

**BEFORE THE NORTH CAROLINA UTILITIES COMMISSION
DOCKET NO. G-9, SUB 698**

In the Matter of:)
Application of Piedmont Natural Gas) **NCSEA’S COMMENTS**
Company, Inc. for Approval of Appendix F)
to its North Carolina Service Regulations)

NCSEA’S COMMENTS

Pursuant to the North Carolina Utilities Commission’s (“Commission”) January 12, 2017 *Order Requesting Comments* and February 3, 2017 *Order Granting Extension of Time*, the North Carolina Sustainable Energy Association (“NCSEA”) submits the following comments regarding the *Application of Piedmont Natural Gas Company, Inc. for Approval of Appendix F to its North Carolina Service Regulations* (“Application”) filed in this docket on December 6, 2016 in which Piedmont Natural Gas Company, Inc. (“Piedmont” or “PNG”) seeks Commission approval of the terms and conditions under which Piedmont would accept and receive “Alternative Gas”¹ onto its system (“proposed standard”). NCSEA does not oppose the adoption of pipeline standards for renewable biogas; in fact, NCSEA supports the adoption of appropriate standards because they would provide market certainty to developers of renewable biogas projects.

NCSEA notes that PNG has been providing directed renewable biogas to at least three customers prior to the adoption of its proposed standard: Duke Energy Carolinas’

¹ PNG defines “Alternative Gas” to include “biogas, biomethane, and landfill gas, as well as any other type of natural gas equivalent produced or manufactured from sources other than traditional underground well sources.” *Application*, Appendix F, p. 1. Other resources for biogas include swine waste, poultry waste, food waste, and municipal wastewater plants. Because these resources are all renewable in nature, NCSEA refers to them collectively as “renewable biogas” resources.

Buck Combined Cycle generation facility;² Duke Energy Carolinas' Dan River Combined Cycle generation facility;³ and Apple, Inc.'s fuel cell facility.⁴ NCSEA recognizes, however, that due to the nature of directed biogas, traditional natural gas mixes with biogas near the point of injection and biogas may not actually reach the end-user for whom it is nominated, and thus these three facilities may not be receiving significant quantities of biogas.

NCSEA recognizes that PNG has a need to protect its infrastructure and an obligation to provide natural gas to its customers that is substantially free of impurities. *See*, Commission Rule R6-30. PNG states that its proposed renewable biogas standards “represent appropriately cautious parameters for the receipt of such Alternative Gas.” *Application*, p. 5. However, NCSEA believes that the standards proposed by PNG are overly cautious and unduly burdensome, especially for North Carolina’s burgeoning market for renewable biogas. For the reasons set forth below, NCSEA believes that PNG’s proposed standard should be modified before it is approved by the Commission.

² *See*, *Direct Testimony of Ellen T. Ruff for Duke Energy Carolinas*, p. 7, Docket Nos. E-7, Sub 791 & E-7, Sub 832 (Dec. 14, 2007). *See also*, *Renewable Energy Facility Registration Statement for Buck Combined Cycle Station*, p. 2, Docket No. E-7, Sub 1086 (June 8, 2015).

³ *See*, *Direct Testimony of Ellen T. Ruff for Duke Energy Carolinas*, p. 14, Docket Nos. E-7, Sub 791 & E-7, Sub 832 (Dec. 14, 2007). *See also*, *Renewable Energy Facility Registration Statement for Dan River Combined Cycle Station*, p. 2, Docket No. E-7, Sub 1087 (June 8, 2015).

⁴ *See*, *Application for a Certificate of Public Convenience and Necessity*, pp. 2-3, Docket No. SP-1642, Sub 1 (March 28, 2012).

I. PUBLIC POLICY DICTATES THAT PIPELINE STANDARDS FOR SWINE WASTE AND POULTRY WASTE-DERIVED BIOGAS SHOULD NOT BE OVERLY BURDENSOME

Public policy dictates that the PNG's proposed standard should not be overly burdensome, particularly because they will significantly impact the ability of producers to inject swine waste and poultry waste-derived biogas into PNG's system. As the Commission is well aware, North Carolina's Renewable Energy and Energy Efficiency Portfolio Standard ("REPS") requires electric power suppliers to obtain certain amounts of their electricity from swine waste and poultry waste resources. *See*, N.C. Gen. Stat. § 62-133.8(e) and (f). As the Commission is also aware, electric power suppliers have consistently failed to comply with the swine waste and poultry waste set-asides.⁵ Accordingly, the electric power suppliers are looking to directed biogas as one possible means to comply with the swine waste and poultry waste set-asides. *See, Duke Energy Carolinas, LLC 2016 Integrated Resource Plan Revision*, p. 247, Docket No. E-100, Sub 147 (Sept. 30, 2016) ("*DEC's 2016 IRP*") ("In an effort to meet compliance with the Swine Waste Set Aside, the Company . . . continues pursuit of swine-derived directed biogas from North Carolina facilities and directing such biogas to DEC's combined cycle plants for combustion and generation of zero emission renewable electricity . . ."). *See also, Duke Energy Progress, LLC 2016 Integrated Resource Plan Revision*, pp. 237-38, Docket No.

⁵ *See generally, Order Modifying the Swine and Poultry Waste Set-Aside Requirements and Providing Other Relief*, Docket No. E-100, Sub 113 (Oct. 17, 2016); *Order Modifying the Swine and Poultry Waste Set-Aside Requirements and Providing Other Relief*, Docket No. E-100, Sub 113 (Dec. 1, 2015); *Order Modifying the Swine and Poultry Waste Set-Aside Requirements and Providing Other Relief*, Docket No. E-100, Sub 113 (Nov. 13, 2014); *Final Order Modifying the Poultry and Swine Waste Set-Aside Requirements and Providing Other Relief*, Docket No. E-100, Sub 113 (March 26, 2014); and *Order Modifying the Poultry and Swine Waste Set-Aside Requirements and Granting Other Relief*, Docket No. E-100, Sub 113 (Nov. 29, 2012).

E-100, Sub 147 (Sept. 30, 2016) (“*DEP’s 2016 IRP*”). However, the electric power suppliers have also noted that overly restrictive pipeline standards can make utilizing directed biogas for compliance with the swine waste and poultry waste set-asides challenging.

In theory, directed biogas reduces costs by using large, efficient, centralized generation in the place of smaller, less-efficient reciprocating engines typical of other projects. However, practically, the Company has found such solutions in North Carolina to be economically challenged, *in part due to additional gas clean-up requirements prior to injection* and the general lack of physical proximity between clusters of farms and pipeline infrastructure.

DEC’s 2016 IRP, p. 247 (emphasis added) (internal footnote omitted). *See also, DEP’s 2016 IRP*, p. 237.

While NCSEA supports the adoption of pipeline standards for renewable biogas, public policy dictates that any such standards should not harm the ability of the electric power suppliers to comply with their swine waste and poultry waste set-aside obligations under the REPS. PNG has noted that “[m]ost of the chemical constituents identified in the [proposed] Standard are likely to be present in natural gas received by Piedmont from interstate pipelines but may not be present in the same proportions.” *PNG Response to N.C. Pork Council Data Request No. 1-3*. PNG also states that “there is little actual scientific evidence available as to what the differences between Swine gas and natural gas may be.” *PNG Response to NCSEA Data Request No. 1-4*. Given the similar chemical constituents in natural gas and renewable biogas and the lack of evidence of the differences between natural gas and swine waste-derived biogas, PNG has not demonstrated to the Commission that its proposed standard is the least burdensome way to accept swine waste and poultry waste-derived biogas.

II. PNG'S PROPOSED STANDARD SHOULD BE CAREFULLY CRAFTED FOR NORTH CAROLINA'S UNIQUE CIRCUMSTANCES.

In drafting their proposed standard, PNG looked to five sources of information: (1) Duke Energy Ohio's standards for landfill gas, (2) the American Gas Association, (3) the Gas Technology Institute, and (4) the California Environmental Protection Agency's Air Resources Board, and (5) the standards of pipelines serving PNG. *See, PNG Response to NCSEA Data Request No. 1-2; PNG Response to NCSEA Data Request No. 1-5; PNG Response to N.C. Pork Council Data Request No. 1-4.* However, PNG's reliance on two of these sources are problematic.

First, PNG's reliance on California's rules is highly problematic because no renewable biogas projects have been completed since the rules were adopted. In fact, in 2016 the California legislature directed state agencies to revisit the rules. California Senate Bill 840, passed into law on September 13, 2016, directed the California Council on Science and Technology to "undertake and complete a study analyzing the regional and gas corporation specific issues relating to minimum heating value and maximum siloxane specifications for biomethane before it can be injected into common carrier gas pipelines[.]" 2015 Cal. Stat. Ch. 341, Sec. 11(a).⁶ The legislature further directed the

⁶ Siloxane is a compound that was explicitly cited by PNG as a concern for the use of Alternative Gas in manufacturing. *See, PNG Response to N.C. Pork Council Data Request No. 1-3* ("Another example of a concern from a manufacturing perspective is the potential presence of siloxanes in biomethane. Siloxanes are non-toxic silicon-bearing organic compounds that are not typically found in traditionally-sourced natural gas, but which may be found in Alternative Gas, particularly Alternative Gas sourced from landfills. During the combustion process, crystalline silica from burning siloxanes can form a glassy coating that can accumulate at the combustion site thereby reducing equipment performance, severely impacting maintenance schedules and negatively impacting equipment life. The presence of siloxanes in the Alternative Gas stream could potentially impact not only manufacturing facilities but also the gas burning equipment of residential and commercial end users.").

California Public Utilities Commission, upon completion of the study, to “reevaluate its requirements and standards . . . and, if appropriate, change those requirements and standards or adopt new requirements and standards, giving due deference to the conclusions and recommendations made in the study by the California Council on Science and Technology.” 2015 Cal. Stat. Ch. 341, Sec. 11(c).

Second, Duke Energy Ohio’s standards for the injection of landfill gas should not be overly relied upon in developing a standard for injection of all forms of renewable biogas in North Carolina. Duke Energy Ohio’s existing standard is solely focused on landfill gas. While PNG’s proposed standard should certainly be crafted to allow for the injection of landfill gas, it also needs to accommodate all other forms of renewable biogas. PNG acknowledges that it “has no experience with [renewable biogas] and, therefore, does not know what constituents will be contained within Alternative Gas it may receive from producers in North Carolina, regardless of the source of such Alternative Gas.” *PNG Response to N.C. Pork Council Data Request No. 1-6*. Thus, overreliance on Duke Energy Ohio’s landfill gas standard could inadvertently harm the ability for other forms of renewable biogas to be injected into PNG’s system in North Carolina.

III. PNG’S PROPOSAL INCLUDES DUPLICATIVE REQUIREMENTS

PNG’s proposed standard includes duplicative requirements by necessitating both pre-injection testing and the installation of in-pipeline monitoring equipment, thereby creating unnecessary expenses for renewable biogas suppliers. Under PNG’s proposed standard, in-pipeline equipment will monitor the constituent makeup of renewable biogas in order to ensure quality and safety. “Piedmont’s gas control center will be able to remotely shut off gas supply volumes from the Alternative Gas producer should problems

with gas quality arise.” *PNG Response to Public Staff Data Request No. 1-10*. PNG’s proposed standard also requires the renewable biogas supplier undertake routine and expensive testing of the renewable biogas that will be delivered to PNG’s system. PNG acknowledges that these testing requirements may cost as much as \$30,000 per year. *PNG Response to Public Staff Data Request No. 1-2*. These costs may prove crucial to the financial viability of a small renewable biogas project. By being required to pay for both in-pipeline facility monitoring equipment and pre-injection laboratory testing, PNG’s proposed standard forces renewable biogas suppliers to pay twice to demonstrate that their product is safe for pipeline injection. One possible compromise position would be to allow testing for a specific constituent to be discontinued after a certain number of consecutive tests have failed to find the constituent in unacceptable amounts in the renewable biogas being supplied.

IV. EXPANSION OF NATURAL GAS SERVICE TO UNSERVED AREAS

It has been declared by the General Assembly that it is the policy of the State of North Carolina “[t]o facilitate the construction of facilities in and the extension of natural gas service to unserved areas in order to promote the public welfare throughout the State . . .” N.C. Gen. Stat. § 62-2(a)(9). To that end, the General Assembly has adopted several statutes to encourage the expansion of natural gas infrastructure to reach underserved, and traditionally rural, communities. *See generally*, N.C. Gen. Stat. § 62-133.15, § 62-158, and § 62-159. While these statutes encourage the expansion of natural gas infrastructure to reach potential new *customers*, electric power suppliers have noted that the lack of natural gas infrastructure is also a hindrance in meeting the REPS’ swine waste and poultry waste set-asides because they cannot reach potential new *suppliers* of

renewable biogas. *See, DEC's 2016 IRP*, p. 247 (“However, practically, the Company has found such solutions in North Carolina to be economically challenged, in part due to . . . the general lack of physical proximity between clusters of farms and pipeline infrastructure.”). *See also, DEP's 2016 IRP*, p. 237. In light of these public policy considerations, the Commission should avoid any actions that would serve to discourage the expansion of natural gas infrastructure into underserved areas.

V. DIVERSIFICATION OF GENERATION AND HEDGING OF FUEL

The Commission has previously noted that there are fuel price hedging benefits when electric utilities diversify their generation and fuel resources. *See, Order Setting Avoided Cost Input Parameters*, p. 42, Docket No. E-100, Sub 140 (Dec. 31, 2014) (“The Commission concludes that there are fuel price hedging benefits associated with solar generation, as well as hydroelectric, landfill gas, and other renewable generation . . .”). In its statement, the Commission explicitly noted that there are fuel price hedging benefits associated with electricity generation utilizing landfill gas, which is a renewable biogas that would be subject to PNG’s proposed standard. The Commission also noted that other renewable generation resources could provide fuel price hedging benefits. As previously noted by NCSEA:

the biogas produced [from swine waste] provides an alternative source of energy. Studies show that North Carolina has the second highest capacity for swine biogas in the nation with a potential to generate 1.1 million megawatts of electricity per year. This energy comes from “indigenous energy resources” and diversifies the resources used to reliably meet the energy needs of consumers in the State, all of which is consistent with the policy goals pronounced by the General Assembly in enacting the REPS.

Rebuttal Testimony of A.W. Maier, p. 7, Docket No. E-100, Sub 140 (June 20, 2014).

Because renewable biogas can be used by electric utilities to diversify their fuel resources,

it can provide hedging benefits to electric ratepayers. Accordingly, the Commission should ensure that PNG's proposed standard does not harm any potential fuel price hedging benefits that could be realized by electric ratepayers.

CONCLUSION

NCSEA does not oppose the adoption of pipeline standards for renewable biogas. In fact, NCSEA supports the adoption of appropriate standards because they would provide market certainty to developers of renewable biogas projects. However, NCSEA believes that the standards proposed by PNG are unduly burdensome and should be modified before they are approved by the Commission. NCSEA requests that the Commission take its comments into consideration when examining PNG's proposal, and prays that the Commission direct PNG to amend its proposed renewable biogas pipeline standards to address the issues raised in these comments.

Respectfully submitted, this the 20th day of February, 2017.

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CERTIFICATE OF SERVICE

I hereby certify that all persons on the docket service list have been served true and accurate copies of the foregoing Comments by hand delivery, first class mail deposited in the U.S. mail, postage pre-paid, or by email transmission with the party's consent.

This the 20th day of February, 2017.

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