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World Bank Institute Learning Symposium: Governance of Unconventional Gas: Exploring How to Deliver Transparent Benefits in Non-OECD Countries
World Bank Headquarters,
Washington DC, 2-3 June, 2014

EDITORIAL

OGEL Special: Governance of Unconventional Gas outside the United States of America

Dr. Philip Andrews-Speed
Energy Studies Institute of the National University of Singapore

Editorial

I have become increasingly interested in understanding why governments and societies miss opportunities, wilt before severe challenges or generally mess up the governance of natural resources, and how they do so in different ways. Whilst the low-carbon transition is one of the more obvious examples to study, the extraction of unconventional gas (mainly shale gas and coal-bed methane) provides another lens through which we can study the governance of natural resources.

Whilst undertaking research into the governance of unconventional gas as part of a project being run by the Energy Studies Institute of the National University of Singapore, I quickly became aware that the literature on countries outside the USA and a few European states was rather thin. To address this deficiency I put out a call for papers for this OGEL Special Issue on the *Governance of Unconventional Gas outside the United States of America,* as well as for a Special Issue of the Journal of World Energy Law and Business (JWELB) on *Unconventional Gas in East Asia.*

The call for papers for the OGEL Special Issue drew the attention of Michael Jarvis at the Governance of Extractive Industries Program of World Bank Institute (WBI). This led to cooperation between OGEL and the WBI, with the support of JWELB, to convene a Learning Symposium on the *Governance of Unconventional Gas: Exploring How to Deliver Transparent Benefits in Non-OECD Countries* , held at the World Bank Headquarters, Washington DC, 2-3 June, 2014. Authors of a representative selection of OGEL and JWELB papers were invited to participate in the symposium, along with a number of other practitioners, policy advisers and academics. The first paper in this Special Issue summarises some of the outcomes of this symposium.

legal practitioners, consultants and academics, and their perspectives include law, economics, politics and social science. Through this diversity of geography, political context and perspective, the reader can gain a good insight into the complexity and diversity of the challenges involved in the governance of unconventional gas.

Philip Andrews-Speed
Energy Studies Institute,
National University of Singapore

Towards a Roadmap for Governance of Unconventional Gas: A Multidimensional Challenge

Michael Jarvis
World Bank Institute

Learning Symposium

The "shale gas revolution" in the US has led to an explosion of interest around the world in shale gas and, to a lesser extent, in tight gas and coal-bed methane. Recent estimates point to the large potential for unconventional gas development in a growing list of countries, including South Africa, Botswana, Mexico, Brazil, China, Algeria and the Ukraine. Some governments, such as in Poland and the UK, have championed active exploration while others still debate the potential impacts of this relatively new area of exploitation. Though unconventional gas is seen as a relatively clean source of energy and as presenting an opportunity for enhanced security and diversity of supply, it also presents its own set of risks that need to be weighed against economic opportunity.

Within this context, good governance is essential to ensuring positive long-term outcomes from unconventional gas development. As has been demonstrated all too often for conventional petroleum extraction, it is more often the non-technical than technical risks that bedevil a project and lead to delays from an investor view point or adverse outcomes locally. Early experiences with unconventionals reinforce this same trend. Yet, what constitutes good governance practice for unconventional gas?

In tandem with this special issue, in June, 2014, Oil, Gas and Energy Law Intelligence (OGEL) and the World Bank Institute (WBI) organized a Learning Symposium to explore that question. Just as governments are exploring the issues that make good for good decision making around unconventional gas, so are technical assistance providers that have a track record of supporting extractives more broadly. Convening a number of the authors represented in this issue together with additional policy and industry experts, the Symposium was a chance to explore key governance considerations relating to potential and established shale gas and coal-bed methane development. Attention to good governance has come late to many policy discussions and practice in the history of traditional oil, gas and mining extraction. The shift to unconventionals offers a chance to embed good governance approaches upfront.

Points of convergence from the wide ranging discussion are detailed below. In many respects, the framing issues raised were common to conventional extractive industries discussions (mining as well as oil and gas), many tied to broader policy agendas and international developments on today's front pages. These included considerations of impacts related to:

- energy security,
- climate change,
- the adequacy of legislative and regulatory frameworks,
- securing the social license to operate,
- access to land and water, and
- institutional capacity.

However, to each there were important nuances delineated specific to unconventional gas development, which clearly merit careful consideration.

Recognize that Unconventional Gas is Different, Treat it as Such. Given the different financial and operating models for unconventional gas, simply relying on existing governance structures from more traditional extractive industries is unlikely to be effective. While it is easier to develop shale gas in contexts with a legacy of conventional exploitation (skills, knowledge, legislation and regulations) there are still aspects that will require careful revision. Some issues that are important to consider, for example, include: whether the cost recovery model is applicable; what constitutes "commercially viable" discoveries in the case of unconventionals; effective approaches for balancing 'enabling' regulations versus 'protective' regulations; and a clear need to secure a social license to operate given prominence of debate, most notably around shale gas, not just local to exploration and production, but at the national level. Furthermore, given that shale gas development is a relatively new area there are still elements around contract negotiation-such as the development of joint operating agreements-that need to be better clarified.

Context Matters. There is no cookie cutter approach. It is important to understand the political economy in each region, country and locale. This is true whether for appreciating the risks of bureaucratic in-fighting, coordinating the roles and responsibilities for managing unconventional gas between departments, identifying champions, generating confidence in the rule of law, or overriding political imperatives. For example, in some emerging countries, shale gas production will often have to be considered within the context of poverty reduction. In this context while the United States presents some important lessons and visits to shale plays have been highly information, it is unlikely to represent an appropriate 'model' for duplication or

replication. Governance frameworks have to reflect domestic realities and capacities. That said, the participants at the Symposium did identify some value to regional considerations in terms of unconventional gas development - spotting some patterns to approaches in Latin America and South East Asia, for example, reflective of shared contextual elements.

Take the Time to Get it Right. Ideally, governments will take the time to clarify objectives and make a careful assessment of the potential merits and downsides before committing to development. In Australia, Western Australia certainly appears to benefiting from a "go slow" approach in getting the right frameworks in place, compared to other states which have hit roadblocks. Particular care needs to be taken when making the decision to explore/exploit unconventional gas, since alternative sources of energy may have a lower long-term cost.

Once a company loses its social license to operate, it is very difficult to regain. Governments, too, can quickly find themselves locked into limited policy options. Global experience illustrates that projects which lack a shared vision (combining both investor and community interests) are less likely to succeed. For this reason, it is imperative that companies and governments always complete their due diligence before production. This will involve not only thorough feasibility and impact assessment studies, but also well-planned strategic engagement activities intended to gain the confidence and buy-in of the local community. Within this context, companies and governments both need to be transparent and open to dialogue and consultation.

All these considerations, assessments and engagements also have to be balanced with a fairly aggressive timeline-from exploration to launch-necessary to remain competitive. Ultimately, a well-thought out and systematic process would help maximize potential gains from development, minimize environmental risk and impact, as well as promote social benefit and energy security.

Information Access and Integrity. Whilepublic awareness of hydraulic fracturing has increased significantly in the past few years, much has focused on environmental risks and there typically remains a lack of clarity around strategic opportunities, risks, and impacts overall. Central to the effective governance of the industry is the free flow of information and transparency in decision-making processes. Such openness will help address asymmetries of information between governments, the industry, and civil society. If unchecked, information asymmetries have the potential to lead to confusion as well as to hinder constructive dialogue and consensus building. Lack of trust in information sources is a further challenge given frequently polarized positions. Comprehensive reports and fact based assessments can be a platform to address public concerns - recent UK investment in such information will be a test case. However, it is important to consider the full range of information channels - those expressing concerns over hydraulic fracturing, for example, have frequently made very effective use of social media. This suggests a need to consider both traditional and new media to help educate and sensitize citizens on the risks and rewards of unconventional gas development, as well the implications for the effective governance of the sector. In this regard, there are potential learnings from other sectors that have elicited citizen concerns, such as around the risks of radiation from cellular telephone towers.

Explore the Potential for Consolidated Guidance on the 'How To.' There exists little knowledge of or established consensus on best practice around the governance of unconventional gas development. For this reason, it would be necessary and useful to develop a practical roadmap that guides governments and stakeholders through a step-by-step process for potential development and the various 'good governance' interventions needed at each stage of the value chain. These would include, for instance: how to effectively develop a state narrative on the 'business case' for shale development; how to manage public expectations; the development of a realistic timeline, (based on guidance on what constitutes a good timeframe from exploration to launch); how to design and deliver multistakeholder dialogues; how to assess and address capacity gaps; how to develop and clarify fiscal rules. The core features of such a generic roadmap would be useful to all, although, as already noted, such guidance would need to be adaptable to different political, economic and social contexts.

Facilitate Ongoing Knowledge Exchange. As global interest in shale gas increases, there is a clear value to exchange of country experiences and shared learning to help fill gaps in common understanding around what is effective in terms of governance of unconventional gas. The articles in this special issue are one highly useful step to fill that gap, but as the Learning Symposium exposed, much more can be done through platforms for shared learning. The participants expressed the hope that the Symposium marked the beginning not end of discussions and could form a kernel for an ongoing community of practice. The resulting insights need to be as relevant and digestible for government officials, for industry, and for civil society, as for researchers, analysts and advisers.

Full article here

OGEL SPECIAL: GOVERNANCE OF UNCONVENTIONAL GAS OUTSIDE THE UNITED STATES OF AMERICA

General

Enhancing the Energy Security and Governance of Shale Gas

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Abstract

Many assessments of the promise and pitfalls to shale gas development are incomplete. They tend to focus primarily on the benefits for electricity generation and gas producers, and therefore only address in a limited way the impact shale gas has on wider issues such as energy security and stewardship. We expand on the existing literature by considering a broad treatment of the energy security needs of the United States and other countries. We find that with the proper safeguards in place-public disclosure, sound water management, continuous evaluation and stakeholder engagement, selectivity in drilling sites, active minimization of negative externalities, and international performance standards-shale gas production can potentially do more help more than harm.

Keywords: Shale gas; energy security; natural gas; hydraulic fracturing; fracking

Full article here

The Expanding Circle of Stakeholders: Shale Gas, Information Flows, and the Social License to Operate

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Abstract

Changes in information flows, outreach, and social media have vastly expanded the number and locations of interested parties who consider themselves stakeholders in shale gas development and offers them opportunity and involvement as perceived equal stakeholders. The inclusion of these new parties - with agendas often quite different from traditional stakeholder sets, living far from shale deposits, and with limited direct experience or investment - can complicate the granting of social license to operate. This issue is of increasing importance as countries such as South Africa, Argentina, Poland, China, Great Britain, Ukraine, Australia, Canada, Mexico, Romania and others begin considering or planning development of their shale resources.

Full article here

Research and Innovation Partnerships: Lessons and Resources for the Unconventional Gas Sector

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Abstract

University-industry partnerships alliances in the unconventional gas sector have faced public scepticism and challenges to their legitimacy, in a number of cases this has been due to concerns including; perceived conflicts of interest, a belief that research outputs will lack integrity and independence, and a lack of stakeholder representation in decision making. A number of controversies have emerged in relation to collaborative research partnerships in the United States, United Kingdom and Australia. This paper aims to collate a number of lessons learned from such partnerships. Such lessons relate to organisational due-diligence, conflict of interest policy and disclosure, organizational governance, and leading practice in research integrity. The paper also provides a range of resources for practitioners to access.

Keywords: Partnerships, innovation and research, organisational governance and research integrity. Disclosure: Both researchers are PhD candidates within the Sustainable Minerals Institute (SMI) at the University of Queensland (UQ). They are recipients of Australian Government Post-Graduate Awards and receive an additional stipend from the Centre for Social Responsibility in Mining (CSRM) and the Centre for Coal Seam Gas (CCSG), which is jointly funded by UQ and companies in the Coal Seam Gas (CSG) industry.

Full article here

Europe

EU Engagement with Shale Gas

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Abstract

Several European Union (EU) member states have an explicit ambition to strengthen their energy security by tapping into indigenous shale gas reserves. To date a complex set of factors has contributed to the fact that no commercial shale gas extraction has taken place. Though debates in the European Commission (EC) and the European Parliament (EP) continue, decision-making regarding shale gas extraction continues to be an affair primarily addressed at the member state level. In this short paper, we argue that while the division of labor between supranational institutions and member states in the EU seems to have been demarcated clearly for now, intra-EU debates about shale gas extraction will inevitably continue, as the EC continues to have a large mandate related to environmental issues such as air quality and water quality. It may be that European institutions in the coming years propose binding European legislation specific to shale gas after all.

Full article here

Shale Gas in the European Union: You, me, together? Reflections from a Subsidiarity Perspective

Leonie Reins
KU Leuven

Introduction

The positions of the European Member States on shale gas legislation and policy are quite divergent, ranging from banning of the activity in France to exploratory drilling in Poland and the United Kingdom, as discussed elsewhere in this volume. A common European position seems hard to establish, as demonstrated by the Council's refusal to include a mandatory environmental impact assessment (EIA) on shale gas into a revised EIA Directive. The Commission has nonetheless established some minimum principles on shale gas in the form of a non-binding Recommendation. This is at first sight quite surprising. Government officials, NGOs, and the Committee of the Regions (CoR) had all asked for a stringent regime due to the associated negative environmental impacts of the activity and uncertainties how and if these evolve in practice as well as due to the large public opposition in the Member States. However, if one steps away from the political dimension of the debate and concentrates on the legal perspective, it becomes well apparent that the hands of the European Institutions might be tied. Shale gas is not so easily comparable to other environmental issues that easily pass the subsidiarity hurdle.

This paper focuses on the legal perspective to the challenge outlined above. Taking into account that the energy and environmental competences of the Union are shared, several questions emerge: how far does the Union's competence reach from a subsidiarity and proportionality perspective? Does the Union have competence to introduce a legal measure on shale gas? Is the recently published Commission Recommendation on minimum principles for unconventional hydrocarbons an escape route in this regard?

Through the blocking of a mandatory EIA, the pro-active shale gas Member States have made it clear that European involvement into the issue is not welcomed. The underlying question is thus: to what extent can the European Union at all engage in the issue? The horizontal division of competences and how this affects the shale gas debate has already been discussed; this contribution focusses on the vertical competences, more precisely on how competences are distributed between the EU and the Member States. Taking into account the question marks outlined above, one has to focus on two essential questions. Firstly, why has the Commission acted at all?; and secondly, why by means of soft law?

Full article here

Shale Gas Planning Applications, Protesters, and Governance: Lessons From the Uk

Professor Ray Kemp
Ray Kemp Consulting Ltd.

Summary

This paper considers the background to high profile protests against fracking for shale gas in the UK from risk perception, risk management, and governance perspectives.

There has always been a tendency to label community opposition to new development projects as "Not In My Back Yard" (NIMBY), or "Not In Any Body's Back Yard" (NIABY) in nature, and therefore either as being self-interested, or implacable and by implication unreasonable in nature. This paper argues that such community reactions are in fact quite predictable responses to perceived external hazards where effective governance has either failed or has been non-existent.

The solutions lie in better understanding public and community concerns and in finding effective consultation strategies to avoid an impasse or outright conflict. Improved dialogue and a greater emphasis on sustainable development and shared

benefits are key to making progress. This does not mean that "Yes In My Back Yard" (YIMBY) or "Yes In Somebody's Back Yard" (YISBY) outcomes will always result - but improved forms of governance for shale gas exploration and production are the important first step.

Full article here

Shale: A Guide to Tailoring Legislation, SPAs, Farm-in Agreements and JOAs in Developing Basins

Humphrey Douglas
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Summary

The United Kingdom (UK) Government, with broadly cross-party political support, was quick to seize the initiative in promoting the development of unconventional gas developments. Such initiative was quickly followed by a number of high profile (albeit limited scale) investments in early stage shale developments in the UK, perhaps most notably by the French major, Total.

Other developing unconventional gas regimes will, therefore, be interested to learn what, if anything, governments can do to attract a limited pool of international petroleum investors to their fledgling unconventional developments.

Learning from the UK example thus far in summary is:

- early political alignment may attract investor interest;
- clarification on an existing regulatory approach gives some investor certainty, and may be sufficient for initial investment by some;
- detailed amendments to regulation or other enhancements of the governance framework may be required to attract more substantive investments and lead to significant drilling activity; and
- where amendments are not made, and in any event, investors may make do with risk allocation in joint venture and other arrangements, where relevant.

Full article here

Fracking the UK's Shale Gas Regulatory Regime

Yanal Abul-Failat
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Introduction

The production of oil and natural gas from shale formations is becoming a trend, and many countries with technically and economically recoverable unconventional resources are endeavouring to explore how shale formations may benefit the economy and achieve energy security. The trajectory of shale gas development in the UK is highly supported by the government; in the Gas Generation Strategy Paper published by the UK government on 5 December 2013, it is recognised that the shale gas production would decrease reliance on imports and thus enhance the UK's energy security. Moreover, the UK Institute of Directors report on UK Shale Gas Potential explains that in the UK there is a potential of production peaking at around 1.13 trillion cubic feet ("tcf") and a sector that could support around 70,000 jobs and secure net benefit to the Treasury in tax revenues. On this basis, there has been a growing interest in the benefits of exploring the UK's shale gas but a combination of technical challenges faced in shale gas operations, a stern opposition by environmentalists and concerns on the adequacy of the legal framework have slowed the progress of the emerging UK shale industry.

Full article here

Full article here

Energy Security or Energy Governance? Legal and Political Aspects of Sustainable Exploration of Shale Gas in Poland.

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Dr. Slawomir Raszewski
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Abstract

This paper analyses prospects for an institutional structure to govern and ensure environmentally sustainable exploration of unconventional (shale) gas in Poland. Shale gas developments in the United States (US) ignited a widespread policy and law debate in Europe about the prospects of emerging fuel. In Poland, the debate has developed particularly high expectations on both the Government and the Public's side, ascribed to future exploration and production of unconventional gas from shale formations. To ensure a balance between energy security prerogatives and resource governance responsibilities, Warsaw has sought to organise a top-down approach to shale gas exploration in Poland with an enhanced role-playing of the

Government and its respective Ministries, particularly the Ministry of Environment in absence of an Energy Ministry proper. What can be referred to as a state-centric model toward exploration of shale gas, the Polish case study evidences opportunities as well as challenges in replicating the US's revolutionary gas production developments and it continues to have an impact on embryonic structure of energy governance in Poland. Utilising theories of politicisation and governance, the paper argues that the state-centric approach to the emerging resource may be inadequate to initiate a large-scale energy security change the country longs for. The state-centric approach and lack of a robust legal framework may have been the key challenges to the rise of shale gas momentum which peaked in early 2010s. Exodus of key commercial actors from the Polish market in the last couple of years may harbinger inevitable decline of future shale gas exploration and production as much needed financial and technological stimulus may be lacking.

Full article here

Governance of Unconventional Gas in Bulgaria: From Exploration to Bust

Dr. Andreas Goldthau
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Michael LaBelle
Central European University, CEU Business School and Department of Environmental Sciences and Policy

Abstract

The story of Bulgarian shale gas exemplifies the difficulty for the unconventional gas industry to take a hold in Europe. This paper investigates the reasons for Bulgaria banning shale gas by disentangling the various domestic causes at work. We find the failure of shale gas exploration to progress in Bulgaria is attributed to two main drivers: material factors such as the government's interest in staying in power; and process related drivers, notably a highly centralized politically controlled decision making structure and a flawed policy process. Central to the discussion is the alienating of local level municipalities thus making them politically resistant to national level dictates. Interestingly, the protest movement resonated in both the environmental realm and geopolitical sphere, with policy agendas partially overlapping with those of Gazprom, the dominant foreign actor in Bulgaria's energy system. The fate of Bulgarian shale gas therefore offers broader lessons on the governance of shale gas, for Central Eastern Europe and beyond.

This research was supported by a Marie Curie International Outgoing Fellowship within the 7th European Community Framework Program. The authors gratefully acknowledge additional support provided by the Central European University Business School Institute for Entrepreneurship and Innovation and the European Union.

Full article here

Africa

SOUTH AFRICA

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Summary

Shale gas could help South Africa become energy independent, support growing electricity demand, and play a key role in South Africa's economic and development plans. The South African government has demonstrated its clear policy support for exploring shale gas, and indicated that it will implement the necessary governance systems.

There are some limitations in the regulatory framework in South Africa as it stands today however. The key legislation was developed primarily for the mining industry and is not tailored to the regulation of onshore gas activities.

Aspects of the environmental legislation are new and untested, and there is a fragmented approach to water, air, waste management and other environmental impacts. Overall, the enforcement of regulatory duties is still in a developing phase in South Africa, particularly in the context of environmental matters. The challenge for regulators will be to build capacity and experience to be able to effectively regulate the complex industrial activities associated with shale gas.

It is in the gas industry's interest for the regulatory framework to be robust, as otherwise NGOs may fill the void and create project delays and additional burdens and costs for industry. We consider that the industry would benefit from a stand-alone regulator for offshore and onshore gas and petroleum development, as well as bespoke legislation.

Full article here

Fracking the Karoo: Mitigating environmental damage

Dean Raviv
Go Legal

Abstract

As the fracking boom gains momentum around the globe, South Africa must prepare a comprehensive frack-related legal framework and commence with the extraction of the enormous wealth buried deep within the Karoo desert.

The objective of this paper is to examine the applicability of South Africa's legal framework to the mitigation of the water related environmental risks posed by fracking activities, and to propose possible legislative solutions where legal lacunas exist. A close look will be taken at the fracking laws of the USA which today is largely the most advanced fracking nation in the world, with a view of importing the extensive knowledge into South Africa's own legal system.

The analysis conducted in this paper will demonstrate how South Africa's existing legislation provides a degree of protection to surface and underground water which may be affected by fracking operations, but that further legislative development is necessary in order to mitigate the potential risks as far as possible. In developing suitable laws, lawmakers and relevant authorities must keep human rights and socio-economic principles at the forefront of their mind.

Full article here

Exploration and Production of Unconventional Hydrocarbons in Algeria - Recent Trends

Emmanuel Gaillard
Maude Lebois

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Summary

[Will be added shortly] - According to a report published on 10 June 2013 by the US Energy Information Administration (EIA) and the figures announced by Algeria itself, Algeria's technically recoverable shale gas reserves stand at over 700 Trillion Cubic Feet, giving it the world's third largest technically recoverable reserves of shale gas, behind China and Argentina. Yet, at this stage it is still difficult to estimate with any certainty the real output potential of Algeria's unconventional reserves. Production of unconventional hydrocarbons is not set to begin before 2016. Production of unconventional hydrocarbons is however expected to increase significantly over the next twenty years. In 2013, Algeria amended its hydrocarbon-related legislation in order to create attractive contractual and financial conditions to offset the heavier investment required for exploration and production of unconventional hydrocarbons. Further, on 21 January 2014, Algeria initiated a call for tender covering 31 perimeters, 10 of which are known to contain reserves of unconventional hydrocarbons, mostly shale gas.

Full article here

Australia

Regulating the Environmental Impact of Tight and Shale Gas Tight Gas Projects in Western Australia: An Assessment of the Existing Regulatory Framework

Dr. Tina Hunter
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Abstract

This paper analyses the WA legal framework regulating the impact of tight and shale gas (T&SG) (project development, especially during the extended appraisal phase. It assesses whether the existing regulatory framework in WA is capable or regulating the environmental impacts of tight and shale gas activities in Western Australia, or whether it still favours conventional petroleum projects.

An assessment of the appraisal phase of shale gas development, under the Western Australian petroleum regulatory framework concludes that the framework, whilst sound, needs to respond to the special requirements of the extended appraisal that is unique to shale gas resource assessment. In assessing whether the existing regulatory framework for T&SG activities in Western Australia is best practice, this paper identifies a need for specific chemical spill contingency plans and well integrity response plans in order to minimize the environmental impact in the event of blowouts or loss of well control.

Full article here

The Regulation of Unconventional Gas in Queensland and New South Wales - Divergent Paths, Same Destination?

Richard Brockett
Ashurst Australia

Abstract

Unconventional gas (including coal seam and shale gas) will play an increasing role in meeting global energy demand. Australia, in particular Queensland and New South Wales, boasts considerable unconventional gas reserves. Queensland already supports 3 world first, CSG-LNG projects. However, the industry has generated considerable community concern.

Governments in both jurisdictions (and the Commonwealth government) have reacted by introducing extensive regulatory reforms seeking to bolster their existing frameworks whilst attempting to balance the interests of the community in ensuring environmental protection (especially in relation to water) whilst facilitating the industry's development in a contracting

resources cycle so as to maximize the economic benefits associated with their operations.

Whilst Queensland has actively promoted and facilitated the industry's rapid expansion, more recent legislative developments have created doubt and caused the industry to reconsider further investment. This reticence has its roots in growing compliance and operational costs flowing from regulatory 'reforms' and general project delays and uncertainty.

Alternatively, in New South Wales, where the industry's development labors behind that witnessed in Queensland, regulatory vacillation has arguably deterred existing operations from expanding and has certainly hampered new exploration and production activities. However, a potential benefit may be that a robust framework will be generally in place before large scale development is sanctioned and therefore investment cases will not be impacted by spiraling costs arising from post-FID regulatory change.

Given that the two jurisdictions are seeking to support the same industry, are geologically and geographically connected, face the same technical and regulatory issues and exist under the same law traditions it is pertinent and interesting to review and consider the points where they align and identify their departures and consider, from a regulatory perspective, which may be optimal. This paper undertakes this task and intends to analyse whether the approach of one is more beneficial when compared with the other.

Full article here

Canada

Unconventional Gas Regulation in Canada

Silke M. Popp
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Summary

Although the exploration and production of unconventional gas is a relatively new and rapidly growing segment of the natural resources industry, Canada has a long history of oil and natural gas production and regulation. This paper discusses the many types of unconventional gas resources found in Canada, the foundation of the current regulatory system, as well as the extent to which existing and proposed regulations govern the exploration, development, and production of unconventional gas.

As of October 2013, Canada is the only other country in the world, apart from the United States, which is a major producer of commercially viable quantities of unconventional gas. In many ways, Canada's approach to development and production of its unconventional gas resources has seen a more tempered approach than in the United States, avoiding some of the frenzied activity witnessed, for instance, at the advent of production in the Bakken formation in North Dakota. As such, its regulations and how it imposes them might serve as a model for countries which are still deciding how-or even whether-to produce their own reserves of unconventional gas.

Canada's vast geography and breadth of political sentiment is reflected in its policies-which range from some of the most comprehensive and detailed regulations in the world in some provinces, to complete moratoria in others. A survey of the existing and proposed regulations in Canada reveals that the country's favor of strong governance has translated to its oversight of the development and production of unconventional gas, with clear attempts by the relevant agencies to carefully consider the many impacts-and potential rewards-of an active unconventional gas industry. This approach is likely to continue as production increases, and will have a significant impact on global regulation as the industry is poised to grow in other countries.

Full article here

How Robust is the Governance System of British Columbia for Regulating the Environmental Aspects of Shale Gas Development?

Sanna Elfving
University of Surrey

Abstract

This paper focuses on the robustness of the regulatory system of British Columbia (BC) from the environmental point of view. It argues that the enforcement of existing regulations is effective due to the active monitoring of compliance by the provincial oil and gas regulator. The regulator has a key role in promoting transparency, public participation and safety and sustainability of shale gas operations. The paper argues that although certain elements in the provincial legislative framework are covered by non-binding guidelines, rather than legislation, the regulator has responded to many of the concerns raised by the public over the shale gas development in BC, including impacts on regional air quality, fresh water contamination and access to water, deforestation, biodiversity and induced seismicity.

The regulator has also recognized several key issues, such as baseline water monitoring as an issue requiring further research. This paper concludes that BC has one of the most robust regulatory systems in North America for regulating hydraulic fracturing.

Full article here

Latin America

Mexican Hydrocarbon Governance: A Developing Story

Cheryl Nolan
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Norton Rose Fulbright

Abstract

Mexico has a long history of hydrocarbon production. Much of Mexico's experience, however, has been characterized by the State monopoly on exploration and production. After decades of inefficiencies, high tax burdens, and restrictions on reinvestment, Mexico has found itself lagging behind other countries with respect to the experience and resources required to compete in the global hydrocarbon industry and fully exploit its resources. Recent reforms provide incentives for private investment and participation in Mexico's hydrocarbon industry, which will likely facilitate more technologically complex exploration and production of Mexico's vast unconventional reserves. As the next weeks, months, and years unfold, Mexico's hydrocarbon governance regime, including its environmental regulation, will continue to develop and adapt to unconventional production. In addition to facing the regulatory unknowns, producers and operators will have to address other difficulties, both unique to Mexico and universal to countries recovering production from their unconventional reserves.

Full article here

Unconventional Gas Development: Updates from Brazil

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Lawyer

Bruno Fernandes Dias
Valente Fernandes Advogado

Summary

Data gathered for this study has shown how governments worldwide are eager to diversify their energy mix, gain energy autonomy and drive down fuel bills. This has become a viable option now that recent advances in technology allow for relatively easy access to unconventional gas reserves.

Here, one takes a closer look at Brazil, which, late in 2013, saw the Agência Nacional do Petróleo, Gás Natural e Biocombustíveis (ANP) issuing Regulation for the exploration of shale gas in land basins across the country. The authors examine how this regulation caused uproar not only amongst civilian society, but also within governmental body groups. Emphasis is also given to Ministério Público Federal v. Agência Nacional do Petróleo e Outros (2013), a case in which a federal court delves into some of the environmental repercussions the advent of shale gas exploitation may cause.

Against that background, the contributors tackle the governance of shale gas in Brazil by analysing the legal basis for shale gas regulation, considering the limits of ANP's formal competence, the need of a proper congressional legal instrument, as opposed to an executive act, and the oversight of crucial environmental principles and procedures.

Finally, a comparative approach is taken regarding shale gas in the United States of America. Legal, economic and structural aspects of the industry in both countries are put side by side.

Full article here

The Energy Sector and the Governance of Unconventional Fuels in Brazil

Professor Manochehr Dorraj
Texas Christian University

Abstract

After discussing the challenges of global energy governance and the issues surrounding it, this article attempts to examine the evolving Brazilian energy sector in which production of pre-salt and deep water shale oil and gas, and as of late, some shale gas inland, are projected to loom larger in future and compete with biofuels and ethanol which have played a large role in Brazil's energy mix. In light of this emerging new dynamics, the article attempts to shed light on some of the challenges of shale oil and gas governance in Brazil

Full article here

The Governance of Shale Gas in Argentina

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Abstract

Governance of the natural gas sector in Argentina is at an incipient stage. The oil and gas sector developed under a centralized management structure in which a relatively insulated government imposed policy on the sector. That structure is well-developed, even if unstable and characterized by lack of credibility. The traditional unilateral government control of the sector is not appropriate for creating a favorable investment climate for the high cost, high risk investments required in shale gas or for managing the protests by civil society actors that have erupted against fracking. But the creation of governance as a

replacement for government control is only beginning and faces many obstacles to its full development. The evolution of governance will have a major impact on the development of the country's shale gas resources. Consequently, the full development of Argentina's shale gas potential is problematic.

Full article here

Asia

Mapping out China's Shale Gas Future: Challenges Towards Development

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Abstract

This paper maps out China's shale gas future and outlines some challenges towards its sustainable development. The Chinese policy agenda is driven by three factors in favour of shale gas development: energy consumption, security and diversification away from brown coal energy sources. In order to achieve higher economies of scale similar to the United States and to develop substantial amounts of gas, a higher intensity of development is needed. For large scale shale gas development to occur in China, market conditions and operational challenges will need consideration. Overlapping roles and responsibilities for policy orientation and regulatory enforcement will add to the complexity in achieving the long term and sustainable growth of the industry. It will be worthwhile observing the next stages in the Government's approach to support and regulate the industry, as the benefits to the nation will concurrently be assessed against the risks to other strategic objectives notably food security and a sustainable agricultural industry. China will need to consider a broader reform of the energy sector governance to ensure that the implementation of its shale gas strategy is in line with its long term environmental sustainability objectives.

Full article here

Shale Oil and Gas Development - A Bailout Package for Pakistan's Energy Crisis

Jan Israr Khan
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Abstract

Pakistan is currently meeting almost 80% of its energy demand in terms of consuming its primary energy resources, i.e., oil and gas. The country is importing crude oil to meet its energy demand, which has resulted in an import bill of US $ 15.2 billion in the year 2012.Notwithstanding the current gas shortfall of around 2.5 Bcf per day, the only ray of hope in the current dire circumstances is the country's unconventional shale oil and gas resource potential which if exploited timely and properly would start yielding its results within next 7-8 years.

A strong investment policy for attracting the investment of International energy players to employ their technology and experience in the development of unconventional energy sector of Pakistan is the need of the hour and essentially required on emergent grounds.

This paper will discuss the shale oil and gas position of Pakistan and the challenges for providing a sustainable legal framework, addressing environmental concerns with regard to shale oil and gas and policy development issues so as to highlight the core issues and tentative solutions towards a secured energy future of Pakistan.

Full article here

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