

**STATE OF MARYLAND  
PUBLIC SERVICE COMMISSION**

**NUMBER: TG-458  
DATE: August 18, 2021  
MAIL LOG NO.: 235636**

TO: Jason M. Stanek, Chairman  
Michael T. Richard, Commissioner  
Anthony J. O'Donnell, Commissioner  
Odogwu Obi Linton, Commissioner  
Mindy L. Herman, Commissioner

FROM: Anthony Myers, Executive Director **MP for AM**

Re: Baltimore Gas and Electric Company – Supplement No. 479 to P.S.C. Md.  
G-9: Renewable Natural Gas Interconnection Service

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**Description of Application:**

On June 4, 2021, Baltimore Gas and Electric Company (“BGE” or “the Company”) filed Supplement No. 479 to P.S.C. Md. G-9: Renewable Natural Gas Interconnection Service in order to offer a renewable natural gas (“RNG”) interconnection service under Schedule RNG.

**Parties which should receive a copy of Staff Recommendations:**

Baltimore Gas and Electric Company  
Maryland Office of People’s Counsel

**Recommended Action:**

Staff recommends that the Commission accept for filing the Company’s revisions to its Gas Supplier Tariff subject to the conditions and revisions proposed by Staff and direct the Company to file revised tariff pages with an effective date of August 25, 2021.

**John Borkoski**  
John Borkoski, P.E.,  
Chief Engineer  
Engineering Division

**Lloyd J. Spivak**  
Lloyd Spivak,  
Deputy Staff Counsel

**Benjamin Baker**  
Benjamin Baker, Director  
Telecommunications,  
Gas and Water Division

Commission Action on \_\_\_\_\_:

Approved \_\_\_ Disapproved \_\_\_ Accept for Filing \_\_\_

cc: H. Robert Erwin, Jr., General Counsel  
Andrew S. Johnston, Executive Secretary  
Ryan C. McLean, Chief Public Utility Law Judge  
Stephanie Bolton, Director, Consumer Affairs Division  
Tori Leonard, Director of Communications

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**Comments of the Telecommunications, Gas and Water Division and the Engineering Division (TG-458)**

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**Summary of Filing**

On June 4, 2021, BGE filed tariff revisions in order to offer a RNG interconnection service under proposed Schedule RNG. BGE has proposed new tariff pages under Renewable Natural Gas – Schedule RNG and proposed revised tariff pages under its Gas Supplier Tariff. Customers under Schedule RNG would be able to supply RNG onto BGE’s distribution system through an interconnection agreement. BGE’s proposed Schedule RNG establishes gas quality standards that must be met by RNG producers, sets forth the terms and conditions of the interconnection service, describes the process that must be completed before RNG producers are able to connect to the Company’s distribution system, and shows the Company’s proposed rates to be charged for the interconnection service.

**Applicable Law**

Under Section 4-202 of the Public Utilities Article (“PUA) of the Annotated Code of Maryland, a Public Service Company must file a tariff schedule with the Commission that contains the Public Service Company’s rates and charges for regulated services.

Under PUA 4-203(a), a Public Service Company may not establish a new rate or change in rate unless the Public Service Company:

1. provides to the Commission notice of the new rate or change in rate at least 30 days before the new rate is established or the current rate is changed; and
2. publishes the new rate or change in rate in accordance with § 4-202 of this subtitle during the entire 30-day notice period in new schedules or plainly indicated amendments to existing schedules.”

**Renewable Natural Gas (“RNG”)**

Renewable natural gas (“RNG”) originates as biogas which is defined by the U.S. Energy Information Administration (“EIA”) as, “an energy-rich gas produced by anaerobic decomposition or thermochemical conversion of biomass.”<sup>1</sup> According to the U.S. Environmental Protection Agency (“EPA”), biogas can be harvested from an array of different sources, such as: municipal solid waste landfills, wastewater treatment plants,

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<sup>1</sup> “Biomass Explained – *Landfill gas and biogas*,” United States Energy Information Administration, November 4, 2020, <https://www.eia.gov/energyexplained/biomass/landfill-gas-and-biogas.php>.

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livestock farms, food production facilities and organic waste management operations.<sup>2</sup> Biogas is composed of methane, carbon dioxide, and trace amounts of other gases.<sup>3</sup> In order for biogas to become interchangeable with natural gas in a distribution pipeline, the biogas must be treated to remove the carbon dioxide and several other gases.<sup>4</sup> Once biogas has been upgraded to pipeline-quality, it is considered renewable natural gas. Benefits of RNG cited by the U.S. EPA include: fuel diversity benefits, economic benefits, local air quality benefits, and greenhouse gas emission reductions.<sup>5</sup>

**Analysis**

In order to fully review the Company’s filing, analysts from the Telecommunications, Gas, and Water (“TGW”) Division and the Engineering Division evaluated the filing. The TGW Division evaluated the tariff parameters and cost recovery while engineering evaluated the RNG standards.

***The Telecommunications, Gas, and Water Division***

**Section 1 “Availability”**

Section 1 of the Company’s proposed Schedule RNG tariff outlines the general availability criteria for customers that wish to supply RNG onto BGE’s distribution system (“system”). Under the proposed language, Schedule RNG is available to customers that have signed and executed an Interconnection Agreement with the Company and are required to deliver gas on BGE’s system for a minimum of (1) year. Additionally, the terms required for termination of the agreement and the maximum volume of RNG BGE will accept from the RNG Customer, will be outlined in the Interconnection Agreement. Finally, BGE requires payment from the RNG Customer in advance before interconnection can take place.<sup>6</sup>

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<sup>2</sup> “Renewable Natural Gas,” United States Environmental Protection Agency, July 14, 2021, <https://www.epa.gov/lmop/renewable-natural-gas>.

<sup>3</sup> “Biomass Explained – *Landfill gas and biogas*,” United States Energy Information Administration, November 4, 2020, <https://www.eia.gov/energyexplained/biomass/landfill-gas-and-biogas.php>.

<sup>4</sup> “Renewable Natural Gas,” United States Environmental Protection Agency, July 14, 2021, <https://www.epa.gov/lmop/renewable-natural-gas>.

<sup>5</sup> *Ibid.*

<sup>6</sup> Mail Log No. 235636, Attachment A, Renewable Natural Gas – Gas Schedule RNG, p. 65.

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Staff agrees with the language proposed in Section 1 “Availability”. Staff believes that under this section, BGE’s existing ratepayers would not be responsible for bearing the costs associated with the early termination of interconnection to an RNG Customer, due to the upfront payment. The minimum of (1) year contract term is also consistent with BGE’s existing Term of Contract provisions in its Schedule ISS,<sup>7</sup> Schedule IS,<sup>8</sup> and Schedule EG tariffs.<sup>9</sup>

Section 2 “Rate Table”

The Company outlines its proposed rates for RNG Customers for each effective rate year (2021-2023) of its Multi-Year Rate Plan (“MYP”). There are two proposed rates: (1) a monthly information fee of \$65 and (2) a monthly customer charge of \$2,925 for each effective rate year.<sup>10</sup> The Information Fee “is a standard fee applied to all customers and marketers who have access to the Company’s electronic bulletin board.”<sup>11</sup>

BGE states that the \$2,925 Schedule RNG customer charge “is cost-based and designed to recover costs BGE reasonably expects to incur associated with operating and maintaining the interconnection equipment.”<sup>12</sup> According to BGE, the proposed charge is not designed to provide a return to Exelon shareholders, but to recover ongoing operations and maintenance (“O&M”) expenses that are associated with RNG interconnection service.<sup>13</sup> The customer charge is calculated by using estimated annual costs for labor and equipment, which will not vary with the amount of RNG supplied onto BGE’s system, meaning the costs are considered fixed.<sup>14</sup> The Company also states that the RNG Customer charge will be reset to the level the Company believes is necessary based on actual costs, and that the Company plans to propose any necessary changes to the proposed customer charge in its next base rate case.<sup>15</sup>

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<sup>7</sup> Baltimore Gas and Electric Company – Gas, Schedule ISS, Filed May 26, 2015 – Effective July 1, 2015, p. 63.

<sup>8</sup> Baltimore Gas and Electric Company – Gas, Schedule IS, Filed May 26, 2015 – Effective July 1, 2015, p. 52.

<sup>9</sup> Baltimore Gas and Electric Company – Gas, Schedule EG, Filed Dec. 28, 2019 – Effective Dec. 17, 2019, p. 64-L.

<sup>10</sup> The proposed tariff states “[t]he Customer Charge shall recover all expenses associated with operating and maintaining the Company’s facilities to interconnect and provide service under this Schedule.”

<sup>11</sup> BGE Response to Staff DR 4-4.

<sup>12</sup> *Ibid.*

<sup>13</sup> Company Response to OPC Data Request 1-1(d).

<sup>14</sup> BGE Response to Staff DR 1-12. and BGE Response to Staff DR 5-9.

<sup>15</sup> BGE Response to Staff DR 5-3 and BGE Response to OPC DR 1-1(b) and (c).

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Since this is a new schedule, Staff believes estimated costs are appropriate to calculate the customer charge, for the time being. Staff agrees that in the future these costs should be based on actual cost and recommends updating the rider based on actual costs in the next rate case once actual costs to serve these customers are known. After the initial case, the costs associated with the proposed customer charge should be updated regularly to ensure the charges continue to reflect actual costs, to correct for any significant changes in costs, or if multiple RNG Customers interconnect to BGE's system. Staff proposes that the rates be revised every three years to align with the MYP, subject to modification as necessary.

Since BGE predicts about \$35,100 to operate and maintain BGE's equipment which is recovered in the customer charge.<sup>16</sup> Staff does not believe that any imbalance resulting from updating the customer charge costs from estimates to actuals will be large enough to meaningfully impact the rates of BGE's other customers at this time. However, this can be validated in BGE's next base rate case proceeding.

Section 2.1 "Extension Provision"

In this section of BGE's proposed tariff, each RNG Customer is required to pay the Company in advance for all the estimated costs deemed necessary to effectuate and maintain the interconnection, as outlined in the Interconnection Agreement.<sup>17</sup> If there is a difference in what was paid, the customer will either have to pay the extra costs or will receive a refund. Also, the customer will pay if there are future costs to the facilities to ensure safety and reliability such as required repairs, upgrades, modifications, or replacements. In the event these future costs are not paid for by the RNG Customer, the Company has the ability to deny the RNG Customer service under this section.

Additionally, this section gives BGE permission to install the necessary equipment on the RNG Customer's property if it is only for the Customer's use, and states that the Customer will procure all required rights of ways.<sup>18</sup> If the customer wants gas service, then Section 8 "Extensions" of the Company's Gas Service Tariff also applies to RNG Customers which is also applicable to the Company's Rate Schedules IS,<sup>19</sup> ISS,<sup>20</sup> and EG.<sup>21</sup>

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<sup>16</sup> BGE Response to Staff DR 1-12.

<sup>17</sup> Mail Log No. 235636, Attachment A, Renewable Natural Gas – Gas Schedule RNG, p. 65.

<sup>18</sup> *Ibid.*

<sup>19</sup> Gas- Baltimore Gas and Electric Company, Schedule IS, Filed Oct. 31, 2017 – Effective Dec. 1, 2017, p. 48.

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When asked if there could be a situation where costs would not be covered by the RNG customer, BGE responded that the Company believes all costs associated with the interconnection should be borne by the RNG Customer and not by the BGE's other ratepayers. BGE has stated the tariff, "is designed so that other BGE customers do not bear the costs of providing BGE interconnection service."<sup>22</sup> BGE states it has incentives to control costs because, "BGE always has and still retains under this proposed tariff the obligation to demonstrate its costs are prudently incurred."<sup>23</sup>

Staff agrees that RNG Customers should bear the costs associated with interconnection to BGE's distribution system. However, Staff was concerned with BGE's initial response to its question regarding if there could be a situation where a cost caused by BGE would ever be covered by BGE and not an RNG Customer under the language in this section.<sup>24</sup> Based on the proposed tariff language, it appears there is not a situation where existing ratepayers would be required to pay these costs, except where an interconnecting RNG Customer fails to pay BGE after the equipment has been installed. However, to the extent there are stranded costs due to a customer inability or refusal to pay Staff believes that this issue could be dealt with if BGE seeks recovery of the stranded costs in a rate case.

Section 3.4 "Temporary Discontinuance of Gas Receipt"

Section 3.4 of BGE's proposed Schedule RNG tariff outlines the terms of temporary discontinuance of gas receipt including the process<sup>25</sup> between BGE and the Supplier to stop and restart service. Under this section, BGE holds the authority to discontinue the receipt of gas from a RNG Customer if the customer is found to be non-compliant with BGE's Gas Quality Standards, if there is an imminent safety risk involved, scheduled maintenance, construction or repair, or "whenever the Company reasonably determines it

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<sup>20</sup> Gas - Baltimore Gas and Electric Company, Schedule ISS, Filed Oct. 31, 2017 – Effective with service rendered on or after Dec. 1, 2017, p. 59.

<sup>21</sup> Baltimore Gas and Electric Company – Gas, Schedule EG, Filed Dec. 18, 2019 – Effective Dec. 17, 2019, p. 64-H.

<sup>22</sup> BGE Response to Staff DR 4-3(a) and Staff Data Request 5-1.

<sup>23</sup> BGE Response to Staff DR 4-3(b).

<sup>24</sup> BGE Response to Staff DR 4-3(a).

<sup>25</sup> Procedural requirements include both the Customer and BGE notifying and working with each other if there are emergency conditions and to return to normal operations, BGE must give the Customer five days notice for maintenance related work, that there must be one test of RNG before restarting the system, and that the Customer will pay if BGE crews are required on site to restart RNG injection.



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is necessary to maintain System integrity.”<sup>26</sup> Staff agrees with the language proposed in this section regarding BGE’s authority to temporarily discontinue RNG delivery where there could potentially be significant safety risks involved or if it is necessary to maintain equipment.

In the event of a temporary discontinuance, the RNG Customer will still be charged the applicable customer charge and information fee. Staff agrees with this provision since the rates are derived from fixed costs associated with interconnection and will not vary with the amount of RNG supplied to BGE’s system.<sup>27</sup> The terms of this section also permit BGE and the RNG Customer to negotiate restart terms within their interconnection agreement which is reasonable to permit flexibility for different systems and must be agreed to between the parties.

As required by Section 4 of the proposed tariff, which is discussed next, the RNG Customer will be required to have an RNG supplier or become an RNG supplier to sell the RNG to ratepayers. The supplier will be required to adhere to all the requirements of a third-party natural gas supplier purchasing gas on behalf of customers on BGE’s system. Due to this requirement, the supplier will be responsible for providing gas to customers even in situations where BGE has disconnected the RNG Production Facility from the system.<sup>28</sup> The RNG Customer is a gas resource directly connected to BGE’s system. Therefore, it is appropriate for there to be someone to be in control of purchasing and selling of the gas if it is not the RNG Customer. Staff’s main concern with this provision is that this source of gas has the potential to be cut-off by BGE for a variety of reasons outside of the gas supplier’s control that could impact a gas supplier’s ability to make deliveries to customers, especially if the outage is with short notice or is a long maintenance outage. Failure to make deliveries may have consequences to the supplier’s ability to continue to operate as a licensed supplier in Maryland.<sup>29</sup>

To remedy this potential concern Staff proposes two modifications: (1) in section 3.4 add a requirement that “BGE will inform the Renewable Gas Authorized Marketer/Licensed Supplier at the same time it notifies the Customer of conditions warranting a disconnection of service or upcoming scheduled maintenance, construction, or repairs” and (2) add a requirement that “disconnections of RNG supply under this tariff with little

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<sup>26</sup> ML. 235636, Attachment A, Renewable Natural Gas – Gas Schedule RNG, p. 65-D.

<sup>27</sup> BGE Response to Staff DR 5-9.

<sup>28</sup> BGE Response to Staff DR 4-2 (b). BGE refers to Gas Supplier Tariff sections 2.2 & 2.6.

<sup>29</sup> See Gas Supplier Tariff sections 2.7, 2.12, and 3.4.4.

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to no notice to the Renewable Gas Authorized Marketer/Licensed Supplier, may constitute a Force Majeure event under BGE’s Appendix B, Gas Supplier Tariff.”

These two requirements ensure that the supplier is informed of a potential interruption to their gas service due to BGE, such that they can take the appropriate action and it also gives the supplier some protection if the supply of gas to its customer is suddenly cut off. Staff did not recommend protections at this time for notices from BGE to the supplier given in advance, under the assumption that suppliers today likely have to respond to changes in their available gas supply; that the supplier who chooses to participate under the RNG tariff should be aware of the risks associated and plan accordingly; and in situations where the supplier has reasonable cause, the supplier tariff has a provision whereby they could petition the Commission in order to challenge BGE’s actions if they believe there is something unfair in their application.<sup>30</sup>

Section 4 “RNG Commodity”

As previously discussed, this section requires a RNG Customer to either use a gas supplier or become a gas supplier to schedule gas on BGE’s system. The scheduling of RNG will be subject to BGE’s Gas Supplier Tariff. RNG Customers are only allowed to contract with one gas supplier at a given time. The Company states that currently, all BGE customers are limited to one supplier at a time.<sup>31</sup> BGE has stated that it, “may limit the number of suppliers to which RNG can be allocated.”<sup>32</sup> BGE has stated that although the RNG Customer may only contract with one gas supplier at a time, the supplier may sell RNG to others on BGE’s distribution system. Additionally, “Due to the current configurations of IT systems, BGE may limit the number of other suppliers the RNG Marketer sells to.”<sup>33</sup>

Staff does not oppose Section 4 “RNG Commodity” at this time. However, Staff views the one supplier limit imposed by BGE as constricting to a potential competitive market. Staff realizes that BGE may have limitations due to its IT system configuration and feels that it is appropriate to limit the number of RNG Suppliers/Marketers that RNG Customers can contract with at this time. However, as the RNG market continues to evolve it may be appropriate to change this, and Staff recommends that in BGE’s next base rate case proceeding, BGE provide a cost benefit analysis of potentially upgrading its system to allow RNG Customers to contract with multiple RNG Suppliers.

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<sup>30</sup> See Gas Supplier Tariff section 2.4.

<sup>31</sup> BGE Response to Staff DR 4-5(a).

<sup>32</sup> Mail Log No. 235636, Attachment A, Renewable Natural Gas – Gas Schedule RNG, p. 65-E.

<sup>33</sup> BGE Response to Staff DR 4-5(c).



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Section 4.1 “Balancing”

BGE must ensure the volumes of natural gas coming into its distribution system are in balance such that the amount of gas delivered from the interstate pipeline, or from the RNG Customer, into its distribution system is sufficient for use by all customers. In the event that the gas volumes delivered exceed BGE’s limit, the excess gas must be taken off the interstate pipeline and put into storage at a cost to BGE. If there is too little gas scheduled for delivery, BGE must supplement the total gas requirement for that day either from sources such as storage or the spot market.

Section 4.1 in BGE’s proposed Schedule RNG tariff states that to the extent that a RNG Customer under this rate schedule has contracted with an RNG Authorized Marketer/Licensed Supplier, the balancing provisions in the Company’s Gas Supplier Tariff and BGE’s other rate schedules will apply.

Staff agrees with the balancing provisions referenced in Section 4.1. The RNG Customer is a supply source going into BGE’s system through a third-party supplier, so it is appropriate for the balancing provisions for licensed suppliers and customers to apply when the gas is being transported in such a manner.

Section 4.2 “Buyer of Last Resort”

In this section, BGE requires that the gas supplier find “end users for the gas” and the proposed tariff permits the supplier to sell the gas to BGE as a buyer of last resort (“BOLR) on a month-to-month basis if notice is given to BGE at least 3-days prior to the beginning of the month. If notice is not given in that time BGE “will purchase the RNG on a best-efforts basis.”<sup>34</sup> If BGE becomes the BOLR, it will purchase the RNG produced for that month at 90% of the Company’s City Gate Index for that month. BGE’s City Gat Index is determined under Rider 2 and aids in determining the BGE’s Market Gas Commodity Price.<sup>35</sup>

BGE stated it determined this purchase price in order to provide a fair price to the RNG Customer while also protecting other BGE customers from paying more for their gas commodity than they would had BGE purchased the gas from one of its traditional

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<sup>34</sup> Mail Log No. 235636, Attachment A, Renewable Natural Gas – Gas Schedule RNG, p. 65-F.

<sup>35</sup> Rider 2 is BGE’s Gas Commodity Price. According to page 85 of BGE’s current tariff, “The Gas Commodity Price procedure establishes gas prices based on the market price for gas at BGE’s City Gate.”

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sources.<sup>36</sup> It is Staff’s understanding that no analysis was performed to develop this number. Since the Company is offering to purchase the RNG producer’s gas at 90% of the price of its City Gate Index price, there is the potential that BGE would be paying less for the gas than it normally would otherwise, though this would be determined in BGE’s purchased gas case. Additionally, BGE’s suppliers are required to nominate volumes of gas they will supply onto BGE’s system three days before the next month, and BGE’s City Gate Index price is published the second day of the month. Therefore, the RNG suppliers would make the decision to sell its gas to BGE without knowing the City Gate Index in advance.

Staff has some concerns with Section 4.2 “Buyer of Last Resort”. Staff believes that BGE has attempted to mitigate the possibility of price arbitrage by offering to be the BOLR and purchase the RNG Customer’s gas at a 10% discount of the City Gate Index. Staff still believes there is a risk that ratepayers may pay more than necessary under this approach, as there are other factors that impact BGE’s gas costs. Additionally, this is a tariff and not a special contract, meaning these terms are available to all RNG Customers. If a large volume of gas starts being provided under this provision, then this could have implications for the cost of BGE’s gas since the price is not coming through a normal market mechanism and BGE’s system would have to be able to take the gas due to the obligatory nature of the tariff.

To track this issue, Staff recommends that in BGE’s future purchased gas cost proceedings, Case No. 9500, the number of suppliers using this provision by month, the terms by supplier by month, and the associated cost per month be filed with the Commission to track the cost to BGE’s ratepayers to determine if RNG customers are using these provisions as last resort options or are engaging in price arbitrage, and recommend adjustments if necessary. Staff also recommends the second sentence of the BOLR section be revised to read:

“To ensure the RNG stays on BGE’s system, BGE will act as the Buyer of Last Resort on a month-to-month basis if the Customer or their Renewable Gas Authorized Marketer provides notice to the Company three (3) days prior to the beginning of the month and BGE’s determines its system can take delivery of the gas.”

Sections 4.2(a) and (b) apply to RNG Customers only if their accumulated imbalance between their nominated gas volumes and their actual metered deliveries sold to BGE is over 1,000 dekatherms (“Dth”). If the RNG Customer’s accumulated imbalance is over

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<sup>36</sup> BGE Response to Staff DR 4-1.

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the limit, BGE will purchase the over-tendered imbalance at either the Gas Commodity Price or 90 percent of the lowest Transcontinental Gas Pipeline Corporation (“Transco”) Zone 6 (non-New York) price for the current month, whichever is lowest. If the RNG Customer’s accumulated balance is under the limit, BGE will purchase the under-tendered imbalance at the higher of the Gas Commodity Price or 110% of the highest Transco Zone 6 (non-New York) price for the current month, excluding during periods of an interruption for system distribution reasons or Gas Production Days.<sup>37</sup>

Staff agrees with BGE’s proposed terms for over-tendered and under-tendered imbalances since the costs align with penalties for Schedules C, IS, and ISS for Accumulated Imbalance Measures on non-peak shaving days. The 1000 Dth threshold matches one of the two thresholds for Comprehensive Balancing Service, but does not match the threshold that triggers the corrective measures for the Self Balancing Option under Schedules C, IS, and ISS. Since this is a situation where the balancing is being controlled by the RNG Customer Staff believes it makes sense to require a combination of the two, and recommends that the requirement be revised:

“At any time, the Customer’s accumulated imbalance between nominations and actual metered deliveries sold to BGE exceeds 1,000 Dth, or 20 percent of the Customer’s average daily nomination for the 5 highest of the preceding 7 day nominations, the following Accumulated Imbalance Corrective Measures apply:”

Section 5 “Miscellaneous”

Section 5 of the Company’s proposed Schedule RNG tariff states that the RNG Customer is responsible for ensuring that the RNG that is produced by the RNG Production Facility is consumed by an end user on BGE’s distribution system. In order for the RNG Customer to transport RNG off of BGE’s distribution system through interstate pipelines, the RNG Customer is required to obtain approval from the Federal Energy Regulatory Commission (“FERC”). Additionally, the RNG Customer is responsible for all volumes of RNG under the contract until the RNG is delivered to BGE at the point of interconnection and satisfies all quality requirements as agreed upon.

Staff finds no issue with Section 5 “Miscellaneous.” Staff agrees with the requirements set forth that put the onus on the RNG Customer to obtain FERC approval to transport gas on interstate pipelines, since it is the RNG Customer causing the need for such actions in the first place. The RNG Customer should be responsible for all gas on their side of the system and for meeting the required gas quality standards.

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<sup>37</sup> ML. 235636, Attachment A, Renewable Natural Gas – Gas Schedule RNG, p. 65-F.

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Section 6 “General Terms”

Section 6 of BGE’s proposed Schedule RNG tariff includes the general terms associated with Schedule RNG. These terms include: Minimum Charge, Late Payment Charge, Payment Terms, Term of Contract with BGE, and Metering Equipment.

Staff finds no issue with the general terms proposed by BGE. The Minimum Charge, Late Payment Charge, Payment Terms, and Term of Contract with BGE terms are the same as the General Terms specified in the Company’s Schedule ISS tariff. The Metering Equipment term states that BGE will install, maintain, and operate the interconnection equipment necessary to determine the volume of gas that is delivered to BGE’s distribution system from the RNG Customer. Staff believes this is necessary in order for BGE to properly meter the RNG Customer’s gas deliveries.

Section 7 “Definitions”

Section 7 of BGE’s proposed Schedule RNG tariff includes definitions for terms used throughout the tariff. This includes: Emergency Condition, Interconnection Agreement, Interconnection Equipment, Licensed Supplier, Renewable Natural Gas (RNG), Renewable Gas Authorized Marketer, and Renewable Natural Gas Production Facility.

Staff recommends the term “Licensed Supplier” be integrated into “Renewable Gas Authorized Marketer” and removed from the definitions and replace it throughout the tariff with “Renewable Gas Authorized Marketer” as appropriate. A “Renewable Gas Authorized Marketer” must be a licensed third-party supplier so the duplicative use of the two in the tariff appears unnecessary. The revised definition should read:

“Renewable Gas Authorized Marketer: The RNG customer or a third party that has been authorized by the Customer to take possession of the RNG and be responsible for the sale and scheduling to end users on BGE’s system. The Authorized Marketer must be a licensed supplier of natural gas that has been licensed by the Commission to sell natural gas to retail Customers within the State of Maryland in BGE’s service territory.”

Staff finds no issue with the definitions otherwise in Section 7 and finds they are pertinent in the context of the tariff.

Section 8 “Riders Applicable”

Under Section 8, BGE states that the current riders that are applicable to Schedule RNG are Rider 9 Demonstration and Trial Installations and Rider 10 Billing in the Event of a Service Interruption.

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Staff finds no issue with Section 8 “Riders Applicable” as these riders are preexisting and are applicable to BGE’s other customers.

Gas Supplier Tariff Revisions

In addition to filing new tariff pages for Schedule RNG, BGE also filed revised tariff pages for its Gas Supplier Tariff. These revisions include: (1) updating the definition of “City Gate” to include interconnection at a renewable natural gas production facility, (2) updating the definition for “Gas Supplier or Supplier” to include renewable natural gas, (3) including a definition for “Renewable Natural Gas” as defined in Section 7 of Schedule RNG, and (4) updating Section 2.8 “Gas Quality Standard” to include the quality standards set forth in Schedule RNG. Staff finds no issue with the modifications made to the Company’s Gas Supplier Tariff. With the exception of “City Gate” these revisions are relatively non-substantive and are consistent with the definitions proposed in Schedule RNG.

“City Gate” is used approximately 20 times in BGE’s supplier tariff. With the modification of the definition, the supplier taking gas from a RNG facility to deliver to customers is subject to all the balancing, delivery, penalty, and collateral rules associated with getting the appropriate amount of gas to a BGE City Gate. Staff notes under section 2.10 of the gas supplier tariff that if BGE determines there are usage reconciliations to City Gate deliveries for a gas supplier that cannot be completed in a reasonable amount of time that they will be financially reconciled using the City Gate Index in Rider 2, unmodified. Since BGE has made it explicitly clear in the tariff that they will purchase gas as the BOLR at a discount, it may be appropriate to have the same provision for section 2.10 of the gas supplier tariff. Staff has not recommended it at this time because it is a subjective measure that BGE controls if a financial reconciliation is necessary.

***Engineering Division***

Gas Quality Standards are specifications meant to ensure that the Renewable Natural Gas (“RNG”) entering the system will be interchangeable with the natural gas that the Company distributes and will not damage Company or other customers’ equipment. To our knowledge, prior to 2021 no gas utility has filed an RNG tariff in Maryland. Several states such as New York, Pennsylvania and New Jersey have RNG regulations which address gas quality, among other things. At this time Maryland does not have RNG regulations. However, Maryland does have experience with equipment damage due to

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poor quality gas. As documented in Case No. 9035,<sup>38</sup> Washington Gas Light Company experienced a significant increase in gas leaks in Prince George’s County Maryland beginning in the fall of 2003 due to gas quality issues with Liquefied Natural Gas (“LNG”) injected into natural gas pipelines at Cove Point in Calvert County. Therefore, it is important to maintain RNG gas quality specifications in tariffs sufficient to avoid a similar adverse outcome.

The BGE RNG tariff covers only one Biomass source, food waste. This will require BGE to revise its RNG tariff gas quality standard for other feedstocks in the future. Regardless of the limited scope of BGE’s RNG tariff, it is very important to understand the basis for BGE’s gas quality tariff proposal, to ensure that the proper balance exists between meeting minimum requirements to ensure RNG will be interchangeable with the natural gas that the Company distributes and will not damage Company or other customers’ equipment, but also not so onerous as to be considered an unreasonable expectation by a natural gas RNG supplier. Accordingly, for reasons explained later, Staff’s research on RNG minimum requirements concludes that the Northeast Gas Association (“NGA”) and the Gas Technology Institute (GTI) Interconnect Guide for Renewable Natural Gas (RNG) appears to be a best practice for minimum guidelines. In addition to the minimum specified limits in the NGA/GTI Interconnect Guide for Renewable Natural Gas, it is also noted that gas received into Buyer’s pipeline system shall be pipeline quality and as such remain commercially free of objectionable materials and merchantable as defined in latest edition of AGA Report 4A "Natural Gas Contract Measurement and Quality Clauses". Staff therefore took into consideration the AGA Report 4A in the review and analysis of BGE’s RNG tariff. Table Nos. 1 and 2 below highlight gas quality differences between the NGA/ GTI Interconnect Guide and BGE’s proposed tariff.

**Table No. 1 - BGE Tariff Requirements vs. NGA/GTI Minimum Standards**

NGA/GTI Specification	Parameter	NGA/GTI Minimum Standard		BGE Tariff Requirements	
		Max	Min	Max	Min
	Heat Content (BTU/scf)	1110	970	1070	970
	Wobbe Number* (+/- 4% from historical supply)	1400	1270	1375	1255
	Water Vapor Content (lbs./MM scf)	7		7	
	Product Gas Mercaptans	1			

<sup>38</sup> *In the Matter of the Inquiry into Natural Gas Leaks from the Washington Gas Light Company Distribution System.*



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(ppmv, does not include gas odor ants)				
Hydrocarbon Dew Point*, (°F) HDP	15		45	
Hydrogen Sulfide (grain/100 scf)	0.25 (4.12ppm)		4 ppmv	
Total Sulfur (grain/100 scf)	1(16.5ppm)		16 ppmv	
Total Diluent Gases including the following individual constituent limits:	4%		5%	
Carbon Dioxide	2%		2%	
Nitrogen	2%		3%	
Oxygen (O2)	0.40%	0.10%	0.3 % vol	
Hydrogen	0.3%	0.10%	0.1 % vol.	
Total Bacteria ( <i>If reasonably expected</i> )	≤0.2microns			
Mercury ( <i>If reasonably expected</i> )	<0.06 µg /m <sup>3</sup>		80µg/m <sup>3</sup> (0.08mg/m <sup>3</sup> )	
Other Volatile Metals (If reasonably expected)	<213 µg/ m <sup>3</sup>			
Siloxanes* - <i>type D4</i> ( <i>If reasonably expected</i> )	<0.5 mg Si/m <sup>3</sup>		5.0 mg Si/m <sup>3</sup>	
Ammonia ( <i>If reasonably expected</i> )	<10 ppm v (59 x 10 <sup>-5</sup> M)		0.001% Mol% (10 <sup>-5</sup> M )	
Non-Halogenated Semi-Volatile and Volatile Compounds (If reasonably expected)	<500 ppmv			
Halocarbons (total measured halocarbons) ( <i>If reasonably</i>	<0.1 ppmv			

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	<i>expected)</i>				
	Aldehyde/Ketones ( <i>If reasonably expected</i> )	<100 ppbv			
	PCB's*/Pesticides ( <i>If reasonably expected</i> )	<1 ppbv			
<b>Addition BGE Specification</b>	Arsenic			0.19 mg/m <sup>3</sup>	
	Copper			0.6 mg/m <sup>3</sup>	
	Propane			20% vol	
	Methane				95% vol
	Carbon Monoxide			0.1 % vol	
	Volatile Organic Compounds			5 PPM	
	RNG Delivery Temperature			120°F	50 °F

*\*see Appendix A for definition*

**Table No. 2 - BGE Tariff vs. NGA/GTI Compliance Matrix**

<b>NGA/GTI Specification</b>	<b>Parameter</b>	<b>Compliance to NGA/GTI Minimum Requirement</b>	<b>Comments</b>
		Heat Content	Yes
	Wobbe Number*	No	BGE has a lower minimum Wobbe number standard than NGA/GTI
	Water Vapor Content	Yes	Within requirement limits
	Product Gas Mercaptans	No	No specification for BGE
	Hydrocarbon Dew Point*(H DP)	No	BGE HDP higher than NGA/GTI
	Hydrogen Sulfide	Yes	Within requirement limits
	Total Sulfur	Yes	Within requirement limits
	Total Diluent Gases	No	BGE has a higher maximum limit

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	Carbon Dioxide	Yes	Within requirement limits
	Nitrogen	No	BGE has a higher maximum limit
	Oxygen (O2)	Yes	Within requirement limits
	Hydrogen	Yes	Within requirement limits
	Total Bacteria ( <i>If reasonably expected</i> )	No specification for BGE	See BGE rationale for this parameter in Table No. 3
	Mercury( <i>If reasonably expected</i> )	No	BGE has a higher maximum limit.
	Other Volatile Metals ( <i>If reasonably expected</i> )	No specification for BGE	See BGE rationale for this parameter in Table No. 3
	Siloxanes* - <i>type D4 (If reasonably expected)</i>	No	BGE has a higher maximum limit
	Ammonia	Yes	Within requirement limits
	Non-Halogenated Semi-Volatile and Volatile Compounds	No specification for BGE	See BGE rationale for this parameter in Table No. 3
	Halocarbons (total measured halocarbons) ( <i>If reasonably expected</i> )	No specification for BGE	See BGE rationale for this parameter in Table No. 3
	Aldehyde/Ketones ( <i>If reasonably expected</i> )	No specification for BGE	See BGE rationale for this parameter in Table No. 3
	PCB's*/Pesticides ( <i>If reasonably expected</i> )	No specification for BGE	See BGE rationale for this parameter in Table No. 3
<b>Addition BGE Specification</b>	Arsenic	NA	BGE specified Tariff Requirement
	Copper	NA	BGE specified Tariff Requirement
	Propane	NA	BGE specified Tariff Requirement
	Methane	NA	BGE specified Tariff Requirement
	Carbon Monoxide	NA	BGE specified Tariff Requirement
	Volatile Organic Compounds	NA	BGE specified Tariff Requirement
	RNG Delivery Temperature	NA	BGE specified Tariff Requirement

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In order to understand if BGE’s RNG proposal satisfies minimum standards for gas quality that are not unreasonable for RNG suppliers, Staff asked BGE to explain in detail the rationale for any differences between BGE’s proposed tariff and the NGA/ GTI Interconnect Guide. Table No. 3 below shows selected BGE discovery responses for the BGE gas quality specifications that were not in compliance with the NGA/GTI quality standard. The BGE discovery responses column in Table No. 3 below provides BGE’s rationale for the differences between the Company’s proposed tariff and the NGA/ GTI Interconnect Guide for that parameter. The rationale for BGE’s additional tariff requirements (beyond the minimum NGA/GTI standard) is also included, in the additional BGE requirement section. The complete BGE discovery responses are contained in the attachment.

**Table No. 3 - Selected BGE Discovery Responses**

	<b>Parameter</b>	<b>BGE Discovery Response (Staff DR No. 2)</b>
<b>NGA/GTI Specification</b>	Wobbe Number*	The source used by BGE is the same NGA/GTI Guide, and also going through the gas quality standards established by other LDCs that have successfully accepted RNG on to their systems. Additionally, BGE held extensive discussions with the future Schedule RNG customer to evaluate the properties of the RNG expected to be produced properties The current Wobbe Numbers accepted by BGE on existing natural gas intake were also considered. ( <i>See Staff DR2-1b.</i> )
	Product Gas Mercaptans	BGE will be responsible for odorizing the RNG with Mercaptan, hence no standard was proposed. ( <i>See Staff DR2-1c.</i> ) Although the NGA/GTI minimum standard is a Product Gas Mercaptans requirement limit of 1 PPMV that does not include gas odorants, Staff has agreed with BGE that since they are responsible for odorizing the RNG, Staff will not propose the NGA/GTI minimum standard for Product Gas Mercaptans.
	Hydrocarbon Dew Point*	BGE has set the RNG delivery temperature at minimum 50 degrees F, avoiding any chances of condensation of a gas or vapor ( <i>See Staff DR2-1d.</i> )

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Total Diluent Gases	There is no indication that the forthcoming Schedule RNG customer will add any nonhydrocarbon components to reduce the heating value of gas. Also, we realized with oxygen and air, the inert gas such as Nitrogen is included coming from air composition. (See Staff DR2-1g.)
Nitrogen	BGE’s requirement of 3% falls within the range of 1 – 4% set forth in Table 5.1 of AGA Report No. 4A, Natural Gas Contract Measurement and Quality Clauses. (See Staff DR2-1h.)
Total Bacteria ( <i>If reasonably expected</i> ) [Commercially Free]	Upstream particulate filtration within the facility of the forthcoming Schedule RNG customer is designed at the 0.1 micron level; therefore BGE expects total bacteria to be well-controlled prior to introduction to the gas distribution system. Gas samples may be analyzed by a 3rd party laboratory to determine the levels of bacteria present in the RNG. (See Staff DR2-1j.)
Mercury ( <i>If reasonably expected</i> )	BGE reviewed the Mercury standards established by Northwest Natural and CenterPoint Energy and determined that .08 is an acceptable limit and provides some flexibility to Schedule RNG customers.(See Staff DR2-1k.)
Other Volatile Metals ( <i>If reasonably expected</i> )	As the source material of the forthcoming Schedule RNG customer is biological and not landfill waste, no metals are involved. (See Staff DR2-1l.)
Siloxanes* - type D4 ( <i>If reasonably expected</i> )	The product of forthcoming Schedule RNG customer will contain a low level of Siloxanes as there is no landfill waste used, only biological materials will be used. Siloxanes are typically found in soap, deodorants, and other health care products. (See Staff DR2-1m.)
Non-Halogenated Semi-Volatile and Volatile Compounds ( <i>If reasonably expected</i> )	Non-Halogenated Semi-Volatile and Volatile Compounds would be found in waste streams containing metals and building materials. The source material of the forthcoming Schedule RNG customer is biological and not landfill waste. (See Staff DR2-1o.)

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	Halocarbons (total measured halocarbons) ( <i>If reasonably expected</i> )	Halocarbons are Organic compounds often used in disinfectant solutions, or as refrigerant gases in air conditioning and other cooling equipment. The source material of the forthcoming Schedule RNG customer is biological and not landfill waste. ( <i>See Staff DR2-1p.</i> )
	Aldehyde/Ketones ( <i>If reasonably expected</i> )	Aldehyde/Ketones are Organic compounds that can be found in waste streams containing building materials. The source material of the forthcoming Schedule RNG customer is biological and not landfill waste. ( <i>See Staff DR2-1q.</i> )
	PCB's*/Pesticides ( <i>If reasonably expected</i> )	The source material of the forthcoming Schedule RNG is biological and not landfill where oil contaminants with PCBs might be found. ( <i>See Staff DR2-1r.</i> )
<b>Addition BGE Specification</b>	Arsenic	Arsenic compounds are used in agricultural chemicals such as pesticides, herbicides, and insecticides, which may generate acids damaging to our pipes. The standards set by other gas utilities and NGA/GTI guide were the sources for BGE's Tariff requirement. ( <i>See Staff DR2-1s.</i> )
	Copper	BGE was guided by successful RNG projects by other gas utilities, as well as the NGA/GTI Guide. ( <i>See Staff DR2-1t.</i> )
	Propane	BGE operates a propane-air peak shaving facility (Notch Cliff) which blends propane into the natural gas system when used for peak shaving. The propane mixture threshold in the quality standard proposal is consistent with the parameters of the operation of the Notch Cliff facility. ( <i>See Staff DR2-1u.</i> )
	Methane	BGE has methane levels to be met on the natural gas delivery and was also guided by successful RNG projects by other gas utilities. ( <i>See Staff DR2-1v.</i> )
	Carbon Monoxide	Carbon Monoxide levels impact the Wobbe Number of the gas product mixture, which may impact the heating value. The source of BGE's requirement is AGA Report No. 4A, Section 4.2.8 Interchangeability Parameters & Wobbe Number.



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		(See Staff DR2-1w.)
	Volatile Organic Compounds	The digestion process of the biological material to be used by the forthcoming Schedule RNG customer can be expected to generate levels of Volatile Organic Compounds. BGE looked to other successful utilities RNG projects for the source of this standard. (See Staff DR2-1x.)
	RNG Delivery Temperature	BGE determined its proposed Delivery Temperature requirements after consultations with the Company’s Gas Control unit. The upper limit of temperature is required to protect the integrity of soft parts in regulation equipment and gaskets. The lower end of the temperature requirement is to prevent a potential freezing effect during pressure reduction at the regulator equipment. (See Staff DR2-1y.)

*\*see Appendix A for definition*

Staff notes that as illustrated in Tables No. 1, 2 and 3, there are many differences between BGE’s proposed tariff and the NGA/GTI Interconnect Guide, but that further engagement on BGE’s proposed gas quality standards in its tariff would likely take several months and likely impede the connection of a RNG supplier(s). Furthermore, development of Maryland RNG standards would likely take a workgroup effort and require a rulemaking. A process that could take well over a year.

Therefore, Staff concludes that in order to reap the benefits of RNG without being an obstacle, a more flexible approach to determining gas quality standards for RNG is needed. In researching RNG to approve the BGE’s tariff application, Staff concludes a guiding policy that could be utilized in Maryland is the Federal Energy Regulatory Commission [“FERC”] Policy Statement on Natural Gas Interchangeability in Docket No. PL04-3-000. On June 15, 2006, FERC announced its policy on natural gas quality and interchangeability issues. “The Commission’s intention in issuing this statement of generic policy is to provide direction for addressing gas quality and interchangeability concerns, as well as to provide guidance to individual companies that have concerns about these issues. The [FERC] Commission’s policy embodies five principles:

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1. Only natural gas quality and interchangeability specifications contained in a [FERC] Commission-approved gas tariff can be enforced.
2. Pipeline tariff provisions on gas quality and interchangeability need to be flexible to allow pipelines to balance safety and reliability concerns with the importance of maximizing supply, as well as recognizing the evolving nature of the science underlying gas quality and interchangeability specifications.
3. Pipelines and their customers should develop gas quality and interchangeability specifications based on technical requirements.
4. In negotiating technically based solutions, pipelines and their customers are strongly encouraged to use the Natural Gas Council Plus (NGC+) interim guidelines filed with the [FERC] Commission on February 28, 2005 as a common reference point for resolving gas quality and interchangeability issues.
5. To the extent pipelines and their customers cannot resolve disputes over gas quality and interchangeability, those disputes can be brought before the [FERC] Commission to be resolved on a case-by-case basis, on a record of fact and technical review.”<sup>39</sup>

Regarding the first FERC principle noted above, Staff notes that the Public Service Commission (“Commission”) does not have jurisdiction over gas quality and interchangeability specifications under FERC jurisdiction; however, any RNG Tariffs filed under Maryland jurisdiction do require Commission acceptance and therefore, any associated gas quality and interchangeability specifications are enforceable. Therefore, any waivers of gas quality standards that are issued by a Company to an RNG supplier are also under Commission jurisdiction, unless enforcement and waiver determination are delegated to the Company in the tariff. In its tariff filing, BGE is requesting that both enforcement and waiver provisions be delegated. Staff does not object to this initial

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<sup>39</sup> See <https://rcp.com/ferc-policy-statement-on-natural-gas-interchangeability/>

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delegation of responsibility, except Staff desires that this delegation be considered conditional, subject to Staff review and intervention, if warranted.

In response to Staff DR1-5, BGE will allow deviations from gas quality standards on a case-by-case basis given advance written notice from the customer. Approval of deviations is proposed to be at the sole discretion of BGE after a review of all requested deviations to ensure they are not injurious to human safety, the environment, or pipeline facilities.

Furthermore, in response to Staff DR1-14, BGE states that Section 3.4 of the RNG Tariff describes the Company's response if the established quality standards are not met, while Section 3.5 describes what the RNG producer must do to restart the injection of RNG after discontinuance.

In each of the aforementioned scenarios, the Commission's Pipeline Safety Manager should be notified after the fact in an annual reporting requirement of each BGE approved deviations from any RNG gas quality standards, BGE ordered RNG discontinuances and BGE approved RNG restarts. Staff should not be involved in the operational decisions of BGE; but, the Commission's Pipeline Safety Manager should be provided sufficient information to be able to determine the frequency of these BGE actions to evaluate the collective operational experience of RNG suppliers under BGE's RNG Tariff. This operational information may prove valuable in determining if an intervention such as revised gas quality standards or gas quality regulations, are needed

The second and third FERC principles noted above are related. Regarding the third FERC principle, Staff desires gas quality and interchangeability specifications be based on technical requirements and to that end has requested BGE justify its proposal by indicating the standards used to develop BGE's proposal. Furthermore, regarding the second principle, Staff concludes that a flexible approach is needed for now since there are no national standards at this time.

Regarding the fourth FERC principle noted above, while FERC Natural Gas Council Plus ("NGC+") interim guidelines filed with the FERC on February 28, 2005 are suggested as a common reference point for resolving gas quality and interchangeability issues, Staff concludes that best practices have evolved since 2005 and now considers the NGA/GTI Interconnect Guide published in 2019 to be a better guideline for a common reference point for specifying gas quality and interchangeability minimum standards in Maryland. The rationale for Staff's conclusion is that this RNG minimum standard is based on collaboration between two highly reputable organizations, GTI and NGA. GTI is an

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independent technology organization that is the leading research, development and training organization addressing natural gas issues in the U.S. and the NGA is a regional trade association to promote and enhance the safe, reliable, efficient, and environmentally responsible delivery of natural gas to customers in the Northeastern US. Furthermore, the NGA/GTI Interconnect Guide is applicable to gas RNG interconnections to gas distribution systems. The NGA/GTI Interconnect Guide also used the NGC+ guidelines as a reference.

Regarding the fifth FERC principle noted above, Staff notes that BGE is proposing minimum standards for gas quality that deviates in some cases from the minimum standards in the NGA/GTI Interconnect Guide. Staff reviewed BGE's rationale for these differences (shown in Table No. 3) and questioned some of BGE's rationale where there was no study or standard to support it. Staff concludes that BGE should revise their RNG quality standard for the following gas parameters to conform with the NGA/GTI minimum quality standard with respect to Staff's RNG gas quality counterproposals a. through d. below ("Staff Counterproposal"). Staff met with BGE on August 9 to discuss Staff's counterproposal. As a result, Staff has adjusted its counterproposal to accept and reflect certain BGE explanations. Staff is still awaiting confirmation of agreement from the Company on the following items:

- a. **Wobbe Number:** BGE in their RNG tariff specified a Wobbe Number range from 1255 to 1375 as compared to the 1270 to 1400 requirement specified in the NGA/GTI standard. In response to Staff DR2-1b, BGE stated that, the source used by BGE is the same NGA/GTI Guide, and also going through the gas quality standards established by other Local Distribution Companies ("LDCs") that have successfully accepted RNG on to their systems. Additionally, BGE held extensive discussions with the future Schedule RNG customer to evaluate the properties of the RNG expected to be produced. The current Wobbe Numbers accepted by BGE on existing natural gas intake were also considered. However, the minimum Wobbe number specified by BGE is lower than the NGA/GTI requirement and other quality standards established by Northwest Natural and CenterPoint Energy which were reviewed and referenced by BGE in their discovery responses. Staff therefore, recommends BGE specify a minimum Wobbe number of at least 1270.
  
- b. **Hydrocarbon Dew Point:** BGE in their RNG tariff specified a HDP of 45 °F as compared to the NGA/GTI minimum standard requirement of 15°F. In response to Staff DR2-1d., BGE stated it has set the RNG delivery temperature at

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minimum 50°F, avoiding any chances of condensation of a gas or vapor. However, a higher HDP normally indicates a higher proportion of heavy hydrocarbon components. Thus, if the gas contains a high proportion of heavy hydrocarbons there is a greater risk of liquid condensate forming in the pipeline. The Northwest Natural and CenterPoint Energy quality standard references the California Public Utilities Commission (CPUC) gas quality standard, which specifies the HDP requirement as follows:

*For gas delivered at a pressure of 800 psig or less, the gas hydrocarbon dew point is not to exceed 45 degrees F at 400 psig or at the delivery pressure if the delivery pressure is below 400 psig. For gas delivered at a pressure higher than 800 psig, the gas hydrocarbon dew point is not to exceed 20 degrees F measured at a pressure of 400 psig.*

The stated minimum delivery temperature was also 50°F in the CPUC gas standard. BGE has a gas delivery system with multiple pressure ranges, but has not addressed the HDP for different delivery pressure ranges. Staff therefore, recommends BGE specify a HDP requirement limit of 15°F in accordance with NGA/GTI minimum standard to cover all gas delivery pressure systems. This is also in line with the quality standard established by Northwest Natural which was reviewed and referenced by BGE in their discovery responses for other gas quality parameters. Alternatively, BGE can also specify the delivery pressure range for the specified HDP of 45°F.

- c. **Total Diluent Gases:** BGE in their RNG tariff specified a Total Diluent Gases limit of 5% as compared to the NGA/GTI minimum standard requirement of 4%. In response to Staff DR2-1g., BGE stated there is no indication that the forthcoming Schedule RNG customer will add any nonhydrocarbon components to reduce the heating value of gas. Also, we realized that with oxygen and air, inert gases such as Nitrogen are included, coming from air composition. Staff finds BGE's discovery response inconsistent with the stated requirement in the RNG tariff and recommends BGE specify a Total Diluent Gases requirement limit of 4% in accordance with the NGA/GTI minimum standard. This is also in line

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with other quality standards established by Northwest Natural and CenterPoint Energy, which were reviewed and referenced by BGE in their discovery responses.

- d. **Siloxanes:** BGE in their RNG tariff specified a maximum Siloxanes limit of 5mg Si/m<sup>3</sup> as compared to the NGA/GTI minimum standard requirement of 0.5 mg Si/m<sup>3</sup>. In response to Staff DR2-1 M, BGE stated that the product of the expected initial Schedule RNG customer will contain a low level of Siloxanes as there is no landfill waste used, and only biological materials will be used to produce the RNG. Siloxanes are typically found in soap, deodorants, and other health care products. However, siloxanes can also be found in food additives and the feedstock for the scheduled RNG supplier is food waste. Staff finds the BGE discovery response to be inconsistent with the stated requirement in the RNG tariff and recommends BGE specify a Siloxanes requirement limit of 0.5 mg Si/m<sup>3</sup> in accordance with the NGA/GTI minimum standard. The quality standard established by CenterPoint Energy, which was reviewed and referenced by BGE in their discovery responses, has maximum Siloxanes limit of 0.1 mg Si/m<sup>3</sup>.

Staff has not determined whether any of Staff's Counterproposal or BGE's proposed RNG Tariff standards would be considered unreasonable by RNG suppliers. Staff is particularly concerned that several of BGE's discovery responses seem to indicate that some of their proposed RNG gas quality specifications are tailored for a particular 1<sup>st</sup> mover RNG supplier and may not be applicable to a 2<sup>nd</sup> mover, 3<sup>rd</sup> mover, etc. RNG suppliers. Therefore, should the Commission adopt any BGE RNG Tariff proposal, then to the extent that BGE their potential RNG suppliers customers cannot resolve disputes over gas quality and interchangeability, those disputes should be brought before the Commission through the Administrative Docket to be resolved on a case-by-case basis for Commission jurisdictional tariffs, on a record of fact and technical review, similar to the policy adopted in the FERC Policy Statement associated with FERC jurisdictional tariffs.

Staff also concludes that as RNG supplier experiences dictate and RNG standards evolve with more Maryland utilities seeking RNG tariffs, it may be appropriate to develop Maryland RNG regulations for minimum gas quality specifications at some point in the future.



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Engineering Recommendation

Staff recommends that the Commission approve BGE's RNG Tariff proposal as an interim gas quality standard, contingent upon BGE agreement to Staff's Counterproposal. Staff also recommends that the Commission's Pipeline Safety Manager be notified annually by March 1 of any BGE approved deviations from RNG gas quality standards, any BGE ordered RNG discontinuances, and any BGE approved RNG restarts.

***Consolidated Recommendations:***

- (1) Require BGE in its next base rate case and every three years after that to file revised rates for schedule RNG based on actual costs.
- (2) Require BGE to provide a cost benefit analysis of potentially upgrading its system to allow RNG Customers to contract with multiple RNG Suppliers in its next base rate proceeding.
- (3) Revise section 3.4 : (1) add a requirement that "BGE will inform the Renewable Gas Authorized Marketer/Licensed Supplier at the same time it notifies the Customer of conditions warranting a disconnection of service or upcoming scheduled maintenance, construction, or repairs" and (2) add a requirement that "disconnections of RNG supply under this tariff with little to no notice to the Renewable Gas Authorized Marketer/Licensed Supplier may constitute a Force Majeure event under BGE's Appendix B, Gas Supplier Tariff."
- (4) Require BGE's future purchased gas cost proceedings, Case No. 9500, to report the number of suppliers using this provision by month, the terms injected by supplier by month, and the associated cost per month be filed with the Commission to track the cost to BGE's ratepayers to determine if RNG customers are using these provisions as last resort options or are engaging in price arbitrage and recommend adjustments if necessary.
- (5) Staff also recommends the second sentence of the Section 4 be revised to read: "To ensure the RNG stays on BGE's system, BGE will act as the Buyer of Last Resort on a month-to-month basis if the Customer or their Renewable Gas Authorized Marketer provides notice to the Company three (3) days prior to the beginning of the month and BGE's determines its system can take delivery of the gas."
- (6) Revise second paragraph of section 4.2 to read: "At any time, the Customer's accumulated imbalance between nominations and actual metered deliveries sold to BGE exceeds the smaller of 1,000 Dth, or 20 percent of the Customer's

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average daily nomination for the 5 highest of the preceding 7 day nominations, the following Accumulated Imbalance Corrective Measures apply:”

- (7) Remove “Licensed Supplier” from the definitions and replace it throughout the tariff with “Renewable Gas Authorized Marketer” as appropriate. Revise definition of Renewable Gas Authorized Marketer A to read:  
“Renewable Gas Authorized Marketer: The RNG customer or a third party that has been authorized by the Customer to take possession of the RNG and be responsible for the sale and scheduling to end users on BGE’s system. The Authorized Marketer must be a licensed supplier of natural gas that has been licensed by the Commission to sell natural gas to retail Customers within the State of Maryland in BGE’s service territory.”
- (8) Recommend that the Commission approve BGE’s RNG Tariff proposal as an interim gas quality standard, contingent upon BGE agreement to Staff’s Counterproposal.
- (9) Recommend that the Commission’s Pipeline Safety Manager be notified annually by March 1 of any BGE approved deviations from RNG gas quality standards, any BGE ordered RNG discontinuances and any BGE approved RNG restarts.

**Recommendation**

Staff recommends that the Commission accept for filing the Company’s revisions to its Gas Supplier Tariff subject to the conditions and revisions proposed by Staff and direct the Company to file revised tariff pages with an effective date of August 25, 2021.

**Samuel Tettah**

Samuel Tettah, Engineer  
Gas Pipeline Safety, Engineering Division

**AFTON HAUER**

Afton Hauer, Regulatory Economist  
Telecommunications, Gas and Water Division

**Benjamin Baker**

Benjamin Baker, Director  
Telecommunications, Gas and Water Division

## ATTACHMENTS

### Appendix A: Definitions

The definitions provided here are intentionally limited in scope and are offered for general information only.

<b>Term</b>	<b>Definition</b>
Wobbe Number	An interchangeability parameter that takes both the higher heating value (HHV) and the relative density of the gas into consideration and accounts for both heat content and gas flow through a fixed orifice. The Wobbe Number is calculated by dividing the HHV by the square root of the relative density. Differences in the relative density, and by extrapolation the Wobbe Number, generally come from the presence of other hydrocarbons or diluent and inert gases such as carbon dioxide or air (nitrogen plus oxygen).
Siloxane	Any chemical compound composed of units of the form $R_2SiO_2$ , where R is a hydrogen atom or a hydrocarbon group. A siloxane has a branched or unbranched backbone of alternating silicon and oxygen atoms, $-Si-O-Si-O-Si-$ , with side chain R groups attached to the silicon atoms. The word siloxane is derived from silicon, oxygen and alkane. Siloxanes can be found in products such as cosmetics, deodorants, water repelling windshield coatings, food additives and soaps. When combusted, the siloxane molecules are reduced to silica dust; this is extremely abrasive and damaging to internal engine components. The combustion process can cause a build up around burner tips and on the tubes of heat exchangers.
PCBs	Polychlorinated Biphenyls are synthetic chlorinated chemicals that were produced for approximately 50 years between the 1920s and the 1970s. The mixtures were sold under the registered trade mark of "Aroclor" followed by a 4-digit code. PCB oils used to be used as compressor lubricants for natural gas pipeline transmission lines. In 1976 Congress passed the Toxic Substances Control Act (TSCA) which banned their use.
Hydrocarbon Dew point Temperature	The hydrocarbon dew point temperature (HDP) is the temperature of the corresponding state condition at which the non-methane hydrocarbon components of natural gas begin to condense into the liquid phase.