



Insight

Energy Efficiency Regulations Impede Clean Energy Growth

PHILIP ROSSETTI | AUGUST 30, 2016

Summary

- The Democratic Party’s [2016 policy platform](#) is calling for an expansion of energy efficiency standards.
- An unintended consequence of energy efficiency regulation is that it reduces incentives for innovation.
- Energy efficiency standards are not costless, amounting to about \$168 billion (excluding vehicles) from 2006 to the present; nearly \$1,350 per household.

Why Have Energy Efficiency Standards?

Energy efficiency standards (also called energy conservation) is the practice of mandating reduced amounts of electricity that appliances or other items can draw from an outlet. Policymakers often see this as an important component of an environmental agenda, because they view environmental degradation as a direct result of electricity generation. Ergo, if you mandate less electricity use, you get a cleaner environment.

The problem with this line of thinking is that there are sources of electricity that generate power with virtually zero environmental impact. If you adopt a policy that reduces the demand for electricity, you are also reducing the demand for clean energy. Even worse, the biggest beneficiaries of increasing electricity demand are new energy sources—which are all cleaner than current coal plants. Regulating efficiency standards creates a market where there is less need to innovate, and keeps us using the same dirty power plants.

This sort of policy limits innovation that delivers cleaner energy, it reduces competition for new electricity sources, and it creates regulatory costs that are passed on to consumers in other ways.

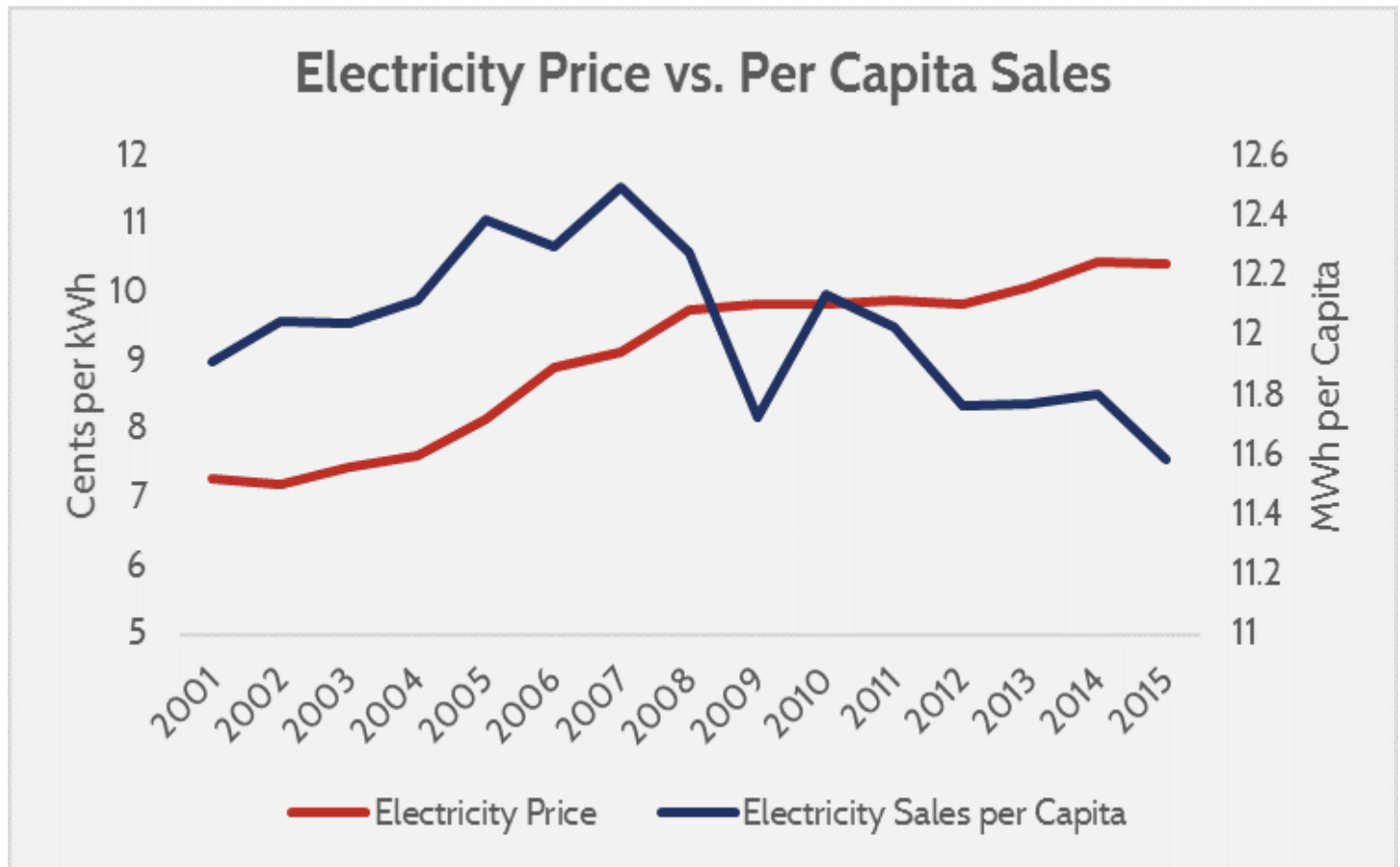
Energy Efficiency Standards Do Not Encourage Breakthroughs

When Bill Gates speaks of the need for an “[energy miracle](#),” he is drawing attention to the fact that existing energy sources are insufficient for achieving our long-term goals for widespread clean energy. Innovation is what will ultimately deliver this desired breakthrough, but the irony is that energy efficiency standards could be a barrier to this.

America had an energy revolution that doubled oil production thanks to hydraulic fracturing (“fracking”)—but fracking has been around for decades. What was so different about 2012, when the revolution took place? Answer: oil was [over \\$100/barrel](#). Technologies that were seen as pipe dreams for years suddenly became profitable, and their widespread adoption led to rapid optimization in costs and efficiency, as well as oil prices [plunging over 70 percent](#).

Profit is the motivator for market participants to take chances on new technology. Energy efficiency standards reduce energy demand, helping to keep prices low, which consequently reduces profits. The graph below shows

that as per capita electricity use is falling, the rise in electricity prices has slowed (despite population growth).



Source: Energy Information Administration and U.S. Census Bureau. Axes do not begin at zero.

Lower prices weaken the competitiveness of newer energy sources like wind and solar, as well as technologies on the horizon like advanced nuclear, [supercritical CO2 natural gas](#) combustion cycles, and others. Getting these technologies to the market is easier when energy consumption and prices are high, not when prices and consumption are low.

Regulations are not Costless

In addition to blunting innovation incentives, energy regulations also have significant cost burdens. The [American Action Forum](#) tabulated the cost burden of all major regulations since 2006, and for energy efficiency (excluding vehicles) this amounts to [\\$168 billion](#)—nearly \$1,350 per household.

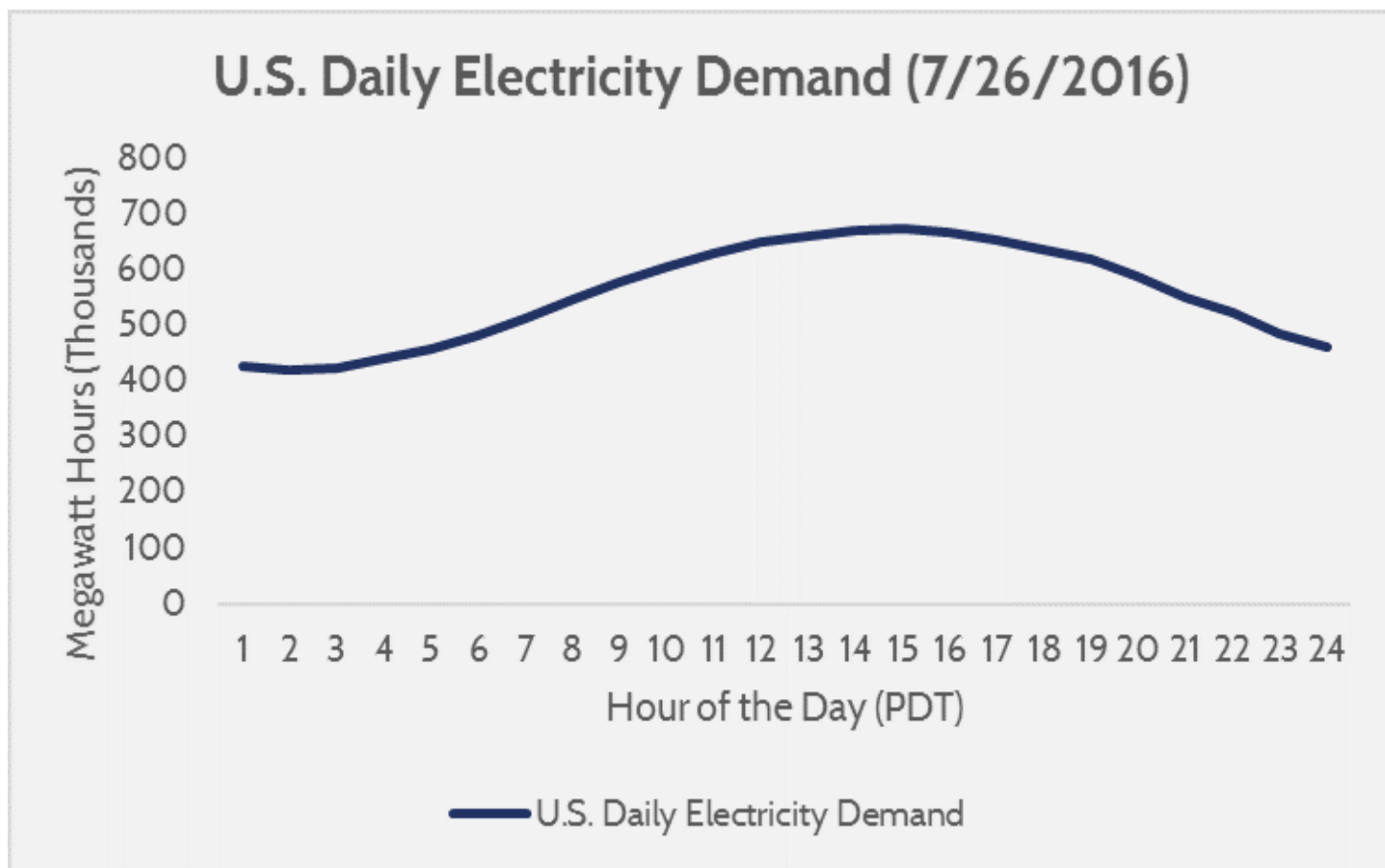
The government justifies these regulations by combining the benefits of total energy savings as well as abated pollution, declaring them to be sufficient enough that the burden is worth bearing. Unfortunately, this method of economic justification means that whether or not the burdens of these regulations are “justified” is reliant on energy being both expensive and dirty. As a consequence, the closer we get to our actual policy goal of cheap, clean energy, the less benefit these regulations actually deliver. One has to question the wisdom of a policy that imposes hundreds of billions of dollars in burdens, but is only justifiable if other policy goals fail.

Furthermore, these regulations are making a choice for consumers about their energy practices. Regulating

energy consumption has the effect of making other means of energy conservation less economical. This also applies to things like residential solar, which is a less attractive option for homeowners when electricity prices are low and appliance costs high.

Scarcity Pricing Is A Better Solution

How do you encourage people to save energy? By encouraging them to save money instead. Wasteful practices with our utility managed resources—especially water—are tied to regulated pricing that does not reflect resource scarcity. If the utility bills are cheap enough, then there is not sufficient money to be saved to encourage consumers to change their habits. Electricity bills also suffer this problem, because the price you pay is based on a regulated seasonal rate—but utilities actually have costs that vary day-by-day, and minute-by-minute.



Source: Energy Information Administration

Electricity demand is higher in the late afternoon, as well as costlier. Utilities use their most efficient and cheapest plants first, and as demand rises must use more expensive plants to service it. These higher costs are passed on to consumers, but in the form of an averaged per-hour price. As a result, consumers do not practice any energy conservation at the times that it is most needed, because their price is the same even if it costs utilities more.

Scarcity pricing—a practice already [used by some independent system operators that coordinate utilities](#)—forces consumers to pay more for electricity at times when the demand is high, and less when demand is low.

This would encourage conservation at times when it is most valuable, such as using a fan instead of air conditioning during a heat wave, buying (as a choice) more efficient heaters in the winter, or investing in better home insulation.

Another potential benefit of scarcity pricing is to flatten the demand curve for electricity, as users may shift energy intense tasks to off-peak hours. This would be a boon for intermittent renewable energy sources like wind and solar, because they tend to generate power during times that electricity demand is low. Leveling out the demand would make them more competitive, and allow them to service a larger portion of our electricity needs.

Conclusion

Achieving the energy vision that policymakers so frequently articulate is going to require technological advancements, not just more of the same. Energy efficiency standards are an impediment to the market conditions that encourage innovation, stymying our progress towards newer, cleaner, and cheaper energy sources. Even worse, these regulations impose significant cost burdens, which are only considered “justifiable” if the status quo persists.

Promoting scarcity pricing, instead of energy efficiency, is a better way of promoting clean energy; where the costs to consumers send clear signals that there are cheaper and more efficient ways to manage their electricity consumption.