
FORM 6-K

SECURITIES AND EXCHANGE COMMISSION

Washington, D.C. 20549

For the month of February 2010 No. 8

TOWER SEMICONDUCTOR LTD.

(Translation of registrant's name into English)

Ramat Gavriel Industrial Park
P.O. Box 619, Migdal Haemek, Israel 23105
(Address of principal executive offices)

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

Form 20-F S

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 S

On February 24, 2010, the Registrant announced its financial results for the fourth quarter and fiscal year ended December 31, 2009. Attached hereto are the following exhibits

Exhibit 99.1 Press release dated February 24, 2010

SIGNATURES

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.

TOWER SEMICONDUCTOR LTD.

Date: February 24, 2010

By: /s/ Nati Somekh Gilboa
Name: Nati Somekh Gilboa
Title: Corporate Secretary



TowerJazz Announces Fourth Quarter Financial Results; Surpassing \$100 million Revenue with Record EBITDA at \$23 million

Q1 2010 guidance expected to be around 94 percent growth year-over-year and 13 percent sequential growth

MIGDAL HAEMEK, Israel – February 24, 2010 – TowerJazz, the global specialty foundry leader, today announced financial results for the fourth quarter and fiscal year ended December 31, 2009.

Highlights

- Record revenue of \$100.6 million in Q4 2009, growing 30 percent over last year and 26 percent sequentially
- Guiding for continued sequential growth into Q1 2010, expecting \$110-115 million in revenues, 94 percent growth as compared to Q1 2009
- Gross profit of \$38.7 million in Q4 2009 with margins of 39 percent on a non-GAAP basis, as compared to \$15.6 million and 20 percent in Q4 2008.
- Operating profit of \$23.3 million in Q4 2009 with margins of 23 percent on a non-GAAP basis, as compared to \$1.7 million and 2 percent in Q4 2008.
- Full year revenues at \$298.8 million, up 19 percent over last year, significantly higher than the industry.
- Strong year-end cash-balance of \$81.8 million, as compared to \$34.9 million as of December 2008

2009 fourth quarter and full year results summary

Fourth quarter 2009 revenue was \$100.6 million, representing a 26 percent increase over third quarter 2009 revenue of \$79.6 million and 30 percent over fourth quarter 2008 revenue of \$77.5 million. Full year 2009 revenues were \$298.8 million, 19 percent higher than \$251.7 million recorded in 2008.

On a non-GAAP basis, as described and reconciled below, the gross profit for the fourth quarter 2009 was \$38.7 million, a sequential growth 50 percent, and representing 39 percent margins. Comparing to the fourth quarter of 2008, non-GAAP gross margin increased from 20 to 39 percent. Non-GAAP operating profit in the fourth quarter 2009 was \$23.3 million, substantially higher than \$1.7 million and \$13.0 million achieved in the fourth quarter of 2008 and third quarter 2009, respectively.

Calculated in accordance with GAAP, TowerJazz achieved in the fourth quarter 2009 gross profit for the first time since 2000 of \$6.6 million, as compared to gross loss of \$5.3 million and gross loss of \$10.8 million in the third quarter 2009 and fourth quarter 2008, respectively. Net loss for the fourth quarter 2009 was \$31.4 million as compared to \$30.2 million for the previous quarter, or \$0.16 and \$0.18 per share, respectively, including for the fourth quarter of 2009 GAAP financing expenses of \$18.7 million, resulting mainly from non-cash GAAP financing expenses due to the significant increase in market and fair value of the Company's tradable securities.

EBITDA for the fourth quarter of 2009 was \$23 million, an all time record, and up substantially from \$2 million reported in the fourth quarter of 2008 and \$15 million in third quarter 2009.

Company's cash balance, as of December 31, 2009 was \$81.8 million, as compared to \$34.9 million as of December 2008 and \$51.7 million as of September 2009.

"2009 demonstrated an inflection year for the Company, in realizing our strategy of becoming the worldwide specialty foundry leader. All of our business units achieved substantial tactical and strategic customer wins. Breaking the significant milestone of \$100 million in quarterly revenue with record EBITDA and record annual design wins while expecting continued 2010 growth, despite foundry seasonality, is evidence of our continued strong positive trajectory," commented Russell Ellwanger, Chief Executive Officer. "We have on hand many substantive opportunities targeting beyond a \$500 million annual revenue run-rate."

Amir Elstein, Chairman of the Board, commented, "The activities in 2009 and the company's performance, culminating in 19 percent year-over-year revenue increase against a double-digit downturn for the industry, is confirmation of the vast capabilities of the TowerJazz management and the entire team, and is indicative of a customer-centric company with well-defined strategy and goals. I remain confident and boldly optimistic with regard to the coming quarters. In addition, these accomplishments are a great tribute to our CEO who was recognized and appreciated by fellow industry experts, as the Israeli Hi-Tech CEO of the year, for the TowerJazz business breakthrough."

Financial Guidance

TowerJazz forecasts revenue in the first quarter of 2010 to range between \$110 and \$115 million, representing a sequential revenue growth of 9-14 percent and 89-98 percent year-over-year growth in revenues.

Conference Call and Web Cast Announcement

TowerJazz will host a conference call to discuss fourth quarter 2009 results today, February 24, 2010, at 10:00 a.m. Eastern Time (EST) / 5:00 p.m. Israel time.

To participate, please call:

1-888-407-2553 (U.S. toll-free number) or +972-3-918-0609 (international) and mention ID code: TOWER-JAZZ

Callers in Israel are invited to call locally by dialing 03-918-0609. The conference call will also be Web cast live at www.earnings.com and at www.towerjazz.com and will be available thereafter on both Web sites for replay for a period 90 days, starting a few hours following the call.

As previously announced, beginning with the fourth quarter of 2007, the Company has been presenting its financial statements in accordance with U.S. GAAP.

As applied in this release, the term Earnings Before Interest Tax Depreciation and Amortization (EBITDA) consists of loss, according to U.S. GAAP, excluding interest and financing expenses (net), tax, depreciation and amortization and stock based compensation expenses. EBITDA is not a required GAAP financial measure and may not be comparable to a similarly titled measure employed by other companies. EBITDA should not be considered in isolation or as a substitute for operating income, net income or loss, cash flows provided by operating, investing and financing activities, or other income or cash flow statement data prepared in accordance with GAAP.

This release, including the financial tables below, presents other financial information that may be considered "non-GAAP financial measures" under Regulation G and related reporting requirements promulgated by the Securities and Exchange Commission as they apply to our company. These non-GAAP financial measures exclude (1) depreciation and amortization and (2) compensation expenses in respect of options granted to directors, officers and employees. Non-GAAP financial measures should be evaluated in conjunction with, and are not a substitute for, GAAP financial measures. The tables also present the GAAP financial measures, which are most comparable to the non-GAAP financial measures as well as reconciliation between the non-GAAP financial measures and the most comparable GAAP financial measures. The non-GAAP financial information presented herein should not be considered in isolation from or as a substitute for operating income, net income or loss, cash flows provided by operating, investing and financing activities, per share data or other income or cash flow statement data prepared in accordance with GAAP and is not necessarily consistent to the non-GAAP data presented in previous filings.

Following the merger with Jazz, the amounts presented in this release, including the financial tables below, include Jazz's results commencing September 19, 2008. Amounts presented for periods preceding the merger with Jazz reflect Tower's results only. The balance sheet as of December 31, 2009, September 30, 2009 and December 31, 2008 includes Jazz's balances as of such dates.

About TowerJazz

Tower Semiconductor Ltd. (NASDAQ: TSEM, TASE: TSEM), the global specialty foundry leader and its fully owned U.S. subsidiary Jazz Semiconductor, operate collectively under the brand name TowerJazz, manufacturing integrated circuits with geometries ranging from 1.0 to 0.13-micron. TowerJazz provides industry leading design enablement tools to allow complex designs to be achieved quickly and more accurately and offers a broad range of customizable process technologies including SiGe, BiCMOS, Mixed-Signal and RFCMOS, CMOS Image Sensor, Power Management (BCD), and Non-Volatile Memory (NVM) as well as MEMS capabilities. To provide world-class customer service, TowerJazz maintains two manufacturing facilities in Israel and one in the U.S. with additional capacity available in China through manufacturing partnerships. For more information, please visit www.towerjazz.com.

Forward Looking Statements

This press release includes forward-looking statements, which are subject to risks and uncertainties. Actual results may vary from those projected or implied by such forward-looking statements and you should not place any undue reliance on such forward-looking statements. Potential risks and uncertainties include, without limitation, risks and uncertainties associated with: (i) maintaining existing customers and attracting additional customers, (ii) cancellation of orders, (iii) failure to receive orders currently expected (iv) the cyclical nature of the semiconductor industry and the resulting periodic overcapacity, fluctuations in operating results and future average selling price erosion, (v) the large amount of debt and liabilities and having sufficient funds to satisfy our debt obligations and other liabilities on a timely basis, (vi) operating our facilities at high utilization rates which is critical in order to defray the high level of fixed costs associated with operating a foundry and reduce our losses, (vii) our ability to satisfy the covenants stipulated in our agreements with our lenders, banks and bond holders, (viii) our ability to capitalize on potential increases in demand for foundry services, (ix) having customer demand that will exceed our manufacturing capacity, (x) meeting the conditions to receive Israeli government grants and tax benefits approved for Fab2 and obtaining the approval of the Israeli Investment Center for an expansion program, (xi) our ability to accurately forecast financial performance, which is affected by limited order backlog and lengthy sales cycles, (xii) the purchase of equipment to increase capacity, the completion of the equipment installation, technology transfer and raising the funds therefor, (xiii) our dependence on a relatively small number of products for a significant portion of our revenue, (xiv) a substantial portion of our revenues being accounted for by a small number of customers, (xv) the concentration of our business in the semiconductor industry, (xvi) product returns, (xvii) our ability to maintain and develop our technology processes and services to keep pace with new technology, evolving standards, changing customer and end-user requirements, new product introductions and short product life cycles, (xviii) competing effectively, (xix) achieving acceptable device yields, product performance and delivery times, (xx) possible production or yield problems in our wafer fabrication facilities, (xxi) our ability to manufacture products on a timely basis, (xxii) our dependence on intellectual property rights of others, our ability to operate our business without infringing others' intellectual property rights and our ability to enforce our intellectual property against infringement, (xxiii) pending resolution of patent infringement claim against the Company, (xxiv) retention of key employees and retention and recruitment of skilled qualified personnel, (xxv) exposure to inflation, currency exchange and interest rate fluctuations and risks associated with doing business internationally and in Israel, and (xxvi) business interruption due to fire, the security situation in Israel and other events beyond our control.

A more complete discussion of risks and uncertainties that may affect the accuracy of forward-looking statements included in this press release or which may otherwise affect our business is included under the heading "Risk Factors" in Tower's most recent filings on Forms 20-F, F-3, F-4, S-8 and 6-K, as were filed with the Securities and Exchange Commission (the "SEC") and the Israel Securities Authority and Jazz's most recent filings on Forms 10-K and 10-Q, as were filed with the SEC. Future results may differ materially from those previously reported. The Company does not intend to update, and expressly disclaims any obligation to update, the information contained in this release.

Contacts

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TOWER SEMICONDUCTOR LTD. AND SUBSIDIARIES
CONSOLIDATED BALANCE SHEETS
(dollars in thousands)

	<u>December 31,</u> <u>2009</u>	<u>September 30,</u> <u>2009</u> <u>unaudited</u>	<u>December 31,</u> <u>2008</u>
ASSETS			
CURRENT ASSETS			
Cash and cash equivalents	\$ 81,795	\$ 51,708	\$ 34,905
Trade accounts receivable	40,604	42,121	45,860
Other receivables	2,520	3,418	2,320
Inventories	32,250	28,746	40,899
Other current assets	11,184	7,519	7,657
Total current assets	<u>168,353</u>	<u>133,512</u>	<u>131,641</u>
LONG-TERM INVESTMENTS	<u>29,361</u>	<u>29,579</u>	<u>29,499</u>
PROPERTY AND EQUIPMENT, NET	<u>371,400</u>	<u>388,234</u>	<u>449,697</u>
INTANGIBLE ASSETS, NET	<u>67,601</u>	<u>70,983</u>	<u>81,034</u>
GOODWILL	<u>7,000</u>	<u>7,000</u>	<u>7,000</u>
OTHER ASSETS, NET	<u>8,002</u>	<u>8,282</u>	<u>8,802</u>
TOTAL ASSETS	<u>\$ 651,717</u>	<u>\$ 637,590</u>	<u>\$ 707,673</u>
LIABILITIES AND SHAREHOLDERS' EQUITY			
CURRENT LIABILITIES			
Current maturities of convertible debenture	\$ --	\$ --	\$ 8,330
Short term bank loan	7,000	4,440	7,000
Trade accounts payable	42,012	39,180	49,462
Deferred revenue	24,696	4,100	6,634
Other current liabilities	23,652	32,228	35,202
Total current liabilities	<u>97,360</u>	<u>79,948</u>	<u>106,628</u>
LONG-TERM DEBT	428,813	416,555	431,501
LONG-TERM CUSTOMERS' ADVANCES	8,262	12,412	11,138
OTHER LONG-TERM LIABILITIES	<u>60,388</u>	<u>55,020</u>	<u>45,959</u>
Total liabilities	<u>594,823</u>	<u>563,935</u>	<u>595,226</u>
SHAREHOLDERS' EQUITY	<u>56,894</u>	<u>73,655</u>	<u>112,447</u>
TOTAL LIABILITIES AND SHAREHOLDERS' EQUITY	<u>\$ 651,717</u>	<u>\$ 637,590</u>	<u>\$ 707,673</u>

TOWER SEMICONDUCTOR LTD. AND SUBSIDIARIES
RECONCILIATION OF REPORTED GAAP TO NON-GAAP CONSOLIDATED STATEMENTS OF OPERATIONS (UNAUDITED)
(dollars in thousands, except per share data)

	Three months ended		Three months ended		Three months ended	
	December 31, 2009	December 31, 2008	December 31, 2009	December 31, 2008	December 31, 2009	December 31, 2008
	non-GAAP		Adjustments (see a, b, c below)		GAAP	
REVENUES	\$ 100,616	\$ 77,453	\$ --	\$ --	\$ 100,616	\$ 77,453
COST OF REVENUES	<u>61,868</u>	<u>61,894</u>	<u>32,194(a)</u>	<u>26,346(a)</u>	<u>94,062</u>	<u>88,240</u>
GROSS PROFIT (LOSS)	<u>38,748</u>	<u>15,559</u>	<u>(32,194)</u>	<u>(26,346)</u>	<u>6,554</u>	<u>(10,787)</u>
OPERATING COSTS AND EXPENSES						
Research and development	6,694	4,625	317(b)	654(b)	7,011	5,279
Marketing, general and administrative	8,711	9,186	1,319(c)	1,352(c)	10,030	10,538
Write-off of in-process research and development	--	--	--	(500)	--	(500)
	<u>15,405</u>	<u>13,811</u>	<u>1,636</u>	<u>1,506</u>	<u>17,041</u>	<u>15,317</u>
OPERATING PROFIT (LOSS)	<u>\$ 23,343</u>	<u>\$ 1,748</u>	<u>\$ (33,830)</u>	<u>\$ (27,852)</u>	<u>\$ (10,487)</u>	<u>\$ (26,104)</u>
BASIC OPERATING PROFIT (LOSS) PER ORDINARY SHARE						
Operating profit (loss) per share	<u>\$ 0.12</u>	<u>\$ 0.01</u>	<u>\$ (0.17)</u>	<u>\$ (0.17)</u>	<u>\$ (0.05)</u>	<u>\$ (0.16)</u>
Weighted average number of ordinary shares outstanding - in thousands	<u>194,236</u>	<u>159,747</u>	<u>--</u>	<u>--</u>	<u>194,236</u>	<u>159,747</u>
NON-GAAP GROSS MARGINS	<u>39%</u>	<u>20%</u>				
NON-GAAP OPERATING MARGINS	<u>23%</u>	<u>2%</u>				

- (a) Includes depreciation and amortization expenses in the amounts of \$32,046 and \$26,150 and stock based compensation expenses in the amounts of \$148 and \$196 for the three months ended December 31, 2009 and December 31, 2008, respectively.
- (b) Includes depreciation and amortization expenses in the amounts of \$148 and \$532 and stock based compensation expenses in the amounts of \$169 and \$122 for the three months ended December 31, 2009 and December 31, 2008, respectively.
- (c) Includes depreciation and amortization expenses in the amounts of \$340 and \$325 and stock based compensation expenses in the amounts of \$979 and \$1,027 for the three months ended December 31, 2009 and December 31, 2008, respectively.
- (d) 2008 data are similar to those previously presented, prior to any adjustments following the inventory change method occurred in 2009.

TOWER SEMICONDUCTOR LTD. AND SUBSIDIARIES
RECONCILIATION OF REPORTED GAAP TO NON-GAAP CONSOLIDATED STATEMENTS OF OPERATIONS (UNAUDITED)
(dollars in thousands, except per share data)

	Three months ended		Three months ended		Three months ended	
	December 31, 2009	September 30, 2009	December 31, 2009	September 30, 2009	December 31, 2009	September 30, 2009
	non-GAAP		Adjustments (see a, b, c below)		GAAP	
REVENUES	\$ 100,616	\$ 79,570	\$ --	\$ --	\$ 100,616	\$ 79,570
COST OF REVENUES	61,868	53,710	32,194(a)	31,205(a)	94,062	84,915
GROSS PROFIT (LOSS)	38,748	25,860	(32,194)	(31,205)	6,554	(5,345)
OPERATING COSTS AND EXPENSES						
Research and development	6,694	5,769	317(b)	288(b)	7,011	6,057
Marketing, general and administrative	8,711	7,060	1,319(c)	965(c)	10,030	8,025
	15,405	12,829	1,636	1,253	17,041	14,082
OPERATING PROFIT (LOSS)	\$ 23,343	\$ 13,031	\$ (33,830)	\$ (32,458)	\$ (10,487)	\$ (19,427)
BASIC OPERATING PROFIT (LOSS) PER ORDINARY SHARE						
Operating profit (loss) per share	\$ 0.12	\$ 0.08	\$ (0.17)	\$ (0.20)	\$ (0.05)	\$ (0.12)
Weighted average number of ordinary shares outstanding - in thousands	194,236	167,200	--	--	194,236	167,200
NON-GAAP GROSS MARGINS	39%	32%				
NON-GAAP OPERATING MARGINS	23%	16%				

- (a) Includes depreciation and amortization expenses in the amounts of \$32,046 and \$31,067 and stock based compensation expenses in the amounts of \$148 and \$138 for the three months ended December 31, 2009 and September 30, 2009, respectively.
- (b) Includes depreciation and amortization expenses in the amounts of \$148 and \$154 and stock based compensation expenses in the amounts of \$169 and \$134 for the three months ended December 31, 2009 and September 30, 2009, respectively.
- (c) Includes depreciation and amortization expenses in the amounts of \$340 and \$357 and stock based compensation expenses in the amounts of \$979 and \$608 for the three months ended December 31, 2009 and September 30, 2009, respectively.

TOWER SEMICONDUCTOR LTD. AND SUBSIDIARIES
CONSOLIDATED STATEMENTS OF OPERATIONS
(dollars in thousands, except per share data)

	Three months ended December 31, 2009 GAAP <u>(UNAUDITED)</u>	Year ended December 31, 2009 GAAP <u></u>
REVENUES	\$ 100,616	\$ 298,812
COST OF REVENUES	<u>94,062</u>	<u>325,310</u>
GROSS PROFIT (LOSS)	<u>6,554</u>	<u>(26,498)</u>
OPERATING COSTS AND EXPENSES		
Research and development	7,011	23,375
Marketing, general and administrative	<u>10,030</u>	<u>31,943</u>
	<u>17,041</u>	<u>55,318</u>
OPERATING LOSS	(10,487)	(81,816)
FINANCING EXPENSE, NET	(18,678)	(45,710)
OTHER INCOME (EXPENSE), NET	<u>(118)</u>	<u>2,045</u>
LOSS BEFORE INCOME TAX	(29,283)	(125,481)
INCOME TAX BENEFIT (PROVISION)	(2,128)	5,022
NET LOSS FOR THE PERIOD	<u>\$ (31,411)</u>	<u>\$ (120,459)</u>
BASIC LOSS PER ORDINARY SHARE		
loss per share	<u>\$ (0.16)</u>	<u>\$ (0.71)</u>
Weighted average number of ordinary shares outstanding - in thousands	<u>194,236</u>	<u>170,460</u>