



## Balancing act: Government roles in an energy conservation network



Andrew Peterman<sup>a,\*</sup>, Arno Kourula<sup>b,c</sup>, Raymond Levitt<sup>a</sup>

<sup>a</sup> Stanford University, Civil and Environmental Engineering, Jerry Yang & Akiko Yamazaki Environment & Energy Building, 473 Via Ortega, Stanford, CA 94025, United States

<sup>b</sup> University of Amsterdam Business School, Roeterseiland – Building M, Plantage Muidergracht 12, 1018 TV Amsterdam, Netherlands

<sup>c</sup> Aalto University School of Business, Lapuankatu 2, Arkadia Building, 00100 Helsinki, Finland

### ARTICLE INFO

#### Article history:

Received 20 August 2012

Received in revised form

28 November 2013

Accepted 14 December 2013

Available online 14 February 2014

#### Keywords:

Alliance network

Government role

Cross-sector

Network governance

National laboratory

Energy

### ABSTRACT

Government-led interorganizational alliance networks present a sensible opportunity to overcome many societal challenges through collaborative governance. In particular, few researchers have studied alliance networks in the field of energy conservation in commercial buildings—a sector with unique barriers to greater diffusion of innovative cost-saving strategies. We applied an analytic inductive case-based method and social network analysis to study one particular alliance network: the United States Commercial Building Energy Alliances representing interests from retail, commercial real estate, and healthcare sectors. This alliance network was initiated by the United States Department of Energy, with assistance from several federally funded research laboratories in the United States, to promote the diffusion of knowledge and ultimately encourage greater deployment of energy efficiency and clean energy strategies in commercial buildings. We draw upon interview data from 28 cases of private, non-profit, and governmental organizations and complete network data from the alliance participants. We honed in on eight focal cases of governmental organizations to provide insight on how the four forms of energy and environmental data, information, and knowledge shared within an alliance network address the challenge of a vastly underutilized energy resource, namely conservation. Further, we identify and discuss the public's four roles—Commissioner, Interpreter, Marketer, and User—in providing balance to the diffusion of both private and public goods in a network.

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So be sure when you step, Step with care and great tact. And remember that life's A Great Balancing Act. And will you succeed? Yes! You will, indeed! (98 and  $\frac{3}{4}$  percent guaranteed) Kid, you'll move mountains.

- Dr. Seuss, Oh, The Places You'll Go!

### 1. Introduction

Since the late 1970s, interorganizational networks or alliance networks have emerged as a governance strategy to diffuse both public and private goods in areas too complex for a single organization to handle on its own (O'Toole, 1997; Provan and Lemaire, 2012). In this study, we analyze such an alliance network intent on the diffusion of knowledge for the greater adoption of innovations related to energy efficiency and renewable energy strategies in commercial buildings. Where market instruments and regulatory pressure have shown inconsistent and often disappointing outcomes in promoting energy conservation in buildings, alliance

networks provide a sensible, collaborative cross-sector approach to overcome the barriers to greater adoption. Interorganizational networks—comprised of federally funded research laboratories, private firms, government entities, and trade associations—provide a platform to leverage stakeholders, collectively strategize, share best practices, validate new technologies, promote (and share) publicly-funded research, and develop new technologies. While the coupling of private industry with government-funded research in a network form presents a promising opportunity for industry transformation through the “sharing of organizational knowledge” (Aldrich and Ruef, 2006), research on interorganizational networks for energy conservation is surprisingly sparse (O'Flynn and Wanna, 2011; Poocharoen and Sovacool, 2012). Even less research exists on the multiple roles that governments are capable of assuming in the network governance form. This paper addresses two main questions: (1) What forms of public and private goods are developed and diffused within alliance networks; and (2) What is (are) the role(s) of government in the provision of both private and public goods within cross-sector alliance networks? We examine these questions by arguing that energy conservation includes elements of both public and private goods and by observing the context of a U.S. network focusing on the energy efficiency of commercial buildings.

\* Corresponding author. Tel.: +1 650 723 4447.

E-mail addresses: [apeterman@stanford.edu](mailto:apeterman@stanford.edu), [apeterman@gmail.com](mailto:apeterman@gmail.com) (A. Peterman).

Energy conservation in the United States commercial building sector presents a particularly puzzling dilemma, which the U.S. government and private firms have long grappled with as regards their respective roles in addressing this challenge. The dilemma is that while many share the environmental costs of excessive energy consumption, the costs for a firm to invest in cleaner energy or efficiency strategies are born by the firm alone. The problem is even worse among commercial building owners who obtain their energy from faraway places. Firms and their employees rarely see the environmental consequences of energy consumption yet the long-term costs to society can be great (Coley, 2008). It is especially puzzling that despite the technologically available and financially viable energy efficient and renewable energy strategies in the United States numerous barriers to adoption remain (Blumstein et al., 1980; DeCanio, 1993; Jaffe and Stavins, 1994; Gillingham et al., 2006, 2009). Termed ‘the silent renewable,’ energy efficiency has been vastly underutilized in the United States as a low cost and technologically-developed strategy for addressing global energy concerns and climate change (Coley, 2008; Kok et al., 2011).

The burgeoning ubiquity of interorganizational networks that specifically address energy challenges suggests this is an important, yet largely unexplored, area of research (Provan and Kenis, 2007; Provan and Lemaire, 2012). With the exception of researchers such as O’Flynn and Wanna (2011) and Poocharoen and Sovacool (2012), few have studied alliance networks in the field of energy conservation in commercial buildings—a sector with unique barriers to greater diffusion of innovative cost-saving strategies (Lovins, 1976). Specifically, there is a dearth of literature examining how alliance networks may promote the diffusion of data, information, and knowledge as private and public goods and what role(s) of government exist in the provision of these goods. We argue that alliance networks allow greater government agility than traditional market incentive or regulatory approaches to energy conservation. Government is capable of occupying numerous roles in the search for a proper balance in supporting the creation of both private and public goods for society. Further, the aforementioned network studies do not present empirical research on energy alliance networks from a domestic context within the United States (O’Flynn and Wanna, 2011; Poocharoen and Sovacool, 2012).

We applied two complementary methodologies—analytic inductive case-based method (Glaser and Strauss, 1967; Manning, 1982; Robinson, 1951; Yin, 1989) and social network analysis (Knoke and Yang, 2008; Scott, 2000) to study the United States Commercial Building Energy Alliances (CBEAs). The CBEAs contain three distinct, yet connected, sub-alliance networks, each with a particular focus on energy conservation: Retail Energy Alliance (REA), Commercial Real Estate Energy Alliance (CREEA), and Hospital Energy Alliance (HEA). The CBEAs were initiated in 2008 by the United States Department of Energy (DOE) to promote the diffusion of knowledge and ultimately encourage greater deployment of energy efficiency and clean energy strategies in commercial buildings (DOE, 2010). This government-led alliance network brings together some of the most influential and largest American-based corporations, including Bank of America, IBM, McDonald’s, The Walt Disney Company, and Walmart, to name a few. We draw upon interview data from 28 cases of private, non-profit, and governmental organizations within the CBEAs and complete network data for all three connected CBEA networks.

Since the founding of this country, government leaders, private firm executives, federal research institutions, and citizens of the United States have grappled with this question: what roles should government play in the lives of its citizens? We modestly contribute to this discussion by empirically identifying the private and public goods shared in one particular network, the multiplicity of roles government entities assumed in a particular network form, and each role’s contribution to the balance of both public and private

goods. By honing in on eight focal government cases, we empirically found that through commissioning, interpreting, marketing, and using, each government organization in this network were able to contribute uniquely to addressing the challenge of a vastly underutilized energy resource, mainly conservation. The following section reviews the literature on challenges to energy efficiency, governance forms, and government roles in energy conservation for buildings.

## 2. Government roles in commercial building energy efficiency deployment

As far back as the mid-1970s, researchers have tussled with this challenge: “. . .The capital savings of conservation [in commercial buildings] are particularly impressive,” yet energy efficiency measures are still seen as an “insurmountable opportunity,” vastly underutilized as an energy resource (Lovins, 1976; Coley, 2008). This challenge has persisted well into the 21st century largely due to institutional, market, organizational, and behavioral barriers to the adoption of energy efficiency measures (Weber, 1997).

### 2.1. Challenges specific to energy conservation in buildings

Numerous researchers (Gillingham et al., 2006; Jaffe and Stavins, 1994; Lutzenhiser, 1993; Stern, 1992; Weber, 1997) have studied the persistent barriers to energy efficiency in buildings that Lovins (1976) noted nearly 40 years ago; these barriers include:

*. . .ideological antipathy and rigidity. . .including more than 3,000 conflicting and often obsolete building codes, an innovation-resistant building industry, lack of mechanisms to ease the transition from kinds of work that we no longer need to kinds we do need, opposition by strong unions to schemes that would transfer jobs from their members to larger numbers of less “skilled” workers, promotional utility rate structures, fee structures giving building engineers a fixed percentage of prices of heating and cooling equipment’ they install, inappropriate tax and mortgage policies, conflicting signals to consumers, misallocation of conservation’s costs and benefits (builders vs. buyers, landlords vs. tenants, etc.), imperfect access to capital markets, fragmentation of government responsibility.*

Further, there exists a “learning disability” in adopting integral innovations—i.e., energy efficiency strategies often require adaptation to new subsystem interfaces or work processes across multiple specialty firms due to the fragmentation of the supply chain both across disciplines and across projects (Sheffer, 2011). We argue that each of the many public and private organizations in the lifecycle of a building project must play a different role in developing appropriate and effective policies for energy conservation. We focus on interorganizational alliance networks as a form of governance allowing these various roles to be realized.

### 2.2. Background on governance strategies applied to energy conservation in buildings

We argue, as others have in the past, that prior research on government roles in public research, innovation, and market creation should be expanded to include a more collaborative view of government intervention (Powell, 1990; Milward and Provan, 2000). Prior research has looked at the role of government in the creation of emergent industries (Mowery and Langlois, 1996), the role of government in research and development (Gates, 1988), the role of government in the commercialization of technologies (Roessner, 1984), the role of government in overcoming barriers to adoption of new technologies (Menanteau and Lefebvre, 2000), and the role

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