

# U.S. stands to save billions through renewable energy usage

September 26 2017

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Credit: Institute of Physics

Rolling out and extending existing US renewable energy standards nationwide could save hundreds of billions of dollars in health and environmental costs by 2050, a new study has found.

The researchers from the Lawrence Berkeley National Laboratory, California, and the National Renewable Energy Laboratory, Colorado, found that the [air quality](#) and climate change mitigation benefits would bring a large net economic benefit, even when the implementation [costs](#) were taken in to account.

Their study is the first national-level, integrated assessment of the future costs and benefits of existing and expanded renewable portfolio standards (RPS) policies, and is published today in the journal *Environmental Research Letters*.

State renewable portfolio standards (RPS) currently exist in 29 US states and the District of Columbia. They require that electric load-serving entities meet a minimum portion of their load with eligible forms of renewable electricity (RE).

The researchers evaluated current RPS policies, and their potential expansion, in terms of: national electric system costs and national and regional retail electricity prices; and environmental and health benefits associated with reduced greenhouse gas (GHG) and air pollution emissions and reduced water use.

Lead author Dr Ryan Wiser, from the Lawrence Berkeley National Laboratory, said: "Our analysis shows that, even under conservative assumptions, the health and environmental benefits of using [renewable energy](#) to meet RPS demand will likely exceed the costs.

"For existing RPS policies, the lower-bound estimates for human health benefits associated with improved air quality come in at at least \$48 billion, plus \$37 billion in benefits from reduced damage to the climate."

The research team also produced an analysis based on a scenario where the policies underwent widespread expansion.

Dr Wiser said: "Expansion of RPS to the levels we assessed would incur upper-bound costs of around \$194 billion. However, even the lower-bound estimates of air quality benefits, at \$303 billion, and climate demand benefits at \$132 billion, outweigh this cost. RPS programs are not likely to represent the most cost effective path towards achieving air quality and climate benefits, but our findings suggest that these programs are, on a national basis, cost effective when considering externalities."

The study also found additional benefits associated with a reduction in water usage that, while not quantified in financial terms, could be particularly important for water-stressed regions.

Provided by Institute of Physics

Citation: U.S. stands to save billions through renewable energy usage (2017, September 26)  
retrieved 17 April 2024 from  
<https://phys.org/news/2017-09-billions-renewable-energy-usage.html>

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