



DIVISION OF  
CORPORATION FINANCE

UNITED STATES  
SECURITIES AND EXCHANGE COMMISSION  
WASHINGTON, D.C. 20549-4631

September 29, 2011

Via Facsimile

Mr. Pablo Brizzio  
Chief Financial Officer  
Ternium S.A.  
29, Avenue de la Porte-Neuve – 3<sup>rd</sup> floor  
L-2227 Luxembourg

**Re: Ternium S.A.  
Form 20-F for the Fiscal Year Ended December 31, 2010  
Filed June 30, 2011  
Response Letter Dated September 22, 2011  
File No. 1-32734**

Dear Mr. Brizzio:

We have reviewed your response 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 this letter within ten business days by amending your filing, by providing the requested information, or by advising us when you will provide the requested response. If you do not believe our comments apply to your facts and circumstances or do not believe an amendment is appropriate, please tell us why in your response.

After reviewing any amendment to your filing and the information you provide in response to these comments, we may have additional comments.

Form 20-F for Fiscal Year Ended December 31, 2010

Sales and Marketing, page 34

1. We note your response to our prior comment number 3. We believe the disclosure requested represents valuable information to allow investors to better assess your business. Please provide the disclosures as previously requested or explain why you believe the disclosures would not be materially useful to an investor.

Raw Materials, Energy and Other Inputs, page 41

2. We note your response to our prior comment number 4. We continue to believe the requested disclosure would provide meaningful information to investors. Please note that if a single metric would not provide sufficient insight to your cost composition and key

drivers of cost, it may be appropriate to provide such information for each major production facility. Please provide the requested information in future filings.

Results of Operations, page 59

3. Regarding prior comment 5, you respond that your current disclosure is responsive to the form requirements. However, you do not address the specific points raised in our comment or explain why you believe additional disclosure concerning these items would not be useful to investors. Please provide us with a detailed response explaining how your future disclosure will address the underlying reasons for changes in your operations in sufficient detail for a reader to see the business through the eyes of management and address the following points from our prior comment:

- The need for expanded discussion and analysis of segment results and the underlying reasons.
- Discussion of product mix and the impact on operations.
- You attribute the change in cost of sales between the years to several factors. Quantify the impact from the various factors and provide a robust analysis of material drivers. For example, your discussion should include quantified analysis of your primary raw materials that provides investors with an understanding of the impact of changes in the price of key raw materials.
- Disclose the expected impact of recent changes in the price of acquired raw materials on profitability in the near term as the materials are processed and related revenue is earned.
- Provide a discussion of your contract mechanisms for recovering increases in raw materials. Discuss limitations on your ability to recover increases in raw materials prices, e.g. any lag between an increase in raw materials and the ability to recover the cost through a contract mechanism, limitations imposed by the market for your finished goods, etc.
- Quantify the percentage of sales to spot market customers vs. short-term and long-term contract sales in your operating segments and locations, how this percentage has changed during recent periods, the impact on your ability to respond to changes in raw materials prices, and the impact on your margins from any recent changes in this mix. Discuss the factors determining this mix, how much control management has in influencing it, and any expected trends or decisions to manage it based on expected volatility in raw materials costs.
- Please quantify the various drivers of changes in selling, general and administrative expenses and discuss the underlying reasons.

These examples are not intended to be a comprehensive list. However, please provide us with examples of future disclosure addressing our key points and revise the disclosures in future filings to provide a greater level of detail and analysis. Note many of these points involve the relationship between your operations and fluctuations in the markets for raw materials. Address how your disclosure communicates to investors your sensitivity to these markets and your approach for managing them.

Item 19. Exhibits, page 114

4. We note your response to comment six in our letter dated September 2, 2011. Based on your response and the disclosure in your filings, we continue to believe that the refinancing agreement entered into on April 6, 2011, and related loan agreement dated July 12, 2007, may be material to investors. Please file these agreements with your future filings.

Financial Statements

Note 4 (e) Intangible Assets, page F-20

5. We note your response to our comment number 9. In future filings, please expand your footnote to disclose the information provided in your response regarding the terms of your concessions.

Note 4(m) Income taxes - current and deferred, page F-22

6. We note your response to our prior comment number 12. It appears you are applying the exception found in paragraph 15(b) of IAS 12. Please expand your accounting policy in future filings to address this element of your overall accounting convention.

Note 4 (w) Critical Accounting Estimates

Goodwill Impairment Test, page F-25

7. Thank you for your response to comment 14, which focused on the 2008 goodwill impairment test. Please tell us how your current CGUs (e.g. Mexico and Argentina) meet both requirements in paragraph 80 of IAS 36. Specifically confirm whether these CGUs are larger than your operating segments, as defined by paragraph 5 of IFRS 8. Please provide us with a list of your operating segments.

Engineering Comments

8. We note your response to our previous comment number 20. Given the recent increase in the spot price of iron ore, please provide us with your actual production cost and the internal transfer price that you use for your lump, fine and pelletized iron ore that is sourced from your Mexican mines. In addition, please tell us if the loss or depletion of your internal iron ore source would have a material impact to your company.
9. We note your response to our previous comment numbers 20 and 21. As supplemental information and not as part of your filing, please provide us with your 2010 actual

Mr. Pablo Brizzio  
Ternium S.A.  
September 29, 2011  
Page 4

production of lump, fine and pelletized iron ore from each of your Mexican mining operations and an estimate of your mineral reserves.

If you wish to have this supplemental material returned, please make a written request with the letter of transmittal. Please note that you may request the return of this information pursuant to the provisions of Rule 418(b). If there are any questions concerning the above request, please phone John Coleman, Mining Engineer at (202) 551-3610.

#### Closing Comments

You may contact Kevin Stertz at (202) 551-3723, if you have questions regarding comments on the financial statements and related matters. You may contact John Coleman, Mining Engineer, at (202) 551-3610 with questions about engineering comments. Please contact Hagen Ganem at (202) 551-3330 if you have questions regarding legal comments, or me at (202) 551-3355 with any other questions.

Sincerely,

/s/ Terence O'Brien

Terence O'Brien  
Branch Chief