

**UNITED STATES
SECURITIES AND EXCHANGE COMMISSION**
Washington, D.C. 20549

**FORM S-3
REGISTRATION STATEMENT
UNDER THE SECURITIES ACT OF 1933**

Kodiak Gas Services, Inc.

(Exact name of registrant as specified in its charter)

Delaware

**9950 Woodloch Forest Drive, Suite 1900
The Woodlands, Texas 77380**

83-3013440

(State or other jurisdiction of incorporation or organization)

(Address, including zip code, and telephone number, including area code, of registrant's principal executive offices)

(I.R.S. Employer Identification Number)

**Jennifer Howard
Executive Vice President, General Counsel,
Chief Compliance Officer and Corporate Secretary
9950 Woodloch Forest Drive, Suite 1900
The Woodlands, Texas 77380
(936) 539-3300**

(Name, address, including zip code, and telephone number, including area code, of agent for service)

Copies to:

**David C. Buck
Sidley Austin LLP
1000 Louisiana Street, Suite 5900
Houston, Texas 77002
Telephone: (713) 495-4500**

Approximate date of commencement of proposed sale to the public: From time to time after this registration statement becomes effective.

If the only securities being registered on this Form are being offered pursuant to dividend or interest reinvestment plans, please check the following box: ☐

If any of the securities being registered on this Form are to be offered on a delayed or continuous basis pursuant to Rule 415 under the Securities Act of 1933, other than securities offered only in connection with dividend or interest reinvestment plans, check the following box: ☒

If this Form is filed to register additional securities for an offering pursuant to Rule 462(b) under the Securities Act, please check the following box and list the Securities Act registration statement number of the earlier effective registration statement for the same offering. ☐

If this Form is a post-effective amendment filed pursuant to Rule 462(c) under the Securities Act, check the following box and list the Securities Act registration statement number of the earlier effective registration statement for the same offering. ☐

If this Form is a registration statement pursuant to General Instruction I.D. or a post-effective amendment thereto that shall become effective upon filing with the Commission pursuant to Rule 462(e) under the Securities Act, check the following box. ☒

If this Form is a post-effective amendment to a registration statement filed pursuant to General Instruction I.D. filed to register additional securities or additional classes of securities pursuant to Rule 413(b) under the Securities Act, check the following box. ☐

Indicate by check mark whether the registrant is a large accelerated filer, an accelerated filer, a non-accelerated filer, a smaller reporting company, or an emerging growth company. See the definitions of "large accelerated filer," "accelerated filer," "smaller reporting company," and "emerging growth company" in Rule 12b-2 of the Exchange Act.

Large accelerated filer ☒
Non-accelerated filer ☐

Accelerated filer ☐
Smaller reporting company ☐
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 7(a)(2)(B) of the Securities Act. ☐

The Registrant hereby amends this Registration Statement on such date or dates as may be necessary to delay its effective date until the Registrant shall file a further amendment which specifically states that this Registration Statement shall thereafter become effective in accordance with Section 8(a) of the Securities Act of 1933, as amended or until the Registration Statement shall become effective on such date as the Securities and Exchange Commission, acting pursuant to said Section 8(a), may determine.

The information in this prospectus is not complete and may be changed. These securities may not be sold until the registration statement filed with the Securities and Exchange Commission is effective. This prospectus is not an offer to sell, nor does it seek an offer to buy these securities in any jurisdiction where the offer or sale is not permitted.

Subject to completion, dated September 28, 2026.

PROSPECTUS

KODIAK GAS SERVICES, INC.

Up to 2,401,278 Shares of Common Stock Offered by the Selling Stockholders

This prospectus relates to the offer and sale by the selling stockholders named in this prospectus, together or separately, in one or more offerings of common stock of Kodiak Gas Services, Inc. (“Kodiak”, “we”, “us” or the “Company”), \$0.01 par value per share (“Common Stock”) from time to time in amounts, at prices and on terms that will be determined at the time of any such offering.

We are registering the offer and sale of the shares of the Common Stock owned by the selling stockholders to satisfy registration rights we have granted to the selling stockholders pursuant to a registration rights agreement dated as of April 1, 2026 (the “Registration Rights Agreement”). We have agreed to bear all of the expenses incurred in connection with the registration of the Common Stock covered by this prospectus. The selling stockholders will pay or assume brokerage commissions and similar charges, if any, incurred in the sale of the Common Stock. We will not receive any proceeds from the offer or sale of the Common Stock by the selling stockholders pursuant to this prospectus. See “Selling Stockholders” for a more detailed discussion about the selling stockholders.

The shares of Common Stock to which this prospectus relates may be offered and sold from time to time by the selling stockholders or alternatively through underwriters, broker dealers or agents. The selling stockholders will determine at what price the selling stockholders may sell the Common Stock offered by this prospectus, and such sales may be made at fixed prices, at prevailing market prices at the time of the sale, at varying prices determined at the time of sale, or at negotiated prices. For additional information on the methods of sale that may be used by the selling stockholders, see the section entitled “*Plan of Distribution*.”

We may amend or supplement this prospectus from time to time by filing amendments or supplements as required. You should carefully read this prospectus and any prospectus supplement or amendment before you invest. You also should read the documents we have referred you to in the “*Where You Can Find More Information*” section of this prospectus for information about us and our financial statements.

We have not, and the selling stockholders have not, authorized anyone to give you any information other than in this prospectus and the information incorporated by reference herein. We take no responsibility for, and can provide no assurances as to the reliability of, any other information that others may give you.

Our Common Stock is quoted on The New York Stock Exchange (“NYSE”) and the NYSE Texas, Inc. (“NYSE Texas”) under the symbol KGS. On September 25, 2026, the last reported sale price of Common Stock on the NYSE and NYSE Texas was \$52.91 per share.

Our principal executive office is located at 9950 Woodloch Forest Drive, Suite 1900, The Woodlands, Texas 77380, and our telephone number is (936) 539-3300.

Investing in our shares of Common Stock involves risks. You should carefully review the risks and uncertainties described under the heading “Risk Factors” contained on page 5 herein and in the applicable prospectus supplement and under similar headings in the other documents incorporated by reference into this prospectus.

NEITHER THE SECURITIES AND EXCHANGE COMMISSION NOR ANY STATE SECURITIES COMMISSION HAS APPROVED OR DISAPPROVED OF THESE SECURITIES OR PASSED UPON THE ACCURACY OR ADEQUACY OF THE DISCLOSURES IN THE PROSPECTUS. ANY REPRESENTATION TO THE CONTRARY IS A CRIMINAL OFFENSE.

The date of this prospectus is September 28, 2026.

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This prospectus is part of a registration statement that we have filed with the Securities and Exchange Commission (the “SEC”) pursuant to which the selling stockholders named herein may, from time to time, offer and sell or otherwise dispose of the shares of Common Stock covered by this prospectus. You should not assume that the information contained in this prospectus is accurate on any date subsequent to the date set forth on the front cover of this prospectus or that any information we have incorporated by reference is correct on any date subsequent to the date of the document incorporated by reference, even though this prospectus is delivered or the shares of Common Stock are sold or otherwise disposed of on a later date. It is important for you to read and consider all information contained in this prospectus, including the documents incorporated by reference herein, in making your investment decision. You should also read and consider the information in the documents to which we have referred you under the caption “*Where You Can Find More Information*” in this prospectus.

We have not authorized anyone to provide any information or to make any representations other than those contained in this prospectus or in any free writing prospectuses we have prepared. We take no responsibility for, and can provide no assurance as to the reliability of, any other information that others may give you. We are not, and the selling stockholders are not, making an offer to sell these shares of Common Stock in any jurisdiction where an offer or sale is not permitted.

We have not, and the selling stockholders have not, done anything that would permit this offering or the possession or distribution of this prospectus or any free writing prospectus we may provide to you in connection with this offering in any jurisdiction where action is required, other than in the United States. Persons outside the United States who come into possession of this prospectus must inform themselves about, and observe any restrictions relating to, the offering of the shares of Common Stock and the distribution of this prospectus outside the United States.

This prospectus contains forward-looking statements that are subject to a number of risks and uncertainties, many of which are beyond our control. Please read “*Risk Factors*” and “*Cautionary Note Regarding Forward-Looking Statements*.”

ABOUT THIS PROSPECTUS

This prospectus is part of a “shelf registration statement” on Form S-3 that we filed with the SEC, utilizing a “shelf” registration process. Under this shelf registration process, the selling stockholders named herein may offer and sell from time to time, in one or more offerings, shares of Common Stock as described in this prospectus.

This prospectus provides you with a general description of the shares of Common Stock the selling stockholders may offer from time to time. Each time the selling stockholders offer or sell shares of Common Stock, the selling stockholders may, if required, provide a prospectus supplement that will contain specific information about the terms of those shares of Common Stock and that offering, including but not limited to, the specific amounts, prices and terms of the securities offered. Such prospectus supplement may also add, update or change information contained in this prospectus. You should carefully read this prospectus and the applicable prospectus supplement, if any, as well as additional information incorporated by reference herein and therein and described under the heading “*Where You Can Find More Information*” before you invest in our shares of Common Stock. We may also prepare free writing prospectuses that may also add, update or change information contained in this prospectus and any applicable prospectus supplement. Any free writing prospectus should also be read in connection with this prospectus and with any prospectus supplement referred to therein. For purposes of this prospectus, any reference to an applicable prospectus supplement may also refer to a free writing prospectus, unless the context otherwise requires. If there is any inconsistency between the information in this prospectus and any prospectus supplement, you should rely on the information in the prospectus supplement.

You should rely only on the information contained or incorporated by reference in this prospectus and any prospectus supplement. We have not authorized anyone to provide you with different information. We do not take any responsibility for, and can provide no assurance as to the reliability of, any other information that others may give you. This prospectus and any accompanying prospectus supplement do not constitute an offer to sell or the solicitation of an offer to buy securities other than the securities described in such accompanying prospectus supplement or an offer to sell or the solicitation of an offer to buy such securities in any circumstances in which such offer or solicitation is unlawful. You should not assume that the information included in this prospectus, any applicable prospectus supplement, or the documents incorporated by reference herein or therein, are accurate as of any date other than their respective dates. Our business, financial condition, results of operations and prospects may have changed since those dates.

You should read carefully the entire prospectus and any applicable prospectus supplement, as well as the documents incorporated by reference in this prospectus, before making an investment decision.

When used in this prospectus, except where the context otherwise requires, references to “Kodiak,” “we,” “us,” “our” and the “Company” refer to Kodiak Gas Services, Inc. and its consolidated subsidiaries.

WHERE YOU CAN FIND MORE INFORMATION

We have filed with the SEC a Registration Statement on Form S-3 to register the offer and sale by the selling stockholders of the Common Stock covered hereby. This prospectus, which forms part of the Registration Statement, does not contain all of the information included in that Registration Statement. For further information about us and the Common Stock covered by this prospectus, you should refer to the Registration Statement and its exhibits. Certain information is also incorporated by reference in this prospectus as described under “*Information Incorporated by Reference*.”

We are subject to the information and periodic reporting requirements of the Securities Exchange Act of 1934, as amended (the “Exchange Act”), and, in accordance therewith, file periodic reports, proxy statements and other information with the SEC. Such periodic reports, proxy statements and other information are available at the website of the SEC at <http://www.sec.gov>. We also furnish our stockholders with annual reports containing our financial statements audited by an independent registered public accounting firm and quarterly reports containing our unaudited financial information. We maintain a website at www.kodiakgas.com. You may access our Annual Report on Form 10-K, Quarterly Reports on Form 10-Q, Current Reports on Form 8-K and amendments to those reports, filed or furnished pursuant to Section 13(a) or 15(d) of the Exchange Act with the SEC free of charge at our website as soon as reasonably practicable after this material is electronically filed with, or furnished to, the SEC. We may use the “Investors” section of our website to communicate with investors. It is possible that the financial and other information posted there could be deemed to be material information. Information contained on, or that is or becomes accessible through, our website does not constitute a part of this prospectus. The reference to our website or web address does not constitute incorporation by reference of the information contained at that site.

We have not authorized anyone to provide you with any information other than that contained in this prospectus or in a document to which we expressly have referred you. We take no responsibility for, and can provide no assurance as to the reliability of, any other information that others may give you. You should assume that the information appearing in this prospectus is accurate only as of the date on the front cover of this prospectus.

INFORMATION INCORPORATED BY REFERENCE

The SEC allows us to incorporate by reference the information we file with it. This means that we can disclose information to you by referring you to those documents. The documents that have been incorporated by reference are an important part of the prospectus, and you should review that information in order to understand the nature of any investment by you in our shares of Common Stock. Information that we later provide to the SEC, and which is deemed to be “filed” with the SEC, will automatically update information previously filed with the SEC, and may update or replace information in this prospectus and information previously filed with the SEC. We incorporate by reference the following documents that we have filed with the SEC (other than any portions of these documents that were deemed to have been furnished and not filed in accordance with the SEC rules, including pursuant to Item 2.02 or Item 7.01 of any Current Report on Form 8-K, including any financial statements or exhibits related thereto and furnished pursuant to Item 9.01), unless otherwise indicated herein:

- our Annual Report on Form 10-K for the year ended December 31, 2025 filed on February 26, 2026;
- the information specifically incorporated by reference into our Annual Report on Form 10-K for the fiscal year ended December 31, 2025 from our Definitive Proxy Statement on Schedule 14A filed on March 27, 2026;
- the description of our Common Stock contained in our Form 8-A filed with the SEC on June 28, 2023 and November 24, 2025, and Exhibit 4.6 to our Annual Report on Form 10-K for the year ended December 31, 2025, including any amendments or reports filed for the purpose of updating the description of our Common Stock;
- our Quarterly Reports on Form 10-Q for the quarters ended March 31, 2026 filed on May 11, 2026 and June 30, 2026 filed on August 7, 2026; and
- our current reports on Form 8-K or 8-K/A filed with the SEC on February 5, 2026, March 12, 2026, March 24, 2026, April 2, 2026, May 7, 2026, May 13, 2026, May 15, 2026, September 28, 2026 and September 28, 2026.

All documents subsequently filed by us pursuant to Section 13(a), 13(c), 14 or 15(d) of the Exchange Act, including all such documents we may file with the SEC after the date of the initial registration and prior to the effectiveness of the Registration Statement (excluding, in each case, any information deemed furnished rather than filed), shall be deemed to be incorporated by reference in this prospectus until the termination of each offering under this prospectus.

Upon request, we will provide to each person, including any beneficial owner, to whom this prospectus is delivered, a copy of any or all of the reports or documents that have been incorporated by reference in this prospectus. If you would like a copy of any of these documents, at no cost, please write or call us at:

Kodiak Gas Services, Inc.

9950 Woodloch Forest Drive, Suite 1900

The Woodlands, Texas 77380

(936) 539-3300

Any statement contained in a document which is incorporated by reference in this prospectus is automatically updated and superseded if information contained in the prospectus modifies or replaces this information.

OUR COMPANY

Kodiak is a leading provider and operator of large horsepower, contract compression infrastructure in the U.S., supporting the critical movement and processing of natural gas across key production regions.

Our compression infrastructure and related services are critical to our customers' ability to reliably produce, gather and transport natural gas and oil. We are a market leader in the Permian Basin, which is the largest producing natural gas and oil basin in the U.S. We operate our large horsepower compression units primarily under fixed-revenue contracts with many upstream and midstream customers. Our compression assets have long useful lives consistent with the expected production lives of the key regions where we operate.

We believe our customer-centric business model positions us as the preferred contract compression operator for our customers and creates long-standing relationships. We strategically invest in the training, development, and retention of our highly skilled and dedicated employees and believe their expertise and commitment to excellence enhances and differentiates our business model. Furthermore, we maintain an intense focus on being one of the most sustainable and responsible operators of contract compression infrastructure.

Our recently completed acquisition of Distributed Power Solutions, LLC, a Texas limited liability company ("DPS"), has expanded our platform beyond contract compression into distributed and behind-the-meter power generation, adding generation capacity and broadening our customer base across data centers, microgrids, manufacturing and energy infrastructure end markets. DPS has been rebranded as Kodiak Power Solutions, a division of the Company.

Shares of our Common Stock trade on the NYSE and the NYSE Texas under the ticker symbol "KGS." Our principal executive offices are located at 9950 Woodloch Forest Drive, Suite 1900, The Woodlands, Texas 77380, and our telephone number is (936) 539-3300. We maintain a website at www.kodiakgas.com. Information contained on, or accessible through, our website is not incorporated by reference in this prospectus.

RISK FACTORS

Investing in the shares of Common Stock described herein involves risk. We urge you to carefully consider the risk factors described in our most recent Annual Report on Form 10-K and any updates in our Quarterly Reports on Form 10-Q, together with any other SEC filings that are incorporated by reference in this prospectus and, if applicable, in any prospectus supplement used in connection with an offering of our shares of Common Stock, as well as the information relating to us identified herein in “*Cautionary Note Regarding Forward-Looking Statements*,” before making an investment decision. Although we discuss key risks in our discussion of risk factors, new risks may emerge in the future, which may prove to be significant. Our subsequent filings with the SEC may contain amended and updated discussions of significant risks. We cannot predict future risks or estimate the extent to which they may affect our financial performance. See the section entitled “*Where You Can Find More Information*” in this prospectus.

CAUTIONARY NOTE REGARDING FORWARD-LOOKING STATEMENTS

This prospectus, any accompanying prospectus supplement and the documents incorporated by reference herein or therein may contain “forward-looking statements” within the meaning of the safe harbor provisions of the U.S. Private Securities Litigation Reform Act of 1995. Forward-looking statements are neither historical facts nor assurances of future performance. Instead, they are based only on our current beliefs, expectations and assumptions regarding the future of our business, future plans and strategies, projections, anticipated events and trends, the economy and other future conditions. Forward-looking statements can be identified by words such as: “anticipate,” “intend,” “plan,” “goal,” “seek,” “believe,” “project,” “estimate,” “expect,” “strategy,” “future,” “likely,” “may,” “should,” “will” and similar references to future periods. Examples of forward-looking statements include, among others, statements we make regarding:

- Expected operating results, such as revenue growth and earnings, including the integration of acquired businesses and assets into our operations, and our ability to service our indebtedness;
- Anticipated levels of capital expenditures and uses of capital;
- Current or future volatility in the credit markets and future market conditions;
- Potential or pending acquisition transactions or other strategic transactions, the timing thereof, the receipt of necessary approvals to close such acquisitions, our ability to finance such acquisitions and our ability to achieve the intended operational, financial and strategic benefits from any such transactions, including our acquisition of DPS;
- Expectations of the effect on our financial condition of claims, litigation, environmental costs, contingent liabilities, and governmental and regulatory investigations and proceedings;
- Production and capacity forecasts for the natural gas and oil industry;
- Strategy for customer retention, growth, fleet maintenance, market position and financial results;
- Our interest rate hedges; and
- Strategy for risk management.

Because forward-looking statements relate to the future, they are subject to inherent uncertainties, risks and changes in circumstances that are difficult to predict and many of which are outside of our control. Our actual results and financial condition may differ materially from those indicated in the forward-looking statements. Therefore, you should not place undue reliance on any of these forward-looking statements. Important factors that could cause our actual results and financial condition to differ materially from those indicated in the forward-looking statements include, among others, the following:

- A reduction in the demand for natural gas and oil;
- The loss of, or the deterioration of the financial condition of, any of our key customers;
- Nonpayment and nonperformance by our customers, suppliers or vendors;
- Competitive pressures that may cause us to lose market share;
- Our ability to successfully integrate any acquired businesses, including DPS, and realize the expected benefits thereof in the expected timeframe or at all;
- Our ability to source and fund purchases of additional compression equipment;
- Changes in the distributed power industry, including any decreases in the demand for electricity and distributed power;
- A deterioration in general economic, business, geopolitical or industry conditions, including as a result of the conflict between Russia and Ukraine, the conflict and potential regime change in Iran as well as other hostilities in the Middle East and developments between the United States and Venezuela, inflation, and slow economic growth in the United States;
- A downturn in the economic environment, as well as continued inflationary pressures;
- The outcome of any pending internal review or any future related government enforcement actions;

- Tax legislation and the impact of changes to applicable tax laws, including the passage of the One Big Beautiful Bill Act, and administrative initiatives or challenges to our tax positions;
- The loss of key management, operational personnel or qualified technical personnel;
- Our dependence on a limited number of suppliers;
- The cost of compliance with existing and new governmental regulations, as well as the associated uncertainty given the current U.S. federal government administration;
- Changes in trade policies and regulations, including increases or changes in duties, current and potentially new tariffs or quotas and other similar measures, as well as the potential direct and indirect impact of retaliatory tariffs and other actions;
- The cost of compliance with regulatory initiatives and stakeholders' pressures, including sustainability and corporate responsibility;
- The inherent risks associated with our operations, such as equipment defects and malfunctions;
- Our reliance on third-party components for use in our information technology systems;
- Legal and reputational risks and expenses relating to the privacy, use and security of employee and client information;
- Threats of cyber-attacks or terrorism;
- Agreements that govern our debt contain features that may limit our ability to operate our business and fund future growth and also increase our exposure to risk during adverse economic conditions;
- Volatile and/or elevated interest rates and associated central bank policy actions;
- Our ability to access the capital and credit markets or borrow on affordable terms (or at all) to obtain additional capital that we may require;
- Major natural disasters, severe weather events or other similar events that could disrupt operations;
- Unionization of our labor force, labor interruptions and new or amended labor regulations;
- Renewal of insurance;
- The effectiveness of our disclosure controls and procedures; and
- Such other factors as discussed in our Annual Report on Form 10-K for the fiscal year ended December 31, 2025 and the risks and uncertainties discussed in any subsequent reports that we file or furnish with the SEC.

All forward-looking statements in this prospectus and any prospectus supplement are made as of the date on its cover page, and any forward-looking statements incorporated by reference herein or therein are made as of the date of the document incorporated by reference. Except as may be required by applicable law, we undertake no obligation to publicly update any forward-looking statement whether as a result of new information, future developments or otherwise.

All forward-looking statements, expressed or implied, included in this prospectus are expressly qualified in their entirety by this cautionary statement. This cautionary statement should also be considered in connection with any subsequent written or oral forward-looking statements that we or persons acting on our behalf may issue.

USE OF PROCEEDS

The selling stockholders may offer and sell up to an aggregate of 2,401,278 shares of Common Stock under this prospectus. Accordingly, we will not receive any proceeds from sales of Common Stock by the selling stockholders. We will bear the costs associated with the sale of any shares of Common Stock under this prospectus by the selling stockholders, other than underwriting fees, discounts and commissions. See the section entitled “*Selling Stockholders*.”

SELLING STOCKHOLDERS

This prospectus covers the offering for resale of up to an aggregate of 2,401,278 shares of Common Stock that may be offered and sold from time to time under this prospectus by the selling stockholders identified below, subject to any appropriate adjustment as a result of any stock dividend, stock split or distribution, or in connection with a combination of shares, and any security into which such shares of Common Stock shall have been converted or exchanged in connection with a recapitalization, reorganization, reclassification, merger, consolidation, exchange, distribution or otherwise.

On April 1, 2026, we entered into the Registration Rights Agreement with the selling stockholders pursuant to which we were obligated to prepare and file a registration statement to permit the resale of certain shares of Common Stock held by the selling stockholders from time to time as permitted by Rule 415 promulgated under the Securities Act of 1933, as amended (the “Securities Act”).

We have prepared the table, the paragraph immediately following this paragraph, and the related notes based on information supplied to us by the selling stockholders and such information is as of September 28, 2026 (except as otherwise noted). We have not sought to verify such information. We believe, based on information supplied by the selling stockholders, that except as may otherwise be indicated in the footnotes to the table below, the selling stockholders have sole voting and dispositive power with respect to the shares of Common Stock reported as beneficially owned by them. Because the selling stockholders identified in the table may sell some or all of the shares of Common Stock owned by them that are included in this prospectus, and because there are currently no agreements, arrangements or understandings with respect to the sale of any of the shares of Common Stock, no estimate can be given as to the number of the shares of Common Stock available for resale hereby that will be held by the selling stockholders upon termination of this offering. In addition, the selling stockholders may have sold, transferred or otherwise disposed of, or may sell, transfer or otherwise dispose of, at any time and from time to time, the shares of Common Stock it holds in transactions exempt from the registration requirements of the Securities Act after the date on which the selling stockholders provided the information set forth on the table below. We have, therefore, assumed for the purposes of the following table, that the selling stockholders will sell all of the shares of Common Stock beneficially owned by them that are covered by this prospectus. The selling stockholders are not obligated to sell any of the shares of Common Stock offered by this prospectus. The percent of beneficial ownership for the selling stockholders is based on 101,377,475 shares of Common Stock outstanding as of September 25, 2026.

Each of the selling stockholders is an investor who has had no position, office, or other material relationship (other than as a purchaser of securities) with us or any of our affiliates within the past three years. Our knowledge is based on information provided by selling stockholder questionnaires in connection with the filing of this prospectus.

Information about the selling stockholders may change over time. Any changed information will be set forth in an amendment to the registration statement or supplement to this prospectus, to the extent required by law.

	Shares of Common Stock Beneficially Owned Prior to the Offering ⁽¹⁾		Shares of Common Stock Offered Hereby	Shares of Common Stock Beneficially Owned After Completion of the Offering	
	Number	Percentage		Number	Percentage
Selling Stockholders:					
Mustang PRS, LLC	1,200,639	1.2%	1,200,639	—	— %
Louisiana Machinery Company, L.L.C.	1,200,639	1.2%	1,200,639	—	— %

- (1) The amounts and percentages of Common Stock beneficially owned are reported on the basis of regulations of the SEC governing the determination of beneficial ownership of securities. Under the rules of the SEC, a person is deemed to be a “beneficial owner” of a security if that person has or shares voting power, which includes the power to vote or direct the voting of such security, or investment power, which includes the power to dispose of or to direct the disposition of such security. Under these rules, more than one person may be deemed to be a beneficial owner of the same securities, and a person may be deemed to be a beneficial owner of securities as to which such person has no economic interest.

PLAN OF DISTRIBUTION

Each selling stockholder may, from time to time, sell any or all of the shares of Common Stock offered by this prospectus either directly, or through underwriters, dealers or agents or on any exchange on which the shares of Common Stock offered hereby may from time to time be traded, in the over-the-counter market, or in independently negotiated transactions or otherwise. The shares of Common Stock offered by this prospectus may be distributed from time to time in one or more transactions, including:

- privately negotiated transactions;
- underwritten transactions;
- exchange distributions and/or secondary distributions;
- in market transaction on any national securities exchange, transaction other than on exchanges or sales in the over-the-counter market;
- ordinary brokerage transactions and transactions in which the broker solicits purchasers;
- broker-dealers may agree with the selling stockholders to sell a specified number of such shares at a stipulated price per share;
- transactions in which the broker-dealer as agent solicits purchasers and ordinary brokerage transactions by the broker-dealer as agent;
- an offering at other than a fixed price on or through the facilities of any stock exchange on which the shares of Common Stock are then listed or to or through a market maker other than on that stock exchange;
- a block trade (which may involve crosses) in which the broker or dealer so engaged will attempt to sell the shares of Common Stock as agent but may position and resell a portion of the block as principal to facilitate the transaction;
- purchases by a broker or dealer as principal and resale by such broker or dealer for its own account pursuant to this prospectus;
- in a public auction;
- short sales;
- through the writing of options on the shares or other hedging transactions, whether or not the options or such other derivative securities are listed on an exchange;
- through the distributions of the shares of Common Stock by the selling stockholders to their partners, members or stockholders;
- a combination of any such methods of sale; and
- any other method permitted pursuant to applicable law.

The selling stockholders may also sell shares of Common Stock under Rule 144 under the Securities Act, in each case if available, rather than under this prospectus. The selling stockholders may also transfer and donate the Common Stock in other circumstances in which case the transferees, donees, pledgees or other successors in interest will be the selling beneficial owners for purposes of this prospectus.

Each selling stockholder is an entity and may elect to make a pro rata in-kind distribution of shares of Common Stock to its members or other security holders pursuant to the registration statement of which this prospectus is a part by delivering a prospectus. To the extent that such members or other security holders are not affiliates of ours, such members or other security holders would thereby receive freely tradable shares of Common Stock pursuant to the distribution through the registration statement.

Such transactions may be effected by the selling stockholders at market prices prevailing at the time of sale or at negotiated prices. The selling stockholders may effect such transactions by selling the shares of Common Stock to underwriters or to or through broker-dealers, and such underwriters or broker-dealers may receive compensation in the form of discounts or commissions from the selling stockholders and may receive commissions from the purchasers of the shares of Common Stock for whom they may act as agent. The selling stockholders may agree to indemnify any underwriter, broker-dealer or agent that participates in transactions involving sales of the shares of Common Stock against certain liabilities, including liabilities arising under the Securities Act. Under

the Registration Rights Agreement, we have agreed to register the Common Stock for sale under the Securities Act and to indemnify the selling stockholders and each person who participates as an underwriter in the offering of the Common Stock against certain civil liabilities, including certain liabilities under the Securities Act.

We have agreed to pay certain expenses related to the registration of the offer and sale of the shares of Common Stock pursuant to the registration statement of which this prospectus forms a part. The selling stockholders will bear all commissions and discounts, if any, attributable to the sale of the shares of Common Stock by the selling stockholders. We will not receive any of the proceeds from sales of our Common Stock by selling stockholders included in this offering.

In connection with sales of the Common Stock under this prospectus, the selling stockholders may enter into hedging transactions with broker-dealers, who may in turn engage in short sales of the Common Stock in the course of hedging the positions they assume. The selling stockholders also may sell Common Stock short and deliver them to close their short positions, or loan or pledge the shares of Common Stock to broker-dealers that in turn may sell them.

The selling stockholders may from time to time pledge or grant a security interest in some or all of the shares of Common Stock owned by them and, if they default in the performance of their secured obligations, the pledgees or secured parties may offer and sell the shares of Common Stock from time to time under this prospectus, or under an amendment to this prospectus under Rule 424 or other applicable provision of the Securities Act amending the list of selling stockholders to include the pledgee, transferee or other successors in interest as selling stockholders under this prospectus.

There can be no assurances that the selling stockholders will sell any or all of the Common Stock offered under this prospectus.

DESCRIPTION OF CAPITAL STOCK

The following description of the Company's capital stock is not complete and may not contain all the information you should consider before investing in the Company's capital stock. This description is summarized from, and qualified in its entirety by reference to, our Amended and Restated Certificate of Incorporation (the "Charter") and our Third Amended and Restated Bylaws (the "Bylaws"), which have been publicly filed with the SEC. See "*Where You Can Find More Information*".

Authorized Capitalization

The Charter provides that the Company is authorized to issue 800,000,000 shares of capital stock, divided into two classes consisting of (a) 750,000,000 shares of Common Stock and (b) 50,000,000 shares of Preferred Stock. Effective September 28, 2026, the prior designation of 6,000,000 shares as Series A Preferred Stock, par value of \$0.01 per share (the "Series A Preferred Stock"), was eliminated following the final exchanges of all outstanding common units ("OpCo Units") of Kodiak Gas Services, LLC for shares of Common Stock (together with the cancellation of shares of Series A Preferred Stock), pursuant to the Sixth Amended and Restated Limited Liability Company Agreement of Kodiak Gas Services, LLC.

Common Stock

As of September 25, 2026, there were 101,377,475 shares of Common Stock issued and outstanding.

Voting Rights

Each holder of Common Stock, as such, is entitled to one vote for each share of Common Stock held of record by such holder on all matters on which stockholders generally are entitled to vote. Notwithstanding the foregoing, to the fullest extent permitted by law, holders of Common Stock, as such, have no voting power with respect to, and are not entitled to vote on, any amendment to the Charter (including any Certificate of Designation relating to any series of Preferred Stock) that relates solely to the terms of one or more outstanding series of Preferred Stock if the holders of such affected series are entitled, either separately or together with the holders of one or more other such series, to vote thereon pursuant to the Charter (including any Certificate of Designation relating to any series of Preferred Stock) or pursuant to the Delaware General Corporation Law (the "DGCL"). Except as otherwise provided in the Charter or required by applicable law, the holders of Common Stock shall vote together as a single class (or, if the holders of one or more series of Preferred Stock (such as the Series A Preferred Stock) are entitled to vote together with the holders of Common Stock, as a single class with the holders of such other series of Preferred Stock) on all matters submitted to a vote of the stockholders generally.

Dividends and Liquidation

Subject to the rights and preferences of any Preferred Stock that the Company may issue in the future, the holders of Common Stock are entitled to receive:

- dividends as may be declared by the board of directors of the Company (the "Board"); and
- all of the Company's assets available for distribution to stockholders in liquidation, pro rata, based on the number of shares held.

No redemption or sinking fund provisions are applicable to the Common Stock. All outstanding shares of Common Stock are fully paid and non-assessable.

Preferred Stock

As of September 28, 2026, there were no shares of Preferred Stock issued and outstanding.

Authorized and unissued shares of Preferred Stock may be issued from time to time in one or more additional series as the Board, by resolution or resolutions, may from time to time determine, each of said series to be distinctively designated. The voting powers, preferences and relative, participating, optional and other special rights, and the qualifications, limitations or restrictions thereof, if any, of each such series of Preferred Stock may differ from those of any and all other series of Preferred Stock (including the Series A Preferred Stock) at any time outstanding, and, subject to certain exceptions set forth in the Charter, and applicable law, the Board may fix or alter, by resolution or resolutions, the designation, number, voting powers, preferences and relative, participating, optional and other special rights, and the qualifications, limitations and restrictions thereof, of each series of Preferred Stock.

Anti-Takeover Provisions

Notwithstanding the opt out from Section 203 of the DGCL, some provisions of the Charter and the Bylaws could make certain change of control transactions more difficult, including acquisitions of the Company by means of a tender offer, a proxy contest or otherwise. These provisions may also have the effect of preventing changes in the Board. It is possible that these provisions could make it more difficult to accomplish or could deter transactions that stockholders may otherwise consider to be in their best interest or in the Company's best interests, including transactions that might result in a premium over the market price for our Common Stock. Therefore, these provisions could adversely affect the price of our Common Stock.

These provisions, summarized below, are intended to discourage coercive takeover practices and inadequate takeover bids. These provisions are also designed to encourage persons seeking to acquire control of the Company to first negotiate with the Board. The Company believes that the benefits of increased protection and the Company's potential ability to negotiate with the proponent of an unsolicited proposal to acquire or restructure the Company arising from such provisions outweigh the disadvantages of discouraging these proposals because, among other things, negotiation of these proposals could result in an improvement of their terms.

Opt Out of Section 203 of the DGCL

In the Charter, the Company elected not to be subject to the provisions of Section 203 of the DGCL regulating corporate takeovers. In general, those provisions, if applicable, would prohibit a Delaware corporation, including those whose securities are listed for trading on the NYSE, from engaging in any business combination with any interested stockholder for a period of three years following the time that the stockholder became an interested stockholder, unless:

- the transaction that resulted in the stockholder becoming an interested stockholder, or the business combination, is approved by the board of directors before the time the interested stockholder attained that status;
- upon consummation of the transaction that resulted in the stockholder becoming an interested stockholder, the interested stockholder owned at least 85% of the voting stock of the corporation outstanding at the time the transaction commenced; or
- on or after the date the interested stockholder attained that status, the business combination is approved by the board of directors and authorized at a meeting of stockholders by at least two-thirds of the outstanding voting stock that is not owned by the interested stockholder.

Our Charter and Bylaws

Among other things, our Charter and Bylaws:

- establish advance notice procedures with regard to stockholder proposals relating to the nomination of candidates for election as directors or business to be brought before meetings of the Company's stockholders. These procedures provide that notice of stockholder proposals must be timely delivered to the Company's corporate secretary prior to the meeting at which the action is to be taken. Generally, to be timely in connection with an annual meeting, notice must be delivered to the Company's corporate secretary not less than 90 days nor more than 120 days prior to the first anniversary of the date of the Company's proxy statement released to the stockholders for the preceding year's annual meeting. The Bylaws specify the requirements as to form and content of such stockholders' notices. These requirements may deter stockholders from bringing matters before the stockholders at an annual or special meeting;
- authorize the Board to issue undesignated Preferred Stock. This ability makes it possible for the Board to issue, without stockholder approval, Preferred Stock with voting or other rights or preferences that could impede the success of any attempt to change control of the Company. These and other provisions may have the effect of deferring hostile takeovers or delaying changes in control or management of the Company;
- provide that, subject to the rights of any holders of Preferred Stock the authorized number of directors may be changed only by resolution of the Board;
- provide that any action required or permitted to be taken by the stockholders of the Company must be effected at a duly called annual or special meeting of such holders and may not be effected by any consent in writing by such holders, subject to the rights of the holders of any series of Preferred Stock with respect to such series;
- provide that all vacancies, including newly created directorships, shall, except as otherwise required with regards to rights granted to holders of Preferred Stock, except as otherwise required by law or, if applicable, the rights of

holders of a series of Preferred Stock, be filled by the affirmative vote of a majority of the directors then in office, even if less than a quorum, a sole remaining director, or the stockholders;

- provide that, except as otherwise required by law and subject to the rights of the holders of any series of Preferred Stock, special meetings of the stockholders may be called only by or at the direction of the Board or the Chairman of the Board;
- provide that, the Board shall be divided into classes of directors, with the terms of the classes elected at the annual meetings of stockholders held in 2024, 2025 and 2026, respectively, expiring at the third annual meeting of stockholders held after the election of such directors; provided that such division shall terminate at the third annual meeting of stockholders held after the 2026 annual meeting of stockholders. Notwithstanding the preceding sentence, but subject to the rights of the holders of any series of Preferred Stock to elect additional directors, each director elected by stockholders after the 2026 annual meeting shall serve for a term expiring at the next annual meeting of stockholders held after such director's election and shall hold office until his or her successor shall be elected and qualified, or his or her death, resignation, retirement, disqualification or removal from office. This system of electing directors, with respect to the classes elected at the annual meetings of stockholders held in 2024, 2025 and 2026, may tend to discourage a third party from making a tender offer or otherwise attempting to obtain control of the Company because it generally makes it more difficult for stockholders to replace a majority of the directors;
- provide that, the Company generally renounces any interest or expectancy in any business opportunity (existing and future) that might be a corporate opportunity for certain persons and that such persons have no obligation to offer the Company those investments or opportunities; and
- provide that the Bylaws may be amended by stockholders, and certain provisions of the Charter may be amended, only with the affirmative vote of the holders of a majority in voting power of all the then-outstanding shares of stock of the Company entitled to vote thereon.

Forum Selection

The Charter provides that unless the Company consents in writing to the selection of an alternative forum, the Court of Chancery of the State of Delaware will, to the fullest extent permitted by applicable law, be the sole and exclusive forum for:

- any derivative action or proceeding brought on the Company's behalf;
- any action asserting a claim of breach of a fiduciary duty owed by any of the Company's directors, officers, or employees to the Company or the Company's stockholders;
- any action asserting a claim against the Company or any director or officer of the Company arising pursuant to any provision of the DGCL, the Charter or the Bylaws; or
- any action asserting a claim governed by the internal affairs doctrine.

The Charter further provides that, unless the Company consents in writing to the selection of an alternative forum, the federal district courts of the United States shall be the exclusive forum for the resolution of any complaint asserting a cause of action arising under the Securities Act or the Exchange Act.

The Charter also provides that, to the fullest extent permitted by law, any person purchasing or otherwise acquiring any interest in shares of the Company's capital stock will be deemed to have notice of, and to have consented to, these forum selection provisions. Although the Company believes these provisions benefit the Company by providing increased consistency in the application of law for the specified types of actions and proceedings, the provisions may have the effect of discouraging lawsuits against the Company's directors, officers, and employees. The enforceability of similar exclusive forum provisions in other companies' certificates of incorporation has been challenged in legal proceedings, and it is possible that, in connection with one or more actions or proceedings described above, a court could rule that this provision in the Charter is inapplicable or unenforceable.

Limitation of Liability and Indemnification of Officers and Directors

As permitted by Section 145 of the DGCL, the Bylaws provide that:

- the Company shall indemnify the Company's directors and executive officers to the fullest extent permitted by the DGCL, subject to limited exceptions, and that the Company may indemnify other officers, employees or other agents;

- the Company shall advance expenses to the Company's directors and executive officers in connection with a legal proceeding to the fullest extent permitted by the DGCL, subject to limited exceptions; and
- the rights provided in the Bylaws are not exclusive.

Any amendment to, or repeal of, these provisions will not eliminate or reduce the effect of these provisions in respect of any act, omission or claim that occurred or arose prior to that amendment or repeal. If the DGCL is amended to provide for further limitations on the personal liability of directors or officers of corporations, then the personal liability of the Company's directors and officers will be further limited to the fullest extent permitted by the DGCL.

LEGAL MATTERS

Certain legal matters in connection with the shares of Common Stock offered hereby will be passed upon for us by Sidley Austin LLP, Houston, Texas.

EXPERTS

The consolidated financial statements of Kodiak Gas Services, Inc. as of December 31, 2025 and 2024 and for each of the three years in the period ended December 31, 2025 and management's assessment of the effectiveness of internal control over financial reporting as of December 31, 2025 incorporated by reference in this Prospectus and in the Registration Statement have been so incorporated in reliance on the reports of BDO USA, P.C., an independent registered public accounting firm, given on the authority of said firm as experts in auditing and accounting.

The financial statements of Distributed Power Solutions, LLC as of and for the year ended December 31, 2025 incorporated by reference in this Prospectus and in the Registration Statement have been so incorporated in reliance on the report of BDO USA, P.C., independent auditors, given on the authority of said firm as experts in auditing and accounting.

Part II

Information Not Required in Prospectus

Item 14. Other Expenses of Issuance and Distribution.

Set forth below are the expenses expected to be incurred in connection with the issuance and distribution of the shares of Common Stock registered hereby and payable by us. With the exception of the SEC registration fee, the amounts set forth below are estimates.

	Amount
SEC registration fee	\$17,469.56
Printing and engraving expenses	— *
Fees and expenses of legal counsel	— *
Accounting fees and expenses	— *
Transfer agent and registrar fees	— *
Miscellaneous	— *
Total	— *

* These fees cannot be estimated at this time as they are calculated based on the securities offered and the number of issuances. An estimate of the aggregate expenses in connection with the sale and distribution of the securities being offered will be included in the applicable prospectus supplement.

Item 15. Indemnification of Directors and Officers.

Section 145 of the DGCL provides that a corporation may indemnify directors and officers as well as other employees and individuals against expenses, including attorneys' fees, judgments, fines and amounts paid in settlement in connection with specified actions, suits and proceedings whether civil, criminal, administrative, or investigative, other than a derivative action by or in the right of the corporation, if they acted in good faith and in a manner they reasonably believed to be in or not opposed to the best interests of the corporation and, with respect to any criminal action or proceeding, had no reasonable cause to believe their conduct was unlawful. A similar standard is applicable in the case of derivative actions, except that indemnification extends only to expenses, including attorneys' fees, incurred in connection with the defense or settlement of such action and the statute requires court approval before there can be any indemnification where the person seeking indemnification has been found liable to the corporation. The statute provides that it is not exclusive of other indemnification that may be granted by a corporation's certificate of incorporation, bylaws, disinterested director vote, stockholder vote, agreement or otherwise.

The Charter provides that the Company's directors and officers will not be liable to the Company or its stockholders for monetary damages to the fullest extent permitted by the DGCL. Any amendment to, or repeal of, these provisions will not eliminate or reduce the effect of these provisions in respect of any act, omission or claim that occurred or arose prior to that amendment or repeal. In addition, if the DGCL is amended to authorize the further elimination or limitation of the liability of directors or officers, then the liability of a director or officer of the Company, will be limited to the fullest extent permitted by the amended DGCL. The Charter and the Bylaws provide that the Company will indemnify, and advance expenses to, any officer or director to the fullest extent authorized by the DGCL.

The Company maintains directors' and officers' insurance to cover the Company's directors, officers and some of the Company's employees for certain liabilities. In addition, the Company has entered into indemnification agreements with the Company's current and future directors and officers containing provisions that are in some respects broader than the specific indemnification provisions contained in the DGCL. The indemnification agreements will require the Company, among other things, to indemnify the Company's directors and officers against certain liabilities that may arise by reason of their status or service as directors or officers and to advance their expenses incurred as a result of any proceeding against them as to which they could be indemnified.

Insofar as indemnification for liabilities arising under the Securities Act may be permitted to directors, officers or persons controlling the Company pursuant to the foregoing provisions, the Company has been informed that in the opinion of the SEC, such indemnification is against public policy as expressed in the Securities Act and is therefore unenforceable.

Item 16. Exhibits and Financial Statement Schedules.

(a) Exhibits.

Exhibit Index

Exhibit No.	Description
1.1*	Form of Underwriting Agreement
2.1†	Membership Interest Purchase Agreement, dated February 5, 2026, by and among Kodiak Gas Services, LLC, Kodiak Gas Services, Inc., Mustang PRS, LLC, Louisiana Machinery Company, L.L.C., and Distributed Power Solutions, LLC (incorporated by reference to Exhibit 2.1 to the Company's Current Report on Form 8-K filed with the SEC on February 5, 2026).
4.1	Amended and Restated Certificate of Incorporation of Kodiak Gas Services, Inc. (incorporated by reference to Exhibit 3.1 to the Company's Current Report on Form 8-K filed with the SEC on May 7, 2026)
4.2	Third Amended and Restated Bylaws of Kodiak Gas Services, Inc. (incorporated by reference to Exhibit 3.2 to the Company's Current Report on Form 8-K filed with the SEC on May 7, 2026)
4.3	Registration Rights Agreement, dated as of April 1, 2026, by and among Kodiak Gas Services, Inc., the undersigned holders of Registrable Securities (as defined therein) and such other holders of Registrable Securities that join the Agreement pursuant to the provisions therein (incorporated by reference to Exhibit 10.1 to the Registrant's Current Report on Form 8-K filed with the SEC on April 2, 2026).
4.4	Certificate of Designations of Series A Preferred Stock of Kodiak Gas Services, Inc. (incorporated by reference to Exhibit 3.1 to the Registrant's Current Report on Form 8-K filed with the SEC on April 1, 2024).
4.5	Certificate of Elimination of Series A Preferred Stock of Kodiak Gas Services, Inc. (incorporated by reference to Exhibit 3.1 to the Registrant's Current Report on Form 8-K filed with the SEC on September 28, 2026).
5.1**	Opinion of Sidley Austin LLP
23.1**	Consent of BDO USA, P.C. regarding audited financial statements of Kodiak Gas Services, Inc.
23.2**	Consent of BDO USA, P.C. regarding audited financial statements of Distributed Power Solutions, LLC
23.3**	Opinion of Sidley Austin LLP (included in their opinion filed as Exhibit 5.1)
24.1**	Powers of Attorney (included on signature page)
107**	Filing Fee Table

* To be filed, if necessary, as an exhibit to a post-effective amendment to this registration statement or as an exhibit to a Current Report on Form 8-K and incorporated by reference herein.

** Filed herewith.

† Certain of the schedules and exhibits to the agreement have been omitted pursuant to Item 601(a)(5) of Regulation S-K. A copy of any omitted schedule or exhibit will be furnished to the Securities and Exchange Commission upon request.

Item 17. Undertakings.

The undersigned registrant hereby undertakes:

- (a) to file, during any period in which offers or sales are being made, a post-effective amendment to this registration statement:
 - (i) to include any prospectus required by Section 10(a)(3) of the Securities Act of 1933;
 - (ii) to reflect in the prospectus any facts or events arising after the effective date of this registration statement (or the most recent post-effective amendment thereof) which, individually or in the aggregate, represent a fundamental change in the information set forth in this registration statement. Notwithstanding the foregoing, any increase or decrease in volume of securities offered (if the total dollar value of securities offered would not exceed that which was registered) and any deviation from the low or high end of the estimated maximum offering range may be reflected in the form of prospectus filed with the SEC pursuant to Rule 424(b) if, in the aggregate, the changes in volume and price represent no more than a 20% change in the maximum aggregate offering price set forth in the "Calculation of Registration Fee" table in the effective registration statement; and
 - (iii) to include any material information with respect to the plan of distribution not previously disclosed in this registration statement or any material change to such information in this registration statement;

provided, however, that paragraphs (a)(i), (a)(ii) and (a)(iii) do not apply if the information required to be included in a post-effective amendment by those paragraphs is contained in reports filed with or furnished to the SEC by the registrant pursuant to Section 13 or Section 15(d) of the Securities Exchange Act of 1934 that are incorporated by reference in the registration statement, or is contained in a form of prospectus filed pursuant to Rule 424(b) that is part of the registration statement.
- (b) that, for the purpose of determining any liability under the Securities Act of 1933, each such post-effective amendment shall be deemed to be a new registration statement relating to the securities offered therein, and the offering of such securities at that time shall be deemed to be the initial *bona fide* offering thereof;
- (c) to remove from registration by means of a post-effective amendment any of the securities being registered which remain unsold at the termination of the offering; and
- (d) that, for the purpose of determining liability under the Securities Act of 1933 to any purchaser:
 - (i) each prospectus filed by the registrant pursuant to Rule 424(b)(3) shall be deemed to be part of the registration statement as of the date the filed prospectus was deemed part of and included in the registration statement; and
 - (ii) each prospectus required to be filed pursuant to Rule 424(b)(2), (b)(5), or (b)(7) as part of a registration statement in reliance on Rule 430B relating to an offering made pursuant to Rule 415(a)(1)(i), (vii), or (x) for the purpose of providing the information required by Section 10(a) of the Securities Act of 1933 shall be deemed to be part of and included in the registration statement as of the earlier of the date such form of prospectus is first used after effectiveness or the date of the first contract of sale of securities in the offering described in the prospectus. As provided in Rule 430B, for liability purposes of the issuer and any person that is at that date an underwriter, such date shall be deemed to be a new effective date of the registration statement relating to the securities in the registration statement to which that prospectus relates, and the offering of such securities at that time shall be deemed to be the initial *bona fide* offering thereof; *provided, however*, that no statement made in a registration statement or prospectus that is part of the registration statement or made in a document incorporated or deemed incorporated by reference into the registration statement or prospectus that is part of the registration statement will, as to a purchaser with a time of contract of sale prior to such effective date, supersede or modify any statement that was made in the registration statement or prospectus that was part of the registration statement or made in any such document immediately prior to such effective date.

The undersigned registrant hereby undertakes that, for purposes of determining any liability under the Securities Act of 1933, each filing of the registrant's annual report pursuant to Section 13(a) or Section 15(d) of the Securities Exchange Act of 1934 (and, where applicable, each filing of an employee benefit plan's annual report pursuant to Section 15(d) of the Securities Exchange Act of

1934) that is incorporated by reference in the registration statement shall be deemed to be a new registration statement relating to the securities offered therein, and the offering of such securities at that time shall be deemed to be the initial *bona fide* offering thereof.

Insofar as indemnification for liabilities arising under the Securities Act of 1933 may be permitted to directors, officers and controlling persons of the registrant pursuant to the provisions described under Item 15 above, or otherwise, the registrant has been advised that in the opinion of the SEC, such indemnification is against public policy as expressed in the Securities Act of 1933 and is, therefore, unenforceable. In the event that a claim for indemnification against such liabilities (other than the payment by the registrant of expenses incurred or paid by a director, officer or controlling person of the registrant in the successful defense of any action, suit or proceeding) is asserted by such director, officer or controlling person in connection with the securities being registered, the registrant will, unless in the opinion of its counsel the matter has been settled by controlling precedent, submit to a court of appropriate jurisdiction the question whether such indemnification by it is against public policy as expressed in the Securities Act of 1933 and will be governed by the final adjudication of such issue.

SIGNATURES

Pursuant to the requirements of the Securities Act of 1933, the registrant certifies that it has reasonable grounds to believe that it meets all the requirements for filing on Form S-3 and has duly caused this registration statement to be signed on its behalf by the undersigned, thereunto duly authorized, in the City of The Woodlands, State of Texas, on September 28, 2026.

Kodiak Gas Services, Inc.

By: /s/ Robert M. McKee

Name: Robert M. McKee

Title: President and Chief Executive Officer

POWER OF ATTORNEY

Each person whose signature appears below hereby constitutes and appoints Robert M. McKee, Jennifer Howard and John B. Griggs as his or her true and lawful attorneys-in-fact and agents, with full power of substitution and resubstitution for him or her in any and all capacities, to sign any or all amendments or post-effective amendments to this Registration Statement, or any Registration Statement for the same offering that is to be effective upon filing pursuant to Rule 462(b) under the Securities Act, and to file the same, with exhibits hereto and other documents in connection therewith or in connection with the registration of the securities under the Securities Act, with the SEC, granting unto such attorneys-in-fact and agents full power and authority to do and perform each and every act and thing requisite and necessary in connection with such matters and hereby ratifying and confirming all that such attorneys-in-fact and agents or any of them or their substitutes may do or cause to be done by virtue hereof.

Pursuant to the requirements of the Securities Act, this registration statement has been signed by the following persons in the capacities indicated below as of September 28, 2026.

Signature	Title
/s/ Robert M. McKee Robert M. McKee	President, Chief Executive Officer and Director (Principal Executive Officer)
/s/ John B. Griggs John B. Griggs	Executive Vice President and Chief Financial Officer (Principal Financial Officer)
/s/ Ewan W. Hamilton Ewan W. Hamilton	Executive Vice President and Chief Accounting Officer (Principal Accounting Officer)
/s/ Terry Bonno Terry Bonno	Director
/s/ William L. Bullock, Jr. William L. Bullock, Jr.	Director
/s/ Alex Darden Alex Darden	Director
/s/ Christopher Drumgoole Christopher Drumgoole	Director
/s/ Jon-Al Duplantier Jon-Al Duplantier	Director
/s/ Randall Hogan Randall Hogan	Director
/s/ Gretchen Holloway Gretchen Holloway	Director
/s/ Margaret C. Montana Margaret C. Montana	Director

Calculation of Filing Fee Tables

Form S-3ASR
Kodiak Gas Services, Inc.

Table 1: Newly Registered Securities

	Security Type	Security Class Title	Fee Calculation Rule	Amount Registered	Proposed Maximum Offering Price Per Unit	Maximum Aggregate Offering Price	Fee Rate	Amount of Registration Fee
Fees to be Paid(1)	Equity	Common stock, \$0.01 par value per share	Rule 457(c)	2,401,278	\$52.68	\$126,499,325.04	\$0.0001381	\$17,469.56
	Total Offering Amounts					\$126,499,325.04		\$17,469.56
	Total Fees Previously Paid							—
	Total Fee Offsets							—
	Net Fee Due							\$17,469.56

(1) Pursuant to Rule 416 under the Securities Act of 1933, as amended, the shares of Kodiak Gas Services, Inc.'s common stock being registered hereunder (the "Common Stock") include an indeterminate number of shares of Common Stock that may be issued in connection with stock splits, stock dividends or other distribution, recapitalization or similar events with respect to the shares of Common Stock being registered. The proposed maximum offering price per share and maximum aggregate offering price for the shares of Common Stock covered by this Registration Statement have been estimated solely for purposes of calculating the registration fee in accordance with Rule 457(c) under the Securities Act of 1933, as amended, based on the average of the high and low sale price of Common Stock, as reported on the New York Stock Exchange on September 24, 2026, which date is within five business days prior to filing this registration statement.



SIDLEY AUSTIN LLP
1000 LOUISIANA STREET
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HOUSTON, TEXAS 77002
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EXHIBIT 5.1

September 28, 2026

Kodiak Gas Services, Inc.
9950 Woodloch Forest Drive, Suite 1900
The Woodlands, Texas 77380

Re: Registration Statement on Form S-3

Ladies and Gentlemen:

We refer to the Registration Statement on Form S-3 (the "Registration Statement") being filed by Kodiak Gas Services, Inc., a Delaware corporation (the "Company"), with the Securities and Exchange Commission (the "SEC") under the Securities Act of 1933, as amended (the "Securities Act"), relating to the registration of 2,401,278 shares of the Company's common stock, \$0.01 par value per share (the "Common Stock") that may be offered and sold by the selling stockholders named in the Registration Statement (the "Shares").

This opinion letter is being delivered in accordance with the requirements of Item 601(b)(5) of Regulation S-K under the Securities Act.

We have examined the Registration Statement, the exhibits thereto, the certificate of incorporation of the Company, as amended to the date hereof (the "Charter"), the bylaws of the Company, as amended to the date hereof (the "Bylaws") and the resolutions (the "Resolutions") adopted by the board of directors of the Company (the "Board") relating to the issuance of the Shares and the Registration Statement. We have also examined originals, or copies of originals certified to our satisfaction, of such agreements, documents, certificates and statements of the Company and others, and have examined such questions of law, as we have considered relevant and necessary as a basis for this opinion letter. We have assumed the authenticity of all documents submitted to us as originals, the genuineness of all signatures, the legal capacity of all persons and the conformity with the original documents of any copies thereof submitted to us for examination. As to facts relevant to the opinions expressed herein, we have relied without independent investigation or verification upon, and assumed the accuracy and completeness of, certificates, letters and oral and written statements and representations of public officials and officers and other representatives of the Company.

Based on and subject to the foregoing and the other limitations, qualifications and assumptions set forth herein, we are of the opinion that the Shares are validly issued, fully paid and nonassessable.

Our opinions are subject to bankruptcy, insolvency, reorganization, moratorium, fraudulent conveyance, fraudulent transfer and other similar laws relating to or affecting creditors' rights generally and to general equitable principles (regardless of whether considered



Kodiak Gas Services, Inc.

September 28, 2026

Page 2 **EXHIBIT 5.1**

in a proceeding in equity or at law), including concepts of commercial reasonableness, good faith and fair dealing and the possible unavailability of specific performance or injunctive relief.

This opinion letter is limited to the General Corporation Law of the State of Delaware. We express no opinion as to the laws, rules or regulations of any other jurisdiction, including, without limitation, the federal laws of the United States of America or any state securities or blue sky laws.

We hereby consent to the filing of this opinion letter as an Exhibit to the Registration Statement and to all references to our Firm included in or made a part of the Registration Statement. In giving such consent, we do not thereby admit that we are in the category of persons whose consent is required under Section 7 of the Securities Act.

Very truly yours,

/s/ Sidley Austin LLP

Consent of Independent Registered Public Accounting Firm

We hereby consent to the incorporation by reference in the Prospectus constituting a part of this Registration Statement of Kodiak Gas Services, Inc. of our report dated February 26, 2026, relating to the consolidated financial statements and the effectiveness of internal control over financial reporting, of Kodiak Gas Services, Inc. (the “Company”) appearing in the Company’s Annual Report on Form 10-K for the year ended December 31, 2025.

We also consent to the reference to us under the caption “Experts” in the Prospectus.

/s/ BDO USA, P.C.

Houston, Texas

September 28, 2026

Consent of Independent Auditor

We hereby consent to the incorporation by reference in the Prospectus constituting a part of this Registration Statement of Kodiak Gas Services, Inc. of our report dated February 13, 2026, relating to the financial statements of Distributed Power Solutions, LLC, appearing in Kodiak Gas Services, Inc.'s Current Report on Form 8-K filed May 13, 2026.

We also consent to the reference to us under the caption "Experts" in the Prospectus.

/s/ BDO USA, P.C.

Houston, Texas

September 28, 2026