

PROSPECTUS SUPPLEMENT NO. 5
(to Prospectus dated May 4, 2026)

SPIRE GLOBAL, INC.

5,000,000 Shares of Class A Common Stock

This prospectus supplement amends and supplements the prospectus dated May 4, 2026 (as supplemented or amended from time to time, the “Prospectus”), which forms a part of our Registration Statement on Form S-1 (No. 333-295274).

This prospectus supplement is being filed to update and supplement the information in the Prospectus with the information contained in our Current Report on Form 8-K, filed with the Securities and Exchange Commission on August 5, 2026 (the “Current Report”). Accordingly, we have attached the Current Report to this prospectus supplement.

This prospectus supplement updates and supplements the information in the Prospectus and is not complete without, and may not be delivered or utilized except in combination with, the Prospectus, including any amendments or supplements thereto. This prospectus supplement should be read in conjunction with the Prospectus and if there is any inconsistency between the information in the Prospectus and this prospectus supplement, you should rely on the information in this prospectus supplement.

Our Class A common stock is traded on the New York Stock Exchange (“NYSE”) under the symbol “SPIR.” On August 3, 2026, the last quoted sale price for our Class A common stock as reported on NYSE was \$12.28 per share.

Investing in our securities involves a high degree of risk. Before buying any securities, you should carefully read the discussion of the risks of investing in our securities in the section titled “Risk Factors” beginning on page 5 of the Prospectus.

You should rely only on the information contained in the Prospectus, this prospectus supplement and any other prospectus supplement or amendment hereto. We have not authorized anyone to provide you with different information.

NEITHER THE SECURITIES AND EXCHANGE COMMISSION NOR ANY STATE SECURITIES COMMISSION HAS APPROVED OR DISAPPROVED OF THESE SECURITIES OR DETERMINED IF THIS PROSPECTUS IS TRUTHFUL OR COMPLETE. ANY REPRESENTATION TO THE CONTRARY IS A CRIMINAL OFFENSE.

The date of this prospectus is August 5, 2026

UNITED STATES
SECURITIES AND EXCHANGE COMMISSION
WASHINGTON, D.C. 20549

FORM 8-K

CURRENT REPORT

Pursuant to Section 13 or 15(d) of the Securities Exchange Act of 1934

Date of Report (Date of earliest event reported): July 31, 2026

SPIRE GLOBAL, INC.

(Exact name of registrant as specified in its charter)

Delaware
(State or other jurisdiction
of incorporation)

001-39493
(Commission File Number)

85-1276957
(IRS Employer
Identification No.)

8000 Towers Crescent Drive
Suite 1100
Vienna, Virginia
(Address of principal executive offices)

22182
(Zip code)

Registrant's telephone number, including area code: (202) 301-5127

Not Applicable
(Former name or former address, if changed since last report)

Check the appropriate box below if the Form 8-K filing is intended to simultaneously satisfy the filing obligation of the registrant under any of the following provisions:

- ☐ Written communications pursuant to Rule 425 under the Securities Act (17 CFR 230.425)
- ☐ Soliciting material pursuant to Rule 14a-12 under the Exchange Act (17 CFR 240.14a-12)
- ☐ Pre-commencement communications pursuant to Rule 14d-2(b) under the Exchange Act (17 CFR 240.14d-2(b))
- ☐ Pre-commencement communications pursuant to Rule 13e-4(c) under the Exchange Act (17 CFR 240.13e-4(c))

Securities registered pursuant to Section 12(b) of the Act:

Title of each class	Trading Symbol(s)	Name of each exchange on which registered
Class A common stock, par value of \$0.0001 per share	SPIR	The New York Stock Exchange

Indicate by check mark whether the registrant is an emerging growth company as defined in Rule 405 of the Securities Act of 1933 (§ 230.405 of this chapter) or Rule 12b-2 of the Securities Exchange Act of 1934 (§ 240.12b-2 of this chapter).

Emerging growth company ☐

If an emerging growth company, indicate by check mark if the registrant has elected not to use the extended transition period for complying with any new or revised financial accounting standards provided pursuant to Section 13(a) of the Exchange Act. ☐

Item 8.01 Other Events.

As previously disclosed, on September 20, 2024, NorthStar Earth & Space, Inc. (“NorthStar”), a Space Services customer, initiated arbitration before the International Court of Arbitration of the International Chamber of Commerce against Spire Global Subsidiary, Inc. (formerly known as Spire Global, Inc.) (“Legacy Spire”), seeking damages for alleged breaches of a Space Services contract entered into on March 1, 2022 (the “Framework Agreement”). NorthStar’s claims, as most recently amended, sought damages of \$45.9 million based on allegations of breach of contract, willful misconduct, and fraudulent misrepresentation. Legacy Spire denied all claims and asserted counterclaims, including for amounts due under a promissory note issued by NorthStar in the principal amount of \$4.5 million, for costs incurred in connection with an interlocutory injunction obtained by NorthStar in the Superior Court of Justice of Ontario, and for costs of the arbitration.

On July 31, 2026, the arbitral tribunal issued a Final Award in the amount of approximately \$12.4 million in favor of Spire Global, Inc. (the “Company”). The Company is evaluating the Final Award and its implications. Among other things, the tribunal:

- dismissed all of NorthStar’s claims, including its claims that the Framework Agreement was induced by fraudulent misrepresentation and that Legacy Spire breached the Space Services contract;
- granted Legacy Spire’s counterclaim on the promissory note; and
- granted Legacy Spire’s counterclaims for costs incurred as a result of the interlocutory injunction and for costs of the arbitration.

The Final Award is final and binding on the parties under the arbitration agreement and the rules under which the arbitration was conducted. The total payment of approximately \$12.4 million owed by NorthStar is immediately due and payable.

The Company cannot at this time predict the timing or amount of any recovery or other impacts of the Final Award.

Forward-Looking Statements

This Current Report on Form 8-K contains forward-looking statements, including information regarding the Company’s evaluation of the Final Award and its implications, including the timing or amount of any recovery or other impacts of the Final Award, within the safe harbor provisions under The Private Securities Litigation Reform Act of 1995. These statements involve known and unknown risks, uncertainties and other factors which may cause the results of the Company to be materially different than those expressed or implied in such statements. Certain of these risk factors and others are included in documents the Company files with the Securities and Exchange Commission, including but not limited to, the Company’s Annual Report on Form 10-K for the year ended December 31, 2025, as well as subsequent reports filed with the Securities and Exchange Commission. Other unknown or unpredictable factors also could have material adverse effects on the Company’s future results. The forward-looking statements included in this report are made only as of the date hereof. the Company cannot guarantee future results, levels of activity, performance or achievements. Accordingly, you should not place undue reliance on these forward-looking statements. Finally, the Company expressly disclaims any intent or obligation to update or revise any forward-looking statements, whether as a result of new information, future events, or otherwise.

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.

SPIRE GLOBAL, INC.

Date: August 5, 2026

By: /s/ Alison Engel
Name: Alison Engel
Title: Chief Financial Officer
