FORM 6-K

SECURITIES AND EXCHANGE COMMISSION

Washington, D.C. 20549

For the month of October 2012 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 October 17, 2012, the registrant announces TowerJazz Further Demonstrates Commitment to China Market; Announces Participation at IC China 2012 and IC CAD 2012.

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: October 17, 2012 By: /s/ Nati Somekh Gilboa

Name: Nati Somekh

Gilboa

Title: Corporate Secretary

NEWS ANNOUNCEMENT

FOR IMMEDIATE RELEASE

TowerJazz Further Demonstrates Commitment to China Market; Announces Participation at IC China 2012 and IC CAD 2012

Keynote presentations and exhibits focus on SiGe/FEM development, CMOS image sensors, 700V LED lighting and scalable LDMOS for DC-DC converters, LED backlighting

NISHIWAKI, Japan, October 17, 2012 – TowerJazz, the global specialty foundry leader, today announced keynote presentations and exhibits at IC China 2012 in Shanghai on October 23-25, 2012 (booth #B11), and IC CAD 2012 in Chongqing, China on December 6-7, 2012. TowerJazz's presence at these influential semiconductor industry expositions in China demonstrates its strong commitment to continue addressing the demands of business in this region. According to iSuppli, today 42 percent of all ICs are consumed in China and it is projected to grow to nearly 50 percent by 2015.

TowerJazz's presentations will focus on the availability of its advanced specialty technologies such as front-end module (FEM) development, its highly integrated 700V technology to meet the green standards for BLDC motor drivers and industrial LED lighting, and its 0.18um BCD with scalable LDMOS for Energy Harvesting, DC-DC converters and LED backlighting, as well as high dynamic range (HDR) pixel development for security and automotive solutions. TowerJazz will also provide highlights of its extensive efforts in offering the best design enablement tools in the industry.

"TowerJazz has continued to grow its technical support capabilities in China having added key design and process support experts within this past year and hence, further demonstrating our solid commitment to the China IC market," said Todd Mahlen, Vice President of APAC Sales. "We are excited to participate at IC China and IC CAD this year and showcase our dedication to providing industry leading design tools that enable China's very skilled design engineering community to excel in meeting the challenging demands for more energy efficient solutions."

About TowerJazz

Tower Semiconductor Ltd. (NASDAQ: TSEM, TASE: TSEM), its fully owned U.S. subsidiary Jazz Semiconductor Ltd., and its fully owned Japanese subsidiary TowerJazz Japan, Ltd., operate collectively under the brand name TowerJazz, the global specialty foundry leader. TowerJazz manufactures integrated circuits with geometries ranging from 1.0 to 0.13-micron, offering 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 CMOS and MEMS capabilities. TowerJazz also offers a world-class design enablement platform that complements its sophisticated technology and enables a quick and accurate design cycle. In addition, TowerJazz provides (TOPS) Technology Optimization Process Services to IDMs as well as fabless companies that need to expand capacity, or progress from an R&D line to a production line. To provide multi-fab sourcing, TowerJazz maintains two manufacturing facilities in Israel, one in the U.S., and one in Japan with additional capacity available in China through manufacturing partnerships. For more information, please visit www.towerjazz.com.

Safe Harbor Regarding 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. A 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 TowerJazz's business is included under the heading "Risk Factors" in Tower's most recent filings on Forms 20-F, F-3, F-4 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, respectively. Tower and Jazz do not intend to update, and expressly disclaim any obligation to update, the information contained in this release.

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