

Spotlight

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RENEWABLE ENERGY

Lobby's report more fog than light



**\$43 million
in lost
investment**



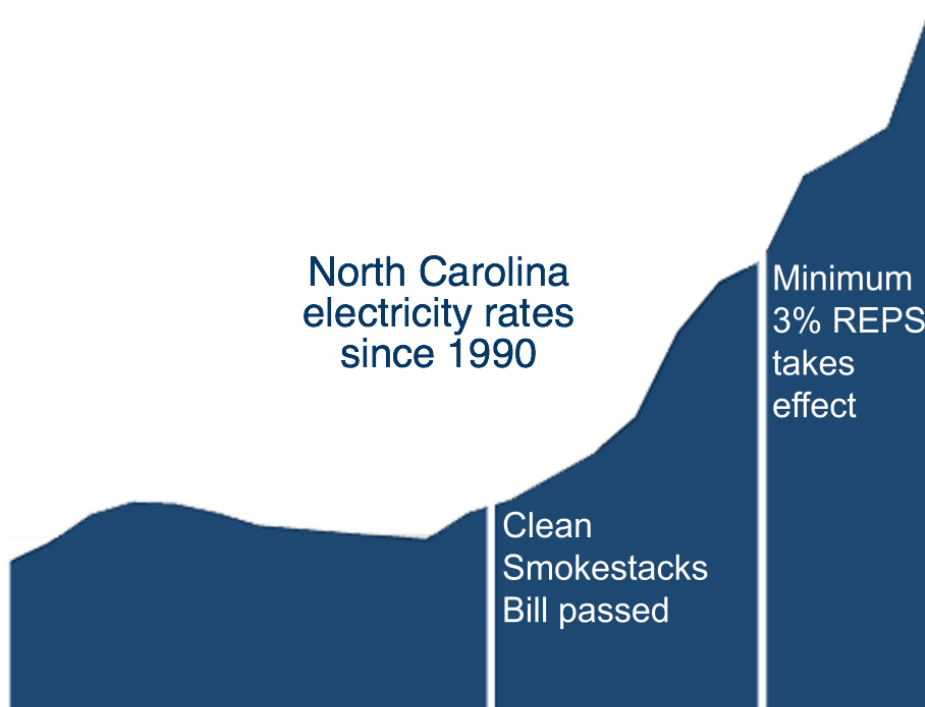
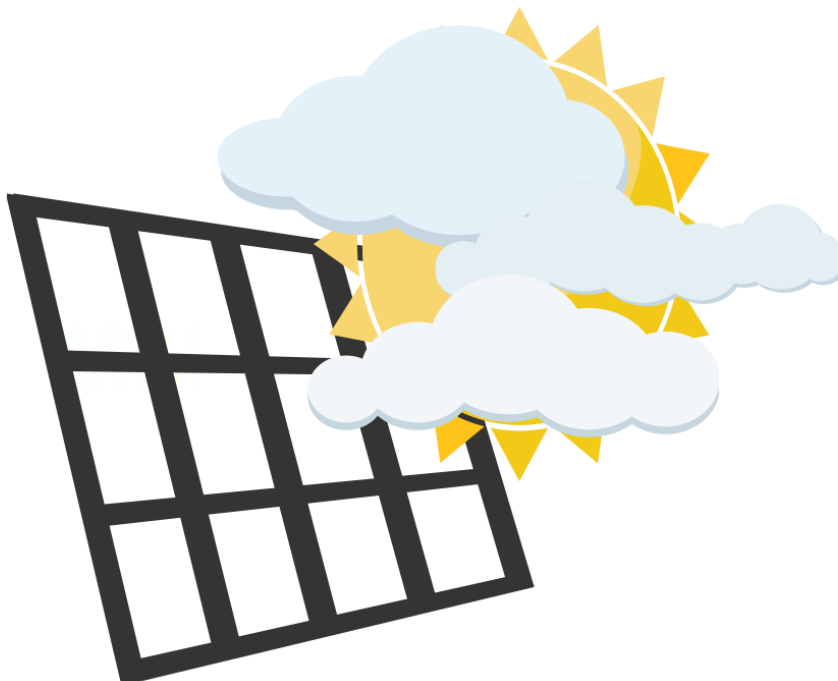
**\$44 million
in lost
revenue**



**\$57 million
in lost disposable
income**



**\$140 million
in lost GDP**



Three of the four drivers of higher electricity costs in North Carolina are because of the state's renewable energy mandates, according to a report circulated among lawmakers by the North Carolina Sustainable Energy Association (NCSEA).¹ They include renewable energy investments by utilities, the Renewable Energy and Energy Efficiency Portfolio Standards (REPS) mandate, and demand-side management/energy efficiency programs.

Somehow, the takeaway from this admission is, in the words of the headline given by Triangle Business Journal, “don't blame renewables for those electricity bills.”²

How so? Because, see, the renewable energy mandates are not the “primary”³ driver of electricity rate increases — as measured “since 2001.”⁴ Utility investments are, if you go back far enough.

The renewable energy lobby seeks to use that not-the-biggest-rate-hiker argument to, in the words of the business journal, “convince lawmakers in Raleigh not to pass legislation that would freeze the state's REPS requirement and limit the size of contracts that could be issued.”⁵

The report raised several issues, detailed as follows:

Going all the way back to 2001 instead of seven years later when REPS took effect

To track the rate impact of a policy change, it would seem sensible to start at the point of that change — in this case, when the REPS mandate took effect in 2008.⁶ Adding in all those previous years' worth of data unaffected by the policy change would statistically *water down the actual effects* of that change.

1 Jim Kennerly (Consultant), Ivan Urlaub, and Kacey Hoover, “Understanding the Impact of Electric Choices on North Carolina Residential Electricity Rates and Bills” (NCSEA report), North Carolina Sustainable Energy Association, May 2015, c.yimcdn.com/sites/energync.site-ym.com/resource/resmgr/Docs/Understanding_the_Impact_of_.pdf.
2 Jeff Jeffrey, “Study: Don't blame renewables for those electricity bills,” *Triangle Business Journal* (TBJ), May 22, 2015, bizjournals.com/triangle/print-edition/2015/05/22/report-don-t-blame-renewables-for-those-electric.html.
3 See NCSEA report, p. 4 et al.; TBJ.
4 See NCSEA report, p. 4 et al.; TBJ.
5 TBJ.
6 Session Law 2007-397, ncleg.net/gascrpts/BillLookup/BillLookup.pl?Session=2007&BillID=s3.

Since 2008, the state's electricity rates have grown dramatically in comparison with the national average. According to the March 2015 Energy Report by the North Carolina Department of Environment and Natural Resources (DENR),

North Carolina's rates have increased more than 2.5 times the national average increase since 2008.⁷ (Emphasis added.)

Starting from 2001 without even acknowledging the effects of the Clean Smokestacks Bill enacted in 2002

A proper, rigorous study of North Carolina electricity rate increases “since 2001” would certainly have addressed the rate impacts of the state's highly unique Clean Smokestacks Bill, passed in 2002. Environmentalists described that law as, among other things, “the most significant piece of environmental legislation in North Carolina's history” and “the shot heard around the world.”⁸

The NCSEA report calls the “primary” driver of rate increases “investments in conventional energy sources (coal, natural gas, and nuclear) [that] make up the vast majority of residential customer charges; accounting for 84% of DEC [Duke Energy Carolinas] and 75% of DEP's [Duke Energy Progress'] cumulative increase in average residential bills from 2001 through 2014.”⁹

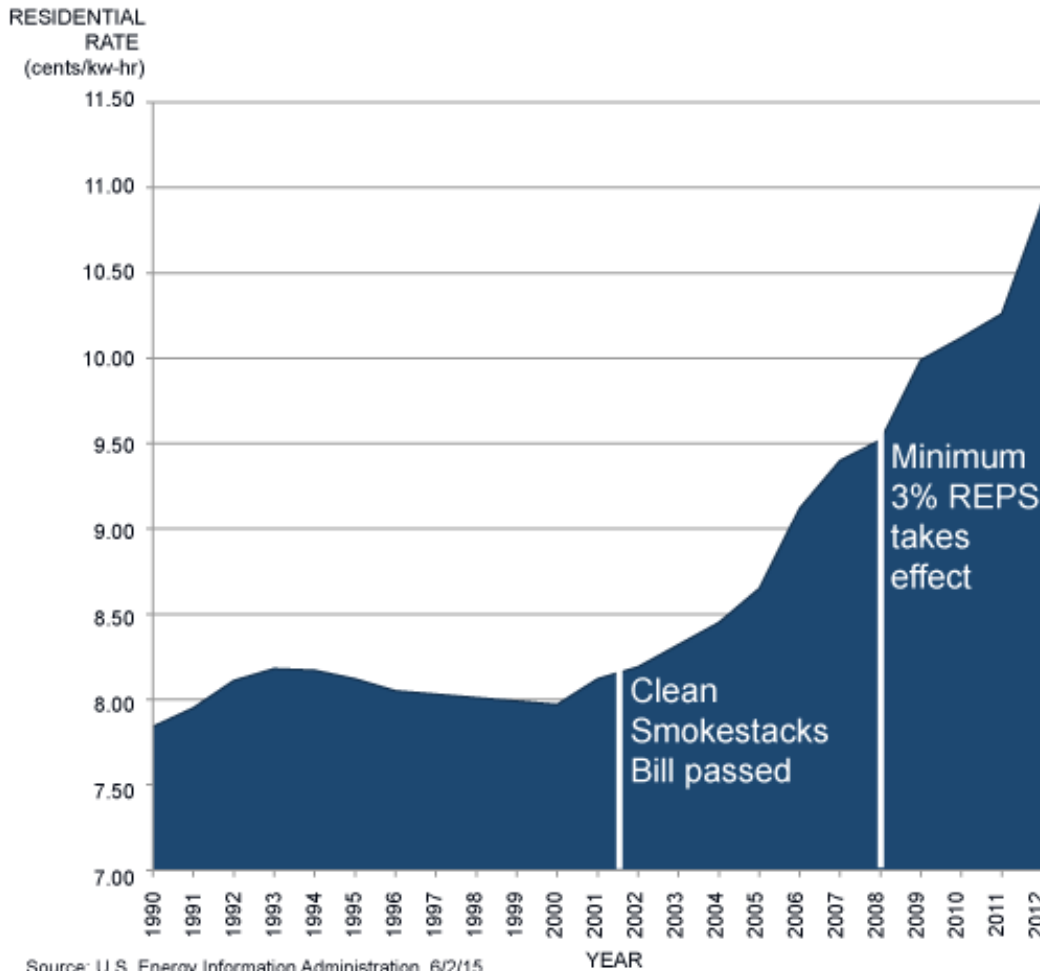
What drove those? Electricity rates in North Carolina had been slowly *decreasing* throughout much of the 1990s. Why did they start increasing?

The very first item quoted by NCSEA from Duke Energy in its 2013 rate increase application is the following:

Capital investments for plant modernization, environmental compliance, and other capital additions¹⁰

7 “The Energy Report: A Snapshot of North Carolina's Energy Portfolio Seven Years After Session Law 2007-397,” North Carolina Department of Environment and Natural Resources, March 2015, portal.ncdenr.org/c/document_library/get_file?uuid=369122bb-0ed1-4974-b62c-3efec5930ff9&groupId=14.
8 Scott Mooneyham, “Going Green By Degrees,” *Business North Carolina*, November 2009, businessnc.com/articles/2009-11/going-green-by-degrees-category.
9 NCSEA report, p. 4.
10 NCSEA report, p. 4.

Average residential electricity rates in North Carolina, 1990–2012



Source: U.S. Energy Information Administration, 6/2/15

The costs of complying with the Clean Smokestacks Bill have skyrocketed since the bill was first proposed. According to research by Dr. Roy Cordato in 2010,

- Initial estimates in 2001 for compliance with Clean Smokestacks was under \$450 million.
- By the bill’s passage in 2002 cost estimates had risen more than fivefold to \$2.3 billion.
- By June 2009, according to the annual report to DENR on the status of Clean Smokestacks, the costs were projected to be over \$3.2 billion, *more than seven times* the initial estimates.¹¹

How much of the non-renewable-energy-driven rate hikes in North Carolina since 2001, which includes seven years not affected by the REPS mandate, are driven nonetheless by compliance with Clean Smokestacks?

¹¹ Dr. Roy Cordato, “The Clean Smokestacks Bill: A Retrospective,” John Locke Foundation *Spotlight* No. 383, March 5, 2010, johnlocke.org/research/show/spotlights/234.

The NCSEA report doesn’t say — nor even venture to alert legislators who could be concerned about rate hikes that it might be a significant factor.

The impression given is of the utilities making “large, long-term investments in conventional energy resources” knowing that “the costs of these investments are passed on to their customers” so that “it can be easily understood that conventional resources are the primary driver of utility rates.”¹² That image would be different, however, if a significant proportion of those investments came about *because of environmental compliance* as opposed to mere monopoly utility indifference to captive ratepayers.

If NCSEA’s report must go back to 2001 in examining the rate effects of a policy that didn’t take effect until 2008, then it should at least have addressed the impacts from the state’s big change in the rules of the game in 2002.

Relying on the effects of the earlier, relatively smaller REPS mandate

The state’s REPS mandate’s measured rate-hiking impacts so far are also not larger because the mandate had reached *only three percent* of 2011 electricity sales. It was at six percent of 2014 electricity sales. By 2021 it is slated to be *over four times* what the state required in 2012 (12.5 percent of 2020 electricity sales).¹³

Even with such a (relatively) small mandate, the cost of North Carolina’s REPS mandate through

¹² Quotations from NCSEA report, p. 4.

¹³ Session Law 2007-397.

2014 totaled \$276 million.¹⁴ The figure is from research by economists at the Beacon Hill Institute at Suffolk University (BHI) for the Institute of Political Economy at Utah State University.

BHI economists caution that as the mandate increases, these price effects will become greater and more burdensome. They furthermore note that the price effects are being mitigated by the Cost Recovery Rider (CRR), which sets caps on how much utilities can charge to recoup their compliance costs from consumers. As the REPS requirements ramp up, however, they will crash into the CRR, meaning they would “effectively, but inadvertently, freeze the amount of renewable electricity produced at 6.75 percent in 2017, short of the 10 percent required by the following year.”¹⁵ This effective freeze would take place unless policymakers decided to lift the cost caps.

For residential ratepayers, that cap nearly triples this year.¹⁶

Ignoring the future, greater rate effects of the increasing REPS mandate

As explained above, policymakers will soon face a choice between freezing the REPS mandate or, much worse for consumers and businesses, raising the caps. Under the latter scenario, commercial electricity customers would face much higher rates, which poses “a potential threat to the competitiveness of North Carolina’s commercial business base.”¹⁷

What happens in North Carolina if the REPS mandate is fully implemented? BHI estimated in a 2009 study:

- Loss of 3,592 jobs
- Loss of \$56.8 million in real disposable income
- Loss to the state of \$43.2 million in investment
- Loss to the state of \$140.4 million in real GDP

- Loss to state and local governments of \$43.5 million in revenues (all figures in 2009 dollars)¹⁸

Note: these figures assume the cost caps are in place — the numbers would be far, far worse without that assumption:

- Loss of 15,373 jobs
- Loss of \$271.2 million in real disposable income
- Loss to the state of \$182.6 million in investment
- Loss to the state of \$606.7 million in real GDP
- Loss to state and local governments of \$246.6 million in revenues (all figures in 2009 dollars)¹⁹

Using discredited methodology and sleight-of-stat

The report concludes that rates “would be higher without renewables and energy efficiency — Drivers 2, 3 and 4 — in North Carolina’s energy mix.” On what basis? The report claims the price-hiking renewables are “of benefit to rate payers statewide: \$162 million in cost savings with clean energy in our state’s balanced energy mix since 2007, and an estimated additional \$489 million to be saved by 2029.”²⁰ Oh?

The source for those claims is the report “The Economic and Rate Impact Analysis of Clean Energy Development in North Carolina – 2015 Update” by RTI International and ScottMadden Management Consultants.

That report is the “2015 Update” to the 2013 study RTI did with LaCapra Associates. A peer review of the 2013 study conducted by economists at BHI had *thoroughly discredited it*, revealing numerous and (what should be) embarrassing flaws in the methodology employed.²¹

But surely wasn’t it just the 2013 report that was dismantled by peer review, not the new report for 2015?

14 The Beacon Hill Institute at Suffolk University, “Theoretical Analysis” section, “Renewable Portfolio Standards: North Carolina,” Institute of Political Economy of Utah State University and Strata Policy, February 2015, pp. 5–7, strata.org/wp-content/uploads/2015/03/FINAL-RPS-North-Carolina.pdf.

15 Beacon Hill Institute, “Theoretical Analysis.”

16 Session Law 2007-397.

17 Beacon Hill Institute, “Theoretical Analysis.”

18 David G. Tuerck, Michael Head, and Paul Bachman, “The Economic Impact of North Carolina’s Renewable Energy and Energy Efficiency Portfolio Standard,” The Beacon Hill Institute at Suffolk University, August 2009, johnlocke.org/acrobat/policyReports/bhionncsb3.pdf.

19 Tuerck, Head, and Bachman, “Economic Impact of N.C.’s REPS.”

20 NCSEA report, p. 8.

21 David Tuerck, Ryan Murphy, and Paul Bachman, “Peer Review of ‘The Economic, Utility Portfolio, and Rate Impact of Clean Energy Development in North Carolina,’” The Beacon Hill Institute at Suffolk University, April 2013, johnlocke.org/research/show/spotlights/283.

Consider: other than “updat[ing] the economic impact results to include clean energy investments made in 2014,” the 2015 report states that “the data and analysis methodology are unchanged” from the 2013 report’s.²²

In other words, the discredited methodology is unchanged. That methodology includes the following (see the appendix for the full executive summary):

- Relying on “absurd,” “mismeasured and spurious” benefits
- Lacking “any evidence that subsidizing green energy will reduce the cost of power in North Carolina”
- Using “arbitrary calculation methodology” to project savings of hundreds of millions of dollars, while flatly assuming “that renewable energy will be cheaper in the future than traditional sources of energy”
- Making that and other assumptions that require markets to be “not just wrong, but terribly wrong and terribly dysfunctional — in order for any of these assumptions to make any sense.”²³

Peer review also revealed this:

Hidden in the text, tables, and charts is that there is little to be said for the renewable energy subsidies themselves. The cost savings will be the result of “energy efficiency,” not renewable energy. Everything else is trivial. But by giving the impression that “not using energy” counts towards “renewable energy,” they claim renewable energy is cheaper.²⁴ (Emphasis added.)

The new NCSEA report circulating among legislators continues this bait and switch of putting not-using-energy savings in renewable energy’s clothing.

Trying to make renewable resources sound cost-competitive with traditional resources

The report makes renewable energy sources seem to be increasingly the cost-competitive option for electricity

generation. E.g., “Renewable energy resources, by comparison [with traditional resources], are sustainably operated” — that phrase is economic nonsense — “and rapidly advancing in technological efficiency and performance as their costs decrease” and “conventional costs are rising and clean energy costs are nominal.”²⁵

It is practically impossible for the *nondispatchable renewable resources of solar and wind* to be actually cheaper than traditional resources of coal, nuclear, and natural gas. Not only are solar and wind several levels less efficient than traditional resources, but also — until the sun and wind can be summoned to produce on an immediate, as-needed basis — *they require those same traditional resources on standby* to back them up when nature disappoints.

This simple fact of nature is why, for example, Apple’s solar farm in Maiden, N.C. — which is supposedly “100 percent”²⁶ powered by renewable energy — just received permits to install 44 diesel-engine generators for backup power.²⁷

Properly accounting for the costs of solar and wind electricity generation requires not only accounting for their relative inefficiency but also including the costs associated with the backup generation they require. As Charles R. Frank Jr. of the Global Economy and Development Program at the Brookings Institution concluded in calculating the benefits and costs of solar and wind relative to coal, nuclear, hydroelectric, and natural gas,

Wind and solar power are very costly from a social perspective because of their very high capacity cost, their very low capacity factors, and their lack of reliability.

For example, adjusting U.S. solar and wind capacity factors to take account of lack of reliability, we estimate that it would take 7.30 MW of solar capacity, costing roughly four times as much per MW to produce the same electrical output with the

22 “The Economic and Rate Impact Analysis of Clean Energy Development in North Carolina – 2015 Update,” RTI International and ScottMadden Management Consultants, February 2015, c.y.mcdn.com/sites/www.energync.org/resource/resmgr/Resources_Page/RTI_2015.pdf.

23 Tuerck, Murphy, and Bachman, “Peer Review.”

24 Tuerck, Murphv. and Bachman. “Peer Review.”

25 NCSEA report, pp. 6–7, 8.

26 Robert McMillan, “Apple’s Data Centers Now 100 Percent Green (Or Something Like That),” *Wired*, March 21, 2013, wired.com/2013/03/apple-data-centers.

27 Paul Chesser, ‘Green’ Apple Installs Diesel Generators, Ballyhoos Phony Forest Offset Scheme, National Legal and Policy Center, May 1, 2015, nlpc.org/stories/2015/05/01/green-apple-installs-diesel-generators-buys-forest-indulgences.

same degree of reliability as a baseload gas combined cycle plant. **It requires an investment of approximately \$29 million in utility-scale solar capacity to produce the same output with the same reliability as a \$1 million investment in gas combined cycle.**

Reductions in the price of solar photovoltaic panels have reduced costs for utility-scale solar plants, but photovoltaic panels account for only a fraction of the cost of a solar plant. Thus such price reductions are **unlikely to make solar power competitive with other electricity technologies without government subsidies.**²⁸ (Emphasis added.)

That final line about government subsidies points out a major “hidden” cost of renewable energy resources: a significant proportion of their costs is borne by consumers not in their role as ratepayers, but as taxpayers.²⁹

Consider the March 2015 DENR Energy Report’s discussion of the cumulative effect of state and federal tax incentives and bonus accelerated depreciation schedules (see the chart also):

*Solar energy investors with sufficient tax liability may combine the 35 percent state ITC with the 30 percent federal ITC and the bonus accelerated depreciation schedule to **return almost all of their investment within six years** and may receive 57.8 percent of their investment back through tax credits and depreciation deductions within 12 months of placing into service. For an investor subject to a 35 percent federal tax rate and a 5 percent state tax rate, the [following] demonstrates how much of the solar energy investment is returned each year through tax incentives.*³⁰

Returning ‘almost all of their investment within six years’

SOLAR PROJECT TAX INCENTIVES					
	Federal Investment Credit	State Investment Credit	Federal Depreciation	State Depreciation	Cumulative Total
YEAR 1	30%	7%	17.85%	2.97%	57.8%
YEAR 2		7%	4.76%	0.79%	70.4%
YEAR 3		7%	2.86%	0.48%	80.7%
YEAR 4		7%	1.73%	0.29%	89.7%
YEAR 5		7%	1.73%	0.29%	98.7%
YEAR 6			0.83%	0.14%	99.7%
TOTAL	30%	35%	30%	5%	100%

A March 2015 study by the Taxpayers Protection Alliance reports that even after several decades the solar industry continues to operate on a “subsidy-based business model”³¹:

*The boom America’s solar energy industry is enjoying — some might even call it a “bubble” — results **not from overwhelming competitive market success, nor from long-promised technical breakthroughs** that finally made solar a major player in the U.S. energy sector. On the contrary, Solar today remains a niche energy provider, generating just 0.6 percent of all U.S. electricity, despite nearly four decades of taxpayer generosity, government favoritism, and pampered treatment.*

*The sobering reality is that Big Solar’s day in the sun simply isn’t possible, **nor is it economically sustainable, without continuous diversions of tax money, government assistance, energy portfolio carve-outs, and utility cost-shifting schemes** — all aimed at creating a “market” for solar that it can’t establish on its own.*³² (Emphasis added.)

As documented by the Institute for Energy Research, renewable energy advocates have been promising policymakers for a long time that resources such as solar and wind are on the brink of being cost-competitive

28 Charles R. Frank Jr. , “The Net Benefits of Low and No-Carbon Electricity Technologies,” *Working Paper* 73, Global Economy and Development Program, Brookings Institution, May 2014, brookings.edu/~media/research/files/papers/2014/05/19-low-carbon-future-wind-solar-power-frank/net-benefits-final.pdf.

29 Q.v., Jon Sanders, “Detailing Solar Companies’ Dependence on Handouts,” *Carolina Journal*, January 23, 2015, carolinajournal.com/articles/display_story.html?id=11731.

30 DENR, “Energy Report,” p. 9.

31 “A House of Cards: Solar Energy’s Subsidy-Based Business Model,” Taxpayers Protection Alliance, March 30, 2015, protectingtaxpayers.org/assets/files/Taxpayers-Protection-Alliance-House-of-Cards-Final-March-30.pdf.

32 “House of Cards,” pp. 1–2.

with traditional resources. How long? Since *at least* the 1970s.³³

Avoiding the reality and implications of plentiful, cheap natural gas from shale

Furthermore, the focus on coal and nuclear ignores the biggest revolution in energy in the United States since the REPS mandate was first discussed: plentiful, inexpensive natural gas from shale rock formations.

Duke Energy recently requested a 15 percent reduction in its avoided-cost charges³⁴ to solar energy producers because of falling natural gas prices. It is Duke's second such request since 2012.³⁵ The requests stand in stark, real-world contrast with the idea that renewable energy prices are competitive with traditional energy sources.

"Customers save when Duke Energy can purchase power at a realistic price," Duke spokesman Randy Wheelless told the Charlotte Observer. "We believe our filing reflects the best data on how these prices should be set."³⁶

Nevertheless, in one-page handouts to legislators, NCSEA is claiming outright that "Your Electric Bill [Is] Better Off With REPS."³⁷

Conclusion

In North Carolina, electricity consumers have no choice in their electricity provider. This fact should, first of all,

never provide an excuse to use this lack of a free market to enrich special interests at the expense of captive ratepayers.³⁸

In return for this guaranteed consumer base, the utility is expected to provide reliable power. The utility was also expected to provide the least-cost reliable power, but that dynamic changed under the REPS mandate.

State leaders should return North Carolina to this standard of least-cost, reliable power.

Furthermore, state leaders should cut through the noise of slanted, rent-seeking tailored industry reports aimed at influencing them to produce public policies favorable to their industry at ratepayer/taxpayer expense. A thorough, comprehensive study of North Carolina energy policy is needed — one that bears in mind that the top stakeholders are ratepayers whose chief interest is least-cost, reliable power at the flip of the switch.

33 "Will renewables become cost-competitive anytime soon?", Institute for Energy Research, instituteeforenergyresearch.org/studies/will-renewables-become-cost-competitive-anytime-soon-the-siren-song-of-wind-and-solar-energy.

34 "Avoided costs" are essentially the marginal costs to the utilities to generate or buy electricity elsewhere instead of being mandated to purchase renewable energy, as determined by utilities commissions in determining the rate the utility must pay for those purchases of renewable energy. The Federal Energy Regulation Commission defines avoided cost as "the incremental cost to an electric utility of electric energy or capacity which, but for the purchase from the QF [qualifying facility], such utility would generate itself or purchase from another source." See ferc.gov/industries/electric/gen-info/qual-fac/benefits.asp.

35 Bruce Henderson, "Duke Energy wants to drop solar rates," *The Charlotte Observer*, March 5, 2015, charlotteobserver.com/news/business/article12638054.html.

36 Henderson, "Duke Energy wants to drop solar rates."

37 "Your Electric Bill: Better Off With REPS," handout, NCSEA, May 2015, c.yimcdn.com/sites/www.energync.org/resource/resmgr/legislative/REPSCharges.pdf.

38 Q.v., NCSEA lobbyist Betsy McCorkle, as quoted by Mark Binker, "Bill putting renewable requirements on hold hitches ride on natural gas bill," WRAL, May 19, 2015, wral.com/bill-putting-renewable-requirements-on-hold-hitches-ride-on-natural-gas-bill/14655546, and Craig Jarvis, "Bill puts brakes on renewable energy," *The News & Observer*, May 19, 2015, newsobserver.com/news/politics-government/politics-columns-blogs/under-the-dome/article21400155.html.

Appendix: When Economists Performed a Peer Review of the Renewable Energy Lobby's Report

Following is the executive summary of economists David Tuerck, Ryan Murphy, and Paul Bachman's "Peer Review of 'The Economic, Utility Portfolio, and Rate Impact of Clean Energy Development in North Carolina.'" Tuerck, Murphy, and Bachman are researchers at The Beacon Hill Institute at Suffolk University:

A recent report from RTI International and La Capra Associates claims to find net economic benefits for North Carolina's renewable energy policies, but these benefits are mismeasured and spurious. Orthodox cost-benefit analysis will not find anything like what the report's authors estimate. Many claims are difficult to directly evaluate given the opacity of the report, despite the report's length. Elsewhere, confusing terminology conceals the lack of any evidence that subsidizing green energy will reduce the cost of power in North Carolina.

The primary benefits the report puts forth are an increase in spending in North Carolina. It implies that a \$72 million increase directly led to an increase in total spending in North Carolina by \$1.4 billion. This is absurd, even when using a Keynesian model of the economy. Since the report assumes that the programs were paid for by reducing other government spending, the best guess is that they had no impact on spending in North Carolina.

The report also projects how much these investments save citizens of North Carolina. It first argues, with an arbitrary calculation methodology, that the measures have already saved North Carolina hundreds of millions of dollars, which implies that energy businesses were too irrational to have taken advantage of such a profit opportunity on their own. Later, the authors of the report assume with certainty that renewable energy will be cheaper in the future than traditional sources of energy, without even allowing for the possibility that similar technological breakthroughs may happen for traditional sources of energy as well (as has happened recently with natural gas). Markets would need to be wrong – not just wrong, but terribly wrong and terribly dysfunctional – in order for any of these assumptions to make any sense.

Hidden in the text, tables, and charts is that there is little to be said for the renewable energy subsidies themselves. The cost savings will be the result of "energy efficiency," not renewable energy. Everything else is trivial. But by giving the impression that "not using energy" counts towards "renewable energy," they claim renewable energy is cheaper.

This "energy efficiency," which will supposedly lead to so many cost-savings amounts to little more than energy efficiency programs in government buildings and mandates in building codes. Cost cutting measures in government buildings are admirable should they follow orthodox cost-benefit analysis, but that has everything to do with cost-benefit analysis and nothing to do with energy. The private market mandates, however, are at best superfluous.

The government does not need to instruct a business owner to install cost-saving measures that will save the business owner money, because the business owner is in a better position to judge what measures will be worth it. The "cost-savings" that take place only as a result of the mandates are unlikely to be worth it.