
FORM 6-K

SECURITIES AND EXCHANGE COMMISSION

Washington, D.C. 20549

For the month of March 2011 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 March 7, 2011, the registrant announced US Army RDECOM CERDEC NVESD and TowerJazz Sign Contract to Develop High Performance CMOS Low Light Imaging Solutions for Army Portable Systems. Attached please find 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: March 7, 2011

By: /s/ Nati Somekh Gilboa

Name: Nati Somekh Gilboa

Title: Corporate Secretary



NEWS ANNOUNCEMENT

FOR IMMEDIATE RELEASE

US Army RDECOM CERDEC NVESD and TowerJazz Sign Contract to Develop High Performance CMOS Low Light Imaging Solutions for Army Portable Systems

US Army RDECOM CERDEC Night Vision Electronics and Sensors Directorate (NVESD) to utilize TowerJazz's on-shore foundry capability for image sensor development

NEWPORT BEACH, Calif., March 7, 2011 – TowerJazz, the global specialty foundry leader, announced it has signed contracts for two phases of development with the US Army RDECOM CERDEC Night Vision Electronics and Sensors Directorate (NVESD) for CMOS low light image sensor development for Army portable systems. As part of this effort, TowerJazz is expanding its aerospace and defense on-shore capability by introducing world class CMOS image sensor (CIS) foundry processes and solutions in its Newport Beach, CA facility. This project will result in advanced CIS technology at TowerJazz's on-shore facility and provide the US Army with a solution for its demanding technology needs and provide state-of-the-art CIS technology for Department of Defense (DoD) CIS programs.

A key goal of the US Army RDECOM CERDEC NVESD program is to enable CMOS imagers with low noise and high sensitivity over a broad spectral range. TowerJazz was chosen as a development partner due to its pixel process which uses advanced methods and technology providing higher pixel performance than competing commercial approaches. The transferred 180nm CMOS image sensor process at TowerJazz's US location is meant to be a viable, commercially sustainable foundry offering to support not only the Army NVESD and their suppliers, but all DoD agencies and other interested third parties.

The TowerJazz pixel and process will be used as the base for the development of a lower dark current PMOS Pixel that will enable the design of the NVESD 4 Mpixel low light level BSI sensor and other low dark current, high performance imagers. TowerJazz will also evaluate the types of process flows needed to support fabrication of backside illuminated or SOI based CMOS image sensors.

"We appreciate the vision and leadership of the US Army RDECOM CERDEC NVESD team in supporting this CMOS low light image sensor development. As a US-based supplier for key manufacturing technology, TowerJazz looks forward to our continued partnership in the establishment of advanced specialty technology that supports their program roadmaps," said Mike Scott, Director of Sales and Marketing – USA Aerospace and Defense Division, TowerJazz.

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.

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 Tower and/or Jazz'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.

For TowerJazz**Company Contact**

Melinda Jarrell

+1 949 435 8181

melinda.jarrell@towerjazz.com**Investor Relations Contact**

Noit Levi

+972 4 604 7066

noit/levi@towerjazz.com**Media Contact**

Lauri Julian

+1 949 715 3049

lauri.julian@towerjazz.com