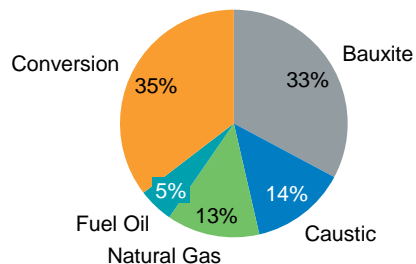


Composition of alumina and aluminum production costs



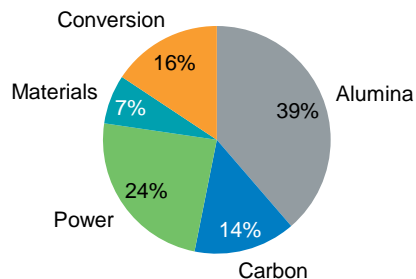
Alcoa 2Q19 production cash costs

Alumina refining



Input Cost	Inventory Flow	Pricing Convention	FY19 Annual Cost Sensitivity
Caustic Soda	5 - 6 Months	Quarterly	\$10M per \$10/dmt
Natural Gas ¹	N/A	N/A	N/A
Fuel Oil	1 - 2 Months	Prior Month	\$3M per \$1/barrel

Aluminum smelting



Input Cost	Inventory Flow	Pricing Convention	FY19 Annual Cost Sensitivity
Alumina	~2 Months	API	\$39M per \$10/mt
Petroleum Coke	1 - 2 Months	Spot, Quarterly & Semi-annual	\$7M per \$10/mt
Coal Tar Pitch	1 - 2 Months	Spot, Quarterly & Semi-annual	\$1.8M per \$10/mt

1. Australia is priced on a 16 quarter rolling average.

2019 Business information



Estimated annual Adjusted EBITDA sensitivities

<i>\$M</i>						AUD + 0.01 USD/AUD	BRL + 0.10 BRL/USD	CAD + 0.01 CAD/USD	EUR + 0.01 USD/EUR	ISK + 10 ISK/USD	NOK + 0.10 NOK/USD
Segment	LME + \$100/mt	API + \$10/mt	Midwest + \$100/mt	Europe + \$100/mt	Japan + \$100/mt						
Bauxite						(4)	3				
Alumina		120				(19)	9		(1)		
Aluminum	193	(36)	118	90	24	(1)		2	(3)	7	3
Total	193	84	118	90	24	(24)	12	2	(4)	7	3

Pricing conventions

Segment	3 rd -Party Revenue
Bauxite	<ul style="list-style-type: none"> Negotiated prices
Alumina	<ul style="list-style-type: none"> ~95% of third-party smelter grade alumina priced on API/spot API based on prior month average of spot prices
Aluminum	<ul style="list-style-type: none"> LME + Regional Premium + Product Premium Primary aluminum 15-day lag; flat rolled aluminum 30-day lag Brazilian hydroelectric sales at market prices

Regional premium breakdown

Regional premiums	% of 2019 Primary aluminum shipments
Midwest	~50%
Rotterdam Duty Paid	~40%
CIF Japan	~10%

Items expected to impact adjusted EBITDA for 3Q19

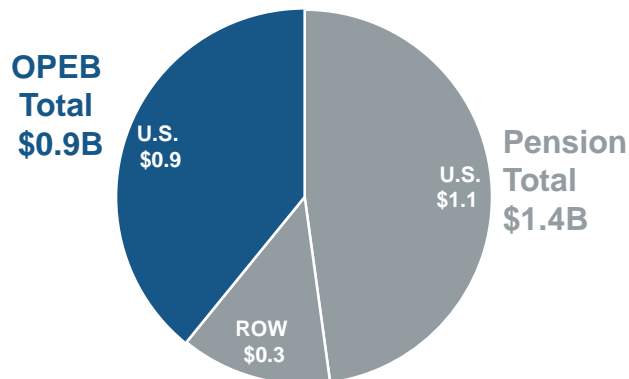
- In the Bauxite segment, we expect Adjusted EBITDA sequential improvement of \$5 million to \$10 million, on higher volumes and lower major maintenance costs compared to 2Q19
- In the Alumina segment, higher volume, lower maintenance costs and lower caustic costs are expected to provide \$30 million to \$35 million sequential benefit
- In the Aluminum segment
 - Lower alumina prices flowing into the Aluminum segment in 3Q19 estimated to produce sequential benefit of \$35 million to \$40 million in the third quarter
 - Expected lower Brazil hydro prices will be partially offset by better rolling results, netting approximately \$10 million lower adjusted EBITDA
 - Removal of Section 232 tariffs on Canadian origin U.S. sales, lower raw materials costs, and other performance improvements are expected to provide a sequential benefit of approximately \$15 million
- Estimate intercompany profit elimination for every \$10/mt decrease in API prices to be a \$8 to \$10 million favorable impact based on comparison of the average prices of the last two months of each quarter. Consider intersegment eliminations as component of minority interest calculation.

Pension and OPEB summary



Net pension and OPEB liability and financial impacts

Net liability as of June 30, 2019¹



Pension funding status as of December 31, 2018

- U.S. ERISA ~80%
- GAAP Worldwide ~77%

U.S. pension contributions currently not tax deductible

Estimated financial impacts, \$M

Expense impact	2019
Segment pension	\$45
Segment OPEB	5
Corporate pension & OPEB	5
Total adj. EBITDA impact	55
Non-operating	115
Special items ² (curtailment/settlement)	38
Total expense impact	\$208

Cash flow impact	2019
Minimum required pension funding	\$190
OPEB payments	110
Total cash impact	\$300

1. The impact on the combined pension and OPEB liability of a 25 basis point change in the weighted average discount rate is approximately \$160M.
 2. Canadian hourly pension plan remeasured as of May 31, 2019 due to retirement benefit changes under new collective bargaining agreement.

Investments summary



Investments listing and income statement location

Investee	Country	Nature of Investment ⁴	Ownership Interest	Carrying Value as of June 30, 2019	Income Statement Location of Equity Earnings
Elysis Limited Partnership	Canada	Aluminum smelting technology	48.235%		
Ma'aden Aluminum Company ¹	Saudi Arabia	Aluminum smelter	25.1%		
Ma'aden Bauxite and Alumina Company ¹	Saudi Arabia	Bauxite mine and Alumina refinery	25.1% ⁵		
Subtotal Ma'aden and Elysis				\$638M	Other expenses / (income), net
Consorcio Serra do Facão	Brazil	Hydroelectric generation facility	34.97%		
Energetica Barra Grande S.A.	Brazil	Hydroelectric generation facility	42.18%		
Halco Mining, Inc. ²	Guinea	Bauxite mine	45% ⁵		
Manicouagan Power Limited Partnership	Canada	Hydroelectric generation facility	40%		
Mineração Rio do Norte S.A. (MRN)	Brazil	Bauxite mine	18.2% ⁵		
Pechiney Reynolds Quebec, Inc. ³	Canada	Aluminum smelter	50%		
Subtotal other				\$503M	COGS
Total investments				\$1,141M	

1. Alcoa Corporation has an investment in a joint venture related to the ownership and operation of an integrated aluminum complex (bauxite mine, alumina refinery, and aluminum smelter) in Saudi Arabia. The joint venture is owned 74.9% by the Saudi Arabian Mining Company (known as "Ma'aden") and 25.1% by Alcoa Corporation.
2. Halco Mining, Inc. owns 100% of Boké Investment Company, which owns 51% of Compagnie des Bauxites de Guinée (CBG).
3. Pechiney Reynolds Quebec, Inc. owns a 50.1% interest in the Bécancour smelter in Quebec, Canada thereby entitling Alcoa Corporation to a 25.05% interest in the smelter. Through two wholly-owned Canadian subsidiaries, Alcoa Corporation also owns 49.9% of the Bécancour smelter.
4. Each of the investees either owns the facility listed or has an ownership interest in an entity that owns the facility listed.
5. A portion or all of each of these ownership interests are held by majority-owned subsidiaries that are part of AWAC.

Rigorous standard in place to manage tailings and residue



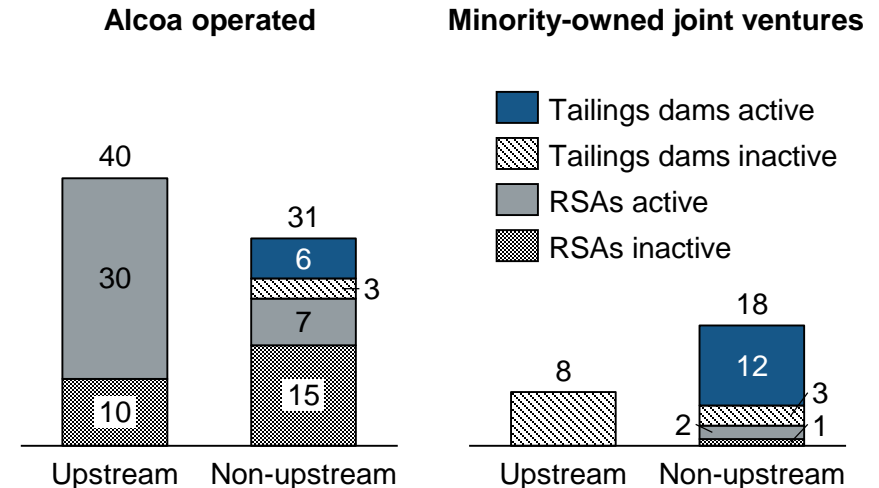
Industry leading standard established over 25 years ago; continuously improved and updated

Robust management process

- Governance structure with global oversight and clearly defined location responsibilities
- Annual independent, third party inspections of Alcoa operated and non-operated impoundments
- Facilities master planned, designed, engineered and constructed to high industry standards
- Operating practices meet or exceed Alcoa standards and local regulations
- Failure analysis and emergency response plans
- 2018 independent global review of impoundment management practices against external benchmarks
- Led industry improvements including dry stacking and filtration technologies
- Focused on progressively closing and rehabilitating inactive areas

Inventory of tailings dams & residue storage

- No Alcoa operated upstream bauxite tailings dams
- 40 Alcoa operated upstream residue storage areas (RSAs)



Note: Inventory does not include 89 Alcoa operated and 17 minority joint venture other impoundments such as hydroelectric dams, fresh water reservoirs, stormwater management, process water, process materials outside of bauxite residue and tailings, closed and remediated legacy location RSAs, and ash ponds. Inventory totals have changed slightly from those included in recent Alcoa presentations, following an internal review to standardize definitions and ensure reporting consistency.

Production and capacity information



Alcoa Corporation annual consolidated amounts as of June 30, 2019

Bauxite production, Mdmt

Mine	Country	2018 Production
Darling Range	Australia	33.5
Juruti	Brazil	5.7
Poços de Caldas	Brazil	0.4
Trombetas (MRN)	Brazil	2.3
Boké (CBG)	Guinea	2.7
Al Ba'itha ¹	Saudi Arabia	1.1
Total		45.8

Alumina refining, kmt

Facility	Country	Capacity	Curtailed
Kwinana	Australia	2,190	-
Pinjarra	Australia	4,234	-
Wagerup	Australia	2,555	-
Poços de Caldas	Brazil	390	214
São Luís (Alumar)	Brazil	1,890	-
San Ciprián	Spain	1,500	-
Point Comfort	U.S.	2,305	2,305
Total		15,064	2,519
<i>Ras Al Khair¹</i>	<i>Saudi Arabia</i>	<i>452</i>	<i>-</i>

Aluminum smelting, kmt

Facility	Country	Capacity	Curtailed
Portland	Australia	197	30
São Luís (Alumar)	Brazil	268	268
Baie Comeau	Canada	280	-
Bécancour ²	Canada	310	259
Deschambault	Canada	260	-
Fjarðaál	Iceland	344	-
Lista	Norway	94	-
Mosjøen	Norway	188	-
Avilés	Spain ³	93	93
La Coruña	Spain ³	87	87
San Ciprián	Spain	228	-
Intalco	U.S.	279	49
Massena West	U.S.	130	-
Warrick	U.S.	269	108
Wenatchee	U.S.	146	146
Total		3,173	1,040
<i>Ras Al Khair¹</i>	<i>Saudi Arabia</i>	<i>186</i>	<i>-</i>

1. The Company's proportionate share of earnings from its equity investment in the Saudi Arabian joint venture does not impact adjusted EBITDA.
2. On July 2, 2019, Alcoa announced that the Bécancour smelter plans to begin restart efforts for curtailed smelting capacity on July 26, after members of the United Steelworkers union in Québec, Canada approved a six-year labor agreement.
3. On July 5, 2019, Alcoa reached a conditional agreement with PARTER Capital Group AG to acquire the Alcoa Avilés and La Coruña aluminum plants in Spain; the casthouses at each plant and the paste plant at La Coruña remain in operation, while the smelter lines at both facilities were fully curtailed during 1Q19.

Valuation framework



Valuation framework key considerations

LTM ending
6/30/2019
Adj. EBITDA excl.
special items

Business Operations	+	Bauxite	Economic value using market multiple of: i. AWAC joint venture, minus small portions of AWAC JV in Aluminum and Transformation	\$454M
	+	Alumina	ii. Ownership in certain mines and refineries outside the JV	\$2,084M
	+	Aluminum	Economic value using market multiple of: i. Smelters, casthouses, rolling mill, and energy assets ii. Smelters and casthouses restart optionality	-\$59M
	-	Non-segment expenses	Economic value using market multiple of: i. Net corporate expenses and Transformation	\$57M
	=	Enterprise value		
Financial Considerations	-	Noncontrolling interest	Implied value of noncontrolling interest in AWAC JV, based on Alumina Limited's observed enterprise value	
	-	Debt & debt-like items ¹	Book value of debt of \$1.8B (\$1.8B, >95% Alcoa), pension & OPEB net liabilities of \$2.3B (\$2.3B, >95% Alcoa; U.S. contributions not tax deductible), environmental & ARO liabilities of \$0.7B (\$0.9B, ~80% Alcoa)	
	+	Cash & equity investments ¹	Cash position of \$0.6B (\$0.8B, ~75% Alcoa) plus carrying value of investments in the Ma'aden joint venture and Elysis of \$0.5B (\$0.6B, ~80% Alcoa)	
	=	Equity value		

1. Dollar amounts reflect Alcoa Corporation's consolidated balance sheet values as of June 30, 2019. The "Alcoa" percentages exclude amounts attributable to Alcoa Corporation's partner in the AWAC JV.

Adjusted EBITDA reconciliation



<i>\$M</i>	1Q18	2Q18	3Q18	4Q18	FY18	1Q19	2Q19	LTM
Net income (loss) attributable to Alcoa Corporation	\$195	\$10	\$(6)	\$51	\$250	\$(199)	\$(402)	\$(556)
Add:								
Net income attributable to noncontrolling interest	145	121	201	176	643	141	109	627
Provision for income taxes	151	158	260	163	732	150	116	689
Other expenses, net	21	9	2	32	64	41	50	125
Interest expense	26	32	33	31	122	30	30	124
Restructuring and other charges	(19)	231	177	138	527	113	370	798
Depreciation, depletion and amortization	194	192	173	174	733	172	174	693
Adjusted EBITDA	713	753	840	765	3,071	448	447	2,500
Special items before tax and noncontrolling interest	19	30	4	5	58	19	8	36
Adjusted EBITDA excl. special items	\$732	\$783	\$844	\$770	\$3,129	\$467	\$455	\$2,536

Alcoa Corporation's definition of Adjusted EBITDA is net margin plus an add-back for depreciation, depletion, and amortization. Net margin is equivalent to Sales minus the following items: Cost of goods sold; Selling, general administrative, and other expenses; Research and development expenses; and Provision for depreciation, depletion, and amortization. Adjusted EBITDA is a non-GAAP financial measure. Management believes that this measure is meaningful to investors because Adjusted EBITDA provides additional information with respect to Alcoa Corporation's operating performance and the Company's ability to meet its financial obligations. The Adjusted EBITDA presented may not be comparable to similarly titled measures of other companies.

Special items detail, net of tax and noncontrolling interest



<i>\$M</i>	2Q18	1Q19	2Q19	Income statement classification
Special items	\$211	\$156	\$400	
USW master agreement negotiation	-	-	5	Cost of goods sold
Bécancour lockout related costs	2	2	2	Cost of goods sold
Spain collective dismissal costs	-	15	1	Cost of goods sold
Contractor arbitration loss	26	-	-	Cost of goods sold
Warrick smelter restart costs	2	-	-	Cost of goods sold
Spain collective dismissal costs	-	2	-	SG&A and R&D expenses
Mark-to-market energy contracts	6	-	-	Other expenses / (income), net
Gain on asset sales	-	(9)	-	Other expenses / (income), net
MRC divestiture	-	-	319	Restructuring and other charges
Pension related actions	166	-	38	Restructuring and other charges
Liberty coal mine exit	-	7	1	Restructuring and other charges
Spain collective dismissal costs	-	103	-	Restructuring and other charges
Wenatchee power penalty and related charges	73	-	-	Restructuring and other charges
Other restructuring related items	(8)	2	12	Restructuring and other charges
Contractor arbitration loss	3	-	-	Interest
Income tax items	(46)	34	22	Tax provision
Non-controlling interest	(13)	-	-	

Free Cash Flow reconciliation



<i>\$M</i>	4Q17	1Q18	2Q18 ¹	3Q18	4Q18	1Q19	2Q19
Cash from operations	\$455	\$55	\$(430)	\$288	\$535	\$168	\$82
Capital expenditures	(150)	(74)	(95)	(82)	(148)	(69)	(89)
Free cash flow	305	(19)	(525)	206	387	99	(7)
Contributions from noncontrolling interest	24	53	56	-	40	20	1
Distributions to noncontrolling interest	(98)	(267)	(118)	(181)	(261)	(214)	(72)
Free cash flow less net distributions to noncontrolling interest	\$231	\$(233)	\$(587)	\$25	\$166	\$(95)	\$(78)

Free Cash Flow and Free Cash Flow less net distributions to noncontrolling interest are non-GAAP financial measures. Management believes that these measures are meaningful to investors because management reviews cash flows generated from operations after taking into consideration capital expenditures and net distributions to noncontrolling interest. Capital expenditures are necessary to maintain and expand Alcoa Corporation's asset base and are expected to generate future cash flows from operations, while net distributions to noncontrolling interest are necessary to fulfill our obligations to our joint venture partners. It is important to note that Free Cash Flow and Free Cash Flow less net distributions to noncontrolling interest do not represent the residual cash flows available for discretionary expenditures since other non-discretionary expenditures, such as mandatory debt service requirements, are not deducted from the measure.

1. Cash from operations for the quarter ended June 30, 2018 includes a \$500 million cash outflow for discretionary contributions made to three of Alcoa Corporation's U.S. defined benefit pension plans. The \$500 million was funded with the gross proceeds of 6.125% Senior notes due 2028 issued in May 2018.

Net Debt reconciliation



<i>\$M</i>	<u>4Q18</u>			<u>1Q19</u>			<u>2Q19</u>		
	Cons.	NCI	Alcoa Prop.	Cons.	NCI	Alcoa Prop.	Cons.	NCI	Alcoa Prop.
Short-term borrowings	\$-	\$-	\$-	\$-	\$-	\$-	\$-	\$-	\$-
Long-term debt due within one year	1	-	1	1	-	1	1	-	1
Long-term debt, less amount due within one year	1,801	34	1,767	1,802	34	1,768	1,804	34	1,770
Total debt	1,802	34	1,768	1,803	34	1,769	1,805	34	1,771
Less: Cash and cash equivalents	1,113	296	817	1,017	238	779	834	184	650
Net debt	689	(262)	951	786	(204)	990	971	(150)	1,121
Plus: Net pension / OPEB liability	2,327	26	2,301	2,290	26	2,264	2,291	28	2,263
Adjusted net debt	\$3,016	\$(236)	\$3,252	\$3,076	\$(178)	\$3,254	\$3,262	\$(122)	\$3,384

Net debt is a non-GAAP financial measure. Management believes that this measure is meaningful to investors because management assesses Alcoa Corporation's leverage position after considering available cash that could be used to repay outstanding debt. Adjusted net debt is also a non-GAAP financial measure. Management believes that this additional measure is meaningful to investors because it provides further insight into Alcoa Corporation's leverage position by including the Company's net pension/OPEB liability.

Days Working Capital



<i>\$M</i>	2Q17	3Q17	4Q17	1Q18	2Q18	3Q18	4Q18	1Q19	2Q19
Receivables from customers	\$789	\$840	\$811	\$814	\$1,025	\$1,017	\$830	\$758	\$684
Add: Inventories	1,447	1,494	1,599	1,855	1,772	1,819	1,819	1,799	1,767
Less: Accounts payable, trade	1,508	1,618	1,898	1,813	1,752	1,711	1,663	1,503	1,523
DWC working capital	\$728	\$716	\$512	\$856	\$1,045	\$1,125	\$986	\$1,054	\$928
Sales	\$2,859	\$2,964	\$3,174	\$3,090	\$3,579	\$3,390	\$3,344	\$2,719	\$2,711
Number of days in the quarter	91	92	92	90	91	92	92	90	91
Days Working Capital¹	23	22	15	25	27	31	27	35	31

1. Days Working Capital = DWC working capital divided by (Sales / number of days in the quarter).

Annualized Return on Capital (ROC)



Reconciliation and calculation information

<i>\$M</i>	1H18	1H19
<i>Numerator:</i>		
Net income attributable to Alcoa Corporation	\$205	\$(601)
Add: Net income attributable to noncontrolling interest	266	250
Add: Provision for income taxes	309	266
Profit before taxes (PBT)	780	(85)
Add: Interest expense	58	60
Less: Interest income	7	10
Add: Special items ¹	250	501
ROC earnings before taxes	\$1,081	\$466
ROC earnings before taxes multiplied by two	\$2,162	\$932
ROC earnings after fixed tax rate of 35%	\$1,405	\$606
<i>Denominator²:</i>		
Total assets	\$16,994	\$15,653
Less: Cash, cash equivalents, restricted cash and short-term investments	1,150	930
Less: Current liabilities	2,995	2,667
Add: Long-term debt due within one year and short-term borrowings	14	1
Average capital base²	\$12,863	\$12,057
ROC	10.9%	5.0%

$$\text{ROC \%} = \frac{(\text{PBT} + \text{net interest}^3 + \text{special items}^1) \times 2 \times (1 - \text{fixed tax rate}^4)}{(\text{Total assets} - \text{cash}^5 - \text{current liabilities} + \text{short-term debt})} \times 100$$

$$\text{1H18 ROC \%} = \frac{((\$780 + \$51 + \$250) \times 2) \times (1 - 0.35)}{(\$16,994 - \$1,150 - \$2,995 + \$14)} \times 100 = 10.9\%$$

$$\text{1H19 ROC \%} = \frac{((-\$85 + \$50 + \$501) \times 2) \times (1 - 0.35)}{(\$15,653 - \$930 - \$2,667 + \$1)} \times 100 = 5.0\%$$

1. Special items exclude interest expense, income taxes, and noncontrolling interest.
2. Denominator calculated using quarter ending balances.
3. Interest expense less interest income.
4. Fixed tax rate of 35%.
5. Defined as cash, cash equivalents, restricted cash and short-term investments.

Glossary of terms



Abbreviations listed in alphanumeric order

Abbreviation	Description
% pts	Percentage points
1H##	Six months ending June 30
1Q##	Three months ending March 31
2H##	Six months ending December 31
2Q##	Three months ending June 30
3Q##	Three months ending September 30
4Q##	Three months ending December 31
Adj.	Adjusted
API	Alumina Price Index
ARO	Asset retirement obligations
AUD	Australian dollar
AWAC	Alcoa World Alumina and Chemicals
B	Billion
BRL	Brazilian real
CAD	Canadian dollar
CIF	Cost, insurance and freight
COGS	Cost of goods sold
dmt	Dry metric ton
Cons.	Consolidated
DoC	Days of consumption
DWC	Days working capital
EBITDA	Earnings before interest, taxes, depreciation and amortization
Elims.	Eliminations
EPS	Earnings per share
ERISA	Employee Retirement Income Security Act of 1974
EUR	Euro
Est.	Estimated
excl. or ex.	Excluding
FY##	Twelve months ending December 31

Abbreviation	Description
GAAP	Accounting principles generally accepted in the United States of America
GWh	Gigawatt hour
ISK	Icelandic krona
JV	Joint venture
kmt	Thousand metric tons
LME	London Metal Exchange
LTM	Last twelve months
M	Million
Mdmt	Million dry metric tons
Mmt	Million metric tons
Mt	Metric ton
N/A	Not applicable
NCI	Noncontrolling interest
NI	Net income
NOK	Norwegian krone
OPEB	Other postretirement employee benefits
PBT	Profit before taxes
Prop.	Proportional
R&D	Research and development
ROC	Return on capital
ROW	Rest of world
SEC	Securities and Exchange Commission
SG&A	Selling, general administrative and other
TBD	To be determined
U.S.	United States of America
USD	United States dollar
VAT	Value Added Tax
vs.	Versus

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