FORM 6-K

SECURITIES AND EXCHANGE COMMISSION

Washington, D.C. 20549

For the month of November 2009 (No. 2)

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 x Form 40-F o

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 o No x

On November 9, 2009, the Registrant announced its financial results for the nine and three months ended September 30, 2009. Attached hereto are the following exhibits

Exhibit 99.1 Press release dated November 9, 2009

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: November 9, 2009

By: /s/ Nati Somekh Gilboa

Nati Somekh Gilboa
Corporate Secretary

Exhibit 99.1

TowerJazz Reports Record Performance for the Third Quarter 2009

All-time Record Revenue, All-time Record EBITDA, All-time Record Design-Wins to Fuel 2010-2011 Accelerated Growth

Q4 Guidance Outperforming the Industry with Double-digit Increase

MIGDAL HAEMEK, Israel – November 9, 2009 – TowerJazz, an independent specialty foundry, today announced financial results for the third quarter ended September 30, 2009.

Highlights:

— Achieved record revenue of $79.6 million, growing sequentially by 31 percent and 36 percent year over year

— Achieved record EBITDA of $15 million, representing 8x increase against similar revenue of Q4'08, first quarter post merger

— Turned-around Jazz into GAAP net profit, with a record net profit since its inception

— Significant corporate-wide cost efficiencies tied with increased revenue, have enabled improved non-GAAP gross, operating and net margins of 32, 16 and 14 percent, respectively

— Twelfth consecutive quarter of positive operating cash flow and sixteenth consecutive quarter of positive EBITDA

— Record 109 customer design-wins, 31 percent up quarter-over-quarter, fueling long-term growth

— Guiding continued growth to $90-94 million in the fourth quarter; a mid-range growth of 16 percent quarter-over-quarter (substantially higher than industry weighted average) and 19 percent year-over-year

— Considering fourth quarter guidance, TowerJazz will be the only reporting foundry to post year-over-year growth

Third quarter 2009 revenue was $79.6 million, representing a 31 percent increase over second quarter 2009 revenue of $60.6 million and 36 percent over third quarter 2008 revenue of $58.5 million. The net profit and gross profit, on a non-GAAP basis, as described and reconciled below, were $11.2 million and $25.9 million, respectively, a sequential growth of 109 and 65 percent, and representing a 14 and 32 percent margins, respectively. Comparing to the fourth quarter of 2008 (the first quarter post merger), non-GAAP gross margin increased from 20 to 32 percent, and non-GAAP operating margin grew from 2 to 16 percent, with a similar revenue level. Non-GAAP operating profit grew sequentially by 272 percent to $13.0 million and by 645 percent as compared to the fourth quarter of 2008, with a similar revenue level.

Calculated in accordance with GAAP, Jazz Technologies, the Company's fully owned subsidiary, achieved in the third quarter of 2009 a record GAAP net profit since its inception in 2002, while Tower Semiconductor recorded a net loss of $30.2 million, including financing expenses of $16.8 million, resulting mainly from the significant increase in market and fair value of the Company's tradable securities.

EBITDA for the third quarter of 2009 was $15 million, an all-time record and up 8x as compared to the fourth quarter of 2008, with a similar revenue level.

Russell Ellwanger, Chief Executive Officer, stated "At the end of the third quarter we celebrated the one year anniversary of our merger with Jazz Technologies. In considering the 740 percent increase in EBITDA against similar revenue Q4'08, record design-wins of 109 and numerous new customer engagements and press-releases for each of our specialty offerings, the merger has been widely successful and propelled us into the position of the leading global specialty foundry." Ellwanger further commented "At our annual technology conference last week, we launched a new name and branding, TowerJazz, and the associated vision 'to be the world leader in specialty foundry solutions as measured by our customers, employees and investors'. This name represents our unmatched strengths in the specialty foundry sector."

Amir Elstein, Chairman of the Board, commented "I remain confident and boldly optimistic with regard to the coming quarters. It is built upon many months of hard work and dedication by TowerJazz's executive team and employees in instilling change, improving processes, and realizing cost efficiencies and synergies throughout the company. Now we are a strong and lean company with business platforms primed for continued long-term and profitable growth."

Financial Guidance
TowerJazz forecasts revenue in the fourth quarter 2009 to range between $90 and $94 million, representing a sequential revenue growth of 13-18 percent and a 16-21 percent year over year revenue growth.

Conference Call and Web Cast Announcement
TowerJazz will host a conference call to discuss third quarter 2009 results today, November 9, 2009, at 10:00 a.m. Eastern Time (EST) / 5:00 p.m. Israel time.

To participate, please call:
1-888-668-9141 (U.S. toll-free number) or +972-3-918-0650 (international) and mention ID code: TOWER-JAZZ

Callers in Israel are invited to call locally by dialing 03-918-0650. 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, (2) compensation expenses in respect of options granted to directors, officers and employees, (3) write-off of in process research and development and (4) finance expenses, net other than interest paid, such that non-GAAP financial expenses, net include only interest paid during the reported period. 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, 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 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) meeting the conditions to receive Israeli government grants and tax benefits approved for Fab2, the possibility of the government requiring us to repay all or a portion of the grants already received and obtaining the approval of the Israeli Investment Center for an expansion program, (x) our ability to accurately forecast financial performance, which is affected by limited order backlog and lengthy sales cycles, (xi) the purchase of equipment to increase capacity, the completion of the equipment installation, technology transfer and raising the funds therefor, (xii) our dependence on a relatively small number of products for a significant portion of our revenue, (xiii) a substantial portion of our revenues being accounted for by a small number of customers, (xiv) the concentration of our business in the semiconductor industry, (xv) product returns, (xvi) 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, (xvii) competing effectively, (xviii) achieving acceptable device yields, product performance and delivery times, (xix) possible production or yield problems in our wafer fabrication facilities, (xx) our ability to manufacture products on a timely basis, (xxi) 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, (xxii) pending resolution of patent infringement claim against the Company, (xxiii) retention of key employees and retention and recruitment of skilled qualified personnel, (xxiv) exposure to inflation, currency exchange and interest rate fluctuations and risks associated with doing business internationally and in Israel, (xxv) the recent global economic downturn and the affect thereof, including global decreased demand, reduced prices, excess inventory, unutilized capacity and the lack of availability of funding sources in light of the financial markets situation, which may adversely affect the future financial results and position of the Company, including its ability to fulfill its debt and liabilities obligations, 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.

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

	September 30, 2009	December 31, 2008
	unaudited	
A S S E T S		
CURRENT ASSETS		
Cash and cash equivalents	$ 51,708	$ 34,905
Trade accounts receivable	42,121	45,860
Other receivables	3,418	2,320
Inventories	28,746	40,899
Other current assets	7,519	7,657
Total current assets	133,512	131,641
LONG-TERM INVESTMENTS	29,579	29,499
PROPERTY AND EQUIPMENT, NET	388,234	449,697
INTANGIBLE ASSETS, NET	70,983	81,034
GOODWILL	7,000	7,000
OTHER ASSETS, NET	8,282	8,802
TOTAL ASSETS	$ 637,590	$ 707,673
LIABILITIES AND SHAREHOLDERS' EQUITY		
CURRENT LIABILITIES		
Current maturities of convertible debenture	$ -	$ 8,330
Short term bank loan	4,440	7,000
Trade accounts payable	39,180	49,462
Deferred revenue and short-term customers' advances	4,100	6,634
Other current liabilities	32,228	35,202
Total current liabilities	79,948	106,628
LONG-TERM DEBT	416,555	431,501
LONG-TERM CUSTOMERS' ADVANCES	12,412	11,138
OTHER LONG-TERM LIABILITIES	55,020	45,959
Total liabilities	563,935	595,226
SHAREHOLDERS' EQUITY	73,655	112,447
TOTAL LIABILITIES AND SHAREHOLDERS' EQUITY	$ 637,590	$ 707,673

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

	Three months ended		Three months ended		Three months ended	
	September 30,	December 31,	September 30,	December 31,	September 30,	December 31,
	2009	2008	2009	2008	2009	2008

	non-GAAP		Adjustments (see a, b, c below)		GAAP	
REVENUES	$ 79,570	$ 77,453	$ -	$ -	$ 79,570	$ 77,453
COST OF REVENUES	53,710	61,894	31,205(a)	26,346(a)	84,915	88,240
GROSS PROFIT (LOSS)	25,860	15,559	(31,205)	(26,346)	(5,345)	(10,787)
OPERATING COSTS AND EXPENSES						
Research and development	5,769	4,625	288(b)	654(b)	6,057	5,279
Marketing, general and administrative	7,060	9,186	965(c)	1,352(c)	8,025	10,538
Write-off of in-process research and development	-	-	-	(500)	-	(500)
	12,829	13,811	1,253	1,506	14,082	15,317
OPERATING PROFIT (LOSS)	$ 13,031	$ 1,748	$ (32,458)	$ (27,852)	$ (19,427)	$ (26,104)
NON-GAAP GROSS MARGINS	32%	20%				
NON-GAAP OPERATING MARGINS	16%	2%				

(a) Includes depreciation and amortization expenses in the amounts of $31,067 and $26,150 and stock based compensation expenses in the amounts of $138 and $196 for the three months ended September 30, 2009 and December 31, 2008, respectively.

(b) Includes depreciation and amortization expenses in the amounts of $154 and $532 and stock based compensation expenses in the amounts of $134 and $122 for the three months ended September 30, 2009 and December 31, 2008, respectively.

(c) Includes depreciation and amortization expenses in the amounts of $357 and $325 and stock based compensation expenses in the amounts of $608 and $1,027 for the three months ended September 30, 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)

	Three months ended		Three months ended		Three months ended	
	September 30,	June 30,	September 30,	June 30,	September 30,	June 30,
	2009	2009	2009	2009	2009	2009
	non-GAAP		Adjustments (see a, b, c, d below)		GAAP	
REVENUES	$ 79,570	$ 60,567	$ -	$ -	$ 79,570	$ 60,567
COST OF SALES	53,710	44,886	31,205(a)	26,307(a)	84,915	71,193
GROSS PROFIT (LOSS)	25,860	15,681	(31,205)	(26,307)	(5,345)	(10,626)
OPERATING COSTS AND EXPENSES						
Research and development	5,769	5,929	288(b)	22(b)	6,057	5,951
Marketing, general and administrative	7,060	6,253	965(c)	900(c)	8,025	7,153
	12,829	12,182	1,253	922	14,082	13,104
OPERATING PROFIT (LOSS)	13,031	3,499	(32,458)	(27,229)	(19,427)	(23,730)
FINANCING EXPENSE, NET	(7,738)	(224)	(9,020)(d)	(9,072)(d)	(16,758)	(9,296)

OTHER INCOME, NET	**1,704**	**459**	**-**	**-**	**1,704**	**459**
PROFIT (LOSS) BEFORE TAX BENEFIT	**6,997**	**3,734**	**(41,478)**	**(36,301)**	**(34,481)**	**(32,567)**
TAX BENEFIT RELATED TO JAZZ	**4,240**	**1,633**	**-**	**-**	**4,240**	**1,633**
NET PROFIT (LOSS) FOR THE PERIOD	**$ 11,237**	**$ 5,367**	**$ (41,478)**	**$ (36,301)**	**$ (30,241)**	**$ (30,934)**
NON-GAAP GROSS MARGINS	**32%**	**26%**				
NON-GAAP NET MARGINS	**14%**	**9%**				

(a) Includes depreciation and amortization expenses in the amounts of $31,067 and $26,201 and stock based compensation expenses in the amounts of $138 and $106 for the three months ended September 30, 2009 and June 30, 2009, respectively.

(b) Includes depreciation and amortization expenses in the amounts of $154 and -$103 and stock based compensation expenses in the amounts of $134 and $125 for the three months ended September 30, 2009 and June 30, 2009, respectively.

(c) Includes depreciation and amortization expenses in the amounts of $357 and $245 and stock based compensation expenses in the amounts of $608 and $655 for the three months ended September 30, 2009 and June 30, 2009, respectively.

(d) Non-GAAP financing expense, net include only interest paid during the reported period.