



Should we call the neighbors? Voluntary deliberation and citizen complaints about oil and gas drilling



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ABSTRACT

Firm adoption of voluntary management practices is one proposed method of mitigating oil and gas development externalities while promoting flexibility in regulations. Where they face social challenges or uncertainties, firms may even voluntarily select deliberative processes in site planning thereby increasing stakeholder involvement. This article tests the potential for adoption of voluntary engagement practices to reduce the likelihood of citizen complaints. Using a dataset of complaints and practices from the state of Colorado, this article finds that adoption of engagement practices and further deliberation about sites is not associated with altered odds of observing a complaint at a wellsite once other variables are controlled. Where more voluntary management practices of any type are adopted, the odds of observing a complaint are higher. Inclusion of engagement and deliberation weaken this association. Finally, large companies, as defined by well counts, are more likely to adopt engagement and deliberation practices that can form the basis of collaboration than are small companies. This indicates that use of voluntary management practices is dependent on the resources available to individual firms, and thus, the environmental and social benefits of such policies are likely to accrue unevenly.

1. Introduction

Incorporation of the concerns of a wide-range of stakeholders into decision making through use of deliberation is a proposed option for managing oil and gas risk (North et al., 2014; Small et al., 2014). In the United States, use of public engagement in managing unconventional gas development (UGD) risk is complicated by state specific and location-by-location permitting (Davis, 2012). Diffuse management here is intended to address the diversity of subsurface characteristics, surface use needs, and structural differences while leveraging proprietary knowledge. Management-based regulatory strategies delegate the administration of rules away from the public sector to private actors who can adapt practices to specific needs (Coglianese and Nash, 2016).

In Colorado in particular, the power to enact UGD risk management policies that engage diverse groups of stakeholders largely rests on either state regulators mandating such action, leverage of minor land use provisions by local governments, or private corporations choosing to undertake those actions (Sounders, 2005; Wiseman, 2010). One way in which firms can choose to engage stakeholders, thus capturing the potential benefits of engagement, is through adoption of voluntary management practices (VMPs) which are a form of management-based

regulatory strategy. VMPs ideally reflect improvements relative to normal operations, and one of the expectations is that firms will learn and adopt practices by benchmarking (Bogan, 1994). This paper evaluates whether VMPs in which firms agree to engage the public in planning and site management are associated with changes in the likelihood of citizen complaints about oil and gas development.

Using a database of citizen complaints from the Colorado Oil and Gas Conservation Commission (COGCC), I develop a spatially matched case-control design to evaluate how the voluntary adoption of engagement and deliberation as management practices is associated with changes in complaint outcomes (Prentice and Pyke, 1979; Wacholder et al., 1992). This provides an evaluation of how the promise to voluntary engagement with residents may alter citizen attitudes and perceptions of oil and gas development.

2. Theoretical rationale

2.1. Risk management and principled engagement

The American Petroleum Institute (API) publishes guidelines for engagement which includes the provision for firms to, if they desire,

Abbreviations: VMP, Voluntary Management Practice; COGCC, Colorado Oil and Gas Conservation Commission; NOAV, Notice of Alleged Violation; IOGBMP, Intermountain Oil and Gas Best Management Practice Project; UGD, Unconventional Gas Development; API, American Petroleum Institute; WAIC, Widely Accepted Information Criterion; INLA, Integrated Nested Laplace Approximation; MOU, Memorandum of Understanding

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“Identify and engage with relevant stakeholders, as required, including communication strategies for contractors, community members, government officials, employees, and other stakeholders as needed” (*Community Engagement Guidelines: ANSI/API BULLETIN 100-3, 2014*, p. 11).

Practices such as the one above, if adopted, allow communication between residents and firms. However, firms also may go beyond communication and notification to actively engage citizens in the process of management. For example, on its well permit in western Colorado, one company wrote,

“This is an exploratory well; all BMP’s are currently being developed through close communication with the surface/mineral owner and the community at large.”

Major approaches to environmental risk management including the Risk Governance Framework (RGF) (Renn and Walker, 2008) and the National Research Council (2009) report “Science and Decisions” advocate use of public engagement. Where engagement goes beyond one and two-way communication and becomes a process for learning, discussing and deciding, engagement becomes *principled* (Emerson and Nabatchi, 2015a; Coenen, 2009; Oels, 2003). Principled engagement is defined by the presence of knowledge sharing, creation of new knowledge, and joint decisions and deliberations (Emerson et al., 2012; Heikkila and Gerlak, 2013). Principled engagement with the public can promote instrumental, normative and substantive benefits such as better policies, enhanced civic society, or improved trust (Coenen, 2009; Coglianese, 2002; Emerson and Nabatchi, 2015a; Koontz and Thomas, 2006; Scott, 2015).

Such engagement processes are often led by public managers, yet this need not be the case. Governments can instead invest technical capabilities, personnel time, and financial resources towards allowing private firms to create public engagement processes (Koontz, 2004). Here government structures the costs and opportunities available to individual firms so as to motivate firms in the direction of deliberating without top-down requirements (Bingham et al., 2005; Delmas and Terlaak, 2001; Koontz, 2004). From the perspective of a public manager, making practices voluntary can encourage interdependence and shared responsibility in governance, leveraging managers’ local knowledge in order to select optimal regulatory strategy (Bogan, 1994; Coglianese and Nash, 2016; D’Arcy and Frost, 2001; Fiorino, 1999). This makes VMPs a potentially cost-effective and politically expedient method achieving a wide variety of environmental and policy goals (Strassler et al., 1999).

2.2. The case of engagement in Colorado

In Colorado, oil and gas permits allow firms to adopt engagement practices through negotiated agreement. Engagement adopted in this way can be termed a kind of voluntary management practice (VMP) (Coglianese and Nash, 2016; Khanna et al., 2007). These practices are part of a wider governance form called management-based regulation in which “firms are expected to produce plans that comply with general criteria designed to promote the targeted social goal” (Coglianese and Lazer, 2003). Firms may be required to include specific elements when choosing VMPs but they are intended to be flexible by-design, allowing firms to adopt practices that will help them balance private and public goals (Coglianese and Nash, 2016; Fiorino, 1999; Van Vliet, 1993).

In the oil and gas sector, groups such as the Intermountain Oil and Gas Best Management Practice Project collect and catalogue VMPs for use by oil and gas companies (Getches-Wilkinson Center, 2013). In Colorado, firms can adopt these VMPs as part of the permitting process. Colorado Form 2 and 2A documents are used to permit drilling at an oil and gas location and they allow adoption of “Best Management Practices” (a type of VMP) being,

“practices that are designed to prevent or reduce impacts caused by oil and gas operations to air, water, soil, or biological resources, and to minimize adverse impacts to public health, safety and welfare, including the environment and wildlife resources.” (*Colorado Oil and Gas Conservation Commission, 2008*)

VMPs proposed by firms must be discussed in consultations with surface owners, the Colorado Department of Public Health and Environment (CDPHE), and local government liaisons. Such negotiations usually occur where local actors desire restrictions that go beyond state law, and they are intended to bridge knowledge gaps between residents and firms about what options are needed and available at a location.

The state agency can request a firm adopt VMPs but there is flexibility in what practices firms adopt. VMPs that are required of firms for a permit to be awarded are identified separately as “Conditions of Approval” (COGCC 500 series rules). Surface owners can also suggest concessions; however, because of split-mineral rights, the surface owner does not necessarily own resources accessed by the well, and surface owners may be developers who do not live at the site. While local governments may leverage land use negotiations to ensure compliance with land use codes, public engagement does not fall under existing land use code rules—engagement thus must be adopted willingly by firms (Minor, 2013). This has been done in some areas via Memorandums of Understandings (MOUs) that go beyond state required regulations. But, promised VMP adoption through MOUs is voluntary and non-binding.

While firms may adopt VMPs to improve outcomes, evaluating whether they have their intended effect is a challenge on two fronts. First of all, such policies are adopted as a method of mitigating environmental and community externalities, but also can help to alleviate citizen concerns, which may not be reflected in reduced physical harms (*Community Engagement Guidelines: ANSI/API BULLETIN 100-3, 2014*). Second, VMPs operate on the promise of practice—actual adherence to the commitment is rarely measured except in the cases of clear, unambiguous violations.

Because deliberations are expected to improve policy choice and design and also improve social outcomes through the intrinsic benefits of engagement, evaluating the efficacy of engagement-aimed VMPs requires considering physical and social outcomes. In essence, engagement practices that improve physical outcomes but leave communities distrusting of company actions only capture part of the potential benefit that can be achieved via deliberation (Coenen, 2009). For firms, learning via engagement and then deliberation should produce new practices, altered decisions, or new approaches to meeting the needs of the public. Thus, there is an instrumental purpose in engaging. For residents, engaging with firms may alter perceptions of the threat, perceptions of the stakeholders involved in managing a risk, or perceptions of actions that can be taken in regards to a risk—a normative rationale for deliberations (Lindell and Perry, 2012). These altered perceptions affect the cognitive processes that lead to citizens taking action on risks (Lindell et al., 2016; Wachinger et al., 2013). While changes to perception and knowledge of risks are usually unobserved without a survey, behavior change to is an output of learning processes (Daniels and Walker, 1996; Gerlak and Heikkila, 2011).

2.3. Citizen complaints for analyzing effectiveness

One potential action citizens might take is to complain to governments about the local problems associated with oil and gas development (COGCC, n.d.; Dong et al., 2011; Weersink and Raymond, 2007; White and Trump, 2016). Citizen complaints are potentially valuable for assessing combined social and environmental outcomes of voluntary adoption of complaints because they require both perception of a risk and an environmental or social cue (Lindell and Perry, 2012). Citizen complaints provide a solution to assessing both whether engagement

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