



DIVISION OF
CORPORATION FINANCE

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

Mail Stop 4631

September 7, 2010

via U.S. mail and facsimile

Pablo Brizzio, CFO
Ternium S.A.
46a, Avenue John F. Kennedy – 2nd Floor
L-1855 Luxembourg

**RE: Ternium S.A.
Form 20-F for the Fiscal Year Ended December 31, 2009
Filed June 30, 2010
File No. 1-32734**

Dear Mr. Brizzio:

We have limited our review to only your financial statements and related disclosures and do not intend to expand our review to other portions of your documents. 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 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 the information you provide in response to these comments, we may have additional comments.

Consolidated Statements of Changes in Shareholders' Equity, page 5

1. In future filings, please disclose the number of authorized shares in accordance with paragraph 79(a)(i) of IAS 1. Please also provide a description of the nature and purpose of each reserve within equity in accordance with paragraph 79(b) of IAS 1.

4 Accounting policies, page 15

(a) Group accounting, page 16

(1) Subsidiary companies, page 16

2. In future filings, please provide investors with a more comprehensive understanding as to your accounting policy for business combinations with consideration as to whether any material acquisitions have occurred during any of the periods presented. Specifically, please ensure you address the following:
- The determination of the acquisition date.
 - The process for recognizing and measuring assets, liabilities, and non-controlling interest.
 - The process for recognizing goodwill or a gain from a bargain purchase.
 - The measurement period for the recognition of assets and liabilities.
 - The treatment of any subsequent measurement and accounting for reacquired rights, contingent liabilities, indemnification assets, and contingent consideration.
- Please refer to IFRS 3 for guidance.

(b) Foreign currency translation, page 18

(3) Transactions in currencies other than the functional currency, page 18

3. In future filings, please disclose your accounting policy for reporting monetary and non-monetary assets and liabilities in periods subsequent to the original transaction. Please refer to paragraphs 23-26 of IAS 21. Please also disclose your accounting policy as it relates to gains or losses on non-monetary items. Please refer to paragraphs 30-31 of IAS 21. Please provide us with the disclosures you intend to include in future filings.

(c) Financial instruments, page 18

4. In future filings, please disclose your accounting policy for assessing your non derivative financial assets that are carried at amortized cost for impairment. Please refer to paragraphs 58-65 of IAS 39.

(e) Intangible assets, page 19

(2) Mining concessions and exploration costs, page 20

5. In future filings, please disclose the method and amortization rate(s) you are using to amortize your mining licenses and exploration and evaluation costs. To the extent that the amortization method for these assets differ, please separately disclose these assets to allow an investor to better understand how each of these assets are impacting the consolidated financial statements. Please refer to paragraphs 88-106 and 118(a)-118(b) of IAS 38 for guidance.

(n) Employee liabilities, page 23

(1) Pension obligations, page 23

6. Please revise your disclosure in future filings to clarify, if correct, that the present value of your defined benefit obligations have been evaluated regularly such that the amounts recognized in the financial statements do not differ materially from the amounts that would have been determined at the end of the reporting period. Please refer to paragraph 56 of IAS 19 for guidance.

(v) Critical Accounting Estimates, page 26

(1) Goodwill impairment test, page 26

7. In future filings, please provide the disclosures required by paragraph 134 of IAS 36 for each of your CGUs that have been allocated a significant amount of goodwill in comparison to the total carrying amount of goodwill. If you have determined that none of your CGUs have been allocated a significant amount of goodwill in comparison to the total carrying amount of goodwill, please provide the disclosures required by paragraph 135 of IAS 36 to the extent appropriate. Please note that these disclosures should provide investors with your company-specific / CGU-specific assumptions rather than a high-level overview that could be applicable to any company. Please provide us with the disclosures that you would have provided in the 2009 20-F and will be the basis for future disclosures.

(4) Allowance for obsolescence of supplies and spare parts and slow-moving inventory, page 27

8. In future filings, please provide investors with a more comprehensive understanding of the charges you recognized to mark your inventories to net realizable value in fiscal years 2009 and 2008. This disclosure should provide investors with the facts specific to Ternium that led to the need to record the valuation allowance, including quantification of the changes in steel prices. Please provide this disclosure by geography to the extent that there are material differences in selling prices between geographic locations. Please refer to paragraphs 125-133 of IAS1 and Section 501.14 of the Financial Reporting Codification for guidance. Please provide us with the disclosures you intend to include in future filings.

(6) Useful Lives and Impairment of Property, Plant and Equipment and Other Long-Lived Assets, page 27

9. We note that long-lived assets with finite useful lives represent a significant portion of your total assets (i.e., 42.9%) and total equity (i.e., 70.5%). As such, please revise your disclosures to provide investors with a more comprehensive understanding as to

how these assets are reviewed each reporting period in future filings either in your footnote disclosures or within MD&A. Specifically, please address each of the following:

- Discuss all of the material, CGU-specific facts and circumstances considered when you assess whether there is an indicator that an impairment may exist. Refer to paragraphs 12-14 of IAS 36 for guidance.
- If you tested any CGUs for impairment during any of the periods presented, please disclose the number of CGUs tested along with the corresponding carrying values of the CGUs and provide a detailed discussion as to how you estimated the recoverable amount, specifically stating whether you estimated the fair value less costs to sell or the value in use or both, along with the material estimates and assumptions made. Refer to paragraphs 18-57 and 74-79 of IAS 36 for guidance.
- To the extent that it is reasonably possible a future impairment charge could be recognized, discuss the facts and circumstances that could lead to additional impairment charges.

Please provide us with the disclosures that you would have provided in the 2009 20-F that addresses the bullet points above and will be the basis for future disclosures.

11 Income tax expense, page 32

10. In future filings, please disclose the impact the termination of the 1929 holding company regime is expected to have once the current exemption expires in December 31, 2010. Please refer to paragraph 81(d) of IAS 12 for guidance. Please provide us with the disclosure you intend to include in future filings.
11. In future filings, please explain what the line item, recovery of income tax, in the income expense components table and the effective tax rate reconciliation. Please provide us with the disclosure you intend to include in future filings.
12. In future filings, please disclose the basis on which the applicable tax rate is computed. Please refer to paragraph 81(c)(i) of IAS 12 for guidance. To the extent appropriate, please also provide an explanation for any changes in accordance with paragraph 81(d) of IAS 12.

20 Cash, cash equivalents and other investments, page 36

13. In future filings, please separately disclose the amount of cash on hand and balances with banks separately from the different components of cash equivalents. Please refer to paragraph 45 of IAS 7.
14. In future filings, please disclose the amount of cash and cash equivalents that are not available for use by the group. Otherwise, please disclose that there are no

restrictions on the use of cash and cash equivalents. Please refer to paragraph 48 of IAS 7 for guidance.

22 Allowances – current, page 37

15. In future filings, please provide investors with an explanation for the reversals in the obsolescence allowance during fiscal years 2009 and 2008. Please refer to paragraph 36(g) of IAS 2 for guidance. Please provide us with the disclosure you intend to include in future filings.

23 Deferred income tax, page 38

16. Please confirm to us that you do not have any material unrecognized deferred tax assets. Otherwise, please confirm that you will provide the disclosures required by paragraph 81(e) of IAS 12 in future filings.

25 Derivative financial instruments, page 40

17. In future filings, please disclose the following for your interest rate contracts and your foreign exchange contracts that are considered cash flow hedging instruments in accordance with IAS 39 to allow investors to better understand how these hedging instruments are impacting the consolidated financial statements:

- The gross amount recognized in other comprehensive income for the change in fair value.
- The gross amount reclassified from other comprehensive income to profit or loss in the consolidated income statements.
- The gross amount remaining in accumulated other comprehensive income, including an understanding as to when you expect the remaining amounts to be reclassified to profit or loss in the consolidated income statements. For example, we note that you disclosed that USD 46.7 million is in accumulated other comprehensive income for your interest rate contracts. However, it is unclear whether this is profit or a loss and when you expect this amount to be reclassified to the consolidated income statements.

Please refer to paragraph 23 of IFRS 7 for guidance. Please provide us with the disclosures you intend to include in future filings.

27 Contingencies, commitments and restrictions on the distribution of profits, page 42

18. We note your disclosure that the ultimate resolution of existing litigation will not have a material impact to your consolidated financial position or results of operations. In future filings, please expand your conclusion regarding materiality as it also relates to your liquidity. To the extent that the ultimate resolutions could have a material impact on your liquidity, please revise your disclosures for each provision to state the

amount or range by which your consolidated financial statements could be impacted above the amount of provision recognized, if any. Please refer to paragraph 86 of IAS 37 for guidance.

(ii) Commitments, page 43

19. In future filings, please expand your disclosure of Siderar's raw material purchase agreements to disclose how you have accounted for the purchases of certain raw materials at prices that exceed current market conditions by USD 66.3 million. Please provide us with the disclosures you intend to include in future filings.

29 Discontinued operations, page 46

(ii) Nationalization of Sidor, page 46

20. In future filings, please explain to investors what the \$136 million "gain" recognized in the interest income – Sidor financial asset line item of the consolidated income statements represents. Please provide us with the disclosures you intend to include in future filings, which should explain how you calculated the \$136 million gain and how you determined a 14.36% annual discount rate is appropriate.

30 Related party transactions, page 45

(iv) Officers and Directors' compensation, page 49

21. In future filings, please also disclose key management personnel compensation by the categories listed in paragraph 16 of IAS 24.

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

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- 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 Tracey Houser, Staff Accountant, at (202) 551-3736, or in her absence, Jeanne Baker, Assistant Chief Accountant, at (202) 551-3691, or me at (202) 551-3355, if you have questions regarding comments on the financial statements and related matters.

Sincerely,

Terence O'Brien
Accounting Branch Chief