STATE OF NORTH CAROLINA
UTILITIES COMMISSION
RALEIGH

DOCKET NO. E-100, SUB 137

BEFORE THE NORTH CAROLINA UTILITIES COMMISSION

In the Matter of Investigation of the Integrated Resource Plans in North Carolina for 2012	)))	NC WARN'S COMMENTS AND REQUEST FOR EVIDENTIARY HEARING

NOW COMES NC WARN, through the undersigned attorney, with comments on the utilities' 2013 integrated resource plans ("IRPs") and a request for an evidentiary hearing.

These comments address the Commission's mandate to find the "least cost mix" of generation needed to meet forecasted growth in demand in order to prevent costly overbuilding. NC WARN then addresses the plainly conflicting forecasts in the IRPs, those made by Duke Energy representatives and those of the Federal Energy Information Agency ("EIA") and the American Council for an Energy-Efficient Economy ("ACEEE"), a national organization with clear expertise. The cost of meeting demand forecasted by an annual growth rate 1.4 – 1.5% annual growth in the IRPs compared with the zero growth propounded by Duke Energy's past president, the EIA, ACEEE and NC WARN is in the $25 – 30 billion range over the IRP planning period. These comments then compare Duke Energy's *status quo* future with one proposed by NC WARN, a responsible energy future, eliminating all coal plants and all new generation, replacing it with energy efficiency, solar power and other forms of distributed generation. The

result is an economically stronger North Carolina, lower utility bills and far less pollution.

I. SCOPE OF REVIEW.

1. Each year the electric utilities file their 15-year plans, called integrated resource plans ("IRPs"), with the Commission. As declared in G.S. 62-2(a)(3a), the Commission's basic standard for review is

> To assure that resources necessary to meet future growth through the provision of adequate, reliable utility service include use of the entire spectrum of demand-side options, including but not limited to conservation, load management and efficiency programs, as additional sources of energy supply and/or energy demand reductions. To that end, to require energy planning and fixing of rates in a manner to result in the ***least cost mix*** of generation and demand-reduction measures which is achievable, including consideration of appropriate rewards to utilities for efficiency and conservation which decrease utility bills

(emphasis added). G.S. 62-2(a)(4) continues this "least cost" theme and states that rates set by the Commission should be "consistent with long term management and conservation of energy resources by avoiding wasteful, uneconomic and inefficient uses of energy."

2. The North Carolina Supreme Court has specified that the purpose of the IRPs is to prevent the costly overbuilding of new generation. *State ex. rel Utils. Comm'n v. High Rock Lake Ass'n,* 37 NC App. 138, 245 S.E.2d 787, cert. denied, 295 N.C. 646, 248 S.E.2d 257 (1978). That case states in part

> the primary mandate of G.S. 62-110.1 to the Commission, which is to regulate the expansion policy of electric utility plants in North Carolina to provide for the public need for electricity without wasteful duplication or overexpansion of generating facilities.

The Commission's mandate is to find the "least cost mix" of meeting demand, and a large part of this is to scrutinize any claims for new generation facilities.

3. Duke Energy is a regulated monopoly that generates more than 95% of the electricity consumed in North Carolina (either directly or through the municipalities and cooperatives), and it tries to make a strong profit for its shareholders while it does. Duke Energy is planning to make its profit from building new power plants, paid for by rate payers, and those power plants are not needed. New expensive power plants are not the least cost solution and will take even more money from the ratepayers that could be used for energy efficiency and weatherization projects that would create many new jobs in our communities and lower electricity bills. Renewable energy sources, such as solar and wind, have the ability to provide reliable electricity throughout the year when it is needed the most. Distributed generation, including customer cogeneration and microgrid technologies, are increasingly economic ways to get energy where it is needed.[1]

4. If the Commission approves the Duke Energy plan, it approves a status quo threatening to bankrupt North Carolina's economy and continue polluting our air and water. The IRPs do not include the external costs, such as health impacts, crop damages, depletion of groundwater and coal ash in our rivers. Positive actions by Duke Energy could be a national, if not international, game-changer reducing the drastic impacts of climate change. There is much at stake

[1] Cogeneration, also referred to as combined heat and power ("CHP"), is use by industrial and large commercial customers of both the electricity generated on-site and the heat it produces. A microgrid "is a localized grouping of electricity generation, energy storage, and loads that normally operates connected to a traditional centralized grid." Along with renewable energy sources, these are all are part of distributed generation, which "allows collection of energy from many sources and may give lower environmental impacts and improved security of supply."

for North Carolina, and for each one of us; the status quo is no longer attainable, or a realistic option.

5. With all of the rapid changes in the electric utilities business, such as the widespread demand for phase-out of carbon-producing power plants, the demise of the nuclear renaissance, rapid advances in utility-scale batteries and the emergence of solar energy as an extremely cost-effective option, the industry is said to face a "corporate death spiral."[2]

6. In last year's IRP docket, NC WARN, Greenpeace and the Blue Ridge Environmental Defense League proposed a course for eliminating all coal plants. Duke Energy considered the proposed plan to be unreasonable and argued it should be ignored as "interesting exercises" if North Carolina wanted to get away from coal and nuclear, and toward energy efficiency and solar.[3] We strongly disagree and firmly believe that State policy mandates the Utilities Commission to consider our plan. It is clear that a balanced mix of distributed generation and energy efficiency is the only reliable, cost effective and readily available energy mix over the IRP planning period.

[2] Edison Electric Institute, "Disruptive Challenges: Financial Implications and Strategic Responses to a Changing Retail Electric Business," January 2013; www.eei.org/ourissues/finance/Documents/disruptivechallenges.pdf

[3] In its order, the Utilities Commission succinctly summarized Duke Energy's position: "According to DEC and DEP, the NC WARN et al. attachments may be ***interesting exercises*** if North Carolina wants to attempt to maximize EE, DSM and renewable resources, while eliminating baseload nuclear, coal and natural gas generation, without regard to cost, reliability or availability." (emphasis added). Order Denying Request for Evidentiary Hearing and Allowing Proposed Orders and Briefs, p. 4; Dockets E-100, Sub 135 and Sub 137, July 15, 2013.

II. DIFFERING GROWTH FORECASTS BY DUKE ENEGY.

7. Both DEC and DEP base their 15-year IRPs on growth in the use of electricity, increasing 1.4 – 1.5% each year, even though actual growth in electricity demand has been flat for more than a decade.[4] Remarkably, each of the projections include the impacts of the utility's energy efficiency programs, so the actual growth Duke Energy maintains in the IRPs is even higher -- almost 1.9%. The forecasts are based on a full economic recovery and a booming growth in population. What is worse, the utilities' plans are to meet new growth for electricity with continued use of polluting fossil fuel plants and extremely costly nuclear plants.

8. What is troublesome are the surprising inconsistencies in the forecasted growth in demand and sales stated in the IRPs and what Duke Energy officials told shareholders and the business press just weeks after the IRPs were filed.

a. In her earnings conference call with Duke Energy shareholders on November 6, 2013, Lynn Good, Duke Energy's CEO, stated the utility actually expects growth to be in the 0.5 to 1.0% range for the foreseeable future.[5] As summarized in an article by Bruce Henderson in the Charlotte Observer, "long-term, CEO Lynn Good told financial analysts, Duke expects sales to grow only 0.5 percent to 1 percent a year. In recent years, annual growth has been about 1 percent."[6]

---

[4] DEC 2013 IRP, pages 13-14; DEP 2013 IRP, pages 13-14.

[5] Duke Energy Corporation Earnings Conference Call, www.duke-energy.com/pdfs/3Q2013Earnings_Call.pdf

[6] www.charlotteobserver.com/2013/11/06/4443787/duke-energys-earnings-rise-after.html#.Up-DxCd8Arw

b. In his presentation to the Legislative Study Committee at the N.C. General Assembly on January 7, 2014, Paul Newton, Duke Energy's President for North Carolina, testified the growth rate would be between 0.5 and 0.9%.[7]

c. In his interview with Industrial Info Resources on December 16, 2013, Jim Rogers, former chairman and CEO of Duke Energy, stated he expects electric growth to be flat for the foreseeable future. He is quoted as stating "over the next couple of decades, we're not going to be building central station generation, particularly when you factor in the effect of state renewable portfolio standards (RPS), more efficient appliances, more efficient building and new technologies that will help customers reduce electric usage." The article then summarizes his position as follows "going forward, he said state RPS policies would absorb most of what growth there will be in customer demand for electricity." Since then, Mr. Rogers has repeated his forecast in other forums.

NC WARN is unable to determine which of these annual growth forecasts Duke actually believes to be accurate.[8]

9. Of these differing forecasts, Mr. Rogers's forecast of zero growth is in line with the most recent growth projections by the EIA as well as actual growth

[7] Joint Legislative Commission on Energy Policy, meeting handouts for January 7, 2014; www.ncleg.net/gascripts/DocumentSites/browseDocSite.asp?nID=233

[8] One rationale given by Duke Energy officials and floated to business reporters for the considerably lower forecasts is that they are for the Duke Energy system in its entirety. This falls flat after reviewing the IRPs (or similar documents) in each of the other states Duke Energy serves – the weighted average is a forecasted 1.33% growth rate, with only Indiana projected as significantly lower than other states. The other rationale given for the lower growth forecasts is they do not include growth in sales to wholesale customers. This also falls flat in that there just are not many potential wholesale customers in the North Carolina service area left, and their growth will not be any higher than the rest of the system.

for the past decade. Electricity sales have stagnated in recent years, and consumption has declined in some sectors.[9] During 2013, EIA estimates the average U.S. residential customer used 10,870 kilowatt hours (kWh) of electricity, which is 2.2% lower than the average level of consumption between 2008 and 2012. In part due to improvements in appliance and lighting efficiency, "the overall growth trend has been slowing in recent years." Overall, energy efficiency is one of the smartest and "least cost" means of meeting energy needs.

10. Another recognized source for energy forecasts, the ACEEE also projects a zero or potential negative growth future for utilities.[10] According to the ACEEE report, electricity sales fell by 1.9% in 2012 over 2007's figures, and sales in the first ten months of 2013 have fallen even lower. While the economic recession explains the decline in sales in 2008 and 2009, it is much less clear why sales have continued to fall. The ACEEE suggests energy-efficient buildings, lighting and appliances have successfully reduced consumption. Other influences were energy efficiency programs and policies, warmer weather, changes in gross domestic product, changes in electricity prices, and long-term trends in energy efficiency.

11. The differences between the IRP, EIA and ACEEE projections are significant in scope and the real world impacts are substantial. Together for both DEC and DEP, Duke Energy forecasts a need for 7,029 MW of new capacity and

[9] U.S. Energy Information Administration, Short-term Energy Outlook report, January 7, 2014; www.eia.gov/forecasts/steo/report/electricity.cfm

[10] ACEEE, "Why is Electricity Use No Longer Growing?" February 2014. Available at http://aceee.org/files/pdf/white-paper/low-electricity-use.pdf

34,691 MWh of additional energy sales.[11] Table 1 below shows the difference in the need for capacity and energy between the forecast increase in the IRPs and the lower forecasts. A forecast in the 1% to 0.5% range reduces the need for new generating plants down to a range of 2,267 MW to 4,686 MW (with similar reductions in energy). The zero growth scenario forecast propounded by Mr. Rogers, and supported by the EIA and the ACEEE, eliminates the need for additional capacity and energy entirely. This forecast eliminates the need for the Lee Nuclear Station and all other proposed new generating plants, and allows the utility to shut down all coal plants and reduce use of natural gas with a stronger commitment to energy efficiency, renewable energy resources, cogeneration and other distributed generation. The debate could and should be about how fast we can shut down coal plants and which natural gas plants should be closed.

TABLE 1 – Difference between IRP projected growth and slower growth models

	NEW CAPACITY (MW)	NEW ENERGY (MWH)	REDUCTION IN CAPACITY (MW)	REDUCTION IN ENERGY (MWH)
IRP projections in 2028	7,029	34,691	–	–
1.0%	4,686	23,659	2,343	11,032
.5%	2,267	11,447	4,762	23,244
0%	0	0	7,029	34,691
-.5%	(2,124)	(10,727)	9,153	45,418

[11] For DEP, the 2028 forecast is a total capacity of 15,881 MW of capacity and 79,198 MWh for energy, an increase of 2,865 MW of capacity and 13,865 MWh for energy over today's level. For DEC, the 2028 forecast is a capacity of 22,496 MW and 113,769 MWh, an increase of 4,164 MW and 20,826 MWh.

12. The projected demand growth is a crucial component in determining the costs for new generation facilities and in the Duke Energy forecast, the 7,029 MW difference between the IRP 1.5% increase and the zero growth scenario is in the $25 – 30 billion range over the IRP planning period. This extraordinarily high figure includes the proposed natural gas plant in Anderson, South Carolina, the two proposed reactors at the Lee Nuclear Station and the other smaller natural gas plants the IRPs forecast which Duke Energy claims are needed over the next 15 years.[12]

13. NC WARN's analysis shows that a zero growth scenario allows for phase out of all coal plants, eliminates the need to construct new nuclear plants and reduces the need for some existing natural gas. This can be done with strengthened energy efficiency measures, a more rapid development of renewable energy, and the fostering of distributed generation, backed up by batteries and pumped storage.[13] As in the EIA and ACEEE projections, many of the energy efficiency measures in the planning horizon are not programs financed by the utilities. Consumers will buy more efficient light bulbs, HVAC systems and appliances because they make sense economically. Many new products are being designed to reduce energy use because of these consumer preferences. At the same time, solar energy and wind, along with CHP, micro-grids and other distributed generation technologies, will supplant Duke Energy-generated electricity.

[12] Joint Planning Scenario; DEC 2013 IRP, pp. 36-37; DEP 2013 IRP, pp. 36-37.

[13] Pumped storage is when water is pumped at night back up into the reservoirs to be released as needed during the day when electricity use is greater. Duke Energy has two pumped storage facilities with a capacity to generate up to 1765 MW with an additional 300 MW added by 2019.

III. THE FUTURE UNDER DUKE ENERGY'S IRP.

14. In 2014, DEC began with 18,332 MW in capacity and annual sales of 92,943 million MWH; DEP began at 13,016 MW and 65,333 GWH in sales, for a combined capacity of 31,348 MW and 158,276 GWH.[14] Appendix A contains a set of pie charts comparing Duke Energy's forecasts with those in NC WARN's responsible energy future -- a zero growth scenario.[15] The most significant difference is the increase of energy efficiency and demand-side management programs ("DSM") to 19% of capacity and 24% of energy, up from 5% of capacity and 6% of energy in the Duke Energy forecasts. Likewise, CHP and microgrids are increased to 8% of capacity and 10% of energy, while it is not included in Duke Energy's forecasts at all; renewable wind and solar is increased to 18% of capacity and 7% of energy, up from 3% of capacity and 3% of energy in Duke Energy's plan.

15. Each of the utilities continues to retain a substantial reserve margin; in its IRP, page 24, Duke Energy reports its reserve margins over the planning horizon are between 14 and 22% with a goal of 14.5% (for both DEC and DEP). Duke Energy's reserve margins have been consistently above average for the industry. The expressed purpose of the reserve margin is to provide electricity in

[14] Capacity is measured in megawatts (MW) and sales of energy in megawatt hours (MWh) or gigawatt hours (GWh, or 1000 MWh). Nuclear and the baseload coal plants are approximately 1,000 MW; a MW provides electricity for approximately 350 homes, and an average residence uses 1,200 kilowatt hours in a year.

[15] Duke Energy's present capacity and energy are taken from the IRPs and combined together in their Joint Planning Scenario. Natural gas-fueled plants are combined into one source to make comparisons easier.

case one of the other plants is not on line when it is most needed.[16] Reliance on large coal and nuclear plants requires higher reserves than the equivalent capacity for a wide variety of distributed generation sources.

16. Neither utility relies on purchases from other utilities, although competitive markets such as the PJM in Virginia and the Atlantic states, are nearby. It is interesting to note that one of the FERC requirements prior to accepting the merger between the two utilities is the construction of major transmission lines connecting to the PJM network.[17] It seems logical that strategic purchases should be a much larger consideration in DEC and DEP's long-term plans.

17. As part of its joint planning scenario, Duke Energy continues to plan for nuclear plants, even though operational dates for the two nuclear units proposed at its Lee Nuclear Station site in Gaffney, South Carolina, have been repeatedly delayed in each of the annual IRPs and now are not expected to operate until 2024 and 2026. A full look at new nuclear plants is critical in a responsible energy future as they are by far the most costly option with cost estimates for the two units at the Lee Nuclear Station at more than $24 billion.[18]

---

[16] A utility relying on larger baseload coal and nuclear plants requires a larger reserve than one with distributed generation of many sizes and locations.

[17] Order Accepting Revised Compliance Filing, as Modified, and Power Sales Agreements; 139 FERC ¶ 61,194, June 8, 2012. FERC is currently investigating Duke Energy's compliance with the FERC merger order.

[18] One of the best estimates for the price of new nuclear plants is from the proposed Levy nuclear plant in Florida which was required to provide cost updates; the price of each of the two nuclear plants is now more than $12 billion. Florida Public Service Commission recommendations, November 7, 2012; www.floridapsc.com/agendas/archive/121126cc/121126.html. Last year's study conducted by Synapse Energy on behalf of the Consumers Against Rate Hikes showed that the addition of the Lee Station alone, without the other plants Duke Energy is planning, will raise rates 40% for North

New estimates on decommissioning a nuclear plant could easily add a billion more for each site.[19] What is more, currently all nuclear licensing is delayed while the Nuclear Regulatory Commission decides what to do with all of the irradiated spent fuel generated by any existing and proposed reactors.[20] The costs for the long-term storage of this spent fuel could add billions more.[21]

18. The only two nuclear plants under construction in the United States, the Summer plant in South Carolina and the Vogtle plant in Georgia, are facing long construction delays and rapidly escalating costs. These extremely expensive and risky plants are only being pursued because the utilities in those states automatically pass on construction costs to rate payers by including annual construction work in progress ("CWIP") payments in ratepayer bills.

19. Subsequent to the filing of its IRPs, Duke Energy made a well-reasoned decision not to purchase part of the Summer nuclear power plant being constructed near Anderson, South Carolina.[22] Based on the full cost estimates for the Levy plant in Florida, the cost of 112 MW from the nuclear plant could be

---

Carolina customers. www.consumersagainstratehikes.org/wp-content/uploads/2012/12/Risks-to-Ratepayers-Synapse-Dec-2012.pdf

[19] Brattleboro Reporter, "Vermont Yankee decommissioning costs could include spent fuel handling," November 25, 2013. Current cost estimates for decommissioning are estimated by Entergy as $825 million consisting of $656 million for radiological decommissioning, $40 million for site restoration and more than $130 million for spent fuel management. www.reformer.com/localnews/ci_24593293/vy-decommissioning-costs-could-include-spent-fuel-handling#

[20] NRC, Consideration of Environmental Impacts of Temporary Storage of Spent Fuel After Cessation of Reactor Operation, 77 Federal Register 277, p. 65137; *New York v. NRC*, 681 F.3d 471 (D.C. Cir 2012).

[21] Estimated costs for the now-abandoned national site, Yucca Mountain, was $100 billion-plus or approximately $1 billion per plant. Current alternatives are vague in scope and costs.

[22] See announcement in SEC Form 8-K, January 27, 2014; www.sec.gov/Archives/edgar/data/30371/000110465914004265/a14-4266_18k.htm.

as much as $1 billion, especially as construction problems arise and the schedule slips. This addition of 112 MW (DEC 66 MW and DEP 46 MW) in 2020 was part of both IRPs and the joint planning scenario, but it is now clear that investment in this project would have been both unwise and unnecessary. The IRPs should be adjusted to reflect Duke's decision not to buy stake in the plant.

20. In the last several years, Duke Energy has retired 2300 MW of coal plants rather than invest in air quality scrubbers. These were the smaller, less efficient coal units that were seldom used. On the DEP side, some of the retired coal plants were converted to natural gas as fuel. Overall, Duke Energy continues to rely on its large coal plants, spewing pollution into the air, polluting water sources and filling up coal ash ponds. Duke Energy sends more than $1.7 billion out of the state each year for coal. Approximate cost estimates for cleanup of all existing coal ash ponds is in the $12 - 15 billion range.[23]

21. In the past, natural gas plants were used because they could be put on line faster and in smaller increments than coal or nuclear plants. Although, from the size of the natural gas additions in the IRPs, the utilities are now considering natural gas to be a baseload resource, as well as used at peak periods. The disadvantages of reliance on natural gas are the polluting greenhouse gases and externalized costs of fracking and conventional drilling, refining, transport and combustion. There is little difference between a natural

[23] Rep. Mike Hager, NC WARN – John Locke Foundation forum, Raleigh, March 20, 2014.

gas plant dependent on fracking and a coal plant in terms of pollution over its entire life-cycle.[24]

22. Duke Energy recently received permission in South Carolina to construct a 750 MW combined cycle natural gas plant near Anderson, South Carolina, costing approximately $1 billion.[25] At present, Duke Energy is not seeking permission to construct the plant from the North Carolina Commission, but will likely seek to recover the North Carolina share of its construction costs from its North Carolina customers in a subsequent rate hike. There have been no showings that a new large-scale baseload natural gas plant is a "least cost" option or that it is even needed. In a motion to the Commission in the present docket, NC WARN maintained that the Commission should use its discretionary authority to review the necessity of this project before Duke Energy seeks to recover costs for it in a future rate case.[26] The Commission denied the motion, but stated NC WARN could raise issues about the need for the plant in its comments on the IRPs, and further that it would scrutinize the costs of the plant if Duke Energy sought recovery in a rate proceeding.

---

[24] Scientific American, "Fracking would emit large quantities of greenhouse gases," January 20, 2012. www.scientificamerican.com/article/fracking-would-emit-methane/ For summaries of recent studies of environmental impacts, www.edf.org/sites/default/files/methane_studies_fact_sheet.pdf The Network for Public Health Law, "Environmental impacts associated with hydraulic fracturing," summarizing EPA Draft Plan to Study the Potential Impacts of Hydraulic Fracturing on Drinking Water Resources (2011). www.networkforphl.org/_asset/w74j2w/

[25] See NC WARN's Motion to Review Costs of Proposed Plant in South Carolina, filed March 10, 2014 in this docket.

[26] See NC WARN's Motion to Review Costs of Proposed Plant in South Carolina, filed March 10, 2014 in this docket.

23. As part of the review of the utilities' IRPs, the amount of carbon emissions and other pollution needs to be assessed.[27] Just from the burning of natural gas and coal, Duke Energy's plan in 2028 (for both DEC and DEP) will result annual CO_2 emissions in the 133 billion pound range, while the NC WARN plan reduces this to 26 billion pounds, a reduction in emissions of 80%. We believe we can reduce greenhouse gas pollution even further by removing all fossil fuel sources of energy from the portfolio.

IV. A BETTER PATH FORWARD.

24. To better understand the differences in the economic and environmental impacts inherent in the Duke Energy IRPs and those in the responsible energy future proposed by NC WARN is to compare Duke Energy's monopoly business model with the competitive model proposed by NC WARN. The Duke Energy business model is dividend driven -- the primary mission for the utility is to generate more dividends for its shareholders. To do this, Duke Energy needs to increase sales in order to justify building more generating plants. To raise the funds for the new plants, Duke Energy increases its rates, giving it higher guaranteed profits and allowing it to increase dividends.

25. NC WARN's model is competition driven; the primary goal is to maximize efficiencies and thus minimize costs to rate payers. To do this, NC WARN would increase energy efficiency and renewable energy, and encourage distributed generation to place energy sources near where they are needed. This

[27] EPA data on average CO_2 emissions from burning coal and natural gas (updated Oct. 2012); www.epa.gov/cleanenergy/energy-and-you/affect/air-emissions.html. For fuller discussion, see NC WARN et al. Comments filed in this docket, February 4, 2013.

eliminates the need for new centralized generating plants and, as a result, decreases rates.

26. The core features of a responsible energy future are phasing out existing coal plants as quickly as possible, eliminating the need for as many new proposed natural gas plants as possible and eliminating plans for new nuclear plants. This can be done through progressive programs to increase energy efficiency at customer locations. A recently released report by ACEEE showed that utility energy efficiency programs were the best value for America's energy dollar.[28] ACEEE reviewed program costs in the years 2009-2012 to calculate the levelized cost of saved energy which ACEEE described as is the best way to compare energy efficiency to other energy resource options. At an average of 2.8 cents/kWh, electric utility energy efficiency programs are about one-half to one-third the cost of new electricity resource options and has remained consistent as the lowest-cost resource. Not all of, or even a significant part of, energy efficiency savings are attributable to utility programs. Consumers at all levels are learning to use electricity in smarter ways, buying more efficient light bulbs and appliances, replacing old water heaters and HVAC systems with new ones and weatherizing their homes. New building codes in North Carolina will make all new homes more efficient.[29] If funded adequately, weatherization programs can lower bills for low-income and working families.[30]

---

[28] ACEEE, "The Best Value for America's Energy Dollar: A National Review of the Cost of Utility Energy Efficiency Programs," March 25, 2014; www.aceee.org/research-report/u1402

[29] www.energycodes.gov/adoption/states/north-carolina

[30] See testimony of Satana Deberry and Deborah Warren for NC WARN's proposal for a Community Enhanced Income Qualified Energy Efficiency and Weatherization Program in Docket

27. The second main component for a responsible energy future is for a renewable energy build-up to account for 24% of total electricity sales, including both retail and wholesale sales in North Carolina. Solar photovoltaics is a tremendous resource that can provide reliable electricity when we need it, with costs continuing to fall steadily. Since 2010, the price of utility-scale photovoltaics projects has been cut in half, from 21.4 cents/kWh to 11.2 cents/kWh, with a realistic target of 6.0 cents/kWh by 2020.[31] Solar has been less expensive than new nuclear generation for several years and recent reports from electric industry publications are expecting grid parity, i.e., the cost of solar energy will be at or less than the average cost of all generation sources, in 2015.[32] Wind is less readily available but still remains a viable source of generation over the IRP planning period and should be fully investigated.

28. We further recommend the development of distributed generation, including substantial CHP systems for commercial and industrial customers who use both heat and electricity in their facilities, and microgrid technologies putting electricity generation as close to where it is needed as possible. North Carolina currently has very little CHP capacity in place -- so little that neither of the IRPs even mention it -- with 1,530 total MW of capacity and only 18 MW installed in

---

E-7, Sub 1032 (DEC's Save-a-Watt programs). The goal of the proposal is to provide direct services annually to 5,000 families, and include another 20,000 in education programs.

[31] SunShot Program, Department of Energy. http://energy.gove/eere/shushot/photovoltaics

[32] NCSEA, "Levelized Cost of Solar Photovoltaics in North Carolina," February 2012. http://energync.org/assets/files/LCOE%20of%20Solar%20PV%20in%20North%20Carolina-FINAL.pdf John Blackburn, "Solar and Nuclear Costs – the Historic Crossover: Solar Energy is Now the Better Buy," July 2010. www.ncwarn.org/wp-content/uploads/2010/07/NCW-SolarReport_final1.pdf

the past seven years.[33] We need to encourage customer cogeneration as its average costs are approximately 6 - 7 cents/kWh. Other microgrid technologies are also becoming increasingly competitive.

29. Taken together, energy efficiency, solar and wind, and other distributed generation technologies, backed up by pumped storage and batteries, will greatly lessen the need for all of the proposed new power plants in the Duke Energy IRP, and will allow us to shut down all existing coal plants and some natural gas capacity. Instead of expensive new plants, NC WARN proposes greatly strengthened efficiency programs, a more rapid development of wind and solar, and the fostering of customer cogeneration and other distributed generation. The costs of the recommended changes are substantially lower than the costs of new nuclear and much less than conventional electricity generation from coal plants, especially when considering environmental costs.

V. WHAT DOES THIS MEAN FOR NORTH CAROLINA?

30. At a minimum, Duke Energy's business plan (based on the proposed construction in the IRP) will cause rates to double from 2009 to 2028, with additional increases in the subsequent decade depending on when new large-scale generation is added.[34] This does not include any additional costs from

[33] Anna Moorefield and Jim Warren, *Combined Heat and Power in North Carolina: Replacing Large Power Plant by Putting Wasted Energy to Work*, NC WARN, February 2013. www.ncwarn.org/wp-content/uploads/2013/02/CHP-Report-FINAL.pdf

[34] The starting year for this analysis is 2009 when DEC came in for the first of its three rate hikes, with DEP adding another rate hike in its service area. This estimate of the rate impact is based in large part on the findings in the report by Synapse Energy Economics filed in this docket in last year's IRP process. The timing of the cost impacts for nuclear construction depends on whether Duke Energy can obtain tracking CWIP, the annual rate hike bill, from the legislature, which would move the risks of the costs of construction to the ratepayers. The other cost considerations

inflation, new and ungraded transmission lines, increases in fuel prices, and controls on the production of carbon.

31. As rates increase under the Duke Energy plan, residential and small business customers will face increasing financial burdens, especially if the utilities can convince the General Assembly to enact tracking CWIP legislation to pass through construction costs to ratepayers before new plants generate any electricity.[35] Under the tracking CWIP scheme, customers pay while the plant is being built, even if the costs escalate, or the plant is delayed or even abandoned. The tens of billions of dollars needed for the proposed nuclear plants would be devastating for the North Carolina economy.

32. Much of the growth in energy efficiency, renewables and other distributed generation sources are outside of Duke Energy's business plan because they will not be able to control how ratepayers will re-examine their electricity use and change their behavior. However, using ratepayer dollars to pay for new and expensive generation plants draws funds away from residential investments for weatherization and appliances, commercial investments in HVAC systems and industrial investments in new turbines. When growth forecasts are too high, the utilities invest our money into their unneeded plants rather than allow us to make our own energy choices. And for many low income families, that choice may be as fundamental as electricity versus food and medicine.

---

are whether the Lee Station stays on-time and on-budget. Because of the way costs are allocated, most of the rate increases will be borne by residential customers and small businesses.

[35] See www.consumersagainstratehikes.org for information on the CWIP Annual Rate Hike Bill and its consequences.

33. From an environmental point of view, the continued reliance by Duke Energy on coal and natural gas plants does very little to reduce the emissions of carbon and greenhouse gases such as methane in the atmosphere, and toxic materials such as mercury and arsenic in our rivers and groundwater from ash ponds. The NC WARN plan remedies this by eliminating coal plants, and reducing natural gas dependency for both utilities by removing the newly proposed baseload natural gas units. If battery and other storage technologies become cost-effective, we believe even more plants can be closed.

34. Another advantage of the responsible energy future is its positive economic benefit for North Carolina. In its 2013 census, the NC Sustainable Energy Association ("NCSEA") estimated there are 18,404 workers in clean energy, bringing in $3.6 billion in revenue.[36] NC WARN's proposal for a community-based low-income weatherization program in the Duke Energy Save-a-Watt docket estimated an additional 1150 jobs could be created in counties across the state, many for low-skilled workers.[37] A recent study shows Duke Energy's reliance on coal imports drains $1.7 billion each year from North Carolina's economy.[38] The cleanup of existing ash retention ponds across North Carolina could cost $12 - 15 billion. Getting rid of all coal plants keeps the money sent out of the state for coal each year in our state's economy, less air pollution

[36] NCSEA, NC Clean Energy Industry Census, January 2014. Available at http://energync.org/assets/files/podcast_episodes/north-carolina-renewable-energy-energy-efficiency-industries-census/2013-nc-clean-energy-industry-census.pdf Note that most of the present jobs are associated with solar industries, smart grid technologies and energy-efficient building.

[37] Deberry Testimony, Appendix; Docket E-7, Sub 1032.

[38] Union of Concerned Scientists, *Burning Coal, Burning Cash: Ranking the States that Import the Most Coal — 2014 Update*, January 2014. Available at www.ucsusa.org/clean_energy/smart-energy-solutions/decrease-coal/burning-coal-burning-cash-2014-update-state-coal-imports.html

is pumped into the atmosphere and we keep toxic coal ash out of our rivers and groundwater.

35. The minimum of $24 billion for nuclear units in the IRPs surely has better uses, and our proposal eliminates the significant uncertainty about whether nuclear plants could be completed. Ratepayers are spared the 18 - 21 cents/KWh costs of nuclear electricity and avoid the risk involved with creating more nuclear waste and potential nuclear accidents.

36. NC WARN's approach can provide an estimated annual savings for North Carolina electricity customers of more than $2 billion. It is a responsible energy future, one that promotes job creation and a good economy and will provide us all with a healthier place to live and a means to do our share in finding solutions to climate change. Converting from Duke Energy's *status quo* IRP to a responsible energy future is more than an "interesting exercise", it is a decision with critical impact on North Carolina's well-being.

VI. THE NEED FOR AN EVIDENTIARY HEARING.

37. In light of the diverse and contradictory forecasts between those provided in the IRPs and those propounded by Duke Energy executives to shareholders, legislative commissions and the business press, NC WARN believes an evidentiary hearing is required. In addition to varying forecasts from the utility, the forecasts and analysis by the EIA, the ACEEE and others support the zero growth scenario. As shown above, the ramifications of following the Duke Energy IRP forecast, in rate impacts and costs to ratepayers caused by

new plant construction and continuing use of coal and its associated risks, are highly significant.

38. Specific items, such as the indeterminate costs arising from the Anderson gas plant and the new cost projections for coal and nuclear plants, require closer scrutiny by the Commission. Another is the significant cost drop in Duke Energy's supplement to the IRPs, filed March 7, 2014, after it re-examined its assumptions on solar and wind's contribution to peak also warrants a close look. Lastly, Duke Energy did not supplement its IRPs after eliminating the share of the Summer nuclear plant in its resource plan.

39. In a series of data requests, NC WARN sought confirmation of the changes in capacity and energy based on the various projections in the IRP and as modified by the Duke Energy representatives. Duke Energy stated the projections were simply mathematical formulae and then maintained it had not conducted analysis showing how it would change its planning in terms of the type of generation plant by fuel type and capacity size, and the year the plant would come on line for each of the following forecasts for the various projections. NC WARN's position is that this is the fundamental purpose of the IRP process – to determine the demand forecasts used by Duke Energy in its real-world planning and to determine the least cost mix of meeting that demand. This is more than just an "interesting exercise."

THEREFORE, in light of the above comments, NC WARN requests that the Commission consider closely its comments on the IRPs and schedule an evidentiary hearing on the IRPs.

Respectfully submitted, this is the 11th day of April 2014.

FOR NC WARN

/s/ John D. Runkle

_____

John D. Runkle
Attorney at Law
2121 Damascus Church Rd.
Chapel Hill, N.C. 27516
919-942-0600 (o)
jrunkle@pricecreek.com

CERTIFICATE OF SERVICE

I hereby certify that I have this day served a copy of the foregoing NC WARN'S COMMENTS AND REQUEST FOR EVIDENTIARY HEARING (E-100, Sub 137) upon each of the parties of record in this proceeding or their attorneys of record by deposit in the U.S. Mail, postage prepaid, or by email transmission.

This is the 11th day of April 2014.

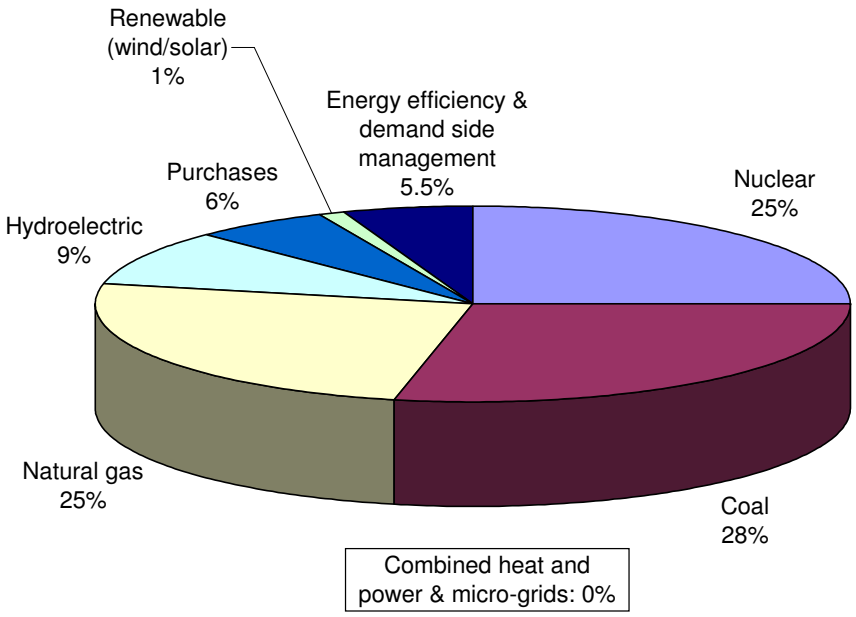
/s/ John D. Runkle

_____

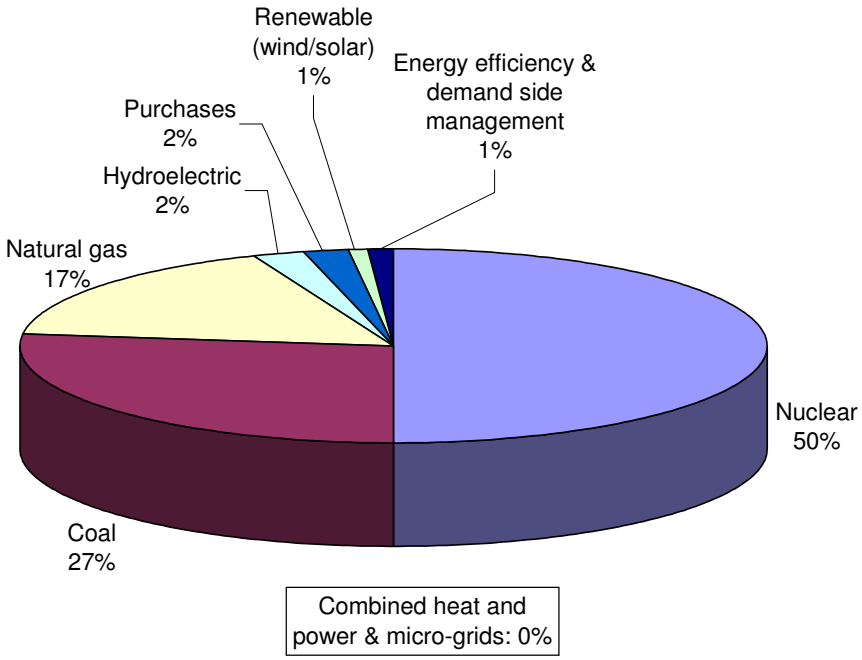
Attorney at Law

Attachment A

IRP Joint Planning Scenario: Combined Company 2014 Capacity

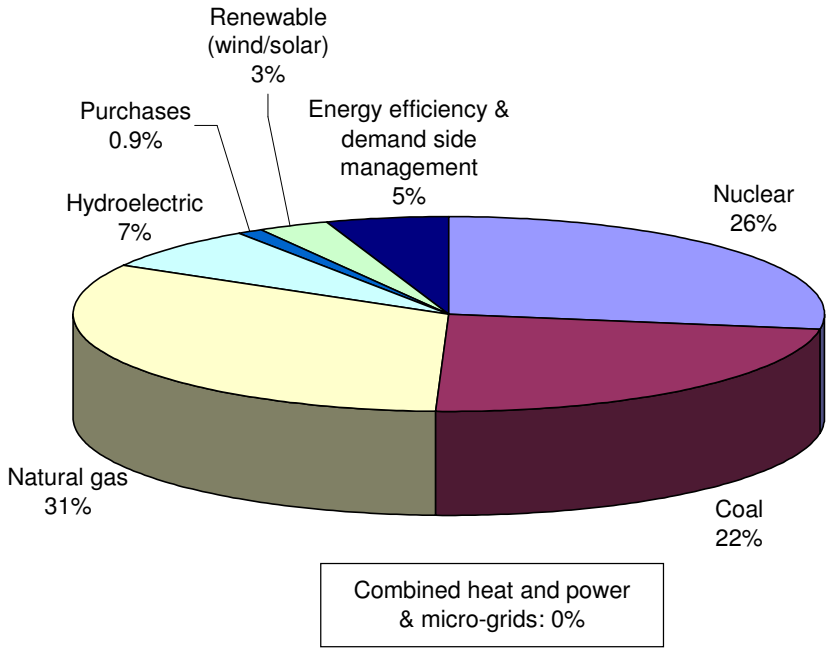


IRP Joint Planning Scenario: Combined Company 2014 Energy

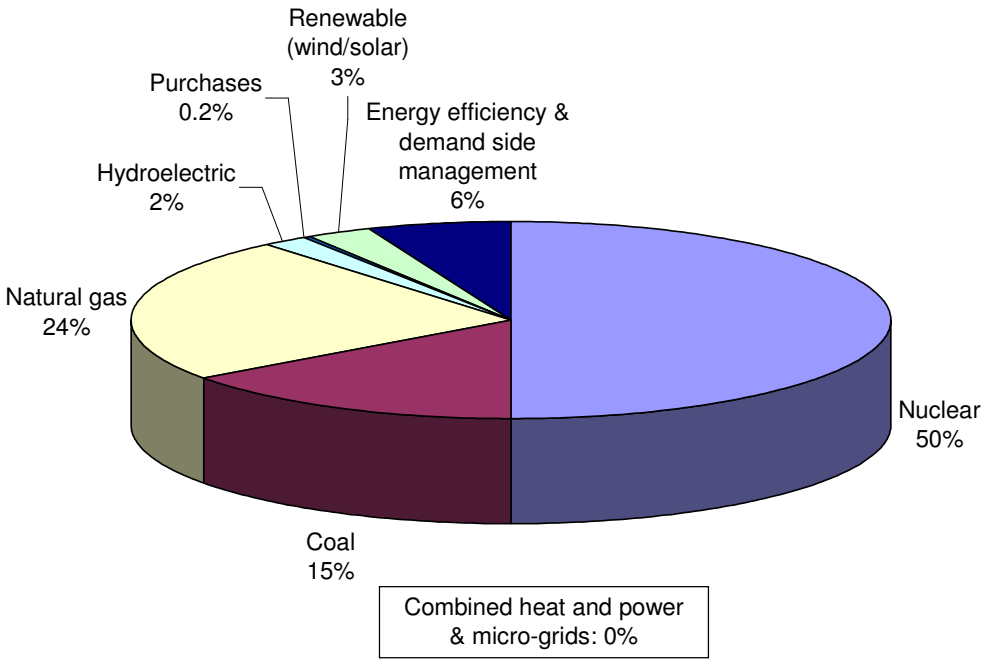


Attachment A

IRP Joint Planning Scenario: Combined Company 2028 Capacity

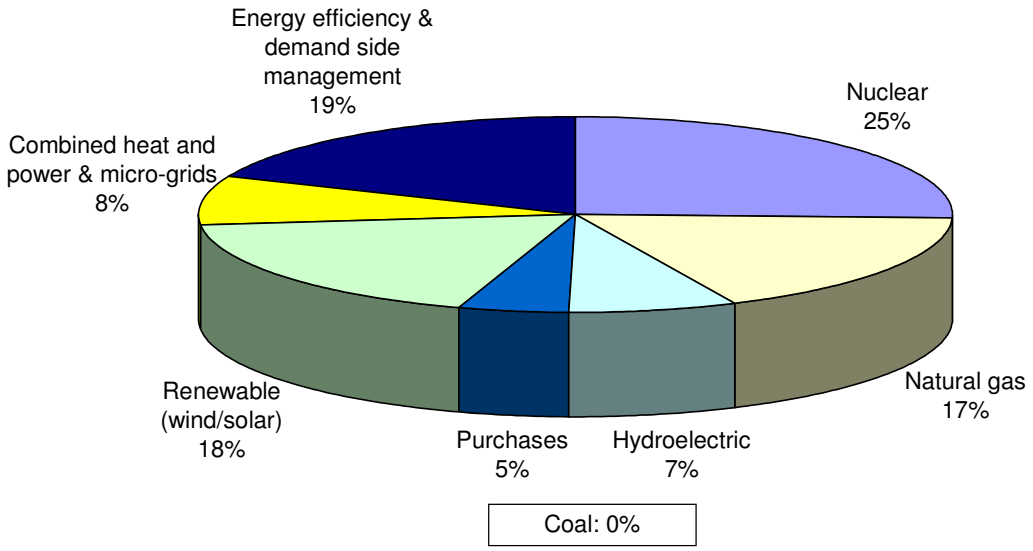


IRP Joint Planning Scenario: Combined Company 2028 Energy

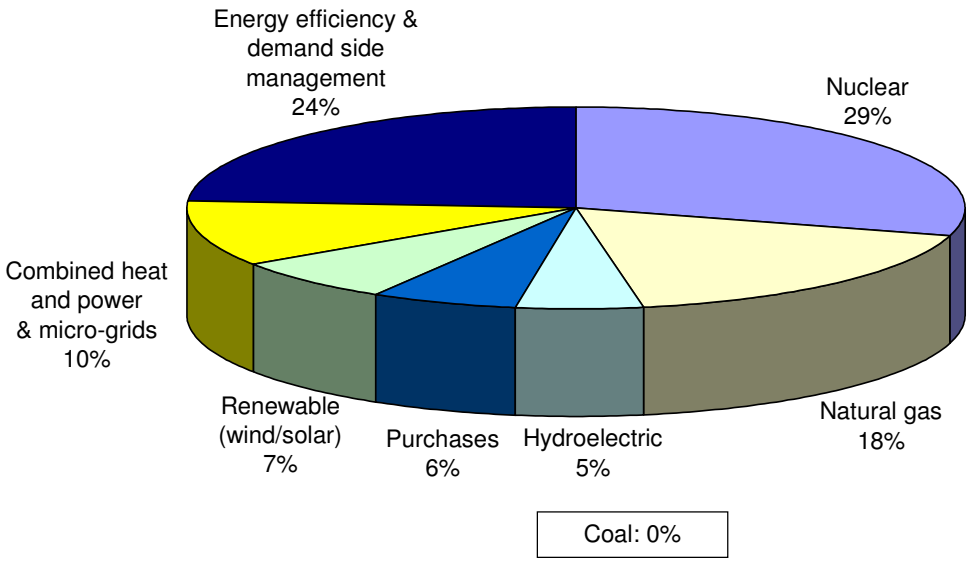


Attachment A

Responsible Energy Future: Combined Company 2028 Capacity



Responsible Energy Future: Combined Company 2028 Energy



Attachment A

Assumptions:

NC WARN assumes the elimination of the use of coal plants in NC and no construction of new generating plants should be the two principal goals of the IRP process.

Company numbers reflect the joint planning scenario for the combined Duke Energy Carolinas-Duke Energy Progress company as outlined in the company's 2013 IRP.

The company's IRP is based on an annual sales growth projection of 1.5% for Duke Energy and 1.4% for Duke Energy Progress. NC WARN's analysis is based on a 0% growth scenario.

NC WARN's analysis uses US Energy Information Administration (EIA) data for the average capacity factor of each energy source. These capacity factors are 90% for nuclear, 85% for coal, 80% for natural gas, 55% for hydroelectric and 30% for renewable energy. NC WARN assumes energy saving resources such as energy efficiency, combined heat and power, and any purchased power reflect a 100% capacity factor. EIA capacity factor analysis is available at www.eia.gov/forecasts/aeo/pdf/electricity_generation.pdf.

Charts of NC WARN’s Responsible Energy Future do not reflect all energy that will be produced by distributed resources outside of Duke Energy's control such as customer-owned rooftop solar. We anticipate this to be a significant factor in our energy future due to the falling price of solar and the increase in customer interest - particularly at the residential level - in solar energy.