

spotlight

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POWER TO THE PEOPLE

End SB 3 with its expensive, regressive renewable energy portfolio standard

KEY FACTS: • In 2007, the General Assembly passed major energy legislation, SB 3, that would deliberately raise electricity prices in North Carolina through a Renewable Energy and Energy Efficiency Portfolio Standard (RPS).

• The RPS mandate fails to meet its stated purposes, worsening consumers' energy needs with higher prices, undercutting 'energy security' and indigenous energy by incentivizing subsidies to out-of-state energy providers while not counting shale gas, harming energy investment, and making questionable choices for air quality.

• The RPS mandate does, however, contribute to higher electricity prices for captive ratepayers.

• Because electricity is a basic necessity, higher rates are highly regressive. Households with annual incomes of \$30,000 per year or less spend as much as one-third of their after-tax income on power bills.

• Economists at Beacon Hill Institute estimated that SB 3 will impose net costs on North Carolina in lost jobs, investment, income, and revenues.

• Instead of developing reliable, efficient, and least-cost sources of electricity, North Carolina's RPS mandate makes utilities chase arbitrary percentages of handpicked "winner" sources, include some that are extraordinarily inefficient. Solar and wind are exorbitantly expensive, dwarfing conventional sources.

• Renewable energy sources also require vastly larger amounts of land to produce power equivalent to conventional sources. To produce 1,000 megawatts, wind power would require more land than the cities of Raleigh, Wilmington, and Fayetteville combined.

• Since the RPS mandate was passed, the energy world has witnessed a revolution in extracting oil and natural gas from shale rock formations. This game-changer cannot be ignored.

• Furthermore, wind and solar require far, far higher amounts of federal subsidies and land to produce equivalent amounts of power as natural gas.

• SB 3 should be repealed. A bill before the General Assembly would cap and end the RPS mandate. Ideally, the renewable energy and energy efficiency portfolio standard would be eliminated, and the measure's Construction Work In Progress section would be struck out. North Carolina policy should support lowest-cost, reliable, and efficient energy sources, which one day could include renewables.



**CAROLINA
CRONYISM**

200 W. Morgan, #200
Raleigh, NC 27601
phone: 919-828-3876
fax: 919-821-5117
www.johnlocke.org

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In 2007, the General Assembly passed, and Gov. Mike Easley signed, major energy legislation that would deliberately raise electricity prices in North Carolina. Senate Bill 3 (SB 3) established a Renewable Energy and Energy Efficiency Portfolio Standard (RPS) in North Carolina for these stated purposes:

- a. Diversify the resources used to reliably meet the energy needs of consumers in the State.
- b. Provide greater energy security through the use of indigenous energy resources available within the State.
- c. Encourage private investment in renewable energy and energy efficiency.
- d. Provide improved air quality and other benefits to energy consumers and citizens of the State.¹

SB 3 was supposed to meet those goals by mandating utility companies to generate at least 7.5 percent of electricity from “renewable” energy sources, meaning (see Table 1) solar, wind, hydroelectric (this source is restricted; allowable hydroelectric power facilities must have a generator capacity of 10 megawatts or less), geothermal, biomass (“including agricultural waste, animal waste, wood waste, spent pulping liquors, combustible residues, combustible liquids, combustible gases, energy crops, or landfill methane”), hydrogen, etc., but not “peat, a fossil fuel, or nuclear

energy resource.” It also mandated utilities to bring about an additional 5 percent reduction in energy use through energy efficiency measures.²

For good reason the renewables mandate in SB 3 has come under question. A bill currently before the state House (H.B. 298) would eliminate the renewable energy portfolio standard while honoring current renewable energy purchasing contracts, essentially capping the mandate at the present level of 3 percent.⁴

Table 1. Energy sources allowed to meet North Carolina’s renewable energy portfolio standard	
Allowed	Not allowed
<ul style="list-style-type: none"> • Solar • Wind • Hydroelectric with generator capacity ≤ 10 MW • Geothermal • Ocean current or wave energy • Biomass • Waste heat and thermal energy • Hydrogen 	<ul style="list-style-type: none"> • Natural gas • Nuclear • Coal • Oil • Hydroelectric with generator capacity > 10 MW (by comparison, the typical coal plant is 667 MW³)

The main issue to captive ratepayers: what electricity costs

Given that ratepayers have no choice in who provides their homes with electricity or from what sources they derive it, the overarching issue for ratepayers, especially poor ratepayers whose household budgets are significantly affected by electricity costs, is what it costs them to turn on the lights. Utilities should be interested in the lowest-cost, most reliable, and most efficient ways of generating electricity. RPS mandates pare away at that process, however, forcing utilities to make state-sanctioned compromises in their electricity bundles and ultimately their rates.

Questionable means for murky goals

SB 3’s own justifications are an exercise in ipse dixit — as if simply by listing its purposes, the bill satisfies them. Pursuing the question of *how* the mandate meets its justifications leads to the discovery that it alternatively can’t or doesn’t.

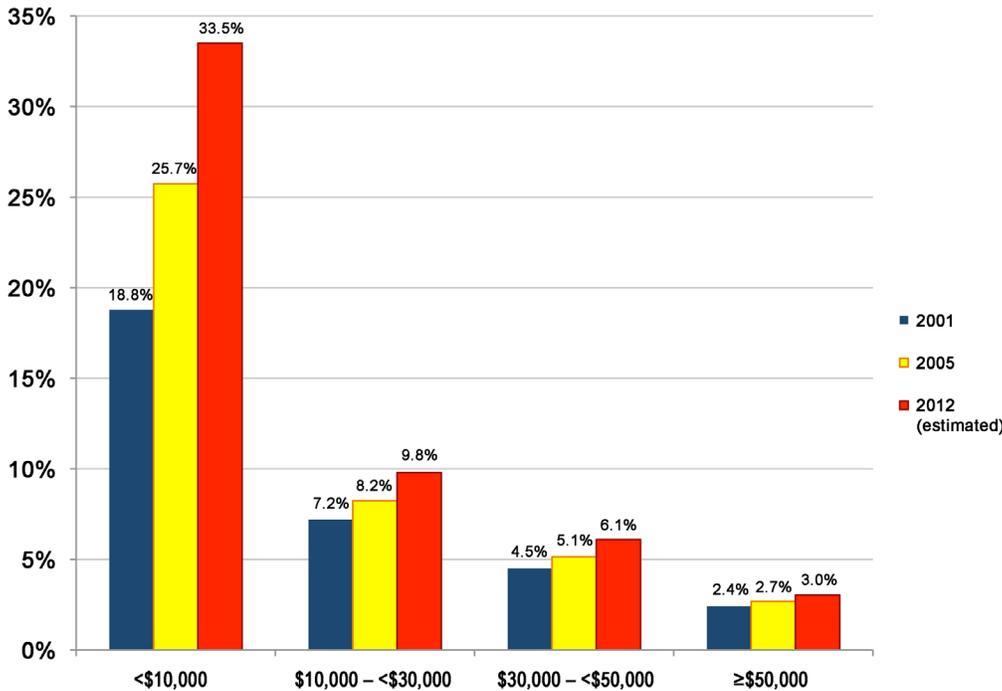
What do energy consumers need?

Take purpose (a). The measure brings about a diversification of energy resources, but setting aside whether doing so is worth a state dictate, does that “reliably meet the energy needs of consumers”? It is clear that SB 3 intended “diversification” to refer merely to different kinds of power resources, not access to many power plants capable of producing electricity on demand. The main renewable resources promoted by SB 3 — wind and solar — are inherently

unreliable resources. They work arbitrarily when the wind blows and the sun shines. Because of that, they require reliable backup generation from a coal or gas power source that can start and ramp up quickly.⁵

Furthermore, consumers' energy needs are not at all limited to power at the flip of a switch. What that power costs

Chart 1. Average expenditures on residential electricity as a percentage of household budget by after-tax income and income level, 2001–2012⁶



them — the price to heat and cool their homes, power their lights, cook their food, refrigerate their perishables, heat their water, power their electronics, etc. — is a significant part of the equation. *Consumers' energy needs include electricity that is as inexpensive as is practicable.*

This need is especially pressing for the poorest ratepayers, for whom electricity takes a significant proportion of their family budgets because it is an inescapable, basic household necessity. A review of numbers from a recent study of energy cost impacts on households showed that U.S. households with annual incomes of \$30,000 per year or less spent one-tenth

to as much as one-third (for the poorest households) of their after-tax income on electricity (see Chart 1).⁷

Furthermore on that point, a statement last summer to the North Carolina Utilities Commission from the Center on Poverty, Work and Opportunity at UNC Law School by center director Gene R. Nichol noted that “the average price of residential electricity has far exceeded income gains.” Nichol wrote,

Between 1990 and 2010, the average residential price of electricity in North Carolina increased 29 percent, while median household income rose a mere 2.7 percent. Nationally, poorer households are spending an ever greater percentage of income on electricity. In 2012, families with a pre-tax income of less than ten thousand dollars are estimated to spend 19.5 percent of their household budget on residential electricity, up markedly from 15 percent in 2005 and 11.4 percent in 2001.

North Carolina electricity customers cannot choose their providers and have little choice but to accept each rate hike with stoicism, no matter how unfairly the costs may have been allocated.⁸

The importance of ratepayers being captive to a monopoly provider of electricity cannot be overstated.

What is ‘energy security,’ and how is it measured?

Purpose (b) not only makes it the state’s business to provide something called “energy security,” but also assumes that it is presently of an insufficient amount (the call is for “greater energy security”) and that its lack can be rectified “through the use of indigenous energy resources.” The notion of energy security is completely without definition,

let alone quantification. The only apparent threat to energy resources in North Carolina is political meddling from without (Pres. Barack Obama has openly spoken of causing energy prices to “skyrocket” and bankrupt coal companies,⁹ for example, and North Carolina is expected to be the 10th hardest hit¹⁰ by new Environmental Protection Agency regulations) or within (e.g., former Gov. Bev Perdue’s veto last year, which was overridden, of SB 820,¹¹ allowing North Carolina to begin setting up the regulatory and permitting processes for future oil and gas exploration through horizontal drilling and hydraulic fracturing).

Even granting that energy security is a measurable thing, is it addressed by indigenous energy resources, and if so, what are they? Oil and gas from shale rock formations, such as in the Deep River and Dan River basins, don’t count per SB 3. Predominantly, wind and solar supposedly do. Curiously, the same year that SB 3 was passed, the North Carolina Utilities Commission had signed on to a letter with eight other Southeastern U.S. states’ utilities commissions urging Congress to *reject* a federal renewable energy portfolio standard because

The reality is that not all states are fortunate enough to have abundant traditional renewable energy resources, such as wind ... this is especially true in the Southeast and large parts of the Midwest.

Because of the limited availability and cost-effectiveness of traditional renewable energy resources, we are deeply concerned that our utilities will be forced to buy renewable energy credits from the federal government. Correspondingly, our retail electricity consumers will end up paying higher electricity prices, with nothing to show for it.¹²

That notwithstanding, a key effect of SB 3’s passage was incentivizing utilities to meet 25 percent of the RPS mandate by subsidizing renewable energy providers *outside* of North Carolina.¹³

Does picking ‘winners’ require ignoring opportunity costs?

Building on the assumptions of (a) and (b), purpose (c) seeks to drive investor behavior. The question of whether it is any of the state’s business to “pick winners and losers” is a perennial one in public policy debates. A state government that deliberately seeks — through legislation, regulation, targeted incentives programs, red tape and roadblocks on competitors, etc. — to favor one market provider over others is *engaging in cronyism*, regardless of whether officials believe they are serving the interests of a public that doesn’t know better.¹⁴ Applying such cronyistic policies to a state-sponsored monopoly only compounds the problem for the people who are affected — in this case, captive ratepayers.

The mandate and state incentives have, of course, prompted investment in renewable energy and energy efficiency efforts. The question is whether that change is a net positive for North Carolina. Industry studies that highlight only the benefits of the incentives miss the very real but unobservable opportunity costs of forcing economic activity in their direction as opposed to where people would have freely chosen. Doing so ignores a foundational principle of economics: that resources are scarce and have alternative uses. Diverting resources *coercively* takes them away from where they would be employed voluntarily, i.e., where they offer the best return on the investment, creating the most wealth and employment opportunities. The mandate creates economic benefits in the state-directed area, but those benefits come at the price of lost investment, wealth, and employment from other, more lucrative uses.¹⁵

Including opportunity costs in the analysis, economists at the Beacon Hill Institute at Suffolk University in Massachusetts estimated that by 2014 SB 3 would lead to a net *reduction* in investment in North Carolina by over \$37 million (2009 dollars).¹⁶

Furthermore, as economist Jonathan A. Lesser pointed out, mandate-driven investment into subsidized renewable energy sources also drives out otherwise competitive electricity generators and dissuades future investment

in unsubsidized electricity sources. As Lesser asks, “why invest scarce capital in a market that politicians are manipulating?”¹⁷ The end result is higher electricity prices and reduced economic growth.

Let alone why, how is air quality to be improved?

Purpose (d) lists improving air quality as a final justification for SB 3’s mandate. As with “greater energy security,” this purpose begs the question whether legislative action, this action, was necessary to improve air quality. As Dr. Roy Cordato of the John Locke Foundation has shown, North Carolina’s air quality — particularly with respect to ozone pollution — had been improving for years before SB 3 passed.¹⁸ Furthermore, this air quality improvement was in line with air-quality improvement in surrounding states.¹⁹ It was essentially a justification in search of a problem that simply wasn’t there.

Nevertheless, with the RPS mandate facing legislative scrutiny, there has been no evidence using actual pollution data demonstrating that the mandate is responsible for improving air quality and cutting air pollution. Given the special interests invested in keeping the mandate and its subsidies in place, it is reasonable to think that if such evidence were available, it would be publicized. That advocates for continuing the RPS mandate have invested in studies claiming to demonstrate *economic* benefits from the mandate while producing no study showing its environmental benefits is telling.

SB 3’s means of improving air quality are also questionable. One of the cleanest energy sources with respect to air quality, nuclear, which emits no carbon dioxide, sulfur dioxide, or nitrogen oxides,²⁰ is expressly listed as an unapproved source. Natural gas, including shale gas extracted through horizontal drilling and hydraulic fracturing, is considered a fossil fuel and therefore is also an unapproved source. Nevertheless, in the European Union, natural gas is considered a “green,” low-carbon fuel source.²¹

Approved sources wind and solar require fast-starting, fast-ramping coal or gas power plants to provide balancing generation, significantly diminishing their air-quality virtues. Furthermore, the frequent cycling of the balancing coal plants keep them operating at less than peak efficiency, producing greater emissions than they would otherwise. It also risks causing expensive damage to the plants. A study of emissions from coal plants tied to wind power plants in Colorado and Texas found increased emissions of carbon dioxide, sulfur dioxide, and nitrogen oxide because of cycling.²²

Solar panel production is also fraught with risk of hazardous waste.²³ Bankrupt U.S. solar panel makers Solyndra²⁴ and Abound Solar²⁵ both left toxic waste messes at their facilities. A 2009 report by the Silicon Valley Toxics Coalition warned of “extremely toxic materials or materials with unknown health and environmental risks” being used in new solar photovoltaic panels and highlighted the potential end-of-life disposal problems they posed.²⁶

Constructing Apple’s 100-acre solar farm in Maiden, N.C., required clear-cutting and burning that, for three years, often left the air “so smoky, you couldn’t breathe,” as one resident put it to WSOC-TV, “real bad, just like a big old smog.” Another complained that “You could hardly see and it (went on) for miles down the highway.”²⁷

Meanwhile, burning biomass — wood, swine waste, poultry waste, etc. — would, if anything, harm air quality. Converting cropland to biofuels may also lead to a net increase in carbon dioxide emissions.²⁸ In 2010, Duke Energy won approval from the N.C. Utilities Commission to have two of its coal-fired power plants classified as renewable facilities to burn a combination of coal with wood chips (even whole trees). The North Carolina Court of Appeals agreed with the NCUC’s decision.²⁹

Renewable energy portfolio standards in other states

North Carolina is the only state in the Southeast to have a renewables mandate. Nevertheless, thirty states and the District of Columbia have some kind of enforceable RPS mandate.³⁰ Studies of different states’ RPS mandates

have similar results: they cost electricity ratepayers more, and they cause harm to their states' economies, costing jobs, investment, and disposable income (see Table 2).

Table 2. Effects of Different States' Renewable Energy Portfolios on Their Economies³¹

State	Study target year	Net cost, in millions (2012 \$)	Electricity cost increase (percent) by target year	Jobs lost	Real disposable income lost, in millions (2012 \$)	Investment lost, in millions (2012 \$)	Annual household electricity cost increase (2012 \$)
California	2020	\$5,096	13%	not calculated	not calculated	not calculated	not calculated
Colorado	2015	\$1,443	40%	18,380	\$1,972	\$247	not calculated
Delaware	2026	\$326	18.1%	2,159	\$306	\$52	\$283
Kansas	2020	\$644	45%	12,110	\$1,483	\$191	\$660
Maine	2017	\$145	8%	995	\$11	\$85	\$365
Minnesota	2025	\$2,415	24%	11,271	\$1,431	\$115	\$279
Missouri	2021	\$1,410	14.8%	6,065	\$675	\$75	\$195
Montana	2015	\$237	18%	1,874	\$184	\$21	\$149
New Mexico	2020	\$652	20%	2,859	\$490	\$41	\$168
North Carolina	2021	\$1,975	not calculated	3,592	\$46	\$61	not calculated
Ohio	2025	\$1,427	9.3%	9,753	\$1,097	\$79	\$123
Oregon	2025	\$1,044	24.0%	17,530	\$179	\$153	\$260
Pennsylvania	2025	\$2,550	11.9%	17,380	\$1,660	\$205	\$170
Wisconsin	2016	\$208	2.4%	1,780	\$128	\$18	\$25

For North Carolina, Beacon Hill economists estimated that SB 3 will, by 2021, have a net cost for North Carolina's economy of nearly \$2 billion, including the losses of nearly 3,600 jobs, \$46 million in disposable income, and \$61 million in investment (these figures are given in 2012 dollars to align with the other figures in the chart; the original figures were given in 2009 dollars).³²

The reasons for such expensive negative effects of SB 3, study authors point out, are many:

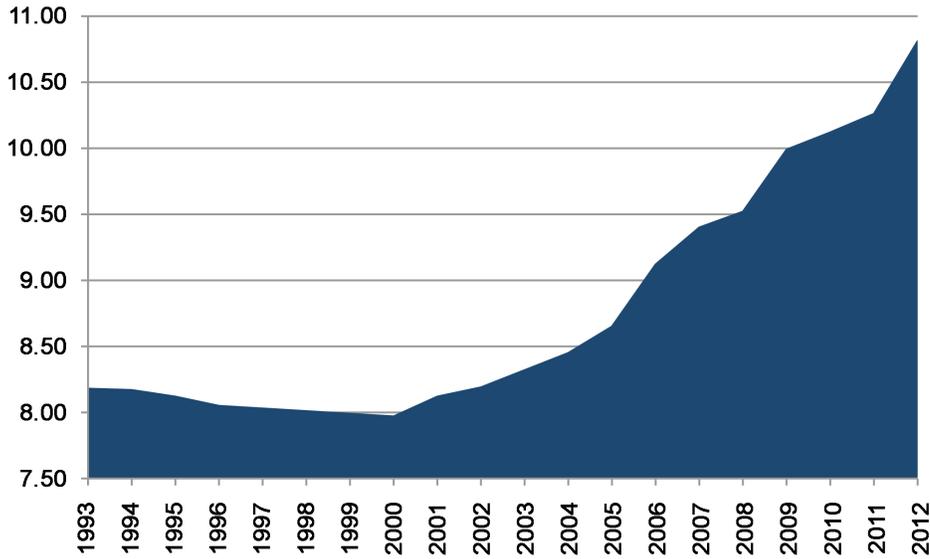
Since renewable energy generally costs more than conventional energy, many have voiced concerns about higher electricity rates. Moreover, since North Carolina has a limited ability to generate renewable energy, the state will start from a low power generation base. In addition, some renewable energy sources — wind and solar in particular — require the installation of conventional backup generation capacity for cloudy, windless days. The need for this backup further boosts the cost of renewable energy.³³

As in North Carolina, legislators in some other RPS states are questioning the mandates. As of this writing, there are bills to lessen or repeal RPS mandates in Kansas, Minnesota, Ohio, Texas, West Virginia, and Wisconsin,³⁴ and bills to modify RPS mandates in Illinois, Maryland, Missouri, Montana, Ohio, Oregon, Virginia (voluntary RPS), West Virginia, and Wisconsin.³⁵

Double-digit rate hikes on captive ratepayers

Residential electricity prices in North Carolina have been steadily increasing since the turn of the century (see Chart 2). The renewables mandate has done nothing to arrest that process, of course. In October 2012, Progress Energy Carolinas, now a subsidiary of Duke Energy, sought its first electricity rate increase from the N.C. Utilities Commission in a quarter century. The original request from Progress Energy included hiking residential rates by an average of 14.2

Chart 2. Residential electricity prices in NC, 1993–2012 (cents/kwhr)



Source: U.S. Energy Information Administration

percent, which officials said would more accurately reflect the cost of supplying power to residential customers.³⁶

WRAL reported Progress’s rationale for such a large rate increase: that “it would help the company as it transitions to cleaner energy.”³⁷ In other words, Progress basically admitted that the RPS mandate is driving large rate increases.

Current rate discussions have Progress wanting to raise residential rates by 7 to 8 percent while cutting rates for large industrial customers by 4.2 percent.³⁸ NC WARN has pointed out, however, that terms of

a proposed settlement between Progress Energy and the Public Staff would boost residential rates 10.42 to 10.76 percent.³⁹

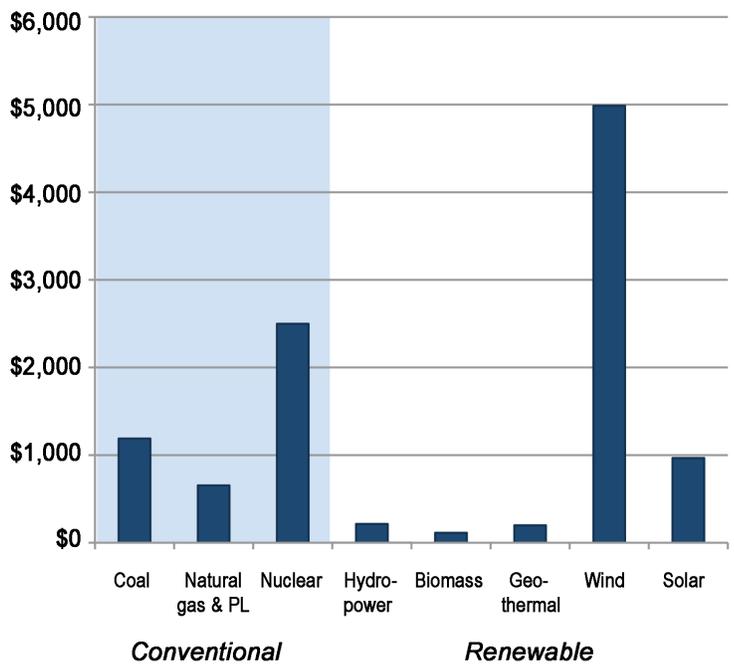
Duke Energy has also requested rate increases this year, which include an additional 11.7 percent on residential rates.⁴⁰ That request comes a year after Duke received a 7.2 percent rate increase on residential rates. That higher rate was less burdensome than Duke’s original request, which was for a residential rate hike of 17 percent.⁴¹

Days after H.B. 298 was originally filed, Duke attempted to portray the RPS mandate in a more favorable light, politically, with respect to cost. As reported in *The News & Observer*, Duke “plans to slash its 22-cent monthly charge to customers, a fee collected in utility bills to cover the cost of renewables” and instead offer “a monthly bill credit of one penny a month” that would, in part, “account for previously overestimated costs of projects that were not built and replaced with cheaper solar farms.”⁴²

Consecutive years of requesting double-digit percentage increases in residential rates — which they acknowledge was driven by the RPS mandate — effectively cancels out a penny’s worth of supposed solar savings, however.

Furthermore, the March 2013 “Carolina Regulatory Update” from Resource Supply Management (RSM) reported the following (emphasis added):

Chart 3. Total federal subsidies of electricity source (millions, \$2010)



Source: U.S. Energy Information Administration

On March 6, 2013, Duke Energy filed a petition with the NCUC to adjust the fuel and energy efficiency components of customer bills. The filing proposes no changes in the fuel charge, but the charges related to Demand Side Management (DSM) and Energy Efficiency (EE) programs will increase. **The request is separate from, and in addition to, the 9.7% rate hike the utility requested in February.** The DSM/EE increases are being **justified by the investment in energy efficiency programs such as the Save-A-Watt pilot program.** If approved, residential customer charges for DSM/EE will increase by \$.002857 per kWh; and non-residential customer charges will increase by \$.000387 per kWh. ...

Duke is also expected to file a separate petition soon to **increase rates relative to renewable energy investments required to comply with state law.**⁴³

Money being fungible, Duke’s many rate-hike requests might be separate, but to captive ratepayers, the effect of higher prices will be just as burdensome.

Made to chase highly subsidized, highly inefficient, unproductive sources

Instead of developing reliable, efficient, and lowest-cost sources of electricity, North Carolina’s RPS mandate put utilities on the path of chasing arbitrary percentages of handpicked “winner” sources by legislators. Some of these sources are extraordinarily unproductive, despite federal subsidies. Chart 3 shows the federal subsidies for different electricity sources, conventional and renewable.

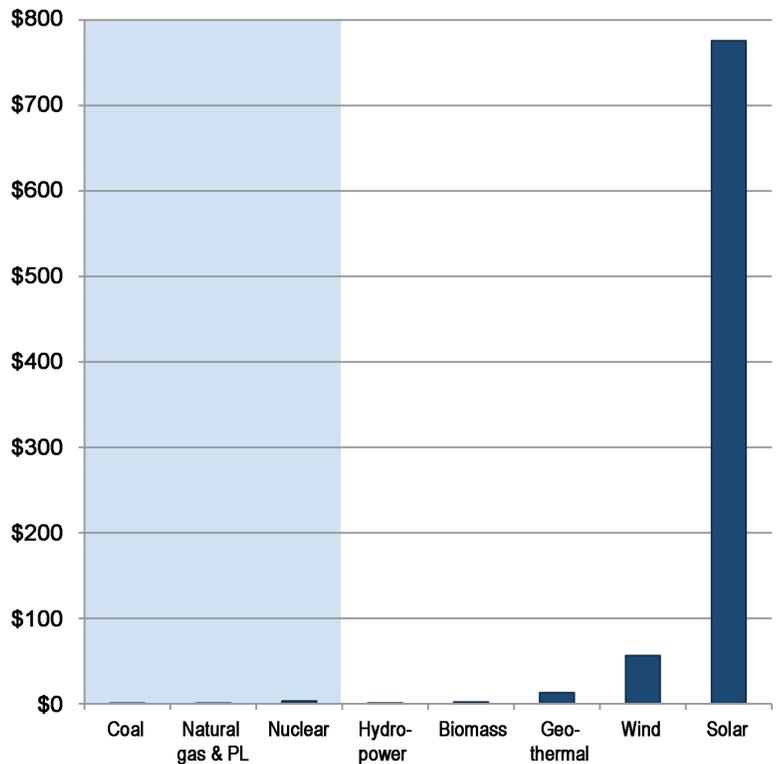
Chart 4 goes a step further and shows how these subsidies compare in terms of electricity generated; i.e., how much is a megawatt-hour of solar or wind power subsidized compared with a megawatt-hour of nuclear or gas power? The results yield a stark picture of actual efficiency of various sources of electricity: solar and wind are exorbitantly expensive, dwarfing conventional sources.

There is disparity among conventional sources, too: relatively highly subsidized nuclear is also about five times as expensive as coal and natural gas. Nevertheless, wind is about 18 times more expensive than nuclear, while solar is nearly 250 times more expensive than nuclear.

Not only are renewable electricity sources currently requiring vastly greater federal subsidies to produce power equivalent to conventional sources, but also renewable power plants need a much bigger “footprint” on the map to do so. Chart 5 compares the acreage required by each kind of power plant to produce 1,000 megawatts of electricity.

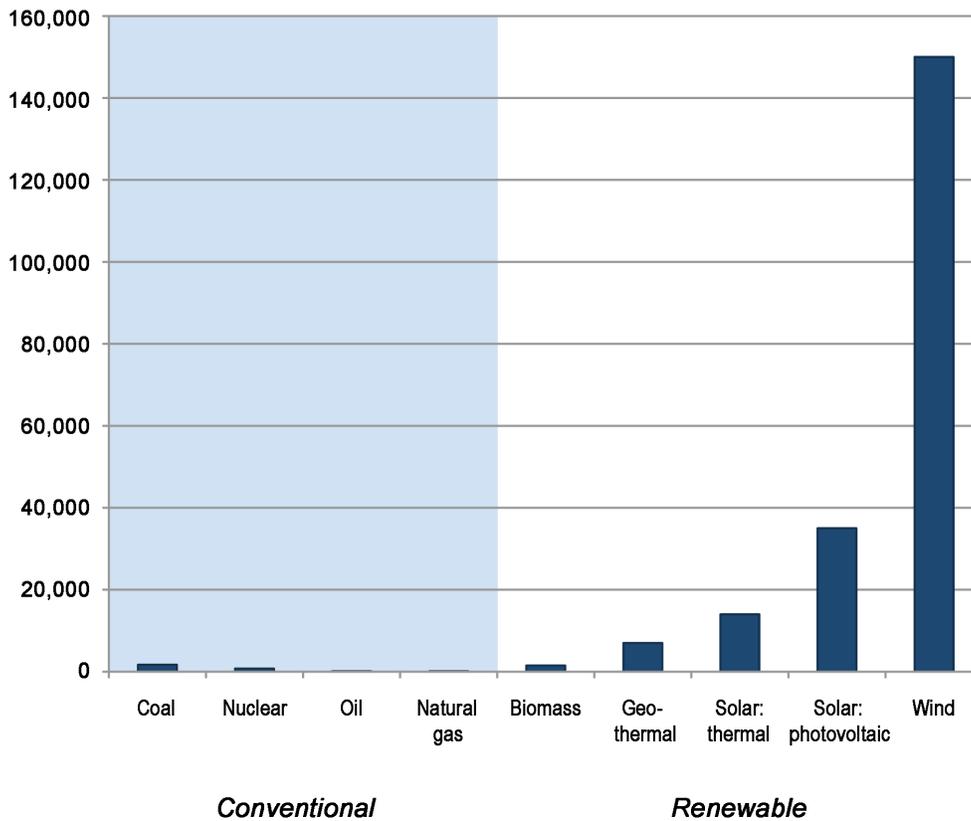
Again, there is disparity among conventional sources as well, but they are dwarfed by the land required by renewable sources. Wind power, for example, would require more land than the area of the cities of Raleigh, Wilmington, and Fayetteville combined.⁴⁴

Chart 4. Federal subsidies of electricity sources per unit of production (\$2010 per MWhr)



Source: U.S. Energy Information Administration

Chart 5. Land use for 1,000-MW equivalent power plant (in acres)



Source: United States Nuclear Regulatory Commission

Note: Land use for wood waste, municipal waste, and crops are extrapolated from 30 acres per 20-MW plant.

Chart 6 shows the difference in the amounts of land required by just conventional sources to generate 1,000 megawatts of electricity. Note that the scale of this chart is about 1/89th that of Chart 5, which included renewable sources.

The game changer: cheap, plentiful natural gas

When SB 3 with its RPS mandate was passed in 2007, the revolution in extracting oil and natural gas from shale rock formations through the combination of horizontal drilling and hydraulic fracturing was just beginning to be realized. Since then, it has become impossible to ignore. The long-sought “energy security” prize of the U.S. becoming energy independent has suddenly become quite

achievable, to which this sampling of recent headlines attests:

- “Americans Gaining Energy Independence With U.S. as Top Producer” — *Bloomberg*, 2/7/2012⁴⁵
- “Natural Gas Glut Pushes Exports” — *The Wall Street Journal*, 10/4/2012⁴⁶
- “Center of gravity in oil world shifts to Americas”— *The Washington Post*, 5/25/2012⁴⁷
- “North America leads shift in global energy balance, IEA says in latest World Energy Output” — International Energy Agency, 11/12/2012⁴⁸

Along with boosting energy security, the shale gas boom is also responsible for lowering energy-related carbon emissions in the U.S.⁴⁹ It is furthermore boosting manufacturing and job creation.⁵⁰ As economist James Pethokoukis observed, despite U.S. government policies heavily favoring “green” energy industries, nearly 20 percent of the good-paying jobs actually being created in the U.S. are in oil and gas.⁵¹

Facts on the ground concerning shale gas essentially cover purposes (b) through (d) of the state’s justification for its renewables mandate: it boosts “energy security,” encourages private investment and job creation, and lowers energy-related carbon emissions. Two other findings (refer back to Charts 4 and 5) underscore the cost-competitiveness of plentiful natural gas in comparison with wind and solar. These concern the amount of federal subsidies and the amount of acreage to produce equivalent amounts of power: wind and solar require far, far greater amounts of federal subsidies and land to produce equivalent amounts of power relative to natural gas (see Table 3).

Table 3. How much do wind and solar take to produce the same amount of power as natural gas?

Resource	Wind	Solar (photovoltaic)
Federal subsidies (to produce 1 MWhr)	88 times more subsidies than natural gas	1,212 times more subsidies than natural gas
Acres of land (to produce 1,000 MW)	1,364 times more land than natural gas	318 times more land than natural gas

The mandate and more

Though current legislation before the General Assembly focuses on the renewable energy portfolio standards,⁵² the concerns over SB 3 extend beyond the mandate.

Buying electricity for out-of-state electricity customers

Recall that letter to Congress opposing a federal renewable portfolio standard from North Carolina and other Southeastern states. The states told Congress they lacked “abundant traditional renewable energy resources of other parts of the country” and were therefore “deeply concerned that our utilities will be forced to buy renewable energy credits from the federal government.” The reason for that concern was that “our retail electricity consumers will end up *paying higher electricity prices, with nothing to show for it*” (emphasis added).⁵³

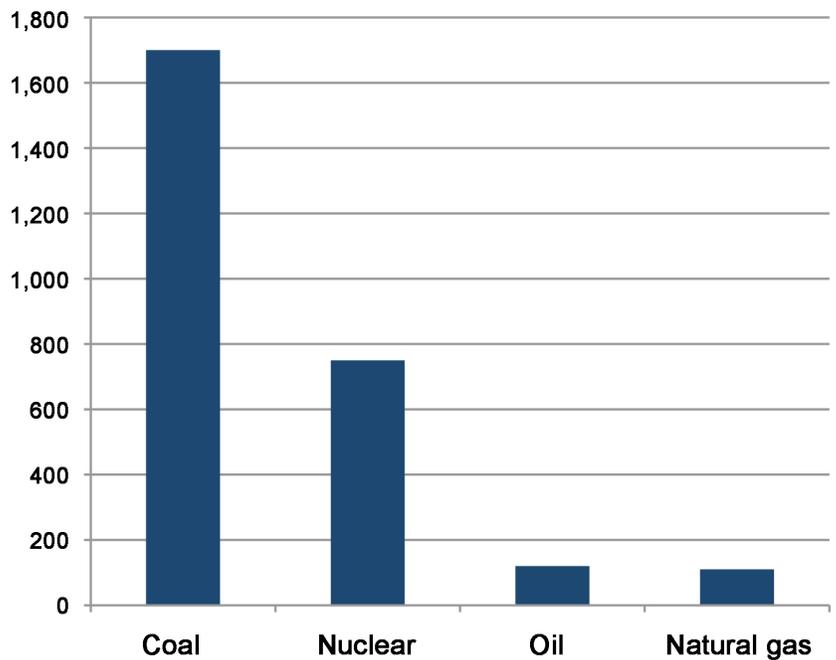
Unlike the other Southeastern states, under SB 3 North Carolina is visiting that very fear upon itself: utilities are allowed to meet up to 25 percent of the renewable energy mandate by purchasing renewable energy certificates (RECs) from out-of-state facilities and, owing to the state’s geography and limited resources, will invariably do just that. In 2011, for example, fully 25 percent of the RECs that Duke and Progress Energy retired to achieve compliance were out-of-state RECs.⁵⁴ The out-of-state facilities include, for example, numerous wind farms in Texas and solar facilities in California.⁵⁵ Purchasing those RECs essentially subsidizes electricity for out-of-state consumers at an additional cost to North Carolina ratepayers, without them receiving any of the electricity they supposedly bought. Furthermore, these out-of-state purchases obviously do nothing to improve the state’s air quality.⁵⁶

More money for nothing

A little-noted aspect of SB 3 allows utilities to pass along to ratepayers the cost of building nuclear power plants, even if the plant is never completed. The “construction work in progress” (CWIP) portion of SB 3 shields utilities from all financial risks of building a nuclear power plant — and burdens captive ratepayers with those costs while removing incentives for utilities to pursue efficiency in construction.⁵⁷

CWIP is coveted legislation for utilities wanting to construct nuclear plants, because even though the federal government (per the Energy Policy Act of 2005) authorized federal loan guarantees for nuclear plant construction of up to 80 percent, utilities still find the plants too expensive to find private investors to finance their construction.⁵⁸ The

Chart 6. Land use for 1,000-MW equivalent conventional power plant (in acres)



Source: United States Nuclear Regulatory Commission

argument for CWIP is that by having ratepayers finance the construction as it proceeds, they would avoid being hit by large rate increases when the fully constructed nuclear power plant comes on line and that it will help them avoid spending years and far more money paying interest. That argument assumes the plants will come on line and not be beset with huge cost overruns, but recent experiences in CWIP states South Carolina, Georgia, and Florida have shown otherwise.⁵⁹ When Duke Energy recently pulled the plug on the Crystal River nuclear power plant upgrade, Florida ratepayers (for the Progress Energy subsidiary) had lost nearly \$100 million in CWIP rate hikes and were facing an additional \$264 million rate increase in the future.⁶⁰ Even before then, Sen. Mike Fasano (R–New Port Richey), one of the state senators who had initially supported CWIP, wrote an apology for it in the *Tampa Bay Times*, saying he now regarded it as “unfair to consumers and bad public policy.”⁶¹

SB 3’s support of energy-efficiency measures has resulted in a system that essentially rewards utilities for *not* generating electricity. Research by the Locke Foundation showed how ratepayers are made to pay a hidden tax on their utility bills to fund others’ purchases of energy-efficient goods and services. This hidden tax is highly regressive, as wealthy ratepayers and businesses are more likely to use the subsidies than poorer captive ratepayers.⁶² For example, when Progress Energy proposed its Small Business Energy Savers Program before the Utilities Commission, which would “pay flower shops, pizzerias and other small businesses up to 80 percent of the cost of installing energy-efficient equipment,” here is how it was to be financed: “The company would be able to recover the costs of the program, including lost energy sales, from *all customers through rate increases*” (emphasis added).⁶³

H.B. 298 would not repeal SB 3’s CWIP provision. Nevertheless, it is a reform the legislature should consider.

Or was it a jobs bill?

Notwithstanding the four statutory justifications for SB 3, supporters of its renewables mandate are arguing on the basis of one that is not in the bill: it’s about jobs.

A recent study from RTI International and La Capra Associates, paid for by the North Carolina Sustainable Energy Association, used multiplier effects to suggest that “clean energy” development in North Carolina with related supply-chain and consumer spending effects is responsible for having “Created or retained 21,163 job years from 2007 to 2012.”⁶⁴ The report used questionable counting methodology and failed to account for opportunity costs of the forced investment.⁶⁵

A “job year” is a statistic invented by the Obama administration in promoting returns from the American Recovery and Reinvestment Act (i.e., the stimulus) — e.g., a single job on a stimulus project that lasted three years would count as three job years. The political advantage of the metric is that it suggests a highly inflated number of jobs.⁶⁶ Conflating jobs created *or retained* is another metric used by the Obama administration in measuring the effects of the stimulus, which not only inflated perceived job creation, but also made the reported figures unusable for all practical purposes.⁶⁷ In this case, 21,163 job years from 2007 to 2012 would equate to over 4,233 jobs,⁶⁸ but how many of them were new, permanent jobs vs. temporary construction jobs for renewable power infrastructure is entirely unclear.⁶⁹

Nevertheless, the rhetorical slights-of-stat had their effect. In a March 19, 2013, “Point of View” editorial in *The News & Observer*, Tim Toben, former chairman of the NC Energy Policy Council, wrote that “During the depths of the great recession, the number of *solar energy-sector jobs increased by 21,160* while the general economy shed more than 100,000” (emphasis added).⁷⁰ Toben’s source for 21,160 solar energy-sector jobs is not specified, though it appears that figure is inferred from the RTI/La Capra study. That study, however, (a) never claimed 21,163 jobs, let alone (b) specifically *solar* jobs, nor did it (c) say the *increase* was by 21,163 — the figure was for job years created *or retained*, which lends itself to just that kind of misinterpretation.

Conclusion and recommendations

SB 3 was passed in 2007 under justifications that the bill's mandate can't achieve. Using state policy to force an arbitrary percentage of electricity generation from unreliable, expensive sources cannot reliably meet consumers' energy needs. Whatever "energy security" is, it isn't helped by promoting only some kinds of indigenous energy resources and subsidizing renewable energy providers outside the state. Encouraging private investment in renewable energy and energy efficiency is of little consequence when the net effect is an overall loss of private investment and more expensive energy. Finally, if improving air quality were that important, the mandates would not exclude nuclear and natural gas while allowing the burning of wood and animal waste, and major renewable sources that need backup generation may, because of the necessary frequent cycling of balancing coal plants, actually lead to diminished air quality.

As in North Carolina under SB 3, renewable portfolio standards in other states are raising electricity rates on residences and causing losses in jobs, investment, incomes, and state GDPs. At present, renewable energy sources require far more subsidies to yield the same amount of energy as conventional sources. Renewable energy plants also need much more land to generate the same amount of energy as conventional sources.

Supporters of North Carolina's renewables mandate argue now that it leads to the creation (or retention) of jobs in renewable energy, though again that doesn't account for this "green cronyism" being bought by higher rates on captive ratepayers. SB 3 also makes ratepayers support businesses that decide to purchase subsidized energy-efficient goods and services, as well as utilities that wish to construct nuclear power plants without any risk to shareholders. These costs affect the poorest ratepayers the most; households with incomes of \$30,000 or less spend one-tenth to as much as one-third of their after-tax income on electricity. All of this occurs in a tightly restricted market where consumers are allowed no choice over their electricity providers.

For these reasons, SB 3 should be repealed. At the very least, as is currently under discussion, the renewable energy portfolio standard should be capped and ended. Ideally, the renewable energy and energy efficiency portfolio standard would be eliminated, and CWIP would be struck out. North Carolina policy should support lowest-cost, reliable, and efficient energy sources. One day those could include renewable sources, but it should be left to private entrepreneurs competing and seeking innovation to bring that about.

Meanwhile, rather than dictate energy source bundles to utilities, N.C. lawmakers should consider ways to free up electricity markets to less price-sensitive consumers who would like to be able to receive electricity from select sources, including solar and wind power, if given the opportunity.

Jon Sanders is Director of Regulatory Studies at the John Locke Foundation.

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