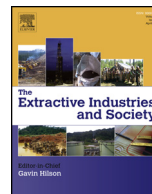




Contents lists available at ScienceDirect

# The Extractive Industries and Society

journal homepage: [www.elsevier.com/locate/exis](http://www.elsevier.com/locate/exis)



Original article

## Fracking and environmental protection: An analysis of U.S. state policies

Charles Davis

Department of Political Science, Colorado State University, Ft. Collins, CO 80523, United States

### ARTICLE INFO

#### Article history:

Received 22 May 2016

Received in revised form 22 December 2016

Accepted 24 December 2016

Available online xxx

#### Keywords:

State energy policy

Environmental protection

Fracking politics

### ABSTRACT

This paper examines the correlates of state policies designed to mitigate prospective environmental impacts associated with U.S. oil and gas drilling (fracking operations). I found that policy decisions are especially influenced by political factors such as the partisan orientations of the statewide electorate and the ideological makeup of state voters as well as economic resource variables such as the generation of revenue from severance taxes. Less important in accounting for variation in state fracking policies are socioeconomic characteristics such as median educational attainment and per capita income and general indicators of a state's prior receptivity to the enactment of environmental programs.

© 2017 Elsevier Ltd. All rights reserved.

### 1. Introduction

An increasingly important policy goal in state government over the past several years has been the development of unconventional natural gas and oil resources made possible by technological advances in hydraulic fracturing and horizontal drilling (i.e., fracking). The public policy benefits are clear. Greater industry use of fracking offers an abundant source of domestic energy that reduces U.S. reliance upon imported oil from politically unstable or unfriendly countries (IHS, 2009). Second, natural gas is a cleaner burning fossil fuel, thus contributing to the argument that a quicker decline in greenhouse gas emissions may occur when it is used to displace coal in the generation of electrical power (Engelder, 2011). Third, fracking operations result in economic development gains such as the creation of infrastructure, well-paying jobs, revenues and taxes for affected local governments (Sovacool, 2014).

However, others are concerned about how oil and gas production might adversely affect environmental quality. This includes potentially negative impacts on air quality from fugitive methane leaks (Vengosh et al., 2014), water contamination linked to leaking or improperly capped wells (Moore et al., 2014), the depletion of groundwater resources for use in fracking operations (Sovacool, 2014), and adverse health effects for people living in close proximity to drilling sites (Bamberger and Oswald, 2012; Adgate et al., 2014). This has led to increased political tension between those who perceive fracking as an economic or energy

issue versus others who see this issue through the lens of environmental protection (Jacquet, 2014; see also Mazur, 2016). State and local policymakers are largely responsible for devising policies through legislation and rulemaking activities that balance resource development goals with environmental quality.

States vary in terms of efforts to regulate fracking in ways that allow production to coexist with public health and environmental quality. My research goal in this paper is to identify the characteristics of oil and gas producing states that have enacted policies designed to mitigate prospective environmental impacts associated with fracking operations. I begin by considering whether these policy decisions are significantly influenced by *political factors* such as the partisan orientations of the statewide electorate and the ideological makeup of in state voters, *socioeconomic characteristics* such as median educational attainment and per capita income, *economic resource variables* such as oil and gas production and severance tax revenues, or *environmental policy support* indicators such as the enactment of state-level green policies or regulations and the voting record of the state's congressional delegation on bills dealing with environmental issues.

After briefly outlining the regulatory context of fracking policies, I examine the small but growing literature dealing with factors that influence state-level decisions and offer a number of research expectations. A preliminary effort to test these expectations is then presented in the findings section using information obtained from documentary and secondary sources, agency and nongovernmental websites and scholarly articles. In short, this research offers some preliminary empirical work on fracking policies that reveals why some states are more likely than others to

E-mail address: [charles.davis@colostate.edu](mailto:charles.davis@colostate.edu) (C. Davis).

<http://dx.doi.org/10.1016/j.exis.2016.12.009>

2214-790X/© 2017 Elsevier Ltd. All rights reserved.

address environmental impacts in the design of regulatory programs. I conclude by considering the extent to which these findings are consistent with the results of other state level studies dealing with energy or environmental policymaking.

## 2. The regulatory context of oil and gas drilling operations

The regulation of oil and gas drilling in the U.S. has been described as “fractured, fragmented federalism” (Warner and Shapiro, 2013). Federal officials retain or share legal authority to shape some fracking policy decisions. For example; the U.S. Environmental Protection Agency (EPA) administers the Clean Air Act, including a rule adopted in 2012 that addresses air quality problems linked to oil and gas operations. However, it is important to emphasize that the states are the major policy players. A state-centric focus has been maintained by oil and gas producer states since the enactment of the Interstate Oil Compact (later renamed the Interstate Oil and Gas Compact) in 1935. The policy also created a compact commission (IOGCC) consisting of at least one representative from every member state to coordinate oil and gas production and conservation programs and to recommend a set of guidelines for the development of state regulatory programs (Zimmerman, 2002).

State policymakers saw the IOGCC and its Commission as a beneficial means of avoiding federal agency regulation of energy industries while creating some semblance of market stability for member state firms. Since then, the regulation of U.S. oil and gas drilling operations has been carried out by state-level commissions, agencies or departments with occasional guidance from IOGCC. This includes regulatory decisions made before and after the surge in shale gas production occurring since the mid-2000s (Richardson et al., 2013) as well as the enactment of new state policies designed to deal with industry changes and impacts linked to fracking operations (Rabe, 2014).

Efforts to retain state-level autonomy within a rapidly changing policy arena have largely succeeded thanks to defensive political actions taken by the IOGCC, trade groups such as the American Petroleum Institute (API) and the American Gas Association (AGA), state elected officials, Republican members of Congress, and state regulators (Warner and Shapiro, 2013). In 2005, Bush Administration officials and their allies within Congress prevented EPA from regulating water-related aspects of oil and gas fracking operations through a provision of the Energy Policy Act often referred to as the “Halliburton Loophole.” Since then, Congressional Democrats have tried (unsuccessfully) to enact the “Frac Act,” a bill that seeks to reinstate EPA’s regulatory authority under the Safe Drinking Water Act (Warner and Shapiro, 2013).

## 3. Environmental research and state fracking policies

Much of the literature cited here follows the path of environmental public policy research that focuses on the states as the primary units of analysis and looks to the importance of political and economic characteristics of these jurisdictions as important explanatory variables (Koniski and Woods, 2012a). The connection between economic factors and state environmental decisions is considered to be particularly important because of the belief that state policymakers may be reluctant to regulate firms that generate pollution (Koniski, 2007; Rabe and Mundo, 2007).

Since states compete for manufacturing firms and the jobs they create, industry officials will direct attention to regulatory compliance costs as one of the important factors along with tax structures and access to markets that structure facility siting choices. This presumably leads to a potentially destructive “race to the bottom” form of competition where environmental protection standards are weakened or de-emphasized by state officials in an

effort to lure jobs (Koniski and Woods, 2012b). So a key question is whether regulated firms can exercise disproportionate influence on state program decisions despite federal requirements that uniform environmental protection standards be met. In examining state policy actions, it is difficult to address constituency response to environmental mitigation efforts since public opinion is evenly divided among supporters and opponents of fracking (Boudet et al., 2014). Others suggest that states producing more oil and gas resources are quite susceptible to industry influence over regulatory decisions (Cook, 2014); however, other staunchly pro-environmental states like Vermont and New York have chosen to ban the use of fracking technologies for resource extraction purposes.

The evidence is mixed on this question when focusing on environmental policy writ large. Studies by Williams and Matheny (1984) and Woods (2006) found a link between economic dependency on regulated industries and a willingness to relax enforcement behavior. Another analysis of state regulators also concluded that enforcement attitudes were somewhat influenced by industry complaints about regulatory compliance costs but respondents were more inclined to suggest that other factors were more important in shaping actual decisions (Koniski, 2007). However, for some regulated firms, the additional costs associated with meeting pollution control requirements were offset by the corresponding reduction in regulatory uncertainty affecting longer term investment decisions (Feiock and Stream, 2001; Koniski and Woods, 2012a).

It is important to note that economic context may assume greater importance within a state’s regulatory calculus given the fixed location of oil and gas resources. However, there is precious little empirical work that directly links economic factors with state fracking policies. Case analyses of states like Texas (Rahm, 2011), Pennsylvania (Rabe and Borick, 2013) and Colorado (Heikkila et al., 2014) suggest that the “golden goose” effect is real, thus suggesting a prominent role for economically important oil and gas trade associations in pushing for industry friendly outcomes as well as the provision of generous campaign funding for pro-drilling candidates for state elective positions. Economic dependency on energy revenues derived from severance taxes is also important since higher production states can more easily deal with recessionary pressures (Rabe and Hampton, 2015).

While the economic context of a state can provide data pertaining to jurisdictional dependency and the likely importance of industry trade groups, the socioeconomic attributes of a state’s electorate such as educational attainment or family income can presumably reveal information about prospective links between constituencies and public policy. Public opinion analysts have historically found greater support for environmental protection policies among people who are more affluent and more highly educated (Jones and Dunlap, 1992) but a more nuanced examination of energy-related attitudes suggests that neither income nor educational attainment is strongly related to attitudes toward offshore oil drilling (Smith, 2002).

More recently, articles by Boudet et al. (2014) and Davis and Fisk (2014) examined the links between demographic factors and perceptions of fracking. Again, neither income nor educational attainment was significantly related to support for or opposition to the use of fracking to extract oil and gas resources. This suggests that state level rankings for income or education are unlikely to influence the enactment of fracking policies; however, it is plausible to assume that shifting contexts such as a combination of NIMBYism with a concern for property values could affect policy decisions indirectly; e.g., the rise of local opposition to drilling in close proximity to neighborhoods (Fisk, 2015).

What about the impact of political factors? Some of the more commonly scrutinized variables include various measures of

Download English Version:

<https://daneshyari.com/en/article/5114448>

Download Persian Version:

<https://daneshyari.com/article/5114448>

[Daneshyari.com](https://daneshyari.com)