
EXECUTIVE SUMMARY

OVERVIEW: Rethinking Policy to Deliver a Clean Energy Future

Hal Harvey and Sonia Aggarwal, *Energy Innovation*

The electricity system in America, and in many other nations, is in the early days of a radical makeover that will drastically reduce greenhouse gas emissions, increase system flexibility, incorporate new technologies, and shake existing utility business models. This is already underway: it is not speculation. Managed well, this transition will give America a great boost, building a cleaner, more affordable, and more reliable grid, as well as an industry ready to profit from deploying its technologies around the globe.

America has an opportunity to lead the world in a vast power system transformation. As costs of renewable energy technologies decline, experience across the world is demonstrating that it is easier to integrate much higher shares of renewables, more rapidly, than previously thought. But a clear policy signal is required to drive efficiency and then switch to ever-greater proportions of clean power.

America's power system is remarkably diverse, and there will be no one-size-fits-all solution for this transformation. Conversations about the best way to keep costs low, keep the lights on, and deliver a cleaner power system are often plagued by arguments over whether utilities or markets are king, or whether legislators or regulators

are driving system evolution. There is no "right" answer to these questions: America's power system is heterogeneous, and will remain so. Change will happen on a regional basis, and innovative partnerships must be forged between previously-siloed decision-makers.

Depending on each region's history and preference, well-designed markets or performance-based regulation can be used to accomplish power system goals of low costs, high reliability, and environmental performance. Top policy recommendations include:

1. Move away from rate-of-return regulation; use performance-based regulation that gives utilities the freedom to innovate or call on others for specific services. Separate the financial health of the utility from the volume of electricity it sells.
2. Create investor certainty and low-cost financing for renewable energy by steadily expanding Renewable Electricity Standards to provide a long-term market signal.

3. Encourage distributed generation by acknowledging customers' right to generate their own energy, by charging them a fair price for grid services, and by paying them a fair price for the grid benefits they create. Set a clear methodology for allocating all costs and benefits.
4. Ensure that all markets (e.g., energy, ancillary services, capacity) and market-makers (e.g., utilities) include both demand- and supply-side options. All options—central and distributed generation, transmission, efficiency, and demand-response—should compete with one another to provide electricity services.
5. Employ electricity markets to align incentives with the desired outcomes, such as rewarding greater operational flexibility. Open long-term markets for new services such as fast-start or fast-ramping
6. Before investing in technical fixes to the grid, first make operational changes that reduce system costs, enable more renewables, and maintain reliability. For example, coordinate between balancing areas, dispatch on shorter intervals and use dynamic line rating to make the most of existing transmission lines
7. Mitigate investor risk by adopting stable, long-term policies and regulations with low impact on the public budget. Financial policies should be predictable, scalable, affordable to public budgets, and efficient for investors.
8. Reduce siting conflicts by using explicit, pre-set criteria; ensuring access to the grid; respecting landowner rights; engaging stakeholders early; coordinating among regulatory bodies; and providing contract clarity.

The U.S. power system is at an inflection point. New technologies offer great promise to increase reliability, reduce fuel costs, minimize capital investment, and reduce environmental damage. Capturing these benefits requires a new approach to utility regulation and business models—no matter if the power system is driven by a vertically integrated monopoly, by a competitive market, or by a hybrid of the two.