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E-100 Sub 157

From: Nancy LaPlaca <laplaca.nancy@gmail.com>
Sent: Wednesday, May 8, 2019 6:32 PM
To: Statements
Cc: Jack Singletary; justiceta1@appstate.edu; Megan Sussman; Scott Johnson
Subject: Letters for Docket E-100 Sub 157; Duke Energy IRP
Attachments: NCUC Letter-Megan Sussman.docx; Mini Assignment #2- Taryn Justice.docx; NCUC letter-Jack Singletary.docx; NCUC-IRP-Letter-Scott-Johnson.docx

Dear Sir/Ms.:

Attached please find 4 letters commenting on Duke Energy's 2018 IRP.

Thank you.

Nancy LaPlaca
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480-359-8442

Ed Finley
North Carolina Utilities Commission
430 North Salisbury Street
Dobbs Building
5th Floor
Raleigh, NC 27603-5918
CC: Jeremy Tarr

Commented [1]: +sussmanma@appstate.edu : FYI, you should add Ed Finley's title, Chair, and address him as Chairman Finley. Also FYI for this type of comment you should include your address. I am going to submit this electronically, so no need to change it. Excellent job, and I love the Greta Thunberg quote at the end!
Assigned to Megan Sussman

Dear Ed Finley,

Climate Change is becoming an increasing concern among the general public, especially among young people who are the future decision-makers of our state and country. According to the National Climate Assessment,¹ the Southeastern portion of the United States can expect to experience sea level rise, increasing temperatures, and decreased water availability in the coming decades. The Southeast is one of the country's largest energy-producing regions and is the largest consumer of energy in the United States.² Because of this, I believe the Southeast, specifically North Carolina, should become a leader in developing and investing in clean energy technology to ensure the health and safety of our future citizens.

As I am sure you are aware, Duke Energy recently put out their proposed Integrated Resource Plan (IRP), which shows investment in clean energy (3,671 MW of solar), but shows increased integration of natural gas (9,534 MW of gas).³ In the past decade, natural gas has been deemed an alternative, cleaner energy to coal and has bipartisan support in the United States. Even its name, "natural" gas, gives the illusion that it is better for the environment than coal or oil. In reality, much of the environmental and human health costs of natural gas extraction have

¹ "Southeast." National Climate Assessment, Nov. 2018.
<https://nca2014.globalchange.gov/highlights/regions/southeast>

² Ibid.

³ "Duke 15-year plans lean heavy on gas to replace coal." 10 Sept. 2018

been externalized and ignored in order to justify its boom in popularity among our world's decision and policy-makers.

Flow-back of fracking fluids and leakage of methane occurs often; it is estimated that 3.6-7.9% of the lifetime production of a shale gas well is vented or leaked to the atmosphere from the wellhead, pipelines, and/or storage facilities.⁴ Additionally, one-fifth of fracking fluid flows back up to the surface in the first two weeks of activation of a gas well and only increases as the lifetime of the well expands.⁵ For example, in a study that was conducted to measure contamination in water wells near fracking sites, it was found that 75% of water wells within one kilometer of the gas drilling was contaminated with methane. Isotopic fingerprinting of the methane proves that the methane found was from deep shale rather than "biologically derived methane."⁶

Methane is a known greenhouse gas and short-lived climate pollutant (SLPC). Methane does not last in our atmosphere for as long as carbon dioxide, but it warms our atmosphere in a much shorter time-frame and is more intense than carbon dioxide.⁷ Regarding human health, Methane is known to have negative human health effects. If and when methane is leaked into United States citizens' water sources, it will cause increased nausea, asphyxiation, memory loss, pulmonary edema, seizures, and even death.⁸

⁴ Howarth, Robert W. et al. "Natural gas: Should fracking stop?" *Nature*, vol. 477, 2011, pp. 273, <https://www.nature.com/articles/477271a>.

⁵ Ibid.

⁶ Osborn, Stephan, et al. "Methane Contamination of drinking water accompanying gas-well drilling and hydraulic fracturing." *Proceedings of the National Academy of Sciences*, vol. 108, no 20, 2011, pp.8174, <http://www.pnas.org/content/108/20/8172.full>.

⁷ "Climate Science Supplement." National Climate Assessment, Nov 2018.

⁸ "Methane." National Library of Medicine: Toxicology Data Network, <https://toxnet.nlm.nih.gov/cgi-bin/sis/search/a?dbs+hsdb:@term+@DOCNO+167>.

Additionally, North Carolina governor Roy Cooper stated earlier this year that North Carolina is going to “intentionally work toward the goal”⁹ to decrease greenhouse gas emissions by 40%. Duke Energy’s IRP goes against the governor’s commitment and should be re-evaluated to better align with greenhouse gas reduction and increase investment into cleaner energies.

Climate activist Greta Thunberg states “You say you love your children above all else, and yet you are stealing their future in front of their very eyes...”¹⁰ The same can be said for Duke Energy; Duke energy is taking away the right to a clean and healthy future for North Carolinians if they move forward with increased investment in natural gas. It has been proven time and time again that natural gas negatively affects our natural environment and humans; this is a claim that needs to be taken seriously. The rest of the world is moving towards cleaner energy and the United States is lagging behind and I believe that Duke Energy has the potential to push the United States forward.

Sincerely,

Megan Sussman

⁹ “Cooper sets global warming goal to cut NC greenhouse gas emissions by 40 percent.” *The News and Observer*, 30 Oct. 2018, <https://www.newsobserver.com/news/politics-government/state-politics/article220789175.html>.

¹⁰ “You Are Stealing Our Future: Greta Thunberg, 15, Condemns the World’s Inaction on Climate Change.” *Democracy Now*, 13 Dec. 2018, https://www.democracynow.org/2018/12/13/you_are_stealing_our_future_greta.

North Carolina Utilities Commission
430 N Salisbury St
Raleigh, NC 27603

4/22/19

Mr. Edward S. Finley
Chairman
North Carolina Utilities Commission
430 N Salisbury St
Raleigh, NC 27603

Dear Mr. Finley,

My name is Scott Johnson, and I am an undergraduate junior pursuing a double major in a BS in Sustainable Development and a BS in Political Science. I am writing to you and the other commissioners to express my strong concerns about the future of our climate and the integrity of our energy infrastructure. As a student and young adult pursuing two science degrees, I am deeply concerned about the impacts of climate change on our planet, and in the function of our own societal health. This is my purpose for writing to you today; climate change poses a severe threat to the health and well-being of our planet, as well as my future and my loved one's futures'.

In October of 2018, the Intergovernmental Panel on Climate Change issued a special report on the urgency to reduce greenhouse gas emissions in relation to a changing climate. The report found that anthropogenic activities, such as the combustion of coal, oil, and gas for electricity and energy have direct links to rising global temperatures, and as a result temperatures have risen 1-degree Celsius since pre-industrial levels. Additionally, the report finds that if emissions from greenhouse gases do not decrease with haste that global temperatures could rise to 1.5-2-degrees Celsius by 2030 [1]. Further, the Fourth National Climate Assessment finds that without significant decreases in greenhouse gas emissions, thereby sticking with a business-as-usual approach, annual average global temperatures could increase by 5-degrees Celsius or more by the end of the 21st century as when compared to preindustrial levels.

Scientists and scholars have determined that these rising temperatures have major negative effects on the global health and ability for future generations to live equally on our planet. According to the Fourth National Climate Assessment, "Global average sea level has risen by about 7–8 inches (about 16–21 cm) since 1900, with almost half this rise occurring since 1993," and "the frequency, depth, and extent of tidal flooding are expected to continue to increase in the future, as is the more severe flooding associated with coastal storms, such as hurricanes and nor'easters" as a result of greenhouse gas emissions [2].

[1] Special Report: Global Warming of 1.5-degrees Celsius: Summary for Policymakers, October 2018, Intergovernmental Panel on Climate Change.

[2] Fourth National Climate Assessment: Our Changing Climate Volume II Impacts, Risks, and Adaptation in the United States, 2018, U.S. Global Change Research Program

The Fourth National Climate Assessment also discusses the negative severe ramifications to changing precipitation patterns, rapid losses in polar-arctic ice, and increasingly severe storms. Naturally, these two reports highlight the imperative necessity to pursue renewable energy with all haste. Climate change is not a phenomenon that is far off in the future and it is happening now, and we must take action. Climate change has contributed to the increasing intensity of wildfires out in California killing hundreds of people and claiming the whole town of Paradise. Furthermore, rising temperatures are having ramifications elsewhere around the globe. Heatwaves have pushed through Japan at a record-breaking intensity of around 40-degrees Celsius killing around 125 people [3]. Climate change is here and will only intensify if we continue to pursue a pro-natural gas approach. We must adapt to the knowledge coming from scientists, and transition to a renewable future, faster, without the “transition fuel” of natural gas, that blocks renewable energy from installation.

Concerned citizens, such as myself and my peers here at Appalachian State have voiced our concerns to elected state representatives. State representatives include Senator Terry Van Duyn, representative Susan Fisher, representative Josh Ager, representative Brian Turner, representative Joe Sam Queen, and representative Ray Russell. These representatives have responded to the concerns of their constituents regarding climate change and recently sent the North Carolina Utilities Commission, with calls to hold another IRP hearing for the western NC region, to be held in Asheville [4]. With the passage of legislation for the Asheville area committing to 100% renewable energy by 2042 with a 50% renewable energy progress-mark by 2030, I am in agreement with these elected officials that another IRP hearing is strongly needed. After reading Duke Energy’s most recent Integrated Resource Plan, I am very underwhelmed with the very slow-to-none adoption of renewable energy infrastructure. This needs to change, and my peers and I strongly request that the North Carolina Utilities Commission hold another hearing to discuss the urgency and strategy to transition our energy sector to renewables compared to devastating combustion fuels.

I share the same views as NC WARN, and argue for the prevention of further gas-fired infrastructure as part of the solution for the problem of climate change. Despite the rhetoric conveyed in Duke Energy’s annual report for 2018 that claims “Everyone who has a stake in Duke Energy’s success..... wants to be part of the answer to generating cleaner power” and that Duke Energy “is a leader in reducing emissions and delivering more renewable energy to customers” [5]. However, after further examining this report, Duke’s ownership in regards to the energy capacity for renewable technologies for estimates to around 5-6%, with almost all of that from out of state commercial renewables contracts, that may not be renewed when facing expiration [6]. Consequently, Duke Energy has been aiming to construct 10,000 megawatts from fracked gas as one of the solutions to a “cleaner” energy grid, which is entirely false [7]. I am writing to the North Carolina Utilities Commission asking you, and your fellow

[3] The world is losing the war against climate change, August 2nd, 2018, The Economist

[4]WNC General Assembly members call on NC Utilities Commission to hold Asheville public hearing about Duke Energy Progress Integrated Resource Plan, March 12, 2019, Mountain Xpress

[5] Transforming the Future: 2018 Annual Report, December 2018, Duke Energy Corporation, pg. 6

[6] Transforming the Future: 2018 Annual Report, December 2018, Duke Energy Corporation, pg. 14

[7] 2018 Biennial IRP’s: Motion for Evidentiary Hearing, November 8th, 2018, NC WARN, pg. 3

commissioners to hold Duke Energy accountable for their extreme lack of renewable energy infrastructure. After viewing Duke Energy's 2018 annual report, I observe that money is not an issue in transitioning to renewables, in fact, renewables are cheaper in certain situations than unconventional fracked natural gas, however, plans to build-out natural gas infrastructure nevertheless are at the top of Duke Energy's agenda. As a regulatory body overseeing Duke Energy's operations with the approval of new gas-fired power facilities and pipeline infrastructure, I deeply urge the North Carolina Utilities Commission to end the support for dirty natural gas-powered facilities and instead mandate that Duke Energy provides significantly higher capacity and megawatt hours of renewable energy from facilities residing in the State of North Carolina, and not from sources beyond state borders.

Viewing Duke's 2018 annual report, I am deeply underwhelmed with the installation of renewable energy in Duke Energy's operations, outside of the Commercial Renewables business, where renewable energy accounted for 145 megawatts out of 50,880 megawatts for Duke's entire operations [8]. Furthermore, within the state of North Carolina, Duke Energy Carolinas (DEC) has installed renewable energy capacity of 31 megawatts, not including hydropower, out of 20,209 megawatts [9], and Duke Energy Progress (DEP) has installed renewable energy capacity of 49 megawatts, not including hydropower, out of 12,747 megawatts [10]. This needs to change, urgently.

Instead of embracing renewable energy projects, the North Carolina Utilities Commission and Duke Energy have been granting approval for the construction of new natural gas-powered facilities, particularly the Robeson Liquefied Natural Gas facility, which aims to be completed by the summer of 2021 costing \$250 million [11]. The cost for this LNG facility is evidence that money is not a problem, and that instead of pursuing renewables, the Commission and Duke continue to "tolerate" this demand. This is unacceptable. Additionally, the NCUC and Duke Energy have approved and began construction of the Atlantic Coast pipeline, through Duke's subsidiary Piedmont Natural Gas, to supply fracked natural gas to customers of North Carolina [12]. The construction of this natural gas infrastructure has blocked the transition to renewable energy, thereby clinging to the business-as-usual track, which is not what customers have advocated for. The construction of this natural gas-powered infrastructure has been passed because of Duke Energy's claim to be a winter-peaking that needs to be able to provide gas power for heat at peak moments of the year from customers [13].

However, with rising temperatures from climate change from the combustion of fossil fuels, such as coal, oil, and natural gas, Duke Energy should not be able to claim to be a winter-peaking utility thereby receiving funds from the NCUC, using taxpayer money to fund projects that are unnecessary for energy customers in North Carolina. As the North Carolina Utilities Commission with regulatory power over Duke Energy, I strongly encourage the commission to end its approval of natural gas-powered facilities and instead strongly embrace the transition to renewable energy because of climate change.

[8] Transforming the Future: 2018 Annual Report, December 2018, Duke Energy Corporation, pg. 26

[9] Transforming the Future: 2018 Annual Report, December 2018, Duke Energy Corporation, pg. 24

[10] Transforming the Future: 2018 Annual Report, December 2018, Duke Energy Corporation, pg. 25

[11] Liquefied Natural Gas Facility Fact Sheet, 2018, Piedmont Natural Gas

[12] Atlantic Coast Pipeline: Fighting to block the expansion of fracked gas in NC, 2018, NC WARN
[13] 2018 Biennial IRP's: Motion for Evidentiary Hearing, November 8th, 2018, NCUC, pg. 4

As a citizen of the great state of North Carolina, and a young adult with many prosperous years ahead, I implore the North Carolina Utilities Commission to re-examine the need for renewable energy infrastructure in North Carolina and hold Duke Energy accountable for the problems of greenhouse gas emissions stimulated from the combustion of carbon-based fuels. I strongly urge the commission to hold another hearing in Western NC to discuss the changing energy sector in regards to the recent legislation passed in Buncombe county aiming to provide 100% renewable energy by 2042. Climate change is an urgent problem and as a commission with regulatory power over Duke Energy, for the sustainability of my future, my peers future, the future of my loved ones, and the future of our planet, please disallow Duke Energy to build more natural gas-powered infrastructure, and instead mandate that Duke Energy must build renewable energy infrastructure to meet the needs of energy customers in North Carolina in a just and sustainable way.

Thank you very much.

Sincerely,

Scott Johnson
Appalachian State University, Class of 2020
Double Major in BS Sustainable Development and BS Political Science
Writing Assistant, Environmental Research and Education Foundation
Member, National Society of Leadership and Success
GPA 3.81

Taryn Justice

April 18th, 2019

Dear Chairman of the North Carolina Utilities Commission, Ed Finley,

I have a few key concerns with the content of Duke Energy's most recent Integrated Resource Plan. One of my main issues with the IRP is the continued and increased reliance on natural gas. It is misleading to say that "approximately 60 percent of electricity" will come from "carbon-free, clean energy sources"ⁱ when those sources are almost all coming from natural gas. By 2033, an anticipated 9,534 MW of gas capacity will be added, meaning that 66% of all new capacity will be from natural gas.ⁱⁱ While carbon dioxide is a major threat to the earth and it is crucial to severely cut down on coal reliance, methane is also a major threat, if not more so. With methane being a short-lived climate pollutant, it does not last as long in the atmosphere as carbon dioxide. However, methane has 30 times the heat trapping capability of carbon dioxide, which is causing significant destruction to earth's natural cycles. This type of purposeful, misleading information is a main contributor to a lack of public knowledge regarding these very serious topics.

In addition to an increase of atmospheric methane, an increase in natural gas poses threats to human life. I am sure that you heard of the recent tragedy that occurred in Durham this month regarding natural gas. A contractor hit a gas line shortly after neighbors called in to report a strong gas smell, leaving 1 person dead and 25 others injured.ⁱⁱⁱ These types of situations are not only tragic, but are avoidable. We currently have the resources and technology to reduce our reliance on natural gas. These explosions are not events of the past, and natural gas is still a huge danger to human life. To integrate more of this substance into the energy mix is irresponsible and can lead to more accidents like this occurring.

The environment is also at risk when it comes to natural gas usage. According to the EIA in 2016, hydraulically fractured gas made up 2/3 of the United States' total natural gas production.^{iv} The negative effects of hydraulic fracturing are widely known and are a serious concern to the environment. The forceful injection of chemical-ridden water thousands of feet under the ground leads to many issues. The chemicals used in the process can leach into groundwater and aquifers, contaminating once potable freshwater that the earth and its inhabitants desperately need. Furthermore, the amount of water that is used in this process is astronomical, and a large waste of resources. For 2-8 million gallons to be used per well, expanding the current usage of (mainly fracked) natural gas shows a blatant disregard for the limited resources on this planet.^v

In addition to the water-related environmental effects of fracking, there is also the increased risk of earthquakes. According to the National Research Council, it was concluded that two earthquakes occurring in Youngstown Ohio were a direct result of hydraulic fracturing. The injection of liquid deep into the underground was responsible for a 2.7 Christmas Eve earthquake and 4.0 New Year's Eve earthquake in 2012.^{vi} Such earthquakes pose a threat to human life and can damage underground well structures that many rely on. If the use of hydraulic fracturing increases along with a higher demand for natural gas caused by goals set in the Integrated Resource Plan, we can expect to see more disasters like all of these mentioned occurring. Natural

gas is not a reliable aspect of our energy future and plans must be made to phase out this dangerous and destructive substance from our energy mix. Plans encouraging the use of natural gas ignore the potential threats to human life and the environment that have been steadily occurring since the rise in its usage.

Along with these serious concerns regarding proposed increases in natural gas usage, I also worry about the lack of discussion in regard to climate change. It is irresponsible to speak extensively on Duke Energy's current and proposed energy usage without mentioning the effects that it has on climate change. As previously mentioned, methane can have drastic impacts on the composition of earth's atmosphere, inevitably leading to climate change. The EPA states that, "Greenhouse gases from human activities are the most significant driver of observed climate change since the mid-20th century."^{vii} This shows a direct link between our use of natural gas and a warming climate. Since 2006, atmospheric methane has been sharply increasing by 25 teragrams every year. This coupled with an increase in atmospheric ethane strongly implies that fossil fuels are largely to blame, as ethane is a main component in natural gas.^{viii}

With natural gas extraction and transportation being such an intensive process, there is a high probability of leaks going into the atmosphere from pipelines and even the wells themselves. Oftentimes, little maintenance is performed on these pipelines once they are put in place, which leads to an aging infrastructure at high risk for leaks. Also, as the ground naturally shifts, these pipelines can become warped, furthering the risk for disastrous leaks. Since 1986, more than 8,000 incidents of faulty pipelines resulting in leaks have occurred in the United States alone, many resulting in deaths and billions of dollars' worth of damage.^{ix} This clearly shows that these are no small accidents. It is known that the leaking of gas into the atmosphere is more harmful to the earth's atmosphere than gas emissions post-combustion, making these leaks detrimental.

Since the IRP excluded the serious, in depth discussion on climate change that society needs, I will discuss some events that can currently be observed on earth. According to Brandon Miller with CNN, the American Meteorological Society "found weather extremes that could not have happened without human-caused warming of the climate."^x This statement clears up any doubt that the extreme changes we are seeing in weather patterns are caused by anything except for human action. There are many environmental disasters that can be directly linked to climate change including flooding, wildfires, and extreme hurricanes. These events have detrimental impacts on society such as droughts in East Africa causing food shortages for millions of people. Hurricane Harvey in August of 2017 killed at least 82 people and caused \$125 *billion* in damages.^{xi} The impact of climate change on human life is undeniable and will only continue to get worse until large companies begin to discuss it openly with the public. With all of this methane leaching into the atmosphere, it is clear that the changes in climate we are witnessing are caused mainly by human fossil fuel usage and will continue to have worsening effects until changes are made, especially from large energy corporations such as Duke.

My final main issue with the most recent Integrated Resource Plan is the lack of emphasis on the potential for solar energy to become a reliable, main source of energy. The IRP does mention a projected increase in the usage of solar energy. According to Duke Energy Carolinas, the solar capacity is expected to increase from 889 MW in 2018 to 2806 MW in 2032. Also, according to Duke Energy Progress, there is an anticipated increase in installed solar capacity, going up from 2440 MW in 2018 to 3847 MW in 2032. This is a step in the right

direction, as these predicted numbers are higher than those of recent year's IRP. With that being said, however, these numbers are once again misleading. The growth amounts mentioned are not entirely accurate because actual capacity is much lower than name place capacity because solar energy fluctuates throughout the day, depending on the amount of sunlight available. This means that actual capacity would be within the 10-25% range, and less than 5% per day during the winter peak in early mornings.^{xiii} It is crucial that Duke Energy gives out transparent, honest information with its customers if we want to make progress in the environmentally-friendly direction when it comes to energy.

Relying on cleaner, safer forms of energy is a viable option. In 2017, NC WARN released *The North Carolina Clean Energy Path 2025: Achieving an Economical Clean Energy Future*, which outlines the possibilities of switching to renewable energy. The report states that by 2025, renewable energy and battery storage will be able to account for 57% of all demand and by 2030, be able to cease the usage of fossil fuels completely. The price of solar has been falling in recent years and technology is only continuing to improve. Solar energy in combination with battery storage is now far cheaper than the retail price for grid power and energy from natural gas plants. Using renewables would also save the \$15 billion needed for Duke's plan to construct new power plants and pipelines. In addition to this, the switch to renewable energy would generate 16,000 permanent jobs in North Carolina alone, while the construction of pipelines offers far fewer permanent positions^{xiii}. This means that renewable energy is a viable option for our energy future that we cannot ignore, and that large energy suppliers like Duke must acknowledge this fact.

The issues within Duke Energy's most recent Integrated Resource Plan are evident. The proposed increase in natural gas usage is irresponsible and a threat to human life and the state of the environment. The lack of discussion on climate change within the IRP is a questionable tactic that purposefully ignores major issues on the planet that are directly related to human activity, especially our energy use. Also, the lack of real effort being put into expanding solar energy is disappointing at best, since it is realistically the next step that we must take if we want to reverse our current situation. Duke Energy is in a great position of power when it comes to these topics, and I feel very strongly about pointing these issues out in the hopes that they will be addressed. It is in the best interest of Duke and our society to come together and have an open discussion about these topics, as they will one day begin to affect us all directly.

Sincerely, Taryn Justice

ⁱ Sorg, Lisa. Critics to state regulators: Duke Energy must do much more to combat climate change. *NC Policy Watch*. 2019, February 07. Retrieved from <http://www.ncpolicywatch.com/2019/02/06/critics-to-state-regulators-duke-energy-must-do-much-more-to-combat-climate-change/>

ⁱⁱ Walton, Robert. Duke 15-year plans lean heavy on gas to replace coal. *Utility Dive*. 2018, September 10. Retrieved from <https://www.utilitydive.com/news/duke-15-year-plans-lean-heavy-on-gas-to-replace-coal/531924/>

ⁱⁱⁱ Vaughan, Dawn B. 911 caller reported smell of gas in Durham almost an hour before deadly explosion. *The News and Observer*. 2019, April 16. Retrieved from <https://www.newsobserver.com/news/local/article229336639.html>

^{iv} Hydraulically fractured wells provide two-thirds of U.S. natural gas production. *U.S. Energy Information Administration*. 2016, May 05. Retrieved from <https://www.eia.gov/todayinenergy/detail.php?id=26112>

^v How much water us used during fracking operations? *Gasland*. Retrieved from <http://www.gaslandthemovie.com/whats-fracking/faq/water-used>

^{vi} Can fracking cause earthquakes? *Gasland*. Retrieved from <http://www.gaslandthemovie.com/whats-fracking/faq/earthquakes>

^{vii} Climate change indicators: greenhouses gases. *Environmental Protection Agency*. Retrieved from <https://www.epa.gov/climate-indicators/greenhouse-gases>

^{viii} What is behind rising levels of methane in the atmosphere? *NASA*.

^{ix} Stover, Richard. America's Dangerous Pipelines. *Center for Biological Diversity*. Retrieved from https://www.biologicaldiversity.org/campaigns/americas_dangerous_pipelines/

^x Miller, Brandon. Climate change is not only influencing extreme weather events, it's causing them. 2018, December 10. *CNN*. Retrieved from <https://www.cnn.com/2018/12/10/world/climate-change-extreme-events-wxc/index.html>

^{xi} Ramsey, Lydia. The 16 most destructive hurricanes in U.S. history. 2018, September 10. *Business Insider*. Retrieved from <https://www.businessinsider.com/most-destructive-hurricanes-in-us-history-2017-8>

^{xii} In the matter of 2017 integrated resource plans and related 2017 REPS compliance plans. 2017, October 12. *NC WARN*. Retrieved from <https://starw1.ncuc.net/NCUC/ViewFile.aspx?Id=f23578d4-8f0b-45ae-a20e-ef4ff18c3cb2>

^{xiii} In the matter of 2017 integrated resource plans and related 2017 REPS compliance plans. 2017, October 12. *NC WARN*. Retrieved from <https://starw1.ncuc.net/NCUC/ViewFile.aspx?Id=f23578d4-8f0b-45ae-a20e-ef4ff18c3cb2>

April 22, 2019

Mr. Edward S. Finley, Jr., Chairman NC Utilities Commission
430 N. Salisbury Street
Raleigh, NC 27603

Dear Members of the North Carolina Utilities Commission,

I am writing to you in regards to the Duke Energy Integrated Resource Plan, the current volatile state of the natural resources upon which this plan is so dependent, and also many of the concerns which have been voiced over the private monopoly investor owned utility (“IOU”) model that has politically dominated the state of North Carolina for so long. It can be well established how the Duke Energy Carolinas (“DEC”) and Duke Energy Progress (“DEP”), collectively known as (“Duke Energy”) Integrated Resource Plan (“IRP”) not only is nonaligned with Governor Cooper’s Executive Order 80 which commits the state to address climate change and a transition to a clean energy economy, but also is noncompliant with the North Carolina General Statute of providing the least cost mix of generation and demand reduction measures.¹ Furthermore, Duke Energy violates the first constitutional amendment by spending captive customer’s bill payments on the promotion of political speech with which the customers do not agree.² The list of points upon how Duke Energy has harmed and not acted in the interest of its North Carolina resident customers goes on. This unethical corporate behavior must not be tolerated any longer. I urge you and the North Carolina Utilities Commission to take seriously the voiced concern of residents and critics in response to the IRP because the opportunity for more just and sustainable access to electricity for the residents of North Carolina is here.

One of the main reasons why the Duke Energy IRP must be reconsidered on numerous fronts is due to the inaction the plan entails in regard to the interests of its customers. Many of these customers, for example, have experienced the brunt of natural disaster events. In September of 2018, Hurricane Florence made landfall in the state of North Carolina. Simply an aspect of the severity of this weather event can be indicated by the action of the President of the United States who declared a state of emergency in the Carolinas over the expected damage of the storm.³ The monetary damage done to the state by Hurricane Florence has been measured at \$17 Billion.⁴ Yet, this figure lacks in the ability to empathize with the suffering experienced by the many families of the 43 individuals included in the death toll from the storm.⁵

How is the example of the harm the residents of North Carolina experienced during Hurricane Florence at all relevant to the Duke Energy Integrated Resource Plan? To start, the

¹ Jordan Jones, “NCSEA Submits Initial Comments & Alternative Proposal for Duke Energy’s Proposed Integrated Resource Plans,” Last modified March 14, 2019, <https://energync.org/ncsea-submits-initial-comments-alternative-proposal-for-duke-energys-proposed-integrated-resource-plans/>

² Sue Sturgis, “INSTITUTE INDEX: Challenging Duke Energy’s influence spending,” Last modified November 27, 2018, <https://www.facingsouth.org/2018/11/institute-index-challenging-duke-energys-influence-spending>

³ Mark Price and Abbie Bennet, “Trump declares state of emergency in both Carolinas as Hurricane Florence nears,” Last modified September 11, 2018, <https://www.charlotteobserver.com/news/local/article218181085.html>

⁴ “Hurricane Florence Damage in North Carolina Reaches \$17B,” Last modified November 2, 2018, <https://www.insurancejournal.com/news/southeast/2018/11/02/506414.htm>

⁵ Richard Stradling, “The death toll from Hurricane Florence has risen again, four months after the storm,” Last modified January 28, 2019, <https://www.newsobserver.com/news/local/article225082775.html>

science has been well established between the links of how climate change can be connected to more extreme weather events, such as more extreme rainfall from hurricanes.⁶ This is significant for the Duke Energy IRP. What the Duke Energy IRP proposes is far from a decrease in the use of energy sources associated with the increased emissions of greenhouse gases which contribute to climate change. Moreover, the Duke Energy IRP actually includes an increase in the use of natural gas as a source for generating electricity for customers with an additional 9,534 Megawatts (MW) of generating capacity with natural gas-fired power plants.⁷ The increased generation of electricity for North Carolina residents with the use of Natural Gas therefore poses a serious problem.

However, it has yet to have been established how the combustion of natural gas for electric generation contributes to climate change, and furthermore, how the natural gas industry as well as supplies are considered increasingly risky investments. Renowned geoscientist David Hughes, an expert in all things fossil fuels, particularly shale and natural gas, can be sought for advice. Hughes's testimony to the North Carolina Utilities Commission, which was unfortunately removed in 2016, includes the outlined risks of natural gas and shale.⁸ First of all, Hughes supports the claim that the build out of natural gas power generation built on the overly optimistic assumptions of shale reserves to replace the coal based generation is risky. I strongly recommend that you take Hughes's advice into further consideration. Furthermore, Hughes also emphasizes how the full-cycle greenhouse gas emissions (GHGs) from the use of shale gas to generate power are not only worse than formerly recognized, but are even more severe than coal.⁹ After viewing the costs associated with the remediation of coal ash from the Dan River, how much more costly will the cost of remediating climate change be with the emissions associated with the investment of natural gas generating capacity indicated by the Duke Energy IRP?¹⁰

One does not need to look very far to understand the inherent risk of increased reliance upon the natural gas extracted from shale gas reserves, especially with the large-scale state wide increased reliance as indicated by the Duke Energy IRP. Furthermore, the North Carolina Utilities Commission is responsible to both the public and utilities and by law (G. S. 62-2) must, "Provide fair regulation of public utilities in the interest of the public".¹¹ It is unclear to me how the North Carolina Public Utilities Commission has yet to have done so in regards to the Duke Energy IRP. The entire shale gas sector is unstable, and I urge you to recognize the inherent risk posed to the state of North Carolina with the Duke Energy IRP which proposes the increased generation capacity with natural gas power plants.¹²

⁶ "The Science Connecting Extreme Weather to Climate Change (2018)," Last modified June 2018. <https://www.ucsusa.org/our-work/global-warming/science-and-impacts/climate-attribution-science>

⁷ Robert Walton, "Duke defends IRP as greens push North Carolina regulators to reassess," Last modified March 11, 2019, <https://www.utilitydive.com/news/duke-defends-irp-as-greens-push-north-carolina-regulators-to-reassess/550112/>

⁸ David Hughes, "Direct Testimony of J. David Hughes for NC WARN, the Climate Times and The NC Housing Coalition," Last modified June 10, 2016, <https://www.ncwarn.org/wp-content/uploads/HUGHES-TESTIMONY.pdf>

⁹ David Hughes, "Direct Testimony of J. David Hughes for NC WARN, the Climate Times and The NC Housing Coalition," 18, Last modified June 10, 2016, <https://www.ncwarn.org/wp-content/uploads/HUGHES-TESTIMONY.pdf>

¹⁰ Jennifer Fernandez, "5 years after Dan River coal ash spill, Duke Energy close to finishing state-mandated cleanup at site," Last modified February 1, 2019, https://www.greensboro.com/news/state/years-after-dan-river-coal-ash-spill-duke-energy-close/article_de8d0fa9-43e8-5b83-85d1-b253683a0548.html

¹¹ "About the NC Utilities Commission," Last modified 2018, <https://www.ncuc.net/Aboutncuc.html>

¹² Daniel Dicker, "Pulling The Plug On Shale," Last modified March 13 2019,

However, the proposed increase in natural gas generating capacity indicated by the Duke Energy IRP is only one side of the story. In terms of the purpose of the IRP as indicated, “The purpose of the IRP is to provide for the orderly expansion of electric generating capacity in order to create a reliable and economical power supply and to avoid the costly overbuilding of generation resources,” the plan falls short once again.¹³ The Duke Energy IRP forecasts a mere 8% renewable energy capacity by 2033 for North Carolina.¹⁴ This dismal figure indicates an effort by Duke Energy to not only not act in the best interest of its customers, but to also indicate as if the IRP opposes a realistic and necessary use of solar energy in power generation. Duke Energy’s unambitious effort to adopt solar energy can be indicated by the fact that the IRP calls for an increase of 4,300 MW of solar power over the next fifteen years. Yet, 4,300 MW of solar power were added to the utility grid in North Carolina in the past four years alone, and the technology only keeps decreasing in price.¹⁵ Therefore, an increased investment of solar power generation must be pursued by the Duke Energy IRP as opposed to the increasingly expensive natural gas power generation in order to act in the utility customer’s best interest.

The increased capacity additions of solar power compared with natural gas amongst North Carolina electric grids can be further supported by understanding the risks, or lack thereof, associated with each method of generation. Not only has it been well established how solar power generation with battery storage is less expensive and more reliable than natural gas power, but there are even examples of utilities which are pursuing more ambitious renewable energy targets across the country which make economic sense. Florida Power and Light Company is currently building the world’s largest battery energy storage system to harness and create more reliable distribution of solar energy for its customers.¹⁶ Is it possible for North Carolina to be a leader in the future of energy transition, or will the current state of the IRP drag the state behind?

Alongside the argument for increased solar generating capacity to be included within the Duke Energy IRP, I also invite you to further explore a change in policy and regulation so North Carolina residents can have better access to safe and reliable electricity. One of the foremost examples of the decrease in price and increased reliability of solar energy generation has been manifested in distributed solar and battery storage. Battery storage combined with solar generating assets alone has been known to be more efficient than gas fired generation, but also can allow for the customer to have more reliable electricity access.¹⁷ When battery storage is combined with solar, at the point of use, at the residential level for example, the eliminated dependence on wires reduces risk of outages.

<https://seekingalpha.com/article/4248573-pulling-plug-shale>

¹³ “NC Warn Initial Comments,” 2, Last modified August 2017, <https://starw1.ncuc.net/NCUC/ViewFile.aspx?Id=f23578d4-8f0b-45ae-a20c-ef4ff18c3cb2>

¹⁴ Elizabeth Ouzts, “Critics challenge Duke Energy’s long-range plan. Will it make a difference this time?” Last modified March 28, 2019, <https://energynews.us/2019/03/28/southeast/critics-challenge-duke-energys-long-range-plan-will-it-make-a-difference-this-time/>

¹⁵ Bill Powers, “Report on Duke Energy 2018 IRPs and Proposed Grid Modernization Program,” 6, Last modified January 16, 2019, <https://www.ncwarn.org/wp-content/uploads/BP-Report-Duke-Energy-2018-IRPs-and-Proposed-Grid-Mod-Program-FINAL.pdf>

¹⁶ Tom Kenning, “Florida utility plans world’s largest battery combined with solar,” Last modified March 28 2019, <https://www.energy-storage.news/news/florida-utility-plans-worlds-largest-battery-combined-with-solar>

¹⁷ Bill Powers, “Report on Duke Energy 2018 IRPs and Proposed Grid Modernization Program,” 10, Last modified January 16, 2019, <https://www.ncwarn.org/wp-content/uploads/BP-Report-Duke-Energy-2018-IRPs-and-Proposed-Grid-Mod-Program-FINAL.pdf>

Furthermore, what the reduced dependence on wires can also indicate is the enormous avoided cost of conventional distribution infrastructure. Duke Energy can be considered to play into the Investor Owned Utility (IOU) capital expenditure bias. This means that utilities increase revenues with the building of capital expenditure projects, whether they are necessary and in the customer's best interest or not. Duke Energy has proposed to spend \$13 billion on North Carolina grid upgrades, \$2.5 billion on the Atlantic Coast Pipeline, and \$10 billion on new gas-fired power plants with the grid modernization program.¹⁸ Much of these costs, even \$15 billion of costs, can be avoided with a reinforced distribution system which incorporates solar plus storage, and prioritizes the customer's best interest with increased reliance on clean and renewable energy sources which are making increasingly economic sense.¹⁹ This new model of electricity distribution inherently involves the favoring of cost effective and environmentally sound solutions, which once again, the Duke Energy IRP does quite the opposite.

Nearing conclusion, I argue that Duke Energy's use of customer funds for political influence must be better recognized and averted, in addition to the increased transparency of public and evidentiary hearings. Clearly, Duke Energy has spent millions in North Carolina and Federal lobbying, in addition to the \$80 million it spends annually to shape public opinion and policy.²⁰ To what extent will this corporate political dominance continue, and to what degree is this type of lobbying in the customer's best interest? It has also been made evident by the Western North Carolina General Assembly how a commission evidentiary hearing in Raleigh on the IRP, and also a public hearing in Western North Carolina must occur to ensure a more fairly represented and supported IRP to be actualized. The Duke Energy IRP clearly does not support the City of Asheville and Buncombe County objectives in reducing GHG emissions 50% by 2030, and 100% by 2042, in addition to the numerous cities and counties across the state which are also pursuing similar targets.²¹ It is therefore supported that a more responsible use of funds for political influence, or lack thereof, and increased transparency at the public hearing level could result in enormous strides forward in terms of not only the public perception of Duke Energy and the North Carolina Utilities Commission, but also an improvement in the likelihood of the sustainability of electricity generation for the state's residents for generations in the future.

In conclusion, this letter recommends a far more stringent evaluation of the Duke Energy IRP to the extent that the NCUC, in providing the, "...fair regulation of public utilities in the interest of the public," no longer succumbs to the corporate monopoly power of Duke Energy's pursuit to continue the increased reliance upon natural gas fired power production far into the future.²² Furthermore, with the advances and price decreases in solar and battery storage

¹⁸ Bill Powers, "Report on Duke Energy 2018 IRPs and Proposed Grid Modernization Program," 5, Last modified January 16, 2019, <https://www.ncwarn.org/wp-content/uploads/BP-Report-Duke-Energy-2018-IRPs-and-Proposed-Grid-Mod-Program-FINAL.pdf>

¹⁹ "NC Warn Initial Comments," 7, Last modified August 2017, <https://starw1.ncuc.net/NCUC/ViewFile.aspx?Id=f23578d4-8f0b-45ae-a20e-ef4ff18c3cb2>

²⁰ Sue Sturgis, "INSTITUTE INDEX: Challenging Duke Energy's influence spending," Last modified November 27, 2018, <https://www.facingsouth.org/2018/11/institute-index-challenging-duke-energys-influence-spending>

²¹ Richard Fireman, "WNC General Assembly members call on NC Utilities Commission to hold Asheville public hearing about Duke Energy Progress Integrated Resource Plan," Last modified March 12, 2019, <https://mountainx.com/blogwire/nc-utilities-commission-to-hold-public-hearing-in-asheville-on-duke-energy-progress-15-year-integrated-resource-plan/>

²² "About the NC Utilities Commission," Last modified 2018, <https://www.ncuc.net/Aboutncuc.html>

technology, in combination with more transparent public commission hearings, the state of North Carolina, including Duke Energy and the North Carolina Utilities Commission, can be better prepared for the challenges of the future.

Respectfully,

Jack Singletary

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