

# BULLETIN

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Editors: Marcin Zaborowski (Editor-in-Chief), Agnieszka Kopeć (Executive Editor),  
Łukasz Adamski, Beata Górka-Winter, Artur Gradziuk, Leszek Jesień,  
Beata Wojna, Ernest Wyciszkwicz

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## Canada's Shale Gas Experience

Bartosz Wiśniewski

Canada's decentralized approach to energy resources management resulted in both success stories and failures for the shale gas industry. Each case reinforced the need to balance geological and market factors in order to ensure the profitability of exploration and drilling. When looking into the Canadian experience in regulating shale gas, Poland should, therefore, pay close attention to ways in which it can both ensure the competitiveness of production of its deposits and offset greater operational costs compared to the North American market.

**The Essence of the Canadian Approach.** Canada is the third-largest natural-gas producer after the United States and Russia. Recent years have witnessed a surge in drilling from unconventional deposits—shale gas, coal-bed methane, tight gas—which accounted for the majority (80%) of new projects. Shale deposits alone are expected to hold anywhere from 11 trillion to 28 trillion cubic metres of the resource. Regulatory jurisdiction over exploratory and drilling activities is divided between federal and provincial authorities. The oversight of inter-provincial projects, such as long-distance pipelines or projects involving exports or imports of natural gas (regasification and liquefaction plants), is conducted at the federal level. The provinces command the majority of tools for managing the resources, e.g., they set the rules for accessing the underground deposits, the royalty rates and, via independent regulatory bodies, grant the actual drilling permits. In addition, provincial authorities set the standards for environmental protection.

The provinces' leading role in regulating the gas industry can be compared to the Canadian and U.S. experience with shale gas where the bulk of oversight authority is vested in the purview of the states. These two cases differ, however, when it comes to handling the control and ownership of the resources. In the United States, whoever owns the land is entitled to dispose of the minerals underneath the surface. In Canada, sub-surface rights and above-the-surface rights are separate. Minerals are owned by the Crown, i.e., the provinces, regardless of who controls the surface. What follows is that the industry has to engage in two separate negotiation processes: First, it must find agreement on the conditions under which it can access the land, then second, it must hammer out the financial and safety modalities for future production. An agreement to access the gas fields is a necessary condition to apply for a drilling permit, yet a lack thereof does not halt the whole process. Provincial authorities are equipped with procedures to reconcile the right of the landowner to receive adequate compensation with the latitude of the energy companies to seek the right to develop the resource or to make investments in transit and processing.

A robust, independent regulatory body is necessary to balance the interests of all parties involved, i.e., the province, which is responsible for protecting the environment though must be cognizant of the economic opportunities involved, the landowners and industry. At the same time, the experience from Western Canada (Alberta, British Columbia) and Quebec clearly shows that one equally important condition for the development of the natural gas industry is a competitive system of royalties, adjusted to the geological and market conditions at hand. The system, in turn, reflects the priorities of a province's energy policy.

**Alberta and British Columbia.** Western provinces produce 75% of Canada's natural gas and hold almost 90% of its reserves. The regulatory framework for the gas industry was revamped in 2009 and 2010 following the increased interest in unconventional gas exploration and a drop in gas prices in the North American market by 50% since mid-2008. A defining characteristic of regula-

tions in both provinces is the flexibility of the royalty system. The royalties depend on the volume of production and the current price of natural gas. Differences can be attributed to various stages of the development of the industry. British Columbia had to make up for the less-rooted tradition of hydrocarbon mining and to encourage the activity in previously undeveloped corners of the province. Hence, the provincial authorities decided not to set a minimal royalty rate and introduced a set of incentives for companies interested in tapping unconventional gas. These included the prospect of significantly reducing royalties if a company decided to upgrade the local infrastructure or if drilling activities were to take place in inaccessible or geologically demanding locations. British Columbia estimates that these royalty programs helped to attract an additional 30% worth of investments in the province's gas industry.

**Quebec.** In March 2011, following a fierce campaign by the province's environment-conscious NGOs, Quebec introduced a moratorium on the exploration of shale gas until the completion of a report on the environmental impact of drilling. The task of preparing the report was assigned to a group of experts composed of representatives of the provincial authorities, academia, civil society and energy firms present in the province. However, eyeing a halt to exploratory activities, the industry declared that it would limit the extent to which it would share technical details from the wells that had been drilled to date, thus putting in question the actual value of the report as a basis for any future decisions concerning the production of shale gas in Quebec.

The industry has signalled its discontent with the moratorium—aggravating to the industry because costly exploratory operations were permitted but the prospect of launching actual production got bleaker—and with the sluggishness of Quebec's authorities in the light of calls to streamline administrative procedures and adjust the royalties system to the nature of shale gas activities, especially because they are initially capital intensive. Canadian operators argue that absent such changes Quebec will not be able to compete with Western Canada or the U.S. Their assessment seems to ignore the favourable geological conditions—Quebec is expected to control up to 10% of Canadian shale gas—and a well-developed transit grid. Natural gas is responsible for about 12-15% of the province's energy consumption.

Changes in the regulatory framework were not brought about by the economic benefits associated with launching homegrown gas production, which would limit the province's trade deficit (one of the highest in Canada), inch it towards energy independence (its entire gas supply is provided by Western Canada) and solidify its position as a leading energy producer. The key obstacle to developing shale gas deposits has been attributed to maintaining the interests of the hydropower industry, which currently generates 97% of Quebec's electricity. Cheap, abundant gas from Quebec would make this resource more competitive vis-à-vis hydropower. At the same time, even with traditional, strong environmental sentiments in mind, the claim about a universal scepticism of the province's public towards the energy industry needs to be approached cautiously. For decades, Quebec has been home to a large part (25%) of Canada's oil refining capacity.

**Conclusions.** The development of Polish shale gas deposits will face different legal, market, geographical and social ramifications. The latter two factors—the greater proximity of drilling sites to consumers and a higher population density—suggest that the indisputable negative impacts of gas production on local communities (noise, challenges to local water supply, traffic and hazards associated with the transit and storage of dangerous substances) will be felt more acutely than in Canada. Thus, Poland should strive to implement solutions that limit the strains that accompany the drilling, ones developed by this highly innovative industry as it seeks to maximize the economies of scale following a drop in gas prices. The industry, in turn, will only admit the profitability of deploying techniques it devises, e.g., to manage water resources more economically or to drill in a more effective manner, once the costs of such investments have been balanced with the overall burden of royalties and taxes and production has reached a sufficiently high level, as was the case in British Columbia. Quebec, for its part, proves the importance of sound information-sharing between the authorities (local, national) and the industry, as early as at the stage of drafting the regulatory framework. Poland will be a case in point since the costs of marketing shale gas likely will be higher than in North America, regardless of the reportedly favourable geological make-up of the Polish deposits. Last but not least, Poland will face competition for investment capital from other prospective gas-holding locations.