GUVERNANȚĂ EUROPEANĂ ÎN DEZBATEREA PRIVIND GAZELE DE ȘIST: IMPERATIVITATEA EVALUĂRII IMPACTULUI ASUPRA MEDIULUI

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Abstract
Shale gas extraction raises environmental concerns in relation to the volumes of water and the chemicals used in fracking and their subsequent disposal, the possible risk of contaminating groundwater, potentially high emissions of methane from well completion, impacts in terms of noise and traffic as well as land use. The European Union has leverage in shaping the shale gas debate by regulating the environmental aspects and imposing regulation and/or making recommendations in what concerns the safety standards. The article highlights the European model of environmental impact assessment in light of the surge in unconventional gas activities that are taking place, pointing to shortcomings in legislation, and analysing Romania's compliance status to the Environmental Impact Assessment (‘EIA’) Directive.

Keywords: shale gas, environmental impact assessment, EU.

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Rezumat
Extracția gazelor de șist ridică îngrijorări cu privire la volumele de apă și substanțele chimice utilizate în procesul de fracturare hidraulică și deversarea ulterioră a acestora, riscul posibil de contaminare a apelor subterane, emisiile potențial mari de metan ca urmare a finalizării sondei, dar și cu privire la impactul în termeni de zgomot și de trafic, precum și de utilizare a terenurilor. Uniunea Europeană are drept pârghie în modelarea dezbaterii pe tema gazelor de șist, reglementarea aspectelor de mediu și impunerea de norme și / sau de a face recomandări în ceea ce privește standardele de siguranță. Articolul subliniază modelul european de evaluare a impactului asupra mediului în lumina evoluției activităților de gaze neconvenționale care au loc, punctând deficiențe în cadrul de reglementare și analizând conformitate României cu Directiva de Evaluare a impactului asupra mediului (‘EIA’).

Cuvinte cheie: gaze de șist, evaluarea impactului asupra mediului, UE.
1. INTRODUCTION

The shale gas boom in the US has raised hopes, as well as worries for Europe: expectations that it will lead to security of supply, and fears about the environmental risks. Despite the US enthusiasm surrounding shale gas, several challenges - such as the lack of specific regulations, the environmental concerns and the geological risks hinder shale gas development in Europe, while environmental issues continue to dominate headlines and influence the debate. The lack of a comprehensive approach to industry based on scientific data makes establishing possible impacts and designing appropriate regulatory frameworks challenging, especially in relation to the environmental concerns. The aspirations of this paper are three-fold. First, it provides an overview of environmental regulatory framework in Europe and US. Second, it points to the shortcomings in the European Environmental impact assessment Directive. Third, it reviews main pieces of Romanian legislation with the aim to check whether it complies with the EU directive. The paper concludes that the EIA Directive plays a central role in the shale debate, as it has to make sure that operations comply with all applicable EU legislation and safeguard the safety of the environment and humans, and in particular to paint a clear picture on potential risks and impacts.

2. ENVIRONMENTAL REGULATORY FRAMEWORK ADDRESSING SHALE GAS: US AND EUROPE

Europe lags behind the US in terms of exploring the unconventional resources potential and producing cheap gas. Gény (2011, p. 47) argues that Europe has little knowledge about the potential, quality, precise location, and location of sweet spots of its unconventional gas resources. Estimates about Europe’s reserves vary considerably and geological studies are still being carried out indifferent parts of Europe (Sweden, UK, Poland). The lack of information is the first significant hurdle. Studies are based on an outdated assessment (Rogner, 1997), estimates that were updated by the US Energy Information Administration (EIA, 2013).

The regulatory framework applicable to shale gas in both the EU and the US includes several pieces of legislation and cover environmental issues, mining, land property, use of chemical substance, and waste regulation. Reins (2011, p. 309) argues that “the federal laws in the US grant primacy to the states on reasons of effectiveness”, but allows an issue to reach the federal level if the state is unable to cope with it. European countries have the right to determine their own fuel mix, to choose between different energy sources and the conditions to exploit its energy resources, thus leaving the EU with
limited leverage on countries’ energy policy. EU has decided that there are no legislative gaps in dealing with the shale gas development. Nevertheless, it has advances a series of recommendations, mainly in what concerns environmental standards. There is no specific “Shale Gas Act” in either jurisdiction. In the US, the most significant piece of legislation is the Safe Drinking Water Act, also called the Frac Act which obliges private companies to disclose the chemicals used in the fracking process. In the EU, there is no overarching policy regulating the development of unconventional gas. Furthermore, a report commissioned by the Directorate General for Energy of the European Commission (Philippe & Partners, 2011) found that European legislation applies to all stages of unconventional gas developments and that there are no gaps in the regulatory framework.

The main piece of legislation relevant for development of shale gas in Europe is the Environmental Impact Assessment Directive (‘EIA’) (85/337/EEC). Currently, shale gas exploration and extraction activities do not fall within the scope of the directive as it is up to the member states to decide whether an EIA is appropriate. This opens the door to inconsistencies in how member states apply the EIA Directive. For example, in Poland the first exploration well was drilled in June 2010 and by end of 1H 2013, about 40 wells have been drilled, more than anywhere else in Europe (A.E., 2013). According to the Polish environmental law, exploration and extraction of hydrocarbons are an activity where an environmental assessment and a decision on environmental conditions are required before a concession is granted. Currently, proposed amendments to the environmental law push for more relaxed rules for exploratory works which allows exploratory drilling without environmental impact assessments. Mid 2012, the Head of the Environment Agency in UK granted support for hydraulic fracturing, as long as it is very rigorously monitored. In Germany, a proposal for mandatory Environmental Risk Assessment of hydraulic fracturing is pushed for at federal level. Threats to the environment made some countries ban fracking: France has passed mid 2011 a law banning fracking due to a powerful grassroots campaign which was challenged by a US firm after its exploration permits were cancelled. Its constitutional council, France’s highest legal body rejected in October 2013 the objections and validated the law banning hydraulic fracturing (Patel and Viscusi, 2013). Concerns about environmental impact led the Bulgarian government to ban fracking beginning of 2012. Other states (such as Netherlands, Austria, parts of Germany) have put on hold shale gas exploration in order to carry a comprehensive investigation into the environmental risks. Environmental ministries in Europe have been tasked to undertake and commission studies weighing the environmental impact of shale gas development in order to gather more evidence on the risks involved with the hydraulic fracturing technology. Preliminary studies have recommended a careful exploration, supplemented by a thorough regulatory and scientific supervision. It is likely that the risks related to shale gas development cannot
be conclusively evaluated at present and will call for more research. Currently, environmental supervision regarding shale gas development mainly follows the regulations and technical guidelines developed for conventional resources. Nevertheless, these do not fully take into consideration the specific environmental issues attached to the new mineral resource.

3. EUROPEAN GOVERNANCE ON THE ENVIRONMENTAL ISSUES

The Environmental Impact Assessment Directive (2011/92/EU) is the main piece of legislation making sure that projects are planned having in mind potential environmental effects and ways to avoid and mitigate risks. The purpose of the EIA is to predict, portray and quantify the likely impact of projects on the environment, while still in the planning stage so that developers, decision-makers and communities are aware of possible consequences in order to find ways to avoid, reduce and offset. EIAs do not necessarily prevent projects with negative environmental impact from happening; it is aimed to provide a full picture of the risks and impacts. Nevertheless, the current version of the directive has some serious shortcomings and fails to cover the recent interest in unconventional gas activities in Europe which are not subject to mandatory EIA. After 28 years of application, the EIA Directive has not significantly changed, while the policy, legal and technical context has evolved considerably. Most importantly, the nature/type of projects under consideration for an EIA have significantly changed over the years.

Mid 2009, EC has published a report assessing the effectiveness of the EIA Directive, pointing to the main areas where improvements and advancing recommendations. In 2010, the Commission launched a wide public consultation which has fuelled a review process and lead to a proposal for a new directive adopted on October 26th, 2012. European Parliament’s Environmental Committee discussed the amendments and has overwhelmingly endorsed beginning of July 2013 a proposal to impose a mandatory EIA for all shale gas drilling activities which was voted in Parliament on October 9th, 2013 and the rapporteur, MP Andrea Zanoni was tasked to negotiate with the environmental ministers of the member states the proposed amendments. The vote in Parliament, requiring a mandatory EIA for shale gas projects (that is exploration and exploitation) means that the European Union aims to make sure that the current technological, economical and social realities are taken into consideration when speaking about new developments, a bill that ensures that citizens’ concerns regarding the potential impact over the environment are pondered upon. On 12 March 2014 the European Parliament adopted its first reading position to the revised EIA Directive (528 votes to 135 with 15 abstentions). The Council of Ministers is to vote in April. If the Council approves the EP position, the amended Directive is expected to enter into force in May 2014 with a 3-year deadline for transposition by Members States.
The EIA Directive applies to public and private projects and enumerates two categories of projects that require an EIA. *The Annex I* lists 43 specific types of projects that always require EIA. In the energy sector, the EIA is mandatory, among others, for projects as thermal and nuclear power stations, crude oil refineries and extraction of petroleum and natural gas. Current Annex I threshold on gas exploitation is inadequate for shale gas. The volumes of gas production from individual projects are too low to allow them to be included as Annex I projects. It does not take into account the specificity of daily production levels of non-conventional resources, which are much lower as compared to the current threshold imposed for conventional ones. Accordingly, despite their environmental impact, projects related to shale gas are not subject to compulsory EIA. In accordance with the precautionary principle, and as requested by Parliament and emphasized by planned amendments to the directive, it is proposed that nonconventional hydrocarbons regardless of the amount extracted, should be included in Annex I and made subject to EIA. Preliminary exploratory drilling in Europe suggests that production rates will most likely be lower than in the US (Efstathiou, 2012). Consequently, it is unlikely that the threshold of 500,000 cubic metres/day will be met for shale gas production at a single well. Nevertheless, for multiple well sites, the total production rate could exceed the threshold. The directive stresses that cumulative impacts need to be taken into account, but it is not explicit in stating whether and EIA is demanded.

There are 87 projects included in the *Annex II* which require member states to consider whether full EIA is required based on the characteristics and locality of the projects and associated impacts. This is called the ‘screening procedure’ which is recommended prior to the preparation of the environmental information to be submitted by the developer. Even though the procedure is optional under the EIA Directive, it can be useful for assessing the environmental effects of unconventional hydrocarbon projects, for which there is not sufficient knowledge. Annex II does not include a definition of deep drilling, thus the exploration phase in the shale gas developments (which requires drilling and makes use of the hydraulic fracking technology) will not be covered and will not require an environmental impact study. In its attempts to review the EIA Directive, the European Commission has stated that member states’ screening procedures are not adequate and are inconsistent with one another. For example, some states take into consideration only the size of a project. Shale gas project developers are unlikely to be consistently required to undertake EIA as this is subject to procedures at member states’ level. This increases the risk of differing understanding of the directive as member states’ approaches is likely to be divergent regarding the way in which risk and impacts are weighted and whether or not an EIA is required, thus leading to legal uncertainty. Under article 4(2), member states shall determine whether the project shall be made subject to an EIA through either a case-by-case examination or setting thresholds or criteria (or both).
In assessing the projects, countries should take into account the relevant selection criteria given in Annex III such as: the size of the project, use of natural resources, production of waste, pollution, nuisances and risks of accidents; as well as location of project; characteristics of the potential impact, including: the extent of the impact, the transboundary nature of the impact, the magnitude and complexity of the impact, the probability of the impact and the duration, frequency and reversibility of the impact.

The recently approved amendments to the EIA stress the significance of abolishing the conflict of interest. The quality and objectivity of the EIA reports is under question due to the fact that the accredited experts undertaking the reports are hired by the developer and their goal is to come to conclusions that would ensure obtaining the permit. The amendments push for securing the objectivity and fairness of the process. It also includes provisions on making sure that the experts involved in the writing the EIA reports have the necessary qualifications, experience and technical skills. The amended text argues that those undertaking EIA must be able to work in a “scientifically objective fashion, independently of the developer or the public authorities themselves”. Another relevant provision is that the public concerned should be allowed to challenge the screening and scoping decisions with the aim to make sure that the public is part of the procedure from the beginning. The legislation should be amended so that the public is informed along the process and is given the opportunity to participate in the decision-making by expressing comments and opinions which should be adequately taken into account by the competent authority.

The proposed amendments to EIA Directive will increase its effectiveness as EIA model in Romania. There are some obvious benefits to implementing the EIA Directive such as the fact that the environmental considerations will be integrated as early as possible in decision-making process, thus granting developers the possibility to anticipate compliance issues even prior to the project application while the public at large is informed and can challenge the legality of final decisions. Performing an EIA leads to cost avoidance for environmental and health damages. Nevertheless, much more remains to be done so that the EIA is granted a realistic chance to influence the outcome of decision-making in the shale gas debate. The implementation of the amendments to the EIA is more likely to be uneven in the member states. This will have negative impact on the competitiveness as companies will operate in uneven playing fields.

4. IMPLEMENTING THE EIA DIRECTIVE: THE CASE OF ROMANIA

In Romania, the ministry responsible for implementation of the EIA directive is the environmental ministry and the authorities under its coordination (such as the regional environmental protection
agencies and the national one which has competences in implementing environmental policies and legislation). Furthermore, the ministry oversees the Technical Assessment Committees which are responsible for assessing the project under consideration for an EIA. In Romania, a case-by-case evaluation is performed in order to determine whether a project shall be made subject to an EIA. The legislation does not mention the express obligation to undergo an environmental impact assessment for unconventional projects. The Romanian petroleum legislation does not make any distinction between conventional and unconventional resources and there are no specific procedures aimed to assess the environmental impact of the shale gas exploration and exploitation. Both type of resources fall under the broad definition of ‘petroleum’ as provided in the Romanian Petroleum Law no 238/2004. The authority responsible for concluding concession agreements (petroleum agreements) for the exploration and exploitation of petroleum is the mineral resources agency. An agreement has multiple stages of execution: exploration (performed after the geological studies and the seismic prospects were carried out), development and exploitation. The concession agreement allows the developer to undergo all three stages of execution without requiring any extra agreements. That means that whoever holds a concession (Petrom, MOL, Romgaz, or any other developer) and is exploring the potential for gas for example, is entitled to exploit any resources identified (from mineral water to non-conventional resources). Three studies were done in Romania concerning the environmental impact of exploration phase carried in three villages in Vaslui county. Based on the studies undertaken by the technical team of Halcrow Romania, the developer, Chevron was granted the permission to start the exploratory drilling.

There are three main pieces of legislation implementing the EIA directive in Romania.

First, environment ministry order 863/2002 sets out the guidelines that an EIA report must follow and regulates the conditions that should be considered when undertaking an environmental impact assessment report. The methodological guidelines highlight what the EIA should include, taking into consideration all environmental factors and the vulnerability of the environment in some of the areas to be affected by the project (such as the quality and the regeneration capacity of natural resources in the area or population density). According to the order, EIA studies are drafted by an individual or a company certified by the environment ministry. The developer of the project will pay for the EIA study. This raises concerns about the objectivity and the quality of the EIA report as the experts undertaking the study are likely not to give a fair analysis, but to provide one that will ensure obtaining the permit. This is perceived as a bias process by the public concerned (environmental organisations and inhabitants of the targeted areas). The current amendments to the EIA directive stress how crucial it is to have qualified experts, with technical capabilities working on the studies, instead of grating relevance
to the being accredited criteria. Second, the order stresses that the environmental protection agency should encourage the developer to identify the public concerned and engage in a direct dialogue with them and organise public debates. Furthermore, it has to prepare answers and solutions to the issues rose during the debate and also has to perform any amendments to the report as requested by the technical analysis committee and taking into consideration suggestions coming from the participants. The order is of significant importance for the EIA study as it provides a „check list” to be considered when drafting the report. The study should present accurate information on the potential impact, existent conditions, forecasted impact; it should be concise, comprehensive, objective and impartial; and include a full description of the proposed project.

Order no 135/2010 is a joint order issued by the environment, agriculture, domestic affairs and regional development ministries approving the methodology related to EIA for public and private projects. For the initial assessment, the project owner must submit to the county’s environmental protection authority a notification regarding its intention to implement the project. Chevron has done so for three areas located in Vaslui county. The EIA procedure has the following stages:

- **Project classification** – the environmental protection authority decides, as appropriate, whether to perform an EIA and/or adequate assessment. In the first phase, the local environmental authority analyses the memorandum, establishes a technical analysis committee, assesses whether the project has a cross-border dimension and informs interested third parties about the project owner’s application. Based on Chevron’s request, for exploratory drilling, the agency has urged for the necessity of an EIA report;

- **Defining the assessment domain** - the environmental agency has provided to the project owner guidelines (included in order 863/2002) regarding environmental issues to be analyzed; Chevron has organised a public debate on the EIA report under the guidance of the environmental protection authority;

- **Assessing the quality of the report** - The Technical Analysis Committee (TAC) within the environmental authority discusses and comments on public opinions, verifies the quality of the EIA report according to the applicable guidelines and decides whether to issue the environmental permit. The technical committee’s members are not experts, but representatives of relevant institutions and therefore are not able to contradict the EIA report. The environmental protection agency has released a document answering all the comments made by the public and assessed the compliance with the guidelines set under order no. 863/2002 and decided to grant the permit for all three areas in Vaslui county.
Government decision 445/2009 refers to the assessment of the environmental impact for certain public or private projects. The order was passed with the aim to fully transpose the EIA Directive and correlate it with the national legislation. For example, it includes a list of the projects subject to environmental impact assessment (transposing Annex no. 1 of the directive) and the list of the project for which it should be decided if they will be subject to an environmental impact assessment (Annex no. 2). It sets the general framework for the environmental impact assessment and includes provisions on the information to be contained in the EIA report. It refers to three main stages: the screening stage (the environmental protection agency decides whether an EIA and an appropriate assessment are required), the assessment scoping stage (the environmental agency gives assistance on the environmental issues to be analysed in the report; and when appropriate decides to take into consideration the public proposals) and quality analysis of the EIA report (requires a consultation period of minimum 20 days, followed by a public debate). In Romania, the petroleum concessions are not public and the granting process does not provide sufficient access to the public. The public can intervene only in the debates organised on the EIA report, as well as with written comments and suggestions on the reports. On the three environmental studies, the public (including environmental organisations) expressed worries that their comments and suggestions were ignored or shallowly treated and argued that the reports and the answers on their queries did not particularly address their worries and focused, instead on the aspects that can generate positive effects. The reports were claimed to be statements of what is going to be performed, without a critical approach and an impartial analysis on the likely impacts and way to offset and mitigate the risks (DG Environment of the European Commission and Milieu Ltd – Law & Policy Consulting, 2013).

Given the current amendments to the EIA directive, the Romanian legislation will have to be modified to take into consideration the European provisions. Nevertheless, the permits granted to Chevron, based on the environmental studies for Vaslui region entitle the company to carry on the exploration phase, and if they find the recovery of shale gas economically viable, to exploit the potential of non-conventional resources. The policy recommendations push for better legislation consistence and coherency, greater transparency from the government, as well as developers, informed debates and better communication with the public concerned. So far, it seemed that the Romanian government was keen to ensure shale gas investors a minimum of regulation rushing on with granting permits before the European institutions finalised, debated and approved the amendments to the regulatory framework regarding the EIA. Accidents are prone to happen: equipments can fail and people can make mistakes, so it is crucial to know how to respond. Few issues should be considered. First, an EIA investigates the impact of a process on the environment. To properly assess the impact, the pre-existing
conditions, that is the baseline has to be recorded so that any changes that will occur will be analysed. Any responsible company should do the baseline assessment. Second, the EIA directive should be better coordinated with other environmental related directives: for example the water treatment and disposal may be covered under the Water Directive, the road traffic and pipe-work may be addressed by the EIA Directive, while the chemical substances to be used as fracking fluid in the process could be regulated under the REACH Directive. Third, areas which are not favourable for development should be identified based on the regional characteristics with the aim to protect the vulnerable areas with unfavourable geology or areas with drinking water issues. Forth, in order to insure the objectivity and the quality of the EIA report, the developer should not be able to make contact with the experts involved in the process, much less to pay them. It is likely that tighter requirements concerning the EIA could lead to a slower permitting process. Considering that the EIA takes between 6 to 12 months to be completed, this means that undertaking an EIA report is likely to slow down exploration in Europe and transform into a bureaucratic and lengthy process. Nevertheless, regulators should take a risk based approach, and if the activity poses an unacceptable risk to the environment, it should not grant approval. As currently debated in the European institutions, the environmental impact assessment should be mandatory for all shale gas operations, involving the participation of local communities at the earliest possible opportunity.

CONCLUSION

It is unlikely that EU will have a homogenous position in the shale gas debate considering that member states do not have the same pool of resources and countries have their own strategy for exploring resources. The environmental policy is likely to grant EU more powers over shale gas development as the EU could intervene with environmental standards, especially concerning water resources or stricter regulation regarding the integrity of wells. Thus, the EIA Directive plays a central role, as it has to make sure that environmental effects of projects are taken into account before the final decisions are made. In relation to shale gas, EC has to make sure that operations comply with all applicable EU legislation and safeguard the safety of the environment and humans, in particular to paint a clear picture on potential risks and impacts. Nevertheless, the current EU regulatory framework concerning hydraulic fracturing has several shortcomings. First, the threshold for EIA to be carried out on hydraulic fracturing activities is set far above any likely industrial activities of this kind, and thus should be lowered significantly. Second, Annex II does not include a definition of ‘deep drilling’, thus any exploration phase would not be covered under Annex II classification. Third, in the development stage of the project, the public concerned (including environmental organizations) should be allowed to express opinions on the
permit’s request and to challenge the legality of a decision to grant a permit to a developer. Forth, the conflict of interest regarding the experts undertaking the EIA studies should be abolished.

REFERENCES


