#### UNITED STATES

### SECURITIES AND EXCHANGE COMMISSION

Washington, D.C. 20549

### FORM 6-K

# REPORT OF FOREIGN PRIVATE ISSUER PURSUANT TO RULE 13a-16 OR 15d-16 OF THE SECURITIES EXCHANGE ACT OF 1934

For the month of May 2024 No.1

Commission File Number 0-24790

## 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 of Form 20-F or Form 40-F.

Form 20-F ⊠ Form 40-F □

On May 1, 2024, Standard & Poor's Maalot (an Israeli rating company which is fully owned by S&P Global Ratings) completed its annual rating review of the Registrant and re-affirmed its corporate credit rating as "ilAA"/ stable. S&P Maalot's official rating report in Hebrew has been submitted by S&P Maalot to the Israel Securities Authority and the Tel Aviv Stock Exchange and is available on the Tel Aviv Stock Exchange website. An unofficial English translation of the report prepared by S&P Maalot is available on the IR webpage (https://ir.towersemi.com/) on the Company's website.

### 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 1, 2024 By: /s/ Nati Somekh

Name: Nati Somekh Title: Corporate Secretary