

Assessing the Electric Productivity Gap and the U.S. Efficiency Opportunity

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Introduction

The electric power industry is one of the most resource intensive industries in the world. In the United States alone, the electric power industry is responsible for emitting approximately one-third of all greenhouse gas emissions (GHG) in the country. Largely, these emissions come from the combustion of fossil fuels to create electricity. Any solution that seriously seeks to address concerns about climate change, energy security, and rising energy costs will need to make energy efficiency the first and foremost component in a portfolio of solutions.

It is commonly known that energy efficiency implementation has not achieved its technical or economically feasible potential in the United States, and many have attempted to quantify how much electricity the U.S. can save in the future. However, few have compared states to each other to determine why some states have been much more effective at using efficiency as a resource.

Approach

Our research explores one aspect of the energy efficiency solution: how effectively has the United States used its electricity? RMI conducted this analysis on state-level electric productivity (measured in dollars of gross domestic product divided by kilowatt-hours consumed, or \$GDP/kWh) to determine what states are the most productive with their electricity.

Findings

The primary findings of our research are:

- The electric productivity gap between the top performing states and the rest of the nation is immense.
- There is a significant gap in the implementation of efficiency. If the rest of the country achieved the normalized electric productivity of the top performing states, with 100 percent adoption, the country would save a total of ~1.2 million gigawatt-hours annually.
- 1.2 million gigawatt-hours is the equivalent of 30 percent of our annual electricity use, or 62 percent of our nation's coal fired electrical power.
- In 2020, if the United States can, on average, achieve the electric productivity of the top performing states today, we can anticipate a 34 percent reduction in projected electricity demand, while maintaining 2.5 percent annual economic growth.

RMI believes that the U.S. can close the electric productivity gap in ten years because the technology and policy solutions are already known, available and tested. Closing the gap will require a large and concerted effort. States must immediately begin installing all cost-effective efficiency measures to ensure that they achieve the electric productivity of today's top performing states.