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HYDRAULIC FRACTURING IN POLAND: A REGULATORY ANALYSIS

I. INTRODUCTION

Hydraulic fracturing, or “fracking,”¹ is a process by which water and other materials are injected into a geologic formation at a high pressure.² This process “induces fractures in the formation that stimulate the flow of natural gas or oil, thus increasing the volume of gas or oil that can be recovered from coalbeds, shales, and tight sands”³ Hydraulic fracturing has been used for nearly 70 years⁴ and has enabled energy companies to recover oil and natural gas resources previously thought to be unrecoverable.

In the past several years, hydraulic fracturing has induced an increasing number of serious environmental, political, and social concerns.⁵ As a result, several countries have restricted hydraulic fracturing practices or even banned their use altogether.⁶ Poland, however, is not one of those countries—Polish leaders are seeking to rapidly develop hydraulic

1. *Science Matters: Answering Questions about EPA’s Plan to Study Hydraulic Fracturing*, ENVIRONMENTAL PROTECTION AGENCY (EPA), available at <http://www.epa.gov/sciencematters/december2011/qa.htm> (last visited May 13, 2013). The process of hydraulic fracturing has also been referred to as “hydrofracking.” See, e.g., *Groundwater Forum Teleconference Thursday, October 7, 2011*, EPA (Oct. 7, 2011), available at <http://www.epa.gov/superfund/remedytech/tsp/download/teleconf/gwf11oct.html>. Still others refer to the process of hydraulic fracturing as “fracking.” See, e.g., Holly A. Vandrovec, *The Fight Over Fracking Recent Hydraulic Fracturing Litigation in Texas*, 74 TEX. B.J. 390, 390 (2011).

2. EPA, DRAFT PLAN TO STUDY THE POTENTIAL IMPACTS OF HYDRAULIC FRACTURING ON DRINKING WATER RESOURCES, at vii (Feb. 7, 2011) [hereinafter EPA, DRAFT PLAN], available at http://www.shalegas.energy.gov/resources/HFStudyPlanDraft_SAB_020711.pdf.

3. *Id.*

4. CARL T. MONTGOMERY & MICHAEL B. SMITH, HYDRAULIC FRACTURING: HISTORY OF AN ENDURING TECHNOLOGY, NSI TECHNOLOGIES 27 (Dec. 2010), available at <http://www.spe.org/jpt/print/archives/2010/12/10Hydraulic.pdf> (Modern fracking procedures were originally introduced by Stanolind Oil in the late 1940s).

5. See Vandrovec, *supra* note 1, at 390; see also HEATHER COOLEY & KRISTINA DONNELLY, HYDRAULIC FRACTURING AND WATER RESOURCES: SEPARATING THE FRACK FROM THE FICTION, PAC. INST. (June 2012), available at http://www.pacinst.org/reports/fracking/full_report.pdf (“These new [hydraulic fracturing] techniques, however, have raised concerns about the adverse environmental and social impacts of these practices, especially related to impacts on water resources.”).

6. See, e.g., Tara Patel, *France Vote Outlaws ‘Fracking’ Shale for Natural Gas, Oil Extraction*, BLOOMBERG (July 1, 2011), <http://www.bloomberg.com/news/2011-07-01/france-vote-outlaws-fracking-shale-for-natural-gas-oil-extraction.html>; *Bulgaria Bans Shale Gas Drilling with ‘Fracking’ Method*, BBC NEWS (Jan. 19, 2012), available at <http://www.bbc.co.uk/news/world-europe-16626580>; *Germany May Ban Fracking Over Environmental Concerns*, RT.COM (Feb. 18, 2013), available at <http://rt.com/business/germany-fracking-ban-environment-492/>.

fracturing operations within their country.⁷ Additionally, Poland may have the largest shale gas reserves in Europe.⁸ As a result, Poland has become a very attractive destination for energy companies looking to expand their fracking operations.⁹

Part I of this Note discusses why Poland is interested in rapidly developing their shale resources through hydraulic fracturing. Part II then examines the possible negative effects of hydraulic fracturing. Part III analyzes and examines the hydraulic fracturing regulatory scheme in the United States, on a federal, state, and local level. Part IV of this Note considers the different attitudes and policy stances that European governments have taken when dealing with hydraulic fracturing. Part V then focuses on how Poland is preparing to utilize hydraulic fracturing. Part VI outlines the fracking regulations that currently exist in Poland and the failures and successes of those regulations to date.

Part VII concludes that Polish policy-makers should utilize the hydraulic fracturing process to address their energy needs while taking care to consider all environmental and public health concerns associated with the wide-scale development of Poland's shale gas reserves. Poland has an opportunity to be a leader in the larger European and global community.¹⁰ By encouraging the expansion of hydraulic fracturing, Polish leaders are ensuring that their country is fully utilizing its valuable natural resources. By enforcing the regulatory protections currently in place and continuing to sponsor scientific studies that examine the effects of hydraulic fracturing, Polish policymakers can also help avoid long-term environmental damage.

7. *Fracking Heaven: Other Europeans Fear Fracking, Poland is Steaming Ahead*, ECONOMIST (June 23, 2011) [hereinafter *Fracking Heaven*], available at <http://www.economist.com/node/18867861>.

8. U.S. ENERGY INFO. ADMIN. (EIA), WORLD SHALE GAS RESOURCES: AN INITIAL ASSESSMENT OF 14 REGIONS OUTSIDE THE UNITED STATES 4 (Apr. 2011), available at <http://www.eia.gov/analysis/studies/worldshalegas/pdf/fullreport.pdf>.

9. *Fracking Heaven*, *supra* note 7.

10. Connor Adams Sheets, *Poland: The Next Fracking Frontier?*, INT'L BUS. TIMES (Oct. 20, 2012), available at <http://www.ibtimes.com/poland-next-fracking-frontier-849359> ("Poland is at the forefront of this concerted effort to expand shale gas extraction throughout the world . . .").

II. HYDRAULIC FRACTURING: A POTENTIAL SOLUTION TO ENERGY AND ECONOMIC PROBLEMS

Energy usage in Poland and throughout the world is rapidly increasing, even among nations with disparate growth rates.¹¹ To keep up with the increasing demand for energy, energy companies are constantly searching for new sources of energy and attempting new and more efficient means of production.¹² One method that numerous energy companies invested in was hydraulic fracturing. Through this technique, these companies discovered a way to access gas in shale formations that was previously too deep below the earth's surface to access through traditional drilling methods.¹³

Communities where hydraulic fracturing takes place have recognized several benefits.¹⁴ These include sizeable job growth, a positive economic boost from royalties and taxes paid to property owners, a large amount of outside investments, and economic growth for already-existing local businesses.¹⁵ Since the only feasible way to reach these reserves is through hydraulic fracturing, other methods of energy production may have never reached these communities¹⁶ and as a result, the benefits never realized. Moreover, producers of other types of energy likely would not have chosen these communities, and the large number of jobs and other benefits generated by hydraulic fracturing would have never been created.¹⁷

Although Poland's economy fared better than any other similarly sized country in Europe during the recession, Poland still faces its share of economic problems.¹⁸ Polish leaders have searched extensively for ways to

11. See EIA, INTERNATIONAL ENERGY OUTLOOK 2011, at 5 (Sept. 2011), available at [http://www.eia.gov/forecasts/ieo/pdf/0484\(2011\).pdf](http://www.eia.gov/forecasts/ieo/pdf/0484(2011).pdf) (“[A]s developing nations mature, they are expected to transition to more service-related enterprises, which will increase demand for energy in the commercial sector.”). World energy consumption grew by five percent in 2010 alone. *World Energy Use in 2010: Over 5% Growth*, ENERDATA (May 5, 2011), <http://www.enerdata.net/enerdatauk/press-and-publication/publications/g-20-2010-strongly-energy-demand-increase.php>.

12. See, e.g., John Council, *Frack Attack: Oil and Gas Caseload Gushes as Supreme Court Backlog Trickles Out*, TEXAS LAWYER (Sept. 19, 2011), http://www.law.com/jsp/tx/PubArticleTX.jsp?id=1202514668965&Frack_Attack_Oil_and_Gas_Caseload_Gushes_as_Supreme_Court_Backlog_Trickles_Out&slreturn=20130413173012; see also *Fracking Heaven*, *supra* note 7.

13. See Vandrovec, *supra* note 1, at 390.

14. See Indep. Petroleum Inst. of America, *Hydraulic fracturing and Natural Gas*, ENERGYINDEPTH (Apr. 2008), <http://www.energyindepth.org/PDF/Hydraulic-Fracturing-3-E's.pdf>.

15. *Id.*

16. *Id.*

17. *Id.*

18. Jack Ewing, *Poland Finds It's Not Immune to Crisis*, N.Y. TIMES (Dec. 17, 2012), available at http://www.nytimes.com/2012/12/18/business/global/poland-finds-its-not-immune-to-euro-crisis.html?pagewanted=all&_r=0.

improve their country's economic situation. Many see hydraulic fracturing as a unique way to help solve many of the difficult problems Poland currently faces.

III. CONCERNS ABOUT HYDRAULIC FRACTURING

There are important considerations about the process of hydraulic fracturing that are slowing its spread and even completely halting development in some parts of the United States and several countries throughout the world. The primary concern involves the potential environmental effects of hydraulic fracturing.¹⁹ In addition to reports claiming that hydraulic fracturing negatively affects crucial resources like drinking water, commentary also suggests concern about the increased frequency and intensity of earthquakes in regions where hydraulic fracturing is most prevalent.²⁰ These concerns led to several countries slowing down or even completely halting the development of hydraulic fracturing within their borders.²¹

There are also important political and social issues at stake, ranging from deciding exactly where geopolitical boundaries begin and end to figuring out how to best honor indigenous rights.²² Hydraulic fracturing

19. See, e.g., Chris Keenan, *Fracking Disposal Wells Linked to Earthquakes, Banned in Arkansas*, INT'L BUS. TIMES (Sept. 16, 2011), available at <http://uk.ibtimes.com/articles/20110916/fracking-disposal-wells-linked-earthquakes-banned-arkansas.htm> (The Arkansas Geological Survey found a correlation between earthquakes and the use of disposal facilities for hydraulic fracturing fluid and issued a ban on construction of new fracking disposal wells). Similar concerns are surfacing in Europe. See Guy Chazan, *Fracking Pioneers Pierce Europe*, WALL ST. J. (July 28, 2011), available at <http://online.wsj.com/article/SB10001424053111904233404576457872933709438.html>. On July 28, the EPA proposed the first national rules to control emissions of air pollutants from fracking operations. Deborah Soloman & Tennile Tracy, *EPA Unveils Air-Quality Rules for Natural Gas Fracking*, WALL ST. J. (July 29, 2012), available at <http://online.wsj.com/article/SB10001424053111904800304576474462644360884.html>.

20. See, e.g., Christopher Joyce, *How Fracking Wastewater is Tied to Quakes*, NAT'L PUB. RADIO (Oct. 9, 2012), available at <http://www.npr.org/2012/01/05/144694550/man-made-quakes-blame-fracking-and-drilling> (Although human-induced earthquakes are rare and it is extremely difficult to determine with certainty what has caused a particular earthquake, hydraulic fracturing is now "creating thousands of wastewater wells, often in heavily populated areas that historically have not been seismically active. That means even small quakes get noticed.").

21. See *supra* note 7.

22. See Emily C. Powers, *Fracking and Federalism: Support for an Adaptive Approach That Avoids the Tragedy of the Regulatory Commons*, 19 J.L. & POL'Y 913, 915 (2011) (arguing that "New York's regulatory primacy could lead to both underprotection and underdevelopment of natural gas resources as public and political fears dominate regulators' decision making processes"); Matthew Hulbert & Christian Brutsch, *The Empire Strikes Back: European Energy and the Return of Gazprom*, J. ENERGY SECURITY (Sept. 28, 2012), available at http://www.ensec.org/index.php?option=com_content&view=article&id=328:the-empire-strikes-back-european-energy-and-the-return-of-gazprom&catid=118:content&Itemid=376 (European Union energy policy is "grounded in weak fundamentals" and

operations that drill thousands of feet beneath the earth's surface are extremely large in scale and very noticeable, sometimes reaching 150 feet in height.²³ While some members of these communities are excited about the prospect of diversifying their area's economic and energy portfolios while providing new professional prospects for their community members,²⁴ others are uncomfortable with the constant presence of these large-scale operations.²⁵

Proponents of hydraulic fracturing have responded to these concerns in several ways. Some argue that there are fatal flaws in the studies and reasoning of those positing that hydraulic fracturing processes should be slowed, stopped, or reversed.²⁶ In February 2012, Poland's Ministry of Environment announced that a study conducted by experts from the Polish Geological Institute showed that "[t]he process of extracting shale gas

"has done little to reassure the authoritarian rulers who control alternative upstream sources in Central Asia and the Middle East that Europe is a credible energy supply bet."); see also Michael Haggerson, *Brazil Judge Blocks Amazon Jungle Dam Construction*, JURIST (Sept. 30, 2011), available at <http://jurist.org/paperchase/2011/09/brazil-judge-blocks-amazon-jungle-dam-construction.php> (construction on a Brazilian dam was halted due to concerns over the rights of indigenous people during the construction of new energy facilities).

23. Morgan Hill, *Effects of Natural Gas Production on Water Quality in Garfield County, Western Colorado*, UNIV. OF COL., available at <http://www.colorado.edu/honorsjournal/content/effects-natural-gas-production-water-quality-garfield-county-western-colorado>.

24. See Wes Deweese, *Fracturing Misconceptions: A History of Effective State Regulation, Groundwater Protection, and the Ill-Conceived Frac Act*, 6 OKLA. J. L. & TECH. 49, at *32 (2010).

Natural gas in particular is a necessary component of a "clean energy future," if the U.S. is to reduce its greenhouse gas emissions through reduced use of coal to generate electricity. Without access to the vast amounts of natural gas currently locked in shale and other unconventional gas formations, a "clean energy future" would remain a pipe dream. Progress cannot be made without access to the oil and natural gas indigenous to the United States. Hydraulic fracturing is one key to accessing the nation's energy potential and moving the nation forward on the path toward a clean energy future.

Id.

25. See Angela C. Cupas, *The Not-So-Safe Drinking Water Act: Why We Must Regulate Hydraulic Fracturing at the Federal Level*, 33 WM. & MARY ENVTL. L. & POL'Y REV. 605, 628 (2009) ("Typical complaints from residences located near hydraulic fracturing fields include: greasy or oily films in water, pungent odors, increased salinity, and even a rise in certain types of cancer.").

26. *Id.*; see also UNIV. OF TEX. ENERGY INST., NEW STUDY SHOWS NO EVIDENCE OF GROUNDWATER CONTAMINATION FROM HYDRAULIC FRACTURING, available at http://www.energy.utexas.edu/images/ei_shale_gas_reg_pressrelease1202.pdf (last visited Oct. 22, 2012) ("The study, released at the annual meeting of the American Association for the Advancement of Science (AAAS) in Vancouver, British Columbia, found that many problems ascribed to hydraulic fracturing are related to processes common to all oil and gas drilling operations, such as casing failures or poor cement jobs."). According to the study, "surface spills of fracturing fluids pose greater risks to groundwater sources than from hydraulic fracturing itself," and other types of oil extracting processes cause many of the same issues. *Id.* However, an independent review of the University of Texas study has recommended that the school retract it because it was misleading. See PUB. ACCOUNTABILITY INITIATIVE, CONTAMINATED INQUIRY (July 2012), available at <http://public-accountability.org/wp-content/uploads/ContaminatedInquiry.pdf>.

does not lead to contamination of the water table or to the release of excessive levels of polluting gas into the atmosphere.”²⁷ Regulators also proposed certain alternatives to curb the use of hydraulic fracturing and protect those most closely affected by it, such as instituting a “fracking tax.”²⁸

Several countries took notice that hydraulic fracturing has strong immediate and long-term incentives to build and drill as soon as possible.²⁹ At the same time, leaders recognized that there are many serious environmental, social, and public health concerns at stake.³⁰ As a result, Europe, the United States, and much of the rest of the world are engaging in large-scale studies and debates in an effort to better understand and determine the best answer to the question of whether or not to allow, and how to regulate, hydraulic fracturing processes.³¹

IV. UNITED STATES APPROACH TO HYDRAULIC FRACTURING

There are currently very few hydraulic fracturing regulations at the federal level in the United States. This is largely because provisions in the major federal environmental statutes grant sweeping exemptions to the oil

27. POLISH GEOLOGICAL INST., *Environmental Impact of Hydraulic Fracturing Treatment Performed on the ŁEBIEŃ LE-2H WELL* (Mar. 2, 2012), available at <http://www.pgi.gov.pl/en/archiwum-aktualnosci-instytutu/4087-aspekty-rodowiskowe-procesu-szczelinowania-hydraulicznego-wykonanego-w-otworze-ebie-le-2h> (reporting that hydraulic fracturing is an environmentally safe practice if performed within the regulatory framework); *Shale-Gas Extraction Does Not Contaminate Water: Polish Report*, WARSAW BUS. J. (Feb. 17, 2012), available at <http://www.wbj.pl/article-58068-shale-gas-extraction-does-not-contaminate-water-polish-report.html> (“The analysis, which bases its findings on a study of hydraulic fracturing performed on a borehole near the Polish village of Łebień, is the first comprehensive report conducted on behalf of the Polish government into the environmental effects of shale-gas extraction.”). However, there are many other studies that diametrically oppose this study conducted by Polish government officials. See *supra* note 19.

28. See, e.g., *Fracking Tax: Requiring Shale Drillers to Pay for Maintenance, Regulation is Reasonable*, THE COLUMBUS DISPATCH (Jan. 22, 2012), <http://www.dispatch.com/content/stories/editorials/2012/01/22/fracking-tax.html> (“Gov. John Kasich is correctly proposing a package of taxes and fees that would balance the interests of residents and the companies that will be benefiting from drilling.”).

29. See John Kemp, *Fracking All Over the World*, REUTERS (NOV. 20, 2012), <http://www.reuters.com/article/2012/11/20/column-kemp-fracking-international-idUSL5E8MK9U020121120>.

30. See *supra* note 28.

31. See EPA, HYDRAULIC FRACTURING RESEARCH STUDY (2010), available at <http://epa.gov/safewater/uic/pdfs/hfresearchstudyfs.pdf>; see also S. Res. 2576, 114th Leg. (N.J. 2010), available at http://www.njleg.state.nj.us/2010/Bills/S3000/2576_I2.PDF (New Jersey legislature passes ban on shale gas “fracking”); Pittsburgh, PA Code tit. 6, art 1, ch. 618, available at http://www.city.pittsburgh.pa.us/district5/assets/marcellus/2010_aug17_Marcellus_Bill.pdf (city of Pittsburgh bans “fracking”). But see Daniel Richey, *Wyoming federal court strikes down Obama alterations to Energy Policy Act*, JURIST (Aug. 13, 2011), <http://jurist.org/paperchase/2011/08/wyoming-federal-court-strikes-down-obama-alterations-to-energy-policy-act.php>.

and gas industry and hydraulic fracturing specifically.³² As such, the regulation of hydraulic fracturing is largely left to the states. The Environmental Protection Agency (“EPA”) is, however, currently undertaking a study that might encourage members of Congress to grant more regulatory power to federal agencies.³³

A 2004 report conducted by the EPA concluded that hydraulic fracturing posed “little or no threat” to underground sources of drinking water.³⁴ Shortly thereafter, the Energy Policy Act of 2005 was passed, which amended the Safe Drinking Water Act (“SDWA”), stating that underground injection of fluids for storage or disposal is excluded from federal regulation, unless the fluid is a diesel fuel.³⁵ Many came to question the findings of the 2004 EPA report, however, partly because the EPA never actually tested any water during the study.³⁶ As a result, the EPA has undertaken another study to more closely examine the effects of hydraulic fracturing on drinking water.³⁷ If the EPA determines that federal regulations are necessary to ensure that the process does not endanger the public’s drinking water sources, Congress may choose to

32. See RENEE LEWIS KOSNIK, THE OIL AND GAS INDUSTRY’S EXCLUSIONS AND EXEMPTIONS TO MAJOR ENVIRONMENTAL STATUTES, EARTHWORKS (Oct. 2007), available at <http://www.earthworksjaction.org/files/publications/PetroleumExemptions1c.pdf?pubs/PetroleumExemptions1c.pdf>.

33. See *supra* note 33.

34. EPA, EXECUTIVE SUMMARY: EVALUATION OF IMPACTS TO UNDERGROUND SOURCES OF DRINKING WATER BY HYDRAULIC FRACTURING OF COALBED METHANE RESERVOIRS, EPA 816-R-04-003, at 1 (2004), available at http://www.epa.gov/ogwdw/uic/pdfs/cbmstudy_attach_uic_exec_summary.pdf.

35. Energy Policy Act of 2005, Pub. L. No. 109-58, 119 Stat. 594 (2005). The Energy Policy Act of 2005 amended the definition of “underground injection” in a way that effectively removed the EPA’s authority to regulate the underground injection of fluids for hydraulic fracturing purposes. See Mike Soraghan, *Frack Study’s Safety Findings Exaggerated, Bush EPA Official Says*, N.Y. TIMES, available at <http://www.nytimes.com/gwire/2011/05/20/20greenwire-frack-study-safety-findings-exaggerated-bush-65374.html>. Some now refer to this as the “Halliburton Loophole.” *Id.* Despite recent efforts to amend the definition in a way that would allow for federal regulation over hydraulic fracturing, the exemption remains as of the time of publication. See Susan L. Sakmar, *The Global Shale Gas Initiative: Will the United States Be the Role Model for the Development of Shale Gas Around the World?*, 33 HOUS. J. INT’L L. 369, 410 (2011).

36. See Abraham Lustgarten, *EPA Launches National Study of Hydraulic Fracturing*, PROPUBLICA (Mar. 18, 2010), available at <http://www.propublica.org/article/epa-launches-national-study-of-hydraulic-fracturing>.

37. Department of the Interior, Environment, and Related Agencies Appropriations Act, H.R. Rep. No. 111-316, at 109 (2010). For the latest updates, see *Natural Gas Extraction—Hydraulic Fracturing*, EPA, available at <http://www.epa.gov/hydraulicfracture/> (last visited May 13, 2013). For a summary of public comments made at an EPA public information meeting, see Hydraulic Fracturing EPA Public Informational Meeting, Binghamton, N.Y., Afternoon Session, Summary of Public Comments, EPA (Sept. 13, 2010), available at <http://www2.epa.gov/sites/production/files/documents/hfsummarybinghamton2.pdf>.

enable federal agencies to create a more extensive federal regulatory scheme for hydraulic fracturing through the SDWA.³⁸

Since 2005, Congress has proposed several bills that aim to end hydraulic fracturing's exemption from the SDWA exemption. The first of the bills was introduced in the House of Representatives in 2008.³⁹ More recently, members of both houses of Congress have repeatedly introduced the Fracking Responsibility and Awareness of Chemicals Act ("FRAC Act").⁴⁰ However, none of these bills have been enacted.

In the meantime, the EPA has recently issued its first air regulations for hydraulically-fractured gas wells and related equipment.⁴¹ In addition, the Department of Interior ("DOI") released a draft rule in May 2012 that would require the public disclosure of chemicals used in hydraulic fracturing operations, set requirements for well-bore integrity, and establish flowback water standards for all hydraulic fracturing operations on federal public lands and American Indian lands held in trust by the United States (Tribal lands).⁴² The question of whether hydraulic fracturing should be regulated at the state or federal level remains a contentious issue in the United States.⁴³

At the time of this writing, states are required to meet the minimum requirements of any federal regulations that may apply.⁴⁴ Apart from these

38. EPA, HYDRAULIC FRACTURING RESEARCH STUDY, *supra* note 31.

39. H.R. 7231, 110th Cong. (2008) (aiming to protect drinking water from oil and gas development).

40. *See* H.R. 2766, 111th Cong. (2009); H.R. 1084, 112th Cong. (2011).

41. *See generally* Oil and Natural Gas Sector: New Source Performance Standards and National Emission Standards for Hazardous Air Pollutants Reviews, 40 C.F.R. § 63 (2012), *available at* <http://www.epa.gov/airquality/oilandgas/pdfs/20120417finalrule.pdf>. For example, storage vessels fall under this new rule. *See, e.g.*, 40 C.F.R. § 60.5365(e).

42. Oil and Gas; Well Stimulation, Including Hydraulic Fracturing, on Federal and Indian Lands, 77 Fed. Reg. 27691 (May 11, 2012) (to be codified at 43 C.F.R. pt. 3160), *available at* <http://www.doi.gov/news/pressreleases/loader.cfm?csModule=security/getfile&pageid=293916>.

43. *See* Fracturing Regulations are Effective in State Hands Act (FRESH Act), S. 2248, 112th Cong. (2012) (U.S. Senate Bill introduced by U.S. Senator James Inhofe from Oklahoma that ensures that states will continue to have the sole authority to regulate hydraulic fracturing—not the federal government); H.R. REP. NO. 109-215 (2005), *available at* <http://www.gpo.gov/fdsys/pkg/CRPT-109/hrpt215/pdf/CRPT-109hrpt215-pt1.pdf>; *see also* Deweese, *supra* note 24, at 31 ("[B]ecause of the states' knowledge of their respective geologies and their history of effective regulation, the states have a greater breadth and depth of knowledge on oil and gas regulation than the federal government."). *But see* Susan L. Sakmar, *The Global Shale Gas Initiative: Will the United States Be the Role Model for the Development of Shale Gas Around the World?*, 33 HOUS. J. INT'L L. 369, 406 (2011) (Numerous environmental groups and concerned citizens have begun "calling for federal regulation and further investigation of hydraulic fracturing due [in part] to concerns about water usage and possible contamination.").

44. *See* WILLIAM J. BRADY, HYDRAULIC FRACTURING REGULATION IN THE UNITED STATES: THE LAISSEZ-FAIRE APPROACH OF THE FEDERAL GOVERNMENT AND VARYING STATE REGULATIONS

requirements, states have full authority to regulate hydraulic fracturing within their borders.⁴⁵ As a result, a variety of regulatory schemes exist at the state level, and those schemes are in a constant state of flux.⁴⁶

At least 35 different states have a specific regulatory scheme for hydraulic fracturing in place.⁴⁷ The regulations can typically be placed into three different categories: (1) chemical disclosure requirements; (2) groundwater protection requirements; and (3) wastewater management requirements.⁴⁸ The majority of these 35 states have all three requirements in place.⁴⁹ The specific requirements themselves, however, vary a great deal. For instance, in states like Illinois, well operators must provide an injection fluid sample for a laboratory analysis before any fluids are injected.⁵⁰ In Utah, on the other hand, operators are simply required to keep logs that include data of formation-water.⁵¹ Several states have taken more serious measures to deal with hydraulic fracturing. New York, for instance, recently prohibited hydraulic fracturing through a de facto moratorium.⁵² New Jersey also passed a one-year moratorium on hydraulic fracturing in August, 2011.⁵³ In addition, there have been regulations passed in certain municipalities banning hydraulic fracturing.⁵⁴

10, available at <http://www.law.du.edu/documents/faculty-highlights/Intersol-2012-HydroFracking.pdf>. For an example of one of the regulations states must follow, see Safe Drinking Water Act, 42 U.S.C. § 300h (2011).

45. *Id.*

46. See, e.g., Jason Yearout, *South Dakota, Alaska Propose Revisions to Hydraulic Fracturing Regulations*, JD SUPRA (Jan. 4, 2013), available at <http://www.jdsupra.com/legalnews/south-dakota-alaska-propose-revisions-t-18417/>.

47. Nicolas D. Loris, *Hydraulic Fracturing: Critical for Energy Production, Jobs, and Economic Growth*, at 1–2, BACKGROUND (Aug. 28, 2012), available at <http://www.heritage.org/research/reports/2012/08/hydraulic-fracturing-critical-for-energy-production-jobs-and-economic-growth>.

48. *Id.* at 7.

49. *Id.* at 7–16.

50. *Id.* at 9.

51. *Id.* at 15.

52. N.Y. Exec. Order No. 41 (Dec. 13, 2010), available at <http://www.governor.ny.gov/archive/paterson/executiveorders/EO41.html>, continued by N.Y. Exec. Order No. 2 (Jan. 1, 2011), available at <http://www.governor.ny.gov/executiveorder/2>; see also Holli Brown, *The Attack on Frack: New York's Moratorium on Hydraulic Fracturing and Where It Stands in the Threat of Takings*, 41 ENVTL. L. REP. NEWS & ANALYSIS 11146, 11146 (2011) (The moratorium was enacted “pursuant to an Executive Order that required the New York Department of Environmental Conservation to undertake a comprehensive review of the supplemental generic environmental impact statement required for drilling permits.”).

53. Max Slater, *New Jersey Legislature Passes One-Year Fracking Ban*, JURIST (Jan. 12, 2012), available at <http://jurist.org/paperchase/2012/01/new-jersey-legislature-passes-one-year-fracking-ban.php>.

54. See, e.g., Joseph Schaeffer, *Municipal ‘Fracking’ Bans and Preemption in Appalachia*, JURIST (July 12, 2011), available at <http://jurist.org/dataline/2011/07/joseph-schaeffer-hydraulic-fracturing.php> (“In November 2010, Pittsburgh became the first major American city to outlaw hydraulic

V. EUROPEAN APPROACH TO HYDRAULIC FRACTURING

While some parts of the U.S. have been experiencing somewhat of a shale gas revolution,⁵⁵ shale gas extraction operations in Europe are developing and expanding at a much slower rate.⁵⁶ Further, several countries in Europe are looking to slow or even stop the spread of hydraulic fracturing completely.⁵⁷ Other European countries, however, remain interested in tapping into their shale gas reserves and are looking to the United States as an example.⁵⁸ In August of 2010, seventeen different countries, including the United States and Poland,⁵⁹ held a regulatory conference where each country's leaders discussed their economic energy goals and looked for solutions.⁶⁰ Of the countries interested in expanding their hydraulic fracturing operations, Poland has been one of the most aggressive in seeking to develop its shale gas resources through the construction of new energy facilities.⁶¹

fracturing within city limits. Buffalo, New York, followed Pittsburgh's lead in February of 2011. Most recently, Morgantown, West Virginia, has responded to drilling activity outside its city limits by considering a ban of its own on hydraulic fracturing."'); *see also* Maria Scarvalone, *In Upstate NY, Gas Drilling Debate Gets Local*, WNYC NEWS (Nov. 3, 2011), available at <http://www.wnyc.org/articles/wnyc-news/2011/nov/03/fracking/>.

55. *See Briefing on the Global Shale Gas Initiative Conference*, U.S. DEPT. OF STATE (Aug. 24, 2010), available at <http://www.state.gov/s/ciea/rmk/146249.htm> (showing, via data compiled by the U.S. Energy Information Administration throughout the last decade, eight times more shale gas is produced in the United States than was produced ten years ago); *see also* ROBERT PIROG & MICHAEL RATNER, *NATURAL GAS IN THE U.S. ECONOMY: OPPORTUNITIES FOR GROWTH*, CONGRESSIONAL RESEARCH SERVICE, *Summary* (Nov. 6, 2012), available at <http://www.fas.org/sgp/crs/misc/R42814.pdf> ("Due to the growth in natural gas production, primarily from shale gas, the United States is benefitting from some of the lowest prices for natural gas in the world and faces the question of how to best use this resource.").

56. *See* INT'L ENERGY AGENCY, *MEDIUM-TERM OIL & GAS MARKETS 190* (2010), available at <http://www.iea.org/publications/freepublications/publication/mtogm2010.pdf> ("Only a few European countries are actually producing unconventional gas, and then only in small quantities.").

57. *See, e.g.*, Patel, *supra* note 6.

58. Sakmar, *supra* note 35, at 392–93 ("Europe has received the most industry attention because many countries in the region are looking to replicate the U.S. shale gas revolution. While there are 'many challenges that could prevent an unconventional gas boom happening in Europe,' recently, there has been a lot of activity and interest in shale gas in Austria, Bulgaria, France, Germany, Italy, Poland, Romania, Spain, Sweden, and the United Kingdom.").

59. *Polish Delegation Attends First Multilateral Meeting of the Global Shale Gas Initiative*, U.S. EMBASSY, DIPLOMATIC MISSION TO WARSAW, POLAND (Aug. 24, 2010), available at <http://poland.usembassy.gov/shalegas.html>; *see also* Sakmar, *supra* note 35, at 373 ("[T]he United States has nonetheless sought to take the lead in helping other countries find the right balance between energy security and environmental concerns through the Global Shale Gas Initiative (GSGI).").

60. Sakmar, *supra* note 35, at 397.

61. *See, e.g.*, John Phillippe, "Hydraulic Fracturing": *Poland Gives Green Light to Massive Fracking Efforts*, GLOBAL RESEARCH (Feb. 2, 2012), available at <http://www.globalresearch.ca/hydraulic-fracturing-poland-gives-green-light-to-massive-fracking-efforts>. Poland is the most noteworthy of any European country because "Poland has approved approximately 45 exploration

VI. THE SITUATION IN POLAND

In a move that the overwhelming majority of the Polish people support,⁶² Poland is currently implementing hydraulic fracturing into their energy portfolio.⁶³ Polish leaders are primarily concerned with achieving energy independence and moving away from other energy production methods that might have a much more detrimental effect on the environment than hydraulic fracturing.⁶⁴ Poland has been extremely dependent on Russia for its natural gas, relying on Russia for almost two-

licenses for shale gas[, and] ExxonMobil has five concessions in the Podlasie and Lublin basins representing 1.3 million acres.” Sakmar, *supra* note 35, at 394 (internal quotation marks omitted) (brackets in original). In addition, an oil and gas research group has estimated that Poland’s unconventional gas reserves (the type which is extracted by hydraulic fracturing) would make Poland completely self-sufficient, at least for the foreseeable future and likely reduce the region’s large, long-lasting dependence on Russia for natural gas supplies. *Id.*; see also Robin Pagnamenta, *Dash for Poland’s Gas Could End Russian Stranglehold on Supplies*, TIMES (LONDON) (Apr. 5, 2010), available at <http://www.thetimes.co.uk/tto/business/industries/naturalresources/article2469906.ece> (“Because of so many companies’ interest in Poland, “[t]here is a landgrab under way” in Poland with several major energy companies investing in the shale gas industry in Poland.”). Other countries in Europe taking an active role in the future of hydraulic fracturing include France, Germany, and Hungary where each country has begun its own process towards utilizing hydraulic fracturing. Sakmar, *supra* note 35, at 394.

62. See *Majority of Poles ‘back’ tapping shale gas*, AFP, Sept. 28, 2011, available at http://www.google.com/hostednews/afp/article/ALeqM5hvYRsu5y9TCiptmOEelzZm2_B-A?docId=CNG.1df1059dafd2f113fff8be0b059fe958.af1 (“Seventy-three percent of Poles back tapping into their country’s apparently vast shale gas reserves despite warnings that production poses a serious environmental risk, a survey said on Wednesday.”). This may not be the case in other countries, such as the United States. See Robert Bryce, *How Fracking Lies Triumphed*, NY DAILY NEWS, Jan. 22, 2012, available at <http://www.nydailynews.com/opinion/fracking-lies-triumphed-article-1.1009485> (“Amid the ongoing battle in New York and elsewhere over hydraulic fracturing, one thing has become clear: The pro-drilling side is losing the public relations fight.”).

63. See *Brussels seeks EU shale gas rules: Oettinger*, AFP (Sept. 9, 2011), available at <http://www.google.com/hostednews/afp/article/ALeqM5g4bdaySTxnhBBSKWdKWyaDlv1sMw?docId=CNG.202cc68122cca049ccb4313c55f50c81.6f1> (“Poland is pushing ahead with moves to exploit reserves thought to contain some 5.3 trillion cubic metres of natural gas.”); see also John Daly, *Poland Gives Green Light to Massive Fracking Efforts*, OILPRICE (Jan. 26, 2012), available at <http://oilprice.com/Energy/Natural-Gas/Poland-Gives-Green-Light-to-Massive-Fracking-Efforts.html> (“On 18 January [2012] 166 members of Bulgaria’s Narodno Sabranie (National Assembly) 240 parliamentarians voted to impose an indefinite ban on shale gas exploration and extraction in Bulgaria using hydraulic fracturing or other similar technology. Six National Assembly members voted in favor of the practice, along with three abstentions.”); Mike Scott, *Reasons to be Cautious About Shale Gas Prospects*, FIN. TIMES (Oct. 23, 2011), <http://www.ft.com/intl/cms/s/0/f8642a3a-f408-11e0-b221-00144feab49a.html#axzz2TILHfcq4> (“Poland is keen to develop shale gas both to move it away from dependency on Russian gas and to help it shift its power sector, which is 95 per cent coal-powered, to less polluting gas. It has the additional advantage that in the areas where its shale reserves are located, population density is much lower than in western Europe.”).

64. Scott, *supra* note 63. As a result of the many environmental concerns surrounding hydraulic fracturing, however, the European Commission has ordered a legal study to assess whether EU legislation is adequate to cover any problems. *Id.*

thirds of its annual gas consumption.⁶⁵ Further, Poland's current reserves may only last the country seven years,⁶⁶ and some studies show that no other European country has as many shale natural gas reserves as Poland.⁶⁷

When Poland held the position as President of the Council of the European Union in 2011, Polish leaders had a unique opportunity to influence energy and environmental policies on a global level.⁶⁸ Several Polish leaders promoted the process of hydraulic fracturing as an effective method to gain access to an abundant resource.⁶⁹ Polish Foreign Affairs Minister Radoslaw Sikorski even referred to new hydraulic fracturing opportunities as "the gold rush of the 21st century."⁷⁰ High-ranking Polish government officials have consistently reiterated their intent to utilize the process of hydraulic fracturing as soon as possible.⁷¹ If there were any questions about the Polish government's stance on hydraulic fracturing, the country's Treasury Minister answered them when he stated that he

65. See Daly, *supra* note 63; see also Rikard Jozwiak, *Poland's Shale-Gas Dream Could Dramatically Change Continent's Energy Game*, RADIO FREE EUR. (June 17, 2011), available at http://www.rferl.org/content/poland_shale_gas_extraction_energy/24238051.html ("The EU as a whole depends on Russia for 25 percent of its gas supplies. Poland is particularly vulnerable, with 65 percent of gas imports coming from Russia.").

66. See Daly, *supra* note 63.

67. Jozwiak, *supra* note 65.

68. See Barbara Lewis, *Analysis: Polish EU lead Could Yet Set Green Energy Example*, REUTERS (Sept. 14, 2011), available at <http://www.reuters.com/article/2011/09/14/us-eu-energy-idUSTRE78D1SQ20110914> ("Half way into its EU presidency, Poland still has the opportunity to lead eastern Europe in bringing on efficient energy technology and to prove wrong those who see it only as an obstacle to a greener agenda").

69. See Daly, *supra* note 63.

70. *Id.*

71. *Id.*

Poland has taken a different tack, noting that thanks to fracking of natural gas shale deposits, in 2009 the United States became the world's largest gas producer, overtaking Russia and driving down prices.

The day after the contentious Bulgarian vote Polish Treasury Minister Mikolaj Budzanowski told reporters that Polish companies with permits to explore for shale gas in the country must intensify drilling to start production of the fuel by 2014 or 2015, with Polish companies each drilling 12 wells and performing 12 hydraulic fracking operations annually.

The reason for such enthusiasm?

Simple, said Budzanowski—Poland's shale-derived gas could be as much as 50 percent cheaper than the Gazprom natural gas Poland now receives from the 2,607 mile-long Yamal-Europe natural gas pipeline, which currently costs Warsaw more than \$500 per 1,000 cubic meters (tcm) for West Siberian output.

Id. But see *Poland Shale Gas Ambitions Undaunted by Bulgarian 'No,' ALBERTA OILFIELD EQUIPMENT SUPPLY* (Jan. 19, 2012) [hereinafter ALBERTA OILFIELD EQUIPMENT SUPPLY], available at <http://www.albertaoil.co/2012/01/19/poland-shale-gas-ambitions-undaunted-by-bulgarian-no/> (last visited Feb. 6, 2012) ("Polish media also report that plans of energy giant such as Exxon Mobil and Chevron to drill for shale gas in southeastern Poland have met with protests in the villages of Rogow and Zurawlow.").

expects “the Treasury-owned companies to present plans to drill as many wells as possible within the next two years and this is the most important task from the perspective of (the nation’s) shale gas policy.”⁷² While other countries have instituted bans against hydraulic fracturing,⁷³ Poland remains steadfast in its efforts to develop its shale gas resources.⁷⁴

VII. LEGAL PROSPECTING PROCESS IN POLAND

Gaining access to land to prospect for minerals in Poland is a two-step process: first, a company must obtain an usufruct, which is an exclusive right to capture the water under the property as long as the property is not damaged; second, a company must obtain a concession, or an official decision approving a geological work program.⁷⁵ Under a usufruct, the government has the responsibility and authority to regulate the minerals under the surface.⁷⁶ In effect, the Polish regulatory structure gives the property rights to the government until any minerals are discovered.⁷⁷

72. Daly, *supra* note 63.

73. *See supra* note 6.

74. ALBERTA OILFIELD EQUIPMENT SUPPLY, *supra* note 71 (“Bulgarian MPs voted with a large majority to ban for an indefinite time exploration and production of shale gas with hydraulic fracturing, imposing a BGN 100 M penalty for infringement. ‘This will not change Poland’s existing position presented to the EU, in which every member state has the sovereign right to define its own position regarding energy resources,’ the Polish Foreign Ministry said in a statement Thursday.”).

75. “In order to obtain the concession for prospecting and exploration of hydrocarbons the applicant is required to acquire a mining usufruct.” Wojciech Baginski, *Shale Gas in Poland—the Legal Framework for Granting Concessions for Prospecting and Exploration of Hydrocarbons*, 32 ENERGY L.J. 145, 148 (2011) (citing Geological and Mining Act, art. 7, § 2). Further, for an energy company to prospect and explore hydrocarbons in Poland, the company is required “to obtain a concession, which is granted if the company is duly registered in Poland (in compliance with the Act on Freedom of Economic Activity) and meets all requirements imposed by the Geological and Mining Law.” *Id.* at 150; *see also* PHILLIPPE & PARTNERS, FINAL REPORT ON UNCONVENTIONAL GAS IN EUROPE 22 (Nov. 8, 2011), available at http://ec.europa.eu/energy/studies/doc/2012_unconventional_gas_in_europe.pdf.

76. *See* PHILLIPPE & PARTNERS, *supra* note 75, at 22. The government is thereby exempted from liability in dealing with groundwater rights. *Id.* at 89 (“[T]he [concession] holder has the full civil liability for damages.”).

77. *Id.* at 22 n.44 (“Due to their location deep under the surface of the earth, shale gas deposits are considered to be property of the State.”). For a discussion of usufructs in the context of U.S. law, *see* Marvin W. Jones & Andrew Little, *The Ownership of Groundwater in Texas: A Contrived Battle for State Control of Groundwater*, 61 BAYLOR L. REV. 578, 590 (2009). An “usufruct argument was again presented to the Texas Supreme Court in *Ryan Consolidated Petroleum Corp. v. Pickens*, and again dismissed.” The argument was that oil and gas have a fugacious nature and should thus belong to no one until they are brought to the surface and reduced to possession. The court dismissed this argument because established rules of property states that oil and gas in place are “subject to ownership, severance, conveyance, lease and taxation as such.” *See* *Ryan Consolidated Petroleum Corp. v. Pickens*, 155 Tex. 221, 208 (1955); *see also* *Texas Co. v. Daugherty*, 107 Tex. 226, 235 (1915):

This type of regulatory scheme has very important practical purposes. The extension of rights for successful prospectors protects the integrity of the process and assures the prospecting companies that no other prospector will receive the benefits of their work for a set amount of time.

There are exceptions to usufruct agreements that increase the efficiency of the process and make Poland more attractive to mining companies.⁷⁸ One of these exemptions involves the tender procedure, or the competition between the potential candidates for exploration.⁷⁹ Generally, the tender procedure would take place before the usufruct could be obtained.⁸⁰ The tender procedure, however, does not have to be used if “the information about the areas to which this procedure does not apply was communicated to the public and published by the authority granting the concession in the Official Journal of the European Union.”⁸¹ Accordingly, the government may grant mining usufruct rights for prospecting and exploration of hydrocarbons in specified areas of Poland upon request by energy companies which meet these requirements.⁸² If a prospector is able to successfully find minerals underneath the surface, the prospector can buy and sell the rights to land that have been prospected properly. These regulations make Poland an attractive destination for companies seeking to expand their hydraulic fracturing operations.

[I]t is difficult to perceive a substantial ground for the distinction [between property in gas and solid minerals]. A purchaser of them within the ground assumes the hazard of their absence through the possibility of their escape from beneath the particular tract of land, and, of course, if they are not discovered, the conveyance is of no effect, just as the purchaser of solid mineral within the ground incurs the risk of its absence, and therefore a futile venture. . . . The argument [that focuses on the possibility of the gases to escape] ignores the equal possibility of their presence, and that the parties have contracted upon the latter assumption; that, if they are in place beneath the tract, they are essentially a part of the realty, and their grant, therefore, while in that condition, if effectual at all, is a grant of an interest in the realty.

78. Wojciech Baginski, *Shale Gas in Poland—the Legal Framework for Granting Concessions for Prospecting and Exploration of Hydrocarbons*, 32 ENERGY L.J. 145, 149 (2011). Article 12 of the Geological and Mining Law regulates another important exception: “[t]he entrepreneur who explored and documented a mineral deposit being the property of the State Treasury and prepared geological documentation with the accuracy required for granting of a concession for mineral exploitation may demand the establishment of the mining usufruct for its own benefit, with priority over other parties.” *Id.*

79. *Id.*

80. *Id.*

81. *Id.*

82. See Geological and Mining Law art. 47, § 3 (1994) (Pol.). In addition, a successful company has the “exclusive right to use the geological information free of charge for research and scientific purposes and for conducting the activities regulated by the Act.” *Id.* Further, “the party which has the right to use the geological information acquired in this manner may make it available to other parties.” *Id.*

Some argue that the process of concessions does not provide enough protection to land owners.⁸³ For instance, by granting unlimited withdrawal rights, the interests of landowners may be forgotten, and the natural resources on which the landowners depend may be depleted.⁸⁴ In addition, the usufruct agreement can create confusion about the ownership of minerals below the surface.⁸⁵

However, pursuant to Poland's new Geological and Mining Law of 9 June 2011,⁸⁶ these concerns are largely alleviated. First, approval from concerned landowners is required before a prospector can be granted authorization to explore state-controlled land.⁸⁷ In addition, the state can grant exploitation-mining usufructs that expire after a limited amount of time, and under no circumstances is Poland required to ultimately grant an exploitation mining usufruct at all.⁸⁸ Prospectors are also not allowed to explore land when their activities would interfere with the designation of that land.⁸⁹ In order to protect against extensive environmental damage,

83. See Jones & Little, *supra* note 77, at 581–82.

84. See *id.*; see also Roderic Fleming, *Hydraulic Fracturing, Louisiana Water Law, and Act 955: An Irresistible Economic Force Meets an Immovable Legal Object*, 24 TUL. ENVTL. L.J. 363, 399 (2011) (regarding the Haynesville Shale play in Louisiana, when “enormous water withdrawals supplying a booming development threatened the sustainability of groundwater withdrawals on which Louisiana citizens depended”). In this case, “antiquated Louisiana water laws offered unlimited withdrawal rights to the frac[k]ing operations and virtually no protections to the domestic uses of Louisiana citizens.” *Id.* This “[k]nee-jerk reaction of the Louisiana legislature to redirect the flood of water withdrawals to the state’s ample running water resources” left Louisiana citizens with little bargaining power. *Id.* “The traditional and near universal failure to charge a fair market value for water resources characterizes these failures. It is, in fact, ‘the success of failure’ that this undervaluing represents that makes it ‘more difficult . . . politically to eliminate or modify it. . . . The more inefficient the government policy the more it will detract economic decisions away from those that would be made in absence of the policy.’” *Id.* Another exception states that certain companies may demand the establishment of the mining usufruct for its own benefit with priority over other parties within two years from the date the geological documentation was accepted in writing by the geological administration authority. Baginski, *supra* note 78, at 149.

85. See Jones & Little, *supra* note 77, at 581–82. (Arguing that to deny landowners their vested property rights in groundwater implies that the government actually owns the minerals under the ground until anything is produced because ownership of property must vest somewhere at all times. “Following this reasoning, [others] conclude that the State, acting through its agencies such as groundwater districts, has authority to regulate groundwater without concern for private property rights of the landowner, thereby exempting the State from liability in dealing with groundwater rights. This idea, however, finds absolutely no support under Texas case law or statutory enactments.”). In United States law, at least one State (Texas) has explicitly rejected the concept of usufructs. *Id.*

86. Act of 9 June 2011 Geological and Mining Law art. 10 (Pol.), available at http://www.mos.gov.pl/g2/big/2012_06/e1fd8f256cbc5cefb421364232bf09dc.pdf.

87. Baginski, *supra* note 78, at 153–54. Permission to explore is near-automatically granted in most cases, but the state is not obliged to grant permission.

88. *Id.*

89. See Phillippe & Partners, *supra* note 77, at 25–26.

prospecting permits cannot exceed 1,200 km².⁹⁰ Finally, if any damage occurs, the concession holder has “full civil liability for damages.”⁹¹

VIII. CONCLUSION

By actively supporting the process of hydraulic fracturing, Poland is fully exploiting its natural resources.⁹² Poland can take several steps to mitigate possible environmental, political, and social impacts of this decision.⁹³ Polish leaders must be careful as they expand their drilling plans and commence additional hydraulic fracturing operations. In deciding exactly how to proceed, Polish legislators should take into consideration the results of the current studies being undertaken by the EPA and EU. It is also vital that Poland take all possible steps to mitigate any negative environmental impact that hydraulic fracturing may have.

The Polish Minister of the Treasury has endorsed drilling “as many wells as possible within the next two years.”⁹⁴ Other Polish leaders, however, argued that hydraulic fracturing is not a “silver bullet” for Poland’s energy dependency problems and stated that hydraulic fracturing

90. *Id.* at 26.

91. *Id.* at 89.

92. John Deutch, *The Good News about Gas—The Natural Gas Revolution and Its Consequences*, 90 FOREIGN AFF. 82, 93 (2011) (In the global energy market, economics tend to prevail, resulting in a “transparent and integrated global gas market with diverse supplies . . . [and as a result] gas consumers everywhere [are] better off.”).

93. *See, e.g.*, POLISH GEOLOGICAL INST. STUDY, *supra* note 27. In the United States, states can utilize the Emergency Planning and Community Right-To-Know Act (EPCRA), 42 U.S.C. § 11023 (1986), which requires federal and state governments to report data on releases and transfers of certain toxic chemicals, in their regulation of hydraulic fracturing. *See Chemicals and Public Disclosure*, FRACFOCUS, available at <http://fracfocus.org/chemical-use/chemicals-public-disclosure> (last visited May 14, 2013). For a summary of EPCRA, see *Summary of the Emergency Planning & Community Right-to-Know Act*, EPA, available at <http://www.epa.gov/agriculture/lcra.html#SummaryofEmergencyPlanningAndCommunityRight-To-KnowAct> (last updated Aug. 23, 2012). To protect themselves, companies can request that information on certain chemicals be withheld from the public as trade secrets. Ben Casselman, *‘Fracking’ Disclosure to Rise: Gas Drillers Begin Supporting Laws Requiring Them to List Chemicals They Use*, WALL ST. J. (June 20, 2011), available at <http://online.wsj.com/article/SB10001424052702304887904576395630839520062.html>. The EPA is taking a careful approach to fracking by conducting a large study. *See supra* note 32; *see also* John Manuel, *Mining: EPA Tackles Fracking*, 118 ENVTL. HEALTH PERSPECTIVES 199 (May 2010), available at <http://www.ncbi.nlm.nih.gov/pmc/articles/PMC2866701/>. Further, “following environmental concern about the hydraulic fracturing or fracking process for extracting gas from shale rock, An EU Spokeswoman said the European Commission has ordered a legal study to assess whether EU legislation is adequate to cover any problems.” *See Lewis, supra* note 68. The EPA has also proposed additional standards to reduce pollution from oil and gas drilling operations and hydraulic fracturing, or “fracking.” *See Proposed Amendments to Air Regulations for the Oil and Natural Gas Industry*, EPA, available at <http://www.epa.gov/airquality/oilandgas/pdfs/20110728factsheet.pdf> (last visited June 23, 2013).

94. Daly, *supra* note 63.

will simply play a role in Poland's overall energy portfolio.⁹⁵ For the foreseeable future, the Polish government should exercise limited reliance and cautious expansion. If Poland focuses too heavily on hydraulic fracturing, the country risks becoming overly dependent on hydraulic fracturing for its energy needs.⁹⁶

The process of hydraulic fracturing has proven to be very beneficial for Poland's economic and energy portfolios. The country should, however, be careful not to cause long-term environmental damage and alienate itself from the larger European and global community as it moves forward with plans for widespread drilling. Poland can continue to garner political capital by showing its willingness to work with its European neighbors and commitment to the future good of the European community by taking a careful approach to its hydraulic fracturing efforts.

The geological and Mining Law of June 9, 2011⁹⁷ and the Polish Geological Institute study on the environmental impact of hydraulic fracturing of March 2, 2012⁹⁸ are the ideal steps forward as Poland seeks to fully utilize its valuable natural resources while protecting the rights of property owners and reducing damage to the environment and the public health.

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95. Jozwiak, *supra* note 65.

96. *See generally supra* Part II.

97. Geological and Mining Law art. 47, § 3 (1994) (Pol.).

98. POLISH GEOLOGICAL INST., *supra* note 27.

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