GROUNDWATER PROTECTION AND SHALE GAS DEVELOPMENT IN UKRAINE: WILL THE ENERGY COMMUNITY PROVIDE THE MISSING PIECE?

REGINA TOPOLINSKAYA*

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ABSTRACT

In 2013, Ukraine signed two Production Sharing Agreements for shale gas development with Shell and Chevron. These agreements have the potential to create a robust domestic supply of natural gas and reorient Ukrainian gas consumption away from Russian imports. Ukraine's ability to extract shale gas successfully and sustainably depends on the State's progress on managing environmental opposition both now and after the

* J.D. Candidate, 2015, Boston University School of Law; A.M., Russian, Eastern European, and Central Asian Studies, 2014, Harvard University; B.A. Economics and Political Science, 2011, University of Florida. I would like to thank Professor Daniela Caruso for her advice, time, and constant encouragement.

conflict in Eastern Ukraine subsides. This note seeks to understand whether Ukraine's obligations under the Energy Community Treaty, a treaty signed between the European Union and a number of its neighbors, can elevate groundwater protection requirements for shale gas development, and in turn, decrease public concern. Finding limited possibilities within the Energy Community's current environmental acquis, the note proposes an expansion of the acquis in the form of a Fourth Energy Package (on the Environment), and evaluates the opportunities and limitations presented by this approach. This note also places further integration with the Energy Community in the context of Ukraine's current political crisis and analyzes how Ukrainian-EU cooperation in environmental and energy affairs is shaped by two opposing pressures: Ukraine's relationship with the Russian Federation and the Ukrainian public's desire for transparency and accountability.

INTRODUCTION

In the mid-2000s American shale gas development took off with impressive intensity. Spurred by the technical improvement of hydraulic fracturing and horizontal drilling, tax incentives, and a dynamic service industry, development of large-scale shale plays like the Barnett in Texas and the Haynesville in Arkansas began to shift the American energy supply picture from shortage and insecurity to plenty.[1] A decade later, the discourse has moved from building liquefied natural gas ("LNG") import terminals to the possibility of exporting shale gas abroad.[2] These developments have prompted scholars to term the changes a shale gas "revolution" and to inquire whether the revolution could be exported to other parts of the world.[3]

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[1] *See* FLORENCE GENY, OXFORD INST. FOR ENERGY STUD., CAN UNCONVENTIONAL GAS BE A GAME CHANGER IN EUROPEAN GAS MARKETS? 24-40 (2010), *available at* http://www.oxfordenergy.org/2010/12/can-unconventional-gas-be-a-game-changer-in-european-gas-markets.

[2] *See* PAUL STEVENS, CHATHAM HOUSE, THE 'SHALE GAS REVOLUTION': HYPE AND REALITY vi (2010), *available at* http://www.chathamhouse.org/sites/default/files/public/Research/Energy,%20Environment%20and%20Development/r_0910stevens.pdf (discussing the effects of the shale boom on gas markets, particularly LNG imports).

[3] KENNETH B. MEDLOCK III ET AL., JAMES A. BAKER III INST. FOR PUB. POL'Y, SHALE GAS AND U.S. NATIONAL SECURITY (2011), *available at* http://bakerinstitute.org/publications/EF-pub-DOEShaleGas-07192011.pdf; GEORG ZACHMANN & DMYTRO NAUMENKO, INST. FOR ECON. RES. AND POL'Y CONSULTING, IMPLICATIONS OF RECENT DEVELOPMENTS IN GLOBAL AND EUROPEAN NATURAL GAS MARKETS FOR UKRAINE (2010), *available at* http://www.beratergruppeukraine.de/download/Beraterpapiere/2010/PP_06_2010_new_Format_eng. pdf; Amy Myers Jaffe, *Shale Gas Will Rock the World*, WALL ST. J., May 10, 2010, http://online.wsj.com/article/SB10001424052702303491304575187880059

One of the most promising areas for shale gas development in Europe is Ukraine. The Energy Information Administration estimates Ukraine possesses approximately 3.6 trillion cubic meters (128 trillion cubic feet) of shale gas reserves, the fourth largest in Europe.[4] Shale gas extraction in Ukraine is badly needed. Currently, Ukraine is dependent on the Russian Federation for roughly sixty percent of its gas, and Russian gas deliveries have become increasingly expensive and, as the recent cutoff of supplies illustrates, unreliable over time.[5] Thus, diversification presents a number of significant economic and geopolitical benefits to the country and will likely be a focal point of the Poroshenko government's energy policy when the violence in Eastern Ukraine abates. Unlike the United States, which experienced relatively slim environmental opposition to early shale gas development, Ukraine (and Europe in general) must manage environmental opposition now if they hope to successfully develop shale gas resources within their borders.[6] Though the environmental movement remains smaller and less organized in Ukraine than in other parts of Europe, grassroots mobilization has exerted pressure on political structures: In 2013, opposition to shale gas operations in Western Ukraine delayed and briefly threatened local council approval of a Production Signing Agreement ("PSA") negotiated between Chevron and the Ukrainian government.[7] The Ukrainian public is specifically concerned about groundwater pollution resulting from extraction of unconventional energy deposits, especially in light of Ukraine's poor track record on environmental protection law and implementation.[8]

Given the benefits that shale gas development can offer to both Ukraine and the European Union, this note sheds light on how Ukraine's 2011

6301668.html.

[4] U.S. ENERGY INFO. ADMIN., TECHNICALLY RECOVERABLE SHALE OIL AND SHALE GAS RESOURCES: AN ASSESSMENT OF 137 SHALE FORMATIONS IN 41 COUNTRIES OUTSIDE THE UNITED STATES 1-9 (2013), *available at* http://www.eia.gov/analysis/studies/worldshalegas.

[5] Michael Birnbaum, *Ukraine, Russia Sign Deal to End Natural Gas Cut-off Ahead of Winter*, WASH. POST, Oct. 30, 2014, http://www.washingtonpost.com/world/europe/ukraine-russia-sign-deal-to-end-natural-gas-cut-off-ahead-of-winter/2014/10/30/69e2963f-3d0b-4c60-a377-65bc44b6b917_story.html.

[6] Andrey Konoplyanik, *The Economic Implications for Europe of the Shale Gas Revolution*, EUROPE'S WORLD (Jan. 13, 2011), http://www.europesworld.org/NewEnglish/Home_old/CommunityPosts/tabid/809/Pos.

[7] Vitalii Kniazhansky, *Chevron Strikes Blow to Shale Gas Revolution?*, DAY, Aug. 29, 2013, http://www.day.kiev.ua/en/article/economy/chevron-strikes-blow-shale-gas-revolution.

[8] *See* U.N. Comm. on Envtl. Pol'y, Econ. Comm. for Eur., Environmental Performance Reviews: Ukraine, U.N. Doc. ECE/CEP/133, at 133 (2007), *available at* http://www.unece.org/fileadmin/DAM/env/epr/epr_studies/Ukraine%20II.pdf.

accession to the European Energy Community could elevate groundwater protection requirements for shale gas operators, potentially assuaging public opposition to unconventional resource development. Finding limited possibilities within the Energy Community's current environmental acquis, this note proposes an expansion of the acquis in the form of a Fourth Energy Package (on the Environment). Part I begins with a short description of the process and technologies involved in shale gas development, as well as the range of environmental effects of extraction. Part II reviews the current state of shale gas development in Ukraine. Part III introduces the history of Ukraine's engagement with the Energy Community, focusing on the motivations for the creation of the organization and environmental protection opportunities present in the Energy Community legal framework. Part IV explains how only one directive from the Energy Community Treaty is applicable to groundwater protection in Ukraine and illustrates the intrinsic limitations of the current environmental acquis. Part V suggests further European Union directives for inclusion in the Energy Community acquis and delineates the barriers to such extension. Expansion of groundwater protection requirements by the Energy Community must overcome both the EU and Ukraine's limited (albeit varying) conceptions of the goals of the Energy Community. Ukraine's acceptance of a package on the environment necessitates a shift in its level of engagement with the Energy Community. Such a shift may prove forthcoming in light of the Ukrainian government's renewed emphasis on rejoining Europe, manifested by the recent signing of the Association Agreement.

I. SHALE GAS AND ITS ENVIRONMENTAL RISKS

A. What is Shale and How Is It Extracted?

Gas reservoirs are generally divided into two categories: conventional and unconventional gas reservoirs.

Conventional gas migrated from a source rock into a trap, which is covered by impermeable rock.[9] Gas is extracted from the trap by drilling a conventional vertical well.[10] The sand or rock containing the gas has interconnected porous spaces, allowing the gas to flow vertically naturally when drilled.[11]

[9] 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 HOUSTON J. INT'L. L. 369, 374 (2011).

[10] *Id.* at 375.

[11] *Id.*

Unconventional gas is contained in impermeable rock, either its initial source rock or rock the gas migrated to which has recently become impermeable, and has not migrated to a trap.[12] Unconventional deposits have low permeability, requiring the use of novel technologies to stimulate gas release through the creation of fissures in the rock.[13] Three types of unconventional gases exist. They vary not by chemical composition, but rather by the properties of the source rock in which they are contained.[14]

1. **Tight gas** is gas trapped in low permeability sandstone.[15]

2. **Coal bed methane** is gas contained in coal seams, commonly located near the surface.[16] Coal bed methane differs from tight gas in that the coal seams are often saturated with water, which must be pumped out during the extraction process.[17]

3. **Shale gas** is gas trapped in fine-grained sedimentary rock known as shale.[18] Shale has low permeability, prohibiting gas from flowing out into more permeable rock structures.

Though the energy industry has been aware of the existence of shale gas for decades, the introduction of two technologies transformed shale gas extraction into a commercially viable practice: horizontal drilling and hydraulic fracturing (popularly known as fracking).[19] Shale gas wells begin as vertical wells but turn horizontally in order to expand the surface area

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[12] *What is the Difference between Conventional and Unconventional Gas?*, N. TERRITORY GOV'T, http://www.nt.gov.au/d/Minerals_Energy/index.cfm?header=What%20is%20the%20difference%20between%20Conventional%20and%20Unconventional%20Gas? (last visited Feb. 19, 2014).

[13] Sakmar, *supra* note 9, at 375.

[14] *Three Main Sources of Unconventional Gas*, TOTAL, http://total.com/en/energies-expertise/oil-gas/exploration-production/strategic-sectors/unconventional-gas/presentation/specific-fields (last visited Feb. 19, 2014).

[15] Sakmar, *supra* note 9, at 376.

[16] Kent Perry & John Lee, *Unconventional Gas Reservoirs – Tight Gas, Coal Seams, and Shales* 15 (Nat'l Petroleum Council, Topic Paper No. 29, 2007), *available at* http://www.npc.org/study_topic_papers/29-ttg-unconventional-gas.pdf.

[17] *Id.* at 15-16.

[18] *Energy in Brief*, U.S. ENERGY INFO. ADM., http://www.eia.gov/energy_in_brief/article/about_shale_gas.cfm (last visited Feb. 19, 2014).

[19] John Deutch, *The Good News About Gas: The Natural Gas Revolution and Its Consequences*, FOREIGN AFF., Jan.-Feb. 2011, at 82, 84, *available at* http://web.mit.edu/chemistry/deutch/policy/2011-TheGoodNewsAboutGas.pdf.

covered by the drilling operation. Horizontal wells may reach 1,000 to 6,000 feet away from the vertical base.[20] Horizontal drilling allows drillers to reach previously inaccessible natural resources, significantly escalating recovery rates per well.[21] The technology reduces the number of vertical wells drilled, thereby decreasing the surface imprint of gas drilling activity.[22] Hydraulic fracturing is the high-pressure injection of fluids into the shale rock in order to create fissures through which the gas can flow.[23] Fluid, composed of ninety-eight to 99.5 percent water and sand, with the remaining portion chemicals, is pumped into the formation, and then a propping agent is injected to prevent the fissures from closing.[24] Gas flows up the well, and once the process is complete, the fracturing fluid, known as flowback, rises to the surface.[25]

One of the most contentious aspects of the process is the lack of information on chemicals in the liquid injected into wells. Currently, the United States has no federal law requiring public disclosure of the composition of fracturing fluid, though a bill to compel disclosure, the Fracturing Responsibility and Awareness of Chemicals Act ("FRAC Act"), was introduced in 2011.[26] American regulation concerning the disclosure of fracturing fluid chemicals has largely proceeded on a state-by-state basis. Twenty U.S. states currently require fracturing chemical disclosure.[27] Unfortunately, almost every single one of these states permits a trade secret exemption, undermining the ability of the public to learn the full composition of chemicals used.[28] Additionally, numerous states mandate

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[20] *Hydraulic Fracturing Background Information*, U.S. ENVTL. PROT. AGENCY, http://water.epa.gov/type/groundwater/uic/class2/hydraulicfracturing/wells_hydrowhat.cfm (last visited Feb. 19, 2014).

[21] David Blackmon, *Horizontal Drilling: A Technological Marvel Ignored*, FORBES (Jan. 28, 2013), http://www.forbes.com/sites/davidblackmon/2013/01/28/horizontal-drilling-a-technological-marvel-ignored.

[22] *Id.*

[23] *Hydraulic Fracturing Background Information*, *supra* note 20.

[24] *Id.*; *Hydraulic Fracturing: The Process*, FRACFOCUS, http://fracfocus.org/hydraulic-fracturing-how-it-works/hydraulic-fracturing-process (last visited Feb. 19, 2014).

[25] *Hydraulic Fracturing Background Information*, *supra* note 20.

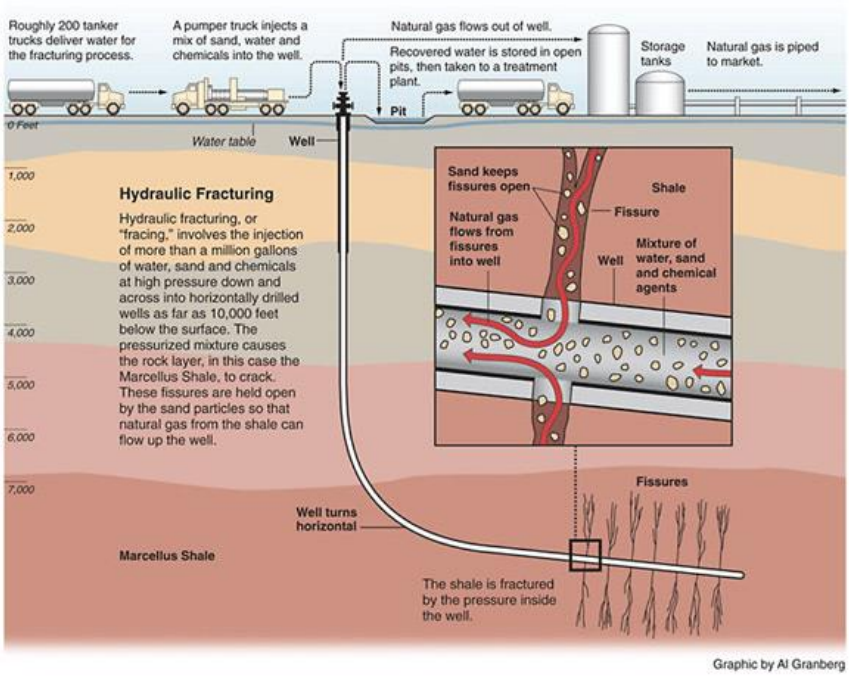
[26] Shale gas development has been exempted from certain portions of the Safe Drinking Water Act by the passage of the Energy Policy Act of 2005. The act introduces what critics have termed the "Halliburton loophole" by removing fracking from the definition of "underground injection." *Effect of Federal Safe Drinking Water Act, Clean Water Act and Emergency Planning and Community Right-to-Know Act*, N.Y. STATE DEPT. OF ENVTL. CONSERV., http://www.dec.ny.gov/energy/46445.html (last visited Feb. 19, 2014).

[27] *See Hydraulic Fracturing Fluid Disclosure Requirements*, VINSON & ELKINS, http://www.velaw.com/uploadedFiles/VEsite/Resources/HydraulicFracturingFluidDisclosureRequirements.pdf (last visited Feb. 19, 2014).

[28] *See id.*

disclosure through the website FracFocus, an industry-supported disclosure database, which has oftentimes failed to report fracturing fluid composition accurately.[29]

Figure 1: Shale Gas Production Process[30]



B. Groundwater Supply Risks

Shale gas production is affiliated with a range of environmental risks to groundwater supplies at different stages of the production process. During the first step of production, water acquisition, the risk centers predominantly on water availability.[31] Hydraulic fracturing, as its name

[29] *See id.*; KATE KONSCHNIK ET AL., HARVARD LAW SCH. ENVTL. LAW PROG., LEGAL FRACTURES IN CHEMICAL DISCLOSURE LAWS: WHY THE VOLUNTARY CHEMICAL DISCLOSURE REGISTRY FRACFOCUS FAILS AS A REGULATORY COMPLIANCE TOOL (2013), *available at* http://blogs.law.harvard.edu/environmentallawprogram/files/2013/04/4-23-2013-LEGAL-FRACTURES.pdf.

[30] *What Is Hydraulic Fracturing?*, PROPUBLICA, http://www.propublica.org/special/hydraulic-fracturing-national (last visited Feb. 19, 2014).

[31] U.S. ENVTL. PROT. AGENCY, EPA 601/R-12/011, STUDY OF THE POTENTIAL IMPACTS OF HYDRAULIC FRACTURING ON DRINKING WATER RESOURCES 9 (2012), *available at* http://www2.epa.gov/sites/production/files/documents/hf-report20121214.pdf.

suggests, requires a large amount of water resources, much more than conventional gas extraction operations. On average, one hydraulic fracturing operation for a single well requires 9,000 to 29,000 cubic meters of water.[32] Water-intensive shale gas development may become a significant source of tension in areas where water resources are scarce and the opportunity costs of water usage are high. In the next stage, chemical mixing, onsite spills may result in ground and surface water pollution.[33]

The next two phases are well injection and flowback. One risk associated with these two phases is that fracturing fluid injected into the well may migrate into water aquifers during the descent or flowback of this material.[34] A recent MIT study has found this risk to be empirically unsubstantiated.[35] A more significant risk is the migration of natural gas loosened by fracturing into drinking water supplies.[36] This risk is generally manifested when poor quality cementing of casing provides a pathway for gas to flow.[37] The potential for gas migration into drinking water is generally mitigated by the construction of proper casing in the freshwater zone.[38] A number of the most prominent incidents of groundwater contamination with natural gas in the United States have resulted from poor casing structures erected by small regional shale gas producers. In the final phase, wastewater treatment and disposal, flowback can be treated in one of four different ways: (1) reuse untreated water in later shale gas operations, (2) store wastewater in deep wells, (3) reuse wastewater treated onsite in additional fracturing, or (4) discharge extensively treated wastewater as freshwater.[39] Improper wastewater treatment resulting in drinking water contamination, as well as wastewater transportation accidents, are the most prevalent risks at this stage of the shale gas development process.[40]

II. DEVELOPMENTS IN UKRAINE

Capitalizing on business demand for extraction of shale gas on the European continent and eager to diversify its energy sources, Ukraine

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[32] *Shale Gas Fracking*, WATERWORLD, http://www.waterworld.com/articles/wwi/print/volume-27/issue-2/regional-spotlight-europe/shale-gas-fracking.html (last visited Feb. 19, 2014).

[33] U.S. ENVTL. PROT. AGENCY, *supra* note 31.

[34] *Id.*

[35] ERNEST J. MONIZ, ET AL., MASSACHUSETTS INST. OF TECH., THE FUTURE OF NATURAL GAS 7 (2011), *available at* https://mitei.mit.edu/system/files/NaturalGas_Report.pdf.

[36] *Id.*

[37] *Id.*

[38] *Id.* at 41.

[39] U.S. ENVTL. PROT. AGENCY, *supra* note 31; *Shale Gas Fracking*, *supra* note 32.

[40] U.S. ENVTL. PROT. AGENCY, *supra* note 31.

entered the shale gas arena in early 2012. Initial reports showed that two areas of the country contained the most lucrative deposits of shale gas: Oleska in the Lviv and Ivano-Frankivsk oblasts of Western Ukraine and Yuzivska in the Kharkiv and Donetsk oblasts of Eastern Ukraine. The Ukrainian government expected Yuzivska to produce eight to ten billion cubic meters ("bcm") annually, and Oleska closer to three to five bcm.[41]

In February 2012, the Ukrainian government opened two tenders for the signing of a fifty-year PSA, one for each shale gas field. The winner of each tender would partner with a majority state-owned gas company to explore for and extract shale gas. In May, Shell won the tender for Yuzivska, and Chevron for Oleska, and the two companies began to negotiate various issues such as taxation and land access with the Ukrainian government.[42] The process for negotiating, implementing, and terminating PSAs is governed by the 1999 Law of Ukraine on Production-Sharing Agreements ("PSA Law"). The PSA is a bilateral document between each energy company and the government in which the state essentially hires the energy company to explore for and, if successful, extract natural resources.[43] Energy investors increasingly prefer PSAs vis-à-vis subsoil licenses and Joint Activity Agreements ("JAA") with current license holders due to their stability.[44] Ukrainian courts and the Ukrainian government have failed to adequately protect the rights of the investor with respect to JAAs and subsoil licenses, often canceling them.[45]

The terms of the PSA regime are specifically suited to the context of doing business in Ukraine and address obstacles surrounding the Ukrainian investment climate. The government agrees to aid the company in

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[41] *Ukraine Snubs Russian Gas for European Imports*, REUTERS, Aug. 19, 2013, http://uk.reuters.com/article/2013/08/19/ukraine-russia-gas-idUKL6N0GK12S20130819.

[42] *Ukraine Picks Shell, Chevron to Develop Shale Gas Fields*, REUTERS, May 11, 2012, http://www.reuters.com/article/2012/05/11/shell-chevron-ukraine-idUSL5E8GBAE0201 20511.

[43] RULG-UKRAINIAN LEGAL GRP., APPLICATION OF PRODUCTION SHARING AGREEMENTS (PSA) REGIME FOR THE USE OF SUBSOIL ON UKRAINE'S CONTINENTAL SHELF 4 (2005), *available at* http://www.rulg.com/psa.asp.

[44] Irina Paliashvili, *Overview of Ukraine's Legal Regime for Upstream Oil & Gas Sector in 2012-2013*, RULG-UKRAINIAN LEGAL GRP. (Feb. 28, 2013), http://www.natural gaseurope.com/pdfs/Article%20Upstream%20Legal%20Regime%202012-13%20Feb%2013 %2013.pdf.

[45] *Id.* Though the PSAs provide more robust guarantees for investors than their legal counterparts, PSAs are not a panacea for investors. For example, in 2008, the Tymoshenko government cancelled the PSA of Vanco Prykerchenska negotiated by the previous government two years earlier. The Arbitration Institute of the Stockholm Chamber of Commerce approved an amicable PSA in 2012. *Perchersky Court Approves Amicable Agreement between Vanco and Ukraine under PSA for Prykerchensky Deposit*, INTERFAX-UKRAINE, June 10, 2013, http://en.interfax.com.ua/news/economic/156439.html.

obtaining approvals, permits, licenses, and subsoil use rights, a particularly important role in the difficult regulatory environment existing in Ukraine.[46] The PSAs also ensure legislative stability, meaning that only laws existing at the time of the signing of each PSA will apply to the investor.[47] The investor undertakes to perform the required works at its own cost and risk.[48] Extracted production is divided between the investor and the Ukrainian government in a proportion negotiated by the parties. The investor is exempt from various taxes levied on other international businesses, as production sharing in essence replaces the traditional taxation regime.[49]

The PSA Law requires that local councils in the contracting areas approve the PSA before signing.[50] This approval provision has proven to be one of the most problematic steps in the PSA negotiation process. Although the PSAs were scheduled to be signed by late 2012, local council opposition in both Eastern and Western Ukraine delayed the process until January 2013 for Shell's PSA and November 2013 for Chevron's. Lviv and Ivano-Frankivsk in Western Ukraine manifested much more widespread and efficacious environmental opposition vis-à-vis Eastern Ukraine.[51] NGOs such as Environmental People Law voiced concern over potential groundwater pollution, water supplies required for shale extraction, and increased seismicity in the area of development.[52] The growing level of environmental opposition to shale gas development caught Shell and Chevron's attention as early as 2012, leading the companies to hold public meetings throughout 2012 and 2013 explaining the process of hydraulic

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[46] Law of Ukraine on Production-Sharing Agreements (RULG-Ukrainian Legal Grp. trans.), art. 4(3) (1999), *available at* http://www.rulg.com/psa.asp. Unlike in the United States, subsoil rights in Ukraine and most of the rest of the world belong to the state, not the landowner. Minerals are perceived as a national commodity to be managed by the state in the societal interest. For an interesting perspective on how subsoil rights ownership impacts landowner acceptance of resource development, see Molly Wurzer, Note, *Taking Unconventional Gas to the International Arena*, 7 TEX. J. OIL GAS & ENERGY L. 357, 375-76 (2011).

[47] Law of Ukraine on Production-Sharing Agreements, art. 27(1). The PSA Law does permit various exceptions to this rule. Legislative changes favorable to the investor, such as tax reductions or the simplification of regulation, will apply. Legislative stability guarantees do not apply in areas such as defense, environmental protection, and national security.

[48] *Id.* art. 4(1).

[49] RULG-UKRAINIAN LEGAL GRP., *supra* note 43, at 6.

[50] Law of Ukraine on Production-Sharing Agreements, art. 11(4).

[51] *See* Natalia Belousova, *Сланцева революція очима львівських депутатів*, DAY, Oct. 9, 2013, http://www.day.kiev.ua/uk/article/ekonomika/slanceva-revolyuciya-ochima-lvivskih-deputativ.

[52] *We Demand to Impose Moratorium on Shale Gas Development in Ukraine!*, ENV'T PEOPLE LAW, http://epl.org.ua/en/environment/shale-gas/documents-by-epl/we-demand-to-impose-moratorium-on-shale-gas-development-in-ukraine (last visited Jan. 20, 2014).

fracturing and the American experience of extracting unconventional resources.[53] Though the number of Ukrainian environmental NGOs remains limited in comparison to the rest of Europe, their concerns, as well as worries of the general public in the affected areas, have effectuated political change.[54] The public's environmental concerns were channeled by local council members, predominantly in Western Ukraine. After delaying approval of the PSA drafts, the Lviv and Ivano-Frankivsk local councils made approval dependent on a portion of the funds from development being transferred to local areas impacted by extraction.[55] Local councils have approved the PSAs, lifting the final barrier to signing, but environmental opposition has not been quelled and concerns persist about the environmental implications of shale gas development.[56]

The population lacks faith in Ukrainian environmental legislation and the government's commitment to sustainable shale gas extraction, particularly in light of the government's poor environmental protection record historically. The memory of the Chernobyl disaster also continues to play a significant role in shaping public perception and structuring the environmental debate on shale gas development. In Eastern Ukraine, existing concerns about shale's potential environmental degradation have recently been exacerbated by the Russian media, and it appears the road to shale gas extraction in the East will ironically be much longer than in the West. Though drilling of shale test wells has been temporarily halted in Eastern Ukraine due to clashes between insurgents and the Ukrainian military, once the violence subsides, Ukraine will have to direct its attention to a long-term energy strategy.[57] This strategy is likely to prioritize shale

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[53] *See На Івано-Франківщині почалися роз'яснювальні семінари про сланцевий газ*, DAY, Feb. 1, 2013, http://www.day.kiev.ua/uk/news/010213-na-ivano-frankivshchini-pochalisya-rozyasnyuvalni-seminari-pro-slanceviy-gaz.

[54] The difference in the nature of the environmental movements in Ukraine and the rest of Europe has certainly impacted the discourse on the environmental effects of shale gas extraction and political results. Environmental opposition in France and Bulgaria has led to the imposition of moratoria on shale gas development in the two countries, while in other European countries, large-scale drilling has been significantly delayed by opposition from an environmentally-conscious public. Ukraine has not experienced similar consequences, and its ability to become one of the first European countries to lay down plans for large-scale unconventional gas operations can be explained in part by the limited involvement of environmental groups in the conversation on shale gas.

[55] Belousova, *supra* note 51.

[56] *See Ukrainians Protest Chevron's Shale Gas Plans*, AGENCE FRANCE-PRESSE, Oct. 17, 2013, http://www.industryweek.com/energy/ukrainians-protest-chevrons-shale-gas-plans.

[57] Shell signed a commencement agreement with Ukraine in September 2013. *Government of Ukraine and Shell Ink Agreement on the Operational Activity in Hydrocarbon Extraction*, CABINET OF MINISTERS OF UKRAINE (Sept. 12, 2013), http://www.

gas development and, to be successful, must take environmental concerns into account. Can missing environmental legislation in the sphere of groundwater protection be found in Ukraine's European energy commitments, assuaging public concern?

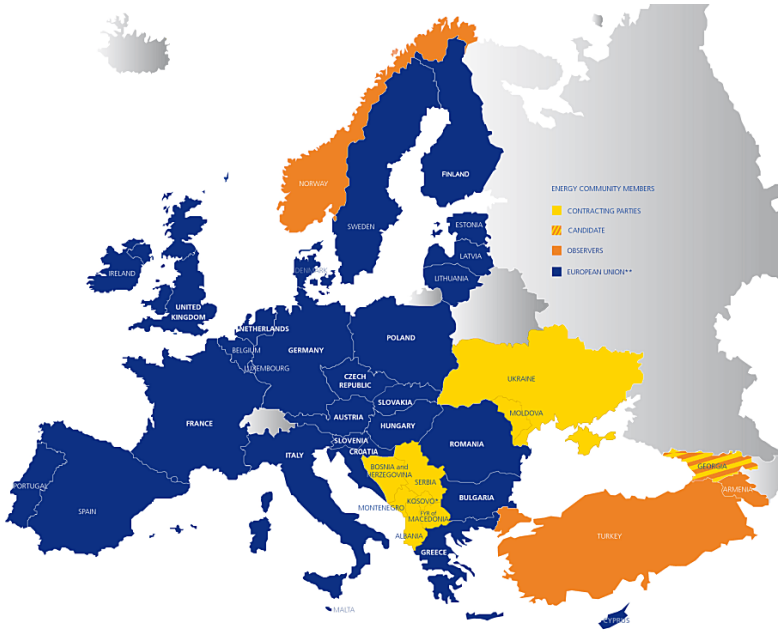
III. UKRAINE'S ENGAGEMENT WITH THE ENERGY COMMUNITY

The Energy Community was formed in 2005 between the European Union and various southeastern European countries and states on the Black Sea as part of the Athens Process.[58] The Community aims to spread the European Union's internal energy market rules, in the form of specific directives of the EU acquis transferred into the Energy Community Treaty, to third parties. The creation of a broader integrated energy market based on the EU model would infuse transparency into opaque energy markets, attract investment, and increase security of supply. Growing energy insecurity arising from the Ukrainian-Russian energy disputes of 2006 and 2009 created a strong impetus for extending the Energy Community further east. Ukraine and Moldova acceded to the Energy Community in 2011.

kmu.gov.ua/control/en/publish/article?art_id=246674100&cat_id=244314971. After drilling two test wells this year, the company announced *force majeure* and halted its operations in the East in July. Chevron's chances for shale gas development in Western Ukraine, an area untouched by the hostilities, are much more favorable. Chevron continues to work with the Ukrainian government, though has not started the exploration phase of its project.

[58] *Who Are We*, ENERGY CMTY., http://www.energy-community.org/portal/page/portal/ENC_HOME/ENERGY_COMMUNITY/Who_are_we (last visited Jan. 20, 2014).

Figure 2: Energy Community Membership[59]



Article 2 of the Energy Community Treaty outlines the following goals for the organization: creation of a stable regulatory environment able to attract investment in order for all Community members to benefit from stable energy supply; introduction of an integrated regulatory framework in the energy sector; augmentation of security of supply; improvement in the environmental situation in energy markets; and an increase in competition in the electricity and gas sectors and the introduction of economies of scale.[60] For these tasks, the Energy Community Treaty creates five institutions: the Ministerial Council, the Permanent High Level Group, the Energy Community Regulatory Board, the Fora, and the Secretariat.[61] One particularly interesting institutional innovation is the creation of the Fora, a group of representatives of interested stakeholders in Energy Community law, including industry, regulators, and consumers.[62] The inclusion of the Fora in the institutional composition of the Energy Community opens up

[59] *Members*, ENERGY CMTY., http://www.energy-community.org/portal/page/portal/ENC_HOME/MEMBERS (last visited Feb. 19, 2014).

[60] Treaty Establishing the Energy Community, Oct. 25, 2005, 2006 O.J. (L 198) 14 [hereinafter TEEC].

[61] *Id.* arts. 47-72.

[62] *Id.* art. 63.

the decision-making process and allows interested groups to influence policy through Fora recommendations to the Permanent High Level Group.[63]

The Energy Community Treaty acquis encompasses the areas of electricity, gas, oil, environment, renewable energy, energy efficiency, and statistics. As the goals of the Community evince, security of supply remains one of the most salient motivations for the creation of the organization, prioritizing the electricity, gas, and oil acquis. By the early to mid-2000s, the EU had clearly solidified its commitment to pursuing energy security through a market-governance approach.[64] In a paper to the European Council, the Commission noted, "Well-functioning world markets are the best way of ensuring safe and affordable energy supplies."[65] Further, the document stated, "[W]e need to convince non EU consumer countries that world energy markets can work for them. If they were to conclude that the only route to security lay in bilateral deals, the risk of disruption of the energy system would grow."[66] Liberalized energy markets would not only dilute the chances of opaque bilateral deals, but also open up markets to other suppliers, drawing in needed investment while lowering prices for consumers.[67] These aspirations lay at the heart of the Third Energy Package adopted by the Energy Community in 2011 as a plan to unbundle the generation, transmission, and sales operations of national energy monopolies.

As the Community is EU-led, the benefits and goals of the organization are often structured by the EU's own priorities. Much like early development of the European Union's environmental law, Energy Community environmental legislation has taken a secondary position to market liberalization.[68] The energy efficiency and renewable energy acquis was only added to the Energy Community Treaty in 2009 after criticism of

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[63] *See id.* art. 65.

[64] Richard Youngs, *Europe's External Energy Policy: Between Geopolitics and the Market* 1 (Ctr. For Eur. Pol'y Stud., Working Paper No. 278, 2007), *available at* http://ceps.be/book/europes-external-energy-policy-between-geopolitics-and-market.

[65] *Commission Report on an External Policy to Serve Europe's Energy Interests*, at 2, S160/06 (2006), *available at* http://www.consilium.europa.eu/ueDocs/cms_Data/docs/pressdata/EN/reports/90082.pdf.

[66] *Id.*

[67] *Commission Green Paper on a European Strategy for Sustainable, Competitive and Secure Energy*, at 5, COM (2006) 105 final (Mar. 8, 2006), *available at* http://europa.eu/documents/comm/green_papers/pdf/com2006_105_en.pdf.

[68] For an analysis of the historical evolution of early EU environmental law prior to the adoption of the Single European Act, see Philippe Sands, *European Community Environmental Law: The Evolution of a Regional Regime of International Environmental Protection*, 100 YALE L.J. 2511 (1991).

the Community's lack of an environmental and social dimension.[69] Therefore, sweeping environmental changes through the Community are not to be expected.

The Energy Community and Ukraine have faced a rather turbulent history since Ukraine's accession in 2011. Ukraine has had difficulty implementing a number of directives by the required deadlines, resulting in the opening of four cases against Ukraine on the failure to implement directives concerning (1) sulfur content in liquid fuels, (2) capacity allocation auction rules, (3) the adoption of National Renewable Energy Action Plans, and (4) state aid distorting competition.[70] The EU and Ukraine have accused each other of failing to fulfill their respective obligations.[71] Ukraine has lamented the lack of promised European funding for modernization of the gas transportation system and criticized the EU's support of alternative Russian-supported transportation routes bypassing Ukraine, mostly prominently Nord Stream and South Stream.[72] The EU remains concerned over Ukraine's slow implementation of the acquis, especially directives included in the Third Energy Package. Overall, the relationship suffers from diverging conceptions of the purposes and goals of

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[69] *See* BANKWATCH, SOUTH-EAST EUROPE ENERGY POLICIES (2008), *available at* http://bankwatch.org/documents/seedw_ener_gy_futures.pdf.

[70] *See* Case No. ECS 08/14 (state aid); Case No. ECS 07/14 (failure to adopt National Renewable Energy Action Plans); Case No. 06/13 (capacity allocation auction rules); Case No. 05/13 (lack of transposition of the directive on the sulfur content of liquid fuels). The Energy Community's dispute settlement mechanism is similar to the Commission's infringement procedure, with the absence of a final judicial decision. A party to the treaty or Regulatory Board initiates dispute settlement, triggering the preliminary procedure. Private bodies may lodge complaints. During the preliminary procedure, the Secretariat establishes the factual and legal grounds of the complaint and allows the member concerned to justify their position. The Secretariat may choose to initiate a dispute settlement procedure through the issuance of an Opening Letter, to which the party is asked to reply. Based on this reply, the Secretariat may issue a Reasoned Opinion, a statement detailing the Secretariat's reasons in concluding non-compliance. The party is then requested to fulfill its treaty obligations within a certain period of time. The Secretariat may also submit a Reasoned Request to the Ministerial Council. The Ministerial Council will then make the final binding decision in the case. Energy Community Ministerial Council Procedural Act 2008/01/MG-EnC, arts. 10-14, 34, *available at* http://www.energy-community.org/pls/portal/docs/296193.PDF.

[71] Igor Lyubashenko, *Ukraine's First Year in the Energy Community: Restart Needed* 1 (The Polish Inst. of Int'l Aff., Policy Paper No. 28, 2012), *available at* www.pism.pl/files/?id_plik=10131.

[72] *European Energy Community Rejects Kyiv's Criticism Concerning Its Position on Diversification*, INTERFAX-UKRAINE, Nov. 8, 2013, http://en.interfax.com.ua/news/general/174105.html; *see Oettinger Hopes Modernization of Ukrainian Gas Transport System Will Begin in 2014*, UKRINFORM, Oct. 14, 2013, http://www.ukrinform.ua/eng/news/oettinger_hopes_modernization_of_ukrainian_gas_transport_system_will_begin_in_2014_311159.

the Energy Community.[73] The two partners' misaligned priorities undermine the potential for cooperation and collaboration within the Energy Community framework. The EU aims to create a liberalized, integrated energy market. Meanwhile, Ukraine perceives the Energy Community in terms of domestic privileges and much needed foreign investment.

The dichotomy between the two sides' understanding of the Community's role is sharpest in the area of energy security. The EU's energy security strategy includes the Energy Community, but it does not stop there. Diversification of supply routes also plays a salient role in the discourse on security of supply, folding in projects Ukraine perceives as detrimental to its interests.[74] The Ukrainian government largely perceives its required level of compliance with Energy Community directives as inextricably linked with the favorability of Energy Community action to Ukraine. For example, in November 2013, former President Viktor Yanukovych stated that the European Union's support of South Stream could grant Ukraine the right to exit the Third Energy Package.[75] Such disputes have led commentators to question whether Ukraine will ultimately fulfill its obligations or leave the Energy Community in the future.[76]

IV. THE IMPACT OF THE ENERGY COMMUNITY

A. The Environmental Impact Assessment Directive

The environmental acquis of the Energy Community encompasses four directives:

1. Directive 85/337/EEC on the assessment of the effects of certain public and private projects on the environment
2. Directive 1999/32/EC relating to a reduction in the sulfur content

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[73] Lyubashenko, *supra* note 71.

[74] *Commission Report on an External Policy to Serve Europe's Energy Interests*, *supra* note 65, at 2.

[75] *Ukraine has Right to Leave Third Energy Package after Support for South Stream by EU, says Ukrainian President*, INTERFAX-UKRAINE, Nov. 27, 2013, http://en.interfax.com.ua/news/economic/177137.html. The Energy Community requires its members to apply the regulations of the Energy Community Treaty in full, including those described in the Third Energy Package. According to Ukraine's Accession Protocol, the country is subject to all obligations imposed on parties to the treaty. Protocol Concerning the Accession of Ukraine to the Treaty Establishing the Energy Community art. 1(2), Sept. 24, 2010, *available at* http://www.energy-community.org/pls/portal/docs/728177.PDF. The only legal way to delay implementation of a treaty provision would be securing a derogation from a particular regulation, which Ukraine has not petitioned for.

[76] *See Russia Leverages its Gas, Cash Supremacy in Ukraine*, EURACTIV (Dec. 4, 2013), http://www.euractiv.com/energy/russia-leverages-gas-cash-suprem-news-532111.

of certain liquid fuels
3. Directive 2001/80/EC on the limitation of emissions of certain pollutants into the air from large combustion plants
4. Directive 79/409/EEC on the conservation of wild birds[77]

Of these directives, only one is germane to the discussion of groundwater protection: Directive 85/337/EEC. The directive, though passed in 1985 long before the growth of the shale industry and the creation of the modern-day European Union and Energy Community, can offer a better understanding of the risks shale gas extraction poses to groundwater supplies and the ability to weigh the costs and benefits on the basis of assessments undertaken.[78] The assessment directive does not directly regulate groundwater quality, but will certainly be indirectly conducive to the goal. Based on its accession protocol, Ukraine was required to implement the provisions of the assessment directive by January 1, 2013.[79] The Energy Community's 2013 monitoring report, published in September, finds that, though certain pieces of legislation have been passed to bring Ukraine into compliance with the directive, Ukraine has failed to create a coherent legislative framework for environmental impact assessments.[80] Specifically, Ukraine's current laws do not specify information required by

[77] TEEC, *supra* note 60, art. 16.

[78] Admittedly very few, if any, directives in the European Union itself, from which Energy Community law originates, directly tackle the challenges faced by shale gas extraction. Given the diverging views on shale gas development among the member states of the Union, consensus on the nature of regulation in this particular sector is difficult to achieve. *See* KPMG, CENTRAL AND EASTERN EUROPEAN SHALE GAS OUTLOOK 25 (2012), *available* at http://www.kpmg.com/HU/en/IssuesAndInsights/ArticlesPublications/Documents/KPMG-CEE-Shale-Gas-Outlook.pdf. For example, a proposed legislative package from the Commission directly tackling the risks of shale gas development, such as groundwater contamination, increasing seismicity, and noise pollution, was thwarted by member states keen on tapping into domestic shale gas reserves, such as the United Kingdom and Poland. Vanessa Mock, *EU Shies Away from Shale Gas Legislation*, WALL ST. J., Jan. 22, 2014, http://online.wsj.com/news/articles/SB10001424052702303448204579336500355760752. Additionally, a number of members of the European Parliament pushed for a requirement that all shale gas and other unconventional drilling activities, regardless of size, be subject to an environmental impact assessment. The final legislation strengthened impact assessment requirements for various projects, but not unconventional resource operations. Will Nichols, *EU Exempts Shale Gas from Tougher Environmental Assessments*, BUSINESSGREEN (Mar. 14, 2014), http://www.businessgreen.com/bg/analysis/2334050/eu-exempts-shale-gas-from-tougher-environmental-assessments.

[79] *Energy Community Annual Implementation Report*, at 168 (Sept. 1, 2013), *available at* http://www.energy-community.org/pls/portal/docs/2304177.PDF.

[80] *Id.*

the assessments, nor do they allow for public participation in the process.[81]

The assessment directive requires the performance of environmental impact assessments on public and private projects having a significant environmental effect.[82] The directive specifies the types of projects subject to assessment, minimum requirements for each assessment, the role of the competent national authorities, and exemptions.[83] The directive begins by noting the importance of prevention of environmental harms over compensation schemes, as well as the existence of divergence in national legislation on impact assessments.[84] An environmental impact assessment must identify and analyze the effects of a proposed project on human beings, flora, and fauna; soil, air, water, and climate; material assets and areas of cultural importance; and the relationship between these factors.[85] At the minimum, the project developer must include information on the project's location, extent, and design, proposed methods to limit and remedy environmental effects of the work, necessary data for identifying the project's environmental impact, key alternatives explored by the developer and a justification of the choice of the current plan, and a non-technical summary of the aforementioned information.[86]

The directive divides projects into those that always require assessment, those that do not, and those that are subject to assessment based on ad hoc review or member state-determined thresholds.[87] Annex I of the directive lists the types of projects that are subject to the assessment, and Annex II describes those that may require assessment.[88] Most of projects in Annex I only fall within the jurisdiction of the directive if they meet certain qualitative and/or quantitative project requirements (for example, operations extracting at least 500,000 cubic meters of gas per day).[89] Various projects outside of the scope of Annex I may be covered by Annex II, such as energy storage, gas transportation installations, and dams, by lifting

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[81] *Id.* at 168-69.

[82] *See* Council Directive 85/337/EEC, 1985 O.J. (L 175) 1.

[83] *See id.*

[84] *Id.* pmbl.

[85] *Id.* art. 3.

[86] *Id.* art. 5.

[87] *Id.* art. 4(1)-(2).

[88] *Id.* Annex I includes crude oil refineries, thermal and nuclear power stations, cast-iron and steel smelting facilities, integrated chemical installations, transportation routes (such as long-distance airport runways and railroads and wide-lane roads), ports, waste disposal facilities, waste water treatment plants, natural gas and petroleum extraction projects, dams, pipelines, electrical power lines, and natural resource storage, among other projects. *Id.* Annex I.

[89] *Id.* Annex I, § 14.

quantitative restrictions.[90] Other industries not featured in Annex I but covered by Annex II include agriculture, textiles, leather, wood, paper, rubber, and tourism.[91] Specific activities of these industries possibly subject to assessment are further detailed in the annex.[92]

The directive also prioritizes the inclusion of the views of interested stakeholders, particularly in access to information and comment. The public maintains a significant position and level of involvement in every step of the assessment process, opening up multifarious opportunities for societal input.[93] Early in the decision making process, the relevant national authorities must notify the public that a project is subject to an environmental impact assessment, how to obtain information, where and how to submit comments on the project and assessment, and the nature of possible decisions on the project.[94] Within a reasonable period of time, required information released by the developer to authorities within the scope of the directive must become available to the public.[95] The public will be given "early and effective opportunities" to participate in the decision-making process and is entitled to submit comments and opinions on the various environmental aspects of the project under review.[96] Different phases of the process should feature adequate time for the public to prepare and participate efficaciously.[97] When the competent authorities have decided whether to go forward with the project, they will inform the public of the nature of the decision, the reasons underlying the decision, and the methods of limiting or avoiding possible environmental harm arising from the project.[98] Member states must grant the public, including NGOs, the right to challenge the decision in a court of law or by a similarly impartial institution.[99] Member states will take steps to effectively inform the public of their right to judicial review.[100]

B. The Assessment Directive's Effect on Ukrainian Shale Projects

Directive 85/337/EC provides extensive opportunities for review of the environmental effects of projects in various sectors. This part of the note

[90] *Id.* Annex II.
[91] *Id.*
[92] *See id.*
[93] *Id.* art. 6.
[94] *Id.* art. 6(2).
[95] *Id.* art. 6(3).
[96] *Id.* art. 6(4).
[97] *Id.* art. 6(5).
[98] *Id.* art. 9(1).
[99] *Id.* art. 10(a).
[100] *Id.*

seeks to understand whether the two shale gas development projects could qualify for a mandatory environmental assessment under Annex I, or alternatively fall into one of the categories listed in Annex II, potentially subjecting the projects to ad hoc consideration. For the purposes of this analysis, the shale gas operations of Shell and Chevron will be treated identically and referred to collectively. This treatment results from the similarities between the two projects, based on the terms of the PSAs signed by the two companies with the Ukrainian government and the infrastructural requirements of the two developments.[101] The operations will only be separated when quantitative considerations are germane and a clear and significant numerical difference exists between the two.

The shale gas projects could qualify for mandatory environmental impact assessments under various provisions of Annex I. Annex I prioritizes the extractive industry for review, but only those projects that operate on a larger scale. The clearest provision encompassing shale gas projects would be Point 14: "[E]xtraction of petroleum and natural gas for commercial purposes where the amount extracted exceeds 500 tons / day in the case of petroleum and 500,000 m3 / day in the case of gas."[102] Based on the government's plan to extract eight billion cubic meters annually at the minimum from Yuzivska, the project will yield approximately twenty-two million cubic meters daily. The Oleska project's conservative estimate stands at around three billion cubic meters, or eight million cubic meters daily. Therefore, even the most conservative estimates for these two fields

[101] All versions, including the final version of the Production Sharing Agreements, are confidential. The government has classified the PSA as "for official use only," and NGOs and the public do not have access to the documents. The NGO Environment People Law filed a lawsuit against the Cabinet of Ministers challenging the limitation on access to the PSAs in 2013. The Administrative Court ruled in favor of the Cabinet. *Challenging Confidentiality of the Agreement on Hydrocarbons Sharing*, ENV'T PEOPLE LAW, http://epl.org.ua/en/environment/shale-gas/cases/challenging-confidentiality-of-the-agreement-on-hydrocarbons-sharing (last visited Jan. 20, 2014). Given the lack of publicly available information on the PSAs, details on the contractual terms of the each PSA are gleaned from drafts leaked by members of local councils reviewing the PSAs. While these drafts are undoubtedly not identical to the final version of the PSAs, they are currently the most detailed information available on the documents. The fundamental aspects of the drafts are highly likely to approximate those included in the final version of the PSAs. For more information on the draft PSAs, please see Угода Про Розподіл Вуглеводнів, Які Видобуватимуться В Межах Ділянки Олеська [Agreement on the Sharing of Production Extracted in the Oleska Field], Ukraine-Chevron-Nadra Oleska, UKRAINIAN PRAVDA [hereinafter Chevron PSA], *available at* http://eimg.pravda.com.ua/files/b/8/b808b48-psa-ukraine-chevron.pdf; Угода Про Розподіл Вуглеводнів, Які Видобуватимуться В Межах Ділянки Юзівська [Agreement on the Sharing of Production Extracted in the Yuziska Field], Ukraine-Shell-Nadra Yuzivska, UKRAINIAN PRAVDA [hereinafter Shell PSA], *available at* http://eimg.pravda.com.ua/files/6/5/650effa-psa.pdf.

[102] Council Directive 85/337/EEC, *supra* note 82, Annex I, § 14.

fall within the quantity-based requirements of Point 14.

The two projects could also qualify indirectly for mandatory environmental review under two provisions dealing with construction ancillary to gas drilling. The first of these provisions is Point 16, covering gas pipelines with a diameter of over 800 millimeters and a length of more than forty kilometers.[103] The second is Point 21, storage for petroleum, petrochemical, or chemical products designed for quantities of 200,000 tons or more.[104] Ukraine maintains one of the best-developed and extensive gas transportation networks in Europe, encompassing 37,800 km of pipelines, seventy-three compressor stations, and thirteen underground storage facilities.[105] The PSAs permit Shell and Chevron non-discriminatory access to these pipelines and storage facilities while simultaneously allowing the construction of additional installations.[106] To what extent the former erodes the necessity of the latter remains to be seen. The construction of smaller pipelines may be necessary to connect the two contracted areas with the larger pipeline system (which the PSAs permit), and the companies may decide to construct storage facilities as well.[107] Should these projects be requested, they may require impact assessments, which would to some extent cover the shale gas extraction operations as well. Shale gas extraction could also fall under Annex II, making the projects subject to ad hoc consideration. The germane provisions here are those pertaining to surface installations for natural gas extraction, transportation, and underground and surface storage, none of which require quantity thresholds.[108]

Application of Directive 85/337/EC to the two shale gas projects may be limited by two factors. First, Article 1, Section 5 circumscribes the scope of the directive by stating that it fails to apply to "projects the details of

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[103] *Id.* Annex I, § 16.

[104] *Id.* Annex I, § 21.

[105] Anna Tsarenko, *Overview of Gas Market in Ukraine* 7 (Ctr. for Soc. and Econ. Res. Ukraine, Working Paper No. 2/2007, 2007), *available at* http://www.caseukraine.com.ua/u/publications/64647c5562749d05c7529cc4f0a59cad.pdf.

[106] Chevron PSA, *supra* note 101, 32.2; Shell PSA, *supra* note 101, 19.1.1, 19.2.1. This particular aspect reflects one of the core goals of the Third Energy Project, competitive access to each member's gas transmission system, enshrined in Regulation 715/2009. Ukraine is obliged to implement this directive by January 1, 2015, but has made only limited progress in this area. *See* Parliament and Council Regulation 715/2009, 2009 O.J. (L 211), 36; DIXI GRP., UKRAINE AND ENERGY COMMUNITY: TWO YEARS OF WAITING 6 (2013), *available at* http://www.irf.ua/files/ukr/programs/euro/dixi_study_en_2013.pdf.

[107] Shell PSA, *supra* note 101, 19.1.1.

[108] Council Directive 85/337/EEC, *supra* note 82, Annex II, §§ 2(e), 3(b)-(d). Ad hoc review is based on the following factors: characteristics of project (size, pollution, and waste), location of projects and environmental sensitivity of the area, and potential impact (extent, magnitude, chance, and duration). *Id.* Annex III.

which are adopted by a specific act of national legislation, since the objectives of this Directive, including that of supplying information, are achieved through the legislative process."[109] The PSAs are adopted on the basis of the aforementioned 1999 Law of Ukraine on Production-Sharing Agreements. To what extent the legislative process achieves the objectives of Directive 85/337/EEC, including the goal of supplying information, is open to debate. Ultimately, the PSA Law does not appear to accomplish the directive's goals. The law vaguely alludes to the objective of this directive, stating that projects will be subject to mandatory evaluation on financial, legal, and environmental grounds, but fails to mention public participation or how information on the evaluation will be supplied, if at all.[110] As the discussion of Ukraine's commitment to public participation on environmental assessments in the following paragraphs will indicate, the Energy Community is not fully convinced of the Ukrainian legislative process's success in securing all of the objectives of Directive 85/337/EEC.[111] Though the potential for utilizing the exceptions clause is admittedly minimal, the Shell and Chevron agreements may be exempt from the directive depending on interpretation of the clause.

The PSAs themselves do not provide much clarity on how the Ukrainian government understands the effect of the directive on shale gas development. Both documents state that an environmental impact assessment will be introduced in accordance with the operator's standards and the laws of Ukraine.[112] On the basis of the assessment results, the operator will craft an environmental protection strategy.[113] The Chevron PSA provides even more extensive protection by mandating a similar assessment be performed every two years, a requirement lacking in the Energy Community directive.[114] No further details are provided about what the required assessment would entail and the standards of these assessments. It is unclear whether the duty to conduct assessments arises from an internal decision of the Ukrainian government or the Energy Community Treaty requirement. Therefore, the Ukrainian government's interpretation of the directive in relation to the shale PSAs cannot adequately be gauged from the documents.

Second, and more importantly, if the Shell and Chevron PSAs exceed the scope of the directive's exceptions clause and are subject to an Energy Community-mandated impact assessment, implementation of the required

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[109] *Id.* art. 1(5).

[110] *See* Law of Ukraine on Production-Sharing Agreements, art. 11(2)-(3).

[111] *See Energy Community Annual Implementation Report*, *supra* note 79.

[112] Chevron PSA, *supra* note 101, 36.5; Shell PSA, *supra* note 101, 25.3.

[113] Shell PSA, *supra* note 101, 25.3.

[114] Chevron PSA, *supra* note 101, 36.5.

assessment is unlikely. Current Ukrainian law fails to comply with the requirements outlined in the directive, meaning that the assessment performed would be unable to fully achieve the goals of the directive. As noted earlier, Ukrainian law does not create a coherent framework for conducting environmental impact assessments and fails to fully meet the requirements of Directive 85/337/EC.[115] A number of individual pieces of legislation do cover selected aspects of the directive, such as the Law on Environmental Assessment, the Law on Environment Protection, and the Law on Ecological Expertise.[116] In May 2013, a draft Law on the Implementation of Provisions of the Convention on Environmental Impact Assessment in Transboundary Context ("Espoo Convention") was submitted to the Verhovna Rada, the Ukrainian Parliament.[117] The Espoo Convention, a United Nations convention signed in 1991 requiring states to carry out environmental impact assessments of certain projects, particularly those potentially resulting in international externalities, covers a number of aspects of the Energy Community impact assessment directive.[118]

The passage of the draft law would guarantee full compliance with both Directive 85/337/EC and the Espoo Convention by introducing a new legal framework for carrying out assessments.[119] The draft law would create a separate chapter within the Law of Ukraine on Environmental Protection on environmental impact assessments, introduce requirements for submitting and analyzing assessments, clarify the range of activities subject to assessment, and secure public participation in the assessment process.[120] The law passed a first reading of the parliament in September 2013, but a second reading has yet to be scheduled. In light of Ukraine's current tumultuous political climate, the draft law's immediate future remains uncertain. The Ukrainian government has also failed to submit the draft law to the Energy Community Secretariat for review.[121]

Prior to 2011, Ukraine followed an environmental impact procedure inherited from the Soviet Union coupled with various post-Soviet

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[115] *Energy Community Annual Implementation Report*, *supra* note 79.

[116] *Id.*

[117] *Id.*

[118] *See* Convention on Environmental Impact Assessment in Transboundary Context, Feb. 25, 1991, 1998 U.N.T.S. 309. Ukraine's violation of the Espoo Convention garnered significant attention recently when the Ukrainian government approved the lifetime extensions of two nuclear reactors at the Rivne nuclear power plant. *See* Statement of the Eastern Partnership Civil Society Forum on Necessity to Bring Ukraine into Compliance with Espoo Convention (2013), *available at* http://www.eap-csf.eu/assets/files/Chisinau/Resolutions/STATEMENT_EspooConvention.pdf.

[119] *Id.* at 1.

[120] *Energy Community Annual Implementation Report*, *supra* note 79.

[121] *Id.* at 169.

amendments.[122] The system featured various inefficiencies (Ukraine conducted approximately 6,000 assessments annually, multiple times higher than Western European countries) and stifled business development by mandating a complicated procedure and encouraging corruption.[123] Aiming to create a more attractive business environment, Ukraine simplified its environmental impact assessment requirements in 2011. Unfortunately, the new requirements were not sufficiently rigorous, resulting in a situation where Ukrainian law regressed further from compliance with the Energy Community directive and Espoo Convention in 2013 than in 2010.[124]

First, current national law fails to list the projects included in Annex I of Directive 85/337/EC as projects subject to mandatory impact assessments.[125] The law must also create a procedure for determining whether projects listed under the directive's Annex II will require assessment.[126] Second, the current environmental assessment process lacks the scoping stage, the phase defining the extent of the assessment, required by the directive.[127] Third, no requirement of mandatory publication of the decision to grant or deny a construction permit for the project exists.[128] Fourth, environmental authorities must be consulted in the project consent process.[129] Fifth, the role of the competent authorities issuing construction permits should be strengthened.[130] Ukrainian law considers issuance of a construction permit to be automatic if no action is taken by the authorities within a certain period of time, circumventing the core purposes of the directive.[131] Sixth, a process for effectuating environmental impact assessment for projects posing trans-border externalities must be introduced.[132] Finally, the public participation dimension of environmental

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[122] KATERINA MALYGINA, INT'L CTR. FOR POL'Y STUD., EUROPEANIZING ENVIRONMENTAL IMPACT ASSESSMENT IN UKRAINE 4 (2012), *available at* http://icps.com.ua/pub/files/67/66/EF_16_2012_ENG.pdf.

[123] *Id.* at 4-5.

[124] *Id.* at 4; *Energy Community Annual Implementation Report*, *supra* note 79.

[125] MALYGINA, *supra* note 122, at 7.

[126] *Id.*

[127] *Id.*

[128] *Id.* at 6.

[129] *Id.* at 7.

[130] *Id.* at 6.

[131] *Id.*

[132] *Id.* The Espoo Convention, which embraces this particular point, may interestingly become a method of securing a country's geostrategic goals over an environmental protection tool in certain contexts. According to the World Wide Fund, shale gas extraction in the Kharkiv area by Shell will result in pollution of Seversky Donets River, which flows into the neighboring Russian Federation. Were Russia a party to the Espoo Convention, the country could require Ukraine to conduct an environmental impact assessment on the shale

assessment law in Ukraine must be strengthened.[133]

The latter problem requires significant improvement. Public participation remains one of the most salient aspects of Directive 85/337/EC for addressing public concern over unconventional resource extraction in Ukraine. A public that is engaged and consulted on environmentally sensitive projects is much more likely to support such endeavors. Today's Ukrainian environmental impact assessment law includes minimal provisions for public participation, heightening the perception of opaque energy operations in the country.[134] Rules for the publication of information on public consultations are not logically formulated, failing to give the public adequate time to prepare and actively involve themselves in consultations.[135] Public access to materials on the projects is also limited.[136]

The problem transcends transposition of the Energy Community directive into national law. Proper implementation by Ukrainian institutions is crucial. Today, Ukraine fails to apply even its own internal minimal standards for environmental impact assessments. Though the PSAs required both Shell and Chevron's shale gas projects to conduct impact assessments, the Ukrainian government did not perform an assessment prior to signing the PSA with Shell.[137] An assessment may have been conducted after the PSA signing and before the commencement of drilling operations.[138] The timing of such an assessment would then violate

gas project, potentially derailing or curtailing the scope of the project. Both Ukraine and Russia signed the Espoo Convention in 1991, but only the former ratified the convention. *See Ukraine's Shale Gas Plans Pose Danger for Russia – WWF*, RIA NOVOSTI, Oct. 31, 2013, http://en.ria.ru/world/20131031/184458703.html.

[133] MALYGINA, *supra* note 122, at 6.

[134] *Id.* External monitoring of public participation guarantees in environmental regulation is not founded exclusively on the basis of Ukraine's Energy Community obligations. Ukraine is also a member of the Convention on Access to Information, Public Participation in Decision-Making and Access to Justice in Environmental Matters, commonly known as the Aarhus Convention. The convention was signed in 1998, and forty-five countries have currently ratified the convention, including the European Union. *See* Convention on Access to Information, Public Participation in Decision-Making and Access to Justice in Environmental Matters, June 25, 1998, 2161 U.N.T.S. 447.

[135] MALYGINA, *supra* note 122, at 6.

[136] *Id.*

[137] Yelyzaveta Aleksyeyeva & Hanna Khomechko, *Shale Gas in Ukraine: Facts*, ACCESS INITIATIVE (Dec. 3, 2013), http://www.accessinitiative.org/blog/2013/12/shale-gas-ukraine-facts.

[138] *See Oleksiy Azarov: All Environmental Risks to be Analyzed before Start of Shale Gas Production*, UKRINFORM, May 16, 2013, http://www.ukrinform.ua/eng/news/oleksiy_azarov_all_environmental_risks_to_be_analyzed_before_start_of_shale_gas_production_303378.

Ukrainian environmental impact assessment law, as an assessment must be conducted before consent is awarded to the operator. By signing the PSA with Shell, the Ukrainian government essentially granted consent without requiring the proper environmental assessment. Therefore, it appears the government conceives of these assessments as an instrument to guide Shell's environmental protection strategy, rather than as a tool for evaluating whether the project itself will be implemented at all in light of the inherent risks involved.

Chevron's shale gas project in Western Ukraine received an environmental impact assessment in August 2013 prior to the signing of the PSA in November 2013.[139] Unfortunately, public participation was excluded from the assessment process.[140] In June 2013, the NGO Environment People Law sued Ukraine's Cabinet of Ministers for failing to conduct an environmental impact assessment on the Shell shale gas project prior to signing the PSA and asked the court to declare the government's obligation to perform such an assessment on Chevron's planned project prior to signing the PSA.[141] A declaratory judgment has not yet been released.[142] Environment People Law also plans on bringing a suit against the allegedly procedurally inadequate performance of the Oleska environmental impact assessment.[143] According to the NGO, the assessment failed to delineate the impact of shale gas production on the ecosystem or explore alternatives to hydraulic fracturing.[144]

V. IS THE TIME RIPE FOR A FOURTH ENERGY PACKAGE (ON THE ENVIRONMENT)?

A. Relevant Directives

Ukraine's ability to benefit from environmental protection during shale gas development through the tools offered by the Energy Community Treaty is potentially limited by the two aforementioned processes, one internal to Ukraine and the second external, the formulation of the environmental impact assessment directive by the European Union. On a broader level, beyond the scope of the directive in question, environmental protection is hampered by the composition of the Energy Community acquis on the environment. The environmental acquis consists of only four directives, and none of these directly tackle the problem of groundwater

139 Aleksyeyeva & Khomechko, *supra* note 137.

140 *Id.*

141 *Id.*

142 *Id.*

143 *Id.*

144 *Id.*

contamination in Energy Community member states. In light of the evident limitations of the current body of Energy Community law on the environment, could the time be ripe for a Fourth Energy Package specifically for the Energy Community, this time on the environment?

Since the passage of the Single European Act, the EU has amassed a significant body of environmental legislation.[145] The question then becomes which pieces of EU environmental law should be incorporated into Energy Community law to best protect groundwater resources in the face of the potential risks emanating from unconventional gas development. According to a landmark study on the future of shale gas in Europe by Florence Geny of the Oxford Institute for Energy Studies, three EU water directives will have the most salient impact on shale gas development in the Union.[146] The three directives have also been deemed germane by the European Parliament:

1. Drinking Water Directive (Directive 98/83/EC)
2. Water Framework Directive (Directive 2000/60/EC)
3. Groundwater Framework Directive (Directive 2006/118/EC)[147]

While the environmental impact assessment directive indirectly affects groundwater protection, these three directives are designed specifically to prevent and manage groundwater contamination. In the Ukrainian context, the directives directly tackle the environmental risks emanating from shale gas development outlined in Part I. Inclusion of these three directives into the Energy Community's legal regime would represent a significant new step in Energy Community development and help realize the Energy Community's fourth goal, improving the environmental situation in energy markets.

The Drinking Water Directive, passed in 1998, introduces drinking water quality standards for European Union member states.[148] The directive regulates water intended for human consumption and requires that states ensure that water is "wholesome and clean."[149] "Wholesome and clean" signifies that the water (1) lacks microorganisms, parasites, or substances

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[145] Patrick Thieffry & Peter E. Nahmias, *The European Union's Regulation and Control of Waste and the Adoption of Civil Liability*, 14 HASTINGS INT'L & COMP. L. REV. 949, 952 (1991).

[146] GENY, *supra* note 1, at 90.

[147] *Id.*; *Directorate General for Internal Policies of the European Parliament Study on Impacts of Shale Gas and Shale Oil Extraction on the Environment and on Human Health*, at 55, IP/A/ENVI/ST/2011-07 (June 2011), *available at* http://europeecologie.eu/IMG/pdf/shale-gas-pe-464-425-final.pdf.

[148] Council Directive 98/83/EC, art. 1, 1998 O.J. (L 330), 32.

[149] *Id.* art. 4(1).

which are deleterious to human health in certain concentrations, and (2) meets certain chemical parameters outlined in the directive.[150] Member states are obligated to monitor drinking water quality through sample testing to corroborate that water meets the parametric requirements of the directive.[151] The directive introduces minimum standards of sampling and monitoring.[152] If water quality is determined to be deficient, member states will take necessary action to remedy the situation and restore water quality to acceptable levels.[153] The directive provides a flexible approach to water quality maintenance by giving states the ability to craft their own monitoring programs within minimal standards.[154] The directive also embraces the principle of subsidiarity and permits derogations of up to three years (with potential extensions), allowing states to maintain higher parametric values provided that these escalated values do not endanger human health.[155]

The 2000 Water Framework Directive aims to achieve parallel goals to the Drinking Water Directive, but in a broader sphere.[156] The Water Framework Directive does not restrict its focus to water intended for human consumption, and seeks to protect surface water, groundwater, coastal waters, and transitional waters in order to facilitate sustainable water usage.[157] For groundwater resources, member states will prevent or limit pollution and restore deteriorated areas.[158] Groundwater monitoring will include chemical and quantitative status.[159] Each state will establish a program to achieve the specific goals outlined in the directive for each river basin district within its borders.[160] Much like the environmental impact assessment directive, the Water Framework Directive similarly prioritizes public participation.[161] Member states are obligated to publicize reports on

[150] *Id.*

[151] *Id.* art. 7(1).

[152] *Id.* art. 7(3)-(4).

[153] *Id.* art. 8(2).

[154] *Id.*

[155] *Id.* art. 9(1).

[156] Council and Parliament Directive 2000/60/EC, 2000 O.J. (L 327), 1.

[157] *Id.* art. 1.

[158] *Id.* art. 4(1)(b).

[159] *Id.* art. 8(1).

[160] *Id.* art. 11(1).

[161] *See id.* art. 14(1). Many of the additions to participation guidelines in EU environmental directives stem from the Aarhus Convention. This includes the original public participation provisions in the Water Framework Directive and amendments to the environmental impact assessment directive in 2003. *See* Parliament and Council Directive 2003/35/EEC, 2003 O.J. (L 156), 17; *The Aarhus Convention*, EUR. COMM'N, http://ec.europa.eu/environment/aarhus/legislation.htm (last updated Feb. 14, 2014).

water management issues and water management programs, as well as make these documents available for comment.[162]

The Water Framework Directive does have its limitations. Although each state's program is required to prohibit direct discharges of pollutants into groundwater, the directive carves out an exception for injection of water used for hydrocarbon production.[163] Therefore, injection of treated wastewater resulting from hydraulic fracturing would likely be permitted. The program must also detail measures to eliminate pollution of surface waters by priority substances.[164] Priority substances are listed in Directive 2008/105/EC, an ancillary directive created to determine priority substances.[165] Two substances, Naphthalene and Benzene, are present in the list of priority substances and in the composition of hydraulic fracturing fluid.[166] Potential overlap with other hydraulic fracturing fluid substances may exist, but given trade secret protections, this is impossible to determine at present.[167] The European Parliament has criticized the Water Framework Directive for its limited coverage of substances present in hydraulic fracturing liquids and advocates reassessment of the list of priority substances in line with new environmental demands presented by shale gas production.[168]

The 2006 Groundwater Framework Directive introduces specific measures to achieve the groundwater protection goals of the Water Framework Directive.[169] The Water Framework Directive calls on the European Parliament and Council to establish criteria for "good groundwater chemical status" and upward trends in pollution.[170] Adequate chemical status will be judged on the basis of standards introduced in this directive and pollutant thresholds established by the member states.[171] This directive confirms the exception for injections derived from hydrocarbon production introduced in the Water Framework Directive.[172]

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[162] Council and Parliament Directive 2000/60/EC, art. 14(1), 2000 O.J. (L 327), 1.

[163] *Id.* art. 11(3)(j).

[164] *Id.* art. 11(3)(k).

[165] *See* Council and Parliament Directive 2008/105/EC, 2008 O.J. (L 348), 84.

[166] *Directorate General for Internal Policies of the European Parliament Study on Impacts of Shale Gas and Shale Oil Extraction on the Environment and on Human Health*, *supra* note 147, at 32.

[167] *See id.* at 31.

[168] *Id.* at 62.

[169] Council and Parliament Directive 2006/118/EC, art. 1, 2006 O.J. (L 372), 19.

[170] Council and Parliament Directive 2000/60/EC, art. 17(1)-(2), 2000 O.J. (L 327), 1.

[171] *Id.* art. 3(1).

[172] *Id.* art. 6(3)(a).

B. Limitations and Opportunities for Expansion

In practice, the introduction of the proposed environmental package will not be simple. The expansion of the Energy Community further into the environmental realm will be limited by the organization's history, and in particular, its foundational purpose. As described earlier, the Energy Community was conceived initially as an organization mainly to enhance energy security, not environmental protection. In reality, the two goals may be linked. The energy security goal may provide the primary justification for augmenting the organization's environmental protection law. Incorporating all or a portion of the three groundwater protection directives would usher in a new era of Energy Community law, allowing the Energy Community to simultaneously meet two fundamental goals of the organization: environmental protection and security of supply. This case study of Ukraine has revealed the limitations on groundwater protection existing under the current Energy Community Treaty. New groundwater protection legislation can remedy this deficiency, and in turn build support for unconventional gas development among the Ukrainian public. The domestic Ukrainian debate over shale gas development does not exist in isolation from the EU's own energy prospects. The two are very much interconnected. The PSAs grant Shell and Chevron the opportunity to export gas abroad bereft of price and quantity controls, and it is likely that these two companies will take advantage of these concessions by exporting shale gas to European customers.[173] It is therefore in the interest of the European Union to encourage domestic gas development in an Energy Community member state as an alternative to external gas supplies from the Russian Federation.[174]

A potentially more problematic hurdle will be opposition by Ukraine and other non-EU states to the expansion of the environmental acquis. While

[173] Chevron PSA, *supra* note 101, 30.3; Shell PSA, *supra* note 101, 7.1(I)-(J).

[174] Not all European states see Russia as an unsustainable energy partner. To what extent European energy companies, and by extension the countries they are headquartered in, perceive Russian gas as an unsecure supply of resources is open to debate. Scholars such as Rawi Abdelal have argued that European companies in Italy, Germany, and France have not lost faith in Gazprom's commitment to their European customers, and this has translated into remarkably robust bilateral relations between these European states and the Russian Federation in the energy sphere. *See* Rawi Abdelal, *The Profits of Power: Commerce and Realpolitik in Eurasia* (Harvard Bus. Sch., Working Paper No. 11-028, 2011), *available at* http://www.hbs.edu/faculty/Publication%20Files/11-028.pdf. These bilateral relations, what some have termed a "divide and rule" strategy by Gazprom, challenge the EU's goal of crafting a unified energy strategy. *See* SAMI ANDOURA ET AL., NOTRE EUR., TOWARDS A EUROPEAN ENERGY COMMUNITY: A POLICY PROPOSAL 80 (2010), *available at* http://www.europarl.europa.eu/meetdocs/2009_2014/documents/envi/dv/201/201006/20100602_envi_study_energy_policy_en.pdf.

the transfer of the aforementioned three directives from the EU acquis to the Energy Community will not impact current EU member states, which are already subject to these obligations, non-EU countries will encounter a significant transfer of power to a non-national authority. Expanding Energy Community competences undermines Ukraine's desire for a limited relationship with the Energy Community. As described earlier, throughout its membership, Ukraine has viewed the Energy Community in terms of domestic economic privileges and has not fully shared the Energy Community's goal of creating a common energy market, much less environmental protection. But Ukrainian opposition to an added transfer of power to the Energy Community begs an even more important question: To what degree does Ukraine seek integration with the European Union, not only in the environmental sphere, but also in other developing areas of engagement?

Ukraine's failure to sign the EU Association Agreement in November 2013, which triggered demonstrations in Kyiv, was reversed in June. Admittedly foreign policy priorities can clearly shift rapidly with the coming of a new administration, but the Poroshenko government has signaled that at least his administration desires a reorientation of Ukraine toward the West. The recent signing of the Association Agreement with the EU suggests that the Ukrainian elite view the European project favorably, offering nascent hope to future progress on deeper EU-Ukrainian relations.

In some ways, the Energy Community is an even more salient forum for deciding Ukraine's position on European integration than the Association Agreement. The energy sphere is one of Ukraine's most important sectors, and Ukraine's gas transportation system is considered one of the country's key strategic national assets. Engrained linkages between Ukrainian and Russian energy elites have an enduring and powerful legacy, and Ukraine's gas transportation system forms an important element of Russia's gas export policy.[175] Decisions to align Ukraine with the EU's energy market, which is at the heart of the Energy Community, threaten Russia's perceived dominance in the Ukrainian energy market. Russia largely understands

[175] Approximately fifty percent of Russian gas exported to Europe transits through Ukraine. *Cold Winter Ahead for EU, Ukraine over Russian Gas War*, RT, Nov. 15, 2013, http://rt.com/business/cold-winter-gas-war-767. Prior to the construction of Nord Stream, this figure stood at eighty percent, the remainder of European-oriented gas transiting through Belarus. SIMON PIRANI ET AL., OXFORD INST. FOR ENERGY STUD., THE RUSSO-UKRAINIAN GAS DISPUTE OF JANUARY 2009: A COMPREHENSIVE ASSESSMENT 5 (2009), *available at* https://www.oxfordenergy.org/2009/02/the-russo-ukrainian-gas-dispute-of-january-2009-a-comprehensive-assessment. The Nord Stream route, by passing Ukrainian pipelines, has diversified Russia's transportation routes to its largest and most lucrative market. The completion of South Stream would further diminish Ukraine's role in the Russian-European energy trade.

Ukraine's engagement with the EU rather than Russia as a zero-sum game. For example, inclusion of the EU in a consortium to manage the Ukrainian gas transportation system is viewed as a loss to the Russian Federation, not a new collaborative opportunity for all three parties involved.[176] On a broader level, Russia sees Ukrainian integration into the Energy Community as the rejection of its own model of energy affairs.[177] Given the stakes and the salience of the energy sphere, further integration with the Energy Community, in whichever form, can be a crucial barometer of Ukraine's interest in deepening its relationship with the European Union.

Whether Ukraine conceptualizes itself as a member of the community of European nations remains to be seen. As the Ukrainian protests of late 2013 highlight, a significant portion of the Ukrainian public seeks closer cooperation with the EU, particularly for the values Europe represents. One of these values is precisely the goal the Energy Community seeks to promote: transparency. The Ukrainian energy sphere is one of the most opaque areas of the Ukrainian economy and represents a microcosm of the overall political and economic system the Ukrainian population opposes. Therefore, a strong commitment to environmental protection and energy transparency by the Energy Community can reflect the demands of Ukraine's population.

CONCLUSION

This case study of Ukraine's potential to develop sustainable shale gas within the Energy Community framework evinces the limited role that today's Energy Community can play in the environmental realm. Three of the four environmental directives included in the Energy Community Treaty are not germane to the environmental challenges introduced by unconventional resource extraction. The remaining directive, the environmental impact assessment directive, could facilitate sustainable

[176] *See EU Ready for Tripartite Consortium to Manage Ukraine's GTS under Certain Guarantees, Says Ambassador*, INTERFAX-UKRAINE, Mar. 1, 2013, http://en.interfax.com.ua/news/economic/142895.html.

[177] Russia has long fought European pressure to adopt Western energy rules. For example, the Russian Federation opposes the extension of the Third Energy Package to Russian suppliers. Unbundling would significantly impact Gazprom's European operations, permitting third-party access to Nord Stream and South Stream. Currently, the EU and Russia are negotiating how the Third Energy Package would apply to Gazprom in relation to these two projects. *See* PETER VAN ELSUWEGE, CTR. FOR EU-RUSSIA STUD., UNIV. OF TARTU, TOWARDS A MODERNISATION OF EU-RUSSIA LEGAL RELATIONS? 13 (2012), *available at* http://ceurus.ut.ee/wp-content/uploads/2011/06/EU-Russia-Paper-51.pdf. The Russian Federation has also been reluctant to open up its upstream operations to non-discriminatory foreign investment at home. As the European Union already provides access to downstream operations, the EU seeks reciprocity upstream as well.

policies for managing environmental risks. The directive covers natural resource extraction projects such as those envisioned by the PSAs. The directive outlines a robust project review process, which incorporates interested stakeholders, including the public. Public participation remains one of the most salient requirements of the directive and adds value to the law in the context of the shale gas debate in Ukraine. The Ukrainian public seeks inclusion, transparency, and engagement, none of which are present in the current discourse on unconventional gas extraction in the country. The environmental impact assessment directive can to some extent provide this inclusion.

Unfortunately, application of the environmental impact assessment directive is potentially foreclosed by two factors: the exception carved out within the directive for projects that arise from national legislation and Ukraine's failure to fully comply with the directive. The former is a potential obstacle, contingent upon the Energy Community and Ukraine's interpretation of the relationship between the PSAs and national legislation. The latter forms an absolute hurdle to utilizing the directive today for shale gas projects and other large-scale developments. Ukraine's non-compliance with the impact assessment directive undermines not only the ability of Ukrainians to benefit from the provisions of this directive, but other environmental directives as well. Non-compliance here evinces Ukraine's desire for limited engagement with the Energy Community and the unlikelihood of expanding the Energy Community into other areas, such as groundwater protection. Additionally, even if the environmental acquis could be expanded, the very same domestic obstacles to implementation discussed in connection with the environmental impact assessment directive would have to be addressed.

The Energy Community offers vast potential for expanding external groundwater protection measures and encouraging sustainable shale gas development for post-conflict Ukraine. This note has proposed the expansion of the Energy Community's environmental acquis to three new directives: the Drinking Water Directive, the Water Framework Directive, and the Groundwater Framework Directive. The extension of these three directives to the Energy Community could open a new chapter in the evolution of the organization, reorienting its traditional emphasis on energy security and energy market liberalization toward a more balanced approach which espouses environmental protection. The impetus for environmental expansion is not currently present, either on the EU or the Ukrainian side. Neither was it present in the earlier days of the European Economic Community. Organizations are not static, and their priorities often transform, expand, and reorient. The Energy Community is (or should be) no exception.