



UNITED STATES
SECURITIES AND EXCHANGE COMMISSION
WASHINGTON, D.C. 20549

DIVISION OF
CORPORATION FINANCE

Mail Stop 4631

July 26, 2016

Via E-Mail

Roy Harvey
President
Alcoa Upstream Corporation
390 Park Avenue
New York, New York 10022

**Re: Alcoa Upstream Corporation
Form 10-12B
Filed June 29, 2016
File No. 001-37816**

Dear Mr. Harvey:

We have reviewed your filing and have the following comments. In some of our comments, we may ask you to provide us with information so we may better understand your disclosure.

Please respond to these comments within ten business days by providing the requested information or advise us as soon as possible when you will respond. If you do not believe our comments apply to your facts and circumstances, please tell us why in your response.

After reviewing your response and any amendment you may file in response to these comments, we may have additional comments.

General

1. Please provide updated financial statements and related disclosures as required by Rule 3-12 of Regulation S-X.

What are the Material U.S. Federal Income Tax Consequences . . . , page 6

2. We note that the distribution is conditioned upon ParentCo's receipt of a tax opinion. Please tell us whether you expect to receive the tax opinion prior to the effectiveness of the registration statement. If not, please advise how you intend to notify your shareholders regarding this material aspect of the spin-off distribution and whether ParentCo has any current intention to waive the tax opinion as a condition to the spin-off.

Information Statement Summary, page 9
History of operational excellence ..., page 11

3. Please balance your disclosure here and on page 65 related to your operational excellence and segment profitability by also disclosing and discussing the significant expenses you exclude from segment income. In this regard, we note you recorded net losses in each of the last four years and during the current interim period.

Bauxite Resource Development Guidelines, page 73

4. We note you do not use a price for bauxite, alumina or aluminum to determine your bauxite reserves and instead use the minimum plant feed specifications as required by the alumina refinery to separate your ore from bauxite mineralization. Please disclose the plant feed specifications with your reserve tables.
5. We note that in addition to these feed specifications, a number of modifying factors have been applied to differentiate bauxite reserves from other mineralized material. Please disclose those major modification factors that affect your reserves such as mine/metallurgical recoveries/losses and wash plant recoveries/losses with your reserve tables.

Management's Discussion and Analysis of Financial Condition and Results of Operations, page 102
Results of Operations, pages 103 and 136

6. When multiple factors contribute to fluctuations in a financial statement line item, please quantify the impact of each factor. Please also ensure that you explain the majority of increases or decreases in each line item. For example, we note your disclosures related to sales, cost of goods sold, SG&A, and DD&A identify multiple factors without quantifying them. Please revise MD&A to quantify the reasons for fluctuations during each period presented whenever possible.

Segment Information, page 110
Bauxite, page 111

7. We note your disclosure that you sold 2.0 million bdmt of bauxite to third parties and purchased 1.1 million bdmt from third parties. Please tell us and clarify the nature of these sales and purchase transactions, including whether or not they represent "buy/sell" transactions of inventory with the same counterparty. Refer to ASC 845-10-15.

Liquidity and Capital Resources, page 123

8. We note from your financial statement disclosures, ParentCo has arrangements on your behalf for the sale of certain customer receivables and also accounts payable settlement

arrangements with certain vendors and third-party intermediaries. Please expand your liquidity discussion to address these arrangements, including whether or not you expect the current or similar new arrangements to continue following the separation.

Contractual Obligations, page 126

9. Please add disclosures within your contractual obligations section, to disclose and discuss the substantial amounts of debt and any other obligations you will incur as a result of the separation.

Executive Compensation, page 166

10. Please tell us how you concluded that historical compensation is not required for each of the named executive officers other than Mr. Oplinger. Please address each of the topics contained in Question 217.01 of our Regulation S-K Compliance and Disclosure Interpretations.

Financial Statements

A. The Proposed Separation and Basis of Presentation

Mineral Rights, page F-11

11. We note your accounting policy disclosure that mineral rights are amortized as the bauxite is produced based on the level of minable tons determined at the time of purchase. Please clarify for us and in your filing the meaning of “minable tons.” It is unclear if you mean proven and probable reserves or some other classification of the level of mineralization.

Q. Segment and Geographic Area Information, page F-42

12. Please more fully explain to us how and why providing certain comparative segment disclosures is not practicable.

U. Equity Investments, page F-55

13. Since we assume the notes to your annual financial statements, including the disclosures required by Rule 4-08(g) of Regulation S-X are covered by the audit report, it appears to us that your current reference to “unaudited financial information” in your annual financial statements is confusing and may be inappropriate. Please advise or revise.

W. Pension and Other Postretirement Benefits, page 57

14. Please tell us and clarify in your filing the extent to which your disclosures relate to foreign and U.S. benefit plans and, if applicable, explain your consideration of the requirements of ASC 715-20-50-4. Also, since it appears you will assume responsibility

for a portion of the benefit obligation you currently account for as a multi-employer plan, please disclose the benefit obligation and plan assets you will assume.

Z. Subsequent Events, page F-71

P. Subsequent Events, page F-102

15. Please disclose the actual date through which subsequent events have been evaluated. Please also disclose whether that date is the date the financial statements were issued or available to be issued. Refer to ASC 855-10-50-1.

Combined Balance Sheet, page F-75

16. We note that prior to or concurrent with the separation you intend to pay a dividend to Arconic Inc. that will be funded by third-party debt. Please reflect the intended dividend on a pro forma basis alongside your most recent historical balance sheet as required by SAB Topic 1:B:3.

We urge all persons who are responsible for the accuracy and adequacy of the disclosure in the filing to be certain that the filing includes the information the Securities Exchange Act of 1934 and all applicable Exchange Act rules require. Since the company and its management are in possession of all facts relating to a company's disclosure, they are responsible for the accuracy and adequacy of the disclosures they have made.

In responding to our comments, please provide a written statement from the company acknowledging that:

- the company is responsible for the adequacy and accuracy of the disclosure in the filing;
- staff comments or changes to disclosure in response to staff comments do not foreclose the Commission from taking any action with respect to the filing; and
- the company may not assert staff comments as a defense in any proceeding initiated by the Commission or any person under the federal securities laws of the United States.

You may contact Kevin Stertzel, Staff Accountant at (202) 551-3723 or, in his absence, Anne McConnell, Staff Accountant at (202) 551-3709 if you have questions regarding comments

Roy Harvey
Alcoa Upstream Corporation
July 26, 2016
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on the financial statements and related matters. Please contact Sherry Haywood, Staff Attorney at (202) 551-3345 or, in her absence, me at (202) 551-3397 with any other questions.

Sincerely,

/s/ Jay Ingram

Jay Ingram
Legal Branch Chief
Office of Manufacturing and
Construction

Cc: Via E-Mail
Margaret Lam, Esq.
Karessa Cain, Esq.