

Managing the Barents Sea: Comparing Norwegian & Russian Offshore Oil-Spill Prevention Policies

Troy J. Bouffard

The Barents Sea has long been a testing ground for cooperation between Russia and Norway. Driven by mutual economic interests, the two states have worked together in previous decades to oversee a shared commercial fishery. More recently, off-shore oil production has become a Russo-Norwegian focus. Emerging petroleum production provides an opportunity to assess environmental stewardship in the region. In particular, this study explores the differences and influences in Norwegian and Russian offshore oil-spill prevention policy in the Barents Sea. The study focuses on how each state's national and economic strategic objectives translate into domestic policy, and how such influences are reflected in operational mandates and behavior. Principal-agent (a.k.a. agency) theory and case studies provide the framework for this study through a defined view of the contractual relationships between the governments (principals) and industry (agents). Findings indicate that 1) there is no mutual policy for the shared environment, 2) there should be, and 3) divergent issues can be identified and potentially overcome. Additionally, the approach to prevention policy by Russia's governmental authorities yields concerns regarding operational intent while Norway's public-sector principles likely instill more confidence in outcomes. As the Barents Region continues to foster a convergence of bilateral (and multilateral) interests, this study helps identify relevant prevention policy decision-making factors while contributing to further understanding and expectations for activities in the Barents Sea.

Introduction

For decades, Russia and Norway successfully worked together, despite occasional conflicts, to manage a world-class fishery. One area presenting significant challenge has been the disputed maritime territory known as the “Gray Zone,” which accounted for twelve percent of the Barents Sea total area. As Russian and Norwegian interests shifted from fish to offshore oil and gas production due to expanding exploration activity, Russia and Norway addressed their Gray Zone dispute with the Barents Delimitation Agreement in 2010. The distinct motivation for this agreement, supported by numerous sources, including the national strategies for both states, strongly indicates ambitions to protect fisheries, often with implicit acknowledgement to energy exploration and production as an underlying factor, possibly only minor (Filipek & Hruzdou, 2011:

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231; Henriksen & Ulfstein, 2011: 8-9; Jensen, 2011: 158; Moe, Fjæroft, & Øverland, 2011: 150-152; Neumann, 2010).

Interest and investment in Barents Sea offshore production clearly increased in the last decade. However, the international community lacks a clear understanding of how both nations intend to approach production risks. Given recent Barents Sea oil production and exploration increases and the likelihood of expansion in the future, it is an apt time to explore Norwegian and Russian offshore oil-spill prevention policy. To what extent do Norway and Russia coalesce in their oil spill prevention policies in the Barents Sea? What explains congruence or variation in their approaches? As joint stewards of the Barents Sea, with statutory requirements regarding any cross-boundary reserves in place, it is appropriate to analyze and compare their regulatory regimes to identify factors that shape oil-spill prevention policy development and implementation.

Currently, both Russian and Norwegian oil project leads in the Barents Sea are state owned. Accordingly, a principal–agent framework offers a useful lens to examine potential outcomes for this study where the *principal* is the state and the *agents* are the oil companies. Under this framing, national interests informing oil production strategies likely play a significant role in oil-spill prevention policies. In particular, Russia and Norway's differing geopolitical goals offer significant insight into the respective motivations behind each nation's oil-spill prevention policies, and may even inform expectations. This argument emphasizes three key points explored in detail throughout the article: 1) no shared prevention policies exist for the shared Barents maritime regions, 2) shared policies should be established as a result, 3) divergent aspects can be identified and overcome in order to achieve mutually beneficial (shared) policies. The findings reveal the potentially leading cause of discrepancy indicating that, as principals, Norway largely enforces high standards over production operations to maintain a stable domestic economy, while Russia employs its energy production capabilities to expand global influence.

This study reviews the relevant context concerning petroleum projections, oil spills in the Arctic, prevention policy fundamentals, and the history of Norwegian and Russian energy policies. Additionally, a case study of each nation will serve as the basis of this inferential study.

Background

As a long-time legal and academic authority concerning oil-spill prevention policy, Dr. Mark Cohen (1986: 176) loosely defines oil-spill prevention as a general responsibility of government. According to Cohen, it is government's responsibility to monitor and enforce adopted policies, absorbing deterrence as a social cost. Government, being reasonably unable to directly monitor all oil producing activities, must make decisions with imperfect information about the level of pollution or source, and must instead create incentives for oil companies to internalize prevention measures, thus reducing risks. This study specifically emphasizes aspects of prevention as opposed to response, mitigation, recovery and other phases of an oil-spill incidents.

Oil Estimates and Commitments in the Barents Sea

A 2008 watershed report estimated the offshore Barents holds a total of 9.5 billion barrels of technically-recoverable oil (Bird et al., 2008), with slightly higher figures reported more recently (Krisel, 2015). In 2016, officials reported Norwegian Continental Shelf (NCS) reserves of discovered oil at about 1.8 billion barrels (Erlingsen, 2016), while undiscovered estimates climbed to over 3.6 billion (Norwegian Petroleum Directorate, 2016: 26). In 2017, Director General of the

Norwegian Petroleum Directorate Nyland announced increases to about 5.25 million barrels in the northern part of the Barents, effectively doubling previous estimates while elevating the share of Barents undiscovered resources within the entire NCS from 50% to 65% (Figure 1) (Norwegian Petroleum Directorate, 2017). In the Southeast part of the Barents Sea of Russia, the Prirazlomnaya platform produced over 30 million barrels of oil since initial production in 2014, with 19 billion more expected in 2017 ("Four Million Tons of Oil from Prirazlomnoye", 2017).

More recently, Norway announced plans to propose a record number of oil exploration blocks (Adomaitis & Doyle, 2017). Russian plans in the Barents mainly involve a contract with oil giants Rosneft and Eni to pursue undiscovered reserves in the Fedynsky (Figure 2) and Central Barents blocks in 2018 that jointly represent estimated reserves of 14 billion barrels of oil (Owen, 2012). This intention was reaffirmed by Putin during a visit to the Arctic ("Meeting on Arctic region's comprehensive development," 2017). Although early-phase exploration estimates are inherently uncertain, the Barents has historically supported expanded estimates as well as proven reserves in later phases.

Oil-Spill Concerns in the Arctic and Barents Sea

The Barents Sea (Figure 1) is one of the most productive ecosystems in the world. Oil spills represent the greatest risk to regional marine ecosystems while requiring the mostly costly response efforts (Emmerson & Lahn, 2012).

Figure 1. The Barents Sea defined by the International Hydrographic Organization



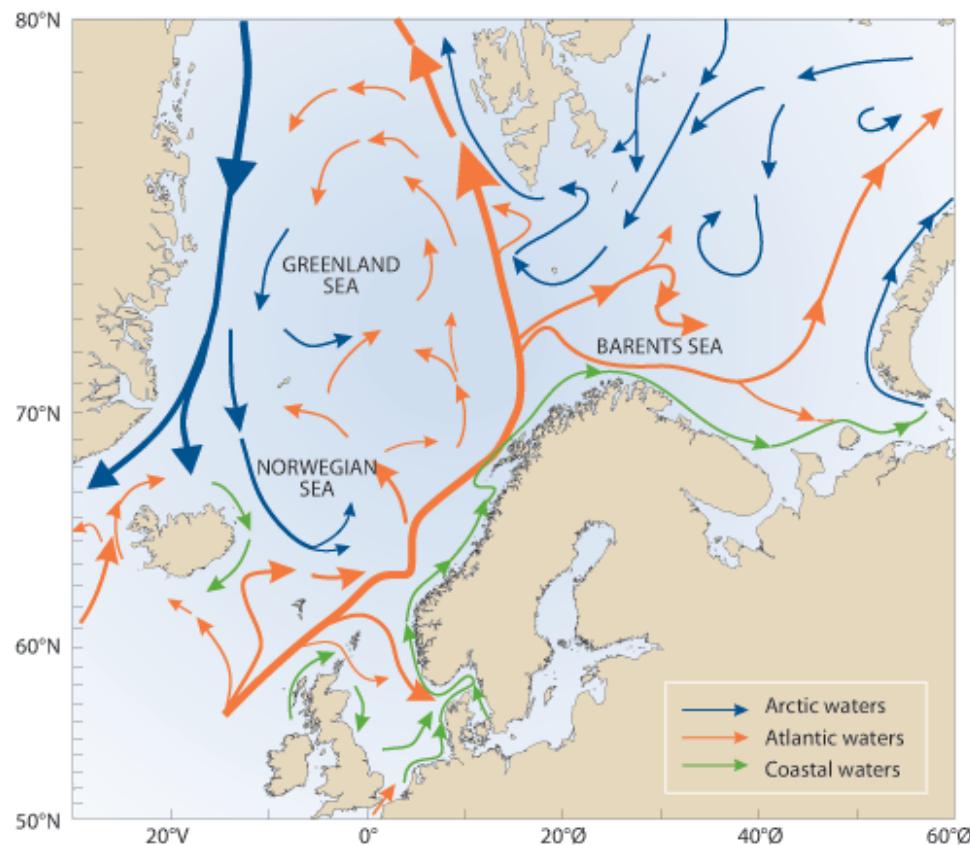
Source: Boundary information provided by Marineregions.org. Map adapted from CIA World Factbook Regional Maps https://www.cia.gov/library/publications/the-world-factbook//graphics/ref_maps/political/jpg/arctic_region.jpg.

Marine ecosystems in the Barents are generally simple, meaning a disruption of one link in the food chain can severely affect the remaining system (Kommedal, Bagi, & Hemmingsen, 2015: 234-235; Stokke, 2000). An oil spill has the potential to additionally disrupt gestation and development of new fish, to harm and kill vulnerable marine life, and to jeopardize fish stock habitat (Dean & Barry, 2005: 221), presenting some degree of adverse sub-lethal effects at a minimum.

Oil pollution effects in a polar marine environment vary depending on location, but, broadly speaking, can create longer-lasting impacts than in other climate zones. Bacteriological breakdown of petroleum pollutants, for example, occurs more slowly in polar areas than in more temperate regions (Stokke, 2000: 130). Certain low-energy Arctic shorelines can remain polluted from one year up to several decades, whereas oil pollution on non-Arctic, high-energy coasts usually only remains up to a year (Brubaker, 1993: 14). Sea ice constantly moves if it is not locked to a coast (land-fast) or seabed (bottom-fast), allowing oil to be transported great distances and introduced into other ecosystems (Figure 2).

Oil can saturate ice leads, coat the undersurface of ice and accumulate against ice edges (Isaksen, Bakken, & Wiig, 1998: 14); these very ice edges and leads support important migration, habitat, and subnivian processes (Engelhardt, 1983: 200), with the-Ice Marginal Zone being one of the densest environments for biological production within a sea (Winther & Vongraven, 2014). Additionally, the coastal zone of the Kola Peninsula (the Barents, Pechora and White Seas) is notable for high levels of biodiversity (Matishov, Golubeva, Titova, Sydnes, & Voegele, 2004: 62). As a microcosm representative of the entire Arctic, the Barents is vulnerable to all of these threats.

Figure 2. Currents and waters masses associated with the Barents Sea



Source: Havsforskningsinstituttet (Institute of Marine Research, Norway).

Prevention Policy

Preventing oil spills requires governmental mandates and industrial compliance. Discerning and implementing principal actor policy intent between operations and outcomes increases the challenge. At the highest-level policy-making authority, crafting regulations often involves architectural frameworks that are “necessarily vague.” This deliberate ambiguity allows subordinate agencies to adapt regulation to meet intent through discretionary application. Such latitude allows pragmatic flexibility, but also invites abuse. Of note, pollution *prevention* policy is rarely as explicit as pollution *response* policy, which is normally presented in clear terms as a ‘policy’. Instead, prevention-related policies normally take form through regulations, where preventive intent can be little more than implied directives. For example, the U.S. Clean Water Act of 1977 (and subsequent amendments) specifies no discrete pollution prevention measures, but implies an expectation of the development of preventative regulations (Office of Pollution Prevention and Toxics, 2008: 104).

Historical Context of Norwegian Offshore Oil-Spill Prevention and Regulation

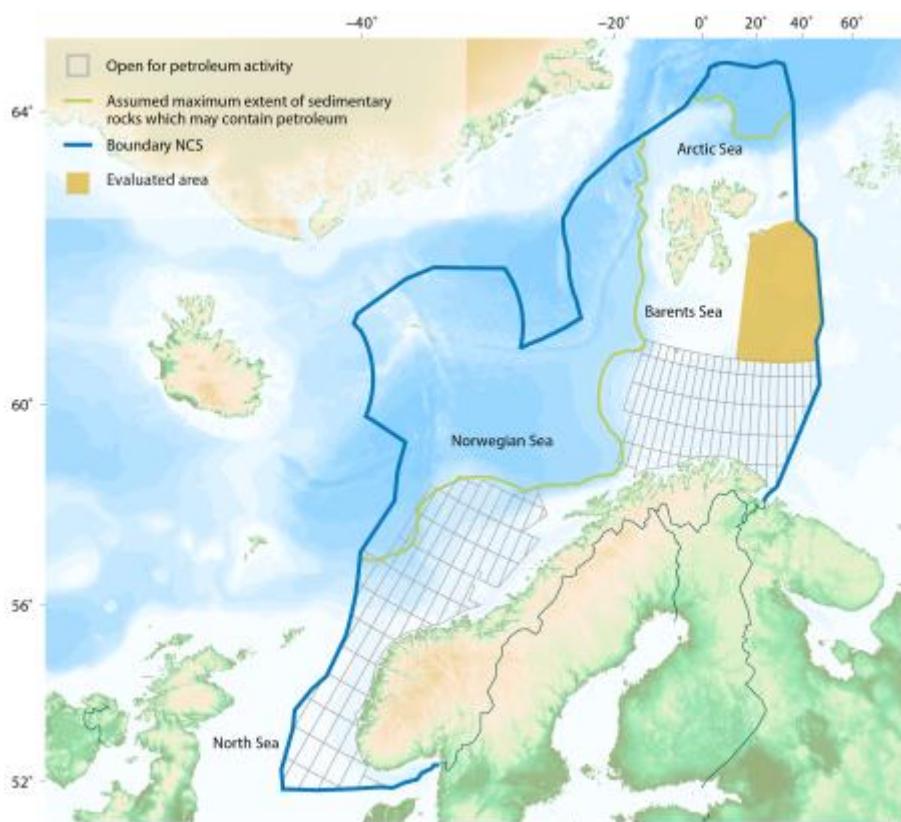
Norway developed its principles and values concerning oil policies in three distinct phases: 1) the transition from foreign to domestic petroleum project control in the early 1970s, 2) the establishment of Norway’s oil industry in the late 1970s, and 3) the adoption of performance-based regulations in 1980.

During the first phase, as operations for inaugural oil production developed, Norway’s government created plans to transition out of what was largely a foreign controlled enterprise. As Norway promoted “absorptive capacity” within domestic enterprises and national institutions (Engen, 2009: 2), an internal petroleum regulatory regime ensued. However, the government’s dependency on oil-company support meant that industry gained significant influence over regulatory development and adoption as well as diminishing government’s role in oversight.

In the second phase, during the early 1970s, Norway sought to formally create industrial and governmental infrastructure to support its nascent oil industry. Norway established the Norwegian Petroleum Directorate (NPD), the Ministry of Oil and Energy, and a state-owned oil company, Statoil (Engen, 2009: 10). Concession laws clarified the relationship between the government and the petroleum industry while simultaneously guaranteeing the rights of firms and reinforcing state sovereignty over the Norwegian continental shelf (Figure 3). In 1973, the NPD formed with little petroleum experience, levying strict regulations to offset the agency’s weaknesses. Within a few years, the Norwegian public administration developed sufficient institutional competence within the petroleum industry to increase oversight of the regulatory regime.

The third phase started after Norway experienced devastating offshore accidents. The first disaster happened on April 22nd, 1977. Known as the ‘Bravo Blowout,’ oil well B-17 under Phillip’s *Bravo* rig suffered an oil and gas pressure incident due to an improperly placed upside-down blowout preventer (“Ekofisk Bravo Oil Field,”). The second disaster, named after the platform *Alexander L. Keilland*, occurred on March 27th, 1980 in the Ekofisk area (“Norway’s Petroleum History,” 2010). One of the rig’s five support columns broke off, causing the rig to capsize (Figure 4). After intense search and rescue efforts, only eighty-nine of two hundred and twelve individuals working on the platform were saved. Following *Keilland*, public outrage prompted the Norwegian energy ministry and NPD to enact significant policy reforms (Lindoe, Baram, & Paterson, 2012: 5).

Figure 3. Map of Norwegian Continental Shelf showing new area



Source: Norwegian Petroleum Directorate.

Figure 4. The *Alexander L. Keilland* platform capsizing



Source: NTB Photo Archive

Norway's policy agenda changed to include a major regulatory paradigm shift from a reactive regime based on prescriptive and technical requirements toward a risk-based, proactive regime with working legal requirements (Engen & Lindøe, 2014: 1). Norway's policy reform process

resulted in a system based on egalitarian principles involving a tripartite arrangement between the government, employers, and employees, with an emphasis on risk reduction and safety through performance.

Contemporary Russian Offshore Environmental Protection Policies and Regulations

Understanding the political attributes within Russia's current oil industry benefits with familiarity of the post-Soviet privatization and re-nationalization episodes. Within a few years after the fall of the Soviet Union, most of Russia's oil industry became privatized. As the liberal-oligarchic model took hold over energy policy, Lukoil and Surgut reformed to private companies by insiders while Yukos and Sibneft shortly thereafter privatized through a loans-for-shares program (Åslund, 2006: 323). Amongst the many effects included the government's significantly decreased capacity to conduct oversight of the companies. The then incoming President Putin saw a need to reverse plummeting oil production shares enabled by Yeltsin's state asset-selling program. Putin's strategy, legitimized partly by his (alleged) dissertation, focused on economic recovery through re-nationalizing the dominant oil (and gas) companies in order to allow state-controlled entities to compete in the world market more effectively (Bradshaw, 2009: 5). As part of a broader reconsolidation effort toward state power, Putin eventually attained effective resource nationalism in support of his continuing global-influence vision.

As part of recentralization priorities, post-Soviet Russia's history of oil production and regulation has largely been driven by Russia's foreign interests. To this end, Russia established national oil companies without pursuing stringent or effective government oversight, especially in cases where the regulatory burden might conflict with Russian economic or geopolitical interests.

Under Putin's lead during the lucrative post-Soviet petroleum era, Russia sought to align oil projects with national interests and goals. However, there have been substantial barriers to actually pursuing these interests while creating useful alignments. Russian oil companies highlighted several faults with the existing regulatory regime, deriving from: 1) the unplanned and cumbersome way the system originated and evolved; 2) the side effects of recentralization of power; and 3) confusion and conflict over goals (Thane, 2012: 384). Bureaucratically, the transition period to post-Soviet Russia could have been an opportunity to implement a new approach to oversight. Instead, the complex Soviet bureaucracy endured into the new era, with new systems added alongside the legacy systems. During the transition period, the pressure to produce oil eclipsed national interest in regulating the oil industry. The laws and regulations in place remained largely ineffectual, owing to a lack of enforcement and of opposing priorities. Licensing pressures help explain part of the problem, as the government focused on assigning resources to oil companies as quickly as possible, giving little attention to regulatory enforcement. During Putin's early efforts to restore strong central powers, the regulatory system became unpredictable, arbitrary, and largely ineffective (Thane, 2012: 387).

Although the Russian constitution has the foundational capacity to address ecological safety, two notable problems persist: 1) legislation and normative legal acts endure inconsistently as a system of laws regarding environmental protection and management, and 2) responsibility for violations of laws needs to be strengthened to support punishment of environmental crimes and related

offenses (A. Ivanova, 2013: 644-645). However, the problem does not seem related to a lack of federal laws, decrees, resolutions, and orders. By 2008, The Russian Federation maintained an extensive base of more than fifty legal documents that governed oil-spill prevention alone, resulting in regulations that are not coherent or based on a unified state policy or approach to oil-spill prevention. (M. Ivanova, 2011: 4). Russia's fragmented regulatory regime has not gone unnoticed. Senior government officials throughout the polar region express views that Russia continues to possibly represent the most expansive actor in offshore oil (and gas) production with the least amount of regulatory clarity (Ebinger, Banks, & Schackmann, 2014: 25).

Alternatively, Putin's forceful restructuring of agency oversight and control may improve regulatory expectations even though the federal approach to bureaucratic governance over the oil industry continues to dictate requirements through prescriptive-based regulation. Additionally, Russia actively participates in the Barents 2020 program with Norway which indicates tangible efforts to improve offshore operations leveraging opportunities to cooperate as well as find ways to improve Russia's policies and operations. Altogether, this may represent the current extent of viable means to eventual effectiveness toward Russia's offshore oil-spill prevention.

Framework and Cases

Framework – Theory and Methodology

This article relies on agency theory, also known as principal-agent theory, to guide a particular scope of a relationship. The theory invokes the metaphor of a contract, specifically a behavior-oriented or outcome-oriented contract, in which one party (the principal) delegates work to another (the agent) for the purposes of analyzing the dynamics between the two (Eisenhardt, 1989). Additionally, agency theory provides a 'unique realistic, and empirically testable perspective on problems of cooperative effort' (Eisenhardt, 1989: 72).

Case study as a methodology is a form of qualitative research that can advise evidence-informed decision making in the policy realm (Baxter & Jack, 2008). Case study is the detailed examination of an aspect of a historical episode to develop or test explanations that may be generalized to other events (George & Bennett, 2005: 5). The cases in this article are diverse assortments of perspectives regarding policies and behaviors conceivably shaped by the respective underlying oil-revenue interests of Russia and Norway. Data within each case represents aspects of relationships between relevant state and industry actors with regards to potential rent-seeking and influence over prevention policies. This approach seems optimal for selection criteria, since Norway and Russia represent the state sovereignties that are the legal and *de facto* stewards of the Barents Sea. Furthermore, the Russian and Norwegian energy sectors are dominated by their state-owned petroleum companies. For this purpose, Russia and Norway are not only the principals as states, but also as corporate owners of the lead agents.

Case 1 – Aspects of Policy Influence for the Russian Federation

Portions of publications cited below emphasize global political economic influence while others emphasize safety and environmental aspects of resources management. However, researchers consistently, if implicitly, acknowledge Russian ambitions to access offshore oil reserves in order to offset terrestrial reductions in production currently underway.

Andreyava and Kryukov (2008: 246) provide insight on the energy sector's significance to Russia and the global market by describing the "Russian Model." They find that Russia's guiding principles and offshore oil and gas development strategies are distinct from other oil producers. Russian authorities regard the oil and gas sector as the basis of the Russian state's power within the world economy. Owing to a weak judicial system, the corporate and government/bureaucratic play an outsized role in prescribing requirements for the sector.

A 2011 *New York Times* (Kramer & Krauss, 2011) article provides further context to decisions made for Arctic offshore exploration. In 2008, the Russian parliament easily passed amendments to subsoil legislation that allowed the Ministry of Natural Resources to transfer offshore blocks to state-owned companies. The move anticipated and supported Russia's maintaining its status as one of the world's top oil producers and a significant factor in the global energy balance.

In a paper analyzing the scope and limits of Russia's capacity to use oil and gas as strategic resources to revive Russia's fortunes as a credible global power, Hashim (2010: 265) explains that the relative weakness of Russia's economy and military compared to the Atlantic Alliance has forced current leadership to focus on leveraging energy as a weapon. Russia has a tendency to use the energy sector as "commanding heights" or "national champions" to leverage Russia's geopolitical stature and has become an impediment to relations with [the EU] part of the West (Hashim, 2010: 272).

Orttung and Overland (2011: 75) express similar observations in an article that argues that Russian leadership has pursued a rational set of political economic goals in its foreign energy policy. Their basic premise is that Russia's political leaders use energy to pursue advantages in expanding Russia's influence abroad. Several authors draw analogous conclusions (Newnham, 2011; Rutland, 2015; Smith, 2008; Stegen, 2011; Woehrel, 2010).

Feklyunina (2012), too, interprets Russia's energy policies (Energy Strategy of 2003) in terms of their capacity to further its strategic interests while pointing out that Russian elites are very sensitive to perspectives on the image of its state-owned companies. Russia's move to shut the natural gas pipe to Ukraine in 2006 and the ensuing crisis vividly illustrated the Federation's willingness to use its energy resources as a political weapon. Feklyunina emphasizes Russia's rapid and almost violent response to the situation as indicative of its traditional method of handling such issues.

With Arctic hydrocarbons defined as a strategic natural resource asset, Harsem et al. (2011) conclude that the Russian government would not likely put constraining measures on the petroleum industry. Similarly, Ariel Cohen (2007) argues that Russia hopes to influence geopolitical conditions, such as NATO expansion, by using energy as leverage while it seeks recognition of its predominant role in former Soviet space.

Russian academics have also weighed in on Russia's Arctic offshore production operations. Pavlenko et al. (2014: 661) provide significant detail about the increased risks involved with Arctic petroleum activities and admit that Russian technology and industrial culture cannot readily prioritize ecological safety. They conclude that more effort should go into prevention mechanisms.

Among other policies, Mow and Rowe (2008: 112-113) consider a 2003 Ministry of Natural Resources strategy concerning the continental shelf. Given that Russia's continental shelf in the Arctic accounts for 30 percent of the world's total, it is no surprise that the nation developed a

specific strategy for it. The authors note several obstacles to Russia's efforts to meet its oil production goals, including the following two that speak to risk: 1) a poorly developed infrastructure supporting production, and 2) an insufficiently developed legal framework that is not adapted to offshore strategy.

Keil (2015) relies on recent scientific modeling that shows how an oil spill will spread in open waters and addresses the insufficient regulations to prevent or respond to such an incident, including ineffective liability caps that protect companies. Although Russia often supports unlimited liability, companies can exploit gaps by claiming unforeseen or unstoppable circumstances (*force majeure*). Russia also has a pattern of politicizing liability enforcement and environmental regulations. Keil also notes that resource-endowed, but dependent, countries like Russia often favor less strict environmental regulation in order to facilitate cost-effective access and production.

Wilson (2006) analyzes the relationship between industry representatives and local peoples at Sakhalin 2, involving 'frontier' circumstances concerning issues with safety and the environment, among other things. Wilson finds that company representatives determined that domestic laws and compensation mechanisms would have to suffice, suggesting that safety violations were not only deemed acceptable, but that both authorities and corporate leadership preferred to ignore safety regulations aimed at prevention.

Stevens et al., (2013: 73) note an absence of strategic focus owing to natural resource management having become embroiled in political competition and conflict among elites. A lack of consensus among the elites about the best form of subsoil (including shelf) management will likely cause regulatory regimes to remain in flux (Stevens et al., 2013: 73). Incompetence and corruption within key regulatory and enforcement institutions further detract from effective, responsible natural resource management (Stevens et al., 2013: 80).

Spiridonov (2006) provides an analysis of the number and effectiveness of impact studies concerning offshore production in the Circumpolar North and concludes that a strategic environmental assessment, as well as environmental impact statements, could benefit and strengthen the regulatory regime of the Russian petroleum industry.

Greenpeace presents a dismal record of terrestrial oil spill violations to construct an argument that Russia should not be trusted to conduct safe operations in the far more complex environment of the Arctic offshore region. The Executive Summary of a 2012 Greenpeace report states:

If Russian oil and gas industry for an extended period of time could not bring regulations to the existing fields, there is no reason to hope that it will show any more responsible attitude to environmental issues when developing the Arctic Shelf (Russian Arctic - Offshore Hydrocarbon Exploration: Investment Risks, 2012).

Furthermore, the NGO argues that the higher operation costs in the Arctic will encourage expedited time periods between licensing and production by circumventing environmental impact and safety measures (*Russian Arctic - Offshore Hydrocarbon Exploration: Investment Risks*, 2012: 21).

Moe (2010) finds Russian attitudes about environmental management to be essentially *laissez-faire*, wherein the phrase "let us wait and see what happens" is not an uncommon Russian response to hypothetical dilemmas.

Case 2 – Aspects of Policy Influence for Norway

As Norway's oil industry expanded in the 1970s its leaders strove to avoid the “Dutch Disease” by maintaining a balanced economy. Gelb et al. (2002: 8) observe that ‘Mainland Norway’ worked to maintain competitiveness in other economic sectors as the excitement surrounding oil and gas prospects built. Currently, a statutory amount of petroleum revenue goes into sovereign wealth savings, in part to prevent deindustrialization (“The Rich Cousin,” 2013). Such strategic choices enhance Norway’s ability to maintain macro-economic stability and reasonable growth even under unfavorable oil market conditions (Barnett & Ossowski, 2002: 18).

Mjøset and Cappelen (2011: 12) studied the integration of the Norwegian oil economy into the world economy over a four-decade span. They found that Norway could have been susceptible to the Dutch Disease and Resource Curse. Excessive exploitation of oil too quickly would have strangled the non-petroleum sectors without disciplined fiscal policy to control the reliance on oil income.

In the previous case study, Rutland (2015: 69) also concluded that Norway effectively adapted to the arrival of oil riches. He found that Norway avoided Dutch Disease through technological achievements in the industry as well as confidence in the democratic processes that focus on channeling back oil wealth to the nation’s collective benefit.

According to Listhaug (2005: 835-836), Norway clearly avoided larger problems associated with resource curses, suffering only a mild form of the economic ailment. However, throughout the initial years, much of the public pushed for new oil wealth to finance a higher proportion of current government expenditures than the government deemed prudent. The Norwegian government stood relatively firm with an eye toward long-term stability, regardless of the short-term political risks.

Bjerkholt and Niculescu (2004: 164, 177-178) outline Norway’s political commitments in their study of fiscal policy and non-renewable natural resources. They found that Norway focused primarily on net-worth risk by saving oil revenue in their unique fund and creating simple transparent rules to deal with market-related fluctuations. Eventual consensus allowed Norway to install and maintain a rules-based framework even during economic recessions.

Mehlum et al. (2012) also reference the resource abundance of a nation as a common cause of poor economic performance. Norway’s strong rule of law, property rights and a well-functioning state bureaucracy further supported oil income as an asset rather than liability. With a well-established labor movement at the time, other industries remained stable, and resource wealth from oil benefited society broadly.

Holden (2013) and Larson (2005) state that the literature suggests that countries with abundant natural resources generally experience lower economic growth than other countries. The lessons from the 1970s showed that Norway began to experience the Dutch Disease when petroleum wealth led to increased public consumption. The Norwegian government formed a commission that recommended a measured oil production pace to ensure future resource wealth. Fiscal discipline on the broader economy as well as monetary policy focused on stable and diverse economic strategies led to reduced pressure on the oil industry to overemphasize maximum production (Holden, 2013).

Strømsnes et al. (2009) studied the presence and effectiveness of Greenpeace in Norway and found that their presence and following were largely non-existent, given strong local support for existing policies and lack of egregious incidents.

The Petroleum Safety Authority (PSA) of Norway, an independent government regulator, issued risk reduction principles as part of Norway's Health, Safety, and Environment (HSE) regulatory frameworks in February 2010. The framework mandates compliance with HSE legislation accountable to internal requirements and acceptance criteria, meaning that the agency sets the conditions, and the oil companies are allowed and expected to implement requirements in a self-regulatory manner ("Regulations Relating to Health, Safety, and the Environment in the Petroleum Activities and at Certain Onshore Facilities: Risk Reduction Principles," 2013). Furthermore, in cases of uncertainty, producers must choose solutions that reduce risk, illustrating that Norway's regulations for petroleum operations are risk-based with the aim to minimize the threat of accidents and environmental damage ("Regulatory Principles," 2016).

During her first full term in the late 80s, Prime Minister Brundtland published an article concerning the politics of oil. As noted in a speech at Harvard in 1987, she stated the following:

"To be able to play a positive and stable role in the global energy picture, and to avoid becoming too dependent on the petroleum sector, we have decided to deplete our petroleum resources at a moderate and long-term basis. Orderly conditions and operations are significant for global economic development, and important if oil is to be exploited in an environmentally sound manner" (Brundtland, 1988: 104, 106).

Throughout both cases presented in this section, a plethora of sources provides consistent perspectives from a variety of scholars and authorities. The following section discusses the case study in aggregate to support qualitative analysis and application as viewed through the established lens of agency theory.

Findings

Russia

The Russian case study relies on perspectives gained from decades of petroleum-related activity prior to operations in the Barents Sea. The lack of current operations or disasters in this region provides the rationale for deduction based on historical perspectives. The data for the Russian case study illustrate four consistent conditions: 1) the energy sector is the most important component of Russia's economy; 2) the Russian state deliberately positioned itself as the majority owner and controlling entity in the energy sector; 3) Russia prefers a prescriptive regulatory approach for increased operational control; and 4) Russia's energy strategy relies on coercive, political influence over both upstream and downstream oil-production and related activities.

Russia's questionable record concerning oil pollution suggests a degree of acceptance of what the international community might deem as irresponsible behavior in pursuit of optimal production levels. This dynamic is essential to understanding the connection between Russia's priority interests and how it translates to operational risks. Russia largely controls every aspect of upstream activity short of the operations themselves. The evidence suggests that Russia fosters conditions for its oil companies to assume relatively high risks. With regard to regulating oil production, Russia presents

itself as sufficiently responsible. However, the evidence further suggests that Russia, as principal, may allow oil companies, as agents, enough latitude to exploit gaps in the regulatory regime in order to ultimately enable long-term progress toward national goals (Table 1).

The Arctic has become a predominant Russian priority in domestic and foreign policies, acknowledged as strategically important to future socio-economic development, and hence to Russia's position in international affairs (Zysk, 2015: 437). Advanced petroleum industries and state actors attempt to maintain a balance between current production (hydrocarbons being extracted) and future reserves (hydrocarbons to be extracted). As terrestrial production in Western Siberia is waning, Russia is keenly interested in exploiting its continental shelf resources, including the Fedynsky High area (Figure 5).

Table 1. Comparison of prevention policy indications between Norway and Russia

Petroleum Regulatory Regime Comparisons		
Indicator of Prevention Expectations	Norway: Performance-Based (Results/Outcome Oriented)	Russia: Prescriptive-Based (Mandated Actions)
Accountability		
• Legal	Decreased ability to establish metrics and measurable goals	Rules favor private interests over public interests
• Bureaucratic	Inability to assess or predict outcomes	Inconsistent enforcement
• Professional	Behaviors reliant on adherence to performance goals	Susceptible to corruption and less qualified/untrained personnel
R&D (Operator Innovation)	Increased opportunity with higher costs	Little opportunity but less costly
Environmental Focus	Higher	Lower
Production Focus	Lower	Higher
Oversight of Operations	Facilitates self-reporting	Requires engagement of principal
Regulatory Administration	Legal autonomy - decisions delegated to agency lead	Structural autonomy - susceptible to political intervention

Sources: (Christensen & Yesilkagit, 2006; May, 2007)

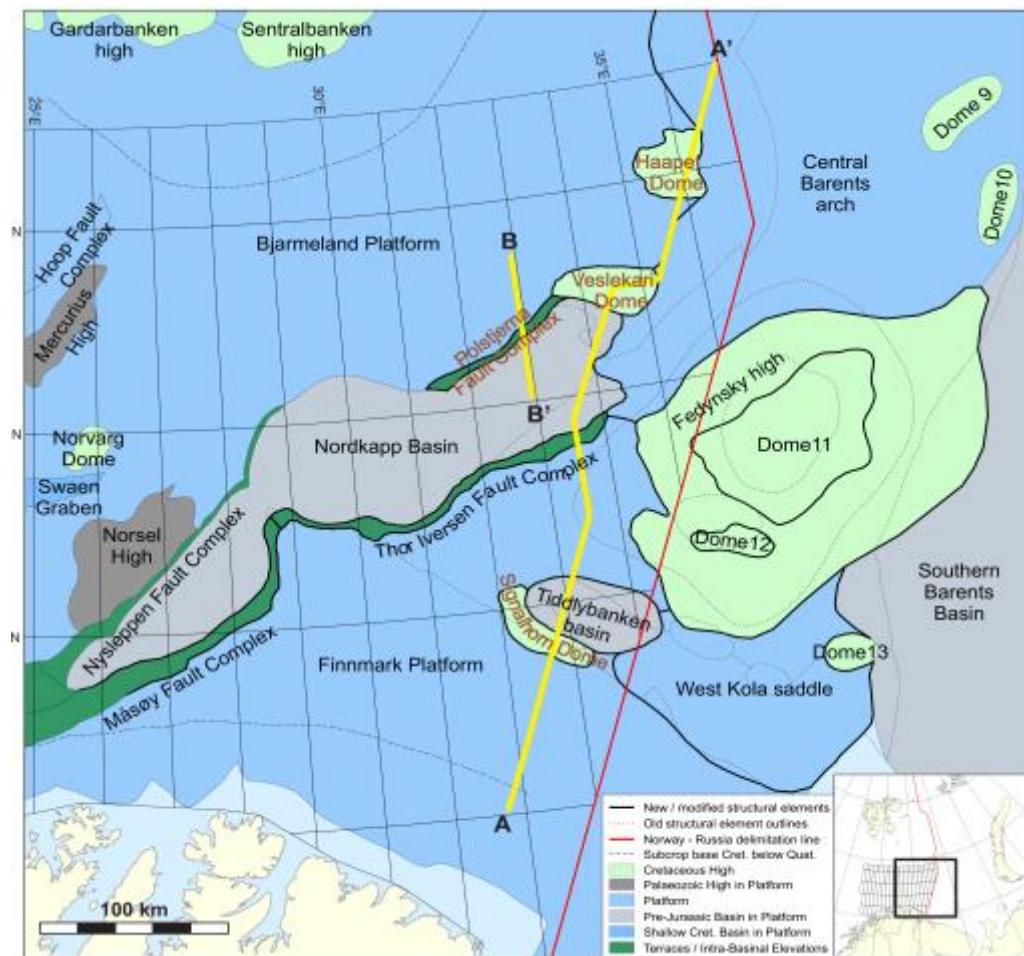
Over the last several years, Russia has directed its formidable energy revenues elsewhere, rather than reinvesting in desperately needed offshore operational capacities. In particular, research and development of exploratory phase technologies and sector manufacturing capabilities notably suffer (Hasle, Kjellén, & Haugerud, 2009). Relevant components include platforms, rigs and ships (retooling legacy naval yards), which suggests an inability or willingness to prioritize effectively (Gaddy & Ickes, 2013: 98-99). Russia's national defense budget increased from \$15.6 billion in 2006 to \$51.8 billion in 2015 (Klein, 2016: 25) and steady into 2016 (Galeotti, 2017; Tian, Fleurant, Wezeman, & Wezeman, 2017). Budget allocations for the north are far more focused on developing Arctic military capabilities (offshore included) as opposed to offshore production capabilities. Although much of Russia's recent defense spending in the Arctic involves recapitalization of legacy infrastructure for dual-use, search-and-rescue stations along the NSR, this can be considered secondary, or even tertiary to natural resource protection, to the national

priority propelling military modernization. Such emphasis on defense-related capital expenditures, rather than petroleum operating expenditures, suggests that investment in pursuing risk reduction and related prevention efforts will not be a priority.

Norway

The following characteristics helped form Norway's energy identity: 1) the early transition from foreign reliance while bolstering an inclusive domestic workforce culture; 2) a reliance on a performance-based regulatory regime that emphasizes agency competence and integrity toward optimal safety and environmental outcomes; 3) recognition as a relatively small state in the international community, but a large player in the global energy spectrum; and 4) domestic economic goals, gaining influence in a competitive balance with political objectives, that guide engagement in the global economy.

Figure 5. Map of Fedynsky High and main elements of geological structure



Source: Norwegian Petroleum Directorate

The integration of substantial oil revenues into the Norwegian economy in the 1970s tested the capacities of institutions and society to manage the new revenues prudently. Early in its energy wealth, Norwegian policymakers understood that market forces left to themselves would produce a crowding out effect with petroleum revenue gradually supplanting other industrial income. Committing to a diversified economy and sound fiscal policies helped Norway weather such

difficult times. Nonetheless, segments of Norwegian society and government justifiably believe that the nation continues to focus too much investment on the oil and gas industry over others, thereby suppressing additional diversification. Other efforts to bring oil revenue online safely seemed largely nominal under the circumstances.

Norway effectively managed inflation, employment, wage control, trade, and the value of the krone through monetary policy aimed in part at macroeconomic stabilization (Svensson, Houg, Solheim, & Steigum, 2002: 29). Norway wisely maintained fiscal diversity over rapid wealth surpluses despite the oil boom.

Norway's managed approach through the Petroleum Safety Authority (PSA) indicates that this representative of the principal (as a regulatory authority for the Norwegian Continental Shelf [NCS]) does not rely on vertical, superordinate authority but rather horizontal cooperation with other actors for regulatory development and implementation success. In this sense, the PSA acts just as much as a mediator as it does an administrative authority. Public-sector commitments and industry acceptance manifest as mutual respect regarding prevention goals. While Norway, as principal, retains authority to administer punishment concerning violations, there is likely to be greater understanding and acceptance of such actions, due to the cooperative nature of the regime structure, as recently demonstrated with PSA inspection of Eni operations at the *Goliat* platform (Figure 6) in the Norwegian Barents (Nilsen, 2017).

Figure 6. ENI-operated *Goliat* FPSO (Floating, Production, Storage, and Off-loading) platform



Source: ENI Norge

However, Norway has not been without its problems since the catastrophes over 35 years ago, as indicated by minor complacency issues recently (Kent, 2017). Before problems magnify, in keeping with proactive principles, the Norwegian government mandated an offshore study (“Minister Hauglie announces new white paper on petroleum safety,” 2016) while the PSA conducts a comprehensive response program (Petroleum Safety Authority Norway, 2017; “Reversing the Trend,” 2016).

Conclusion

Although a performance-based versus prescriptive-based approach to prevention goals could theoretically produce the same desirable results, that is not likely the situation for the Barents Sea. The principal-agent theory used in this study provided a focused method for considering how state and industry decision makers may determine and focus offshore production policy strategies. The framework and aggregate-level case study methodology helped establish individual policy circumstances for Norway and Russia, which allows further consideration of overlapping issues and expectations more reliably.

The research question posed in this article considers the extent as well as reasons explaining the divergent policy approaches for Norway and Russia. Both face significant bilateral deliberations ahead for elements of their shared maritime region. The article provides compelling evidence that no shared policy exists for offshore oil-spill prevention, yet there is a clear need for one. The goal of this study was to offer a focused insight into strategic influences that might contribute to understanding and expectations. Furthermore, the article helps to identify where issues diverge and ways to develop recommendations for overcoming difficulties in establishing joint solutions through shared policy.

Individually, Norway’s system, by design, facilitates petroleum activity by promoting a methodology of “governing within” (Nordtveit, 2015: 155) whereas Russia prefers a top-down style of governance. Moe (2010: 245) describes very different constraining forces between Russia and Norway with regard to offshore development in the Arctic. In Norway’s case, self-imposed constraints, driven by discernable national interest, translate into environmental precautions that determine the pace of development and otherwise control oil production activities in favor of safety. Alternatively, Russia has lofty global objectives and requires energy revenues to realize them. The oil industry supports these goals through less prudent, or restrictive, and more permissive practices to maximize production levels.

Overlapping concerns reveal that separate systems and processes may need to be addressed through policy partnership efforts to reduce incompatible factors that transcend state antecedence. While accounting for relevant facts and assumptions, filtering primary actors through principal-agent theory facilitates efforts to identify policy limitations as well as areas to strengthen policy cooperation. Regional perspectives make matters even more complicated. For example, European Union officials, on no less than three separate notable occasions, negotiated to impose a variety of significant restrictions on Arctic offshore activities, including an Antarctic-like treaty as well as total drilling bans (Council of the European Union & European Parliament, 2013; European Parliament, 2008; Stępień & Raspotnik, 2017). Such efforts have failed thus far. Especially notable was the demise of the concept for the Antarctic-like treaty, soundly marginalized after the “Arctic Five” (Canada, Denmark, Finland, Russia, and the United States), signed and reaffirmed the

Ilulissat Declaration in 2010 and 2012 respectively, announcing clearly to the world that UNCLOS remains the instrument of choice to manage Arctic maritime sovereignty issues.

Canadian scholar Michael Byers (2013) presented an enduring and compelling assessment of existing environmental agreements and efforts, stating that “more cooperation is needed, and quickly, on regional standards for oil spill prevention.” Such sentiment essentially represents the current circumstances for the Barents Sea. As industrial activity in the Barents Sea predictably grows, continued research can provide much needed and value-added perspectives for any number of complex political and economic dynamics. Finally, in the relatively early stages of energy production in the Barents maritime environment, further exploration of national interests and resulting behaviors emphasizes the need to contribute additional knowledge that helps foster cooperation and policy development.

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