FORM 6-K

SECURITIES AND EXCHANGE COMMISSION

Washington, D.C. 20549

For the month May 2022 No. 3

TOWER SEMICONDUCTOR LTD.

(Translation of registrant's name into English)

Ramat Gavriel Industrial Park
P.O. Box 619, Migdal Haemek, Israel 2310502
(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 ☒

On May 9, 2022, the Registrant announced Expansion of its Leading-Edge Power Management Platforms Supporting Higher Power and Higher Voltage ICs

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: May 9, 2022

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

NEWS ANNOUNCEMENT *FOR IMMEDIATE RELEASE*

Tower Semiconductor Expands its Leading-Edge Power Management Platforms Supporting Higher Power and Higher Voltage ICs

Releasing its second generation 65nm BCD scalable power LDMOS expanding voltages to 24V operation and 20% lower Rdson; and adding deep trench isolation (DTI) to its 180nm BCD platform enabling up to 40% die size reduction for operation up to 125V

Tower will present its latest power management technologies at the 2022 PCIM conference *in N✔rnberg, Germany*

MIGDAL HAEMEK, Israel, May 9, 2022 – Tower Semiconductor (NASDAQ/TASE: TSEM), the leading foundry of high-value analog semiconductor solutions, today announced the expansion of its power management platforms with the release of the second generation of its state of the art 65nm BCD expanding operation to 24V and reducing Rdson by 20%. The company is also adding deep trench isolations to its 180nm BCD platform enabling up to 40% die size reduction for voltages up to 125V. The new releases address the increasing demand for higher power ICs at higher voltages and power efficiency, further enhancing Tower's leading market position in support of the power IC market that according to Yole Développement (Yole) will reach over $25.5B by 2026.

Tower's 65nm BCD platform is known as the best-in-class sub-90nm BCD technology with its leading figure of merit in power performance, cost, and integration competitiveness. The second generation 65nm BCD benefits from power performance and/or die size reduction by up to 20% due to the decrease in LDMOS Rdson for devices up to 16V together with voltage extension to 24V operation. These advancements firmly address the needs of the computing and consumer markets for monolithic high-power converters, including, high-power voltage regulator for CPU and GPUs in addition to applications such as chargers high power motor drivers and power converters.

The Company's 180nm BCD is the industry's widest, best-in-class platform with respect to voltage coverage, isolation schemes, power performance, die size, and mask count. The 180nm BCD deep trench isolation scheme (DTI) offers improved noise immunity within a single IC, flexibility at the elevated voltages enabling to select between multiple isolation scheme, and reduced die size by up to 40%. All these strategic features support the market's increasing deployment of 48V systems that require ICs to hold voltages up to 120V and more; and specifically address the advancing requirements of the industrial and automotive applications including gate drivers, power converters, motor drivers, and automotive 48V systems with their demand for advanced isolations in ICs with multiple voltage domains at a smaller die size.

The Company will participate in upcoming 2022 PCIM in N✔rnberg, Germany, May 10 - 12, 2022
booth: #6-431.

For additional details on the Company's power management technology offerings, please visit here.

About Tower Semiconductor
Tower Semiconductor Ltd. (NASDAQ: TSEM, TASE: TSEM), the leading foundry of high value analog semiconductor solutions, provides technology and manufacturing platforms for integrated circuits (ICs) in growing markets such as consumer, industrial, automotive, mobile, infrastructure, medical and aerospace and defense. Tower Semiconductor focuses on creating positive and sustainable impact on the world through long term partnerships and its advanced and innovative analog technology offering, comprised of a broad range of customizable process platforms such as SiGe, BiCMOS, mixed-signal/CMOS, RF CMOS, CMOS image sensor, non-imaging sensors, integrated power management (BCD and 700V), and MEMS. Tower Semiconductor also provides world-class design enablement for a quick and accurate design cycle as well as process transfer services including development, transfer, and optimization, to IDMs and fabless companies. To provide multi-fab sourcing and extended capacity for its customers, Tower Semiconductor owns two manufacturing facilities in Israel (150mm and 200mm), two in the U.S. (200mm), three facilities in Japan (two 200mm and one 300mm) which it owns through its 51% holdings in TPSCo and is sharing a 300mm manufacturing facility being established in Italy with ST. For more information, please visit: www.towersemi.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'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. Tower does not intend to update, and expressly disclaim any obligation to update, the information contained in this release.

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