

TOWER SEMICONDUCTOR LTD

Form 6-K

November 20, 2013

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FORM 6-K

SECURITIES AND EXCHANGE COMMISSION

Washington, D.C. 20549

For the month of November 2013 No. 5

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

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On November 20, 2013, the registrant announced it was Selected as Silicon Provider for the Upgrade of the Inner Tracking System of the ALICE Experiment at CERN. Attached please find the press release.

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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: November 20, 2013

By: /s/ Nati Somekh  
Name: Nati Somekh  
Title: Corporate Secretary

NEWS ANNOUNCEMENT

FOR IMMEDIATE RELEASE

TowerJazz was Selected as Silicon Provider for the Upgrade of the Inner Tracking System of the ALICE Experiment at CERN

TowerJazz was invited to participate at CERN's Israel Innovation Day in Geneva, Switzerland in October 2013 showcasing its CMOS Image Sensor process capabilities

MIGDAL HAEMEK, Israel November 20, 2013 – TowerJazz, the global specialty foundry leader, today announced it was chosen to provide silicon for the upgrade of the Inner Tracking System (ITS) of the ALICE experiment at the European Organisation for Nuclear Research (CERN) in Geneva, Switzerland. TowerJazz was also invited by the Commercial Department of the Embassy of Israel in Switzerland together with the Israeli Export Institute to participate in the Israel Innovation Day at CERN that took place on October 2-4, 2013.

ALICE is a general-purpose heavy-ion experiment designed to study the physics of strongly interacting matter and the quark-gluon plasma in nucleus-nucleus collisions at the Large Hadron Collider (LHC) at CERN. The collaboration includes over 1300 members from 138 institutions in 36 countries and is currently engaged in the analysis of data taken during the first runs of 2010 to 2013. The detector used for these studies is located in a cavern 60 m underground at the LHC, providing measurements of the particles emerging from the collisions.

At the heart of the 10,000 tons ALICE detector, in the immediate vicinity of the collisions, is the ALICE Inner Tracking System (ITS), a 10 m<sup>2</sup> large silicon tracking detector providing precise information on the path of emerging particles which carry an electrical charge. The ALICE collaboration has recently decided to upgrade the entire ITS system and to build the largest silicon tracking detector in the world based on silicon pixel detectors. This upgrade is planned to be installed in 2018 and will strongly enhance the capabilities of ALICE to study strongly interacting matter and the properties of the quark-gluon plasma.

TowerJazz's CIS (CMOS Image Sensor) technology is not only used for visible light, it can also be used to build highly sensitive and efficient particle detectors. This technology has been chosen by ALICE researchers to develop monolithic silicon pixel detectors for the ITS upgrade of the ALICE detector.

According to ALICE experiment spokesperson, Dr. Paolo Giubellino, "The upgrade of the Inner Tracking System is a corner stone for the future of the ALICE experiment and will allow a precise determination of the properties of the quark-gluon plasma, which will be a major scientific achievement. An essential component in this upgrade is the development of monolithic silicon pixel detectors together with TowerJazz to obtain a unique low mass tracking detector. This technology represents a breakthrough for our experiment."

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“The ALICE ITS upgrade is a very challenging project and the close interaction with TowerJazz has already enabled significant progress in the development of monolithic detectors for this application. The unique features of the TowerJazz CIS process allow the use of CMOS imaging sensors for single particle detection at an LHC detector. We are very much looking forward to continuing this collaboration towards a successful ITS upgrade,” said Luciano Musa, ALICE ITS project leader.

“TowerJazz is the leading specialty foundry and serves the majority of Europe for specialty CMOS image sensors and particle detectors as well as a large portion of the US and Asia Pacific. We are pleased that ALICE has chosen TowerJazz for their next generation of sensors. This project is part of our intention to serve many other European scientific as well as space programs,” said Dr. Avi Strum, VP and GM, CMOS Image Sensor BU and VP of Sales for Europe.

For more information on CERN, please visit: <http://home.web.cern.ch/>.

#### About TowerJazz

Tower Semiconductor Ltd. (NASDAQ: TSEM, TASE: TSEM), its fully owned U.S. subsidiary Jazz Semiconductor, Inc. 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, offering a broad range of customizable process technologies including: SiGe, BiCMOS, Mixed-Signal/CMOS, RFCMOS, CMOS Image Sensor, Power Management (BCD), and MEMS capabilities. TowerJazz also provides a world-class design enablement platform that enables a quick and accurate design cycle. In addition, TowerJazz provides (TOPS) Transfer Optimization and development Process Services to IDMs and fabless companies that need to expand capacity. TowerJazz offers multi-fab sourcing with two manufacturing facilities in Israel, one in the U.S., and one in Japan. For more information, please visit [www.towerjazz.com](http://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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