

FORM 6-K

SECURITIES AND EXCHANGE COMMISSION

Washington, D.C. 20549

For the month of May 2006

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 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

On May 17, 2006, the Registrant announced its plan to ramp up capacity of Fab 2 by approximately 50%. Attached hereto is a copy of the press release.

This Form 6-K is being incorporated by reference into all effective registration statements filed by us under the Securities Act of 1933.

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: May 18, 2006

By: /s/ Nati Somekh Gilboa

Nati Somekh Gilboa
Corporate Secretary

TOWER ANNOUNCES PLAN TO RAMP UP CAPACITY OF FAB 2 BY
APPROXIMATELY 50%

The Company and its Lender Banks Signed an MOU to Refinance its
Long-term Debt tied to The Israel Corporation commitment to invest \$100M

MIGDAL HAEMEK, Israel -- May 17, 2006 -- Tower Semiconductor Ltd. (NASDAQ: TSEM; TASE: TSEM), a pure-play independent specialty foundry, announced today that the Company's board of directors approved the Company's plan to accelerate the ramp up of Fab 2 by approximately 50%. Furthermore, the Company and its lender banks, Bank Leumi and Bank Hapoalim, signed an MOU for the refinancing of the Company's \$527 million long-term debt and The Israel Corporation committed to invest \$100M in the Company.

RAMP UP OF FAB 2

Tower's Board of Directors approved the Company's plan to accelerate the ramp up of Fab 2 to meet the Company's customers' and products qualifications needs, based on its customer pipeline, reinforced by forecasted market conditions. The Company will need to raise approximately \$130 million during 2006, which will take the current Fab 2 capacity to approximately 24,000 wafers per month, including a considerable increase in the 0.13 micron capacity.

Russell Ellwanger, Tower's chief executive officer, said: "Building on our recent achievements, we have made a strategic decision to accelerate Fab 2's ramp-up plan to better serve and meet both our established and newer customers' longer term expectations and capacity requirements, while bringing added value to our shareholders."

FINANCING THE RAMP UP OF FAB 2

The Company and its lender banks, Bank Leumi and Bank Hapoalim, signed an MOU for the refinancing of the Company's \$527 million long-term debt, according to which 30% of the debt will be converted to equity for approximately 52 million ordinary shares of the Company, based on a formula using the average closing price during the 10-day period prior to signing the MOU. The interest rate of the long-term loans will be decreased from LIBOR plus 2.5% per annum to LIBOR plus 1.1% per annum and the postponement of the commencement date for the repayment of principal from July 2007 to September 2009. The terms of the MOU are subject to a commitment of Israel Corporation Ltd. ("TIC") to invest \$100 million in the Company's capacity expansion, as described below, and are further subject to the signing of a definitive amendment to the Facility Agreement. In this regard, TIC has agreed to commit to invest \$100 million in the Company for approximately 66 million ordinary shares, based on the same base price used in the formula under which the banks will be issued shares. TIC investment is subject to the signing of a definitive investment agreement between Tower and TIC, the receipt of approvals, including from Tower's shareholders, and the closing of the definitive amendment to the Facility Agreement.

In order to implement the plan in a timely manner, Tower and TIC entered into an agreement according to which TIC will order up to approximately \$100 million worth of equipment in connection with the ramp-up of Fab 2. Under the terms of the agreement: (i) TIC has the right to sell the equipment to Tower at cost, plus related expenses; (ii) Tower has the right to purchase the equipment from TIC at cost, plus related expenses, subject to Tower having raised \$100 million; (iii) upon the sale of the equipment by TIC to Tower, Tower will assume TIC's obligations to the equipment suppliers; and (iv) if after 5 months from the signing of the agreement, the equipment has not been sold to Tower by TIC, TIC may sell the equipment to a third party and Tower will pay TIC the difference between the cost, plus related expenses, for the purchase of the equipment by TIC and the net sale price. Tower's audit committee and board of directors, in approving this agreement, resolved that the transactions contemplated thereby are on market terms, in the ordinary course of business and to the benefit of Tower. This agreement shall be subject to shareholder approval if Tower shall have received by May 31, 2006 (Israel time) a written request by any shareholder or shareholders of Tower who hold at least 1% of the issued and outstanding shares of Tower to bring the agreement to the Company's shareholders for approval.

In addition, in May 2006, the Company and its lender banks signed an amendment to the Facility Agreement, according to which the repayments of long-term loans in the amount of approximately \$100 million, formerly scheduled to be paid between October 2006 and June 2007, were deferred to July 2007.

The Company continues to examine additional funding sources.

RE-PRICING OF EMPLOYEE OPTIONS

The Board of Directors approved a plan to re-price the exercise price of existing options held by the Company's employees at each employee's discretion, based on the 90 day average closing price of the Company's shares prior to the Board of Directors' approval. The new options will be granted based on terms similar to the existing option plan with new vesting periods. The Board of Directors further approved that the total number of employees options, including the options to the CEO, that may be granted in the coming 24 months may represent at any given time up to 8% of the Company's shares on a fully diluted basis.

OPTIONS GRANTED TO THE CHIEF EXECUTIVE OFFICER ("CEO")

The Audit Committee and Board of Directors approved the grant of options to the CEO of the Company, who also serves as a director, in addition to the options granted to him in April 2005, such that in total, the CEO will hold options to purchase shares that represent 4% of the Company's shares on a fully diluted basis during the two-year period from the approval of the Audit Committee. The exercise price of the initial grant of additional options will be \$1.45, the 90 day average closing price of the Company's shares prior to the Board of Directors' approval. In the event of a future equity financing, additional options will be granted to the CEO as described above with an exercise price equal to the price per share of such investment. The new grant of options and its terms are subject to the approval of the Company's shareholders.

ABOUT TOWER SEMICONDUCTOR LTD.

Tower Semiconductor Ltd. is a pure-play independent specialty foundry established in 1993. The company manufactures integrated circuits with geometries ranging from 1.0 to 0.13 micron; it also provides complementary technical services and design support. In addition to digital CMOS process technology, Tower offers advanced non-volatile memory solutions, mixed-signal and CMOS image-sensor technologies. To provide world-class customer service, the company maintains two manufacturing facilities: Fab 1 has process technologies from 1.0 to 0.35 micron and can produce up to 16,000 150mm wafers per month. Fab 2 features 0.18 micron and below standard and specialized process technologies and has a current capacity of up to 15,000 200mm wafers per month. Tower's website is located at www.towersemi.com.

CONTACT:

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SAFE HARBOR

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. Potential risks and uncertainties include, without limitation, risks and uncertainties associated with: (i) the completion of the equipment installation, technology transfer and ramp-up of production in Fab 2, (ii) having sufficient funds to operate the company in the short-term and raising the funds required to implement the ramp up plan and complete Fab 2, (iii) the cyclical nature of the semiconductor industry and the resulting periodic overcapacity, fluctuations in operating results, future average selling price erosion that may be more severe than our expectations, (iv) operating our facilities at satisfactory utilization rates which is critical in order to cover the high level of fixed costs associated with operating a foundry, (v) our ability to satisfy certain of the covenants stipulated in our amended facility agreement (vi) the receipt of our banks' approval of the ramp up plan for Fab 2 and the entering into and consummation of a definitive agreement with our banks for the restructuring our debt, (vii) our ability to capitalize on increases in demand for foundry services, (viii) meeting the conditions to receive Israeli government grants and tax benefits approved for Fab 2 and obtaining the approval of the Israeli Investment Center for a new expansion program, (ix) attracting additional customers, (x) not receiving orders from our wafer partners, customers and technology providers, (xi) failing to maintain and develop our technology processes and services, (xii) competing effectively, (xiii) our large amount of debt and our ability to repay our debt on a timely basis, (xiv) achieving acceptable device yields, product performance and delivery times, (xv) the timely development, internal qualification and customer acceptance of new processes and products, (xvi) the receipt of shareholder and other approvals as required under applicable law or otherwise, including in connection with the potential investment by TIC and the agreement with TIC for the ordering of equipment described above, (xvii) business interruption due to terror attacks, earthquakes, and other acts of God and (xviii) the entering into and the consummation of investment agreements, including the potential investment by TIC.

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 our most recent filings on Forms 20-F, F-1, F-3 and 6-K, as were filed with the Securities and Exchange Commission and the Israel Securities Authority. Future results may differ materially from those previously reported. We do not intend to update, and expressly disclaim any obligation to update, the information contained in this release.