FORM 6 - K

SECURITIES AND EXCHANGE COMMISSION Washington, D.C. 20549

Report of Foreign Private Issuer Pursuant to Rule 13a - 16 or 15d - 16 of the Securities Exchange Act of 1934

As of 5/4/2010

Ternium S.A. (Translation of Registrant's name into English)

Ternium S.A.
46a, Avenue John F. Kennedy – 2nd floor
L-1855 Luxembourg
(352) 4661-11-3815
(Address of principal executive offices)

Indicate by check mark whether the registrant files or will file annual reports under cover Form 20-F or 40-F.

Form 20-F ü Form 40-F_

Indicate by check mark whether the registrant by furnishing the information contained in this Form is also thereby furnishing the information to the Commission pursuant to Rule 12G3-2(b) under the Securities Exchange Act of 1934.

Yes No ü

If "Yes" is marked, indicate below the file number assigned to the registrant in connection with Rule 12g3-2(b):

Not applicable

The attached material is being furnished to the Securities and Exchange Commission pursuant to Rule 13a-16 and Form 6-K under the Securities Exchange Act of 1934, as amended.

This report contains Ternium S.A.'s press release announcing first quarter 2010 results.

SIGNATURE

Pursuant to the requirements of the Securities Exchange Act of 1934, the Registrant has duly caused this report to be signed on its behalf by the undersigned, thereunto duly authorized.

TERNIUM S.A.

By: /s/ Pablo Brizzio Name: Pablo Brizzio

Title: Chief Financial Officer

Dated: May 4, 2010

By: /s/ Daniel Novegil Name: Daniel Novegil

Title: Chief Executive Officer

Ternium Announces First Quarter 2010 Results

LUXEMBOURG--(Marketwire - May 4, 2010) - Ternium S.A. (NYSE: TX) today announced its results for the first quarter ended March 31, 2010.

The financial and operational information contained in this press release is based on Ternium S.A.'s consolidated financial statements prepared in accordance with International Financial Reporting Standards (IFRS) and presented in U.S. dollars and metric tons.

Summary of First Quarter 2010 Results

	1Q 2010		4Q 2009				1Q 2009			
Shipments (tons)	1,908,000		1,655,000)	15	%	1,504,000	0	27	%
Net Sales (US\$ million)	1,650.6		1,365.2		21	%	1,174.7		41	%
Operating Income (US\$ million)	293.5		216.1		36	%	(26.5)		
EBITDA (US\$ million)	384.8		315.9		22	%	95.0		305	%
EBITDA Margin (% of net sales)	23	%	23	%			8	%		
EBITDA per Ton, Flat & Long Steel (US\$)	190		177		7	%	56		239	%
Net Foreign Exchange Result (US\$ million)	101.0		72.2				(160.5)		
Net Income (US\$ million)	245.1		194.8		26	%	(117.0))		
Equity Holders' Net Income (US\$ million)	205.2		159.3		29	%	(93.2)		
Earnings per ADS (US\$)	1.02		0.79		29	%	(0.46))		

- -- EBITDA(1) of US\$384.8 million in the first quarter 2010, up 22% compared to the fourth quarter 2009, mainly due to higher shipments and a slightly higher EBITDA per ton.
- -- Earnings per ADS(2) of US\$1.02 in the first quarter 2010, which includes a US\$0.32 after-tax non-cash foreign exchange gain per ADS on Ternium's Mexican subsidiary's US dollar denominated debt.
- -- Positive free cash flow(3) of US\$258.6 million in the first quarter 2010.
- -- Collection of US\$300.2 million in March 2010 in connection with the transfer of the Sidor shares to Venezuela.
- -- Net cash position of US\$0.4 billion at the end of the first quarter 2010.

Ternium's operating income in the first quarter 2010 was US\$293.5 million, up 36% compared to the fourth quarter 2009 mainly due to higher shipments and revenue per ton, partially offset by higher operating cost per ton. Shipments increased 253,000 tons in the first quarter 2010 compared to the fourth quarter 2009, mainly due to a 211,000 ton increase in shipments in the North America Region. Revenue per ton increased US\$43 in the first quarter 2010, as prices were higher in all of Ternium's regions during the period than they were in the fourth quarter 2009. The increase in prices was partially offset by higher operating cost per ton, mainly as a result of higher costs for third-party slabs, scrap and energy, as well as an increase in the share of third-party-slab-based products in Ternium's first quarter 2010 sales mix.

Operating income in the first quarter 2010 increased US\$320.0 million when compared to the first quarter 2009 mainly as a result of higher shipments, higher revenue per ton and lower operating cost per ton. Shipments in the first quarter 2009 stood at their lowest level in the last two years as a result of the economic downturn that began in the second half of 2008. Revenue per ton in the first quarter 2009 was also significantly affected by the economic downturn, and only began to gradually recover in the second half of 2009.

Ternium's net income in the first quarter 2010 was US\$245.1 million, an increase of US\$50.3 million compared to the fourth quarter 2009 mainly due to a US\$77.4 million increase in operating income and a US\$15.7 million increase in financial income, partially offset by an increase in income tax expense.

Net income in the first quarter 2010 was US\$362.1 million higher than in the first quarter 2009, mainly as a result of a US\$320.0 million increase in operating income and a US\$254.2 million increase in non-cash net foreign exchange results on Ternium's Mexican subsidiary US dollar denominated debt (which was offset by changes in Ternium's net equity position), partially offset by an increase in income tax expense.

Outlook

A gradual recovery in business conditions in the NAFTA region, coupled with a restocking in the steel value chain, should help sustain Ternium's increased shipment levels in the second quarter 2010. In addition, the company expects shipments in its core markets in the South & Central America Region to resume growth following a seasonally weak first quarter.

Ternium expects an increase in operating income in the second quarter 2010 compared to the first quarter 2010 mainly as a result of slightly higher shipments and an improved operating margin, as higher steel prices should be only partially offset by higher raw material costs.

Analysis of First quarter 2010 Results

Net income attributable to Ternium's equity holders in the first quarter 2010 was US\$205.2 million, compared with a net loss attributable to the company's equity holders of US\$93.2 million in the first quarter 2009. Including minority interest, net income for the first quarter 2010 was US\$245.1 million, compared with a net loss of US\$117.0 million in the first quarter 2009. Earnings per ADS for the first quarter 2010 were US\$1.02, compared with a loss per ADS of US\$0.46 in the first quarter 2009.

Net sales in the first quarter 2010 were US\$1.7 billion, 41% higher than net sales in the first quarter 2009. Shipments of flat and long products were 1.9 million tons during the first quarter 2010, an increase of 27% compared to such shipments in the first quarter 2009, mainly due to an increase in demand in Ternium's main steel markets. Revenue per ton shipped was US\$838 in the first quarter 2010, an increase of 10% compared to the same quarter in 2009, mainly as a result of higher prices in the North America Region, partially offset by lower prices in the South & Central America Region.

	Net Sales	(million US	S\$)	Shipments	Shipments (thousand tons)			Revenue / ton (US\$/ton)				
	1Q 2010	1Q 2009	Dif.	1Q 2010	1Q 2009	Dif.	1Q 2010	1Q 2009	Dif.			
South & Central	585.3	358.0	63%	628.5	363.7	73%	931	984	-5%			
America												
North America	834.8	545.6	53%	990.8	704.0	41%	843	775	9%			
Europe & other	7.1	93.3		12.6	170.9		559	546				
Total flat products	1,427.1	996.8	43%	1,631.9	1,238.5	32%	874	805	9%			
South & Central	28.2	11.4	148%	56.7	23.1	145%	498	493	1%			
America	1111	1210	5 01	210.0	220.4	0.07	650	7.60	150			
North America	144.1	134.8	7%	218.8	239.4	-9%	658	563	17%			
Europe & other	0.4	2.0		0.7	3.0		540	666				
Total long products	172.7	148.2	17%	276.2	265.5	4%	625	558	12%			
Total flat and long products	1,599.7	1,145.0	40%	1,908.1	1,504.1	27%	838	761	10%			
Other products (1)	50.9	29.7	71%									
Total Net Sales	1,650.6	1,174.7	41%									

⁽¹⁾ Primarily includes iron ore, pig iron and pre-engineered metal buildings.

Sales of flat products during the first quarter 2010 were US\$1.4 billion, an increase of 43% compared with the same quarter in 2009. Net sales increased as a result of higher shipments and revenue per ton. Shipments of flat products were 1.6 million tons in the first quarter 2010, an increase of 32% compared with the same period in 2009, mainly due to an increase in demand in Ternium's main steel markets. Revenue per ton shipped increased 9% to US\$874 in the first quarter 2010 compared with the same period in 2009, mainly due to higher prices in the North America Region, partially offset by lower prices in the South & Central America Region.

Sales of long products were US\$172.7 million in the first quarter 2010, an increase of 17% compared to the same period in 2009 mainly due to higher volumes and revenue per ton. Shipments of long products totaled 276,000 tons in the first quarter 2010, a 4% increase versus the same quarter in 2009 due to higher shipments in the South & Central America Region, partially offset by lower shipments in the North America Region. Revenue per ton shipped was US\$625 in the first quarter 2010, an increase of 12% compared to the first quarter 2009, mainly due to higher prices in Mexico, partially offset by a lower value-added sales mix.

Sales of other products totaled US\$50.9 million during the first quarter 2010, compared to US\$29.7 million during the first quarter 2009. The increase was mainly driven by higher iron ore shipments and prices.

Sales of flat and long products in the North America Region were US\$978.8 million in the first quarter 2010, an increase of 44% versus the same period in 2009, due to higher shipments and revenue per ton. Shipments in the region totaled 1,210,000 tons during the first quarter 2010, or 28% higher than in the same period in 2009 as a result of higher demand. Revenue per ton shipped in the region increased 12% to US\$809 in the first quarter 2010 over the same quarter in 2009, mainly due to higher prices.

Flat and long product sales in the South & Central America Region were US\$613.5 million during the first quarter 2010, an increase of 66% versus the same period in 2009. This increase was mainly due to higher shipments, partially offset by lower revenue per ton. Shipments in the region totaled 685,000 tons during the first quarter 2010, or 77% higher than in the first quarter 2009, due to higher steel demand in the region. Revenue per ton shipped was US\$895 in the first quarter 2010, a decrease of 6% compared to the same quarter in 2009, mainly due to lower prices and a lower value-added sales mix.

Cost of sales totaled US\$1.2 billion in the first quarter 2010 compared to US\$1.0 billion in the first quarter 2009. Cost of sales increased mainly as a result of higher shipments, partially offset by a lower cost per ton. The lower cost per ton year-over-year was due to lower raw materials and third-party slabs costs, as well as the absence of inventory write-downs in the first quarter 2010.

Selling, General & Administrative (SG&A) expenses in the first quarter 2010 were US\$144.3 million, or 9% of net sales, compared with US\$136.2 million, or 12% of net sales, in the first quarter 2009. In the first quarter 2010 there were higher freight expenses and taxes, both related to higher shipment levels.

Operating income in the first quarter 2010 was US\$293.5 million, or 18% of net sales, compared with an operating loss of US\$26.5 million in the first quarter 2009.

EBITDA in the first quarter 2010 was US\$384.8 million, or 23% of net sales, compared with US\$95.0 million, or 8% of net sales, in the first quarter 2009.

Net financial income was US\$108.7 million in the first quarter 2010, compared with net financial expenses of US\$187.6 million in the first quarter 2009. During the first quarter 2010, Ternium's net interest expenses totaled US\$14.8 million, a decrease of US\$7.8 million compared to the first quarter 2009, due to lower indebtedness.

Net foreign exchange result was a gain of US\$101.0 million in the first quarter 2010 compared to a loss of US\$160.5 million in the same period in 2009. The first quarter 2010 gain was primarily due to the impact of the Mexican Peso's 5% revaluation on Ternium's Mexican subsidiary US dollar denominated debt. This result is non-cash when measured in US dollars and is offset by changes in Ternium's net equity position in the currency translation adjustments line, as the value of Ternium Mexico's US dollar denominated debt is not altered by the Mexican Peso's fluctuation when stated in US dollars in Ternium's consolidated financial statements. In accordance with IFRS, Ternium Mexico

prepares its financial statements in Mexican Pesos and registers foreign exchange results on its net non-Mexican Pesos positions when the Mexican Peso revaluates or devaluates relative to other currencies.

Income tax expense for the first quarter 2010 was US\$156.8 million, compared with an income tax benefit of US\$96.5 million in the same period in 2009. The first quarter 2009 result included a gain of US\$35.4 million due to a favorable resolution on a tax-related dispute in Mexico.

Income attributable to minority interest for the first quarter 2010 was US\$39.9 million, compared to a loss attributable to minority interest of US\$23.8 million in the first quarter 2009.

Cash Flow and Liquidity

Net cash provided by operating activities in the first quarter 2010 was US\$313.2 million, compared to US\$409.3 million in net cash provided by operating activities in the first quarter 2009. While operating income was US\$320.0 million higher in the first quarter 2010 than in the first quarter 2009, there was a US\$371.3 million reduction in working capital in the first quarter 2009 compared with a small increase in the first quarter 2010. The increase in working capital in the first quarter 2010 resulted mainly from an increase in sales volume and prices that turned into higher trade receivables and accounts payable, while inventories remained relatively stable. In the first quarter 2009, working capital decreased mainly as a result of an inventory reduction program put in place as a result of the economic downturn.

Capital expenditures in the first quarter 2010 were US\$54.5 million, compared to US\$68.3 million in the first quarter 2009. Capital expenditures during the first quarter 2010 were mainly related to the relining of a blast furnace and a new slitting line in Argentina and the upgrading of two rolling mills in Mexico.

In the first quarter 2010, Ternium had a positive free cash flow(4) of US\$258.6 million compared to positive free cash flow(4) of US\$341.0 million in the first quarter 2009. In addition, proceeds from the transfer of shares of Sidor to Venezuela totaled US\$300.2 million in the first quarter 2010.

Ternium's net repayment of borrowings in the first quarter 2010 was US\$289.0 million, mostly related to scheduled payments of the company's Mexican subsidiary outstanding debt. As of March 31, 2010, Ternium's financial debt was US\$2.0 billion, while the company's cash and cash equivalents totaled US\$2.4 billion.

Forward-Looking Statements

Some of the statements contained in this press release are "forward-looking statements." Forward-looking statements are based on management's current views and assumptions and involve known and unknown risks that could cause actual results, performance or events to differ materially from those expressed or implied by those statements. These risks include but are not limited to risks arising from uncertainties as to gross domestic product, related market demand, global production capacity, tariffs, cyclicality in the industries that purchase steel products and other factors beyond Ternium's control.

About Ternium

Ternium is a leading steel company in Latin America, manufacturing and processing a wide range of flat and long steel products for customers active in the construction, home appliances, capital goods, container, food, energy and automotive industries. With its principal operations in Mexico and Argentina, Ternium serves markets in the Americas through its integrated manufacturing system and extensive distribution network. The Company has an annual production capacity of approximately nine million tons of finished steel products. More information about Ternium is available at www.ternium.com.

- (1) EBITDA in the first quarter 2010 equals operating income of US\$293.5 million plus depreciation and amortization of US\$91.3 million.
- (2) Each American Depositary Share (ADS) represents 10 shares of Ternium's common stock. Results are based on a weighted average number of shares of common stock outstanding of 2,004,743,442.
- (3) Free cash flow in the first quarter 2010 equals net cash provided by operations of US\$313.2 million less capital expenditures of US\$54.5 million.
- (4) Free cash flow in the first quarter 2010 equals net cash provided by continuing operations of US\$313.2 million less capital expenditures of US\$54.5 million, while free cash flow in the first quarter 2009 equals net cash provided by continuing operations of US\$409.3 million less capital expenditures of US\$68.3 million. Consolidated income statement

Consolidated income statement

US\$ million	1Q 2010		1Q 2009		Dif.	
Net sales	1,650.6		1,174.7		475.9	
Cost of sales	(1,213.6)	(1,044.6)	(169.1)
Gross profit	437.0		130.1		306.9	
Selling, general and administrative expenses	(144.3)	(136.2)	(8.1)
Other operating income (expenses), net	0.9		(20.4)	21.3	
Operating income (loss)	293.5		(26.5)	320.0	
Interest expense	(18.9))	(27.7)	8.8	
Interest income	4.1		5.1		(1.0)
Interest income - Sidor financial asset	27.2		-		27.2	
Other financial income (expenses), net	96.2		(165.0)	261.2	
Equity in (losses) earnings of associated companies	(0.2)	0.5		(0.8)
Income (Loss) before income tax expense	401.9		(213.6)	615.5	
Income tax (expense) Benefit	(156.8)	96.5		(253.4)
Net income (loss) for the period	245.1		(117.0)	362.1	
Attributable to:						
Equity holders of the Company	205.2		(93.2)	298.4	
Minority interest	39.9		(23.8)	63.7	
	245.1		(117.0)	362.1	

Consolidated balance sheet

US\$ million	March 31, 2010	December 31, 2009
Property, plant and equipment, net	4,116.1	4,040.4
Intangible assets, net	1,121.7	1,085.4
Investment in associated companies	6.3	6.6
Other investments, net	37.2	16.4
Receivables, net	77.9	101.3
Total non-current assets	5,359.3	5,250.1
Receivables	88.3	136.3
Derivative financial instruments	0.6	1.6
Inventories, net	1,378.9	1,350.6
Trade receivables, net	639.6	437.8
Sidor financial asset	691.4	964.4
Other investments	6.7	46.8
Cash and cash equivalents	2,387.0	2,095.8
Total current assets	5,192.4	5,033.3
Non-current assets classified as held for sale	10.1	9.2
Total assets	10,561.8	10,292.7
Shareholders' equity	5,562.2	5,296.3
Minority interest in subsidiaries	1,002.5	964.9
Minority interest & shareholders' equity	6,564.7	6,261.2
Provisions	19.1	18.9
Deferred income tax	900.2	857.3
Other liabilities	191.5	176.6
Derivative financial instruments	26.2	32.6
Borrowings	1,534.8	1,787.2
Total non-current liabilities	2,671.8	2,872.7
Current tax liabilities	176.1	103.2
Other liabilities	78.7	57.0
Trade payables	523.3	413.0
Derivative financial instruments	41.3	46.1
Borrowings	505.8	539.5
Total current liabilities	1,325.2	1,158.8
Total liabilities	3,997.1	4,031.4
Total liabilities, minority interest & shareholders' equity	10,561.8	10,292.7

Consolidated cash flow statement

US\$ million	1Q 2010		1Q 2009		Dif.	
Net income (loss) for the period	245.1		(117.0)	362.1	
Adjustments for:						
Depreciation and amortization	91.3		94.4		(3.2)
Equity in earnings of associated companies	0.2		(0.5)	0.8	
Changes in provisions	2.0		(1.2)	3.1	
Net foreign exchange results and others	(82.4)	173.7		(256.1)
Interest accruals less payments	(9.6)	9.7		(19.3)
Interest income - Sidor financial asset	(27.2)	-		(27.2)
Income tax accruals less payments	116.8		(148.0)	264.8	
Impairment charge	-		27.0		(27.0)
Changes in working capital	(23.0)	371.3		(394.3)
Net cash provided by operating activities	313.2		409.3		(96.1)
Capital expenditures	(54.5)	(68.3)	13.8	
Proceeds from sale of property, plant & equipment	0.7		0.3		0.3	
Acquisition of business	-		(0.2)	0.2	
Decrease (Increase) in Other Investments	19.6		(0.9))	20.5	
Proceeds from Sidor financial asset	300.2		-		300.2	
Net cash provided by (used in) investing activities	266.0		(69.0)	335.0	
Proceeds from borrowings	1.4		74.2		(72.8)
Repayment of borrowings	(290.5)	(395.9)	105.4	
Net cash used in financing activities	(289.0)	(321.7)	32.7	
Increase in cash and cash equivalents	290.1		18.6		271.5	

Shipments			
Thousand tons	1Q 2010	1Q 2009	4Q 2009
South & Central America	628.5	363.7	602.0
North America	990.8	704.0	772.3
Europe & other	12.6	170.9	13.4
Total flat products	1,631.9	1,238.5	1,387.6
•			
South & Central America	56.7	23.1	37.5
North America	218.8	239.4	226.5
Europe & other	0.7	3.0	3.1
Total long products	276.2	265.5	267.0
Total flat and long products	1,908.1	1,504.1	1,654.6
Revenue / ton			
US\$/ton	1Q 2010	1Q 2009	4Q 2009
South & Central America	931	984	909
North America	843	775	798
Europe & other	559	546	482
Total flat products	874	805	843
South & Central America	498	493	533
North America	658	563	550
Europe & other	540	666	500
Total long products	625	558	547
Total flat and long products	838	761	795
Net Sales			4.0.00
US\$ million	1Q 2010	1Q 2009	4Q 2009
South & Central America	585.3	358.0	546.9
North America	834.8	545.6	616.4
Europe & other	7.1	93.3	6.5
Total flat products	1,427.1	996.8	1,169.8
South & Central America	28.2	11.4	20.0
North America	144.1	134.8	124.6
Europe & other	0.4	2.0	1.5
Total long products	172.7	148.2	146.1
Total flat and long products	1,599.7	1,145.0	1,315.9
Other products (1)	50.9	29.7	49.3
Total net sales	1,650.6	1,174.7	1,365.2
(1) Primarily includes iron ore, pig iron and pre-engineered metal building	ngs.		

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