
FORM 6-K

SECURITIES AND EXCHANGE COMMISSION

Washington, D.C. 20549

For the month of April 2010 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 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 April 13, 2010, the registrant announces First Quarter 2010 Financial Results Conference Call.

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: April 13, 2010

By: /s/ Nati Somekh Gilboa

Name: Nati Somekh Gilboa

Title: Corporate Secretary

TowerJazz Announces First Quarter 2010 Financial Results Conference Call

Migdal Haemek, Israel – April 13, 2010 - TowerJazz (NASDAQ: TSEM, TASE: TSEM), an independent specialty foundry, will hold a conference call to discuss its first quarter 2010 financial results and second quarter 2010 guidance on Wednesday, May 12, 2010, at 10:00 a.m. Eastern Time (09:00 a.m. Central, 08:00 a.m. Mountain, 07:00 a.m. Pacific and 17:00 Israel Time). TowerJazz will issue the first quarter 2010 earnings release on Wednesday, May 12, 2010.

This call will be webcast by Thomson/CCBN and can be accessed on TowerJazz's Website at www.towerjazz.com, or can also be accessed in the U.S. and in Israel by calling a domestic number:

| | |
|-----------------|------------------|
| 1-888-668-9141 | (U.S. Toll-Free) |
| 03-918-0609 | (Israel) |
| +972-3-918-0609 | (International) |

The webcast is also being distributed through the Thomson Street Events Network to both institutional and individual investors. Individual investors can listen to the call at www.earnings.com, Thomson/CCBN's individual investor portal, powered by StreetEvents. Institutional investors can access the call via Thomson's password-protected event management site, StreetEvents (www.streetevents.com).

The teleconference will be available for replay for 90 days.

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.

Contact Information:

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| Tower Semiconductor | GK Investor Relations |
| Noit Levi, +972 4 604 7066 | Tel: 1 646 201 9246 (US) / +972 2 563 6521 (Israel) |
| noitle@towersemi.com | kenny.green@gkir.com |
