MEMORANDUM

TO: Missouri Public Service Commission
Official Case File, Case Nos. GA-2026-0121and GO-2026-0122
Spire Missouri, Inc.

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/s/ Melissa J. Reynolds 03/23/2026
Case Manager Date

SUBJECT: Staff Recommendation for Denial of Certificate of Convenience and Necessity and Denial of Renewable Natural Gas Program

DATE: March 23, 2026

EXECUTIVE SUMMARY

On November 5, 2025, Spire Missouri, Inc., d/b/a Spire ("Spire") filed an application with the Commission requesting a Certificate of Convenience and Necessity ("CCN") to construct, install, own, operate, maintain, and otherwise control and manage equipment and facilities for the production, processing, pipeline interconnection, and distribution of renewable natural gas in the Kansas City, Missouri, area (the "CCN Application" or the "Project"). Spire also requested a waiver from the notice provisions of Commission Rule 20 CSR 4240.4.017(1). Also on November 5, 2025, Spire filed an application with the Commission for approval of a Renewable Natural Gas ("RNG") program, pursuant to Section 386.895 of the Revised Statutes of Missouri ("RSMo"), and Commission Rules 20 CSR 4240-2.060 and 20 CSR 4240-40.100 (the "Program Application"). Spire also requested a waiver from the notice provisions of Commission Rule 20 CSR 4240-4.017(1).

On November 6, 2025, the Commission issued in both cases an *Order Directing Notice, Setting Intervention Deadline, and Directing Staff Recommendation* ("Orders"). The Orders directed Staff to file its recommendation(s) regarding Spire's Application(s) or an alternative pleading on when it expects to file a recommendation no later than December 22, 2025. No applications to intervene were filed in either case by the January 5, 2026, intervention deadline(s).

On December 19, 2025, Staff filed in both cases its *Status Report and Motion for Extension of Time to File Staff Recommendation*, in which Staff requested an extension to March 23, 2026. On December 30, 2025, the Commission granted Staff's motion in both cases and ordered Staff to file a recommendation or a status report no later than March 23, 2026.

As explained in more detail in this Memorandum, Staff recommends denial of Spire's CCN Application and denial of Spire's Program Application. The Project appears to have originated in response to Kansas City's and KC Water's need to beneficially utilize biogas generated at the Blue River Wastewater Treatment Plant ("Blue River WWTP") rather than flare the gas. This purported initial need for KC Water's biogas disposition and beneficial use is materially different from a utility need for new system supply, new capacity, improved reliability, or ordinary customer service growth, for example. Spire has not demonstrated a need for the service or that the service would be an improvement justifying its cost.

CASE BACKGROUND

According to the CCN Application, Spire proposes to construct, install, own, operate, maintain, and otherwise control and manage equipment and facilities for the production, processing, pipeline interconnection, and distribution of RNG. The Project will consist of construction of a biogas upgrading facility, a gas meter and regulation interconnect, and a transmission pipeline to Spire's distribution system – all of which would be constructed/installed in Jackson County, Missouri. The Project would capture biogas generated by a City of Kansas City, Missouri, ("Kansas City" or "City") wastewater treatment plant, clean the biogas, and inject the resulting RNG into Spire's western distribution system.

Background of Spire

Spire is a "gas corporation" incorporated under the laws of the State of Missouri and a "public utility" as those terms are defined in Section 386.020 and 393.1009(4), RSMo. Spire is a Missouri corporation in good standing, as evidenced by a Certificate of Good Standing submitted in prior case, Case No. GF-2025-0053. Spire is engaged in distributing and transporting natural gas to customers in many counties in Missouri as well as the City of St. Louis.

Spire has separate distribution systems for Spire West and Spire East regions. Spire West, the distribution system that would receive any RNG produced as part of this project, transports natural gas to approximately 542,000 customers, about 507,456 customers being residential. Spire West customers can be found in the Counties of Andrew, Barry, Barton, Buchanan, Carroll, Cass, Cedar, Christian, Clay, Clinton, Cooper, Dade, DeKalb,

Greene, Henry, Howard, Jackson, Jasper, Johnson, Lafayette, Lawrence, McDonald, Moniteau, Newton, Pettis, Platte, Ray, Saline, Stone, and Vernon.

Background of Kansas City Wastewater Treatment Plant

Kansas City, through its Water Services Department ("KC Water"), issued a public request of interest to beneficially utilize the biogas generated by the KC Water's Blue River WWTP in late 2021 and a subsequent request for proposal on October 20, 2022, for Design-Build-Finance-Operate-Maintain ("DBFOM") approach to project delivery. Spire submitted a copy of its March 10, 2023, proposal to Staff, with an estimated construction cost of ** [redacted] ** and supplying ** [redacted] ** of gross revenue from gas sales to Kansas City. Spire was ultimately awarded the contract in October 2023 and received the notice to proceed with work on December 22, 2023. Spire provided to Staff the Biogas Use Application Project Agreement (the "Agreement") entered into by Spire and Kansas City.[1]

According to the Blue River WWTP National Pollutant Discharge Elimination System permit MO-0024911, this is a 105 million gallons per day ("MGD") facility that discharges treated effluent into the Missouri River. It serves Jackson County. KC Water has modified the Blue River WWTP by upgrading the solids handling facility and making significant improvements needed to meet regulations and support process operations. The Blue River WWTP uses anaerobic digestion to stabilize biosolids, producing biogas as a byproduct that is currently flared.

STAFF'S INVESTIGATION

Staff reviewed the application, the technical design of the proposed biogas upgrading facility, the integration and connection with Spire's existing distribution system, and gas quality monitoring and control.

Project Description

The project will be located at the Blue River WWTP with the City leasing a site at the Blue River WWTP to Spire to accommodate the construction and operation of the processing facility. The facility will be owned and maintained by Spire and operated by Spire via a contract operator. Biogas is mainly a mix of methane and carbon dioxide ("CO_2"), with small amounts of water vapor and trace gases like hydrogen sulfide ("H_2S"), ammonia, and siloxanes. Currently, the gas is combusted in a process called flaring. Flares are subject to stack testing and subsequent testing to measure the sulfur content of the biogas vented. The proposed project will collect and upgrade the raw biogas that is currently flared into pipeline-quality RNG.

[1] Paragraph 8, The Application.

Raw biogas will be routed to a new facility constructed by Spire on the treatment plant property to improve the quality of the gas, known as upgrading. The upgrading system will remove moisture, particulates, carbon dioxide, hydrogen sulfide, and other trace contaminants. The upgraded gas will be transported by proposed new pipelines to two points of interconnection with Spire's existing gas distribution system. The new pipeline facilities will include gas metering, pressure regulation, gas quality analyzers, odorization equipment, and a control valve to divert gas that does not meet the Commission's gas quality standards to a flare. Construction for the plant will occur within the existing Blue River WWTP boundaries.[2]

Biogas Upgrade Engineering Review

Staff from the Water, Sewer, Gas and Steam Department reviewed the engineering design of the biogas cleaning and upgrading technology and found that the proposed system is consistent with accepted industry practices for RNG upgrading. The upgrading equipment is capable of producing gas that meets Spire's gas quality specifications. The system includes redundancy for critical components. The two major project portions of the system are summarized in the following sections.

Sewage Sludge Processing System Background

Until recently, solids removed from the wastewater were dewatered and burned in incinerators, landfilled, or sent for land application. As of July 2020, the last remaining incinerator was shut down, which also eliminated a number of ongoing compliance issues with DNR air pollution regulations.[3] KC Water now operates an enhanced solids digestion process. Odor-laden air is treated prior to being vented to the atmosphere. The thermally treated sludge is then transferred to two modified anaerobic digesters where biogas and biosolids are generated and transferred to a holding tank. Biogas from the holding tank is currently flared.[4]

Renewable Natural Gas Conversion

The proposed facility will utilize a combination of desulfurization and membrane-based upgrading technologies to convert raw digester gas into pipeline-quality methane. The system uses two primary technology platforms: a desulfurizer[5] for hydrogen sulfide ("H_2S") removal, and a membrane upgrading system[6] for methane enrichment

[2] Paragraph 10, The Application.
[3] Missouri Department of Natural Resources Inspection Report dated August 28, 2023.
[4] Permit Number 092025-006 Missouri Department of Natural Resources.
[5] Identified as a ** [redacted] ** on page 156 of Appendix 1 – Complete, filed with Spire's application in GA-2026-0121.
[6] Identified as a ** [redacted] ** on page 129 of Appendix 1 – Complete, filed with Spire's application in GA-2026-0121.

and carbon dioxide separation. Together, these systems provide a complete treatment capable of producing RNG.

Biogas Desulfurization

Hydrogen sulfide must be removed from the biogas because it is toxic, corrosive, and environmentally harmful. Venting H_2S to the atmosphere can pose serious health risks, cause equipment damage, and lead to odor complaints. The project will use a desulfurizer, which consists of a vertical, packed bed wet scrubber, an oxidation tank, and a settling tank. In the tower, a scrubbing liquid added at the top and iron media beds are utilized to neutralize and absorb toxic compounds from the biogas introduced into the bottom of the tower. The liquid phase containing soluble H_2S products then reaches an adjacent tank where it is oxidized by air from a blower and a series of diffusers to convert H_2S into less harmful byproducts like elemental sulfur or sulfate and water. The liquid is then pumped back into the tower at the bottom for a second stage of scrubbing as it is pushed up to the top of the scrubber bed. The desulfurized gas exiting the top of the unit is suitable for downstream polishing and upgrading. The captured sulfur and other particulates are collected inside a settling tank for disposal.[7]

Biogas Pre-Treatment and Conditioning

After H_2S removal, the gas undergoes additional conditioning steps to protect the upgrading membranes and ensure consistent performance. These steps include removal of moisture, and volatile organic compounds ("VOCs") polishing. Adsorption is the process by which molecules from a gas or liquid adhere to the surface of a solid material, such as activated carbon, without penetrating into its internal structure. In this process VOCs in the biogas are captured on the surface of activated carbon. Once adsorbed, the VOCs remain bound to the carbon until the media is replaced or regenerated, preventing them from entering downstream equipment and ensuring gas quality. These pre-treatment stages ensure that the gas entering the upgrading system is clean, dry, and free of contaminants that could reduce separation efficiency.

Membrane Upgrading

The core upgrading process will be performed by the ** [redacted] ** system. After being desulphurized and pre-treated, compressed biogas is fed to an upgrading unit. This upgrading unit makes use of vacuum pressure, swing adsorption technology to remove carbon dioxide ("CO_2"), nitrogen, oxygen and residual water from the gas stream.[8]

[7] Page 156 of Appendix 1 – Complete, filed with Spire's Application in GA-2026-0121.
[8] Page 129 of Appendix 1 – Complete, filed with Spire's Application in GA-2026-0121.

After membrane upgrading, the gas undergoes compression to the required injection pressure for Spire's distribution system and final moisture removal utilizing a coalescing filter. The raw biogas production by the Blue River WWTP to the upgrading processes to form pipeline quality RNG is a continuous flow; therefore, no significant gas storage is necessary.

DNR Permitting and Compliance Background

Staff from the Water, Sewer, Gas and Steam Department reviewed the air compliance history of Blue River WWTP with MDNR for the previous five years from the date on which the Application(s) were filed. Several violations were applicable to KC Water but they were not directly related to the stated implications for the RNG project.

PIPELINES AND GAS QUALITY - SAFETY ENGINEERING ANALYSIS

Proposed Pipeline Descriptions

Spire is proposing to construct two interconnected pipelines to transport the RNG from the gas treatment facility to points of connection with Spire's existing natural gas distribution system. Spire filed a preliminary pipeline route map[9] for these new pipelines with its application in Case No. GA-2026-0121. This pipeline route map identifies the two proposed pipelines as "KCWW RNG" pipeline and "Spire Planned Pipeline".

The proposed KCWW RNG pipeline will be constructed of ** [redacted][10] [redacted]. [11] [redacted][12] ** Staff's analysis of the pipe specification is provided in Confidential Appendix A to this Memorandum. Staff finds that the planned KCWW RNG pipeline specifications are consistent with applicable commission rules for the proposed pipeline function and anticipated operating conditions.[13]

[9] Identified as Appendix 2b- Blue River WWTT RNG – Preliminary Pipeline Route Map. An expanded view of this route is provided as Confidential Appendix B to this Memorandum.

[10] Commission Rule 20 CSR 4240-40.030(2) sets forth material requirements for pipe. Commission Rule 20 CSR 4240-40.030(2)(C) sets forth minimum requirements for new steel pipe. Pipe is qualified for use under this rule if was manufactured in accordance with a listed specification incorporated by reference in the rule. ** [redacted] **

[11] Information is from Spire's Confidential response to Staff Data Request 0018.2.

[12] Information is from Spire's Confidential response to Staff Data Request 0013.

[13] Commission Rule 20 CSR 4240-40.030 Section (2) – Materials.

At the point where RNG is transferred to the KCWW RNG pipeline, Spire stated that the anticipated gas temperature and pressure will be ** [redacted] **, Staff finds it reasonable that the temperature of the RNG entering Spire's natural gas distribution system will be between 40 and 100 degrees Fahrenheit, as required by Commission Rule 20 CSR 4240-10.030(J).

The Spire Planned Pipeline shown in Confidential Appendix B to this Memorandum will be constructed of ** [redacted] **

As shown in Confidential Appendix B, ** [redacted][14] [redacted] **

Staff's analysis of the pipe specification is provided in Confidential Appendix A to this Memorandum. Staff finds that the Spire Planned Pipeline material specification is

[14] Information is from Spire's Confidential response to Staff Data Request 0018.2.

consistent with applicable commission rules for the proposed pipeline function and anticipated operating conditions.[15]

Spire provided a listing of other utilities and infrastructure that the pipelines will cross along this preliminary route.[16] Staff has inferred that this listing is preliminary, due to notes on confidential drawings provided in response to Staff data requests that state: ** [redacted] ** Staff notes that some of the crossings listed, such as the Linde liquid oxygen and nitrogen pipelines, may have cathodic protection. Cathodic protection is applied to steel pipelines to prevent external corrosion and is required by federal and Commission pipeline safety rules.[17] In some circumstances, stray currents from a cathodic protection system can cause corrosion damage to other underground metallic structures that are nearby or crossed by a cathodically protected structure. In response to a Staff data request,[18] Spire stated that ** [redacted] **[19] Staff's concern regarding Spire's planned pipeline route and use of ** [redacted] **

Gas Quality Standards

Commission Rule 20 CSR 4240-10.030 sets forth the gas quality standards required for RNG delivered to customers in Missouri. This rule requires monitoring of certain constituents and properties within the gas stream for evaluation of compliance with the gas quality

[15] Commission Rule 20 CSR 4240-40.030 Section (2) – Materials.
[16] *Appendix 3 – Identified Crossings*, filed with Spire's application in GA-2026-0121.
[17] Federal rules pertaining to external corrosion control are in Subpart I of 49 CFR Part 192. Commission rules pertaining to external corrosion control are in 20 CSR 4240-40.030 Section (9).
[18] Spire's confidential response to Staff Data Request 0018.2.
[19] ** [redacted] **

standards, and the design, installation and operation of an isolation device that will prevent RNG from entering downstream pipelines when the RNG does not meet the quality standards. Staff reviewed the diagrams ** [redacted] ** that were provided as a confidential attachment to Spire's response to Staff Data Request 0009, and Spire's responses to Staff data requests pertaining to gas monitoring and control. Staff's review of Spire's preliminary design indicates that Spire intends to monitor and control gas impurity constituents and properties that are required to be monitored and controlled in Commission Rule 20 CSR 4240-10.030, except for hydrogen and ** [redacted] **. See Confidential Appendix C to this Memorandum for additional details regarding gas quality monitoring parameters that appear to be addressed within the preliminary design.

Commission Rule 20 CSR 4240-10.030(10)(E) requires that gas shall not contain more than 400 parts per million hydrogen.

Commission Rule 20 CSR 4240-10.030(10)(L) requires that gas shall not contain any microbial organisms, active bacteria or bacterial agent capable of contributing to or causing corrosion or other operational problems where bacterial agents include sulfate reducing bacteria and acid producing bacteria.

Commission Rule 20 CSR 4240-10.030(11) requires that each gas utility receiving or transporting RNG shall provide, install, operate, maintain and continuously monitor sensors and testing equipment to determine if the quality of RNG meets the requirements of section (10) of the rule.

With respect to hydrogen monitoring and control, Spire's response to Staff Data Request 0022 states:

> Based on published literature and prior project experience, hydrogen is not expected to be encountered in wastewater treatment plant biogas and therefore RNG. Furthermore, the City conducted raw biogas sampling and analysis through GTI Energy's laboratory as part of the RFP process and hydrogen was not detected in the biogas. There are no current plans to monitor hydrogen.

With respect to ** [redacted] **, Spire's response to Staff Data Request 0020.1 states:

> ** [redacted]

[redacted] **

Staff's position is that to omit monitoring and control of a gas constituent or property listed in Commission Rule 20 CSR 4240-10.030 Section (10), Spire will need a waiver from the provision of Commission Rule 20 CSR 4240-10.030 Section (11) which requires monitoring of these constituents and properties, and Section (12) which requires isolation of gas that does not meet the limits in Section (10) from the downstream gas distribution system. Therefore, if Spire does not intend to monitor for hydrogen or to ** [redacted] ** in the RNG to be delivered to the distribution system, Spire will need to apply for and be granted a waiver.

PURCHASED GAS ADJUSTMENT (PGA) AND ACTUAL COST ADJUSTMENT (ACA) IMPACTS

Traditional Missouri Natural Gas Cost Procedure

It is important to provide a background of how the typical PGA and ACA process works from a traditional acquisition of fossil based natural gas as compared to the RNG project in this case. Traditional fossil-based natural gas is typically delivered over Federal Energy Regulatory Commission ("FERC") regulated high pressure interstate natural gas pipelines. The sources of this supply for Missouri Local Distribution Companies ("LDCs") vary, with some supply coming from Texas, Oklahoma, and Kansas. Another supply source is from the Marcellus Shale areas, while additional supply can be sourced from Louisiana. The Commission regulated LDCs typically buy the supply from natural gas marketers and transport the supply from the production areas to the LDC's distribution system at the city-gate or point where the interstate pipeline interconnects with the LDC's distribution system.

Although an oversimplification, LDCs like Spire will usually require a certain amount of "baseload" supply that flows evenly, each day of a particular month. The other supply that LDCs typically procure can be characterized as a daily supply either procured as a spot market supply or as a firm "swing" supply that can move up and down based upon the LDC's demands. Again, although somewhat of an overgeneralization, baseload supplies are often priced on a "first of month" ("FOM") price while daily supply is more likely to be priced at a daily price. Both of these prices are often derived from an "index" that is calculated by an industry journal based upon a sampling of fixed-price transactions. The daily market can be quite volatile, while the first of month or baseload price is often less volatile.

In Missouri, and many other states, the procurement of the wholesale supply and related interstate pipeline transportation is recovered through a PGA clause or tariff. It is an automatic adjustment that tracks the "actual cost of gas". Actual gas costs have been viewed as being primarily a cost that is outside much of an LDC's control due to the unregulated natural gas supply markets and the FERC-regulated interstate pipeline market. In fact, only natural gas costs can be passed through the PGA/ACA mechanism. Other costs are addressed in the context of a general rate case. Although this Commission does not regulate the cost of wholesale natural gas or the interstate natural gas pipeline transportation, it does conduct an annual review of the reasonableness of the gas procurement procedures and decisions related to procuring the supply and transportation.

Title for natural gas will typically pass from the gas producer or marketer to the LDC depending on the underlying delivery point of the contract. By the time the gas supply reaches the LDC's distribution system, the only parties that hold title to the gas supply are the LDC or its transportation customers.

In the ACA or true-up process, a comparison is made between the "actual costs" of the gas supply and transportation invoices to the PGA revenues billed to the customers of the LDC. Any differences between the "actual gas costs" and billed PGA revenues is either returned to the customer in the case of an "over-recovery" or collected from the customer in the case of an "under-recovery." These procedures are set out in each LDC's tariffs.

The Proposed Procurement and PGA Procedure for the RNG Project

The Project as proposed by Spire contemplates acquiring the raw biogas from the Blue River WWTP owned by Kansas City.[20] Spire would then own and operate an RNG upgrading facility that cleans this raw biogas into a pipeline quality product that is comparable and interchangeable with the traditional natural gas procured by Spire.[21] This RNG is injected into the Spire distribution system that is near the Blue River WWTP. Spire estimates that this RNG will have been "transformed" into over 175,000 MMBtu of pipeline quality gas per year.[22] Spire also estimates it is enough supply to serve 2,500 customers,[23] and from that standpoint, this is a very small quantity of gas on a system that serves over 500,000 customers.

One way of viewing the RNG project is that Spire is producing the RNG to make it usable in its distribution system. From a PGA standpoint, it provides Spire with about 175,000 MMBtu of gas that can displace its traditional fossil-based geological supply. Since Spire will have

[20] Case No. GA-2026-0121, Bouselli Direct Testimony, page 3, lines 16-18.
[21] Case No. GA-2026-0121, Bouselli Direct Testimony, page 5, lines 16-19.
[22] Case No. GA-2026-0121, Bouselli Direct Testimony, page 3, lines 18-20.
[23] Case No. GA-2026-0121, Bouselli Direct Testimony, page 4, line 2.

title to the RNG as it flows on its distribution system,[24] it has the ability to use that gas supply to serve customers in the Kansas City distribution system. Since Spire's proposal is to either collect its cost of manufacturing the RNG in a general rate case or incrementally in a surcharge,[25] there should be no requested recovery in the PGA. The cost of the gas from a PGA standpoint would be zero. From an ACA view, the gas supply would be mixed with other gas supplies in the area and consumed in customers' homes. That would result in PGA revenues for the 175,000 MMBtu at the prevailing PGA rate. If no further accounting adjustments are made in the PGA/ACA process, the RNG would have no cost for PGA purposes while PGA revenues for the 175,000 MMBtu sales would be returned to the customers in the PGA/ACA reconciliation.

If the Commission approves the Applications, for purposes of PGA accounting, Staff recommends that a monthly invoice be developed to show the volumes of RNG produced and delivered to the distribution system at a zero cost of gas. No further entries or ACA accounting adjustments would be necessary on the revenue side of the ACA reconciliation.

RNG Benefits

Voluntary RNG projects are authorized by statute and related rule that provide mechanisms for recovery of RNG project costs.[26] A recent resolution (GAS-2) of the National Association of Regulatory Commissions (NARUC) supported RNG as a Strategic Energy Resource to Enhance Economic Growth, Reliability, Emissions Reductions.[27] That resolution cited various ancillary benefits from RNG for emissions reduction and energy system resilience. The addition of RNG also offers a diversity of energy resources that was also cited in the resolution. However, it is important to note that while citing economic and environmental objectives, rate impacts to customers and the overall public interest must be considered.

Avoided Gas Costs

A critical aspect of the Program Application relates to Spire's analysis of the cost of the project as compared to "Avoided Gas Cost Per MMBtu". The spreadsheet analysis was provided with Spire's Program Application as Confidential Appendix 2 and is essentially a type of ** [redacted]. ** The bottom-line impact of this analysis is contained on the spreadsheet's summary tab. Spire appears to be saying that the estimated per MMBtu cost of the project far exceeds the amount that would be saved by assuming 175,000 MMBtu of fossil-based natural gas that is displaced by RNG. The ** [redacted] ** per MMBtu is

[24] Case No. GO-2026-0122, Bouselli Direct Testimony, page 10, line 13.
[25] Case No. GO-2026-0122, Bouselli Direct Testimony, page 9, lines 12-18.
[26] *See* Section 386.895, RSMo., and Commission Rule 20 CSR 4240-40.100.
[27] See NARUC Resolution as Appendix D, page 9.

characterized as the "Avoided Gas Cost Per MMBtu" and represents the commodity cost of gas that would be avoided if RNG was available. Unfortunately, this avoided gas cost estimate does not come close to the estimated per MMBtu project costs (Project Life Gas Cost Per MMBtu).

Below are Spire's numbers of the cost of the project as compared to "Avoided Gas Cost Per MMBtu":

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In looking at how the proposed RNG supply might fit into Spire's PGA portfolio, it becomes clear that this supply is more of a steady "baseload" type of supply. It is not a peak day resource or a supply that has optionality (like storage or some types of variable gas supply) to justify higher costs than "first of month" or baseload pricing. The daily volumes and even monthly volumes are so small, the RNG really cannot be characterized as a type of price hedge that would have a material hedging impact on the cost of gas. It could be argued that fixed transportation charges might be relevant to a long-term analysis, but even when adding those, the avoided cost is nowhere near the per unit project costs of ** [redacted] ** per MMBtu.

It is difficult to justify this RNG premium to traditional fossil-based natural gas even when recognizing various intangible or qualitative benefits from RNG. This project is not justified from a PGA or gas procurement standpoint.

TMF AND TARTAN ENERGY CRITERIA

Staff utilizes the concepts of Technical, Managerial, and Financial capacities ("TMF") in reviewing certain CCN applications. It is Staff's position that Spire has the ability to secure funding, to oversee construction of any necessary upgrades or repairs or new construction, and to successfully manage operations of the Project.

When considering a request for a new CCN, the Commission applies criteria originally developed in a CCN case filed by the Tartan Energy Company and referred to now as the "Tartan criteria." The Tartan criteria contemplate 1) the need for service; 2) the utility 's

qualifications; 3) the utility's financial ability; 4) the economic feasibility of the proposal; and 5) promotion of the public interest. Similar to the TMF capacities in previous CCN cases, Staff's investigation relates to the proposed acquisition. The results of Staff's investigation are outlined below:

(1) Need for Service

There is not a need for service, as service is already provided to customers by Spire. It is Staff's position that there is not a need for RNG as an alternative to existing service, as the needs of customers are already met by existing fossil gas sources. As explained above, the RNG will provide no significant benefit in maintaining reliability or safety.

(2) Applicant's Qualifications

Spire is currently engaged in providing natural gas services in approximately 41 different counties of Missouri and the City of St. Louis.[28] Spire is in good standing with the Secretary of State's office, is subject to the jurisdiction of the Commission and holds a franchise to serve in the area requested. It is Staff's position that Spire is qualified to provide service.

(3) Applicant's Financial Ability

Staff investigated whether Spire (or "Applicant") has the financial ability to construct, install, own, operate, maintain, and otherwise control and manage equipment and facilities for the production, processing, pipeline interconnection, and distribution of renewable natural gas (the "Project").[29]

Staff examined the cost of the Project and the financing plan of Spire. The estimated Project cost, approximately ** [redacted] ** before federal tax incentives or capitalized interest during construction, was included in the capital expenditure plan supporting the financing authority approved in Case No. GF-2025-0053.[30] In addition, Spire has taken steps to apply for tax incentives after the completion of the project under the Inflation Reduction Act of 2022.[31]

Considering Spire's financial capacity, the Applicant has the ability to provide the service. According to the 5-year capital expenditure plan, Spire will invest approximately ** [redacted] ** during the 2026–2030 period.[32] Spire indicated that the Project cost was included in the capital expenditure plan supporting the financing application.[33] Currently,

[28] Case No. GR-2021-0108, Spire Missouri's tariff Sheet nos. 1-1.2.
[29] Paragraph 7, The Application.
[30] Paragraph 19, The Application.
[31] Spire Missouri Response to Staff Data Request 0008.
[32] Spire Missouri Response to Staff Data Request 0004.
[33] Page 9, lines 16-17, Eric Bouselli's Direct Testimony.

Staff has no concerns regarding Spire's financial risk profile. According to the pro forma analysis conducted by Spire, the financial ratios would not significantly change.[34] Spire is a wholly owned subsidiary of Spire, Inc. Spire Inc.'s targeted 10-year capital expenditure through 2035 is $11.2 billion.[35] Standard & Poor's ("S&P") and Moody's both rated Spire and Spire Inc. as investment grade. S&P assigned a rating of "BBB+" to both companies, while Moody's rated Spire as "A1" and Spire Inc. as "Baa2" respectively.[36] Because the proposed total cost of the Project represents approximately 5% of Spire's average annual capital expenditure, it is reasonable to conclude that Spire possesses the financial capability to undertake the Project.

(4) Economic Feasibility of the Proposal

The Cambridge Dictionary defines "economic feasibility" as "the degree to which the economic advantages of something to be made, done, or achieved are greater than the economic costs."[37]

As part of its investigation in this case, Staff reviewed the Spire internal cost analysis used to justify the Project. This analysis was attached as Appendix 5 to the application in Case No. GA-2026-0121.[38] As noted earlier in this memorandum, Spire's analysis computed an estimated levelized average cost of gas over the ** [redacted] ** year life of the project of ** [redacted] ** per MMBtu. The estimated levelized average cost of gas with consideration of avoided gas costs is ** [redacted] ** per MMBtu.

Spire's Analysis

Spire's analysis included several assumptions. Changes to these assumptions can have a meaningful impact to the levelized cost of gas. Staff has included a sensitivity analysis of the more impactful assumptions in this memorandum. Staff has identified some recommended changes to the analysis that Staff believes result in a more accurate projection of the average cost of gas over the life of the Project.

Staff Recommended Changes to Spire's Feasibility Analysis

- Staff recommends using the gross capital investment projected for the project for purposes of calculating rate base investment and depreciation. Spire used the gross capital investment less 30% for the Inflation Reduction Act ("IRA") Investment Tax Credits ("ITC"). Staff included the estimated capitalized interest, commonly

[34] Spire Missouri Response to Staff Data Request No. 0002 (No. 0010.1, GF-2025-0053).
[35] Slide 10, Spire Inc.'s Year-end Fiscal 2025 Update, provided in response to Staff Data Request 0004.
[36] S&P Capital IQ Pro. Retrieved in March 13, 2026.
[37] ECONOMIC FEASIBILITY definition | Cambridge English; https://dictionary.cambridge.org/us/dictionary/english/economic-feasibility?q=Economic+Feasibility.
[38] The same analysis is attached as Appendix 2 to the application in Case No. GO-2026-0122.

referred to as Allowance for Funds used During Construction ("AFUDC") in the rate base investment. For ratemaking purposes, the gross capital investment would be utilized for rate base, book depreciation, and property tax purposes. This change increases the estimated levelized average cost of gas.

- Staff recommends increasing the capital expenditures by at least the annual inflation assumption of 3%. The capital expenditures for this project were estimated at January 2025. Spire assumed 3% annual O&M inflation for the operation of the RNG facility. The commissioning of the facility is projected to occur in February 2027 assuming the Commission approves this application. This change increases the estimated levelized average cost of gas.
- Staff recommends including an amortization of the Investment Tax Credit over the life of the project. This ratemaking treatment assumes Spire can utilize the tax credits to offset its tax liability. In the alternative, Spire can monetize these credits. This change decreases the estimated levelized average cost of gas, but is mitigated by not assuming immediate monetization of the tax credits.

With Staff's changes to Spire's analysis, the estimated levelized average cost of gas over the ** [redacted] ** year life of the project of ** [redacted] ** per MMBtu. The estimated levelized average cost of gas with consideration of avoided gas costs is ** [redacted] ** per MMBtu.

Sensitivity Analysis

Variations of the assumptions utilized by Spire can have a significant impact on the levelized cost of gas. Below are the impacts on the levelized cost of gas based on changes of the main assumptions in Spire's analysis:

- Capital expenditures: for each 1% increase of capital expenditures, the levelized cost of gas increases by $0.22.
- Market price of Renewable Identification Number ("RIN"):[39] for each $0.01 reduction in the market price of RIN, the levelized cost of gas increases by $0.05.

Therefore, it is Staff's position that the project is not economically feasible, as the costs are significantly greater than the economic advantages of the project.

[39] The Program Application at paragraph 19 states that Spire "expects the Project to generate D3 Renewable Identification Numbers ('RINs') under the Environmental Protection Agency's Federal Renewable Fuel Standard ('RFS') and intends to sell these attributes to offset the cost of the gas generated from the Project for our Missouri West customers and to share revenue with KC Water per the Agreement." Additionally, Spire "will be working with Anew to facilitate the certification and marketing of the RINs or other certification in an alternative attribute market. The value of the RINs is subject to market conditions and can fluctuate over time." Program Application at paragraph 19.

(5) Promotion of the Public Interest

It is Staff's position that this project does not promote the public interest. Resiliency and reliability are not significantly improved by such a small amount of gas supply. The KC Water Blue River WWTP sewage processing plant flares the biogas Spire intends to recover and recycle into natural gas, and aims to reduce the amount of carbon dioxide equivalents ("CO_2e") emitted into the atmosphere. KC Water projections of reduced CO_2e of approximately 20,000 tons annually.[40] Comparatively, in 2023 the Kansas City region alone emitted 27.2 million metric tons of CO_2e.[41] The resulting impact of a 20,000-ton reduction in CO_2e is a 0.07%, or a seven-hundredths of a percent, decrease in emission levels. Narrowing the scope to focus on the City of Kansas City only, the City has a CO_2e value of 17.8[42] tons per person and an estimated population of 516,032,[43] which results in an estimated value of 9,185,369.6 tons of CO_2e emissions. Looking solely at the emissions of Kansas City, the reduction of 20,000 tons of CO_2e emissions results in a decrease of approximately 0.2%, or a two-tenths of a percent, in emission levels. Comparing the estimated emissions this Project plans to reduce to either the Kansas City region emissions or the City of Kansas City emissions show that the overall impact is minute. Staff can appreciate that preventing 20,000 tons of CO_2e from entering the atmosphere at the Blue River WWTP is no small feat. However, with the impact of the reduction in emissions relative to the total emissions for Kansas City being minuscule, the Project cannot be justified by Staff as being reasonable and does not promote the public interest for Spire customers.

It also needs to be noted that the contract between Kansas City and Spire mentions that the City has implemented a plan to become carbon neutral by 2040.[44] The state of Missouri, however, does not have such a plan. The plan for carbon neutrality and having the development of a biogas facility to fulfill said plan should be taken into consideration regarding the Spire customers paying for the actual construction of the Project. Since the cost of constructing and maintaining the Project is planned to be borne by ratepayers that do not all live in Kansas City, with the purpose of fulfilling a requirement set forth entirely by the City and not the state of Missouri, Staff does not agree that the Project promotes the public interest for all Spire West customers.

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[40] GA-2026-0121, Spire Missouri Witness Eric Bouselli, direct testimony, page 10, line 16.
[41] SSG, & Hoxie Collective LLC (2025 November), Climate Action Technical Report, Kansas City Regional Climate Action Technical Report, November 2025
[42] *Climate Action*, City of Kansas City, Official Website: Climate Action | CITY OF KANSAS CITY | OFFICIAL WEBSITE (n.d.). https://www.kcmo.gov/home/showpublisheddocument/7190/637695609843430000
[43] U.S. Census Bureau, "QuickFacts: Kansas City, Missouri", QuickFacts, 2025 U.S. Census Bureau QuickFacts: Kansas City, Missouri, accessed on March 13, 2026.
[44] Appendix 1, page 1 section D.

OTHER ISSUES

Spire is current on its natural gas PSC assessment payments, is current on its annual reports, and is in good standing with the Secretary of State's office. Spire has no proceeding before the Commission that should impact the outcome of this case.

STAFF RECOMMENDATIONS AND CONCLUSIONS

Staff's position, based on its review as described herein, is that the cost incurred for RNG to be produced by Spire in conjunction with KC Water's Blue River WWTP is not necessary or convenient for the public service. Staff, therefore, does not recommend approval of the requested CCN or Renewable Natural Gas Program Applications.

However, if the Commission chooses to approve either or both of the Applications Staff recommends the following conditions:

1. Spire must obtain detailed location information on each existing underground facility either crossed by or in close proximity to its proposed pipeline route, and contact and coordinate with the owners of each facility which may be the source of or suffer from the effects of stray currents to determine what mitigation measures are needed.
2. Prior to accepting gas from the RNG facility onto its natural gas distribution system, Spire must seek and be granted a waiver from each requirement of Commission Rule 20 CSR 4240-10.030 that Spire does not intend to follow.
3. Staff recommends that a monthly invoice be developed to show the volumes of RNG produced and delivered to the distribution system at a zero cost of gas.
4. That nothing in the Commission's order shall be considered a finding by the Commission of the value of this Project for rate making purposes, and that the Commission reserve the right to consider the rate making treatment to be afforded and its impact on cost of capital, in any later rate proceeding, including a determination of inclusion in rate base.

Appendix A - Staff Analysis of Pip Specification - Confidential

Appendix B - Expanded view of Pipeline Route - Confidential

Appendix C - Gas Quality - Confidential

Appendix D - NARUC Resolution

BEFORE THE PUBLIC SERVICE COMMISSION

OF THE STATE OF MISSOURI

In the Matter of the Application of Spire Missouri Inc. d/b/a Spire for Approval of a Certificate of Convenience and Necessity to Construct and Operate Renewable Natural Gas Infrastructure in Kansas City, Missouri	)))))	Case No. GA-2026-0121
In the Matter of the Application of Spire Missouri Inc. d/b/a Spire for Approval of a Renewable Natural Gas Program	))))	Case No. GO-2026-0122

AFFIDAVIT OF KEITH MAJORS

STATE OF MISSOURI)
) ss.
COUNTY OF Jackson)

COMES NOW KEITH MAJORS and on his oath declares that he is of sound mind and lawful age; that he contributed to the foregoing *Staff Recommendation* in Memorandum form; and that the same is true and correct according to his best knowledge and belief.

Further the Affiant sayeth not.

KEITH MAJORS

JURAT

Subscribed and sworn before me, a duly constituted and authorized Notary Public, in and for the County of Jackson, State of Missouri, at my office in Kansas City, on this 23rd day of March 2026.

CHERYL LEVERETTE
MY COMMISSION EXPIRES
9-7-2027
NOTARY SEAL
#01404338
JACKSON COUNTY
NOTARY PUBLIC, STATE OF MISSOURI

Notary Public

BEFORE THE PUBLIC SERVICE COMMISSION

OF THE STATE OF MISSOURI

In the Matter of the Application of Spire Missouri Inc. d/b/a Spire for Approval of a Certificate of Convenience and Necessity to Construct and Operate Renewable Natural Gas Infrastructure in Kansas City, Missouri	)	Case No. GA-2026-0121
In the Matter of the Application of Spire Missouri Inc. d/b/a Spire for Approval of a Renewable Natural Gas Program	)	Case No. GO-2026-0122

AFFIDAVIT OF KATHLEEN A. McNELIS, PE

STATE OF MISSOURI)
) ss.
COUNTY OF COLE)

COMES NOW KATHLEEN A. McNELIS, PE and on her oath declares that she is of sound mind and lawful age; that she contributed to the foregoing *Staff Recommendation* in Memorandum form; and that the same is true and correct according to her best knowledge and belief.

Further the Affiant sayeth not.

KATHLEEN A. McNELIS, PE

JURAT

Subscribed and sworn before me, a duly constituted and authorized Notary Public, in and for the County of Cole, State of Missouri, at my office in Jefferson City, on this 23rd day of March 2026.

DIANNA L. VAUGHT
Notary Public - Notary Seal
State of Missouri
Commissioned for Cole County
My Commission Expires: July 18, 2027
Commission Number: 15207377

Notary Public

BEFORE THE PUBLIC SERVICE COMMISSION

OF THE STATE OF MISSOURI

In the Matter of the Application of Spire Missouri Inc. d/b/a Spire for Approval of a Certificate of Convenience and Necessity to Construct and Operate Renewable Natural Gas Infrastructure in Kansas City, Missouri	)	Case No. GA-2026-0121
In the Matter of the Application of Spire Missouri Inc. d/b/a Spire for Approval of a Renewable Natural Gas Program	)	Case No. GO-2026-0122

AFFIDAVIT OF MELISSA J. REYNOLDS

STATE OF MISSOURI)
) ss.
COUNTY OF COLE)

COMES NOW MELISSA J. REYNOLDS and on her oath declares that she is of sound mind and lawful age; that she contributed to the foregoing *Staff Recommendation* in Memorandum form; and that the same is true and correct according to her best knowledge and belief.

Further the Affiant sayeth not.

MELISSA J. REYNOLDS

JURAT

Subscribed and sworn before me, a duly constituted and authorized Notary Public, in and for the County of Cole, State of Missouri, at my office in Jefferson City, on this 23rd day of March 2026.

DIANNA L. VAUGHT
Notary Public - Notary Seal
State of Missouri
Commissioned for Cole County
My Commission Expires: July 18, 2027
Commission Number: 15207377

Notary Public

BEFORE THE PUBLIC SERVICE COMMISSION

OF THE STATE OF MISSOURI

In the Matter of the Application of Spire Missouri Inc. d/b/a Spire for Approval of a Certificate of Convenience and Necessity to Construct and Operate Renewable Natural Gas Infrastructure in Kansas City, Missouri	)	Case No. GA-2026-0121
In the Matter of the Application of Spire Missouri Inc. d/b/a Spire for Approval of a Renewable Natural Gas Program	)	Case No. GO-2026-0122

AFFIDAVIT OF DAVID M. SOMMERER

STATE OF MISSOURI)
) ss.
COUNTY OF COLE)

COMES NOW DAVID M. SOMMERER and on his oath declares that he is of sound mind and lawful age; that he contributed to the foregoing *Staff Recommendation* in Memorandum form; and that the same is true and correct according to his best knowledge and belief.

Further the Affiant sayeth not.

David M. Sommerer

DAVID M. SOMMERER

JURAT

Subscribed and sworn before me, a duly constituted and authorized Notary Public, in and for the County of Cole, State of Missouri, at my office in Jefferson City, on this 23rd day of March 2026.

DIANNA L. VAUGHT
Notary Public - Notary Seal
State of Missouri
Commissioned for Cole County
My Commission Expires: July 18, 2027
Commission Number: 15207377

Dianna L. Vaught

Notary Public

BEFORE THE PUBLIC SERVICE COMMISSION

OF THE STATE OF MISSOURI

In the Matter of the Application of Spire Missouri Inc. d/b/a Spire for Approval of a Certificate of Convenience and Necessity to Construct and Operate Renewable Natural Gas Infrastructure in Kansas City, Missouri	)	Case No. GA-2026-0121
In the Matter of the Application of Spire Missouri Inc. d/b/a Spire for Approval of a Renewable Natural Gas Program	)	Case No. GO-2026-0122

AFFIDAVIT OF JADON STAFFORD

STATE OF MISSOURI)
) ss.
COUNTY OF COLE)

COMES NOW JADON STAFFORD and on his oath declares that he is of sound mind and lawful age; that he contributed to the foregoing *Staff Recommendation* in Memorandum form; and that the same is true and correct according to his best knowledge and belief.

Further the Affiant sayeth not.

JADON STAFFORD

JURAT

Subscribed and sworn before me, a duly constituted and authorized Notary Public, in and for the County of Cole, State of Missouri, at my office in Jefferson City, on this 23rd day of March 2026.

DIANNA L. VAUGHT
Notary Public - Notary Seal
State of Missouri
Commissioned for Cole County
My Commission Expires: July 18, 2027
Commission Number: 15207377

Notary Public

BEFORE THE PUBLIC SERVICE COMMISSION

OF THE STATE OF MISSOURI

In the Matter of the Application of Spire Missouri Inc. d/b/a Spire for Approval of a Certificate of Convenience and Necessity to Construct and Operate Renewable Natural Gas Infrastructure in Kansas City, Missouri	)	Case No. GA-2026-0121
In the Matter of the Application of Spire Missouri Inc. d/b/a Spire for Approval of a Renewable Natural Gas Program	)	Case No. GO-2026-0122

AFFIDAVIT OF SEOUNG JOUN WON, PhD

STATE OF MISSOURI)
) ss.
COUNTY OF COLE)

COMES NOW SEOUNG JOUN WON, PhD and on his oath declares that he is of sound mind and lawful age; that he contributed to the foregoing *Staff Recommendation* in Memorandum form; and that the same is true and correct according to his best knowledge and belief.

Further the Affiant sayeth not.

SEOUNG JOUN WON, PhD

JURAT

Subscribed and sworn before me, a duly constituted and authorized Notary Public, in and for the County of Cole, State of Missouri, at my office in Jefferson City, on this 23rd day of March 2026.

DIANNA L. VAUGHT
Notary Public - Notary Seal
State of Missouri
Commissioned for Cole County
My Commission Expires: July 18, 2027
Commission Number: 15207377

Notary Public

Appendix A

Staff Analysis of Pipe Specifications

Note – this is a preliminary evaluation based on pipe specifications only. More comprehensive evaluations of compliance with applicable requirements of the Commission's pipeline safety standards in Commission Rule 20 CSR 4240-40.030 for materials, pipe and component design, welding, corrosion control, and testing[1] will be conducted during inspections of pipeline construction and testing if the Commission approves the project.

A. Pipeline Design Criteria:

With some limited exceptions that apply to existing pipelines, natural gas pipelines may not be operated at a pressure that exceeds the lower of:[2]

1. The design pressure of the weakest element in the segment, determined in accordance with Section (3) and (4) of Commission Rule 20 CSR 4240-40.030.
    - Section (3) provides the design formula for steel pipe:

$$P = \left(2 * \frac{S * t}{D}\right) * F * E * T$$

Where:

P = Design pressure in pounds per square inch (or kPa) gauge;

S = Yield strength in pounds per square inch (or kPa) determined in accordance with subsection (3)(D);

D = Nominal outside diameter of the pipe in inches (or millimeters);

t = Nominal wall thickness of the pipe in inches (millimeters).

F = Design factor determined in accordance with subsection (3)(F);

[1] Applicable sections of Commission Rule 20 CSR 4240-40.030 include: Sections (2) – Materials, (3) – Pipe Design, (4) – Design of Pipeline Components, (5) – Welding of Steel in Pipelines, (9) – Requirements for Corrosion Control, and (10) – Test Requirements.

[2] Commission Rule 20 CSR 4240-40.030(12)(M) – Maximum Allowable Operating Pressure – Steel or Plastic Pipelines. Exceptions may apply in certain circumstances to existing pipelines that are converted to gas service under subsection (1)(H) or uprated under section (11) of Commission Rule 20 CSR 4240-40.030.

E = Longitudinal joint factor determined in accordance with subsection (3)(G); and

T = Temperature derating factor determined in accordance with subsection (3)(H).

- Section (4) provides design criteria for pipeline components. The currently effective Commission Rule requires that each component of a pipeline must be able to withstand operating pressures and other anticipated loadings without impairment of its serviceability with unit stresses equivalent to those allowed for comparable material in pipe in the same location and kind of service.[3]

2. The pressure obtained by dividing the highest pressure to which the segment was tested after construction or uprated.
   - For steel pipe operated at ** [redacted] **
   - Commission Rule 20 CSR 4240-40.030(10)(B)1 states that no person may operate a new segment of pipeline until it has been tested in accordance with the requirements of section (10) and subsection (12)(M) of Commission Rule 20 CSR 4240-40.030.
3. For existing pipe, the highest actual operating pressure to which the segment was subjected during the five years preceding the date in the second column of the table in Commission Rule 20 CSR 4240-40.030(12)(M)C., unless the segment was tested in accordance with subparagraph (23)(M)1.B after the applicable date in the third column of the table, or the segment was uprated in accordance with section (11).
4. The pressure determined by the operator to be the maximum safe pressure after considering and accounting for records of material properties, including material properties verified in accordance with subsection (12)(E) if applicable, and the

[3] 20 CSR 4240-40.030(4)(B)1.

history of the pipeline segment, including known corrosion and the actual operating pressure.

B. Spire's Proposed Pipelines:

Spire is proposing to construct two new steel pipelines, the KCWW RNG pipeline and the Spire Proposed Pipeline. Since the ** [redacted] ** of these pipelines differs, Staff has evaluated separately.

Certain provisions in Commission Rule 20 CSR 4240.030(12)(M) do not apply to newly constructed natural gas pipelines. These are:

- Exceptions provided for pipe that is converted to service in accordance with subsection (1)(H) or uprated in accordance with section (11) of Commission Rule 20 CSR 4240-40.030.
- Criteria in Commission Rule 20 CSR 4240-40.030(12)(M)C that apply to pipelines in operation before the effective dates in the second column of the table in this paragraph of the rule, which range from July 1, 1970 to March 15, 2006, since new pipelines are required to be pressure tested in accordance with subparagraph (12)(M)1.B. of 20 CSR 4240-40.030.

Additionally, pressure testing is a requirement under Commission rules prior to operation,[4] but cannot be conducted until after the pipeline is constructed.

Therefore, for purposes of this evaluation of the preliminary design of proposed new pipelines, the evaluation is based on design formula for steel pipe in Commission Rule 20 CSR 4240-40.030(3)(C).

B.1 KCWW RNG Pipeline

Values used for the KCWW RNG pipeline in the design formula for steel pipe in 20 CSR 4240-40.030(3)(C) are as follows:[5]

P = value to be calculated;

[4] 20 CSR 4240-40.030(10)(B)1 requires that no person may operate a new segment of pipeline, or return to service a segment of pipeline until it has been tested in accordance with Section (10) and subsection (12)(M).
[5] Values are from Spire's confidential response to Staff Data Request 0018.2 unless otherwise stated.

** [redacted][6]

[redacted] **

F = Design factor will be determined by class location, as determined by the method provided in Commission Rule 20 CSR 4240-40.030(1)(C). For purposes of this evaluation, design pressure has been calculated for each of the four class location categories;

**[redacted][7]

[redacted][8] **

Substituting these values into the design formula for steel pipe in Commission Rule 20 CSR 4240-40.030(3)(C) results in the following equation:

** [redacted] **

Using the Design Factor (F) values for each of the four class locations from the table in Commission Rule 20 CSR 4240-40.030(3)(F) results in the following calculated design pressures for each class location:

Design Pressure (psi), Calculated	Class Location	Design Factor
** [redacted] **	1	0.72
** [redacted] **	2	0.6

[6] Spire's confidential response to Staff Data Request 0018.2 provides the following: ** [redacted] **

[7] Spire's confidential response to Staff Data Request 0018.2 provides the following: ** [redacted] **

[8] Spire's confidential response to Staff Data Request 0013 states that the ** [redacted] **

Design Pressure (psi), Calculated	Class Location	Design Factor
** [redacted] **	3	0.5
** [redacted] **	4	0.4

** [redacted] **

B.2 Spire Planned Pipeline

Values used for the Spire Planned pipeline in the design formula for steel pipe in Commission Rule 20 CSR 4240-40.030(3)(C) are as follows[9]:

P = value to be calculated;

** [redacted][10] **

F = Design factor will be determined by class location, as determined by the method provided in Commission Rule 20 CSR 4240-40.030(1)(C). For purposes of this evaluation, design pressure has been calculated for each of the four class location categories;

** [redacted][11] [12] **

[9] Values are from Spire's confidential response to Staff Data Request 0018.2 unless otherwise stated.

[10] Spire's confidential response to Staff Data Request 0018.2 provides the following: ** [redacted] **

[11] Spire's confidential response to Staff Data Request 0018.2 provides the following: ** [redacted] **

[12] Spire's confidential response to Staff Data Request 0013 states that the ** [redacted] **

Substituting these values into the design formula for steel pipe in Commission Rule 20 CSR 4240-40.030(3)(C) results in the following equation:

** [redacted] **

Using the Design Factor (F) values for each of the four class locations from the table in 20 CSR 4240-40.030(3)(F) results in the following design pressures calculated for each class:

Design Pressure (psi), Calculated	Class Location	Design Factor
** [redacted] **	1	0.72
** [redacted] **	2	0.6
** [redacted] **	3	0.5
** [redacted] **	4	0.4

** [redacted] **

Appendix B

Expanded view of Pipeline Route (Confidential)

** [redacted]

[redacted]

[redacted]

[redacted]

[redacted]

**

Appendix C

Gas Quality

A. Monitoring

The Commission's gas quality standards for RNG are found in 20 CSR 4240-10.030(10) and are summarized in the table below. Section (11) of 20 CSR 4240-10.030 requires that each gas utility that receives or transports RNG on its gas transmission and distribution systems provide, install, operate, maintain and continuously monitor sensors and testing equipment to determine if the quality of NRG meets the requirements of Section (10).

Staff's comparison of the requirements of Sections (10) and (11) of 20 CSR 4240-10.030 to Spire's RNG facility design is summarized below.

Listing of Parameters Required to be Monitored (Unless otherwise specified, "Drawing No.", "Instrument" and "Instrument Range" in this table refer to the Confidential Attachment CONF-167263_Spire_Blue River_90% Process Dwgs file, attached to Spire's response to Staff Data Request 0009)				
Parameter (Units)	**Rule Limit**	**Drawing No.**	**Instrument**	**Instrument Measurement Range**
Heating Value (BTU)	950-1,200 [13]	** [redacted] **	** [redacted] **	See Note 1
Water, H_2O, Vapor (lb/mmcf)	≤ 7 [14]	** [redacted] **	** [redacted] **	** [redacted] **
Liquids	Free from [15]	** [redacted] **	See Note 2	See Note 2
Oxygen, O_2 (v/v %)	≤ 1% [16]	** [redacted] **	** [redacted] **	** [redacted] **
Hydrogen, H_2 (ppm)	≤ 400 [17]	See Note 3	See Note 3	See Note 3
Hydrogen Sulfide,	≤ 0.5 [18]	** [redacted] **	** [redacted]	** [redacted] **

[13] 20 CSR 4240-10.030(10)(A) states: The gas shall have a gross heating value between nine hundred fifty (950) and one thousand two hundred (1,200) British thermal units (Btu) per dry standard cubic foot. For purposes of this rule, the term "gross heating value" when applied to a cubic foot of gas shall mean the number of Btus produced by the complete combustion of the amount of gas that would occupy a volume of one (1) cubic foot at fourteen and seventy-three hundredths (14.73) pounds per square inch absolute (psia) at a temperature of sixty degrees Fahrenheit (60ºF).

[14] 20 CSR 4240-10.030(10)(B) states: The gas shall not contain more than seven (7) pounds of water in vapor phase per million cubic feet.

[15] 20 CSR 4240-10.030(10)(C) states: The gas shall be free from hydrocarbons and water (H_2O) in liquid state at the temperatures and pressures delivered and shall not have a hydrocarbon dew point in excess of the lower of forty degrees Fahrenheit (40ºF) or the gas delivery temperature.

[16] 20 CSR 4240-10.030(10)(D) states: The gas shall not contain in excess of one percent (1%) by volume of oxygen (O_2), and every reasonable effort shall be made to keep the gas completely free of oxygen.

[17] 20 CSR 4240-10.030(10)(E) states: The gas shall not contain more than four hundred (400) parts per million (ppm) of hydrogen (H_2)

[18] 20 CSR 4240-10.030(10)(F) states: The gas shall not contain more than one-half (0.5) grain of hydrogen sulfide (H_2S) per one hundred (100) cubic feet.

Listing of Parameters Required to be Monitored (Unless otherwise specified, "Drawing No.", "Instrument" and "Instrument Range" in this table refer to the Confidential Attachment CONF-167263_Spire_Blue River_90% Process Dwgs file, attached to Spire's response to Staff Data Request 0009)				
Parameter (Units)	**Rule Limit**	**Drawing No.**	**Instrument**	**Instrument Measurement Range**
H_2S (gr/ccf)			** [redacted] **	
Total Sulfur, S (gr/ccf)	≤ 20 [19]	** [redacted] **	** [redacted] **	See Note 5
Carbon Dioxide, CO_2 (v/v %)	≤ 2 [20]	** [redacted] **	** [redacted] **	** [redacted] **
Nitrogen, N_2 (v/v %)	≤ 3% [21]	** [redacted] **	** [redacted] **	** [redacted] **
Temperature (ºF)	40 – 100 [22]	** [redacted] **	See Note 6	See Note 6
Impurities	Free from [23]	See Note 7	See Note 7	See Note 7
microbial organism	Free from [24]	See Note 8	See Note 8	See Note 8

Note 1: Spire's confidential response to Staff Data Request 0019 states in part:

** [redacted]

[19] 20 CSR 4240-10.030(10)(G) states: The gas shall not contain more than twenty (20) grains of total sulfur per one hundred (100) cubic feet.

[20] 20 CSR 4240-10.030(10)(H) states: The gas shall not contain more than two percent (2%) by volume of carbon dioxide (CO_2).

[21] 20 CSR 4240-10.030(10)(I) states: The gas shall not contain more than three percent (3%) by volume of nitrogen (N_2).

[22] 20 CSR 4240-10.030(10)(J) states: The gas shall be at a temperature between forty degrees Fahrenheit (40ºF) and one hundred degrees Fahrenheit (100ºF);

[23] 20 CSR 4240-10.030(10)(K) states: The gas shall be substantially free from impurities that may cause excessive fumes when combusted in a properly designed and adjusted burner.

[24] 20 CSR 4240-10.030(10)(L) states: The gas shall not contain, either in the gas or in any liquid within the gas, any microbial organism, active bacteria, or bacterial agent capable of contributing to or causing corrosion or other operational problems. For purposes of this rule, microbial organisms, bacteria, and bacterial agents include sulfate reducing bacteria (SRB) and acid producing bacteria (APB).

[25] Staff notes that the units BTU/dscf refers to British Thermal Units per dry standard cubic foot.

[redacted] **

Note 2: Spire's confidential response to Staff Data Request 0021 states in part: ** [redacted] **

Note 3: Spire's response to Staff Data Request 0022 states: "Based on published literature and prior project experience, hydrogen is not expected to be encountered in wastewater treatment plant biogas and therefore RNG. Furthermore, the City conducted raw biogas sampling and analysis through GTI Energy's laboratory as part of the RFP process and hydrogen was not detected in the biogas. There are no current plans to monitor hydrogen."

Note 4: Spire's confidential response to Staff Data Request 0023 states in part: ** [redacted] **

Note 5: Spire's confidential response to Staff Data Request 0024 states in part: ** [redacted] **

Note 6: Spire's confidential response to Staff Data Request 0010 states in part: ** [redacted] **

Note 7: Spire's confidential response to Staff Data Request 0026 states in part: ** [redacted] **

Note 8: Spire's confidential response to Staff Data Request 0020.1 states: ** [redacted] **

Staff notes that Spire does not intend to monitor for hydrogen (See Note 3) and intends to ** [redacted] ** (See Note 8).

B. Control

Commission Rule 20 CSR 4240-10.030(12) requires that each gas utility receiving or transporting RNG on its gas transmission and distribution systems shall install an isolation device at each location where manufactured gas or RNG is delivered to its natural gas pipeline systems. Each isolation device shall be designed and operated to completely isolate the source of manufactured gas or RNG from the downstream pipeline when the gas does not meet the quality standards in section (10) of this rule, as determined by the monitoring and testing performed in section (11) of this rule.

Documents submitted with Spire's confidential response to Staff Data Request 0009 show ** [redacted] **

Resolutions

Adopted by the

Board of Directors

of the

National Association of Regulatory Utility Commissioners

at the

February 8 – 11, 2026

NARUC Winter Policy Summit

in Washington, D.C.

If you are interested in this resolution, you should read the <u>entire</u> resolution and <u>not</u> rely on the truncated description in the Table Contents.

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Resolution encourages Congress, the Administration, federal agencies, and research institutions to unlock this low-cost energy supply by maintaining and enhancing existing federal energy efficiency programs, investments, and standards, and by working together with states, utilities, the commercial and industrial sector, and other stakeholders in advancing new pilot projects, supporting data-sharing, maintaining minimum energy efficiency standards and building codes and encouraging other efficiency initiatives as cost effective tools to address the challenges of rising bills and demand.

IV. Gas Committee

(1/23 1:37 PM vz from Commissioner Stacy Paradis (Illinois))

Sponsor – The Honorable Stephen DeFrank (Pennsylvania)

See description under ERE-1.

(1/23 4:50 PM vz from Sephanie Wimer (Pennsylvania)

Sponsor – The Honorable Kathryn Zerfuss (Pennsylvania)

Resolution recognizes (i) RNG's role as part of a diversified energy portfolio to meet growing energy demand and strengthen economic development; (ii) the benefit of regulatory clarity in RNG project development, including consideration of appropriate cost recovery mechanisms, market-based procurement approaches, streamlined interconnection standards that do not unduly burden RNG, and the integration of RNG into long-term planning and decarbonization strategies; and (iii) recognizes RNG's ancillary benefits for emissions reduction and energy system resilience, and encourages collaboration among regulators, policymakers, and industry stakeholders to ensure RNG development advances both economic and environmental objectives without compromising customer affordability or system reliability.

V. Telecommunications Committee

(02/08/2026 5:15 PM UPDATE from Lara Walt)

Sponsor – The Honorable Mary Pat Regan (Kentucky)

Resolution urges adoption of the Numbering White Paper and its filing at the FCC = with recommendations that the FCC: [1] provide clarity, guidance, and support to state

commissions in the management of numbering resources; [2] strengthen existing rules that place strict limits on new requests for numbering resources by non-compliant SPs; [3] Prohibit the sale of numbering resources; [4] use the FCC's audit authority over number resources to actively review regulatory filings; [5] Revisit past rulings regarding exceptions to requirements on returning unused number blocks for paging companies and encourage the return of these unused numbers and [6] provide more transparency, increased clarity, and greater assistance to state commissions in the reclamation of numbering resources.

ERE-1/EL-1/CPI-1/GS-1 Resolution to Support Adequate and Timely Federal Funding for the Low-Income Home Energy Assistance Program

Whereas the Low-Income Home Energy Assistance Program ("LIHEAP"), established in 1981 and administered through the U.S. Department of Health and Human Services ("HHS"), helps low-income households with their energy bills, covering heating, cooling, and crisis assistance, as well as weatherization improvements;

Whereas more than 300 million households have received LIHEAP assistance since the program's inception and more than 5 million housing units have been weatherized;

Whereas 5.9 million households received LIHEAP support in FY 2024. LIHEAP is critical for vulnerable populations serving seniors on fixed incomes, individuals with disabilities, families of young children, and low-income households. Funding support reduces disconnections, often directly paying the utility;

Whereas growing national energy demand has led to rising electricity and natural gas prices, with U.S. average electricity prices increasing by 13 percent from 2022 to 2025, outpacing inflation;

Whereas energy affordability has become a leading national concern with consumers across the country voicing an inability to afford increasing utility bills, rising housing costs and other essential needs;

Whereas climate-related extreme weather events have increased the frequency and severity of both heating and cooling emergencies;

Whereas children and the elderly are more sensitive to extreme temperatures because they are physiologically less able to regulate body temperature and people with complex medical needs also shoulder higher energy costs, due to electricity-dependent equipment;

Whereas in 2024, approximately 23 percent of the households in the US lived in energy poverty;

Whereas households that spend more than 6 percent of their income on energy costs are energy burdened. Energy burdened households spend more than 20% of income for utilities;

Whereas single parents, who are disproportionally women, are more likely to be energy insecure, as are rural residents, Indigenous and minority households;

Whereas current federal LIHEAP funding reaches less than 20% of eligible families;

Whereas states are responsible for creating and administering their own LIHEAP programs; and states rely on timely, predictable, and adequate levels of federal funding to administer LIHEAP effectively before the onset of peak winter and summer seasons;

Whereas timely funding is necessary to enable utility and local agency coordination regarding bill assistance, arrearage management, and energy efficiency programs;

Whereas maintenance of full federal administrative staff for LIHEAP at HHS is essential to ensure that

States and local partners do not experience delays in technical assistance, slower allocation processes, and limited critical funding access for vulnerable populations;

Whereas proposed total LIHEAP funding for FY26 is $3.6B. Total LIHEAP funding for FY25 was $4.1B and total LIHEAP funding for FY24 was $4.1B; *now, therefore, be it*,

Resolved that the Board of Directors of the National Association of Regulatory Utility Commissioners ("NARUC"), convened at its 2026 Winter Policy Summit in Washington, D.C., urges Congress and the Administration to appropriate no less than $4.2B for LIHEAP annually, provide equivalent advance appropriates to ensure continual funding, and fully staff HHS to ensure all funds are released in a timely manner in advance of peak seasons.

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Passed by the Committees on Energy, Resources and the Environment, Gas, and Consumers and the Public Interest on February 9, 2026.
Adopted by the NARUC Board of Directors on February 11, 2026.

ERE-2/CPI-2 Resolution on Unlocking Energy Efficiency to Support Adequate Energy Supply and Curb Electric Bill Increases

Whereas an adequate supply of affordable, reliable, efficient electricity is foundational to the global competitiveness of the United States economy, allowing industry, state and local economies, and the people of the United States to thrive;

Whereas demand for electricity supply is rising sharply across the United States, due to new data center development to support American Artificial Intelligence, new onshore manufacturing, building electrification and growth of electric vehicles;

Whereas forecasts indicate that in three years, by 2030, total national electricity use will increase by 32 percent, and that in addition to demand side management programs, the United States must build about 80 GW of additional capacity per year over the next 20 years compared to the 40 GW average of new capacity built annually over the past five years (See analyses from Grid Strategies and ICF, respectively);

Whereas national average retail electricity prices have risen rapidly in nominal terms in recent years due to a number of drivers -- including distribution investments, extreme weather and wildfires, load growth, wind and solar deployment, and natural gas dependence (See report from Lawrence Berkely National Laboratory);

Whereas energy utilities will spend nearly $1.2 trillion on new infrastructure through 2029 to meet new rising electricity demand (See forecasts from S&P Global);

Whereas rising utility bills are now a national issue with rising costs contributing to American consumers' broader economic concerns (See Powerlines analysis) and rising energy costs are contributing to inflation (See Consumer Price Index release);

Whereas utilities and state utility commissions maintain responsibility for supplying energy adequate to meet customer requirements at the lowest reasonable cost;

Whereas Congress, the Administration, and federal agencies maintain responsibility for fostering the nation's economic activity, protecting consumers generally, investing in strategies to support adequate domestic energy supply and keep energy costs down, and regulating the interstate transmission of electricity;

Whereas investing in the lowest reasonable cost, most cost-effective energy supply first can reduce the cost to customers of meeting energy requirements;

Whereas energy inefficient homes strain Americans' wallets with high energy bills while also straining the grid precisely during critical extreme cold and heat events;

Whereas energy efficiency equals economic efficiency, quickly providing supply, cutting utility system costs, lowering customer bills, creating American jobs, bolstering national security, and lowering public health costs. (See reports from the Brattle Group, Regulatory Assistance Project and American Council for an Energy-Efficient Economy);

Whereas energy efficiency is overall system efficiency and a cornerstone that enables more economic value to be extracted from supply side and other demand side resources;

Whereas energy efficiency remains a large untapped energy resource across the many sectors and markets of the United States economy by 2040, energy efficiency has the potential to reduce electricity consumption by about 8% and demand by about 70 GW (See Electric Power Research Institute, U.S. DOE, and ICF analyses);

Whereas numerous state and utility energy efficiency programs already exist and are proven examples of low-cost options available to meet energy needs, together with the growing number of sources of demand-side supply like demand response programs, are examples. (See studies from Alliance to Save Energy, American Council for an Energy Efficient Economy, Lawrence Berkeley National Laboratory, , and State and Local Energy Efficiency Action Network);

Whereas numerous federal programs and standards already exist and can be leveraged to complement state and utility energy efficiency efforts, including manufactured home efficiency standards, grid enhancing technology requirements at FERC for interstate transmission, the U.S. EPA's Energy Star® program, the Weatherization Assistance Program, and more; *now, therefore be it*

Resolved that the Board of Directors of the National Association of Regulatory Utility Commissioners, convened at its 2026 Winter Policy Summit in Washington, D.C., encourages Congress, the Administration, federal agencies, and research institutions to unlock this low-cost energy supply by maintaining and enhancing existing federal energy efficiency programs, investments, and standards, and by working together with states, utilities, the commercial and industrial sector, and other stakeholders in advancing new pilot projects, supporting data-sharing, maintaining minimum energy efficiency standards and building codes and encouraging other efficiency initiatives as cost effective tools to address the challenges of rising bills and demand.

Passed by the Committee on Energy Resources and the Environment and the Committee on Consumers and the Public Interest on February 9, 2026
Adopted by the NARUC Board of Directors on February 11, 2026

GAS-2 Resolution Supporting Renewable Natural Gas as a Strategic Energy Resource to Enhance Economic Growth, Reliability, and Emissions Reductions

Whereas State regulatory commissions are responsible for ensuring reliable and affordable energy service for consumers while considering economic development and innovation;

Whereas energy demand is increasing across all sectors of the economy, requiring commissions to evaluate all available resources to maintain system reliability, customer affordability, and economic competitiveness;

Whereas, renewable natural gas ("RNG"), produced from a variety of waste and byproduct streams, offers measurable economic opportunities, including the creation of jobs, development of new revenue streams for agricultural and municipal stakeholders, and leveraging of existing pipeline infrastructure, thereby reducing the need for costly new buildouts;

Whereas recent studies have identified significant untapped RNG potential in the United States, demonstrating that RNG can supply a meaningful share of natural gas demand while supporting regional economic growth and providing a diversity of energy sources;

Whereas RNG also provides ancillary environmental benefits by capturing and utilizing methane emissions that would otherwise be released into the atmosphere, thereby supporting State and federal clean energy goals, and has the potential to be a cost-effective abatement strategy with the further adoption of this technology;

Whereas regulatory certainty and clear policy frameworks are essential to encourage utility and third-party investment in RNG projects, including consideration of RNG as a resource in integrated resource planning, ratemaking, and broader state energy strategies;

Whereas commissions can play a critical role in establishing policies that recognize RNG's multi-faceted value—as an energy resource, an economic driver, and a tool for cost-effective emissions reduction—while maintaining affordability and system reliability for all customers; *now, therefore be it*

Resolved that the National Association of Regulatory Utility Commissioners ("NARUC") recognizes RNG's role as part of a diversified energy portfolio to meet growing energy demand and strengthen economic development; *and be it further*

Resolved that NARUC recognizes the benefit of regulatory clarity in RNG project development, including consideration of appropriate cost recovery mechanisms, market-based procurement approaches, streamlined interconnection standards that do not unduly burden RNG, and the integration of RNG into long-term planning and decarbonization strategies; *and be it further*

Resolved that NARUC recognizes RNG's ancillary benefits for emissions reduction and energy system resilience, and encourages collaboration among regulators, policymakers, and industry stakeholders to ensure RNG development advances both economic and environmental objectives without compromising customer affordability or system reliability.

Passed by the Committee on Gas on February 9, 2026.

Adopted by the NARUC Board of Directors on February 11, 2026.

TC-1 Resolution on Telephone Number Conservation White Paper

Whereas the Federal Communications Commission (FCC) has delegated many telephone numbering administration activities to state public utility commissions (state commissions);

Whereas in using this delegated authority, state commissions have identified numerous problems with the current numbering administration and have identified potential solutions to those problems;

Whereas members of the National Association of Regulatory Utility Commissioners (NARUC) Staff Subcommittee on Telecommunications developed a white paper, *Perspectives and Recommendations on How Telephone Number Conservation Can be Enhanced to Extend the Life of the NANP and Reduce Illegal Robocalling Activity* (Numbering White Paper), discussing identified problems and potential solutions;

Whereas the Numbering White Paper promotes collaborative approaches to resolve modern numbering resource administration challenges through continued dialogue with state commissions, industry, other stakeholders, and the FCC; *and*

Whereas the Numbering White Paper recommends that the FCC:

- Provide clarity, guidance, and support to the state commissions in the management of numbering resources;
- Strengthen existing rules and regulations that place strict limits on new requests for numbering resources by SPs that have not complied with numbering rules;
- Prohibit the sale of numbering resources;
- Use the FCC's audit authority over number resources to actively review regulatory filings;
- Revisit past rulings regarding exceptions to requirements on returning unused number blocks for paging companies and encourage the return of these unused numbers; and
- Provide more transparency, increased clarity, and greater assistance to state commissions in the reclamation of numbering resources; n*ow therefore be it*

Resolved that the Board of Directors of the National Association of Regulatory Utilities Commissioners, convened at its 2026 Winter Policy Summit in Washington, D.C., adopts the attached *Perspectives and Recommendations on How Telephone Number Conservation Can be Enhanced to Extend the Life of the NANP and Reduce Illegal Robocalling Activity* White Paper; *and be it further*

Resolved that NARUC present the Numbering White Paper to the FCC to seek support of the Numbering White Paper's recommendations.

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Passed by the Committee on Telecommunications on February 9, 2026.
Adopted by the NARUC Board of Directors February 11, 2026.