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**UNITED STATES  
SECURITIES AND EXCHANGE COMMISSION**

Washington, DC 20549

**FORM 6-K**

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

**For the month of September 2025**

**Commission File Number 001-33159**

**AERCAP HOLDINGS N.V.**

(Translation of Registrant's Name into English)

**AerCap House, 65 St. Stephen's Green, Dublin D02 YX20, Ireland, +353 1 819 2010**

(Address of Principal Executive Office)

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 ☐

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## Other Events

On September 10, 2025, the board of directors of AerCap Holdings N.V. (“AerCap”) approved a share repurchase program authorizing total repurchases of up to \$750 million of AerCap ordinary shares through December 31, 2025 (the “Share Repurchase Program”).

Repurchases under the Share Repurchase Program may be made through open market purchases or privately negotiated transactions in accordance with applicable U.S. federal securities laws. The timing of repurchases and the exact number of ordinary shares to be purchased will be determined by AerCap’s management, in its discretion, and will depend upon market conditions and other factors. The Share Repurchase Program will be funded using AerCap’s cash on hand and cash generated from operations. The Share Repurchase Program may be suspended or discontinued at any time.

The information contained in this Form 6-K is incorporated by reference into AerCap’s Form F-3 Registration Statement, File No. 333-282733, and Form S-8 Registration Statements, File Nos. 333-194638, 333-194637, 333-180323, 333-165839 and 333-154416, and related Prospectuses, as such Registration Statements and Prospectuses may be amended from time to time.

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SIGNATURE

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.

AERCAP HOLDINGS N.V.

By: /s/ Aengus Kelly

Name: Aengus Kelly

Title: Authorized Signatory

Date: September 11, 2025