

Two months ago, Duke Energy declared war on the Carolina Foothills. Duke thought they were declaring “victory” by publishing their assumptive “Duke Energy Western Carolinas Modernization Project,” attempting to limit the discussion of the “modernization” program, (I use the term loosely) to the choice of a single transmission line among many alternatives to connect a new substation in SC with a new power generation station in Asheville. They used “happy talk” in their web site and supporting materials to describe this glowing “modernization” program as a way to increase capacity and reliability, “at no cost to you”, the customer.

The spontaneous eruption of protests throughout the area quickly documented that the cost of their proposal was unacceptable and the benefits false. The proposed Duke Energy transmission system and accompanying substation would degrade our economies, deface our environment, damage our agriculture economy and destroy the value of thousands upon thousands of peoples’ homes.

The destructive nature of the Duke Energy proposal has been documented by individual testimonies (in writing and at many meetings), by the eloquent objections of the Henderson County NC Tourism Development Office, the Fletcher County town council, the Carolina Land Coalition, by testimony of real estate professionals, engineers, the Greenville SC Town Council and outreach by the Sierra Club. This small sample of the outrage shows the depth and breath of this opposition.

From the [change.org](#) petition page opposing Duke’s Plan (which has over 5,000 signatures, a number that is growing daily), we learn that “Rep. Doug Brannon, a Landrum Republican, sent a letter on his legislative stationary Tuesday to the state Office of Regulatory Staff, which represents consumers in utility matters, protesting the proposal. He wrote that three other lawmakers — Sen. Tom Corbin of Travelers Rest, Rep. Tommy Stringer of Greenville and Rep. Mike Burns of Taylors — also are opposed to the plan and “will fight this Duke Energy project with all political options available to us and will not hesitate to take advantage of judicial remedies as necessary.” So, politicians are getting the message, as well.

This is a war we cannot, and will not lose.

**And this is a war that we should not even have to fight.**

Why? Two things: First, Duke’s growth assumptions are bogus. In their own financial documents, they say energy growth is leveling off.

And second, because not only is it really bad business to be at war with your customers, this proposal is bad energy policy and bad science. Why? Because the future of the energy grid in this country is in distributed energy, embedded in micro-grids, connected by a smart grid.”

I read from “[EnergyAcuity.com](#) - online insight into the energy industry and markets.” “Since their inception, the electric utility business model has remained largely unchanged. They own and operate segmented networks of power stations, substations and transmission lines that interconnect to form a nation-wide grid. Customers pay these utilities to deliver power to their homes, and maintain their section of the grid. However, recent developments have begun to threaten the traditional utility operating model, and many have raised the question, will they be able to adapt?”

Distributed generation operates completely opposite to the current utility system; power is generated and consumed at a single location by many small producers who send their leftover energy back to the grid. Some examples of this type of system are solar panels on a neighborhood home, or a fuel cell used to help power an industrial facility. The idea is that producing power at the consumption source will reduce inefficiencies created by transmitting power over long distances, drive down costs, and allow consumers more freedom in choosing where their energy comes from. But is there room for electric utilities in this increasingly popular form of energy generation?

Many have pointed to the proliferation of distributed energy as the beginning of the end for electric utilities. The reason for concern is that many believe profits will shrink as customers increasingly produce their own energy. In reality these fears are unfounded as distributed generation users still need to be attached to a grid in order to guarantee a continuous power source when their systems are not producing energy. If anything, distributed generation allows utilities to evolve their business model as long as they are willing to embrace the new technology and operational models associated with it.”

This entry is from November 6, 2013 ALMOST TWO YEARS AGO.

And not only is Duke’s model old-fashioned, their centralized generation and distribution model is LESS stable than the distributed energy/smart grid model of the future.

Again, I read from a press release, June 24, 2015, reporting on research from NCState University :

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“Currently, power infrastructure uses a centralized scheduling approach to forecast and coordinate the energy produced at the thousands of large power plants around the country. But as renewable energy systems – such as rooftop solar panels – proliferate, and are incorporated into the power grid, the infrastructure will need more advanced systems for tracking and coordinating exponentially more energy sources. Addressing this issue is essential to the idea of a smart grid that can make efficient use of widespread renewable energy resources.

“A key challenge for renewable energy generated on-site – by home solar panels, for example – is determining how much of that energy needs to be stored on-site and how much can be shared with the larger grid,” says Mo-Yuen Chow, a professor of electrical and computer engineering at NC State and senior author of a paper describing the new power scheduling technique.

The existing approaches to scheduling are highly centralized, with power plants sending data to a control center that crunches the numbers and then tells plants how much they’ll be expected to contribute to the grid.

“This approach doesn’t scale up well, which is a problem when you consider the rapid growth of on-site renewable energy sources,” says Navid Rahbari-Asr, a Ph.D. student at NC State and lead author of the paper.

“The rise of on-site energy storage technologies presents an additional challenge, since that means energy can be stored for use at any time – making power scheduling calculations significantly more complex,” Rahbari-Asr says. “In addition, the centralized approach is vulnerable. If the control center fails, the whole system falls apart.”

By that, the author means, MASSIVE, ROLLING, BLACKOUTS. That means that a centralized system like Duke is proposing is MORE vulnerable to future outages than the one that they have today, which has an unacceptable outage rate as is.

The Carolinas deserve better.

North Carolina is an early adopter of this new advanced energy technology business model.

The FREEDM Systems Center at NC State was established in 2008 by NSF to develop smart grid technology based on advanced power electronics and information technology.

In fact, according to the 2014 North Carolina Clean Energy Industry Census, the state's cleantech sector grossed nearly \$5 billion in 2014, and is expected to grow between 30 and 35 percent this year. There are 1,208 cleantech firms in the state employing the equivalent of 22,995 full-time workers and generating \$4.8 billion of direct and indirect economic activity.

What are they working on? Mainly the efficiency of buildings. That sector produces about 40 percent of the state's clean energy revenues, with 833 companies focusing on it through construction, consulting, or the installation of systems and components. The next-largest sector is solar, with 450 companies involved. North Carolina is ranked fourth nationwide in installed solar power, with more than 600 megawatts (MW) of capacity.

Things are going so well that the state has actually become an exporter. Up to 20 percent of its cleantech goods and services head out of state.

**Local business organizations are touting their “clean/modern technology credentials “  
From The Wake County, chamber of congress web site:**

“Welcome to Wake County; the Smart Grid Capital of the World. A bold statement for sure, but it’s one that’s backed up by dozens of companies that employ thousands of people. Collectively, these smart grid firms invest tens of millions of dollars annually on research, development, and implementation of new enabling technologies. Our community’s success didn’t happen overnight, and it’s not just focused on smart grid technologies. Wake County is part of a larger concentration of cleantech companies found in North Carolina’s Research Triangle Region that includes renewable energy and energy efficiency companies, plus a growing collection of businesses and assets engaged in advanced transportation and water technologies. In 2011, recognizing the area’s impressive industry growth, the International Cleantech Network invited the Research Triangle Region to become one of only 15 members in the exclusive global organization.”

And Asheville, the supposed beneficiary of Duke Energy's Megawatt largess, has just announced that the American Association of State Climatologists has chosen Asheville for their national headquarters.

**from their press release.**

"This is the kind of win that will attract additional companies in this field," said Clark Duncan, director of business development for the Economic Development Coalition for Asheville-Buncombe County. "Bringing (this group) to Asheville is a great milestone for us, which has honestly been a part of a many years' effort to grow high-wage, technical and professional employment around this valuable asset that we have: climate data."

Since 1951, Asheville has been home to the National Centers for Environmental Information, which was previously known as the National Climatic Data Center.

Located inside the Federal Building, 100 Otis St., the Centers for Environmental Information hosts and provides public access to some of the most significant environmental data archives on Earth.

Along with housing more than 20 petabytes of environmental data, the center also employs some 400 scientists, technologists and analysts, including 16 Nobel Laureates.

Though the Centers for Environmental Information is a federally funded entity, its presence has made Asheville a well-known city among those working in the climate science sector.

Over time, that has created what many have called 'Asheville's climate cluster.'

That cluster includes North Carolina Cooperative Institute for Climate and Satellites, UNC Asheville's National Environmental Modeling and Analysis Center, the data center, a number of private-sector climate-related interests and The Collider.

Dan Leathers, president of the American Association of State Climatologists, said it was this concentration of climate science organizations and businesses that ultimately sealed the deal for his group. The nonprofit is focused on championing the use of science-based information when making public policy decisions regarding matters of climate."

**Irresponsible, and unpopular energy companies like Duke, are becoming an economic liability.**

In a 2011 report titled "How dirty is your data?", Greenpeace rated Apple as having the lowest Clean Energy Index and the highest Coal Intensity among tech giants such as Facebook, Google, Microsoft and Amazon. Apple also received a 'C' for Transparency, an 'F' for infrastructure Siting and a 'C' for Mitigation Strategy on the environmental group's "Clean Cloud Power Report Card."

Apple, along with Facebook and Google, was criticized for contributing to a "dirty data triangle" in North Carolina, where substantial tax incentives from the state have attracted billions of dollars in data center investments from tech companies.

"Apple's decision to locate its iDataCenter in North Carolina, which has an electrical grid among the dirtiest in the country (61% coal, 31% nuclear<sup>45</sup>), indicates a lack of a corporate commitment to clean energy supply for its cloud operations," the report said.

In response, Apple shows how important sustainable energy is.

From the MIT Technology Review, in an issue published shortly after the Green Peace challenge, Apple describes a power system that is almost completely divorced from Duke Energy, although they will feed excess power to the grid:

"Apple says the much-watched project (Wired actually hired a pilot to take photos of it) will be one of the most environmentally benign data centers ever built because it will use several energy-efficiency tricks and run on biogas-powered fuel cells (supplied by Bloom Energy) and a giant 20-megawatt solar array."

**So, how good does it look for Asheville to be getting their power from "the dirtiest utility in the united states?"**

The many spontaneous resident and business organizations that grew out of the outrage to this Duke Energy "modernization" proposal have joined as one to stop this program in its' tracks.

Our proposal is this:

In the infamous words of Anonymous, Duke Energy can either "lead, follow, or get out of the way."

We would prefer they choose to LEAD. By that we mean, embrace the new distributed power generation and smart grid technology. Work with local and national experts to identify sites for micro-grids, figure out how to upgrade the grid to new smart technology. And expand, as needed, with the best technology available. As a comparison, using combined heat and power fuel cell systems, sited close to heavy users (industry, hospital, educational institutions, and such), capable of generating the 400MW that Duke says that they are currently sending to Asheville could be sited on less than 45 acres, TOTAL. How does that compare with the 45 mile, football-field wide transmission-line path that Duke Energy proposes? To give you an idea, a Bloom Fuel Cell Server, capable of powering a typical office building would occupy about one PARKING SPACE. And since it is so innocuous, it could be sited right next to the building.

And a 14.9 MW system like the base load fuel cell park in the middle of Bridgeport Conn is located on what was a 1.5 acre empty lot. Right in the middle of town Now there is a 90% efficient, clean, quiet, power, no nitrogen or sulfur oxide gasses, paying taxes and not bothering anyone.

That is a vision we would gladly embrace.

Second, Duke could FOLLOW. They could subcontract the development of a clean-tech, distributed power solution to a consultant company that would work with an independent resident, business and town council committee to ensure that the system is appropriate to our needs.

And finally they can just get out of the way.