

Comments on EPA's Proposed Clean Power Plan for Existing Power Plants

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Carbon standards for existing fossil fueled power plants were proposed on [June 2](#) by the President and US Environmental Protection Agency (EPA) under Section 111(d) of the Clean Air Act (CAA). Overall, these standards seek to reduce CO₂ emissions by 30% in 2030 relative to 2005. This nationwide goal is the aggregate of individual state goals, which are expressed in rates. For example, EPA's proposed goal for Georgia in 2030 is to reduce its carbon emissions per MWh to 48% of its rate in 2012: from 1598 to 834 pounds per MWh. Nuclear, gas, renewables, and improved plant efficiencies are all part of this proposed goal, as is a 6% reduction in electricity demand via energy efficiency.

The proposed EPA carbon pollution limits on existing power plants will not just encourage states and utilities to use less carbon-intensive power generation – that is, the “behind the fence” supply strategy. They also will reward states and power producers for helping consumers use less electricity – the “outside of the fence” demand strategy. The role this proposed rule may play in creating stronger markets for energy efficiency in the South's clean energy future is the subject of my remarks today.

The availability of reasonably priced and reliable electricity has helped to drive the South’s economic development. But these historically low rates have also made energy efficiency and conservation less valuable. As a result, the South has a bountiful opportunity to reduce its energy demand and cut its energy bills with the type of push that the proposed regulations would put on energy efficiency. Because the South uses energy so wastefully, home energy bills are similar to the rest of the nation (\$170/month in the South vs \$175/month for the U.S.) – despite the fact that its electricity rates are some of the lowest.

For the nation, the plan’s proposed goals for reducing electricity demand through energy efficiency seem small relative to the empirical evidence in peer-reviewed literature about the magnitude of the economic potential for electricity efficiency (see, for instance, Wang and Brown, 2014). This “building block” should be a bigger player in the proposed “best system of emission reduction, especially for states in the South,.

In 2013, the South accounted for 43% of U.S. energy consumption and 43% of U.S. electricity consumption, but the South is home to only 36% of the nation’s population and only 35% of the U.S. GDP. Thus, the region has high ratios of electricity per capita and per GDP relative to the rest of the U.S. (Figure 1).

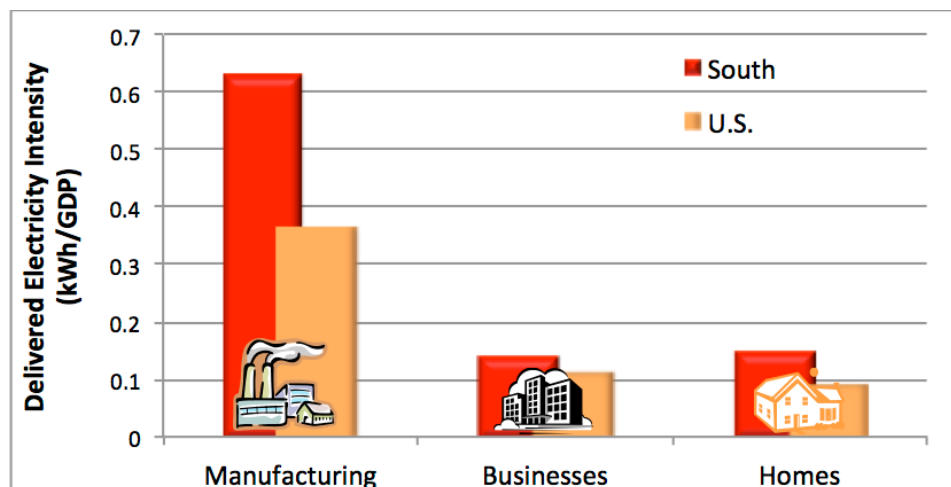


Figure 1. Electricity Intensity by Customer Class in the South and the U.S. in 2012 (Notes: The South excludes TX and OK. Source: Brown et al., 2014)

- The industrial sector in the South uses 73% more electricity than the national average to generate one unit of GDP. This is partly due to the region's higher-than-average share of electricity-intensive industries such as metals, textiles, paper products, and chemicals.
- The commercial and residential sectors in the South are also more energy intensive than the rest of the nation. This is partly because buildings in the South rely more on electricity and less on natural gas for space heating than the rest of the nation.

These high levels of energy intensity also reflect the region's inefficient use of electricity. The American Council for an Energy-Efficient Economy (ACEEE) has ranked most southern states amongst the lowest third in the nation based on their energy efficiency policies and performance. The evidence of energy inefficiency in the South is overwhelming. For instance,

- Sales data suggest a low market penetration of energy-efficiency products in the South. For each of the ENERGY STAR appliances with sales data that are tracked by EPA – air conditioners, clothes washers, dishwashers, refrigerators, and water heaters – the South has the lowest rates of market penetration (Brown, et al., 2012).
- Evidence of weak energy efficiency policies is ample.
 - Twenty U.S. states have energy efficiency resource standards (EERS) and only two of these are in the South. EERS are one of the strongest energy efficiency policies.
 - Sixteen states have implemented policies to “decouple” electricity profits from sales, but only two of these are in the South. Decoupling or similar rate reforms are needed because current ratemaking procedures encourage utilities to increase electricity

sales and discourage them from promoting energy efficiency and distributed generation, which reduce sales.

- Utilities in the South spent \$7 per capita on electric efficiency programs on 2012, while the average expenditure across the nation is \$19: Louisiana spent less than \$1 per capita and Georgia spent \$3, while Arkansas spent \$17.

By “energy efficiency” I do not mean cold showers and warm beer. I mean getting more energy services out of the energy you consume – with high-efficiency fluorescent bulbs and solid state lighting, smart thermostats and building control systems that save energy by strategically idling equipment when it is not needed, variable speed motor and drive systems, and energy upgrades to industrial plants including combined heat and power systems that minimize energy waste.

In 2010, I co-authored a study with a team of researchers at the Georgia Institute of Technology and Duke University’s Nicholas Institute that examined the South’s energy efficiency potential.

The study, titled “Energy Efficiency in the South,” demonstrated that a broad-based set of energy efficiency measures that were both technically feasible and cost effective would reduce utility bills in Georgia by \$3.8 billion annually, adding 32,000 new jobs each year by 2020.

The job creation story is simple: using less electricity means that consumers pay lower power bills and can spend more money on other things, like cars, houses, food and education. The production of these goods and services generate many more jobs than money spent on electricity bills because power generation is not labor intensive – it is resource and capital intensive.

The new regulations could raise energy efficiency in the South from its current lowly status as a personal virtue to the status of a transformational electricity resource. To help facilitate this transformation, EPA should provide energy

measurement and verification tools for states to use that calibrate the impact of energy efficiency programs on carbon emissions per MWh. Providing calculators and other such tools to states will aid in both the development and implementation of state plans, and may also facilitate the development of regional plans. Without such assistance, I fear that states and utilities will lack the certainty to exercise the most cost-effective demand-side options available to them.

Relevant publications:

Brown, Marilyn A., Etan Gumerman, Xiaojing Sun, Kenneth Sercy, and Gyungwon Kim. 2012. "Myths and Facts about Clean Electricity in the U.S. South," *Energy Policy* 40: 231-241.

Marilyn A. Brown, et al. 2010. *Energy Efficiency in the South*, Southeast Energy Efficiency Alliance, <http://cepl.gatech.edu/drupal/node/17>.

Marilyn A. Brown, et al. 2014. *State of Electric Power in the South*, Working Paper #80, Draft, July, School of Public Policy, Georgia Institute of Technology, http://cepl.gatech.edu/drupal/sites/default/files/FEPS%20White%20Paper%20072114_0.pdf#overlay-context=node/75.

Wang, Yu and Marilyn A. Brown. 2014. "Policy Drivers for Improving Electricity End-Use Efficiency in the U.S.: An Economic-Engineering Analysis". *Energy Efficiency*, 7(3): 517-546.