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RESPONSE

FRACKING AND FEDERALISM CHOICE

MICHAEL BURGER[†]

In Response to David B. Spence, *Federalism, Regulatory Lags, and the Political Economy of Energy Production*, 161 U. PA. L. REV. 431 (2013).

INTRODUCTION

Hydraulic fracturing—also referred to as “fracking”—has spread across the United States over the last two decades in dramatic fashion.¹ There are now active fracking operations in approximately thirty states,² with some oil- and gas-rich shale “plays,” such as the Marcellus and Bakken shale formations, spanning multiple states.³ The emergence of this extraction technique has been accompanied by an abundance of controversy, much of it surrounding the often-undisclosed chemical contents of the fluid mixtures that fracking operators inject deep underground. Critics of fracking cite the risk of groundwater contamination, inadequate regulation of wastewater at

[†] Associate Professor, Roger Williams University School of Law. Thanks to Jody Freeman, Amy Mall, and Hannah Wiseman for their insights, and to Gregory Hoffman for his research assistance.

¹ For an interactive diagram of the fracking process, see Graham Roberts et al., *Extracting Natural Gas from Rock*, N.Y. TIMES (Feb. 26, 2011), <http://www.nytimes.com/interactive/2011/02/27/us/fracking.html>. For a summary of shale gas’s role in our national energy policy, see *Energy in Brief: What Is Shale Gas and Why Is It Important?*, U.S. ENERGY INFO. ADMIN., http://www.eia.gov/energy_in_brief/about_shale_gas.cfm (last updated Dec. 5, 2012).

² See NATURAL RES. DEF. COUNCIL, FRACKING FACTS: PROTECTING AMERICANS FROM THE RISKS OF FRACKING 2 (2012), available at <http://www.nrdc.org/energy/files/frackingrisks.pdf>.

³ See, e.g., U.S. ENERGY INFO. ADMIN., LOWER 48 STATES SHALE PLAYS (2011), available at http://www.eia.gov/oil_gas/rpd/shale_gas.pdf.

the surface, and the impacts of the industry on local communities as driving their opposition.⁴ That fracking is exempt in important ways from several federal environmental laws only exacerbates these critics' concerns.⁵ Given its national implementation, its environmental impact both locally and across state lines, and its uncertain risks, fracking raises a critical question: Who should regulate the practice—the federal government or the states?⁶

To date, fracking discourse has focused on whether environmental protections under existing laws ought to be strengthened and whether the exemptions to the Safe Drinking Water Act (SDWA),⁷ the Resource Conservation and Recovery Act (RCRA),⁸ and the Emergency Planning & Community Right-to-Know Act (EPCRA)⁹ ought to be revoked.¹⁰ Professor

⁴ See, e.g., Danny Hakim, *Shift by Cuomo on Gas Drilling Prompts Both Anger and Praise*, N.Y. TIMES (Sept. 30, 2012), <http://www.nytimes.com/2012/10/01/nyregion/with-new-delays-a-growing-sense-that-gov-andrew-cuomo-will-not-approve-gas-drilling.html> (discussing Governor Cuomo's agreement to delay hydraulic fracturing in response to environmentalists' entreaties to conduct more studies on the impacts of this drilling on public health).

The protest movement has even inspired a feature film, *Promised Land*, co-written by and starring John Krasinski and Matt Damon. See Donna Freydkin, *A 'Land' of Plenty for Writer/Actor Matt Damon*, USA TODAY (Jan. 6, 2013), <http://www.usatoday.com/story/life/people/2013/01/04/matt-damon-promised-land/1807047/>.

⁵ *Fracking, Federal Laws: Loopholes & Exemptions*, ENVTL. DEF. CENTER, http://www.edcnet.org/learn/current_cases/fracking/federal_law_loopholes.html (last visited Jan. 22, 2013).

⁶ Elsewhere I refer to this as a question of "federalism choice." See Michael Burger, *Consistency Conflicts and Federalism Choice: Marine Spatial Planning Beyond the States' Territorial Seas*, 41 ENVTL. L. REP. 10602, 10611 (2011).

⁷ 42 U.S.C. §§ 300f to 300j-26 (2006).

⁸ *Id.* §§ 6901-6992k.

⁹ *Id.* §§ 11001-11050.

¹⁰ See Hannah Wiseman, *Untested Waters: The Rise of Hydraulic Fracturing in Oil and Gas Production and the Need to Revisit Regulation*, 20 FORDHAM ENVTL. L. REV. 115, 145-46 (2009) [hereinafter Wiseman, *Untested Waters*]. Professor Wiseman has led academic discourse in this area by compiling and analyzing state and federal regulations and identifying critical regulatory gaps. See *id.* at 142-82 (describing a host of regulatory failures at the state and federal levels); Hannah Wiseman, *Regulatory Adaptation in Fractured Appalachia*, 21 VILL. ENVTL. L.J. 229, 241-75 (2010) (discussing failures in regulation in the Appalachian region); see also Hannah Wiseman, *Trade Secrets, Disclosure, and Dissent in a Fracturing Energy Revolution*, 111 COLUM. L. REV. SIDEBAR 1, 7 n.42, 8-12 (2011), http://www.columbialawreview.org/assets/sidebar/volume/111/1_Wiseman.pdf. (discussing a move by the EPA to require disclosure of chemicals used in fracking operations); Hannah Wiseman, *Risk and Response in Fracturing Policy*, 84 U. COLO. L. REV. (forthcoming 2013) (manuscript at 75-80), available at http://papers.ssrn.com/sol3/papers.cfm?abstract_id=2017104 (offering policy recommendations in light of recent developments in fracking practices and regulatory response). Environmental advocacy groups, such as the Natural Resources Defense Council, have examined regulatory failures at the state level and advocated increased federal involvement. See, e.g., MATTHEW MCFEELEY, NATURAL RES. DEF. COUNCIL, STATE HYDRAULIC FRACTURING DISCLOSURE RULES AND ENFORCEMENT: A COMPARISON (2012), available at <http://www.nrdc.org/energy/files/Fracking-Disclosure-IB.pdf>. Industry groups, such as the Natural Gas Alliance, the American Petroleum Institute, and the Independent Petroleum Association of America, have opposed new federal regulatory measures. See, e.g., AM.

David Spence tackles these problems in a different way, beginning by asking “which level of government can better implement” good policy.¹¹ Using this “policy-neutral”¹² approach, Professor Spence comes to the conclusion that there is no need for a comprehensive or uniform federal fracking regime.¹³ Thus, in Professor Spence’s view, Congress should not create a new federal–state permitting system based on the principles of cooperative federalism, nor should the EPA organize and implement its existing authority to set up a one-stop shop for fracking permits.¹⁴ At the same time, Professor Spence concludes that there may be a role for federal regulation of specific aspects of fracking operations that are known to cause interstate environmental harm, and that further risk assessments and scientific studies may reveal a need for a stronger federal role in other areas, as well.¹⁵

Professor Spence’s project is intriguing and is among the first to take a serious look at fracking regulation through the lens of the federalism-choice question.¹⁶ His Article also contributes to the sparse scholarly literature on fracking by offering a preliminary comparative analysis of the dynamics between state agency identity, regulatory strategy, and stringency.¹⁷

PETROLEUM INST., “THE PRESIDENT’S BACKWARD ENERGY POLICY WON’T HELP LOWER GASOLINE PRICES”: ENERGY MYTHS & FACTS 2 (2012), available at <http://www.api.org/-/media/Files/Policy/Exploration/Energy-Myths-and-Facts.pdf> (arguing that a “potential avalanche of new rules will discourage further natural gas development”). This back-and-forth has also been influenced by major media events, including the release of the documentary film *Gasland*, and major investigatory series by the *New York Times* and *Pro Publica*. See Ian Urbina, *Drilling Down Series*, N.Y. TIMES, http://www.nytimes.com/interactive/us/DRILLING_DOWN_SERIES.html (last updated May. 15, 2012); *Fracking: Gas Drilling’s Environmental Threat*, PROPUBLICA, <http://www.propublica.org/series/fracking> (last updated July 9, 2012). See also NatGasNow, *The Truth About Gasland*, YOUTUBE (Jan. 31, 2011), http://www.youtube.com/watch?feature=player_embedded&v=Y1W8MnveFq8 (arguing, in a film produced by America’s Natural Gas Alliance, that *Gasland* “is a deeply flawed documentary” and “gets several important facts wrong”). The dynamics of political, environmental, and industry agendas is theorized and examined in Charles Davis & Katherine Hoffer, *Federalizing Energy? Agenda Change and the Politics of Fracking*, 45 POL’Y SCI. 221 (2012). The authors describe how “policy actors” have alternately appealed to state or national audiences when strategies at one or the other level fail. *Id.* at 227.

¹¹ David B. Spence, *Federalism, Regulatory Lags, and the Political Economy of Energy Production*, 161 U. PA. L. REV. 431, 460 (2013).

¹² *Id.*

¹³ *Id.* at 507-08. Given that the politics of federalism has already formed to some extent, “neutral” analysis is probably not possible. See Davis & Hoffer, *supra* note 10, at 224 (noting how “actions taken by one group will shape the actions of the other” in federalism controversies).

¹⁴ See Spence, *supra* note 11, at 503-04.

¹⁵ *Id.* at 506-08.

¹⁶ See also Jody Freeman, *The Wise Way to Regulate Gas Drilling*, N.Y. TIMES, July 6, 2012, at A23 (arguing for uniform federal regulation of fracking).

¹⁷ See Spence, *supra* note 11, at 453-54 (arguing that Texas’s and Pennsylvania’s choices to regulate fracking through existing regulatory regimes for oil and gas production led to increased drilling activity in those states versus in New York); Wiseman, *Untested Waters*, *supra* note 10, at

In this Response, I offer a set of constructive challenges to Professor Spence's Article. In Part I, I argue that fracking's federalism-choice question has already been answered, and that but for the outdated and under-justified exemptions mentioned above, fracking is already under the jurisdiction of federal regulators. In Part II, I conduct an alternative federalism-choice analysis that adds to Professor Spence's analysis in three ways. First, I balance his analysis by examining rationales commonly used to justify decentralization, rather than federalization, of environmental law. Second, I argue that given the fast-paced growth in drilling activity across the country, fracking's environmental impacts should be analyzed with regard to their cumulative effects. When so viewed, it is clear that fracking gives rise to interstate, and even national, problems that must be addressed accordingly. Third, I argue that widespread impacts on rural America weigh in favor of federal regulation.¹⁸

I. FRACKING AND FEDERAL LAW

Professor Spence's Article is the first scholarly attempt to reckon the "matching principle"¹⁹ with fracking, and he offers a detailed and rigorous examination of the scope of fracking's impact, not only on groundwater contamination and wastewater disposal, but also on water supply, community character, and fugitive methane emissions.²⁰ Yet Professor Spence also misses a critical point: Congress has already acted to federalize drinking water regulation and to oversee the management of hazardous waste,²¹ even though most individual contamination events occur entirely within a single state or locality. Similarly, Congress has regulated toxic chemicals,²² even where there is no immediate interstate effect. Yet, fracking has been

157-70 (examining regulatory mechanisms in Texas, Pennsylvania, New York, and a few other states). *But see, e.g.,* Davis & Hoffer, *supra* note 10, at 223 (noting that although most states encourage development of fracking for economic development purposes, a smaller number of states have "exhibited greater sensitivity to environmental concerns").

¹⁸ Professor Spence acknowledges that there may well be "broader rationales" for federalization that focus on "moral rights." Spence, *supra* note 11, at 436 n.19.

¹⁹ The matching principle reasons that the scope of a given problem should match the responsible institution's jurisdiction, thereby ensuring the greatest match between a problem and an institution's response. *See* Jonathan H. Adler, *Jurisdictional Mismatch in Environmental Federalism*, 14 N.Y.U. ENVTL. L.J. 130, 133, 158-60 (2005) ("As a general structural matter, it is more efficient and effective to address environmental problems through institutions of equivalent scope as the problem in question.").

²⁰ *See* Spence, *supra* 11, at 479-93.

²¹ *See* Safe Drinking Water Act, 42 U.S.C. §§ 300h to 300i-2 (2006); Resource Conservation and Recovery Act, 42 U.S.C. §§ 6921-6939f.

²² *See* Toxic Substances Control Act, 15 U.S.C. §§ 2601-2692.

specifically exempted from these comprehensive regimes even though the practice appears to fit squarely within the competencies of the respective programs.²³ These carve-outs are based on analyses and political calculations that are either outdated, unjustified, or both. Any thorough analysis of the federalism issues at play must begin by acknowledging the fact that but for these under-theorized exemptions, many of the matching questions Professor Spence poses would already have been definitively answered.

A. *Why Fracking Is Not Already Federally Regulated*

The SDWA mandates the regulation of underground injection activities in order to protect groundwater resources,²⁴ and the EPA regulates these activities through its Underground Injection Control (UIC) program.²⁵ Under the UIC permitting process, states, or in cases in which the EPA has not approved the state program, the EPA, regulate the permitting, siting, construction, operation, monitoring, and closure of injection wells.²⁶ As a general matter, oil and gas injection wells—including so-called “enhanced recovery” wells like fracking wells—are regulated under the UIC program’s Class II requirements.²⁷ However, in the 2005 Energy Policy Act (EPAct),²⁸ Congress amended the definition of “underground injection” under the SDWA specifically to exclude “the underground injection of fluids or propping agents (other than diesel fuels)” associated with fracking.²⁹ That is, since the passage of EPAct, fracking operations can legally inject anything but diesel into the ground without obtaining a UIC permit.³⁰

According to Professor Spence, Congress created the fracking exemption after an EPA study showed “that the injection of fracking fluids into coalbed methane wells pose[d] little or no threat to drinking water

²³ See *supra* notes 5 & 7-10 and accompanying text.

²⁴ See 42 U.S.C. § 300h(b)(1)(B) (stating that applicants for underground injection permits must “satisfy the State that the underground injection will not endanger drinking water sources”).

²⁵ See 40 C.F.R. § 144.11 (2011) (prohibiting underground injections except those performed in authorized wells or conducted under a UIC permit).

²⁶ See *id.* § 144.1; EPA, GUIDANCE FOR STATE SUBMISSIONS UNDER SECTION 1425 OF THE SAFE WATER DRINKING ACT 13-17 (n.d.), available at http://www.epa.gov/ogwdw/uic/pdfs/guidance/guide_uic_guidance-19_primacy_app.pdf.

²⁷ See 40 C.F.R. § 144.6(b).

²⁸ Pub. L. No. 109-58, 119 Stat. 594 (2005) (codified as amended in scattered sections of 42 U.S.C.).

²⁹ 42 U.S.C. § 300h(d)(1)(B)(ii).

³⁰ See EPA, PERMITTING GUIDANCE FOR OIL AND GAS HYDRAULIC FRACTURING ACTIVITIES USING DIESEL FUELS—DRAFT: UNDERGROUND INJECTION CONTROL PROGRAM GUIDANCE #84, at 6 (2012), available at <http://water.epa.gov/type/groundwater/uic/class2/hydraulicfracturing/upload/hfdieselfuelsguidance508.pdf>.

sources.”³¹ The real story, however, is far more complicated, far more political, and far more troubling.

In the early 1990s, the EPA considered fracking “to be a well stimulation technique associated with production and therefore not subject to [regulation under the] UIC [program].”³² In 1994, the Legal Environmental Assistance Foundation (LEAF) sued to compel the EPA to begin regulating fracking under the UIC program.³³ The Court of Appeals for the Eleventh Circuit found that fracking “obviously falls” within the class of activities Congress intended to regulate under the UIC program.³⁴

The EPA began the study on coalbed methane wells, to which Professor Spence refers, in 1999.³⁵ When President George W. Bush took office in 2001, with the study still ongoing, he assigned Vice President Dick Cheney, former CEO of Halliburton,³⁶ to lead the National Energy Policy Development Group (the “Energy Task Force”).³⁷ The Energy Task Force busied itself preparing a “new national energy policy.”³⁸ Records showed that while drafting this new policy, Vice President Cheney “held at least 40 meetings . . . most of them [with representatives] from energy-producing industries,” before meeting with a single representative from an environmental interest group.³⁹ The Task Force eventually “recommend[ed] that the President direct the Secretaries of Energy and the Interior to promote enhanced oil and gas recovery from existing wells through new technology.”⁴⁰

The EPA study, issued in 2004, reported that “the injection of hydraulic fracturing fluids into [coalbed methane] wells pose[d] little or no threat to [underground sources of drinking water] and does not justify additional

³¹ Spence, *supra* note 11, at 450 (footnote omitted).

³² See *Hydraulic Fracturing Background Information*, EPA, http://water.epa.gov/type/groundwater/uic/class2/hydraulicfracturing/wells_hydrowhat.cfm (last updated May 9, 2012).

³³ See *Legal Envtl. Assistance Found., Inc. v. EPA*, 118 F.3d 1467, 1471 (11th Cir. 1997).

³⁴ *Id.* at 1474.

³⁵ See *Hydraulic Fracturing Background Information*, *supra* note 32.

³⁶ Though Halliburton did not invent fracking, the company was the first to patent and commercially market the technique. See CARL T. MONTGOMERY & MICHAEL B. SMITH, NSI TECHNOLOGIES, HYDRAULIC FRACTURING 27 (2010), available at <http://www.spe.org/jpt/print/archives/2010/12/10Hydraulic.pdf>.

³⁷ See generally NAT'L ENERGY POLICY DEV. GRP., RELIABLE, AFFORDABLE, AND ENVIRONMENTALLY SOUND ENERGY FOR AMERICA'S FUTURE (2001), available at http://www.netl.doe.gov/publications/press/2001/nep/national_energy_policy.pdf.

³⁸ See Michael Abramowitz & Steven Mufson, *Papers Detail Industry's Role in Cheney's Energy Report*, WASH. POST (July 18, 2007), http://www.washingtonpost.com/wp-dyn/content/article/2007/07/17/AR2007071701987_pf.html.

³⁹ See *id.*

⁴⁰ NAT'L ENERGY POLICY DEV. GRP., *supra* note 37, at 5-20.

study at this time.”⁴¹ But the report did not recommend a categorical exemption for fracking, and the EPA, in conversations with Bush Administration officials, opposed the exemption’s broad language.⁴² However, according to a high official from the EPA at the time, the Bush Administration communicated “clearly” that it “did not want [the EPA] to take a formal position of opposition to the exemption.”⁴³ Moreover, an EPA whistleblower claimed that the EPA’s conclusions were “scientifically unsound and contrary to the purposes of the law.”⁴⁴ The whistleblower asserted that the EPA had “conducted limited research” and that, while the study was peer-reviewed, five of the seven reviewers had conflicts of interest.⁴⁵ In response to the whistleblower’s letter, Representative Henry Waxman of California requested that the EPA Inspector General examine “whether political considerations influenced the agency’s conclusions,”⁴⁶ but Congress passed the EPAct—fracking exemption and all—before any investigation took place.⁴⁷

In 2011, the Environmental Working Group, a research and advocacy organization, uncovered a 1987 EPA report that concluded that fracking in a natural gas well in West Virginia had contaminated an underground drinking water source.⁴⁸ The report indicated that the individual examples it provided were meant to be “fairly illustrative of practices and conditions” throughout various zones including Appalachia.⁴⁹ Yet the EPA’s 2004 study

⁴¹ OFFICE OF GROUND WATER & DRINKING WATER, EPA, 816-R-04-003, EVALUATION OF IMPACTS TO UNDERGROUND SOURCES OF DRINKING WATER BY HYDRAULIC FRACTURING OF COALBED METHANE RESERVOIRS, EXECUTIVE SUMMARY 1 (2004), available at http://water.epa.gov/type/groundwater/uic/class2/hydraulicfracturing/wells_coalbedmethanestudy.cfm.

⁴² Abraham Lustgarten, *Former Bush EPA Official Says Fracking Exemption Went Too Far; Congress Should Revisit*, PROPUBLICA (Mar. 9, 2011), <http://www.propublica.org/article/former-bush-epa-official-says-fracking-exemption-went-too-far>.

⁴³ *Id.*

⁴⁴ Letter from Weston Wilson, Employee, EPA, to Wayne Allard, U.S. Senator, et al. 1 (Oct. 8, 2004), available at <http://latimes.image2.trb.com/lanews/media/acrobat/2004-10/14647025.pdf>.

⁴⁵ *Id.*

⁴⁶ Letter from Henry A. Waxman, U.S. Congressman,, to Nikki L. Tinsley, Inspector General, EPA 2 (Oct. 14, 2004), available at <http://oversight-archive.waxman.house.gov/documents/20041014163542-63301.pdf>.

⁴⁷ See Wiseman, *Untested Waters*, *supra* note 10, at 170-79 (providing a more detailed account of the controversy surrounding the EPA report).

⁴⁸ EPA, MANAGEMENT OF WASTES FROM THE EXPLORATION, DEVELOPMENT, AND PRODUCTION OF CRUDE OIL, NATURAL GAS, AND GEOTHERMAL ENERGY, at IV-22 (1987), available at <http://nepis.epa.gov/Exe/ZyPDF.cgi?Dockey=20012D4P.pdf>.

⁴⁹ *Id.* at IV-11; see also Ian Urbina, *A Tainted Water Well, and Concern There May Be More*, N.Y. TIMES (Aug. 3, 2011), <http://www.nytimes.com/2011/08/04/us/04natgas.html?pagewanted=all> (offering detailed background information on the 1987 report).

does not mention the 1987 report, nor did Congress consider it during hearings concerning the fracking exemption in the EPAct.⁵⁰

B. *Managing Wastewater under the RCRA and Information Disclosure under the EPCRA*

Like the SDWA, both the RCRA and the EPCRA offer clear answers to federalism-choice questions: Congress enacted the RCRA as a “cradle to grave” regulatory framework for managing hazardous wastes,⁵¹ and the EPCRA as a comprehensive regime requiring companies to disclose information related to the storage and use of hazardous and toxic chemicals.⁵² And as with the SDWA, administrative regulation pursuant to both the RCRA and the EPCRA exempt fracking from their purview. In passing amendments to the RCRA in 1980, Congress temporarily exempted oil and gas exploration and production wastes from regulation under the statute.⁵³ The EPA later concluded that federal regulation under the RCRA was unnecessary, and that regulatory goals would be better served by strengthening the UIC permitting process and passing regulations under another subsection.⁵⁴ And use of fracking fluids, like other oil and gas exploration and production activities, are exempt from the EPCRA’s reporting requirements.⁵⁵ Neither of these exemptions reflects a principled federalism analysis of the type advanced by Professor Spence.

Thus, Congress has already acted to federalize fracking regulation. But, due to a toxic blend of agency capture, flawed research, and shortsighted administrative decisions, the federal government’s leadership in fracking regulation has been paralyzed. New administrative findings could change all of this quickly,⁵⁶ but the challenge for Professor Spence remains. Coming

⁵⁰ Recent research confirms that fracking can contaminate underground drinking water. See OFFICE OF RESEARCH & DEV., EPA, EPA/600/R-00/000, INVESTIGATION OF GROUND WATER CONTAMINATION NEAR PAVILLION, WYOMING 33 (draft 2011), available at http://www.epa.gov/region8/superfund/wy/pavillion/EPA_ReportOnPavillion_Dec-8-2011.pdf (reporting groundwater contamination near wells using fracking service).

⁵¹ See 42 U.S.C. § 6922(a)(4) (2006) (regulating the creation, transport, and disposition of hazardous wastes).

⁵² See *id.* § 11022(d)(2).

⁵³ See *id.* § 6921(b)(2)(A) (Supp. IV 1981).

⁵⁴ Regulatory Determination for Oil and Gas and Geothermal Exploration, Development and Production Wastes, 53 Fed. Reg. 25,446-47 (July 6, 1988).

⁵⁵ See 40 C.F.R. § 372.23 (2011). The EPA demands that industries classified by certain Standard Industrial Classification Codes (SICs) must adhere to specified reporting requirements. However, “Major Group 13: Oil and Gas Extraction” is not one of the SICs included. *Id.*

⁵⁶ The EPA is currently conducting a new study of fracking’s potential impacts on drinking water, with a preliminary report to be issued late this year and a final report in 2014. See generally OFFICE OF RESEARCH & DEV., EPA, EPA/600/R-11/122, PLAN TO STUDY THE POTENTIAL

on the heels of such a bewildering and compromised process, the status quo is hardly a “neutral” starting point. And Professor Spence must say more about why Congress got it wrong when it chose to regulate underground drinking water and hazardous waste.⁵⁷

Of course, even if these exemptions were undone, regulation would still be carried out primarily by the states under the SDWA’s and the RCRA’s cooperative federalism regimes. Such regimes are designed to capture the benefits of decentralized regulation without sacrificing the core goals of public health and environmental protection that undergird federal environmental law.

II. FRACKING AND FEDERALISM CHOICE

Several rationales dominate arguments in favor of federalization of environmental law: the need to address the interrelated problems of interstate externalities, the “race to the bottom,” and NIMBYism (not in my backyard); the economic efficiencies gained through federal uniformity; the benefits of pooling resources in order to gather technical and scientific expertise; creating durable rules, and providing for enforcement; the potential for greater diversity of interest-group participation; and the mobilization around national moral imperatives.⁵⁸ A different set of factors dominates arguments in favor of decentralization: increased democratic participation and responsiveness to local preferences; the ability to tailor

IMPACTS OF HYDRAULIC FRACTURING ON DRINKING WATER RESOURCES (2011), available at http://www.epa.gov/hfstudy/HF_Study__Plan_110211_FINAL_508.pdf. If the EPA finds that fracking does contaminate drinking water, the regulatory field could change dramatically.

In addition, environmental groups have filed a number of petitions seeking more immediate federal action. See Petition to Add Oil and Gas Extraction Industry, Standard Industrial Classification Code 13, to the List of Facilities Required to Report Under the Toxic Release Inventory, from Erica Schaeffer, Executive Director, Env’tl. Integrity Project, to Lisa P. Jackson, Administrator, EPA (Oct. 24, 2012), available at http://www.environmentalintegrity.org/news_reports/documents/2012_10_24TRIPetitionFINALSIGNED.pdf; Citizen Petition Under Toxic Substances Control Act Regarding the Chemical Substances and Mixtures Used in Oil and Gas Exploration or Production, from Deborah Goldberg & Megan Klein, Earthjustice, to Lisa P. Jackson, Administrator, EPA (Aug. 4, 2011), available at http://earthjustice.org/sites/default/files/fracking_petition.pdf; Petition for Rulemaking Pursuant to Section 6974(a) of the Resource Conservation and Recovery Act Concerning the Regulation of Wastes Associated with the Exploration, Development, or Production of Crude Oil or Natural Gas or Geothermal Energy, from Natural Res. Def. Council, to Lisa P. Jackson, Administrator, EPA (Sept. 8, 2010), available at http://docs.nrdc.org/energy/files/ene_10091301a.pdf.

⁵⁷ See Spence, *supra* note 11, at 807-08.

⁵⁸ See Michael Burger, “It’s Not Easy Being Green”: Local Initiatives, Preemption Problems, and the Market Participant Exception, 78 U. CIN. L. REV. 835, 854-55 (2010) (comparing arguments for centralization and decentralization in environmental law).

decisions to local environmental conditions; regulatory and policy innovation; adaptive management or other experimentalist or “new governance” regimes; and interjurisdictional competition that can lead to economically efficient regulation.⁵⁹ A balanced federalism might presumptively favor state regulation, but it should still look at both sides of the equation before deciding which level of governance is appropriate.

Professor Spence targets four pro-federalization arguments—managing interstate spillovers, preventing a “race to the bottom,” accommodating industry’s potential desire or need for uniform national standards, and promoting important national interests⁶⁰—and concludes both that there may be a limited cause for federal regulation in areas in which the federal government already employs its regulatory authority, and that new studies may reveal that more federal regulation is justified.⁶¹ In response, I will augment Professor Spence’s analysis by addressing relevant “pro-decentralization” arguments, reframing the question of interstate spillovers in light of fracking’s cumulative impact, and identifying the practice’s potentially transformative effects, especially on rural America. These effects make fracking a matter of true, national concern.

A. *The Benefits of Decentralized Fracking Regulation*

Opponents of federal regulation of fracking frequently advance two pro-decentralization arguments: the ability of state and local governments to tailor decisions to local environmental conditions and the idea that states may serve as regulatory and technical testing grounds.⁶² Neither offers a persuasive case for giving states primary authority to regulate fracking.

First, some have argued, and Professor Spence suggests,⁶³ that the geological differences among shale plays position state agencies to better understand the relevant local environmental conditions, and so they should set the local standards.⁶⁴ But this argument ignores the fact that the SDWA employs a cooperative-federalism approach in which the states and the federal government share authority.⁶⁵ In a delegated UIC permitting

⁵⁹ *Id.* at 855-56.

⁶⁰ See Spence, *supra* note 11, at 462-65, 478-506.

⁶¹ See *id.* at 506-08.

⁶² See *id.* at 435.

⁶³ See, e.g., *id.* at 492-93 (arguing that states may be best suited to address groundwater contamination caused by fracking because those are risks that directly impact locals).

⁶⁴ See, e.g., AM. LEGISLATIVE EXCH. COUNCIL, RESOLUTION TO RETAIN STATE AUTHORITY OVER HYDRAULIC FRACTURING (n.d.), available at http://www.alecexposed.org/w/images/9/9e/3E11-Resolution_to_Retain_State_Authority_over_Hydraulic_Fracturing_Exposed.pdf.

⁶⁵ See *supra* note 30 and accompanying text.

program, state officials would be charged with taking account of local geological conditions while meeting minimum standards set by the federal government.⁶⁶ Thus, in the federal regime conceptualized in extant regulatory regimes, local geological knowledge would be adequately brought to bear on permitting decisions.

Second, opponents of federal regulation argue that the diversity of state approaches to fracking regulation will lead to technical and regulatory experimentation, and ultimately, maximum efficiency. Thus, they argue, the federal government should seek to preserve this experimentation.⁶⁷ Certainly, some states are taking measures to improve safety: New Mexico and North Dakota have imposed wastewater management requirements; a number of states have updated well-casing requirements; Colorado revised its oil and gas code to include buffer zones around public water supplies, improved remediation requirements, and additional wildlife protections, among other measures; and New York has proposed stringent environmental protections and imposed a ban while it conducts a comprehensive environmental review of high-volume fracking in the Marcellus Shale.⁶⁸ But state regulatory regimes remain highly inconsistent, with some states actively seeking to address the problems generated by fracking, but even more not.⁶⁹

In addition, an important component of the “state laboratories” argument is that the information being generated in one state is shared and utilized in others. There is little evidence that such collaboration is taking place with fracking regulation.⁷⁰ On the other hand, a centralized regime under federal law would likely produce a far greater amount of resource pooling, technical and regulatory information sharing, and knowledge generation than what is currently taking place under the decentralized approach.

⁶⁶ See 40 C.F.R. §§ 146.21–24 (2011).

⁶⁷ See, e.g., Spence, *supra* note 11, at 435 (suggesting that the states’ varied “regulatory approaches represent a series of experiments from which all can learn”).

⁶⁸ See generally HANNAH WISEMAN & FRANCIS GRADIJAN, CTR. FOR GLOBAL ENERGY, INT’L ARBITRATION & ENVTL. LAW, REGULATION OF SHALE GAS DEVELOPMENT, INCLUDING HYDRAULIC FRACTURING 141–42 (2012) (addressing regulations in a sample of sixteen states that produce or are likely to produce gas or oil from shales or tight sands).

⁶⁹ See, e.g., Wiseman, *Untested Waters*, *supra* note 10, at 167 (discussing the various tiers at which states are regulating fracking operations).

⁷⁰ The websites fracfocus.org and STRONGERinc.org (State Review of Oil & Gas Environmental Regulations) offer convenient forums for states to share information about their successes and failures in regulating fracking operations. However, the only instance I am aware of in which a state agency has made explicit reference to another state’s regulations was to demonstrate how the other state had fallen short. See *Fact Sheet: What We Learned from Pennsylvania*, N.Y. DEP’T OF ENVTL. CONSERVATION (July 2011), <http://www.dec.ny.gov/energy/75410.html> (describing New York Department of Environmental Conservation officials’ visit to a Pennsylvania fracking site that was experiencing equipment failure).

B. *Interstate Externalities and Cumulative Impacts*

Fracking is rapidly expanding across the United States. Companies in Arkansas, Colorado, Louisiana, Montana, Oklahoma, Texas, Utah, and Wyoming have collectively reported that 18,158 wells were “readied for production or were newly producing” between April, 2011 and the end of 2011.⁷¹ According to another report, in 2012, there will be a nineteen-percent increase in the worldwide market for fracking.⁷² Some states, such as North Dakota and Pennsylvania, have seen particularly dramatic increases in the scale of fracking operations.⁷³

The equation is simple: The more wells there are, the higher the risk of both direct interstate pollution⁷⁴ and cumulative impacts that warrant federal response.⁷⁵ Accordingly, in attempting to manage both short-term and cumulative impacts on communities, land use, wildlife, and ecologies, regulators “should pay greater attention to the combination of impacts from multiple drilling, production and delivery activities . . . and make efforts to plan for shale development impacts on a regional scale.”⁷⁶ Limiting such regional planning efforts to individual states might be easier politically, but given the sheer number of fracking operations, and the fact that many shale plays are located close to and across state borders,⁷⁷ it makes little sense if the goal is to account for actual direct and cumulative impacts.

⁷¹ See Benjamin Haas et al., *Fracking Hazards Obscured in Failure to Disclose Wells*, BLOOMBERG (Aug. 14, 2012), <http://www.bloomberg.com/news/2012-08-14/fracking-hazards-obscured-in-failure-to-disclose-wells.html>.

⁷² Joe Carroll, *Fracking Market to Grow 19% to \$37 Billion Worldwide in 2012*, BLOOMBERG (Jan. 19, 2012), <http://www.bloomberg.com/news/2012-01-19/frack-market-to-grow-19-in-2012-to-37-billion-correct-.html>.

⁷³ See *id.* (discussing new production on the Bakken and Marcellus shale formations, which lie beneath North Dakota and Pennsylvania respectively).

⁷⁴ See, e.g., Press Release, Douglas F. Ganser, Md. Att’y Gen., Attorney General Gansler Notifies Chesapeake Energy of the State’s Intent to Sue for Endangering the Health of Citizens and the Environment (May 2, 2011), *available at* <http://www.oag.state.md.us/Press/2011/050211.html> (describing the State’s intent to file a suit and seek injunctive relief and civil penalties against an energy company for releasing thousands of gallons of fracking fluids into a major river).

⁷⁵ ROYAL SOC’Y & ROYAL ACAD. OF ENG’G, *SHALE GAS EXTRACTION IN THE UK: A REVIEW OF HYDRAULIC FRACTURING* 55 (2012) *available at* http://royalsociety.org/uploadedFiles/Royal_Society_Content/policy/projects/shale-gas/2012-06-28-Shale-gas.pdf (arguing that British regulators need to pay attention to how “risks [would] scale up if a shale gas industry develops nationwide”).

⁷⁶ See SHALE GAS SUBCOMM., SEC’Y OF ENERGY ADVISORY BD., *THE SEAB SHALE GAS PRODUCTION SUBCOMMITTEE NINETY-DAY REPORT* 3 (Aug. 2011), *available at* http://www.shalegas.energy.gov/resources/081111_90_day_report.pdf.

⁷⁷ See U.S. ENERGY INFO. ADMIN., *supra* note 3.

C. *The National Interest in Federal Fracking Regulation*

In discussing the national interests in federalizing fracking regulation, Professor Spence examines the implications of natural gas extraction for the nation's emergency preparedness, national security, energy security, air quality, and climate change policy, all of which generally support the promotion of the fracking industry.⁷⁸ Yet nothing about this national interest in natural gas implies that federalization of fracking is inappropriate. Such a conclusion depends on the presumption that the costs imposed by federal regulation will outweigh the benefits gained by it, which is a typical argument made by industry insiders, but one that runs counter to the evidence.⁷⁹

What's more, Professor Spence's examination misses what may be the most significant long-term impact of fracking: the transformation of large swaths of rural and small town America. Townspeople across the country have voiced concern that fracking will erode the historic qualities of their hometowns.⁸⁰ Moreover, many local officials and leaders have stepped in to put a stop to fracking in their communities before it even begins. In New York, "dozens of counties and towns . . . have imposed moratoriums or bans on fracking."⁸¹ Communities in North Carolina are also proceeding cautiously.⁸² And in Pennsylvania, the State's attempt to preempt local fracking bans has reached the Pennsylvania Supreme Court.⁸³

⁷⁸ See Spence, *supra* note 11, at 497-504.

⁷⁹ See OFFICE OF MGMT. & BUDGET, 2010 REPORT TO CONGRESS ON THE BENEFITS AND COSTS OF FEDERAL REGULATIONS AND UNFUNDED MANDATES ON STATE, LOCAL, AND TRIBAL ENTITIES 95 tbl.B-1 (2010), available at http://www.whitehouse.gov/sites/default/files/omb/legislative/reports/2010_Benefit_Cost_Report.pdf (providing cost-benefit information for a host of federal, regulatory regimes).

⁸⁰ See, e.g., *The Oil Boom Is Destroying Small Towns Across America*, BUSINESSINSIDER (Mar. 2, 2012), <http://www.businessinsider.com/the-oil-boom-is-destroying-small-towns-across-america-2012-3> (describing how violent crime and traffic jams accompanying the boom in fracking operations have "turned [a] little town upside down").

⁸¹ Paul Gallay, *Hydrofracking: A Bad Bet for the Environment—and the Economy*, HUFFINGTON POST BLOG (Jan. 5, 2012, 3:42 PM), http://www.huffingtonpost.com/paul-gallay/fracking-environment_b_1186998.html; see also William J. Kemble, *Rosedale Schedules Hearing on Law That Would Ban Fracking in Town*, DAILY FREEMAN (Aug. 9, 2012), <http://www.dailyfreeman.com/articles/2012/08/09/news/doc5024299153a3b154598681.txt> (citing fracking's potential impact on "small-town character" as one of several reasons the Town Board of Rosedale, NY wants to ban the practice).

⁸² Ted M. Natt, Jr., *Fracking: Promise—and Peril*, THE PILOT (Aug. 9, 2011), <http://www.thepilot.com/news/2011/aug/08/fracking-promise-and-perils/> (discussing North Carolina's slow move toward possibly legalizing fracturing in the state).

⁸³ The Pennsylvania Supreme Court recently noted probable jurisdiction. Appeal Docket Sheet at 10, *Robinson Township v. Commonwealth*, No. 64 MAP 2012 (Pa. Aug. 8, 2012), available at <http://ujportal.pacourts.us/docketsheets/SupremeCourtReport.aspx?docketNumber=64%20MAP%202012>.

A full account of the impact of fracking operations on rural America is far beyond the scope of this Response. Nonetheless, given that most fracking occurs in rural areas, that the increasing scale of operations results in an increased risk of both direct pollution and cumulative environmental impacts in those areas, and that rural and small town America's cultural and historic landscape may be significantly threatened by the continuing expansion of the industry, concerns over the fate of rural communities are simply another reason pure federalism might not be the best tack.

CONCLUSION

The regulation of fracking is a hot button issue, and debates will continue to play out in federal and state legislatures, agencies, and courtrooms, not to mention on the front pages of newspapers, in the coming years. Professor Spence's Article is a serious, first-to-market attempt to situate this highly charged political controversy in the frame of federalism theory. In a future article, Professor Spence should further develop the foundations of existing exemptions and explore how they factor into his analysis. Moreover, I hope he will consider some of the issues I raise regarding the merits of decentralization of fracking regulation in practice (or lack thereof), the reality of cumulative impacts, and fracking's effects on rural America, all of which I believe counterbalance his argument. Nevertheless, Professor Spence has initiated an important and previously overlooked theoretical inquiry into the proper scale of fracking regulation.

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