REGULATING UNDER CONDITIONS OF UNCERTAINTY AND RISK: LESSONS LEARNED FROM THE REGULATION OF HYDRAULIC FRACTURING IN THE U.S.

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Overview

Uncertainty and risk often characterize the conditions under which new policy is developed. This has been particularly true in the case of hydraulic fracturing ("fracking") and its regulation within the United States of America's federal system of governance. During the George W. Bush administration, the federal government intentionally limited the U.S. Environmental Protection Agency's legal authority to regulate processes associated with fracking. This decision shifted responsibility for the regulation of fracking to individual U.S. states. Some states, in the interest of economic development, were quick to adopt policies that promoted the use of fracking despite environmental concerns regarding the risks. Other states were more cautious, instituting moratoriums on its use. In this study, which is part of a larger book project, we create a framework for understanding policy development during conditions of scientific uncertainty. We provide lessons learned from the widely varying regulatory approaches and outcomes of U.S. states, and we conceptualize a process whereby a country's political actors can make informed regulatory decisions despite the uncertainty of new technologies.

Methods

Case studies

Results

The response of government in the face of uncertainty about a promising new technology falls along a continuum from allowing unimpeded experimentation irrespective of risk to complete restriction of the technology until further information is obtained. Which position a government chooses depends, in large part, on the potential economic benefits to be gained and perceptions of the degree of uncertainty and risk associated with the new technology.

Conclusions

The regulatory outcomes, both positive and negative, of different U.S. states lead to the following lessons learned:

1. Use policy to reduce uncertainty
2. Encourage innovation while minimizing risk
3. Account for local conditions
4. Regulate that which is the riskiest
5. Facilitate cooperation between government and industry, not cooptation
6. Ignore the public at your peril
7. Update regulations given new evidence and experience