

TOWER SEMICONDUCTOR LTD  
Form 424B3  
September 27, 2010

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PROSPECTUS

Filed Pursuant to Rule 424(b)(3)  
Registration Statement No. 333-169389

25,254,070 Series J Warrants

25,254,070 Ordinary Shares

This prospectus relates to the resale, from time to time, by the selling securityholders named in this prospectus of up to 25,254,070 Series J Warrants and up to 25,254,070 ordinary shares issuable upon exercise of such warrants held by the selling securityholders. This prospectus also relates to the offer and sale by us of up to 25,254,070 ordinary shares issuable upon the exercise of the Series J Warrants by persons other than the persons who acquired the Series J Warrants in the transactions described in the section entitled "Selling Securityholders".

The selling securityholders may sell all or any portion of these warrants in one or more transactions through the over-the-counter market, in privately negotiated transactions or otherwise. The selling securityholders may sell all or any portion of these ordinary shares in one or more transactions through Nasdaq, the Tel Aviv Stock Exchange, in the over-the-counter market, in privately negotiated transactions or otherwise. In addition, the selling securityholders may sell any portion of these ordinary shares or warrants (i) directly to purchasers or through agents, brokers, dealers or underwriters; (ii) at market prices prevailing at the time of sale, at prices related to such prevailing market prices, or at negotiated prices; or (iii) or any other means described in the section entitled "Plan of Distribution."

Our ordinary shares are listed on the NASDAQ Global Market under the symbol "TSEM" and on the Tel Aviv Stock Exchange in Israel under the symbol "TSEM." On September 24, 2010, the last reported sale price of our ordinary shares on the NASDAQ Global Market was \$1.41 per share and on September 26, 2010 the last reported sale price of our ordinary shares on the Tel Aviv Stock Exchange was NIS 5.21 per share. The Series J Warrants are not listed for trading on any established market and we do not expect a trading market for the Series J Warrants to develop.

The securities offered hereby involve a high degree of risk. See "Risk Factors" beginning on page 2.

None of the U.S. Securities and Exchange Commission, the Israeli Securities Authority or any state securities commission have approved or disapproved of these securities or passed upon the adequacy, completeness or accuracy of this prospectus. Any representation to the contrary is a criminal offense under the laws of the United States and the laws of the State of Israel.

The date of this prospectus is September 27, 2010

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## ABOUT TOWER SEMICONDUCTOR LTD.

We are a pure-play independent specialty wafer foundry dedicated to the manufacture of semiconductors. Typically, pure-play foundries do not offer products of their own, but focus on producing integrated circuits, or ICs, based on the design specifications of their customers. We manufacture semiconductors for our customers primarily based on third party designs and our own process technology and engineering support. We currently offer the manufacture of ICs with geometries ranging from 1.0 to 0.13-micron. We also provide design services and complementary technical services. ICs manufactured by us are incorporated into a wide range of products in diverse markets, including consumer electronics, personal computers, communications, automotive, industrial and medical device products.

In January 2001, we commenced construction of a state-of-the-art wafer fabrication facility, which we refer to as Fab 2, located in Migdal Haemek, Israel and adjacent to our first facility, Fab 1. In 2003, we completed the infrastructure of Fab 2 and commenced production at this Fab. Fab 2 is designed to operate in geometries of 0.18-micron and below, using advanced materials and advanced CMOS technology licensed from Freescale and Toshiba and other technologies that we developed and will develop independently or with development partners. Depending on the process technology and product mix, when fully ramped-up, we estimate that Fab 2 will be able to achieve capacity levels of approximately 40,000 wafers per month. We have not completed the full ramp-up of Fab 2. The timing of that decision and its implementation will depend upon several factors, including funding, cost and availability of equipment and market conditions.

In September 2008, we acquired Jazz Technologies in a stock for stock transaction. Jazz is an independent semiconductor foundry focused on specialty process technologies for the manufacture of analog and mixed-signal semiconductor devices. Jazz's specialty process technologies include advanced analog, radio frequency, high voltage, bipolar and silicon germanium bipolar complementary metal oxide ("SiGe") semiconductor processes, for the manufacture of analog and mixed-signal semiconductors. Jazz's customers use the analog and mixed-signal semiconductor devices in products they design that are used in cellular phones, wireless local area networking devices, digital TVs, set-top boxes, gaming devices, switches, routers and broadband modems. Jazz operates one semiconductor fabrication facility in Newport Beach, California, in which it currently produces the majority of its products and in which all of Jazz's process research and development is performed.

Our executive offices are located in the Ramat Gavriel Industrial Park, Post Office Box 619, Migdal Haemek, 23105 Israel, and our telephone number is 972-4-650-6611.

Additional information about us and our operations may be found at our web site: [www.towerjazz.com](http://www.towerjazz.com). Information on our website is not incorporated by reference in this prospectus.

## RISK FACTORS

An investment in our securities is speculative and involves a high degree of risk. Therefore, you should not invest in our securities unless you are able to bear a loss of your entire investment. You should carefully consider the risk factors described in our periodic reports filed with the SEC, including those specified in Exhibit 99.1 to our Report on Form 6-K for the month of September 2010 No. 1, filed with the SEC on September 7, 2010 in the section captioned "Risk Factors", which is incorporated by reference in this prospectus. You should carefully consider those risks together with the other information in this prospectus before deciding to invest in our securities. If any of those risks actually occur, our business, financial condition and results of operations could be materially and adversely affected. In that case, the trading price of our ordinary shares could decline, and you may lose all or part of your investment.

## SPECIAL NOTE ON FORWARD-LOOKING STATEMENTS

The statements incorporated by reference or contained in this prospectus discuss our future expectations, contain projections of our results of operations or financial condition, and include other forward-looking information within the meaning of Section 27A of the Securities Act of 1933, as amended. Our actual results may differ materially from those expressed in forward-looking statements made or incorporated by reference in this prospectus. Forward-looking statements that express our beliefs, plans, objectives, assumptions or future events or performance may involve estimates, assumptions, risks and uncertainties. Therefore, our actual results and performance may differ materially from those expressed in the forward-looking statements. Forward-looking statements often, although not always, include words or phrases such as the following: "will likely result," "are expected to," "will continue," "is anticipated," "estimate," "intends," "plans," "projection" and "outlook."

You should not unduly rely on forward-looking statements contained or incorporated by reference in this prospectus. Various factors discussed in this prospectus, including, but not limited to, all the risks discussed in "Risk Factors," and in our other SEC filings may cause actual results or outcomes to differ materially from those expressed in forward-looking statements. You should read and interpret any forward-looking statements together with these documents.

Any forward-looking statement speaks only as of the date on which that statement is made. We will not update any forward-looking statement to reflect events or circumstances that occur after the date on which such statement is made.

## CAPITALIZATION

The following table sets forth our long-term debt, debentures and capitalization as of June 30, 2010 on an actual basis. This table was prepared in accordance with the US GAAP and the financial data is derived from our unaudited interim consolidated financial statements as of June 30, 2010.

(US dollars in thousands)

Short term bank loan	\$ 12,000
Long-term bank loans	160,941
Debentures	230,580
Long-term customers' advances	7,940
Other long-term liabilities	58,999
Shareholders' equity:	
Ordinary Shares, NIS 1.00 par value per share; 1,100,000,000 authorized shares, 235,812,789 issued shares* and 234,512,789 outstanding shares	\$ 59,741
Additional paid-in capital	736,859
Capital notes	311,472
Equity component of convertible debentures and cumulative stock based compensation	25,988
Accumulated other comprehensive loss	(1,472 )
Accumulated deficit	(1,054,340)
Treasury stock, 1,300,000 shares	(9,072 )
Total shareholders' equity	69,176
Total capitalization	\$ 648,232

\*Includes 1,300,000 treasury shares

The information set forth on an actual basis in the foregoing table excludes the following securities as of August 31, 2010

- (i) approximately 26.1 million ordinary shares issuable upon exercise of options granted to employees and directors at a weighted average exercise price of \$1.14;
- (ii) 23.4 million ordinary shares issuable upon exercise of options granted to our Chief Executive Officer at a weighted average exercise price of \$1.15;
- (iii) 11.5 million ordinary shares issuable upon exercise of options granted to our Chairman of the Board at an exercise price of \$0.29;
- (iv) 2.5 million ordinary shares issuable upon exercise of warrants issued to our banks with an exercise price of \$2.04 per share exercisable until December 2015;
- (v) 0.9 million ordinary shares issuable upon exercise of warrants issued to our banks in connection with our credit facility with an exercise price of \$6.17 per share exercisable until December 2015;
- (vi) 1.1 million ordinary shares issuable upon exercise of warrants issued to our banks in connection with our credit facility with an exercise price of \$0.89 per share exercisable until December 2015;



- (vii) 26.5 million ordinary shares issuable upon conversion of our debentures convertible series E until January 2013, issued pursuant to our June 2007 public offering in Israel at conversion rate of approximately \$1.10;
- (viii) 8.3 million ordinary shares issuable upon exercise of warrants we issued to our banks with an exercise price of \$1.21 in connection with the July 2005 amendment to our facility agreement exercisable until December 2015;
- (ix) 9.4 million ordinary shares issuable upon conversion of our debentures convertible series B until January 2012, pursuant to the prospectus dated December 15, 2005 at conversion rate of \$1.10;
- (x) 96.4 million ordinary shares issuable upon conversion of the equity equivalent convertible capital notes we issued to each of our two banks and 206.1 million shares issuable upon conversion of such notes issued to Israel Corp.;
- (xi) 8 million ordinary shares issuable upon exercise of warrants series 6, with an exercise price of \$1.06 per share and exercisable until August 2011;
- (xii) 5.2 million ordinary shares issuable upon exercise of warrants series 5 sold in our private placements completed in November 2006, with an exercise price of approximately \$2.7 per share and exercisable until December 2010;
- (xiii) 28.9 million ordinary shares issuable upon conversion of our debentures convertible series C until December 2011, issued pursuant to our June 2006 public offering in Israel at conversion rate of approximately \$1.10;
- (xiv) 5.3 million ordinary shares issuable upon exercise of the warrants series I issued in our March 2007 private placement at exercise price of \$0.74 exercisable until March 2012;
- (xv) 59.5 million ordinary shares issuable upon exercise of warrants, with an exercise price of approximately \$2.78 per share and exercisable until March 2011;
- (xvi) 10.7 million ordinary shares issuable upon conversion of our debentures convertible until December 2011 at conversion rate of \$4.07; and
- (xvii) 25.3 million ordinary shares issuable upon exercise of warrants series J covered by this prospectus, with an exercise price of \$1.70 per share and exercisable until June 2015.

This information does not take into account potential dilutive issuances of securities pursuant to our credit facility agreement and warrants issuable to our banks since the number of shares issuable will depend upon future transactions in which we may engage and/or the market price of our shares and/or other conditions.

#### USE OF PROCEEDS

All of the proceeds from the sale of the ordinary shares and warrants offered under this prospectus are for the account of the selling securityholders. Accordingly, we will not receive any proceeds from the sales of these securities. We also will not receive any proceeds resulting from the exercise price payable upon the exercise of warrants held by the selling securityholders because all such warrants are exercisable on a net exercise, or “cashless” basis. See “Description of Share Capital—Series J Warrants.”

We have agreed to bear all expenses relating to the registration of the securities registered pursuant to this prospectus.





### MARKET FOR OUR ORDINARY SHARES

Our ordinary shares are listed and traded on the NASDAQ Global Market and on the Tel Aviv Stock Exchange (TASE) under the symbol “TSEM”.

The following table sets forth, for the periods indicated, the high and low reported sales prices of the ordinary shares on the NASDAQ Global Market and Tel Aviv Stock Exchange:

Period	NASDAQ Global Market		Tel Aviv Stock Exchange	
	High (\$)	Low (\$)	High (NIS)	Low (NIS)
August 2010	1.66	1.25	6.12	5.25
July 2010	1.50	1.31	5.96	5.15
June 2010	1.60	1.28	6.10	5.02
May 2010	1.74	1.25	6.35	4.90
April 2010	1.73	1.47	6.48	5.61
March 2010	1.87	1.55	7.02	5.82
Third quarter 2010 through September 26, 2010	1.66	1.25	6.12	5.04
Second quarter 2010	1.74	1.25	6.48	4.90
First quarter 2010	1.87	0.99	7.02	3.71
Fourth quarter 2009	1.18	0.89	4.51	3.35
Third quarter 2009	1.49	0.33	5.13	1.36
Second quarter 2009	0.39	0.19	1.49	0.84
First quarter 2009	0.24	0.13	1.02	0.50
Fourth quarter 2008	0.54	0.09	1.91	0.36