STATE OF NORTH CAROLINA
UTILITIES COMMISSION
RALEIGH

BEFORE THE NORTH CAROLINA UTILITIES COMMISSION

DOCKET NO. E-7, SUB 1155

In the Matter of Petition by Duke Energy Carolinas, Inc. for Approval of Proposed Residential New Construction Program	)))	COMMENTS OF THE PUBLIC STAFF

NOW COMES THE PUBLIC STAFF - North Carolina Utilities Commission (Public Staff), by and through its Executive Director, Christopher J. Ayers, pursuant to Commission Rule R8-68(d)(2), and responds to the application filed September 20, 2020, by Duke Energy Carolinas, LLC (DEC) (Modified Application) for approval of its Residential New Construction Program.

Background

1. The Commission approved a Residential New Construction Program for Progress Energy, Inc.,[1] in Docket No. E-2, Sub 1021 (DEP Program), as an energy efficiency (EE) program by order dated October 2, 2012 (2012 DEP Order). The DEP Program replaced the Residential Home Advantage (RHA) program, which was terminated by Commission order issued on January 31, 2012, in Docket No. E-2, Sub 928, because the RHA program was no longer cost-effective due to changes in the federal Energy Star standards and the North Carolina Energy Conservation Code (NCECC).

[1] Now operating as Duke Energy Progress, LLC (DEP), following the merger of Progress Energy Corporation and Duke Energy Corporation.

2. The DEP Program offered incentives to builders and developers of single and multi-family housing who installed energy efficient equipment or constructed new residences that met energy efficient whole house building standards. Participants received incentives for either installing high-efficiency heat pump water heaters or HVAC equipment, or meeting the 2012 NCECC High Efficiency Residential Option (HERO) standards (*Whole House* measure).[2] A larger incentive was given for the *Whole House* measure if the home received a higher energy efficiency rating as measured by the Home Energy Rating System (HERS) Index. The original incentives for the DEP Program are summarized below:

Energy Efficiency Measure	Incentive Payment	Eligibility Requirement
Equipment Measures		
1. Heat Pump Water Heater	$350	Energy Factor ≥ 2.0
2. High Efficiency HVAC:		
- Air-to-Air Heat Pump	$300	Requires minimum 15 SEER
- Central Air Conditioning	$300	Requires minimum 15 SEER
Whole House Measures		
1. HERO	$1,000	Meet 2012 NCECC HERO standards
2. HERO plus HERS 70	$1,750	Meet HERO standards and achieve a 70 HERS Index
3. HERO plus HERS 65	$2,500	Meet HERO standards and achieve a 65 HERS Index
4. HERO plus HERS 55	$4,000	Meet HERO standards and achieve a 55 HERS Index

[2] https://codes.iccsafe.org/content/NCECC2018/appendix-r4-additional-voluntary-criteria-for-increasing-energy-efficiency-high-efficiency-residential-option-

5. On December 3, 2015, DEP filed a letter notifying the Commission of certain modifications to improve the Program's savings and cost effectiveness going forward, pursuant to the flexibility guidelines for making program modifications adopted in the 2012 DEP Order. DEP stated that the proposed modifications were in response to an evaluation, measurement, and verification (EM&V) study that suggested the kilowatt-hour (kWh) savings for the *Whole House* measure were 75% less than originally estimated.[3]

6. The December 3, 2015 filing made by DEP included the following modified incentive structure:

Energy Efficiency Measure	Incentive Payment	Eligibility Requirement
Equipment Measures		
Tier 1 AC or Heat Pump	$350	Requires minimum 14 SEER and Quality Installation standard of 90%
Tier 2 AC or Heat Pump	$300	Requires minimum 15 SEER but less than 17
Tier 3 AC or Heat Pump	$400	Requires minimum 17 SEER
Quality Installation Standard	$75	Optional for Tiers 2 and 3
Whole House Measures		
1. HERO	$750	Meet 2012 NCECC HERO standards
2. HERO plus	$0.90/ kWh	Meet HERO standards and submit confirmed annual kWh savings from the Energy Summary Report

[3] See Tables 3-4 through 3-6 in the EM&V report filed January 26, 2016, in Docket No. E-2, Sub 1021. A higher level of gas-heated homes was identified as one of the reported reasons for the lower savings.

7. DEP filed a subsequent letter on December 16, 2015, that withdrew the December 3, 2015 filing and notified the Commission of revised modifications that removed the Tier 3 incentive and the smart thermostat measure, along with an updated cost effectiveness evaluation of the measures. The Public Staff filed comments on December 31, 2015, stating that it believed that the modifications were reasonable. Commission approval of these modified incentives was unnecessary because the modifications were made pursuant to the flexibility guidelines discussed above.

8. On September 20, 2017, DEP filed a request to modify its Program[4] and DEC filed a request for approval of a Residential New Construction Program in this docket that mirrored the proposed modifications to the DEP program. According to the DEP filing, the modifications to the DEP Program would eliminate the tiered structure for Air Conditioning (AC) and heat pump equipment, require a minimum Seasonal Energy Efficiency Ratio (SEER) rating of 15, and remove the quality installation and heat pump water heater[5] measures because they were typically included in the HERO standards and were rarely implemented as individual measures.

9. In its review of filings under Commission Rule R8-68, the Public Staff has not made it part of its review to contact every entity upon which the Applicant is required to serve its filing pursuant to Commission Rule R8-68(d)(2), including the regulated natural gas utilities (LDCs)within DEC's and DEP's service territories. Thus, the Public

[4] Docket No. E-2, Sub 1021

[5] On September 11, 2017, the heat pump water heater measure was moved to the Residential Smart Saver programs for each company.

Staff did not verify whether the LDCs received notice of any of the filings related to the DEP or DEC Residential New Construction Programs.

10. On October 23, 2017, the Public Staff filed comments on DEC's proposed Program, and among other items, noted:

> 19. The Public Staff has not discovered any information suggesting that the Program would affect a customer's decision to install natural gas or electric service.
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> * * *
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> 21. The Public Staff believes that the filing contains the information required by Commission Rule R8-68(c) and is consistent with G.S. 62-133.9, R8-68(c), and the Stipulation and Mechanism. The Public Staff concludes that the Program has the potential to encourage EE, appears to be cost effective, is consistent with DEC's IRP, is in the public interest, and should be approved on a Program basis as a "new" EE program pursuant to Commission Rule R8-68.

11. On June 7, 2019, DEC filed to withdraw its Program application.

12. On November 25, 2019, the Commission issued its *Order Scheduling Hearing and Providing Notice of Topics* in Docket No. E-7, Sub 1155, identifying several topics that the Commission wanted DEC and other interested parties to address during the hearing scheduled for January 27, 2020. Topics included:

a. Details about the concerns the natural gas companies (LDCs) have regarding the unintended consequences of DEC's Program.

b. Details about the efforts made by DEC to resolve the concerns of the natural gas companies regarding the unintended consequences of DEC's Program.

c. The factors that have allowed the DEP Program to be successfully implemented without concerns of the natural gas providers in DEP's service territory regarding potential unintended consequences of the DEP Program being a barrier.

13. Following the January 27, 2020 hearing, the Commission issued its *Order Holding in Abeyance Decision on Motion to Withdraw Program and Requiring Filing of Proposed Modified Program* (Sub 1155 Order) on June 23, 2020. Testimony from representatives from the LDCs indicated that their primary concern was centered on the incentive structure associated with the *Whole House* measures in both DEP's Program and DEC's proposed Program. The structure used a "dollar per kWh saved" basis rather than a flat amount as in DEP's original program incentives. The LDCs indicated that they believed that such a structure had caused loss of market share in the DEP territory and would cause further loss of market share if the DEC Program were approved.

14. The Sub 1155 Order acknowledged DEC's "good faith" effort to develop a cost-effective EE program, using the DEP Program as a model. The Commission noted that DEC did not intend for the Program to encourage fuel switching or to promote unfair competition, but the Commission recognized the "significant difference in the financial resources" available to electric utilities and natural gas utilities. The Commission further

concluded that the potential for losses in the natural gas companies' new residential construction market share was worthy of further consideration and analysis.

15. The Sub 1155 Order required DEC to modify the DEC Program: (1) to address the natural gas companies' fuel choice concerns; (2) clarify whether a builder can receive an HVAC equipment incentive and a whole-house HERO incentive for the same premise, or must choose to receive either an HVAC equipment incentive or a whole-house HERO incentive; and (3) clearly explain how the "up to $0.90/kWh" savings incentive applies to various types of energy savings, such as heating savings, lighting savings, or whole-house savings. Furthermore, the Commission ordered DEC to make a good faith attempt to obtain and include in its filing the data and analysis from the LDCs that shows the effect, if any, that the DEP Program's annual per kWh incentive may have had on past new construction fuel choice decisions.

Modified Program Filing

16. On September 21, 2020, DEC filed a Modified Application pursuant to the Sub 1155 Order. The Public Staff's review of the Modified Program indicates that DEC complied with the Sub 1155 Order. More specifically:

a. DEC updated the information related to cost effectiveness by incorporating the avoided cost energy and capacity data from DEC's approved avoided costs in Docket No. E-100, Sub 158, the 2018 Integrated Resource Plan, and updating the energy savings comparison from the 2012 NCECC to the 2018 NCECC.

b. As noted in Section (c)(2)(i)(e) of the Modified Application and page 1 of 2 of the proposed tariff, builders are not allowed to receive both the equipment incentive AND the *Whole House* incentives for the same home.

c. The incentives for the *Whole House* measure were reduced from $750 to $650 for the HERO standard, and from $0.90/kWh to $0.75/kWh for the HERO-Plus standard.[6]

d. Attachment H of the Modified Application included information to explain the process DEC used to derive its proposed HERO-plus standard incentive of $0.75/kWh, including a breakdown of the types of savings that would be eligible for the incentive. All of the savings are based on the amount of electricity saved above the 2018 NCECC baseline. DEC also provided support for the projected participation and the number of homes with both natural gas and electric service seeking *Whole House* measure incentives.

e. Attachment H of the Modified Application also included information about the impact of the DEP Program on past new construction activities. This information cites data on the number of homes in particular subdivisions where the installation or selection of natural gas

[6] Language in DEC's proposed tariff for the Program states that the HERO-Plus incentive requires "HERO compliance verification, and for HERO-Plus, a Home Summary Report from Company-approved Energy Software modeling report as assessed by a qualified HERS rater…" (*See* "Responsibility of Parties" section). However, Company representatives recently informed the Public Staff that builders are eligible for the HERO-Plus incentive by providing a blower door test that achieves a minimum infiltration rate.

service might have been adversely impacted by the DEP Program. However, this data is inconclusive and nearly impossible to verify. The Public Staff is not able to draw any discernable “causal effect” or determine whether the DEP Program hindered the extension of natural gas utility service or in cases where gas service was already available, to forgo building homes that included natural gas appliances, based on this limited information. This type of data is in some respects analogous to proving a negative. In other words, it is difficult to show what type of service builders would have selected had the DEP Program not been in existence.

<u>Appendix to Commission Rule R8</u>

17. The Public Staff reviewed the conditions and requirements of Appendix R8 to assess the influence of the Program on natural gas utility service.

<u>Paragraph 1(a through f)</u> – The proposed tariff specifically addresses the framework of the incentive and imposes a maximum incentive amount. The Program is described in the Modified Application and the measure of efficiency and cost effectiveness are based only on the electricity savings of the Program.

<u>Paragraph 2 (a and b)</u> – This rule addresses the potential for DEC to recover the cost of the program incentives if the program is promotional in nature. The Public Staff does not believe the intent of the program is promotional, but rather a fundamental, cost-effective means for encouraging the adoption of more energy

efficient residential housing. The incentive framework and the amounts were not intended or designed to affect the decision to install natural gas service. Incentives for the *Whole House* measure have been structured to take into account the kWh savings that would result from a group of measures related to building construction methods/materials that meet a higher efficiency standard (HERO and HERO-Plus) than is required by the 2018 NCECC. With respect to building envelope-type measures, there could be natural gas savings (if the builder also installed natural gas service) from the added efficiency of the home envelope. However, the incentive would only compensate the builder for the electricity savings. The Public Staff understands the LDCs' concern that the dollar per kWh incentive structure could influence a builder's decision to install natural gas service or not because the builder can receive a larger incentive by installing all electric appliances for space and water heating, rather than using natural gas service to heat the home and water. DEC has attempted to mitigate this influence by reducing the *Whole House* measure incentive from 90 to 75 cents per kWh. The Public Staff also interprets Paragraph 2 (a and b) to include the recovery of other program costs, net lost revenues, and the program performance incentive costs that DEC is eligible to recover through its DSM/EE cost recovery mechanism.

Paragraph 2(c) – No party has demonstrated that the Program is promotional in nature.

Paragraph 3 (a through c) – This paragraph involves the structure of the Program incentive and the requirements builders must meet in order to qualify.

According to responses from DEC, the Program does not require builders to build a minimum number of all-electric homes, require a specific type of home (natural gas or electric) to be built, or require the builder to advertise that they are "all-electric" builders. DEC has indicated to the Public Staff that additional work is underway to ensure that none of the advertising and communications materials implies that builders are required to advertise or build all-electric homes to qualify for the incentives.

Paragraphs 4 through 7 – These do not appear applicable to the Modified Application.

Other Considerations

18. Over 60 letters from customers, homebuilders, and other interested parties have been filed in this docket either supporting the Modified Application or opposing withdrawal of DEC's 2017 Application.

19. The Modified Application includes projections of EE kWh savings through 2024. The Program is projected to provide additional cost-effective kWh savings to DEC's EE and DSM portfolio.

20. Whole-house/building EE programs are staple EE programs because of their capability to produce energy savings for homes that utilize either electricity, natural gas, or both. However, the focus of the Program is to reduce electricity use in the home. In cases where space and water heating measures are involved, electricity savings from the installed equipment is determined as the difference between the standard electric

equipment and the high efficiency electric equipment. For the *Whole-House* measure, the electricity savings from the *Whole House* measure are those savings as measured against the 2018 NCECC baseline. The HERO-Plus incentive requires the home to pass a blower door efficiency test[7] in addition to meeting the HERO qualifications.

21. The requirement for a blower door test is a deviation from the Modified Application and DEP's current program tariff language. The current DEP Program and the proposed DEC Program rely on the submission of a HERS rater's modeling report, which may or may not include a blower door test.

22. The Public Staff has reviewed the modeling and projections of savings for the Program and has determined the program savings only include electricity savings.

23. The Public Staff notes that the use of natural gas is generally a more efficient means of heating space and water. However, the current regulatory environment prohibits undue discrimination, marketing, and promotion of electric service over natural gas service, and vice versa. Appendix R8 attempts to mitigate these situations. This should not be an obstacle to EE program development, as electric utilities are strongly encouraged to develop cost-effective EE programs.[8] EE program development is

[7] The blower door test requires the home to achieve an infiltration rate of less than or equal to 4.00 air changer per house at 50 Pascal of pressure, or 0.24 cubic feet per minute per square foot of surface area.

[8] In its October 24, 1995 Order Adopting Guidelines in Docket No. E-100, Subs 64A and 71, at 12, the Commission said:

> The Commission concludes that it should not attempt to resolve the matter of the relative efficiency of electricity versus natural gas herein. The Commission does not have the necessary information in the record of these dockets (or in any other dockets at this time) to determine whether or not electricity or gas is the most efficient fuel to use under various scenarios (space heating alone, space heating plus A/C, space heating plus A/C plus water heating, etc.). It is not clear that the Commission should even attempt to resolve such issue, absent a mandate from the General Assembly.

agnostic to the existence of natural gas service because EE programs are not required to consider natural gas savings. The extension of gas utility service into an area is a separate question, not directly related to the development of electricity-based EE programs.

24. The Public Staff believes that DEC's reduced incentive for the *Whole House* HERO-Plus measure is both a reasonable concession to the LDCs' concerns and a more precise way of incentivizing EE. The flat rate incentive that is part of the current DEP Program lumps large and small homes together and pays the incentive on an average-sized home basis. The dollar per kWh structure more appropriately awards homes that produce greater electricity savings.

25. Another option, which would be a slightly more refined approach, would be to develop an incentive rate based on the percentage of reduced kWh between standard construction and EE construction. One example is the Puget Sound Energy program[9] that pays a flat rate incentive based on the percentage of energy reduction. One intriguing aspect of the Puget Sound Energy program is that its structure allows incentives for either all-electric homes or gas-electric homes. This type of EE program seems to address the issue of potential marketing conflict by incorporating savings for gas and electric utility service. The Public Staff believes DEC and the LDCs should consider how they could formulate a joint EE program that would promote greater efficiency across the board for

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The Commission concludes that a better approach at this time would be to determine the acceptability of incentive programs herein based on the energy efficiency of electricity alone or of natural gas alone, as applicable.

[9] https://www.pse.com/rebates/new-construction-grants/high-performance-homes

both electric service and natural gas. The Public Staff understands that this may require the development of a new or different cost recovery mechanism[10] for the LDCs, which could be considered in the context of a rate case, or preferably, pursuant to legislation.

26. The issue of incentivizing electricity usage over natural gas service is a concern that cannot easily be addressed in the current regulatory environment. Electric utilities are under significant pressure from clean energy mandates and other proposals to implement EE. Natural Gas companies are not currently under the same level of pressure. Incentives for electric efficiency programs must balance the need to implement more EE against the possibility of promoting electricity usage over natural gas. This balance is the basis for the Appendix to Commission Rule R8.

27. The Commission in determining whether to approve a measure or program is to consider whether the proposed measure or program promotes unfair or destructive competition or is inconsistent with the public policy of this State as set forth in N.C. Gen. Stat. § 62-2 and N.C.G.S. § 62-140. It appears that the last time the Commission considered the issue of whether an EE program would cause "destructive competition" between electric and natural gas companies, the Commission said:

> In addition, the questions of the impact of incentives on inter-fuel competition and total cycle fuel efficiency are beyond the scope of this rulemaking. Therefore, while the Commission acknowledges the Public Staff's assertion that it may be productive to revisit these issues in the future, the Commission finds good cause to reject proposals to mandate the consideration of other fuels, to create a single efficiency

[10] An example of the current EE cost recovery mechanism for natural gas companies is the Customer Utilization Tracker (CUT) mechanism that recovers the cost associated with energy efficiency programs. See *Order Approving Partial Rate Increase and Requiring Conservation Initiative* dated March 23, 2009, in Docket No. G-9 Sub 499.

> fund and to consider efficiency on a total-cycle basis on the basis that they are beyond the scope of this rulemaking.

Order Adopting Final Rules, Docket No. E-100, Sub 113, February 29, 2008, at 87.

The Public Staff does not believe that approval of the Program would result in destructive or unfair competition. Public Service Company of North Carolina, Incorporated, d/b/a Dominion Energy North Carolina (PSNC), currently has a High Efficiency Discount Rate Program whose purpose "is to encourage construction of homes and commercial buildings that are substantially more energy efficient than those built to code standards."[11] There is nothing barring PSNC from modifying its program, or Piedmont Natural Gas, Inc., from creating its own. The Public Staff supports cost-effective energy efficiency programs from both electric and natural gas providers. If done properly, there can be constructive competition that benefits all ratepayers and promotes greater overall energy efficiency.

Conclusions and Recommendations

28. The Public Staff's comments filed October 23, 2017, concerning the original Application, should also apply to the Modified Application.

29. The updating of inputs to DEC's modeling suggests that the Modified Program will be cost effective.

30. The Public Staff concludes that the Program has the potential to encourage EE, appears to be cost effective, is in the public interest, and should be approved as a "new" EE program pursuant to Commission Rule R8-68.

[11] "Conservation Program Annual Report," Docket No. G-5, Sub 495A, March 31, 2020.

31. With respect to the LDCs' concerns about the dollar per kWh incentive structure, without more tangible evidence, the Public Staff is not convinced that such market harms have occurred. However, the Public Staff understands those concerns. The LDCs should be given the opportunity to provide evidence of adverse market conditions that the DEP program is causing, and that the DEC program, if approved, causes. Within six months of a Commission order in this matter, the LDCs should each file a report providing evidence of any market harms caused by the programs.

32. The Program is eligible for consideration of recovery of program costs, net lost revenues, and a program performance incentive, subject to the terms of the cost recovery mechanism.

33. The Public Staff further recommends that the Commission determine the appropriate recovery of program costs, net lost revenues, and program performance incentives associated with the Program in the annual DSM/EE rider proceeding consistent with N.C. Gen. Stat. § 62-133.9, Commission Rule R8-69, and the cost recovery mechanism.

34. DEC should evaluate the effects of restructuring the Program to provide an incentive for both electric and natural gas savings similar to the Puget Sound Energy example highlighted above and provide a report to the Commission in 60 days regarding the legality and feasibility of offering such a program in North Carolina, or offering a joint program with the natural gas utilities. This could be accomplished through DEC’s EE Collaborative.

35. The Public Staff recommends that the Commission require DEP and DEC to update the approved tariff language for both programs to reflect the current qualifications for the *Whole House* HERO-Plus incentive.

36. The Public Staff further recommends that the Commission encourage DEC, DEP, and the LDCs to work together to investigate the potential for joint development of energy efficiency (gas and electricity savings) programs that would serve their respective customers. The Public Staff believes that joint programs would not only reduce the use of electricity and natural gas, but it would also address several public policy objectives now being considered at federal, state, and gubernatorial levels regarding clean energy initiatives.

This the 19th day of January, 2021.

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CERTIFICATE OF SERVICE

I certify that a copy of these Comments has been served on all parties of record or their attorneys, or both in accordance with Commission Rule R1-39, by United States Mail, first class or better; by hand delivery; or by means of facsimile or electronic delivery upon agreement of the receiving party.

This the 19th day of January, 2021.

Electronically submitted
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