

Inside Energy

Published by the Caesar Rodney Institute
Center for Energy Competitiveness

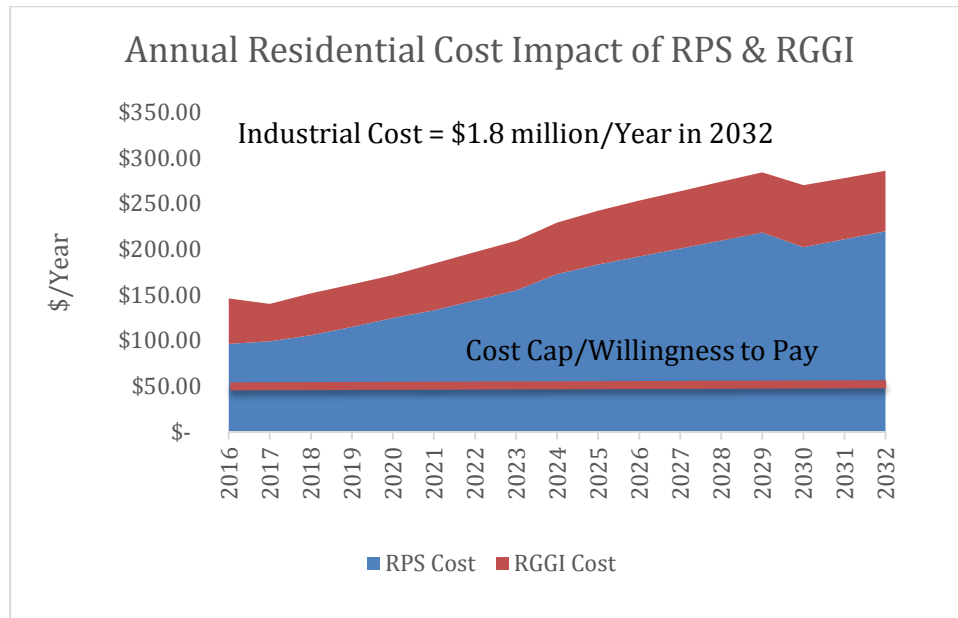
RE: End Delaware Regulatory Manipulation of Electric Industry

DATE : 3/2/2018

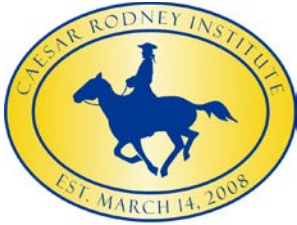
David T. Stevenson, Director

Delaware has laid a heavy hand on the state's electric generation industry with mandatory rules for wind and solar power, carbon dioxide (CO₂) emission caps, and energy efficiency measures. While well intentioned, the rules have simply not worked to lower CO₂ emissions. However, the rules have raised electric rates, and will likely continue to raise them according to my analysis (see Chart 1 below). Regulations are already adding about \$150 a year to residential bills, three times what customers say they are willing to pay. Mid-size industrial customers are paying about \$1 million a year. These costs could double by 2032.

Chart 1



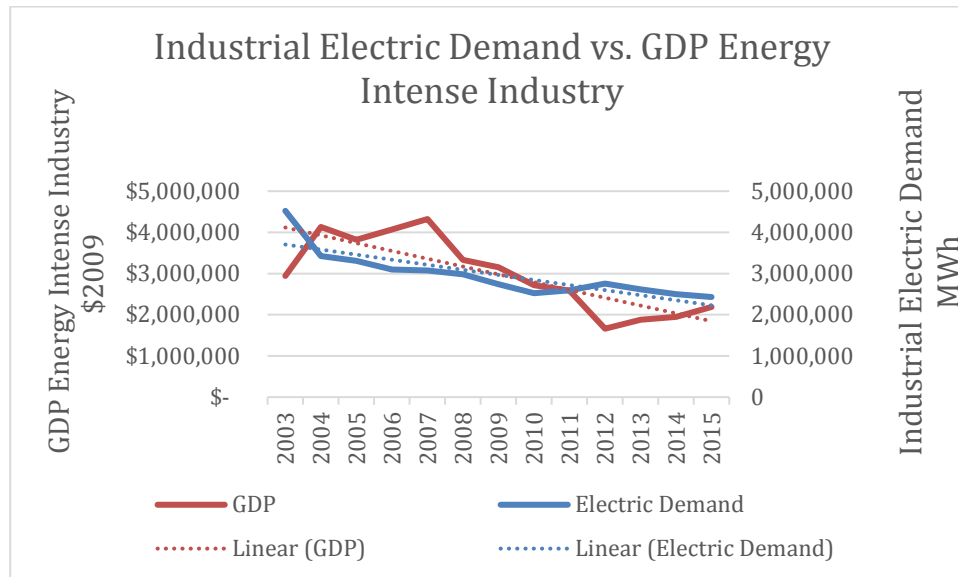
The US Census reports in its annual Household Survey¹, Delaware inflation adjusted median household income has dropped from \$70,000 a year in 2000 to \$58,000 in 2016. Higher industrial electric costs (26% average) contributed to cutting production, and industrial electric demand, in half from 2003 and 2015 from energy intensive manufacturing businesses such as chemicals, paper products, steel, autos, food processing, and oil refining (Chart 2). By comparison, national production in the same industries saw a 7 percent increase, while industrial electric demand fell only 3 percent most likely reflecting improved efficiency. Companies are simply relocating to states with more competitive electric rates. Manufacturing losses in these industries led to fewer high paying blue collar jobs, jobs that often paid up to \$75,000 a year. That is a shocking loss of income! With 30 percent of Delawareans spending more than 10 percent of their income on energy, the definition of energy poverty, and lost high paying jobs in energy intense businesses, these policies are causing real hardship.



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Chart 2



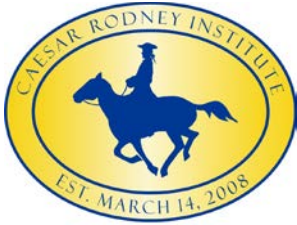
Sources: Electric demand from US Energy Information Agency², and GDP data is from the US Bureau of Economic Analysis³

As poorly as these regulations have worked, there are plans to make them even more stringent. Delaware belongs to a nine state Regional Greenhouse Gas Initiative (RGGI) that targeted about a 50% reduction in CO₂ emissions by 2020 by requiring electric generators to buy emission allowances in quarterly auctions. The costs are passed onto electric customers. A new rule has been announced to require another 30% reduction by 2030, and the cost to consumers could increase 50% as allowance prices rise.

Also, legislation is being proposed doubling the requirement for renewable energy, such as wind and solar power, in the Renewable Portfolio Standard (RPS) from 25 percent of electric demand by 2025 to 50% by 2032. This will likely harm electricity reliability as wind and solar supply power intermittently. Consumer costs for the program may double, in part because state subsidies will have to make up for falling federal subsidies.

I recently published the only independent, peer reviewed study of the RGGI program, “A Review of the Regional Greenhouse Gas Initiative”, in the winter issue of the Cato Journal⁴. I found RGGI states had the same emission reductions as non-RGGI states, lost more manufacturing jobs, had higher electric rates, and fared worse in adding wind, solar, and improving energy efficiency. In another study I compared Maryland and Delaware with rigid regulations to Virginia with no RGGI program, and voluntary wind, solar, and energy efficiency programs⁵. All three states are in the same regional electric grid. Virginia reduced CO₂ emissions faster on a per capita basis, added twice as much renewable power, and did a better job of improving energy efficiency.

A recent study done for the Maryland offshore wind project by the Public Service Commission staff consultant⁶ shows adding more wind power doesn't lower emissions either as the need for cycling



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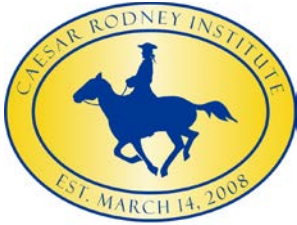
conventional power plants up and down to back-up intermittent wind erases any emissions gains from the wind project. Delaware's RPS required 16.5% of electric demand be filled with renewable power with 2 percent of that coming from solar in 2017. The U.S. Energy Information Agency provides generating and emissions data in its Electric Power Monthly⁷. The goal was met for the solar portion with in-state systems. Another 2% of generation came from the Bloom fuel cell program that is actually fueled with conventional natural gas. To pass the project approval process the Bloom generation is actually allowed to count double to make it seem less costly. Most of the remaining 10 percent renewable energy requirement is coming from out-of-state wind farms that add cost for Delaware electric customers, but provide no jobs here.

The desire of proponents to extend and expand the RGGI and RPS have been driven by Trump Administration plans to abandon the Paris Accord, and to repeal the treaty supporting the EPA proposed Clean Power Plan regulation. However, America has reduced greenhouse gas emissions 20 percent more than the entire developed world combined from 2005 to 2015⁸. Our emissions are down 10 percent compared to 6.5 percent for other developed countries according to the Organization for Economic Cooperation and Development. The failed Clean Power Plan target of 28 percent reduction in CO₂ emissions from power plants by 2025 has been met eight years early without the regulation²! Using 2017 information from RGGI, Delaware has already reduced emissions from power plants 58 percent compared to a 2020 goal of 53 percent⁹, and has met the 2030 Clean Power Plan goal for the state.. The RGGI extension is simply not needed, and won't work anyway.

As reported in my recently published study⁴, lower priced natural gas from the shale revolution encouraged fuel switching from coal that has twice the emission rate for each megawatt-hour of power, and accounted for 70 percent of national emission reductions. National regulations from the EPA accounted for the other 30 percent nudging older, smaller coal-fired power plants to retire rather than investing in new pollution control equipment. RGGI had no impact. Ironically, Delaware has opposed extracting natural gas from shale, the primary successful strategy in reducing emissions.

Not only do Delaware energy policies not work, the cost greatly exceeds the willingness of electric customers to pay the added cost. A recent study by the University of Michigan¹⁰ concluded 34 percent of the U. S. population is not willing to pay anything extra for CO₂ reduction, with another 28 percent only willing to pay \$50 a year. Four other national surveys confirm the University of Michigan results. Coincidentally, \$50 a year is about the same amount the Delaware Legislature set as a cumulative cost cap of 3% on electric bills. The cost cap was exceeded in 2012, and cost of the RPS was over double the cost cap in 2017. Proposed legislation would change the cost cap from a cumulative 3% to allow cost increases of up to 3% a year!

A better policy would be to withdraw from RGGI, and freeze the requirement for more renewable power. Over the last year nearly two thirds of all new electric generation in the United States was wind and solar power⁷. These technologies are ready to compete with new conventional power plants without state subsidies. In Delaware, a large solar farm is being built in Sussex County with no state subsidies, and solar capacity may more than double with other planned non-subsidized additions. The Solar Energy Industry Association reports new utility scale projects are delivering power for \$28 to \$45/MWh¹¹. Last year



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Delmarva Power paid \$58/MWh for wholesale power from conventional sources. The last thing we need is to tighten costly state regulations when the free market can do the job without subsidies.

Notes:

- 1) U.S. Census Bureau, Current Population Survey, Annual Social and Economic Supplement, “*Median Household Income by State: 1984 to 2016*”. Table H-8. Available at <https://www.census.gov/data/tables/time-series/demo/income-poverty/historical-income-households.html>
- 2) U.S. Energy Information Agency “*Annual State Energy Data*” available at <https://www.eia.gov/electricity/data/state/>
- 3) U.S. Bureau of Economic Analysis “*Interactive Data*” available at <https://bea.gov/itable/iTable.cfm?ReqID=70&step=1#reqid=70&step=4&isuri=1&7003=900&7001=1900&7002=1&7090=70>
- 4) Stevenson, D. T. (2017) “A Review of the Regional Greenhouse Gas Initiative”, “Winter 2018” Volume 38, Cato Journal. Available at <https://www.cato.org/cato-journal/winter-2018/review-regional-greenhouse-gas-initiative>
- 5) Adjusting for changes in out-of-state imports of power, Virginia carbon dioxide emissions from electric generation fell 38.6 percent/capita from 2005 to 2016 while Delaware and Maryland combined fell only 37.1 percent
- 6) Levitan and Associates Inc. for the Maryland Public Service Commission Docket 9431item 85, “Evaluation and Comparison of US Wind and Skipjack Proposed Offshore Wind Project Applications” pages 92 and 160, revised public version, March 17,2017, <http://www.psc.state.md.us/search-results/?keyword=9431&search=all&search=case&x.x=15&x.y=13>
- 7) U.S. Energy Information Agency (EIA), *Electric Power Monthly* (December 2017): “Table 1.14.B Wind by State by Sector, Year-to-Date”; “Table 1.17.B Solar Photovoltaic by State by Sector, Year-to-Date”. Available at <https://www.eia.gov/electricity/monthly/>
- 8) Organization for Economic Cooperation and Development Greenhouse Gas Data Set, available at https://stats.oecd.org/Index.aspx?DataSetCode=AIR_GHG
- 9) RGGI COATS interactive table for 2017, available at <https://rggi-coats.org/eats/rggi/index.cfm?hc=ISkgICAK>
- 10) University of Michigan Center for Local, State, and Urban Policy, “National Surveys on Energy & Environment”, willingness to pay Q31, <http://closup.umich.edu/national-surveys-on-energy-and-environment/nsee-data-tables/nsee-2017-spring/#Q31>
- 11) Solar Energy Industry Association, “*Industry Data Report*”, available at <https://www.seia.org/solar-industry-data>