In recent years, US solar power capacity has grown rapidly. Government subsidies and mandates, not market forces, are encouraging the development of solar power. Policymakers at both the federal and state level have enacted incentives for solar power to address constituents' desire to transition away from fossil fuels. Unfortunately, solar energy is expensive and inefficient. Government policies that mask the high cost of solar power encourage investments in solar power that misallocate resources and increase the burden on taxpayers.

Retail electricity rates do not communicate the full cost of producing electricity from solar energy. Government subsidies, for example, do not actually reduce the cost of solar; they simply transfer part of that cost onto US taxpayers. The actual cost of solar power is much higher than most people think because it includes the cost of government policies, along with other unseen costs like infrastructure issues and environmental impacts. These costs are explored in a recent report by the Institute for Political Economy at Utah State University.

THE UNSEEN COSTS OF FEDERAL SOLAR POLICIES

Federal subsidies increase the unseen costs of solar energy by distorting the energy market and transferring the high cost of solar to taxpayers and electricity consumers. The three most important federal solar power subsidies are the Investment Tax Credit (ITC), Modified Accelerated Cost Recovery System (MACRS), and the American Recovery and Reinvestment Act of 2009. Between 2000 and 2013, the ITC resulted in over $4 billion in revenue losses. About $1.7 billion in tax revenue was lost due to the MACRS program.

THE UNSEEN COSTS OF STATE SOLAR POLICIES

State policies such as mandates, tax incentives, feed-in tariffs, and net metering further increase the unseen costs of generating electricity from solar power. By enacting these policies, state policymakers are picking winners and losers, reducing the reliability of the grid, and increasing the tax burden for state taxpayers.

Twenty-nine states have enacted Renewable Portfolio Standards (RPS), which mandate that a specific percentage of a state's electricity come from renewable sources by a given date. The negative economic impacts of RPS include lost jobs and increased energy prices. According to a study by the Institute for Political Economy, in 2014 North Carolina had an estimated 23,769 fewer jobs than it would have if it had not enacted an RPS.

These state mandates also raise electricity prices. Renewables are more expensive than conventional sources of energy, so when RPS require more energy come from renewables, energy prices go up. In 2010, states with RPS had electricity prices that were an estimated 38 percent higher than states without.

INFRASTRUCTURE ISSUES & ENVIRONMENTAL IMPACTS

The cost of solar power is higher than most people assume because solar is unreliable and has fewer environmental benefits than expected. Solar panels only generate electricity when the sun is shining, so conventional power plants must be kept on backup to meet demand when electricity generated from solar is insufficient to meet demand. These conventional generators repeatedly increase and decrease electricity production in a process known as baseload cycling. Baseload cycling increases operations and maintenance costs for conventional plants, which drives up the cost of electricity for consumers. It also offsets the carbon reduction benefits of wind power by 20 percent, on average.

Despite attempts to kickstart solar energy through federal and state policies, solar power is the most expensive form of producing electricity today. An accurate estimate of the actual cost of producing electricity from solar power must take into account the cost of both federal subsidies and state mandates. These hidden costs add up, making solar power a bad investment for US taxpayers.
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![Image of a table summarizing explicit and implicit costs](UnseenSolarOnePagerPrint.pdf)

At Strata, our mission is to help people make informed decisions about issues that impact the freedom to live their lives. We work to achieve more prosperous and free societies by affecting a change in the climate of ideas. We do this by conducting robust research on energy and environmental issues, informing policy makers, citizens and civic leaders, and by mentoring high-achieving students to become future decision makers. Strata is located in Logan, Utah. We draw from the collective academic strength and ideas from the faculty and students at Utah State University and a strong network of academics and professionals throughout the world.

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