



# An Unstable State: Conflict and Institutional Change in the Electric Industry

*Resolution of conflicts among innovation, customer options, and fixed-cost recovery requires building new capabilities for regulatory and other institutions through leadership and learning. Interviews with stakeholders revealed strategic components for enhancing capabilities: incorporating multiple perspectives, establishing a vision, developing trust, addressing low-income issues, assessing impacts of new practices, understanding customer demand, and evaluating business model options.*

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## I. Introduction

Over the past several years there has been rapid innovation in the development and delivery of energy efficiency measures and distributed solar energy facilities. In some states, these innovations have resulted in significant energy savings and displacement of utility-generated electricity by distributed solar energy. As a

consequence, utilities have become concerned about recovering the costs of their investments as kWh sales decline.

The traditional regulatory mechanism is not up to the task of resolving conflicts among rapid innovation, expanded customer options, and financial security for utilities that make large investments. This article explores resolution of these conflicts as a

process of institutional change accomplished by modifying the capabilities and practices of utilities and regulators.

The major message of this article is the key role played by leadership and learning in building institutional capabilities to resolve conflicts among the forces at work in the electric industry. We begin by reviewing three factors shaping the current conflict: innovation, customer options, and recovering the costs of utility investments. We then look at regulatory and utility approaches to resolving conflicts arising from these three factors, examine the role of leadership and learning in fostering institutional change, and summarize the scope of issues and the institutional factors central to resolving today's conflicts as illuminated by our interviews with nine industry experts. We conclude by providing a summary of strategies for addressing current conflicts.

## II. Conflicts in the Electric Utility Industry

The conflicts currently arising in the electric industry stem from incompatibilities among innovation and increasing customer options on the one hand, and recovering the costs of asset-specific investments on the other. This section describes these three factors. Innovation is a driving force in many cases.

### A. Innovation

Innovation encompasses changes in technology, financing, marketing, learning by producers and consumers, and so forth, and is a crucial element of economic progress and of improvements in economic well-being. But innovation does not just happen. It has to be accepted as a legitimate process within society and has to be cultivated and

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developed (McCloskey, 2010).

Recent innovations in the electric industry flow through several pathways. The first is government policy to promote development of renewable energy, including distributed renewable energy, and energy efficiency. It leads to or supports three other pathways.

The second pathway is through entrepreneurs seeking market opportunities. Examples include the leasing model for distributed solar energy, which made rooftop photovoltaics affordable for many consumers; incorporation of photovoltaics into public

infrastructure (Western Resource Advocates, 2011); using smart meter data to identify sources of wasted energy, especially in buildings with large potential savings (Grueneich and Jacot, 2014); customer-sited energy storage; and home energy automation and control.

A third innovation pathway is through expanded social capital. Social capital refers to shared norms, outlooks, and knowledge (Ostrom, 2000). In this context, social capital consists of establishing trust within a community regarding energy efficiency or solar energy, empowering citizens to take ownership of energy efficiency and distributed solar energy programs, using social networks to increase adoption of energy efficiency measures or distributed solar energy, and using partnerships to extend proficiencies. Social capital is mobilized by community organizations that educate and assist citizens in understanding energy efficiency and distributed generation and in shopping around for clean energy devices (Berry, 2010, 2013). The result is accelerated adoption of clean energy technologies and practices, including distributed solar energy and energy efficiency.

The fourth innovation pathway is through utilities that are working to modernize their grids. Modernization encompasses deployment of smart technologies that communicate in real time and

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