

Blue Ridge Environmental Defense League

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February 11, 2013

BEFORE THE NORTH CAROLINA UTILITIES COMMISSION

DOCKET NO. E-100, SUB 137

In the Matter of Investigation of the Integrated Resource Plans in North Carolina for 2012

Statement of Louis A. Zeller, Executive Director

Background

On November 27, 2012, the Blue Ridge Environmental Defense League filed a motion¹ to intervene in the North Carolina Utilities Commission Integrated Resource Plans (IRP) and on November 29th the Commission granted permission to intervene. IRPs are required to be filed by power companies to provide a long-range forecast of their operations. Together with NC WARN and Greenpeace, who filed similar petitions, we will present detailed information on the electric utilities' proposals for serving the state's power needs during the next 15 years.

Recommendations

- Phase out all coal-fired power plants in North Carolina by 2025
- Add no new nuclear power reactors and reduce production at existing plants
- Add no new natural gas-fired power plants and reduce production at existing units
- Put an end to the state's Renewable Energy Portfolio Standards requirement for electric power plants fueled by poultry and hog manure
- End the false distinction between "base-load" and "intermittent" power sources
- Increase the renewable energy standard to 33% by 2020
- Target solar and wind energy to achieve 99% of the state's electric power by mid-century

Statement

The IRPs are of vital importance in setting the future path of the utilities. Given the costs and environmental problems associated with fossil-fuel, biomass and nuclear generation and the decreasing costs of energy efficiency and renewable energy, the path forward is clear to us. And it will become more and more apparent to ratepayers across the state during the coming decades. However, three investor-owned utilities—Duke, Progress and Dominion—and the quasi-governmental Tennessee Valley Authority are courting disaster by going down the road towards more fossil fuel and more nukes.

Based on documents submitted to the Commission in this docket, Duke Energy's long-

¹ NC Utilities Commission Docket No. E-100 Sub 137, In the Matter of Investigation of the Integrated Resource Plans in North Carolina for 2012, November 27, 2012

range plan would have 82% of North Carolina's electric power provided by natural gas, nuclear and coal.² Likewise, Progress Energy would provide 89% with natural gas, nuclear, coal and oil.³ Together Duke and Progress supply about 96% of the utility-generated electric power consumed in the state. A third investor-owned utility supplying about 4%, Dominion Virginia Power, d/b/a North Carolina Power, would generate 85% with nuclear, natural gas and coal.⁴ Across their respective multi-state service areas, Dominion and Duke sell similar amounts of power. All three companies plan to reduce coal use but will increase natural gas by such large amounts that it will erase most or all of any potential reductions in global warming impacts. For example, during the next fifteen years, Dominion would actually increase its fossil fuel-generated electric energy output by 44%.⁵

Although not subject to the Commission's IRP requirements, The Tennessee Valley Authority provides power to 33,000 households and 8,300 commercial and industrial customers in North Carolina located in Cherokee, Clay, McDowell, Burke, Avery and Watauga counties. TVA posits that 70% of its electric energy in 2022 will be provided by nuclear, coal and natural gas.

Blue Ridge Environmental Defense League opposes pollution-generating sources of power including hydrofracking, biomass, landfill gas, incineration of solid waste, poultry and hog manure, waste gasification, and nuclear. Support for fossil and nuclear power retards the growth of renewable energy sources such as solar and wind. Biomass and waste-powered plants present false solutions to global warming.

Biomass

The Blue Ridge Environmental Defense League has done extensive study and comparison of poultry manure-fueled power plants and much of these data are in Commission REPS dockets. We found that comparing poultry litter fuel to coal-fired power plants—both subject to preconstruction New Source Review and requirements for best available control technology—that emissions of particulates, carbon monoxide and nitrogen oxides from poultry litter power plants exceeded those of coal-fired power plants; in the case of nitrogen oxides more than double. All things considered, replacing electricity from coal with electricity from poultry litter would increase ozone pollution in North Carolina.

Natural Gas

The US Environmental Protection Agency has studied non-energy related methane

² Duke Energy Carolinas' 2012 Integrated Resource Plan and 2012 REPS Compliance Plan, Docket No. E-100, Sub 137, filed 4 September 2012

³ Progress Energy Carolinas, Inc.'s 2012 Integrated Resource Plan, Docket No. E-100, Sub 137, filed 4 September 2012

⁴ Dominion North Carolina Power's and Dominion Virginia Power's Report of Its Integrated Resource Plan Before the North Carolina Utilities Commission and Virginia State Corporation Commission, PUBLIC VERSION, Docket No. E-100, Sub 137, Case No. PUE-2012-00099, Filed: August 31, 2012

⁵ *Id.*, Energy by Source Base Plan, Figure 6.7.5

emissions from hydraulic fracturing nationwide. Non-energy related emissions include fugitive, vented and flared releases of emissions; i.e., methane not captured for electric energy production. The emission factors indicate that there is about 7 ½ million cubic feet of non-energy related methane emitted per well developed by hydraulic fracturing. The NC Department of Environment and Natural Resources estimates that upwards of 164 wells per year may be developed in North Carolina. Based on these data, the state could have 1.2 billion cubic feet of fugitive methane emissions annually with hydraulic fracturing. Direct methane emissions released to the atmosphere are about 21 times more powerful than CO₂ in terms of their warming effect on the atmosphere. Additional sources of fugitive emissions from natural gas include processing of the gas to remove contaminants, pipeline, tank storage and distribution leaks, all part of normal operations.

Wind and Solar

In addition to being cleaner and safer, total cost-benefit accounting for electric energy reveals that wind and solar energy are more economical than coal and nuclear. A study done for the Commission of the European Communities by Olav Hohmeyer analyzed the impacts of renewable energy compared with fossil fuel and nuclear power.⁶ The study quantified in financial terms the total costs and benefits of four major sources of electric power: coal, nuclear, solar, and wind. It determined that there is a net social *benefit* of 0.3 - 0.6 cents per kilowatt hour for wind energy and 0.9 - 3.3 cents per kilowatt hour for photovoltaic power. These benefits result from employment gains and resultant wage and tax benefits from the installation of wind and solar technologies. The study concluded that the total costs to society of fossil and nuclear power are much higher than the market price would indicate and that the costs of solar and wind energy are much lower. In other words, the skewing of rates for conventional electricity below actual costs delays the introduction of cleaner forms of power.

The costs of misguided energy decisions have been calculated and they are substantial. Continued reliance on outdated, polluting energy sources has huge public health costs which are borne by all of us. And although renewable forms of energy are growing, unnecessary and avoidable costs to society are incurred because of the failure of the utilities to introduce more renewable power sources sooner.

Baseload is a Fiction

The concept of base load power is outdated and should be abandoned. It is a fiction convenient for the electric power producers which allows them to say, in effect, that they want to develop wind and solar energy, but it should be done in addition to coal and nuclear sources in for periods when the sun does not shine or the wind does not blow.

⁶ *Social Costs of Energy Consumption*, Olav Hohmeyer, ISBN 3-540-19350-2 Springer-Verlag, Berlin Heidelberg New York (1988)

A recent study published in the *Journal of Power Sources*⁷ found that, by using combinations of three renewable electricity sources— inland wind, offshore wind and photovoltaics— that 99.9% of electric power demand can be provided by these renewables alone with batteries and fuel cells for storage. The study encompassed many combinations of renewables and storage, a grid system of 72 gigawatts-electric (about 1/5 of the US grid) and 35,040 hours (four years) of load matched to actual weather data.

The results of the study found nearly three times the electricity needed to meet electrical load and 90% of these hours would be below normal costs. Bottom line: At 2030 technology costs, the electric system can be powered 90% to 99.9% of hours entirely on renewable electricity, at costs comparable to today's, with excess electricity displacing natural gas.

Conclusion

The general statutes of North Carolina which require the IRP analysis of the long-range need for electricity and least-cost considerations (NCGS 62-110 and 62-2) compel the Commission to require a full cost accounting of all electric generation sources. However, Duke Energy, Progress Energy and Dominion Energy are pursuing *most-cost* energy policies which are both expensive and reckless. Wind energy, a clean and abundant energy resource, produces electricity with no emissions of nitrogen oxides, sulfur dioxide, or carbon dioxide, and no ionizing radiation.

Respectfully submitted,

A handwritten signature in black ink, appearing to read "Louis A. Zeller", followed by a horizontal line extending to the right.

Louis A. Zeller
February 11, 2013

⁷ "Cost-minimized combinations of wind power, solar power and electrochemical storage, powering the grid up to 99.9% of the time," *Journal of Power Sources* 225 (2013) 60-74, Budischak et al, <http://www.sciencedirect.com/science/article/pii/S0378775312014759>