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Offshore Oil and Gas Governance in the Arctic

A Leadership Role for the U.S.

Charles Ebinger
John P. Banks
Alisa Schackmann

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Contact for the Energy Security Initiative:

Colleen Lowry
Project Coordinator
(202) 797-4389
clowry@brookings.edu

About The Authors

Charles Ebinger

Charles Ebinger is a senior fellow and director of the Energy Security Initiative at Brookings. He has more than 35 years of experience specializing in international and domestic energy markets (oil, gas, coal, and nuclear) and the geopolitics of energy, and has served as an energy policy advisor to over 50 governments. He has served as an adjunct professor in energy economics at the Johns Hopkins School of Advanced International Studies and Georgetown University's Walsh School of Foreign Service.

John P. Banks

John P. Banks is a nonresident senior fellow at the Energy Security Initiative at Brookings. He has worked with governments, companies and regulators for over 25 years in establishing and strengthening policies, institutions, and regulatory frameworks to promote sustainable energy sectors. Mr. Banks also serves as an adjunct professor at the School of Advanced International Studies at Johns Hopkins University. He has worked in over 20 countries.

Alisa Schackmann

Alisa Schackmann is the senior research assistant in the Energy Security Initiative at Brookings. With a background covering international energy policy and climate change negotiations from abroad, her research focuses on the impact of U.S. policies on global energy markets and security. She has a Master's degree from the Lyndon B. Johnson School of Public Affairs at the University of Texas at Austin and a B.A. from the University of Southern California.

"I congratulate you and your collaborators on the report and on the Energy Security Initiative. The active interest and involvement of Brookings in Arctic affairs is, and will be, of enormous importance for the future development of the region."

—H.E. Ólafur Ragnar Grímsson, President of Iceland

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List of Acronyms

AANDC	Aboriginal Affairs and Northern Development Canada
AMAP	Arctic Monitoring and Assessment Programme (Arctic Council)
ANWR	U.S. Arctic National Wildlife Refuge
AOR	Arctic Ocean Review
API	American Petroleum Institute
BAT	Best Available Techniques
BEP	Best Environmental Practice
BOEM	U.S. Bureau of Ocean Energy Management
BP	British Petroleum
BSEE	U.S. Bureau of Safety and Environmental Enforcement
CAFF	Conservation of Arctic Flora & Fauna (Arctic Council)
CEN	European Committee for Standardization
COGOA	Canada Oil and Gas Operations Act
COS	Center for Offshore Safety
DOD	U.S. Department of Defense
DOE	U.S. Department of Energy
DOI	U.S. Department of the Interior
DOS	U.S. Department of State
EEZ	Exclusive Economic Zone
EIA	Environmental Impact Assessment

EPA	U.S. Environmental Protection Agency
EPPR	Emergency, Prevention, Preparedness, and Response (Arctic Council)
ERRA	Energy Regulators Regional Association
ESI	Energy Security Initiative at Brookings
EU	European Union
HSE	Health, Safety, and Environment
ICC	Inuit Circumpolar Council
IMO	International Maritime Organization
IPIECA	International Petroleum Industry Environmental Conservation Association
IRF	International Regulators Forum
ISO	International Organization for Standards
JAMP	Joint Assessment Monitoring Programme (OSPAR)
JIP	Arctic Oil Spill Response Technology Joint Industry Program
KOGAS	Korean Gas Company
LNG	Liquefied Natural Gas
MARPOL	International Convention for the Prevention of Pollution from Ships
MMS	U.S. Minerals Management Service
MODU	Mobile Offshore Drilling Units
MOU	Memorandum of Understanding
MPE	Ministry of Petroleum and Energy (Norway)
MWCC	Marine Well Containment Company
NEB	National Energy Board (Canada)
NGL	Natural Gas Liquids
NGO	Non-Governmental Organization
NOAA	U.S. National Oceanic and Atmospheric Administration
NPD	Norwegian Petroleum Directorate
NSPD	National Security Presidential Directive

OCS	Outer Continental Shelf
OESC	Ocean Energy Safety Advisory Committee
OESI	Ocean Energy Safety Institute
OGP	International Oil and Gas Producers Association
OIC	Offshore Industry Committee (OSPAR)
OSPAR	Convention for the Protection of the Marine Environment of the North-East Atlantic
PAME	Protection of Arctic Marine Environment (Arctic Council)
PSA	Petroleum Safety Authority (Norway)
QSR	Quality Status Report (OSPAR)
RUNARC	Russia-USA-Norway Arctic Offshore Oil and Gas Regime Project
SCPAR	Standing Committee of Parliamentarians of the Arctic Region
SEMP	Safety and Environmental Management Program
SWRP	Subsea Well Response Project
TAPS	Trans-Alaska Pipeline System
UAS	Unmanned Aircraft Systems
UNCLOS	United Nations Convention on the Law of the Sea
UNEP	United Nations Environment Programme
USD	United States Dollar
USG	United States Government
USGS	United States Geological Survey

Summary for Policymakers

The Arctic is changing and increasingly drawing the world's interest. Perhaps the promise of this vast region was best summarized by former Secretary of State George Shultz, when he said that the opening of the Arctic is the greatest event in human history since the coming of the ice age. In the Secretary's view the exploitation of the Arctic will open a whole new ocean for human activity and knowledge, with the region's vast energy, mineral and marine resources fueling technological innovations no less revolutionary than the impact of the discovery of the Pacific on the Old World.[1] The importance of this region in terms of climate change, world fisheries, new transportation corridors, and prospects for growing economic activity as the sea ice melts in response to rising CO_2 emissions, mandates that all nations will have an interest in this region for years to come.

Among these economic activities, the potential for vast reserves of offshore oil and gas constitutes arguably the most attractive, yet challenging prospect in the region. By the mid to late 2000s, interest in offshore hydrocarbons had surged owing to receding sea ice, making more of the region accessible, rising global energy demand, U.S. government estimates of large undiscovered oil and gas reserves throughout the Arctic, and a more politically stable investment climate relative to other global regions with large hydrocarbon resources. These factors have spurred the Arctic coastal states to support offshore oil and gas development, and the region is experiencing other growing commercial interest and activity.

Nevertheless, the Arctic poses a unique operating environment characterized by remoteness, the lack of ancillary supporting infrastructure, the presence of sea ice, extended periods of darkness and cold, and hurricane-strength storms. In addition, a diverse natural ecosystem and the presence of indigenous communities call for the highest standard of environmental protection and responsible development. These factors, along with regulatory uncertainties, add considerable risk and thus cost to exploiting offshore oil and gas. Although this reality recently has tempered the enthusiasm of some oil and gas companies and even cast some development plans in doubt, there is broad agreement that there will be increased offshore hydrocarbon activity in the future. The key question is whether the U.S. will be prepared to meet the challenges posed by this activity.

Since 2009, the U.S. government has gradually formulated a policy approach to the Arctic. This approach is outlined in the *National Strategy for the Arctic Region*, published in 2013, with an emphasis on international cooperation, the importance

[1] Secretary George P. Shultz, Remarks before the Hoover Institution Arctic Symposium, Stanford University, Palo Alto, California, November 16, 2012.

of the Arctic Council, and responsible development of hydrocarbon resources. More recently, in anticipation of the U.S. assuming chairmanship of the Arctic Council in 2015, the White House released its *Implementation Plan for the National Strategy for the Arctic Region* in January 2014. To further advance its earlier-outlined themes, the *Plan* singles out two key objectives: "promoting oil pollution preparedness, prevention, and response" and developing "a robust agenda for the U.S. chairmanship of the Arctic Council."

At the same time, the Deepwater Horizon oil spill in the Gulf of Mexico in April 2010, together with the technical setbacks confronted by Shell in its attempt to drill in the Chukchi and Beaufort Seas off the coast of Alaska in the summer of 2012, has had a transformative impact on Arctic policy development. These events raised questions about drilling in frontier areas such as the Arctic and prompted widespread calls from the government, industry and expert bipartisan groups for U.S. leadership in offshore oil and gas governance. Specifically, there is an increasing focus on oil spill prevention, control and response, and on the development of Arctic-specific standards to accommodate drilling in ice-laden areas.

Within the context of all these factors and evolving policy, we identified two critical questions: 1) How can the U.S. elevate the region as a priority national interest? 2) How can the U.S. lead in strengthening offshore oil and gas governance in the Arctic? The objective of this policy brief is to recommend how the U.S. government can answer these questions in preparation for assuming chairmanship of the Arctic Council in 2015.

Conclusions

There is consensus that the U.S. government should elevate the Arctic as a priority national interest. The changing Arctic is outpacing the government's current policy and institutional structure to deal with it. As a former U.S. Department of State official stated, "The U.S. government needs to understand the 'need for speed' in molding its Arctic policy." This requires a shift from viewing the Arctic primarily as a security threat in a strictly military and geopolitical sense, to focusing on a *safety threat* in the Arctic in the context of climate change, sustainability of indigenous communities, and protection of the environment.

The existing governance framework for offshore oil and gas activities in the Arctic region needs to be strengthened, especially in the area of oil spill prevention, containment, and response. Given large distances, severe climate conditions, the pristine nature of the region, and the potential for oil pollution to affect more than one national jurisdiction, a critical part of strengthening governance is oil spill prevention, containment, and response. There is growing awareness and criticism that the current, multilayered regulatory framework is too fragmented and is not tailored to the unique conditions of the Arctic marine environment. There are concerns that national laws and regulations in place vary in their overall systemic approach and ability to be enforced, and that they are not sufficiently Arctic-specific or Arctic-tested to address operations taking place in ice-covered regions. Furthermore, the standards should be supported by equipment and infrastructure in place, as well as resource sharing arrangements, that allow timely and appropriate preparedness and response in the event of an accident.

The most effective governance strengthening approach is to build on the existing regulatory framework. A new, Arctic-wide, legally binding instrument addressing offshore oil, gas, and accompanying institutional structures is not feasible in the near-term. First, it is a top-down approach that, since it involves so many sovereign and other interests, could be unwieldy and take many years to enact (similar to the experience with the International Maritime Organization's Polar Code). Second, such a high-level,

consensus-driven process—with sovereign interests at stake and widely differing conditions throughout the Arctic—could result in weak, watered-down regulations in a "regulatory race to the bottom." Third, the prospect of developing a new legal architecture has been addressed already by the Ilulissat Declaration in which five Arctic states explicitly recognize the adequacy of the existing legal framework. Fourth, attempting to craft a new legal framework could overwhelm other more useful and effective efforts in the short-term.[2]

The Arctic Council should be strengthened to play a stronger role in enhancing offshore oil and gas governance, but its current mandate and legal character should not be changed. The Arctic Council works and any governance-strengthening approach should build on it. It has been an invaluable institution in raising awareness of the importance of the Arctic, especially in elevating the voice of indigenous peoples throughout the region, and it should continue to play a key role in enhancing oil and gas governance. We do not support changing the Arctic Council's fundamental mandate, including proposals for making it a legal entity with treaty powers. Rather, the Arctic Council should remain a policy-shaping, scientific fact-finding body and not become a policymaking entity. Nevertheless, the Council should be imbued with enhanced internal structural and process changes that prioritize and elevate oil and gas issues allowing for a more structured and effective convening of all relevant actors to strengthen the offshore oil and gas governance regime.

Localized, regional, or bilateral governance approaches have significant merit: they have been used extensively to yield timely, meaningful, and practical results. This approach takes into consideration similar "neighborhood" conditions (including types of resources, extent of infrastructure, ecosystems, and indigenous populations) and builds on existing exchanges and lower-level dialogues. It also provides concrete localized governance mechanisms that can be adopted or modified for wider application and offers a more streamlined path (since it would not initially involve multiple sovereign actors) to reach meaningful short-term solutions. This method is best characterized by the Barents 2020 process between Russia and Norway.[3]

There is considerable room for better communication, coordination, and information sharing amongst a wide array of institutions, conventions, and treaties relevant to Arctic oil and gas. Networks, exchanges and other peer-to-peer mechanisms on a multilateral and bilateral basis, as well as industry collaborative efforts, have been in place for many years throughout the Arctic, and they work. Moreover, there are precedents in other regions and sectors that provide workable models for how to implement networks that enhance the regulation of offshore activity in the Arctic (for example, in fisheries and law enforcement). One clear benefit of the networking approach is that it helps fill gaps in knowledge by sharing lessons and experience. There is also widespread consensus on the value of and need for expanding this concept. The networking approach also allows more entrees for the private sector into the process—a pressing need that we heard in a number of our research discussions.

The private sector should be better integrated into efforts to strengthen Arctic governance. Since hydrocarbon development in the Arctic will be undertaken by companies, they need to be involved in the process of establishing standards. This does not mean that oil and gas operators dictate their

[2] "The effort to make progress toward the adoption of an Arctic Ocean framework agreement could soak up a lot time and energy and might well detract from the capacity of policy makers to address more specific needs for governance…" at Oran R. Young, "If an Arctic Ocean treaty is not the solution, what is the alternative?", Polar Record 47 (243), 2011, pp. 327-334.

[3] See Chapter 4 for detailed discussion of the Barents 2020 initiative.

final form. Rather they should have a seat at the table of a collaborative process from the early stages of any effort. There are a number of industry entities undertaking such efforts, as well as efforts among consortia of companies researching oil spill response technology or providing mutual aid in response capabilities. Collaboration is the key to leverage the expertise and resources—both financial and in equipment and infrastructure while taking advantage of lessons learned and sharing best practices.

It is critical to involve indigenous groups in decisions concerning offshore oil and gas activities, including the development and implementation of governance instruments. There is broad acceptance of the critical importance of dialogue and public consultation with local communities. This view is shared by governments and the oil industry. There is also growing awareness that indigenous input into the development of standards is necessary to leverage traditional knowledge. This can have an impact on a range of regulatory issues such as area and seasonal drilling and seismic testing, and their interaction with marine mammal activity.

Recommendations

The U.S. government must "decide if it is an Arctic nation or not and what our vital interests in the region are."[4] Based on our analysis and conclusions, we believe that it is in the U.S. national interest to lead in strengthening the Arctic offshore oil and gas governance regime. The cornerstone of U.S. leadership should be enhancing oil spill prevention, control and response through the development of Arctic-specific standards and resource sharing arrangements to ensure adequate standards, procedures, financial resources, equipment, and infrastructure are in place and available.

This policy approach supports important objectives of the *U.S. National Arctic Strategy* to strengthen international cooperation and "promote Arctic oil pollution preparedness, prevention and response." It also addresses U.S. obligations to meet the Arctic Council's Kiruna Declaration to develop effective ways to implement the *Arctic Oil Pollution Agreement*—namely, to "encourage future national, bi-national, and multinational contingency plans, training and exercises, and to develop effective response measures."[5] Moreover, it supports recommendations from the Deepwater Horizon Commission, the Offshore Energy Safety Advisory Commission, and the Department of Interior to develop Arctic-specific regulations. In short, we believe that our recommendations provide an opportunity for the U.S. to increase domestic awareness of the strategic importance of the region and improve governance of Arctic offshore oil and gas activities, while meeting stated objectives and commitments of U.S. policy in the region.

Our specific recommendations are as follows:

1. Establish oil spill prevention, control, and response as the overarching theme for U.S. chairmanship of the Arctic Council in 2015-2017.
2. Create the diplomatic post of "Arctic Ambassador."
3. Establish a Regional Bureau for Polar Affairs in the U.S. Department of State.
4. Accelerate the ongoing development of Alaska-specific offshore oil and gas standards and discuss their applicability in bilateral and multilateral forums for the broader Arctic region.
5. Strengthen bilateral regulatory arrangements for the Chukchi Sea with Russia, and the Beaufort Sea with Canada.

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[4] Comment from a former senior U.S. government official, private interview.

[5] Throughout this brief, we use "*Arctic Oil Pollution Agreement*" to refer to the *Agreement on Cooperation on Marine Oil Pollution Preparedness and Response in the Arctic*.

6. Support the industry-led establishment of an Arctic-specific resource sharing organization for oil spill response and safety.
7. Support and prioritize the strengthening of the Arctic Council through enhanced thematic coordination of offshore oil and gas issues.
8. Support the establishment of a circumpolar Arctic Regulators Association for Oil and Gas.

U.S. Leadership and Strengthening Arctic Offshore Oil and Gas Governance

Climate change is contributing to unprecedented changes in the Arctic. As the ice melts further and hydrocarbon exploration and development move into more ice-infested waters, new regulatory approaches will be needed, including the adoption of Arctic-specific standards and the implementation of systems, infrastructure, and resource sharing arrangements to strengthen oil spill prevention, containment, and response. Despite much debate over how this is best accomplished, there is broad consensus that the prospect of much of the Arctic opening up for commercial development on a scale scarcely recognized a few decades ago poses major challenges. Environmental challenges on the local, regional, and international levels and associated risks, especially to indigenous communities, must be managed through strengthening the existing offshore governance regime.

This policy brief is designed to inform the legislative and executive branches of the U.S. government of the current state of offshore oil and gas governance in the Arctic, the need to strengthen this governance, possible avenues for doing so, and the leadership opportunities available in its chairmanship of the Arctic Council. The brief is intended to highlight that the responsibilities and challenges the U.S. will assume in this role cannot be met with current policies. Rather, proper leadership will require a sustained commitment of financial and institutional resources to move forward efforts to improve the prevention, containment, and response to accidents in the Arctic.

Congress has the responsibility to understand the importance of establishing strong offshore governance in this region as a national security priority. Even if offshore oil and gas activities in the region take decades to come online at commercial scale, tourism, fishing, and transportation will continue to drive economic development in the Arctic. Hydrocarbon activity is sure to follow this path once paved. When it does, it is critical that proper oil spill prevention, response, and management regimes are in place to avoid environmental devastation. In preparing for its chairmanship of the Arctic Council, the U.S. government must not only recognize the opportunity it has to spearhead these efforts but also to embrace them, pushing forward on initiatives such as those recommended in this policy brief.

1. Introduction

Over the last several years, the Energy Security Initiative (ESI) at Brookings has been examining major issues in the Arctic through a series of events featuring diverse regional leaders from indigenous groups, Arctic ambassadors, and foreign ministers of the Arctic Ocean littoral states, the Prime Minister of Greenland, the President of Iceland, and key U.S. officials from the Department of State, Department of the Interior, Navy, Coast Guard, NOAA, the EPA, and leading academic specialists. In addition, ESI's staff has participated in several high-level working group meetings of the Arctic Program at the Hoover Institution, chaired by former Secretary of State George Shultz and Retired Rear Admiral Gary Roughead.[6]

As a result of these activities and additional research, several facts became increasingly clear. First, climate change is opening new regions of the Arctic for commercial development. Second, not only is there a strong prospect for extensive oil and gas discoveries, but there is also growing commercial interest and activity in the region's hydrocarbon resources, with all the littoral states having enacted policies to enable their development. Third, the Arctic environment poses unique challenges to offshore oil and gas development. Fourth, and perhaps most importantly, despite some recent positive policy developments, there is near unanimous consensus that the U.S. government is not sufficiently prepared to address these changing dynamics.

Moreover, the Deepwater Horizon oil spill in April 2010, along with the setbacks experienced by Shell in the Chukchi Sea in 2012, have had a major impact on this evolving policy environment, specifically on drilling in fragile frontier areas. Opponents of developing offshore Arctic hydrocarbons are skeptical that the risks associated with oil and gas development in the Arctic can be reduced to an acceptable level. They stress that the existing governance regime in the Arctic is inadequate; the very limited resources available to respond to a loss of well control combined with pristine and highly diverse ecosystems would make a Deepwater Horizon-type incident have far more dire consequences in the Arctic than it did in the Gulf of Mexico. Furthermore, critics argue that existing standards are not Arctic-tested for operations in ice-covered waters, and that there is no equipment and infrastructure in the region to respond to an oil spill. In contrast,

[6] The Hoover Institution will release a major book length manuscript in 2014 dealing with a number of critical Arctic issues, including governance of shipping and other international maritime trade issues affecting the oil and gas industry.

supporters of Arctic drilling favor appropriately regulated access to resources to support economic development, generate revenues for local and national governments, and create jobs.

The increasing focus on the Arctic and Deepwater Horizon has also spurred a wider global debate. For example, the Arctic Ocean littoral states take the view that since most of the Arctic Ocean falls within their respective Exclusive Economic Zones (EEZs), international law allows each state's laws and regulations to govern oil and gas resource development within their domains. However, this view is not shared by some non-Arctic states such as India, China, South Korea, and Japan. These states and others argue that all nations should have a seat at the table on issues relating to the region's future owing to the Arctic's vast energy, mineral and fish resources, its importance to the global ecosystem and climate, and the emergence of new commercial maritime routes. In addition, some of these nations assert their right to the resources in the "High Arctic," a geographically small area outside the EEZs of the littoral states. Non-Arctic states also note that traditional international law has not kept up with pending challenges posed by the region's commercial development, with specific concerns over the inadequacy of a suitable legal liability regime in case of damaging accidents.

Deepwater Horizon and Shell's experiences in the Chukchi have demonstrated the potential dangers of drilling in the Arctic. The environmental damage and inadequacy of infrastructure exhibited by these incidents have led to calls from government, industry and expert bipartisan groups for U.S. leadership in offshore oil and gas governance. In addition, one of the key "lines of effort" in the Obama administration's *National Strategy for the Arctic Region* is to strengthen international cooperation in the Arctic. The U.S. chairmanship of the Arctic Council, to begin in June 2015, will serve as an opportunity for the U.S. government to assume leadership in the Arctic on both offshore oil and gas governance and international coordination.

Realizing this opportunity, Brookings embarked on a research effort to recommend how the U.S. government can prioritize Arctic policy and, specifically, play a global leadership role in strengthening offshore oil and gas governance.

Methodology

Owing to the volume of work already conducted on the subject, Brookings relied on a two-track approach: a detailed review of the existing literature including reports by governments, academic institutions, NGOs, and the private sector; and detailed interviews with over 80 Arctic specialists from Canada, Finland, Iceland, Norway, Sweden, Russia, the United States, and European Union officials in Brussels. The participants in these research interviews included five Senior Arctic Officials (the highest ranking government official dealing with the Arctic in each country), top level oil industry officials responsible for the Arctic from three major companies, NGOs, non-oil and gas companies, and representatives of indigenous communities. We also had discussions at the Arctic Circle Conference in Reykjavik in September 2013 with academic experts, the government of Greenland (including the current and former Prime Minister), the Prime Minister of the Faroe Islands, and Russian specialists. Finally, we were able to draw upon the knowledge and insights of Iceland's President Ólafur Ragnar Grímsson from a Brookings forum held in Washington in April 2013 in concert with the Embassy of Canada and from his address at the Arctic Circle conference in Iceland. All the views expressed in the course of our interviews and discussions were given in confidence with no direct attribution provided unless previously agreed, or made in a public setting.

During the formulation of the report, we drew extensively upon the information and insights provid-

ed by the interviewees. In the final analysis, however, the recommendations reflect the views of the ESI team alone and not the views of any individual interviewed. We have attempted to create recommendations reflecting what we believe are issues worthy of serious consideration by the U.S. government.

Assumptions and Definitions

This assessment focuses on "offshore oil and gas activity," broadly encompassing the supporting infrastructure and steps involved in drilling and production. We do not address shipping in this analysis since this is covered extensively in other analyses and is largely regulated under separate legal instruments. The respective national tax and financial regimes surrounding offshore oil and gas activities are also not addressed. Finally, there is a growing realization that the insurance and liability regime governing a major oil pollution incident in the Arctic is inadequate and steps should be taken now to establish a framework in advance of commercial oil and gas activity in the region. For example, the AOR report states that "international law does not currently address liability for damage from drilling activities in the way the CLC and Fund conventions have for oil spills from vessels."[7] However, we do not assess this critical aspect of offshore oil and gas governance given several recent analyses on this subject, including from the Hoover Institution.[8]

We use the term "governance" in this report to refer to a multi-faceted framework in which various stakeholders play a distinct and critical role in overseeing and regulating offshore oil and gas activities, both in direct and indirect ways. Governments set broad national policy objectives related to the development of resources, and national regulators, as part of a government, develop and implement a regulatory approach and specific rules and standards to ensure government policy objectives are met. The oil and gas companies and related trade groups bring technical expertise and operating experience to inform the development of workable standards. There are also a wide array of other institutions that do not play a direct governance role, but provide important scientific and other inputs, including standards organizations, NGOs, academia, and local communities. For example, the Arctic Council, while not responsible directly for governance, is critical in supporting research, examining science-related issues, and examining and developing best practices.

The authors of this policy brief do not take a position on drilling in Arctic waters. They acknowledge that since activity is already taking place and will likely continue, it is prudent to take steps now to ensure that offshore hydrocarbon development is carried out in the most responsible manner possible, in particular with respect to oil spill prevention, control and response.

This policy brief is organized as follows:

- **Chapter 2: A New Energy Frontier** – Provides an overview explaining the potential and growing commercial interest in offshore oil and gas in the Arctic, highlighting key opportunities and activities.
- **Chapter 3: U.S. Arctic Policy** – Assesses the evolution of U.S. Arctic policy,

[7] PAME, "The Arctic Ocean Review Project, Final Report, (Phase II 2011-2013)." (AOR May 2013) Protection of the Arctic Marine Environment (PAME) Secretariat, Akureyri, May 2013, p. 58. "CLC" is the International Convention on Civil Liability for Oil Pollution Damage, and the "Fund" is the International Convention on the Establishment of an International Fund for Compensation of Oil Pollution Damage.

[8] For an excellent analysis of the issue and options see Mark E. Rosen and Patricio Asfura-Heim, "Addressing the Gaps in Arctic Governance." Arctic Security Initiative, Hoover Institution, 2013.

examines the impact of the Deepwater Horizon oil spill in the Gulf of Mexico, and describes the challenges confronting U.S. Arctic policy.

- **Chapter 4: Current Global Governance Framework** – Provides an overview of the existing global governance framework for offshore oil and gas activities.
- **Chapter 5: Challenges in the Governance Framework** – Analyzes challenges and opportunities for strengthening the existing offshore oil and gas governance regime.
- **Chapter 6: Conclusions and Recommendations** – Recommends steps for the U.S. government to elevate the Arctic as a policy priority and specifically to assume a leadership role in strengthening the current offshore oil and gas governance regime as it prepares for the chairmanship of the Arctic Council in 2015.

2. A New Energy Frontier

This chapter describes the offshore oil and gas potential and project activity throughout the region. This is not an exhaustive inventory, but rather is intended to highlight key data and selected developments. **Exhibit A** provides a map of the Arctic indicating the location of major resources.

Rising Interest in Arctic Oil and Gas

Several factors converged in the mid to late 2000s to spur interest in Arctic offshore hydrocarbon resources. First, as a result of climate change and the retreat of Arctic sea ice, the waters of the region are increasingly open for longer periods of the year for oil and gas exploration as well as the transit of supporting maritime vessels. Estimates indicate that the polar ice cap is now 40 percent smaller than in 1979, and summer sea ice across the Arctic covers half of the area it did in 2000.[9]

Second, in 2008 the U.S. Geological Survey (USGS) issued a revised hydrocarbon assessment of the Arctic indicating 13 percent of the world's undiscovered oil resources (90 billion barrels) and 30 percent of the world's undiscovered natural gas resources (1,669 trillion cubic feet) lie in the region; of this, 84 percent are offshore.[10]

Third, strong projected global growth in oil demand and soaring prices peaking at $147 per barrel in July 2008 accelerated interest in new frontier areas. Finally, interest in the Arctic was bolstered by the fact that, despite major technical risks and high costs, most of the region is governed by politically stable states that adhere to the rule of law and the sanctity of contracts. The Arctic thus poses far less political risk than other parts of the world where the growing power of national oil companies either limits access to promising drilling acreage or risks demands for contract revisions once oil and gas is discovered.

Regional Prospects and Commercial Activity

United States

The U.S. Arctic is estimated to hold large reserves of oil and gas. The USGS believes there may be 23 billion barrels of technically recoverable oil and 108 trillion cubic feet of natural gas offshore alone on the Outer Continental Shelf (OCS) in the Beaufort and Chukchi Seas.[11] Elsewhere in Alaska, there are indications, while controversial, that sizeable oil and gas resources still exist on the central North Slope. Furthermore, though estimates

[9] The 40 percent figure is from "U.S. Coast Guard Arctic Strategy," May 2013. For data on changes in sea ice coverage, see J.P. Clement, J. L. Bengtson, and B. P. Kelly, *Managing for the future in a rapidly changing Arctic: A report to the President*. Interagency Working Group on Coordination of Domestic Energy Development and Permitting in Alaska, Washington, D.C., 2013, p. 11. While sea ice returned in 2013, the long-term trends over the last 30 years are clear.

[10] For more information, see: K.J. Bird et al, "Circum-Arctic Resource Appraisal: Estimates of Undiscovered oil and Gas North of the Arctic Circle: U.S. Geological Survey Fact Sheet FS-2008-3049", U.S. Geological Survey, 2008, p. 4, (http://pubs.usgs.gov/fs/2008/3049/fs2008-3049.pdf).

[11] Marc Humphries, Robert Pirog, and Gene Whitney, "U.S. Offshore Oil and Gas Resources: Prospects and Processes," Congressional Research Service, 26 April 2010. States have jurisdiction for activities up to three miles from the coast, and federal jurisdiction extends from that point to 200 miles and is referred to as the OCS.

Exhibit A:
Estimated Undiscovered Oil and Gas in the Arctic and Potential Trade Routes

Sources: U.S. Geological Survey, 2008; United States Coast Guard Arctic Strategy, May 2013

have been reduced recently, prospects of oil in the National Petroleum Reserve and perhaps in the Arctic National Wildlife Refuge (ANWR) exist as well. There might also be oil and gas in shale formations which could potentially be developed with hydraulic fracturing when market conditions allow.[12]

There has been some exploration and production activity in the Alaskan OCS: a total of 86 exploratory wells have been drilled since 1975—the vast majority in the period 1975-1995—with 31 in the Beaufort Sea and 6 in the Chukchi Sea.[13] In recent years the U.S. government has sought to offer more acreage in the Alaskan OCS commensurate

[12] Clement et al, *Managing for the future*, p. 16.
[13] Sharon Warren, "Energy Outlook: U.S. Arctic Outer Continental Shelf," Department of the Interior, Bureau of Ocean Energy Management, July 2013.

with the Obama administration's stated "all of the above" energy strategy to help promote economic development and enhance energy security.[14] Nearly 1 million acres are leased in the Beaufort and 2.75 million acres in the Chukchi, and the *2012-2017 Five Year Outer Continental Shelf Oil and Gas Leasing Program* calls for two additional lease sales, one in the Chukchi in 2016 and one in the Beaufort in 2017.[15]

In 2012, Shell commenced initial preparations for oil exploration in the Beaufort and Chukchi Seas, but owing to ice encroachment and delayed certification of an oil spill containment vessel, was unable to drill. Although Shell had intended to continue exploratory drilling in the Chukchi Sea in the summer of 2014, they have since canceled these plans owing to a January 2014 ruling by a U.S. federal court challenging the legitimacy of the lease sale to Shell in 2008.[16] ConocoPhillips and Statoil also hold leases in the Chukchi but both companies have announced that they are temporarily shelving exploration plans.[17]

The importance of oil to the state of Alaska is demonstrated by the fact that oil comprises 98 percent of all natural resource revenues collected by the state and that about 50 percent of all jobs are directly or indirectly related to oil production or ancillary activities on the North Slope.[18] Yet oil production has been in decline since 1988. If production continues to fall, by the end of the decade the valuable Trans-Alaska Pipeline System (TAPS) could cease operation, with serious consequences for the Alaskan economy and billions lost on stranded assets. To avoid this situation, many hope that new oil production in the Chukchi and Beaufort Seas could use this existing transportation network, reducing the time and cost of getting oil to market. It should be noted, however, that transporting oil from the Chukchi Sea to TAPS will require a major pipeline project involving subsea trenching and crossing hundreds of miles of sensitive terrain, an effort that most scenarios indicate is more than a decade away. Moreover, the success of the unconventional oil and gas revolution in the lower 48 states has had a sobering effect on how soon energy resources in high-cost areas such as the Arctic will be developed.

European High North

Over the next decade, investments in excess of 30 billion euros will commence in the European High North and adjoining regions of Russia, with the largest projects associated with the offshore oil and gas industry.[19] These investments could be facilitated by a seismic shift in global transportation routes if Russia's Northern Sea Route, the Northwest Passage through the Canadian archipelago, and new previously unimagined transpolar sea lanes become the new reality of international commerce. These new corridors could reduce the distance between Europe and Asia by as much as 5,200 miles and will lead to the development of new international "marine servicing hubs" for industry in places as diverse as Iceland, the Faroe Islands, and remote regions of Russia, Canada, and Alaska. In addition, with this increased maritime traffic new ports will be developed which in turn

[14] See "Interior Finalizes Plan to Make All Highest-Resource Areas in the U.S. Offshore Available for Oil & Gas Leasing," U.S. Department of Interior Press Release, 28 June 2012, (http://www.doi.gov/news/pressreleases/Interior-Finalizes-Plan-to-Make-All-Highest-Resource-Areas-in-the-US-Offshore-Available-for-Oil-and-Gas-Leasing.cfm).

[15] See "Five Year Outer Continental Shelf (OCS) Oil and Gas Leasing Program," Bureau of Ocean Energy Management, (http://www.boem.gov/5-year/2012-2017/).

[16] Phil Taylor, "Shell Scraps 2014 exploration, cites 9th Circuit's lease decision," Greenwire, 30 January 2014.

[17] Clifford Krauss, "ConocoPhillips Suspends Its Arctic Drilling Plans," *New York Times,* 10 April 2013.

[18] *Managing for the future*, p. 16.

[19] Lapland Chamber of Commerce, *European High North Business Yearbook 2013, Arctic Business Forum*, April 2013, (http://ic.com/files/Yearbook_13.pdf). See also: Timo Koivurova and Kamrul Hossain, "Background Paper Offshore Hydrocarbon: Current Policy Context in the Marine Arctic", Arctic Transform, Arctic Center, pp. 5-12, 4 September 2008, (http://arctic-transform.org/download/OffHydBP.pdf).

will lead to the opening of new intermodal rail, pipeline, and road links from the Arctic Ocean south into the interior of Europe and Russia's vast Far Eastern regions.[20]

Norway

Norway is Europe's largest oil producer and among the world's largest natural gas exporters. Petroleum activities in Norway are divided into mature areas and frontier areas. Mature areas include the North Sea, where most oil production has taken place, and most of the Norwegian Sea. Frontier areas—defined as regions "with little knowledge of the geology, significant technical challenges, and lack of infrastructure"—include deepwater and northern areas of the Norwegian Sea, and most of the Barents Sea.[21]

The Barents Sea holds significant promise: a recent USGS survey estimated the mean undiscovered, recoverable petroleum resources in the Barents Sea Shelf to include 11 billion barrels of oil, 380 trillion cubic feet of natural gas, and two billion barrels of natural gas liquids (NGLs).[22] The Norwegian government estimates that the Barents holds 30 percent and 43 percent respectively of the country's undiscovered oil and gas resources.[23] For this reason there is increasing interest in this region as evidenced by a June 2013 licensing round in which the government offered 86 blocks, 72 of which were in the Barents. Awards went to Statoil, ENI, Conoco, Total, Shell, and several other companies.[24] In the licensing round to be held in 2014, the government will offer 34 blocks in the Barents, moving into areas further north and east.[25] The Barents has only one field developed—Snøhvit—which came online in 2007 and provides gas for LNG exports. Another oil field, Goliat, owned by ENI, has estimated resources of 190 million barrels of oil and is expected to start production in late 2014.[26] The Skrugard-Havis field near Goliat is in the planning phase, with just the pipeline linking the field to a terminal north of Honningsvag, requiring an investment of 800 million euros.[27]

Several promising areas of the offshore Norwegian shelf have not been approved for petroleum activities by the Norwegian Parliament. These include all of the northern Barents Sea toward the Svalbard archipelago, the eastern part of the southern Barents Sea, the Northeastern Norwegian Sea, the Arctic Ocean north of Svalbard, and the area around Jan Mayen. With very limited seismic study activity done at this point, there are no plans for exploration licensing in these areas. However, the government has initiated two "opening processes"—in which it formally assesses the risks and prospects of a particular area—for Jan Mayen and the south eastern Barents Sea.[28] The boundary in the Eastern Barents with Russia has now been settled, and the Russians have commenced seismic activity studies in their portion.

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[20] Lapland Chamber of Commerce, pp. 14-32.
[21] *Facts 2013: The Norwegian Petroleum Sector*, Norwegian Petroleum Directorate, Norwegian Ministry of Petroleum and Energy, March 2013.
[22] "Assessment of Undiscovered Petroleum Resources of the Barents Sea Shelf." World Petroleum Resources Assessment Fact Sheet, U.S. Geological Survey, accessed 26 July 2013, (http://pubs.usgs.gov/fs/2009/3037/pdf/FS09-3037.pdf).
[23] Facts 2013, p. 28.
[24] Reuters Editorial Staff, "Update 1-Norway grants 24 oil licenses in Arctic-focused round," Reuters, 12 June 2013, (http://www.reuters.com/article/2013/06/12/norway-oillicensing-idUSL5N0EC2AD20130612).
[25] Atle Staalesen, "Drilling further north, farther east," Barents Observer, 18 February 2014. http://barentsobserver.com/en/energy/2014/02/drilling-further-north-farther-east-18-02#.UwV7at83IbE.email.
[26] *Facts 2013*, p. 114.
[27] Lapland Chamber of Commerce, pp. 19–22.
[28] *Facts 2013*, p. 33.

Russia

In February 2013, Russia released its first Arctic strategy through the year 2020, emphasizing the importance of the Arctic region for national security, economic growth, and improvement of jobs and quality of life.[29] In particular, the strategy focuses on regional infrastructure and the development of oil and gas deposits in the continental shelf. Russia has the greatest potential for Arctic offshore oil and gas with 52 percent of all assessed oil, natural gas, and natural gas liquids in the region.[30] By 2020, Russia intends to study and develop the offshore fields in the Barents, Pechora, and Kara Seas as well as in the Yamal and Gydan Peninsulas. The government is also establishing a state program for mineral exploration and development in the Arctic shelf to tap known resources of chrome, zinc, manganese, titanium, aluminum, tin, and uranium.

Offshore hydrocarbon production has already commenced: the Kirinskoye gas field in the Sea of Okhotsk began production October 2013, and the Prirazlomonoye oil field in the Pechora Sea started production in December 2013.[31] Other projects are also moving forward. Moscow is seeking partners for Rosneft and Gazprom to develop offshore oil and gas, and there has been considerable interest. In the wake of a settlement of Norway's disputed maritime boundary with Russia, Rosneft signed a $2.5 billion agreement in May 2012 with Norway's Statoil to explore a field in the Barents Sea.[32] The China National Petroleum Corporation signed a deal in March of 2013 to explore three offshore oil fields with Rosneft, and China is assessing other arrangements to increase its oil and gas links with Russia.[33]

In perhaps the most significant development, ExxonMobil signed a Strategic Cooperation Agreement with Rosneft in August 2011 which was subsequently expanded in February 2013. While little noted at the time, the original agreement included exploration rights for hydrocarbon resources in three blocks in the Kara Sea covering more than 125,000 square kilometers, an area equal in size to the total leased acreage in the U.S. Gulf of Mexico. Under the extended agreement, ExxonMobil received access to an additional 600,000 square kilometers across seven new blocs in the Chukchi, Laptev, and Kara Seas, all regions considered among the world's most promising and least explored offshore areas. The agreement also offered Russia participation in some of some of ExxonMobil's acreage in Alaska. As part of the February 2013 agreement with Rosneft, ExxonMobil agreed to study a prospective LNG project in Russia's Far East and to collaborate with Rosneft in establishing an Arctic Research Center.[34]

Despite these promising developments, the emergence of low-cost unconventional shale gas in the U.S. has undermined the economics of developing some of these large projects, including the giant Shtokman natural gas field. Statoil was originally cooperating with Gazprom and Total in the Shtokman project, which was designed to send LNG to the U.S., but did not renew its contact in June 2012 due to rising costs and an unfavorable market.[35]

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[29] Trude Pettersen, "Russia launches program on Arctic development to 2020," Barents Observer, 20 February 2013.

[30] "Arctic Oil and Gas," Ernst and Young, 2013, (www.ey.com/oilandgas), p. 13.

[31] "Kirinskoye Gas and Condensate Field, Sea of Okhotsk, Russia," Offshore Technology.com, (http://www.offshore-technology.com/projects/kirinskoye-gas-condensate-field-russia/); Offshore Magazine," Gazprom starts oil production from Prirazlomnoye in Pechora Sea, 23 December 2013, http://www.offshore-mag.com/articles/2013/12/gazprom-starts-oil-production-from-prirazlomnoye-in-pechora-sea.html.

[32] "Rosneft and Statoil in Arctic exploration deal," BBC News, 6 May 2012.

[33] Rakteem Katakay and Will Kennedy, "Russia lets China into Arctic Rush as Energy Giants Embrace," Bloomberg, 25 March 2013.

[34] See ExxonMobil, Arctic Leadership, (www.exxonmobil.com/Corporate/files/news_pub_poc_arctic.pdf), and also based on interviews with Exxon Arctic officials.

[35] When development of Shtokman was first conceived, it was projected that within a decade the US would be importing 40 percent of its natural gas needs. The project was located perfectly geographically to serve that market. This led to a financial boon in the Murmansk region of Russia as billions of euros poured in preparation for the construction of the ancillary facilities required for the project.

Canada

Canada possesses significant technically recoverable oil, gas, and NGL resources in the Arctic, with offshore potential in the Mackenzie Delta-Beaufort Sea, Eastern Arctic offshore, and the Arctic islands. Government policy in recent years has supported developing these resources. In its 2010 Arctic Foreign Policy statement, Canada identified securing international recognition of the Canadian continental shelf as one of its priorities.[36] In December 2013, the government submitted a partial claim for rights in the Atlantic seabed and indicated its intention to file an Arctic claim at a later date extending to the North Pole.[37] The government also has taken steps to strengthen its offshore oil and gas regulatory regime. In 2011 the National Energy Board—which regulates oil and gas exploration activities in the Arctic—completed an *Arctic Offshore Drilling Review* to gather information on the risks involved in drilling in Arctic waters and develop approaches "to minimize harmful impacts to the environment."[38] One of the major outcomes of this review was the re-affirmation of the Same Season Relief Well Policy—that operators must demonstrate "the capability to drill a relief well to kill an out of control well during the same drilling season."[39] The focus of the NEB's *Review* was extensive public outreach to gather comments from a wide range of stakeholders, and this approach continues: Aboriginal Affairs and Northern Development Canada are currently holding several public meetings regarding future offshore oil development in the Arctic.[40]

At the end of 2012, there were a total of 152 active licenses in the Mackenzie Delta-Beaufort Sea, Eastern Arctic offshore, and the Arctic islands, of which most are "significant discovery licenses" in the Mackenzie Delta-Beaufort Sea (there are only two "production licenses.")[41] Arctic exploration now is turning to the next phase of deepwater activity, while much of the past activities have been offshore or in much shallower depths. For example, in September 2013, Imperial Oil, ExxonMobil, and BP filed a joint agreement to begin exploratory drilling in the Beaufort Sea, with the Ajurak and Pokak blocks expected to see drilling in depths of 1,500 meters. These are the farthest north yet to be drilled in the Canadian Arctic.[42] Of the 92 wells previously drilled in the Beaufort Sea, all have been in less than 68 meters of water.[43] In October 2013, the Canadian government approved a license application from ConocoPhillips to begin drilling exploratory wells in the Northwest Territories.[44] This was the first such application that approved drilling in this region using hydraulic fracturing techniques. Statoil and

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[36] Government of Canada, "Canada and the Arctic," Foreign Affairs and International Trade Canada, accessed 30 July 2013, (http://www.international.gc.ca/arctic-arctique/index.aspx?lang=eng). Under UNCLOS, a country can claim control over waters beyond its 200 mile Exclusive Economic Zone if it can provide evidence that its continental shelf extends beyond this limit. This was the first time the Canadian Government stated its intention to claim the continental shelf all the way to the North Pole.

[37] Stephen Chase, "Arctic claim will include North Pole, Baird pledges as Canada delays full seabed bid." The Globe and Mail, 9 December 2013, (http://www.theglobeandmail.com/news/politics/ottawa-delays-full-bid-for-claim-to-north-pole/article15824139/).

[38] "Backgrounder – National Energy Board Report on the Arctic Offshore Drilling Review," National Energy Board, last modified 1 November 2011, (http://www.neb-one.gc.ca/clf-nsi/rthnb/pplctnsbfrthnb/rctcffshrdrllngrvw/fnlrprt2011/bckgrndr-eng.html).

[39] "Backgrounder."

[40] David Murphy, "Canada holds Nunavut consultations on offshore oil and gas drilling". Nunatisaq Online, 3 February 2014, (http://www.nunatsiaqonline.ca/stories/article/65674canada_holds_nunavut_consultations_on_offshore_oil_and_gas_drilling/). The AANDC is responsible for policy development, royalties and leasing in Canada's Arctic Region.

[41] "Northern Oil and Gas Annual Report 2012," Aboriginal Affairs and Northern Development Canada, p. 13.

[42] Jeffrey Jones, "Imperial Oil leads push to drill deep in Canadian Arctic," Globe and Mail, 29 September 2013, (http://www.theglobeandmail.com/report-on-business/industry-news/energy-and-resources/major-oil-companies-apply-to-drill-deep-in-canadian-arctic/article14596797/).

[43] Jones, "Imperial Oil", 2013.

[44] Chester Dawson, "Canada Approves ConocoPhillips Test Oil Drilling in Arctic North," Wall Street Journal, 30 October 2013, http://online.wsj.com/news/articles/SB10001424052702304073204579168212023494666.

Husky Energy also made two discoveries in the Flemish Pass Basin off the Labrador coast of Newfoundland in November 2013. ExxonMobil is constructing the Hebron oil platform in the same region, with installation slated to begin in 2016 and oil production by 2017.[45]

There is also considerable commercial interest in the Canadian Arctic's gas potential, particularly as consumers in Asia look for more gas to help meet rising demand. In December 2012, the Korean Gas Company (KOGAS) purchased a 20 percent stake in the offshore Umak field, and also has plans to build an LNG terminal along the Northwest Territories.[46] The Canadian government has also proposed building the Mackenzie Valley pipeline, which would run from the Canadian Arctic to British Columbia, effectively reducing shipping costs for LNG to Asia.[47]

Greenland

With a population of only 56,000 people, Greenland's large, estimated oil and gas reserves present a significant opportunity to support economic development and increasing autonomy from Denmark. The self-ruling government in Nuuk supports natural resources development with the Bureau of Ministry and Petroleum issuing 120 energy and mineral licenses to multinational companies involving iron ore, uranium, emeralds, and nickel extraction.[48] Nevertheless, even while acknowledging the potential for oil and gas to spur economic development, the Premier of Greenland also issued a moratorium on *new* exploration licenses.[49]

Cairn Energy was the first oil company operating in Greenland and made its first oil discovery in the summer of 2010.[50] Additional licenses subsequently have been granted. In December 2013, Statoil, alongside partners ConocoPhillips and Nunaoil, received a license to drill in a block just off northeastern Greenland and in January 2014, BP acquired a license to develop the Amaroq concession, consisting of 2,630 square kilometers.[51] After Cairn Energy invested $1 billion in drilling operations, Greenland has 14 exploratory wells as of 2013, up from only six in 2000.[52]

Nevertheless, harsh environmental conditions continue to make Greenland a very challenging operating environment and commercial discoveries remain elusive. Cairn will not resume its Greenland projects in 2014 as its costly efforts have proven to be "fruitless".[53] Statoil is also mulling over ending its drilling operations off Western Greenland.[54]

As these overviews demonstrate, the substantial amount of estimated reserves, activities underway, and plans on the drawing board indicate a

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[45] Ashley Fitzpatrick, "Bay du Nord biggest find outside Norway: Statoil," The Telegram, 26 September 2013, (http://www.thetelegram.com/News/Local/2013-09-26/article-3406745/Bay-du%E2%80%88Nord-biggest-find-outside-Norway%3A-Statoil/1).

[46] Nathan Vanderklippe, "South Koreans eye Arctic LNG shipments," The Globe and Mail, 23 August 2012, (http://www.theglobeandmail.com/report-on-business/industry-news/energy-and-resources/south-koreans-eye-arctic-lng-shipments/article597537/).

[47] Brent Jang, "Gas exports from B.C. seen as key to reviving pipeline," The Globe and Mail, 3 February 2014, (http://www.theglobeandmail.com/report-on-business/industry-news/energy-and-resources/gas-exports-from-bc-said-key-to-reviving-pipeline/article16657138/). The Canadian government also issued licenses to Imperial and ExxonMobil to begin exporting LNG along British Columbia, though an LNG terminal has yet to be built.

[48] Greenland Bureau of Minerals and Petroleum, "Report to Inatsisartut, the Parliament of Greenland, concerning mineral resources activities in Greenland," 2012, p. 13.

[49] Terry Macalister, "Greenland halts new oil drilling licenses," The Guardian, Wednesday 27 March 2013, (http://www.theguardian.com/world/2013/mar/27/greenland-halts-oil-drilling-licences).

[50] "Arctic Oil and Gas."

[51] Terry Macalister, "BP wins first Greenland drilling concession despite chequered record," The Guardian, 3 January 2014, (http://www.theguardian.com/business/2014/jan/03/bp-wins-first-greenland-drilling-deepwater-horizon).

[52] Coco Smits, *Governance of oil, gas and mining activities in Arctic Greenland*, Wageningenur, 14 August 2012, pp. 42, 43.

[53] Gareth Mackie, "Greenland on back burner as Cairn plans African push," The Scotsman, 22 January 2014, (http://www.scotsman.com/business/energy/greenland-on-back-burner-as-cairn-plans-african-push-1-3277106).

large offshore opportunity and significant commercial interest in the Arctic. Yet there are serious obstacles. Regulatory uncertainties, high costs, and environmental conditions add considerable risk to exploiting offshore oil and gas in this unique environment. These challenges are recognized by the oil and gas companies, illustrated by Shell's decision to suspend drilling in the Chukchi Sea in 2014 and public statements from other companies. For example, Statoil's exploration chief recently stated, "We don't envision production from several of these areas before 2030 at the earliest, more likely 2040, probably not until 2050."[55] Nevertheless, although the exact timing of investments is unknown and changing market conditions for oil and gas and other industrial development elsewhere in the global economy will have an impact on future projects, the Arctic will within the next 10-20 years undergo a transformation that will have implications felt around the globe. Skeptics of Arctic resource development may argue that such developments are many decades away, but economic forces from various arenas in the global economy will inexorably link to development of this region. The question is not whether the Arctic will be developed and drawn into the mainstream of international commerce, but rather when this will occur and whether the U.S. will be prepared to meet the challenge.

The question is not if there will be large scale Arctic development, but when and how quickly it will occur.

[54] Brian Swint and Mikael Holter, "Statoil Considers Leaving West Greenland to Keep Lid on Spending," Bloomberg, 21 January 2014, (http://www.businessweek.com/news/2014-01-21/statoil-considers-leaving-west-greenland-to-keep-lid-on-spending).

[55] Joshua Franklin, "Large-scale Arctic oil and gas drilling decades away – Statoil," Reuters, 29 November 2013. See also, Guy Chazan, "Total warns against oil drilling in the Arctic," Financial Times, 25 September 2012.

3. U.S. Arctic Policy

This chapter provides a brief overview of U.S. Arctic policy, describes the impact of the Deepwater Horizon oil spill, and assesses the main challenges confronting U.S. Arctic policy.

Evolution of U.S. Arctic Strategy

In January 2009, the Bush Administration issued National Security Presidential Directive (NSPD)-66 establishing the policy of the United States towards the Arctic, including the need to "work with other Arctic nations to ensure that hydrocarbon and other development in the Arctic region is carried out in accordance with accepted best practices and internationally recognized standards."[56] On May 10, 2013, President Obama released a new *National Strategy for the Arctic Region* which, for the first time, articulated the strong linkages between events in the Arctic and enduring U.S. interests. An important contribution of the *Strategy* is the strong case it makes that changes in the Arctic are affecting U.S. national security. The President also defined strengthening international cooperation as one of the principal "lines of effort" in the strategy not only to support new commercial opportunities but also to provide stewardship in this fragile environment.[57]

In January 2014, the White House issued an *Implementation Plan for the National Strategy for the Arctic Region* providing more detail on how to achieve the strategy's major objectives.[58] The *Implementation Plan* identifies two related areas to advance U.S. policy in the region regarding hydrocarbon development: promote Arctic oil pollution preparedness, prevention, and response internationally, and work through the Arctic Council to advance U.S. interests in the Arctic Region. With regard to the latter, the plan specifically calls for developing "a robust agenda for the U.S. chairmanship of the Arctic Council." The release of the *Implementation Plan* was followed by Secretary of State John Kerry's announcement on February 14, 2014, that the U.S. Department of State will designate a Special Representative for the Arctic Region, "a high-level official of stature who will play a critical role in advancing American interests in the Arctic Region, particularly as we prepare efforts for the United States to Chair the Arctic Council in 2015."[59]

[56] National Security Presidential Directive (NSPD)-66 also titled Homeland Security Presidential Directive (HSPD) -25 or NSPD-66/HSPD-25, January 2009, (http://www.fas.org/irp/offdocs/nspd/nspd-66.htm).
[57] The White House, *National Strategy for the Arctic Region*, May 2013, (www.whitehouse.gov/sites/default/files/docs/nat_arctic_strategy.pdf).
[58] The White House, *Implementation Plan for The National Strategy for the Arctic Region*, January 2014, (http://www.whitehouse.gov/sites/default/files/docs/implementation_plan_for_the_national_strategy_for_the_arctic_region_-_fi....pdf).
[59] "Secretary Kerry Announces Department Will Establish a Special Representative for the Arctic Region," Press Statement, U.S Department of State, Washington, DC, 14 February 2014, (http://www.state.gov/secretary/remarks/2014/02/221678.htm).

The President's *National Strategy for the Arctic Region* was strongly seconded by the May release of the Coast Guard's *Arctic Strategy*[60] and that of the Department of Defense (DOD) in November 2013.[61] The Coast Guard *Strategy* opens with the bold assertion that "the U.S. is an Arctic nation" ready to deal with partners in the region. It highlights the changes brought about by climate change in terms of the opening of new sea routes and the fact that the region's abundant resources will lead to increased industrial activity throughout the region. Importantly, the document highlights the Coast Guard's recognition of the need to cooperate internationally to improve Arctic governance. In short, the Coast Guard's strategy is articulate, forward looking, and anticipatory in recognizing that circumstances are evolving and that it needs to plan for them.[62]

The DOD *Arctic Strategy* is designed to advance U.S. security interests, pursue responsible Arctic region stewardship, and strengthen international cooperation. The department also has the mandate in the Arctic to improve nautical charts of direct interest to the oil and gas industry, to enhance atmospheric and oceanic models, to improve the accuracy of estimates of ice extent and thickness, and to detect and monitor climate change indicators. DOD possesses a key role in meeting the U.S. obligations in aiding in search and rescue operations and in responding to oil spills in ice-covered waters, specifically vis-a-vis the *Agreement on Cooperation on Aeronautical and Marine Search and Rescue* (Search and Rescue Agreement) in the Arctic and the *Arctic Oil Pollution Agreement*.[63]

Nevertheless, there is a difference in tone between the Coast Guard strategy, which sees the Arctic as a dynamic region undergoing fundamental change, and DOD's relatively passive approach toward the importance of the region. In particular, the DOD strategy cautions against exaggerations of the extent and rapidity of changes in the region: "Significant uncertainty remains about the rate and extent of the effects of climate change including climate variability in the Arctic. There is also uncertainty about future economic conditions and the pace at which human activity will increase in the region. The challenge is to balance the risk of having inadequate capabilities or insufficient capacity when required to operate in the region with the opportunity cost of making premature and/or unnecessary investments in a time of fiscal austerity."[64]

In sum, since 2009 the U.S. government gradually has formulated a policy approach to the Arctic that emphasizes international cooperation and, in particular, the importance of the Arctic Council. Moreover, as illustrated in the January 2014 *Implementation Plan* issued by the White House, strengthening offshore oil and gas governance—by promoting oil pollution preparedness, prevention, and response—is singled out as an important objective.

Impact of the Deepwater Horizon Oil Spill

The impact of the Deepwater Horizon oil spill in the Gulf of Mexico in April 2010 cannot be overstated. Together with the technical setbacks confronted by Shell in Alaska in the summer of 2012, the accident has had a transformative impact on U.S. energy and Arctic policy and on perceptions about the role of Alaska in the nation's energy future. Prior to both events, Alaskan oil and gas,

[60] United States Coast Guard, *Arctic Strategy*, May 2013, (www.uscg.mil/seniorleadership/DOCS/CG_Arctic_Strategy.pdf).
[61] United States Department of Defense, *Arctic Strategy*, November 2013, (www.defense.gov/pubs/2013_Arctic_Strategy.pdf). NB: It is anticipated that the U.S. Navy will release its own strategy in the first quarter of 2014 placing a strong emphasis on the links between climate change and U.S. strategic interests in the Arctic.
[62] United States Coast Guard, May 2013.
[63] Department of Defense, November 2013.
[64] Ibid.

especially from the OCS, was predicted to play a key role in future energy supply. These events, however, undermined this assumption as critics asked how the industry could insure that an accident in Arctic conditions could be contained hundreds of miles from any land-based infrastructure if one could not be contained near the heart of the oil and gas industry in Texas and Louisiana. Deepwater Horizon also generated numerous efforts to assess lessons learned and revise procedures for offshore drilling in general, and specifically for the Arctic.

"The need for international standards for activities in the Arctic is also unquestioned: the United States has already awrded leases in the region and now it is incumbent on the United States to push for standards"

—U.S. Deepwater Horizon Commission Report

National Commission Report on Deepwater Horizon

The Commission reviewing the Deepwater Horizon accident could not have been more searing in its indictment of the risks involved or the inadequacy of the regulatory oversight of current offshore drilling procedures:

> Deepwater energy exploration and production, particularly at the frontiers of experience, involve risks for which neither industry nor government has been adequately prepared but for which they can and must be prepared in the future.[65]

Of greatest relevance for the Arctic, the Commission found that, "Scientific understanding of environmental concerns in sensitive environments in deep Gulf waters, along the region's coastal habitats, and in areas proposed for more drilling, such as the Arctic, is inadequate. The same is true of the human and natural impacts of oil spills."[66] Specifically, the Commission drew attention to several basic facts. Given the unique challenges posed by remoteness, weather, ice, and other conditions, oil spill response methods from the Gulf of Mexico cannot "simply be transferred to the Arctic."[67] It discussed the potential for oil spills in the Arctic to flow across national boundaries immediately internationalizing any accident. Thus, the Commission made a clarion call for strong international standards agreed to by all Arctic nations.[68] Clearly the enactment of such standards will require extensive cooperation and coordination among all Arctic nations as well as strong institutional leadership.

Interagency Working Group on Coordination of Domestic Energy Development and Permitting in Alaska

To address fundamental questions regarding what U.S. Arctic policy should be, the future of Alaska in the U.S. energy mix, and other issues relating to the relationship between the federal government and Alaska, President Obama on July 12, 2011, issued Executive Order 13580 establishing the Alaska Interagency Working Group. The Executive Order was forthright in noting that federal agencies have a number of independent authorities and responsibilities related to energy development and that these are often not as well-coordinated as they might be and, in some cases, even work at cross purposes.[69]

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[65] National Commission on the BP Deepwater Horizon Oil Spill and Offshore Drilling. Deep Water: The Gulf Oil Disaster and the Future of Offshore Drilling, Report to the President, United States Government Printing Office, January 2011, p. vii, (www.gpo.gov/fdsys/pkg/GPO-OILCOMMISSION/pdf/GPO-OILCOMMISSION.pdf).

[66] National Commission, Deep Water, p. vii.

[67] Ibid, pp. 303-304.

[68] Ibid, p. 304.

[69] Executive Order No.13580, 76 Fed. Reg. 41991, 12 July 2001, (http://www.nps.gov/legal/laws/112th/Executive%20orders/EO_13580.pdf).

Although the Department of the Interior has the primary regulatory authority over offshore drilling, the Working Group coordinated the development of the department's Arctic-specific requirements for Shell with those of the Coast Guard, EPA, and NOAA. Specifically, the Interagency Working Group developed integrated requirements that were applied to Shell's exploration activities during the summer of 2012. These Arctic-specific requirements included a shortened drilling season (to account for time to address an accident before ice formed), use of booms around vessels during fuel transfer, an available capping stack, a containment ship that could collect oil if the capping stack fails, and a separate drilling rig in the theater that could drill a relief well if needed.

Based on its experience facilitating coordinated permitting of energy projects in Alaska, the Interagency Working Group developed a report that described the coordination effort. It went further to offer a number of recommendations for procedural changes to facilitate the coordination of all relevant agency reviews, "thereby enabling a more orderly, efficient and informed approach to permitting and managing renewable and conventional energy projects in Alaska."[70]

The report makes a number of excellent institutional recommendations including adoption of an Integrated Management Approach merging stewardship and development decisions affecting the U.S. Arctic, institutionalizing high-level White House leadership on Arctic issues, strengthening key partnerships among the federal government, the State of Alaska and Alaskan Natives, promoting better stakeholder engagement, and coordinating and streamlining federal actions.[71]

"What's really called for offshore of Alaska is an Arctic-specific model. And fundamental to that, I believe, is the concept of resource sharing among any company or set of companies that would endeavor to work up there."

—Tommy Beaudreau, Assistant Secretary of the Interior and BOEM Director

The Ocean Energy Safety Advisory Committee (OESC)

In January 2011, the Secretary of the Interior announced the creation of the Ocean Energy Safety Advisory Committee (OESC), a permanent advisory body under the Bureau of Safety and Environmental Enforcement (BSEE) in DOI "through which the nation's leading scientific, engineering, and technical experts will provide input on improving offshore drilling safety, well containment, and spill response."[72] From April 2012 to January 2013 the OESC released technical and institutional recommendations drawing on the lessons of Deepwater Horizon. The Committee called for the development of Arctic-specific and Arctic-tested standards for well design, pipelines, rigs, vessels, blowout preventers, and all other equipment related to oil spill prevention and response.[73] The OESC also recommended that a study be commissioned on the human factors associated with working in the Arctic to identify specific regulations needed to

[70] Clement et al, *Managing for the future*, p. 5.
[71] Ibid. pp. 46-47.
[72] "Salazar, Bromwich Announce Next Steps in Overhaul of Offshore Energy Oversight and Management," U.S. Department of Interior, Press Release, 19 January 2011, (http://www.doi.gov/news/pressreleases/Salazar-Bromwich-Announce-Next-Steps-In-Overhaul-of-Offshore-Energy-Oversight-and-Management.cfm#).
[73] Ocean Energy Safety Advisory Committee to BSEE Director James Watson, 25 January 2013, p. 45, (www.bsee.gov/uploadedFiles/BSEE/About_BSEE/Public_Engagement/Ocean_Energy_Safety_Advisory_Committee/OESC%20Recommendations%20January%202013%20Meeting%20Chairman%20Letter%20to%20BSEE%20012513.pdf).

support development of Arctic specific work practices, technologies, and operating procedures. It recommends that spill containment procedures should be made specific to Arctic conditions for capping stacks and relief rigs and that they be prepositioned for rapid deployment. OESC also called for major reforms in institutional collaboration and coordination both between and among government agencies and industry to insure that all equipment is suitable for Arctic conditions.

The OESC also recommended the formation of an offshore safety entity, and in May 2013 BSEE announced that it will establish an independent Ocean Energy Safety Institute (OESI) designed to enhance further safety and oversight in offshore activities.[74]

"To ensure common standards for Arctic OCS exploration and production, the OESC recommends that DOI develop Arctic-specific regulations and/or incorporate standards for prevention, safety, containment, and response preparedness in the Arctic OCS."

—Ocean Energy Safety Advisory Committee

Department of Interior

Deepwater Horizon led to major changes in U.S. regulation of offshore activities. Perhaps most importantly, BSEE and BOEM, the Bureau of Ocean Energy Management, Regulation and Enforcement, did not allow deepwater drilling to recommence in the Gulf until operators could demonstrate the ready availability of a capping stack and containment ship.[75] In addition, BOEM revised the methodology required for companies to estimate "worst case" spill potential, and it bolstered the response capabilities required for such spills accordingly. The OESC's call for the development of Arctic-specific standards was supported further by an in-depth evaluation of Shell's performance in 2012 conducted by DOI. The resulting report recommended seven principles, including that "industry and government must develop an Arctic-specific model for offshore oil and gas exploration in Alaska."[76] DOI followed-up with plans to release new oil and gas regulations for Arctic waters by the end of 2013, although these plans have now been pushed back to the first quarter of 2014.[77] The new standards will be based on the requirements that were imposed on Shell, and DOI's leadership has emphasized resource sharing among companies as a way to ensure pre-positioning of assets and for companies to share, thus reducing costs.

Anticipating the release of the DOI's new standards, the Pew Charitable Trusts released a report with several recommendations concerning the content of the department's new rules. Pew's recommendations include:[78]

- Drilling be confined to periods of time when open water is available, meaning July through early October (106 days),

[74] "Operation and Maintenance of the Ocean Energy Safety Institute (OESI)," (http://www.schoolitgrants.info/GrantDetails.aspx?gid=35131). In November 2013, the Department of Interior announced that Texas A&M along with other partners will manage the Institute whose mandate will include "Arctic exploration and development." See Phil Taylor, "Texas A&M to manage new offshore safety institute," Greenwire, 7 November 2013.

[75] As a result of the Deepwater Horizon, the existing regulatory institutional structure was overhauled with the previous Minerals Management Service (MMS) split into the Bureau of Ocean Energy Management (BOEM) to oversee management of offshore natural resources and minerals, while the Bureau of Safety and Environmental Enforcement (BSEE) inspects and enforces safety and response preparedness.

[76] *Review of Shell's 2012 Alaska Offshore Oil and Gas Exploration Program*, Department of the Interior, Washington, D.C, 8 March 2013, pp. 3-7.

[77] Yereth Rosen, "Release of Interior's Arctic standards for offshore oil development delayed," *Alaska Dispatch*, 20 November 2013, (http://www.alaskadispatch.com/article/20131120/release-interiors-arctic-standards-offshore-oil-development-delayed-0).

[78] "Arctic Standards: Recommendations on Oil Spill Prevention, Response, and Safety in the U.S. Arctic Ocean," Pew Charitable Trusts, September 2013, (http://www.pewenvironment.org/uploadedFiles/PEG/Publications/Report/Arctic-Standards-Final.pdf).

due to the difficulty (impossibility) of cleaning oil spills underneath ice.

- Setting standards for a minimum number of Polar Class vessels to support drilling operations and the specification of Polar Class for those ships (1 through 7).
- Inspection, certification, and redundancy requirements for well construction and blowout prevention measures.
- Thickness standards for pipelines as well as inspection and leak detection measures.
- Requirement for a reasonable time to withdraw assets near the end of a drilling season.
- Requirements for staff expertise and qualifications.
- Prohibition of discharge of cuttings, water, waste, mud, and other materials that can be reasonably collected.

Other institutions are also pushing for Arctic-specific standards. For example, Lois Epstein, Arctic Program Director for The Wilderness Society, urges regulations that go beyond Arctic-specific technical requirements such as those recommended by the OESC. Epstein, who also served on the OESC, calls for significant reforms in regulatory policy, oversight, and financial responsibility requirements, and more transparency of government oversight and of incident or near miss reporting, to name a few.[79]

As this discussion has illustrated, the Deepwater Horizon oil spill and Shell's experience in the Chukchi have shaped the approach and direction of U.S. Arctic policy. There have been widespread calls from the government, industry, and expert bipartisan groups for U.S. leadership in offshore oil and gas governance. Specifically, there is an increasing focus on oil spill pollution prevention, control and response, and on the development of Arctic-specific standards.

Challenges for U.S. Arctic Policy

Despite the developments summarized above, within the broader Arctic community the U.S. is often criticized for not prioritizing the Arctic as an important policy area. Many of our regional counterparts want to know: What are U.S. intentions not only as one of the eight Arctic countries, but also as a superpower? Typical criticisms cite the inability of the U.S. to accede to UNCLOS, the U.S.'s hesitancy to enhance the legal authority and mandate of the Arctic Council, and the slow pace of elevating the Arctic as a key policy priority within the government, especially at the State Department. Another problem highlighted in our discussions is the State Department's reluctance at the highest levels to have close interaction with the private sector, even though the private sector has the most resources in the Arctic in terms of implementing the *Search and Rescue Agreement* and the *Oil Pollution Agreement*.

"We need more meat on the bones of Arctic strategy."

—Senior USG official

There is also a rising chorus within the U.S. complaining that the government—and most Americans—simply does not see itself as an Arctic nation, and that the U.S. does not have an effective, comprehensive Arctic strategy. The chief obstacle in effecting a coherent Arctic strategy is a long-standing challenge in balancing Alaskan and broader pan-Arctic

[79] Listening Session. Bureau of Ocean Energy Management and Bureau of Safety and Environmental Enforcement. Vol. I. Anchorage, Alaska, 6 June 2013.

interests. One of the manifestations of this is multiple government agencies with policy and oversight roles in the Arctic posing coordination challenges. Issues relating to Alaska are in the hands of domestic agencies, most notably the Department of the Interior, the Department of Homeland Security (Coast Guard), the Environmental Protection Agency, and the Department of Commerce (NOAA) as well as others. On the international level, primary representation of the U.S. government in international forums is the responsibility of the Department of State, with the Coast Guard and Navy interacting on cross-border maritime issues with Canada and Russia as well as with other Arctic states in a number of areas.

The historic lack of focus on the importance of the Arctic is illustrated in another perspective expressed to us. This belief is that for far too long the government has treated the Arctic as something that scientific experts deal with in obscure locations, having little relevance to larger geopolitical issues. Institutionally, the U.S. government has focused on the Arctic as a "technical" rather than a "strategic" issue, hindering the elevation of the region as a priority in the policy hierarchy. As a result, in this view, too much of Arctic policy is conducted at lower levels of the government rather than at the highest levels of the Department of State or White House. This in turn constrains the organizational, human, and financial resources dedicated to the Arctic. Several participants in our research, including some former Arctic officials, were forceful in their contention, saying "We can no longer pretend that we can deal with the challenges of the Arctic and not budget the resources to meet them." The overall result, according to a senior U.S. government official based in Alaska, is that U.S. Arctic policy "right now is very broad and not real defined."

There are signs of progress. The last two Arctic Council ministerial meetings were attended by the U.S. Secretary of State (Sec. Clinton in Nuuk, Greenland and Sec. Kerry in Kiruna, Sweden), representing the most senior level U.S. officials to attend Council ministerial meetings. The strategy documents produced in 2013 by the White House, Coast Guard and the DOD, as well as the January 2014 *Implementation Plan for the National Strategy for the Arctic Region* and Secretary Kerry's intention to designate a senior representative for the Arctic region demonstrate movement in the right direction. In addition, as noted, the work of the *Interagency Working Group on Coordination of Domestic Energy Development and Permitting in Alaska* is an important step to improving decision-making and coordination among government agencies, as well as promoting a "whole of government" approach.

Nevertheless, in our discussions there was widespread agreement that the rapidity of the changing Arctic environment and commercial activity is outrunning the institutional capacity of the U.S. government. The current policy framework does not insure that response capabilities are adequate to have any meaningful impact on the region, and there is a need to act now.

Going Forward

Effective articulation of what U.S. policy should be can be found in speeches given on the occasion of the Arctic Council's Ministerial Meeting on May 15, 2013, by Secretary of State John Kerry and Sen. Lisa Murkowski (R-AK), ranking minority member on the Senate Energy Committee.

Secretary Kerry noted that the crux of President Obama's policy is a "secure and well-managed Arctic marked by international cooperation and an absence of conflict." While he acknowledged that many details of the policy still have to be worked out, he noted the dramatic impact that climate change is having on the region and the need now more than ever for collaborative

scientific research. He also recognized the need for responsible economic development that respects the rights of all native people.[80]

Sen. Murkowski remarked that it is imperative for offshore oil and gas development, when it finally occurs in the American Arctic and expands elsewhere, to have in place collaborative and collective agreements governing these activities. She noted, "This is no longer an area that is locked in ice and snow, an area where we are not able to transit, an area where there is no human activity…we are seeing a level of activity that is unprecedented. It is truly the last frontier."[81] The senator echoed Sec. Kerry's remarks calling for the need to impress upon the American people that we are an "Arctic nation" and that we must work with other members of the Arctic Council on matters of mutual interest.[82]

These two speeches capture the essence of the challenges confronting the U.S. government as it takes up the gavel as Chair of the Arctic Council in 2015. In this role, how can the U.S. elevate the Arctic as a priority national interest, and how can it lead in strengthening offshore oil and gas governance in the Arctic region? To better address these questions, it is important to first understand the current governance framework at the global level.

[80] Secretary of State John Kerry, Remarks at the Arctic Council Ministerial Session, Kiruna, Sweden, 15 May 2013, (www.state.gov/secretary/remarks/2013/05/209403.htm).
[81] Senator Lisa Murkowski, Speech from the Senate Floor, 16 May 2013, p. 6, (http://www.gpo.gov/fdsys/pkg/CREC-2013-05-16/pdf/CREC-2013-05-16-senate.pdf).
[82] Ibid.

4. Current Global Governance Framework

Although in general there is currently limited domestic and international law specific to the Arctic, this is changing.[83] The effort by the International Maritime Organization (IMO) to develop the Polar Code, the recent enactment of the *Search and Rescue Agreement* and the *Arctic Oil Pollution Agreement,* and several national initiatives, including Russian Federal Law No. 132 governing the Northern Sea Route, the Northern Canada Vessel Traffic Services Regulation, and the U.S. North Pacific Fisheries Management Council are illustrative of this trend.[84]

Despite this evidence, "Arctic-specific legal solutions are still the exception rather than the rule."[85] Moreover, there is no specific global regime governing offshore hydrocarbon activities that are, for instance, applicable to all marine environments. "Hydrocarbon transportation is governed by specific international regulations…nothing of the kind, however, exists for offshore oil platforms."[86]

Nevertheless, regulation of offshore oil and gas exploration and production in the Arctic is hardly non-existent. A multi-layered framework of international, regional, bilateral, and national standards as well as other mechanisms is in place. In addition, various trade groups, standards organizations, and industry itself have established—or are developing—recommended practices and guidelines (**Exhibit B** provides a summary of the principal governance arrangements currently in place). Some of these instruments are voluntary, while others, such as national regulations, are legally binding. They also vary with respect to the level of specificity in addressing Arctic conditions.

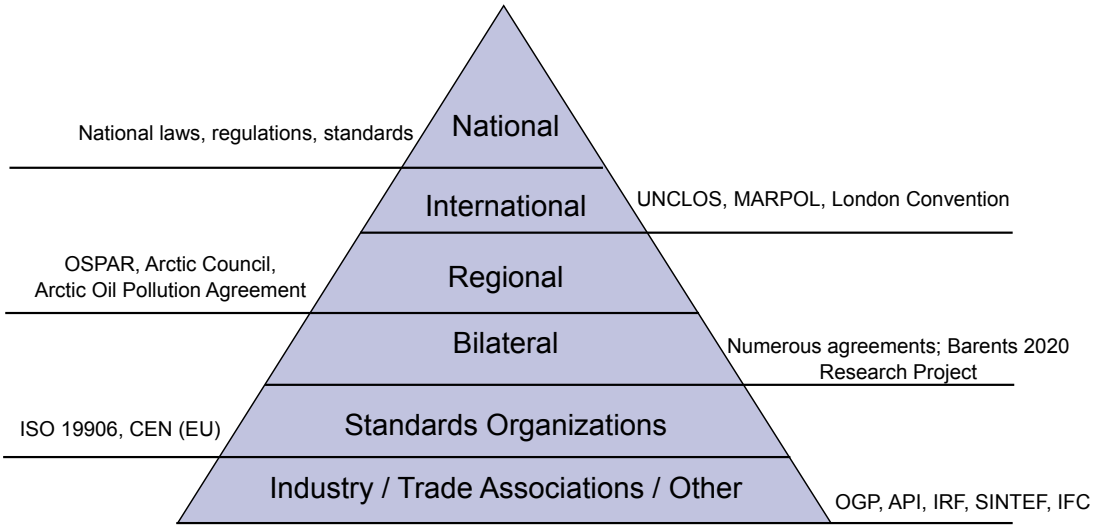
In this chapter, we provide a summary of this framework. (More detailed information on the instruments and mechanisms comprising this framework is provided in **Annex A**.)

National Governance

National standards and regulations are the principal governance mechanisms in place. Each Arctic state has its own regulatory approach, legal regime, institutional arrangements and capacities, and management systems based on an array of factors, ranging from the degree of its offshore oil and gas activities, to the Arctic conditions unique

[83] Private interview with an Arctic legal expert, 14 August 2013.
[84] Ibid.
[85] Ibid.
[86] Lucien Chabasson, "Offshore oil exploration: A new frontier for international environmental law," IDDRI, November 2011.

Exhibit B: Current Governance Framework for Offshore Oil & Gas Activities in the Arctic (Selected Instruments and Organizations)



Source: Adapted from Steve Walker and Jan de Jong, "The involvement of IRF in setting standards and best practices," International Regulators Forum, Summit Conference, Stavanger, Norway, 4/5 October 2011.
Note: Graphic does not depict all efforts, instruments or entities, rather selected, main governance mechanisms relevant for the Arctic. In addition, these mechanisms may be binding or voluntary. There is also considerable inter-action and coordination amongst these mechanisms.

to the country's territory. Because Norway has been operating in harsh, northern offshore conditions for decades, it has a more mature regulatory infrastructure in place compared to newer players such as Greenland. Norway also has a more robust, streamlined legal and institutional framework, while other regimes such as Russia's are more fragmented. Finally, although there have been efforts in recent years—including between governments and at less formal levels—to enhance regulatory coordination, there has been an increasing call for the "harmonization" of standards.[87] In this view, the lack of Arctic-wide, common standards may leave the region vulnerable to the least common denominator of preparedness and response.

There are several excellent analyses and comprehensive comparative assessments of the oil and gas regulatory regimes of the Arctic countries.[88] This policy brief does not intend to repeat or review that work in detail for each country's regulatory system. Rather, we summarize two key themes having an impact on the strengthening of Arctic offshore oil and gas governance: regulatory approach and Arctic-specific standards.

Regulatory Approach

One of the most often referenced differences in national governance schemes is whether the country's regulatory approach is prescriptive or performance-based. The U.S. traditionally has employed a prescriptive approach, which the

[87] For example, in 2013 BSEE signed Memoranda of Understanding with the PSA of Norway and with the NEB of Canada to share information on best practices and regulatory approaches and to cooperate on enhancing drilling practices between the regulatory bodies.
[88] "Comparing the Offshore Drilling Regulatory Regimes of the Canadian Arctic, the U.S., the U.K., Greenland and Norway," Pembina Institute, 2011; Preben H. Lindoe et al, "Robust Offshore Risk Regulation – an assessment of US, UK and Norwegian approaches," June 2012; Betsy Baker, "Offshore Oil and Gas Regulation in the Arctic: Room for Harmonization?", The Yearbook of Polar Law IV, 2012, pp. 475-504.

Arctic Council defines as one in which standards are adopted as explicit regulatory requirements. A regulatory body then evaluates and inspects operations in accordance with these standards.[89] In this approach, the regulator is responsible for ensuring the operators meet clearly-defined requirements.

Among the Arctic states, Norway is widely viewed as a model for utilizing performance-based standards. This approach is designed to place more responsibility on and encourage innovation by the operators. While the regulator remains responsible for setting quantifiable goals, the performance-based approach leaves the means of reaching those goals up to the operators.[90]

While neither approach can be said definitively to be better than the other, there are an increasing number of regulatory systems that are moving toward performance-based standards. In addition, they are not necessarily independent of each other; as the Arctic Council notes in its *Arctic Offshore Oil and Gas Guidelines*, a combination of prescriptive and performance-based standards is another viable regulatory option that allows some flexibility.[91] This hybrid approach is often used when regulatory systems traditionally using prescriptive standards are revised or adapted to performance-based standards.

Arctic-Specific Standards

Regardless of whether performance-based or prescriptive, mandatory or voluntary, offshore oil and gas standards are in place across all Arctic states —some even in collaboration with neighboring states. Yet these standards rarely distinguish between operating environments. Standards for rig weatherization, safety and environmental practices, and management tend to be all-encompassing, not taking into consideration the varying characteristics of ice, marine ecology, and weather patterns that may exist in different locations. This is a concern that many Arctic experts raise when discussing offshore drilling activities. Operators experience first-hand the lack of effectiveness of warm-water standards when drilling in the Arctic; they resort to developing their own standards voluntarily, which in some instances are shared among the operators. Many observers caution that the lack of Arctic-specific standards leaves the Arctic's marine habitat vulnerable to accidents due to equipment ill-suited for the unique and extreme conditions of the region. There is also the challenge of not being able to reach accidents in the Arctic owing to the remoteness of operations and lack of prepositioned infrastructure and resources. Thus, there is a strong and rising chorus calling for Arctic-specific standards.

The following overviews offer examples of regulatory frameworks and recent developments in selected Arctic countries: Norway, Canada, and Russia.

Norway

As Europe's largest oil producer and the second largest exporter of natural gas in the world, Norway has a longer history of offshore drilling activities than most of its Arctic counterparts.[92] The country has thus had the opportunity to mature its regulatory structure accordingly. Unlike in the U.S., the majority (80 percent) of Norway's oil and gas production is controlled by one company—Statoil—which is 67 percent owned by the state.[93] This strong connection has facilitated Norway's

[89] "Arctic Offshore Oil & Gas Guidelines," Arctic Council Protection of the Arctic Maritime Environment Working Group, 29 April 2009, p. 25.
[90] *Facts 2012: The Norwegian Petroleum Sector*. Norwegian Petroleum Directorate, Norwegian Ministry of Petroleum and Energy, Oslo, 2013, (http://www.npd.no/Global/Engelsk/3-Publications/Facts/Facts2012/Facts_2012_web.pdf).
[91] Arctic Council Guidelines 2009, p.25.
[92] U.S. Energy Information Administration. "Norway - Analysis - U.S. Energy Information Administration (EIA)." U.S. Energy Information Administration (EIA). http://www.eia.gov/countries/cab.cfm?fips=NO.
[93] *Facts 2012*, p. 15.

advancement in public-private coordination and in setting up a strong, centralized regulatory structure.

Established lines of communication between the companies, environmental agencies, and regulators encourage regulations to be developed based on the most up-to-date best practices. The overall framework for offshore oil and gas activities in Norway is directed by the Storting, or Norwegian Parliament.[94] The main party responsible for ensuring the operators' activities are in line with national guidelines is the Ministry of Petroleum and Energy (MPE). The MPE holds broad responsibility over managing the state's natural resources and is also a key institution for promoting suitable regulation. The Petroleum Safety Authority (PSA) is the primary regulatory body responsible for technical and operational safety, including emergency preparedness and working environment. The Norwegian Petroleum Directorate (NPD), which serves as an advisory body to the MPE, has administrative authority over resources in the Norwegian shelf. The MPE encourages these regulations to be devised through partnerships between companies, employees, and regulatory authorities.[95] Other ministries involved include the Ministry of Labor, which oversees personnel safety and emergency preparedness, and the Ministry of Finance, which ensures that the state properly collects drilling taxes.[96]

Despite many strengths in their governance regime, Norwegian officials express frustrations in other areas of their national scheme. For instance, despite the effectiveness of their performance based regulations, many of these rules are open to multiple interpretations, especially when foreign and multinational companies are involved. These officials stress the importance of taking time to clarify existing standards before moving to developing additional requirements. Government and industry stakeholders in Norway share consensus that refinements to their current governance scheme would be sufficient without additional Arctic-wide standards.

Canada

Canada's "Northern Strategy," or Arctic foreign policy, is comprised of four pillars: 1) exercising Canadian sovereignty, 2) promoting economic and social development, 3) protecting the Arctic environment, and 4) improving and developing governance for Canadian northerners.[97] These clearly set priorities guide Canada's regulatory authority—the National Energy Board (NEB), which operates under a single, major legislation—the Canada Oil and Gas Operations Act (COGOA). This structure is similar to that of Norway's with a strong, centralized hierarchy. The NEB is responsible for the management and oversight of most offshore oil and gas activities, while COGOA directs operations in Arctic waters through specific regulations pertaining to health and safety, infrastructure design, liability, and other components of drilling operations.[98]

While some of Canada's offshore standards, such as for geophysical operations, remain prescriptive, most of the Canada Oil and Gas Drilling and Production Regulations are performance-based. Canada is thus an example of a country in which the regulatory system follows somewhat of a hybrid of regulatory approaches.

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[94] Information in this paragraph was provided by the Embassy of Norway, Washington DC.
[95] "Comparing the Offshore Drilling Regulatory Regimes of the Canadian Arctic, the U.S., the U.K., Greenland and Norway", Pembina Institute, 2012.
[96] *Facts 2012.*
[97] "NEB – Major Applications before the NEB – Arctic Offshore Drilling Review", National Energy Board, last modified 15 December 2011, (http://www.neb-one.gc.ca/clf-nsi/rthnb/pplctnsbfrthnb/rctcffshrdrllngrvw/rctcffshrdrllngrvw-eng.html).
[98] "Comparing the Offshore Drilling Regulatory Regimes of the Canadian Arctic, the U.S., the U.K., Greenland and Norway", Pembina Institute, 2012.

Following the Deepwater Horizon accident in April 2010, the NEB has been noted for its review of its safety and environmental regulations for offshore drilling in its Arctic. The process involved extensive public consultation and discussions among operators, northern populations, regulators, and other government agencies. This widely commended review process of Canada's existing policies could serve as a model for similar reviews in other Arctic states, including the United States. Among the most prominent findings from the NEB review was the lack of a consistent safety culture across operations as a result of inadequate capabilities and implementation of management systems.[99] This is a concern voiced across the industry and by regulators and other experts in most Arctic states. Despite the various national regulatory approaches across the Arctic, the wide reference to Canada's review is indicative of potential means by which Arctic states can share methods of improving the quality of regulations.

Russia

Among the Arctic states, Russia has perhaps the most expansive offshore oil and gas activities with, according to some senior government officials of its Arctic neighbors, the least amount of regulatory clarity. Russia possesses a strong sense of being an Arctic nation, and has accordingly developed extensive, strict legal criteria for assessing the impact of many areas of offshore oil and gas activity. However, some knowledgeable experts share that the existing regulatory framework allows legal enforcement of its many regulations to fall short. Thus, despite the plethora of strong regulatory requirements "on the books," the oversight responsibilities are often ignored or abused.

Russia has several government agencies with oversight responsibility in the country's offshore governance scheme, and within this structure, the country has over fifty legal documents and federal laws that apply to only one area of regulation—oil spill response.[100] Neighboring regulatory officials note that the overwhelming volume of standards and inconsistency in accountability for operations in Russia pose significant challenges for implementing international standards. Environmental experts studying the Arctic ecosystem express frustration at the potential for confusion in disaster response under the current Russian regulatory system, which leaves the natural environment exceptionally vulnerable. As a more specific example, many note a lack of importance placed by smaller Russian companies on resolving key environmental or indigenous population issues before commencing operations.[101]

However, as detailed elsewhere in this brief, Russia has shown signs of successful cooperation with its Arctic neighbors, including the Barents 2020 project with Norway on offshore drilling guidelines, and effective communication with U.S. law enforcement present off the Alaskan coast. Nonetheless, the current regulatory regime in Russia, which leaves gaps if only out of the sheer effort required to comprehend its regulations, adds to the wide range of considerations when evaluating the potential for Arctic-wide offshore governance.

International Mechanisms

The Final Report of the Arctic Ocean Review (AOR) Project, adopted by the Arctic Council member states at Kiruna in May 2013, identifies

[99] "Backgrounder", National Energy Board, (http://www.neb-one.gc.ca/clf-nsi/rthnb/pplctnsbfrthnb/rctcffshrdrllngrvw/fnlrprt2011/bckgrndr-eng.html).

[100] Maria Ivanonva, "Oil spill emergency preparedness in the Russian Arctic: a study of the Murmansk Region," Polar Research, Department of Engineering and Safety, University of Tromso, Norway, June 2011, p. 4, (http://www.polarresearch.net/index.php/polar/article/view/7285/html_167).

[101] Based on private interviews.

several global legal instruments relevant to offshore oil and gas activities: the U.N. Convention on Law of the Sea (UNCLOS), MARPOL, and the London Convention (see **Annex A** for more details).[102]

United Nations Convention on the Law of the Sea

UNCLOS is the most critical legal mechanism, serving as a binding international convention governing the use of the world's seas. It is not specific to hydrocarbons or other natural resources, but provides a broad framework and principles for governing oil and gas activities. In particular, it emphasizes pollution prevention, control, and response, the harmonization of standards, and cooperation on issues related to regulation and liability. The Convention leaves the detailed implementing rules, regulations and standards to the coastal states. For example, UNCLOS calls on these nations to adopt measures to address pollution from offshore installations and for those measures to be "no less effective than international rules, standards and recommended practices and procedures." As the AOR points out, however, "there are few international rules or procedures for exploration and production activities undertaken by mobile offshore facilities."[103] In addition, UNCLOS is largely not Arctic-specific, with the exception of Article 234, which allows states to develop "laws and regulations for the prevention, reduction, and control of marine pollution from vessels in ice-covered waters within the limits of the EEZ." While the U.S. is the only Arctic country that has not acceded to UNCLOS, parties generally acknowledge that all Arctic states abide by the Convention in practice.

Regional Mechanisms

Arctic Council

The Arctic Council is the foremost regional actor within the governance framework, though it does not have a direct governance role (additional regional mechanisms are summarized in **Text Box 1**). The Council was established in 1996 to "serve as a high-level, inter-governmental forum for political and scientific discussions on issues common to the governments of the Arctic region and its inhabitants."[104] Specifically, it acts as a "trigger" to highlight and prompt the study, research, and decision-making on critical issues, and "to generate knowledge, frame issues, and set agendas."[105] The Council comprises eight member states and six Permanent Participants representing Arctic indigenous peoples.[106] Decisions of the Council must be reached by consensus of all member states.

The Arctic Council is organized around six working groups, three of which deal most directly with oil and gas activities: Protection of the Marine Environment (PAME), Arctic Monitoring and Assessment Programme (AMAP), and Emergency Prevention, Preparedness and Response (EPPR). The Council also forms task forces to address specific issues within a limited time frame, using working group members and other experts from the member states. There are four active task forces, two of which have a link to offshore oil and gas activities: Task Force on Arctic Marine Oil Pollution Prevention, and the Scientific Cooperation Task Force.[107]

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[102] AOR May 2013, p. 67.

[103] Ibid, p. 58. Refers to UNCLOS article 208.

[104] Arctic Council Fact Sheet, (http://www.arctic-council.org/index.php/en/document-archive/category/100-general-arctic-council-information).

[105] Paula Kankaapää and Oran Young, "The Effectiveness of the Arctic Council," (Kankaapää and Young), Polar Research 2012, p. 11.

[106] The member states are Canada, Denmark, Finland, Iceland, Norway, Russia, Sweden and the United States. The six Permanent Participants are: Aleut International Association; Arctic Athabaskan Council; Gwich'in Council International; Inuit Circumpolar Council; Russian Association of Indigenous Peoples of the North; and The Saami Council. There are also Observers from NGOs, inter-governmental or inter-parliamentary organizations, and states. Notable permanent observers include China, France, Germany, United Kingdom, Netherlands, Poland, Italy, Spain, South Korea, Japan, Singapore, and India, along with nongovernmental bodies such as the United Nations Development Programme, the United Nations Environment Programme, and the International Red Cross Foundation. Other states such as Turkey hold ad hoc observer status in which they must request permission to attend individual meetings.

[107] "Arctic Council – Task Forces," (http://www.arctic-council.org/index.php/en/about-us/working-groups/task-forces).

Box 1: Other Selected Regional Mechanisms

- **Espoo Convention on Environmental Impact Assessment in a Transboundary Context** – signed in Espoo, Finland in 1991 and entered into force in 1997. The Convention requires countries to undertake environmental impact assessments (EIAs) early in the course of certain activities which include thermal power generation, oil refining, transporting oil and gas through pipelines, and mining. Signed by all eight Arctic states, but Russia, Iceland, and the U.S. are still to become parties.
- **Bonn Agreement for Co-operation in Dealing with Pollution of the North Sea by Oil and Other Harmful Substances** – a European treaty concerning procedures for managing pollution from oil and other substances in the North Sea which was first signed in 1969, then amended in 1983 and 2001. The Agreement requires signatories to actively monitor their portions of the North Sea, share information, harmonize procedures, undertake joint exercises, and assist each other in the event of polluting accidents.
- **Copenhagen Agreement of the Nordic States on Oil Pollution and Other Harmful Substances** – an agreement signed in 1971 and most recently revised in 1993 between the five Nordic countries to assist one another in the event of oil or other substance pollution at sea. The Agreement requires monitoring, regional exercises, and information sharing; the Agreement also established a working group for cooperation and a rotating secretariat.
- **Helsinki Convention on the Protection of the Marine Environment of the Baltic Sea** – an agreement first signed in 1974 and then revised in 1992 by the EU and coastal states. The Convention commits signatories to make every effort to safeguard the environmental integrity of the Baltic, share information concerning environmental impacts from any activity and adopt best environmental practices; the Convention also established the Baltic Marine Environment Protection Commission to implement the agreement, encourage cooperation, and make recommendations.
- **Agreement between Denmark, Finland, Iceland, Norway, and Sweden Concerning Cooperation in Measures to Deal with Pollution of the Sea by Oil or Other Harmful Substances** (1993)
- **Northern Dimension** – a policy structure established in 1997 between the European Union, its members, Iceland, Norway, and Russia aimed at improving international cooperation in Northern Europe. The Arctic Council participates as a non-state actor.
- **Nordic Council of Ministers** – formed in 1971, a forum bringing together ministers and convening several councils on specific regional policy issues, including the Environment and Business, Energy & Regional Policy.

Sources: http://www.unece.org/env/eia/about/eia_text.html; http://www.bonnagreement.org/eng/html/agreement/welcome.html; http://www.ust.is/library/Skrar/COPA/engelsk.pdf; http://www2.unitar.org/cwm/publications/cbl/synergy/pdf/cat3/helsinki_convention.pdf; http://formin.finland.fi/Public/default.aspx?nodeid=15579&contentlan=2&culture=en-US; http://www.norden.org/en/nordic-council-of-ministers

The United States has been involved actively in the Council's oil and gas-related activities since its inception, including a substantial leadership role in the working groups and task forces. **Text Box 2** provides a summary of selected efforts.

Box 2: U.S. Oil and Gas Leadership in the Arctic Council

- AMAP Oil and Gas Assessment (2007) – co-led by the U.S. (MMS) with Norway
- PAME Offshore Oil and Gas Guidelines (2009) – led by the U.S. (MMS)
- PAME Arctic Marine Shipping Assessment (2009) – co-led by the U.S. (BOEM) with Norway, Greenland and Canada.
- Task Force for the Search and Rescue Agreement – co-led by the U.S. (Department of State/BSEE)
- Task Force for the Oil Spill Preparedness and Response Agreement – co-led by the U.S. (Department of State/BSEE/Interior)
- PAME HSE Management Systems project – is led by the U.S. (BOEM/BSEE)
- PAME Management Regulation and Enforcement web-based information resource project – co-led by U.S. (BOEM/BSEE) and PAME Secretariat
- EPPR Report Recommended Practices for Prevention of Pollution – U.S. participation (BSEE/BOEM)

The Arctic Council has developed recommended *Arctic Offshore Oil and Gas Guidelines*, initially issued in 1997, and amended in 2002 and 2009. The voluntary *Guidelines* were negotiated among, and are endorsed by, all eight Arctic Council member states. With a targeted audience of regulators, they propose "specific suggested operational steps to follow when planning for Arctic offshore oil and gas activities" except for transportation.

Finally, the Arctic Council was instrumental in establishing the *Arctic Oil Pollution Agreement.* It should be noted, however, that this is a legally binding agreement independent of the Arctic Council; all member states used the Council as a negotiating forum in drafting and negotiating it, but it is not issued or enforced by the Council. The *Agreement's* objective is "to strengthen cooperation, coordination and mutual assistance among the Parties on oil pollution preparedness and response in the Arctic in order to protect the marine environment from pollution by oil."

Convention for the Protection of the Marine Environment of the North-East Atlantic (OSPAR 1992)

The OSPAR Convention "is the mechanism by which fifteen governments of the western coasts and catchments of Europe, together with the European Community, cooperate to protect the marine environment of the North-East Atlantic."[108] Region I of OSPAR includes a portion of Arctic waters (of Greenland, Iceland, Norway, and Russia), and the Convention specifically mentions offshore hydrocarbon activities and offshore installations. The Arctic Council's AMAP Working Group is an observer to OSPAR but PAME is not (although there are informal channels of communication and information sharing between OSPAR and PAME). However, as the AOR points out, the Arctic Council's *Guidelines* refer specifically to OSPAR's

[108] See "About OSPAR" section of the Convention's website: (http://www.ospar.org/content/content.asp?menu=00010100000000_000000_000000). The fifteen governments are Belgium, Denmark, Finland, France, Germany, Iceland, Ireland, Luxembourg, The Netherlands, Norway, Portugal, Spain, Sweden, Switzerland, and United Kingdom.

approach to standards addressing environmental monitoring, (Best Available Techniques and Best Environmental Practices) and decommissioning.[109]

The OSPAR Commission has made significant progress in addressing pollution within the region, but its 2010 Quality Status Report (QSR) calls for increased efforts to address oil pollution in the Arctic. Specifically, the QSR cites the need "to consider the suitability of existing measures to manage oil and gas activities in Region I, and continue monitoring and assessment and improve the evidence base for evaluating the impact of the offshore industry on marine ecosystems."[110]

As a result, the Commission has taken major steps to operationalize this focus. It developed specific, thematic sub-strategies as part of OSPAR's *2010 North-East Atlantic Environment Strategy*, including one for the offshore oil and gas industry. The goal of this strategy is, "to prevent and eliminate pollution and take the necessary measures to protect the OSPAR maritime area against the adverse effects of offshore activities" (see **Annex A** for a description of key areas the Commission will focus on in the period up to 2020).[111]

Within the Commission, an Offshore Industry Committee (OIC) has been established to facilitate the implementation of the Thematic Strategy on the Offshore Oil and Gas Industry.[112] The OIC functions as the main structural unit in the Commission, coordinating and implementing the strategy as well as relevant elements of other, overarching OSPAR strategic directives.

Bilateral Mechanisms

There are a number of bilateral projects and legal instruments throughout the Arctic region that address offshore oil and gas governance, especially pertaining to oil spill response. For example in the U.S., the *Canada-U.S. Joint Marine Pollution Contingency Plan* and the *Russia-U.S. Joint Contingency Plan Against Pollution in the Bering and Chukchi Seas* provide frameworks for the respective governments to cooperate in establishing measures and mechanisms to prepare for and respond to pollution incidents.

One effort often cited as an effective bilateral mechanism is the Barents 2020 research project.[113] Barents 2020 began in 2007 as a cooperative endeavor between the Norwegian and Russian governments. It was designed to leverage Russian expertise operating in cold climates with Norwegian competence in offshore operations to develop common health, safety and environment (HSE) standards for use in the Barents Sea. In March 2010, the project released a report recommending 130 standards, of which 66 could be used directly, while 64 could "be applied provided special considerations are made for low temperatures and/or ice loading."[114] A final phase of the project was completed in March 2012 in which further work was conducted on several key areas including ice loads, working environment, escape evacuation and rescue, and operational emissions and discharges to air and water.[115] In addition, these recommendations were submitted to the International Organization for Standardization

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[109] AOR May 2013, p. 61.
[110] *Quality Status Report 2010*, OSPAR Commission, 2010, (http://qsr2010.ospar.org/en/media/chapter_pdf/QSR_complete_EN.pdf).
[111] *The North-East Atlantic Environment Strategy: Strategy of the OSPAR Commission for the Protection of the Marine Environment of the North-East Atlantic 2010-2020*, OSPAR Commission, March 2010, p. 19, (http://www.ospar.org/html_documents/ospar/html/10-03e_nea_environment_strategy.pdf#OIC).
[112] OSPAR Commission, Terms of Reference for the Offshore Industry Committee, Annex 5, p. 10.
[113] Other initiatives include: the *Canada-US Joint Marine Pollution Contingency Plan*; and the *Bilateral Agreement between Denmark and Canada for Cooperation Relating to the Marine Environment* (1983).
[114] "Barents 2020: Assessment of international standards for safe exploration, production and transportation of oil and gas in the Barents Sea," DNV GL, 2012, p. 13, (http://www.dnvusa.com/Binaries/Barents_2020_report_phase_4_tcm153-519595.pdf).
[115] "Barents 2020," DNV GL, p. 13.

(ISO) for consideration, thus allowing for the bilateral approach of Barents 2020 to contribute to the development of standards applicable beyond the Barents Sea (the ISO is discussed below).

Importantly, although initiated by the Norwegian government (the Ministry of Foreign Affairs), the Barents 2020 project garnered the support of industry, which largely assumed funding responsibility and carried out the work. As it evolved, it became a joint industry project with involvement of Shell, Gazprom, and DNV. Other non-Russian and non-Norwegian companies also took part including Statoil, ENI, and Total. In addition, the project worked with the International Oil and Gas Producers Association, an industry trade group representing major offshore oil and gas companies (the OGP is described below). Thus, Barents 2020 is a good model of government-initiated and industry-led collaboration in the Arctic, and indicative of transnational industry cooperation.

Trade Associations, Industry, and Standards Organizations

Important components of the governance structure for offshore hydrocarbon activities are recommended standards developed by trade associations, industry, or standards organizations. Typically, these standards are developed by experts with the intent that they can be used by national regulators and companies in the industry. As one analysis states, these types of standards:

> promote safety, health and the protection of the environment by providing consistent, authoritative advice which, if adopted, should ensure some level of "acceptable" worker and environmental protection. This is especially important for the E&P industry because of the global nature of that industry, its workforce and its contractors… by using common globally accepted international standards to provide a "level playing field" between countries, particularly useful for mobile drilling units who can easily move around the world.[116]

American Petroleum Institute (API)

The API provides the basis for many standards used globally, specifically through its *Recommended Practices, Standards, and Specifications*. Specifically, *RP 2N – Planning, Designing, and Constructing Structures and Pipelines for Arctic Conditions* lays out considerations unique for these circumstances.[117] RP 2N covers the following:

- offshore concrete, steel and hybrid structures, sand islands, and gravel islands used as platforms for exploration drilling or production
- offshore ice islands used as platforms for exploration drilling
- near shore causeways
- offshore pipelines
- shore crossings for pipelines

There are, however, other national and regional standards such as NORSOK (Norway), GOST-R (Russia), the International Finance Corporation's *Environmental, Health, and Safety Guidelines for Offshore Oil and Gas Development,* and the European Committee for Standardization (CEN).

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[116] "The Involvement of IRF in setting standards and best practices," (IRF 2011) IRF Summit Conference, Stavanger, 4-5 October 2011, p. 3.

[117] See API Publications Catalog, 2013: (http://www.api.org/~/media/Files/Publications/Catalog/Final-catalog.pdf). RP2N also states that it "should be used with other applicable codes and standards like RP 2A-WSD (Planning, Designing and Constructing Fixed Offshore Platforms) or RP 1111 (Recommended Practice for the Design, Construction, Operation, and Maintenance of Offshore Hydrocarbon Pipelines)." We also note that API also has RP75 - Recommended Practice for Development of a Safety and Environmental Management Program (SEMP) for Offshore Operations and Facilities, a "fit-for-purpose tool for integrating safety management into a variety of offshore operations," http://www.api.org/oil-and-natural-gas-overview/exploration-and-production/offshore/exploration-management.

International Oil and Gas Producers Association (OGP)

The OGP is a global entity representing oil and gas exploration and production companies. The OGP is engaged in the development and promotion of international standards, with a vision of "global standards used locally worldwide." The OGP also has formed an Arctic Coordination Task Force to serve as an industry advocate in policy and regulatory developments affecting the Arctic and to "develop a long-term strategy to address the key Arctic issues for upstream industry."[118] OGP has published guidelines for environmental protection in the Arctic, international recommendations on well incident prevention, intervention and response in the aftermath of the Macondo oil spill (non-Arctic-specific), and a "good practice guide" for environmental management in the Arctic.[119]

The OGP was instrumental in forming the *Arctic Oil Spill Response Technology Joint Industry Programme* (JIP) bringing together companies to conduct research on technologies and approaches to deal with oil spills in the Arctic marine environment. Commencing in January 2012, JIP is a four year project with a budget of $20 million examining six areas:[120]

- dispersant technology
- trajectory modeling of oil in ice
- remote sensing of oil in ice
- mechanical recovery of oil in ice
- environmental impacts of oil spills
- oil spill responses and in situ burn technologies

The JIP has released its first six reports each with initial research findings.

The OGP also called for the formation of the *Subsea Well Response Project (SWRP)* in 2011, a non-profit initiative among several major oil and gas companies to develop and deploy approaches, hardware, equipment, and other tools to "enhance the industry's capacity to respond to subsea well-control incidents."[121] Other related industry activities are summarized in **Text Box 3.**

The OGP is a non-governmental observer to the OSPAR Convention, and has applied for, but was not granted, observer status at the Arctic Council.

International Regulators Forum (IRF)

The International Regulators' Forum (IRF) is a global association "of offshore petroleum health & safety regulators…dedicated to the common cause of raising offshore health and safety standards," although it is not Arctic-specific, and Russia and Greenland are not members.[122] The IRF has become more active in the area of international standards development, "formally committing to supporting the ISO standards system as the principal one for offshore regulators" at its Summit Conference in October 2011.[123] The U.S. national commission report to the president on the Deepwater Horizon oil spill specifically recommended

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[118] See OGP website at: (http://www.ogp.org.uk/global-insight/the-arctic-environment/). Accessed 2 January 2014).

[119] "Oil and gas exploration and production in Arctic offshore regions: Guidelines for environmental protection," OGP, Report No 2.84/329, 2002; "International recommendations on well incident prevention, intervention and response," OGP Global Industry Response Group, (http://www.ogp.org.uk/downloads/GirgBrochure.pdf); "Environmental management in Arctic oil and gas operations: Good practice guide", OGP Report No. 449, May 2013.

[120] The API and the International Petroleum Industry Environmental Conservation Association (IPIECA) also supported the establishment of JIP. The JIP's members are: BP, Chevron, ConocoPhillips, ENI, ExxonMobil, Shell, Statoil, North Caspian Operating Company (NCOC), and Total. For more information, see: (http://www.arcticresponsetechnology.org/about-the-jip).

[121] The SWRP is supported by BP, Chevron, ConocoPhillips, ExxonMobil, Petrobras, Shell, Statoil, and Total. For more information, see: (http://subseawellresponse.com/).

[122] The AANDC in Canada is not a member but the Newfoundland and Labrador Offshore Petroleum Board, (C-NLOPB) and Nova Scotia Offshore Petroleum Board, (CNSOPB) are. The Danish Energy Agency is a member but the Bureau of Minerals and Petroleum in Greenland is not. For more information, see: (http://www.irfoffshoresafety.com/about/).

[123] IRF 2011, p. 6.

working with the IRF to strengthen standards for offshore oil and gas activities, including in the Arctic.[124]

Box 3: Selected Industry Activities Related to Offshore Oil Spill Prevention, Control, and Response

- *Oil Spill Response Limited* – an "industry-owned cooperative" providing response capabilities to oil spills worldwide, including expertise, equipment, and training. Formed in 1985, members are able to utilize its services from eight locations around the world.
- *Joint Industry Program on oil spill contingency for Arctic and ice-covered waters (JIP Oil in Ice)* – a research project implemented from 2006-2009 by SINTEF, Scandinavia's largest independent research organization, and sponsored by the Norwegian Research Council and six oil companies. Its goal was "to improve our understanding related to techniques for handling oil spills in ice, and included field tests.
- American Petroleum Institute and the Joint Industry Program on Oil Spill Recovery in Ice, Spill Response in the Arctic Offshore, 2012 – conducted with *JIP Oil in Ice* to examine tools available for combating oil spills in ice.
- *Helix Well Containment Group* – a consortium of deepwater operators in the Gulf of Mexico, in which members can access collective resources and expertise to respond to an incident. It recently introduced a capping stack as part of its well-containment response system.
- *Marine Well Containment Company* – a not-for-profit entity formed in March 2011 in response to the Deepwater Horizon accident, the MWCC provides well containment response services and technology in the event of an oil spill in the Gulf of Mexico. It has 10 member companies although non-members operating in the Gulf can also draw on its services which include providing subsea equipment and a capping stack.
- *Center for Offshore Safety (COS)* – a not-for-profit industry-led entity sponsored by the API and established in response to recommendations from the Deepwater Horizon Commission's report to the President, the Center will focus on safety and environmental management systems (SEMS), in particular API's RP75. It is developing a system for third-party audits of SEMS, including tools for member companies to assess their performance against RP75. The Center is also examining the development of suitable practices for onshore line management to engage offshore facilities, a common set of indicators to measure how the COS Is performing over time, a process for collecting incident information, i.e., how it is captured and shared, and contractor verification of skills. The Center is currently focused on Gulf of Mexico deepwater operations, but the concept can be applied to the OCS and eventually the Arctic.

Sources: http://www.oilspillresponse.com/; "Joint industry program on oil spill contingency for Arctic and ice-covered waters: Summary Report," SINTEF A14181, April 10, 2010; http://www.api.org/~/media/Files/EHS/Clean_Water/Oil_Spill_Prevention/Spill-Response-in-the-Arctic-Offshore.ashx; http://www.hwcg.org/; http://www.marinewellcontainment.com/; http://www.centerforoffshoresafety.org/.

[124] National Commission on the BP Deepwater Horizon Oil Spill and Offshore Drilling, Recommendation A3, p. 252.

International Organization for Standards (ISO)

The ISO has developed 160 standards for the oil and gas industry under the auspices of ISO Technical Committee 67 (ISO/TC 67), with the ISO 19900 series specifically addressing offshore structures. Beginning in 2002, the ISO began examining the development of standards for offshore structures in the Arctic and, in December 2010, issued ISO-19906. This standard "specifies requirements and provides recommendations and guidance for the design, construction, transportation, installation, and removal of offshore structures, related to the activities of the petroleum and natural gas industries in Arctic and cold regions."[125]

In 2011, a separate subcommittee (Subcommittee 8) was created to work further on standards development for Arctic offshore structures, with seven working groups established to address the following areas:[126]

- Working environment
- Escape, evacuation, and rescue
- Environmental monitoring
- Ice management
- Arctic materials
- Physical environment for arctic operations
- Man-made islands and land extension

As noted, the Barents 2020 project has submitted its recommendations to the ISO, and several countries are in the process of adopting ISO 19906, namely Russia and Canada (the EU has already adopted it). In addition, the OGP's Arctic Coordination Task Force is seeking a formal liaison relationship with ISO TC67/SC8, and is encouraging its members to work with the ISO.[127]

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[125] "Petroleum and natural gas industries -- Arctic offshore structures," ISO, (http://www.iso.org/iso/home/store/catalogue_tc/catalogue_detail.htm?csnumber=33690). Areas addressed include foundation design, fixed steel and concrete structures, floating structures, subsea production systems, topsides, ice management, foundation design, and escape, evacuation, and rescue. See "ISO 19906 Arctic Offshore Structures," Presentation by Ove T. Gudmestad, University of Stavanger, Norway, 6th Harsh Weather Summit, 2012.

[126] ISO/TC 67/SC 8 Arctic operations at (http://www.iso.org/iso/standards_development/technical_committees/other_bodies/iso_technical_committee.htm?commid=652790.) Standards organizations from nine countries are participating in this Subcommittee (with a Russian Secretariat): Canada (SCC), France (AFNOR), Italy (UNI), Kazakhstan (KAZMEMST), Netherlands (NEN), Norway (SN), Russian Federation (GOST R), United Kingdom (BSI), United States (ANSI).

127 Standards Bulletin No. 13, 2012, International Oil and Gas Producers Association.

5. Challenges in the Governance Framework

There is growing awareness and criticism that the current, multilayered framework described in the previous chapter is too fragmented, lacks consistency, and is not tailored to the unique conditions of the Arctic marine environment, especially to accommodate expanded operations in ice-covered areas.

National regulations of the coastal states are the most targeted and binding governance instruments for offshore operations in the Arctic. Each country has laws and regulations in place with many similarities, but they vary in their overall systematic approach, specificity to Arctic conditions, and the ability to enforce them. There is also concern that existing regulations are not sufficiently Arctic-specific and Arctic-tested.

International mechanisms in place provide some (often very general) guiding principles and a broad framework but are few in number and largely not Arctic-specific (especially ice-covered areas). They also do not address fixed or mobile offshore installations. As the Arctic Council has noted, none of the international legal instruments in place "relate to, or provide a comprehensive regulatory regime for offshore hydrocarbon activity…and none deals specifically with the prevention of marine pollution from…production activity, such as the operation of fixed stations, or Mobile Offshore Drilling units."[128]

Regional and bilateral instruments are an important component of the overall governance approach since they can be customized to specific, local marine conditions, and involve fewer actors to establish and implement. These cooperative instruments can then feed into the development of more broadly applicable standards and best practices and used to compare with other regional or national efforts as well. However, they cover only parts of the Arctic, such as OSPAR.

Recommended standards, guidelines, and best practices, such as those developed by trade associations, industry, NGOs, or standards organizations also contribute to strengthening governance. Yet given their voluntary nature, these instruments are viewed by some to be too general, lacking sufficient detail, and often reflecting the lowest agreeable standard (least common denominator) of a consensus-based process.

In this chapter, Brookings presents an assessment of this current framework with a focus on major themes emerging in our research that provide a foundation for our recommendations presented in chapter 6.

[128] AOR May 2013, p. 57.

Adequacy of existing governance

The assumption that rising interest in oil and gas resources in the Arctic is outpacing the adequacy of the existing governance framework was questioned by some in the course of our discussions. This view was voiced most often by officials in, or working closely with, oil and gas companies. They argue that while some analysts are eager to portray the Arctic as a lawless region with a race for resources, this is not the case. Even the most authoritative source for oil and gas resource estimates in the Arctic—the USGS survey—is rather speculative and indicates that most resources are located in the continental shelf of the five littoral states. Thus, any exploration and commercial production of offshore oil and gas are regulated as part of those nations' EEZs, and thus under their respective national laws. In addition, international treaties and conventions are also relevant to the EEZs, namely UNCLOS. There is really only the "high Arctic" outside the jurisdiction of the littoral states, i.e. beyond the 200 mile EEZs, which is not governed, and there is no activity and little interest to date in this area.

"It's a bit of a myth that there is so much going on that [it] demands changes in governance."

—Oil Company Executive

Furthermore, according to one oil company executive, the number of Arctic exploratory wells drilled each year in ice-covered waters "is just a handful." He continues, "since these are all at the exploration stage, it would still take 10-15 years for the wells to reach the commercial production stage." These statements echo public comments made by Total and Statoil concerning the high risk of operating in the Arctic and that large-scale commercial production is many years away.

An additional point is that the oil and gas companies actually involved, or expressing interest in the region, are largely super-majors or state-owned firms (ExxonMobil, BP, ConocoPhillips, Shell, Gazprom, Rosneft, Statoil, ENI, Total) with considerable resources and expertise that are well aware of the reputational risk of drilling in the Arctic, i.e., the adverse commercial impact and negative publicity associated with an oil spill. For example, one oil company executive differentiated between the "stretch Arctic" where drilling can technically be done today but which is challenging, and the "difficult Arctic" where technology does not yet exist to allow drilling. This official noted that the industry must "earn" the trust of society step by step, showing that Arctic drilling is safe and that rushing into areas where the industry is not yet ready to drill can be disastrous.[129]

There is also the argument, cited often, that oil and gas exploration and production (as well as transportation, including pipelines) have been occurring in the Arctic for many decades without large-scale incidents. Onshore activities commenced in the 1920s and 1930s, and offshore exploration began in the 1970s and 1980s.[130]

In our view, there is certainly scope for improving the existing governance regime. First, national laws and standards—the "first line of defense" and the "guts of oil and gas governance"—are especially critical given that virtually all offshore oil and gas development in the Arctic for the foreseeable future will take place within the waters of one or more of the five coastal states. There are concerns, however, about the adequacy of the littoral

[129] Comments made Runi M. Hansen, Vice President for the Arctic Unit at Statoil, at Arctic Circle event in October 2013 in Reykjavík, Iceland.
[130] "Assessment 2007: Oil and Gas Activities in the Arctic – Effects and Potential Effects, Volume I," (AMAP 2010) Arctic Monitoring and Assessment Programme, Oslo, Norway, Finding F1.B, p. 2.

states' regulations around varying levels of regulatory enforcement, the adequacy of financial and human resources dedicated to regulatory activities, and the insufficient incorporation of indigenous concerns. As the 2007 Oil and Gas Assessment conducted by the Arctic Council's working group for the Protection of Arctic Marine Environment (PAME) stated: "Arctic national oil and gas legal regimes are relatively stable, modern, and designed to protect human health, rights of indigenous residents and the environment, but in some cases regulatory systems are outdated, incomplete, or enforcement is inadequate."[131]

The differences among regulatory regimes have led many experts to call for greater harmonization, or standardization, of regulations governing offshore activities. Nevertheless, there is some push-back against the concept of harmonization. A national energy agency representative stated that harmonization is not achievable, citing too many cultural, social, political and legal differences across nations, and a foreign ministry official declared "we are not interested in regulation for the sake of regulation." One regulator commented that "harmonization is not the way" if it means adopting the same standards everywhere. Thus, there is a need to clarify the meaning and approach of "harmonization." For example, common objectives or best practices can be developed and then adopted or adapted by national regulators. As noted, the ISO is developing recommended standards in seven technical areas with broad involvement of industry, national regulators, and other international institutions. These standards are then meant to be applied at the national level.

Second, while the coastal states have regulations in place, they are not necessarily "Arctic-relevant." This refers to the need to develop, implement, and enforce regulations that take into consideration the unique conditions found in the marine Arctic environment. Much of the activity to date in the Arctic has been onshore, and most of the offshore activity has been in ice-free areas with attendant regulation addressing those conditions rather than the offshore environment affected by ice that is attracting increasing attention. In this regard, one expert commented that industry's claim that national regulations in place are sufficient is incorrect and in fact are largely "irrelevant" to environments with pack ice, constant darkness, and other extreme conditions.

The oil companies Brookings interviewed tended to argue that existing standards are sufficient since they are largely implemented by national regulators who have tailored regulations to specific local conditions. For this reason, they see no need to rush into developing stronger regulations for ice-covered regions since major activity in these areas is many years in the future. However, this view is not monolithic. In a recent survey, industry respondents cited lack of Arctic-specific technology, HSE systems, procedures, and training among the main gaps to reduce risks in the Arctic.[132] Industry participants also cited the need for "more international common standards" to reduce risks.[133]

Focus on Oil Spill Prevention, Control, and Response

It is true that there has been limited exploration and production in ice-covered offshore areas in the Arctic, and that large-scale commercial production may be many years in the future. However, it is critical to focus on prevention, control, and containment of an oil spill as part of the process of developing Arctic-specific regulations. As the

[131] AMAP 2010. Finding F10.B, pp. 7-14.

[132] "EPPR R3 Report: Recommended Practices for Arctic Oil Spill Prevention", (EPPR R3 Report) Arctic Council, 31 August 2012. See Appendix III, Question 1.2. The companies participating were Shell, Total, Statoil, and Conoco Phillips, and it is noted that the responses do not indicate official statements from the companies.

[133] EPPR R3 Report, Question 1.3.

Arctic Council Working Groups have concluded: "an oil spill in ice-covered waters could have a large ecological impact,"[134] and "the risk of major oil spills is a serious threat for marine ecosystems, particularly those associated with sea-ice, because response can be difficult and spilled oil is likely to persist for a long time."[135] There is mounting concern that regulations concerning oil spill prevention and response in ice-covered waters are inadequate and not sufficiently Arctic-tested.[136] In addition, even if standards are in place, there is still the need to ensure that the physical infrastructure and assets are available to support them. Many experts and officials are very concerned about lack of progress in this area.[137]

Thus, there is a strong argument for developing and implementing approaches now before more extensive activities ensue: "As commercial activities expand in the Arctic, the need to develop regulatory measures in a number of areas will grow…there is much to be said for anticipating such developments in regulatory terms and *putting in place suitable regimes today* rather than struggling to react once commercial activities become entrenched" (emphasis added).[138] There are increasing efforts to address oil spill prevention and response, for example in the Arctic Council, through industry efforts and at the national level, as well as extensive activities to assess Arctic oil spill response technologies.[139] Nevertheless, a primary lesson of Deepwater Horizon is that it is eminently prudent to establish functioning arrangements addressing the prevention, control, and response to pollution from offshore oil and gas activities in advance of those activities commencing.

"Diverse eco-systems require diverse standards."

"Standards have to reflect conditions."

—Government officials from two Arctic Council member states

Arctic-Wide vs. "Neighborhood" Approaches

Even with acceptance of a need to strengthen the governance regime, there is a debate on the feasibility of developing an Arctic-wide versus a more localized approach. On the one hand, there is a strong sentiment that common international standards are required for the Arctic. This view is reflected in the criticism that "there are no internationally binding rules for the prevention, reduction, and control of pollution caused by offshore hydrocarbon activities."[140] Supporters of this approach believe it best fills the gaps and inadequacies of the current multi-layered system by incorporating all Arctic states into a common agreement, achieving harmonization of standards.

There is an equally persuasive view that, with such a large area containing such different conditions (various levels of presence of ice, water depth, proximity to supporting infrastructure), adopting a "one-size-fits-all" approach does not

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[134] AMAP 2010, Finding F6.F, pp. 7-9.

[135] "Arctic Biodiversity Assessment: Report for Policy Makers," (CAFF Biodiversity Assessment 2013) Conservation of Arctic Flora and Fauna, Akureyri, Iceland, Key finding 4, p. 11, 2013.

[136] "Oil Spill Prevention and Response in the U.S. Arctic Ocean: Unexamined Risks, Unacceptable Consequences," U.S. Arctic Program, Pew Environment Group, November 2010.

[137] Another area often raised in our discussions, but as noted which we do not address in this brief, is the lack of an insurance and liability regime governing a major oil pollution incident in the Arctic.

[138] "Arctic Governance in an Era of Transformative Change: Critical Questions, Governance Principles, Ways Forward," (Arctic Governance Project 2010) Report of the Arctic Governance Project, 14 April 2010, p. 8, (http://www.arctic-council.org/eppr/wp-content/uploads/2012/08/EPPR-RP3-Best-Practices-report-v3.1-31aug121.pdf).

[139] As noted, there have been many efforts researching this issue. For a detailed description of various activities, see "Oil Spills in Arctic Waters: An Introduction and Inventory of Research Activities and USARC Recommendations," U.S. Arctic Research Commission and U.S. Army Corps of Engineers, November 2012.

[140] "Transatlantic Policy Options for Supporting Adaptations in the Marine Arctic: Summary for Policy Makers," Arctic Transform, June 2009.

make sense. In support of this argument, the example of the contrast between the ice-free waters off Norway (the North Sea and the Norwegian Sea) and the ice-laden Chukchi and Beaufort Seas off the coast of Alaska is often cited. One oil and gas company executive stated that many of the current initiatives to develop standards focus on ice-covered regions that are very different from ice-free areas, and it is precisely in the latter where commercial drilling is occurring. Thus in the view of this company, imposing Arctic-wide standards actually would hamper current commercial drilling activities and arguments for having performance-based standards implemented on a localized basis. Other oil and gas companies echoed this skepticism of the need for, or effectiveness of, Arctic-wide standards, and stipulated that differing conditions by region or even subregions support locally-tailored, performance-based standards that will provide greater flexibility and incentivize technology innovation.[141]

One keen observer of Arctic governance notes that bilateral and lower level exchanges across nations—for example regulator to regulator—have been taking place for many years and have been very effective (see **Text Box 4**). This expert recognizes that, "baseline problems differ from area to area," making a "neighborhood" approach to addressing governance challenges "very attractive." In this regard, the Barents 2020 process was cited often in our discussions as a feasible model, and many supported the idea of initiating bilateral arrangements on key issues and then linking the results back into the Arctic Council's deliberations.

Another argument in favor of the "neighborhood" approach is averting much of the sovereignty challenge, including the difficulty of wrangling eight countries toward a consensus agreement. Because the issue revolves around energy resources, strong sovereign interests are at stake hindering the development of an Arctic-wide governance regime or, at the least, suggesting that any regime would

Box 4: Selected Examples of U.S. Bilateral Cooperation

There is a long history of U.S. bilateral cooperation in the Arctic. For example, the Mineral Management Service (MMS), the fore-runner of the BOEM within the Department of the Interior, has been working with Russia since the early 1990s. The U.S. government teamed with Russian counterparts in 1993, holding a series of seminars on how to conduct leasing, inspections, and EIAs. This culminated in a joint lease sale in the Chukchi Sea, although ultimately no companies expressed interest in the acreage. In 1994, the Ministry of Natural Resources in Russia and the MMS signed a Memorandum of Understanding to undertake "joint activities and exchange of information concerning the principles and methods of evaluation and development of mineral resources on shelf," and a Russia-U.S.A.-Norway Arctic Offshore Oil and Gas Regime project (RUNARC) was initiated in 1997 to evaluate existing Russian regulations and legislation and identify what could be modified to allow a establishment of a more modern system. The U.S. BSEE currently has MOUs with the NEB in Canada and the PSA in Norway, and the U.S. Coast Guard is working with Russian counterparts on a peer-to-peer basis on a variety of issues. The USCG and Canadian Coast Guard also collaborated in July 2013 on a joint oil spill response drill in the Bering Strait.

Sources: "The Feasibility Study – The Joint Russian-American-Norwegian Project: Safety and Environmental Regime for Russian Offshore Oil and Gas operations," Moscow, 1998; and "U.S., Canada conducts Bering strait spill drill, Alaska Journal, July 25, 2013.

[141] It is also true that, even within a similar environment, there might be different regulatory approaches. For example, conditions in the Beaufort Sea are largely the same on the US and Canadian sides, but each country has a different regulatory approach.

have to be purely voluntary. With the different interests of the littoral states, non-littoral states, and the expanding list of observers, it will be hard to construct some form of Arctic-wide mechanism under an IMO-type scheme (the Polar Code). This contrasts with the existing civil liability regime established globally for tankers and vessels (including in the Arctic), where sovereignty concerns did not prevent the implementation of a regulatory framework.

Establishing a New Framework vs. Building on the Existing Regime

Institutional responsibilities for offshore oil and gas governance could be located in existing institutions such as the Arctic Council or in a newly-created entity. However, there is a strong view that current international regulatory foundations —including regional and bilateral approaches and entities—provide a viable foundation for moving forward to strengthen the governance framework for offshore oil and gas activities. A new organization or set of legal instruments could take time and resources to establish, thus undermining the goal of ensuring that such a vital area as offshore oil and gas exploration is addressed in a timely and comprehensive way. One Arctic legal expert has noted:

> Customary and treaty based international law and the work of the Arctic Council are further bases for a stable and peaceful Arctic, relied upon by the Inuit Circumpolar Council and Arctic States alike. This broad based reliance on law and cooperation is not just a vision for the future; it is functioning robustly here and now in today's Arctic.[142]

This view is echoed by another Arctic specialist who recently observed that the potentially acrimonious competition for resources in the Arctic so feared just a few years ago has not materialized precisely because the Arctic nations have used the existing international legal regime as widely-accepted and stable rules of the game to sort out differences. He asserts that, "none of this cooperation required a single new overarching legal framework. Instead, states have created a patchwork of bilateral and multilateral agreements, emanating from the Arctic Council and anchored firmly in UNCLOS."[143]

The Arctic Council seems to have acknowledged explicitly the important role of the existing governance framework and the need for the Council to work closer with other mechanisms and organizations. The AOR specifically recommends that the "Arctic Council should promote interactions with the appropriate international treaty bodies on offshore oil and gas issues."[144]

Another related perspective emphasized the need for some kind of holistic regional-national approach to governance. One view suggested that perhaps greater regional oversight might be better than national oversight since the former may be better able to leverage and deploy resources on site. However, this view can quickly run into opposition either on sovereignty grounds or that national entities are better able to tailor regulations to specific local conditions.

Recommended Standards vs. Legally Binding Agreements

The issues raised above have major implications for the nature of the legal instruments employed.

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[142] Betsy Baker, "Oil, Gas, and the Arctic Continental Shelf: What Conflict?", *Arctic Region: Boundaries, Resources and the Promise of Cooperation, Oil, Gas and Energy Law Intelligence Journal*, OGEL 2 (2012).
[143] Scott Borgerson, "The Coming Arctic Boom," Foreign Affairs, July/August 2013.
[144] AOR May 2013, Executive Summary with Recommendations, p. 7.

First, there is considerable literature discussing the concepts of hard law and soft law, revolving mainly around the advantages and disadvantages of mandatory and enforceable legal agreements in contrast to more voluntary, self-regulating commitments. In the case of offshore oil and gas regulations, one view indicated that if the Arctic Council were to have more oversight of oil and gas drilling and transportation through the negotiation and establishment of a "binding document," this could either be reduced to the lowest common denominator or potentially create a rift in the Council with damaging effects on its consensus mode of operation. In addition, the drafting of such an agreement, in the view of some, could take many years in a manner similar to the process for drafting an International Code of Safety for Ships Operating in Polar Waters (the Polar Code) under the International Maritime Organization (IMO).[145] Furthermore, a hard law approach may require resources to establish a structure and processes to monitor and enforce requisite regulations. On the other hand, there may be some prestige associated with a voluntary approach helping to attract both large and small groups to join. In addition, a soft law approach is likely to be easier and faster to implement. In particular, non-binding approaches, such as recommended practices and guidelines, are preferred by the industry.

"Voluntary guidelines fall below the precision of company guidelines."

—Oil company executive

Another view stressed that the international governance regime on offshore oil and gas is fragmented, with most of the existing relevant, binding treaties and conventions covering only one part of the Arctic, providing broad legal guidance while leaving detailed regulation to national entities. Other criticisms center on the fact that these agreements are not sufficiently Arctic-specific.[146] Even a binding legal document targeted to oil and gas activity in the Arctic such as the *Arctic Oil Pollution Agreement* has been criticized as having no real powers to impose operating conditions. Greenpeace labeled the Agreement "incredibly vague…fails to hold oil companies liable for the impact of their mistakes, and there is nothing here that ensures adequate capacity to deal with a spill."[147] Indeed, Appendix IV of the *Agreement* proposing operational guidelines is non-binding.

The major non-binding instrument is the Arctic Council's *Arctic Offshore Oil and Gas Guidelines* comprising recommendations "intended to encourage the highest standards currently available." In the course of our discussions, there was significant skepticism of their effectiveness.[148] One government representative of an Arctic Council member state who was closely involved in producing these *Guidelines* admitted that they completely miss some key issues while including others that are less important, and that much of what is included is watered down to unproductive, uncontroversial language. A foreign ministry official noted that there is "not much value" in the *Guidelines*. In addition, one participant in our research mentioned that although the *Guidelines* were useful, the private sector was not sufficiently involved

[145] The drafting of the Polar Code is based on existing IMO guidelines. For example, the *Guidelines for Ships Operating in Polar Waters* issued in January 2010 provide "recommendations rather than mandatory direction."

[146] Tim Koivurova and Kamrul Hossain, "Offshore Hydrocarbon: Current Policy Context in the Marine Arctic," Arctic Transform and the Arctic Centre, Rovaniemi, Finland, 4 September 2008, p. 37.

[147] "Press Release: Leaked Arctic Council oil spill response agreement 'vague and inadequate'", Greenpeace, 4 February 2013, (http://www.greenpeace.org/international/en/press/releases/Leaked-Arctic-Council-oil-spill-response-agreement-vague-and-inadequate---Greenpeace/).

[148] One analysis noted that "since there is no evaluation of their [the Guidelines] impact it is difficult to conclude whether they have any significant impacts." See Koivurova and Hossain.

in the process of developing them. Nevertheless, some observers believed that the *Guidelines* provide a very good starting point for a more binding governance framework.

Regulatory Approaches

Many participants in our research raised the issue of divergent views regarding the most appropriate regulatory approach for governing Arctic offshore oil and gas activities, centering on the advantages and disadvantages of prescriptive standards vs. performance standards. If some common set of standards is to be applied across the Arctic, the question that immediately surfaces is whether a prescriptive or performance-based approach, or some hybrid, is most effective. In addition, countries implementing these respective approaches tend to view their regulatory regime as the best, and in fact there is strong divergence amongst the Arctic nations on how a regulatory system should function.

"Why should we compare our rules with prescriptive standards? We abandoned this approach decades ago."

—Government official of an Arctic Council member state

According to one national regulator in a littoral country, a performance-based standards approach allows the administrator of the license the flexibility to vary terms and conditions. Moreover, it allows for effective creativity and competition among companies to develop low-cost, efficient ways to meet standards that prioritize safety and environmental soundness. Performance-based standards are also more adaptable as drilling activities move into new, challenging conditions. Indeed many respondents increasingly argue that, given the unique and extreme operating conditions in the Arctic, many of which will present challenges not faced before, it makes more sense to incentivize operators to develop innovative solutions. There seemed to be an emerging consensus that many national regulators were moving in the direction of a performance-based approach for these reasons including the U.S., Canada, and Greenland.

Finally, among the oil and gas companies Brookings interviewed, there is a clear and resounding view that performance standards provide greater flexibility in terms of innovation in technology, while prescriptive regulations conversely hinder innovation. These sentiments were captured by one major oil company representative who noted: "There should be a clear process for approval of exploration plans, oil spill response plans, and applications for permits to drill based on performance standards alone."[149]

However, we also encountered skeptical views of a performance-based standards approach, with some arguing for a combination of both regulatory styles. The major caveat is that the operator-centric model of goal-oriented regulation requires more government expertise; regulators need to keep abreast of rapidly changing innovations and non-standardized solutions. Performance standards require much better-credentialed regulators, and often there are not enough resources to employ third-party overseers or auditors. Without regulatory depth in numbers and expertise (compared to companies with far more resources), it is difficult to rely solely on the safety case approach. The danger is that the whole framework devolves into operator self-regulation.

[149] Listening Session, Bureau of Ocean Energy Management and Bureau of Safety and Environmental Enforcement. Vol. I. Anchorage, Alaska, 6 June 2013.

It should be noted that similar problems can occur in a regulatory system largely based on prescriptive standards. Larry Mayer, who served as chairman of the National Academy of Sciences committee on the "Impacts of Deepwater Horizon on the Ecosystem Services of the Gulf of Mexico" has noted that the regulatory system in the U.S. had failed because: 1) it was too complex and proscriptive; 2) had a lack of high-level expertise; 3) the regulators were not qualified because they are paid too little to attract experienced professionals in comparison to what people can make working for private industry, and; (4) the prescriptive standards are written by people who do not have the requisite expertise. He stressed that all of these findings are relevant for the Arctic where conditions are much more complex.

Thus, some commentators argue for a combination of regulatory approaches to balance the need for incentivizing innovation while prescribing minimum requirements in certain key areas. The Arctic Council's EPPR Working Group concludes: "A combination of prescriptive and functional (goal-based) requirements was identified as the optimum solution,"[151] and the Council's *Oil and Gas Guidelines* are also cited by some as an example of a hybrid of performance standards and a rule specification approach.

Role of the Arctic Council

Generally, two schools of thought on the future role of the Council emerged during Brookings' research. The first reflects a general re-evaluation of how it could be strengthened to keep pace with the rapidly changing circumstances in the Arctic, especially concerning increased activity in oil and gas and natural resources development, as well as increased marine transportation. Several experts lamented that the Council functions primarily as a "talk shop," "needs more teeth," is a "paper tiger," or more bluntly, "should grow up." In short, in the view of some experts it must have more legal status: "The Arctic Council must now adapt itself to the new reality of the rapidly increasing political and economic importance of the region."[152]

Some cite the implementation in May 2011 of the binding *Search and Rescue Agreement* and the *Arctic Oil Pollution Agreement* as examples of the Council extending its role. It should be pointed out, however, that these are state-driven documents: the Council served as a convener or broker amongst the national governments since it has no legal personality. Nevertheless, some experts argue that these agreements mark a gradual change in how the Council functions.

Specifically, there is a body of opinion that believes that the Council should become a full-fledged treaty organization and "expanded to address a range of economic issues." This approach was supported by one Arctic Ambassador, who stressed that in his opinion this concept is becoming widely shared amongst the Council's member states. The World Wildlife Fund, which is an Observer to the Council, seems to support this idea, stating that "the Council faces the issue of whether yet again it will approve a set of ideas and recommendations but will not monitor or speak to their implementation by governments."[153] In addition, the Standing Committee of Parliamentarians of the Arctic Region has taken the position that, "to be truly effective and autonomous, the Arctic Council needs to be more than a coordinating instrument acting by consensus of its members."[154] The Committee states that "What is proposed…is not an international treaty on the

[150] Remarks provided at the Arctic Circle event in Reykjavík, Iceland, October 2013.
[151] "Summary Report and Recommendations on the Prevention of Marine Oil Pollution in the Arctic," EPPR, Arctic Council, 2013.
[152] "Arctic Governance in an Evolving Arctic Region," (SCPAR) A proposal by the Standing Committee of Parliamentarians of the Arctic Region, p. 3, (http://www.arcticparl.org/files/arctic-governance-in-an-evolving-arctic-region.pdf).

Arctic, but strictly an exclusive treaty among the eight Arctic states to give themselves more formal governmental binding powers."[155]

The perceived benefits of this approach are that it would raise the profile and authority of the Council, and could provide for the implementation of binding mechanisms for critical issues such as oil and gas governance, shipping and other matters. In addition, one view expressed during our discussions asserted that with a treaty-based organization, observer status issues could be easier to handle and take less administrative time to address.

"The Council does not have the capacity itself to develop standards, but can play a role."

—Arctic Ambassador, Arctic Council Member State

This view is not unanimously shared, and some experts raised several downsides to making the Arctic Council an entity with some form of legal personality. First, moving in this direction would fundamentally alter its role as originally established; it has functioned very well in its current form and has had a very strong role in influencing mid-level ministerial and administrative actions in its member state governments. Moreover, one government official from an Arctic member state noted that deliberations in the Council often influence decisions in international organizations such as the IMO and UNEP "more than is recognized." Several commentators stressed that the Council was established primarily as an organization to highlight and study scientific and environmental aspects of the Arctic, not as an entity with policy making and legal authority. While changing the role and mandate of the Council could elevate its "prominence as a body with capacity to address Arctic issues authoritatively," it could also politicize its activities.[156]

Second, indigenous peoples now have a unique role and voice in the Council, and this might be lost as decision-making moves to a higher level with greater implications for national sovereignty of the member states. This view reflects a looming dilemma: while many believe that the Arctic needs to be viewed as a global issue rather than a regional one, the indigenous community largely fear that if this were to occur its interests would be lost to the "great powers."

Third, presently the Arctic Council is adaptable, and able to react quickly to changing conditions. A Council with a more formal, structured legal personality could get unwieldy, slowing down decision making just at a time when it needs to be more nimble in navigating multiple complex issues.

In addition to the prospect of strengthening the Council by focusing on *external* issues such as altering its overall role in the regional and global context, there are also *internal* approaches. The Arctic Council's lack of financial and human resources is a perennial concern. The Working Groups and Task Forces consist of experts from the member governments, scientific entities, NGOs and others, but are not full-time staff. The recent formation of the Arctic Council Secretariat is a step in the right direction, helping to provide administrative support and coordination. Yet the Secretariat remains a small cadre of people, and the Council's overall budget is still small, at less than USD $1 million.[157] Thus, there are considerable limitations on the Council's ability to expand its activities.

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[153] Bill Eichbaum, "Transparent Stewards," The Circle, World Wildlife Arctic Programme, April 2013.
[154] SCPAR, p. 3.
[155] Ibid.
[156] Kankaapää and Young, p. 13.

Finally, there are concerns over the capacity of the Council to implement broadening terms of reference in offshore oil and gas governance. The scope of work for the Working Groups (in particular, PAME and EPPR), the mandate of the Oil Spill Prevention Task Force, and the recommendations of the AOR, together emphasize prevention, standards and policy harmonization, increased dialogue and information sharing, and greater interaction across various organizations and conventions. Implementing this scope of activities will be difficult. For example, while the intention is for the Working Groups addressing oil and gas issues to work together, experts we spoke with familiar with the inner workings of this process noted that the Working Groups tend to work "autonomously" and the focus and urgency on oil and gas waxes and wanes (despite each Working Group designating an oil and gas "contact group" usually comprising two-three people). One expert noted:

> The way the Council deals with oil and gas—it comes up periodically, for example, only when PAME guidelines are getting old, or the AMAP assessment needs updating, but rest of the time there is little attention beyond citing how important oil and gas is, that there will be more of it [activity], etc.

There are related concerns over the efficiency of the Working Groups, namely that they need to be more sector or project specific. For example, a commentator noted that one Working Group "is a mess."[158] A study recommends that the structure of the Sustainable Development Working Group and its activities should be more sector-specific, suggesting an overhaul of its entire structure.[159]

Thus, there is a recognized need for better coordination and prioritization. The challenge, however, is how to accomplish this structurally and procedurally. One expert cautioned that he has "never heard anyone pushing for an oil and gas sector group" or heard of oil and gas raised as a separate theme (rather in the case of PAME, as part of the "marine sector").

Private Sector Participation

One message we heard in our discussions was the importance of involving the private sector. Since oil and gas companies are working in the Arctic and gaining operational experience on the ground, industry is generally ahead of governments both in terms of knowledge and mutual cooperation.

However, there is concern, not only among private sector entities with whom we spoke but also others, that the business community has not yet played a sufficient role. In particular, governments and multilateral organizations such as the Arctic Council need to emphasize and incorporate the private sector in all their deliberations. This view was highlighted by the president of a Chamber of Commerce in the Arctic, stressing that while the North holds the key to that country's future, its Arctic policy disappointingly overlooks the critical role of business as well as the tremendous growth forecast for business in the region. In addition to oil and gas companies, pertinent businesses will include hydroelectric power, wind power, and minerals.

Specifically, we heard that to date the Arctic Council has not been very effective at involving the private sector. At one level, this is not surprising: the Council initially was established primarily as an environmental and scientific research organization, and this character still permeates its operating culture. However, insufficient incorporation of

[157] Arctic Council Secretariat Indicative Budget 2013, Stockholm, 15 May 2012.
[158] Comment in private interview.
[159] Kankaapää and Young, p. 15.

industry has had consequences. Icelandic President Grímsson noted at the inaugural session of the Arctic Circle in October 2013, that while the *Search and Rescue Agreement* and the *Arctic Oil Pollution Agreement* are noteworthy, it is vital to realize that the lack of private sector participation in their development could hamper the agreements' viability given that the industry may have more resources readily at hand than the littoral governments. This view was echoed by another commenter, who acknowledged the success of the Council in advancing these agreements but wondered how much equipment is going to be needed to have effective response capability in both areas and who will finance it.

The private sector can also play a role in the development of standards. As noted, the API and OGP are involved in developing recommended practices for the industry, including in the Arctic. However, some practitioners have cautioned that industry's voice in this process could overwhelm others, such as the indigenous community, and moreover the industry needs to do more to propose standards directly applicable for Arctic operations, especially in ice-covered environments.

Another issue raised is that of overseeing the performance and activities of sub-contractors, i.e., ensuring that standards are effectively applied to these entities. This links directly with some of the lessons emanating from the Deepwater Horizon oil spill, as well as Shell's experience in the Chukchi Sea in the summer of 2012: that sufficient management systems need to be in place for the larger oil and gas companies to guide, monitor, and evaluate the performance of contractors, often much smaller companies that may not have the resources or breadth of knowledge and experience in a new and challenging environment. For example, one expert noted that in Russia, while large Russian companies are fairly effective and conscientious environmental stewards, it is the projects of smaller Russian companies where problems arise. According to this observer, one of the biggest problems the oil and gas industry confronts today in Russia is the activities of sub-contractors, whose performance schedules are often tight and who are incentivized to cut corners while operating in highly vulnerable marine environments or areas of permafrost or other icy conditions. Another problem is that the break-up of vertically integrated companies has led to more outsourcing of project management with oversight becoming very lax.

Importance of Indigenous Communities

One of the major recurring themes in our discussions was the essential requirement to establish meaningful dialogue with indigenous communities throughout the Arctic in order to incorporate their knowledge, traditions, and concerns regarding offshore oil and gas development. Many organizations and governments explicitly support and highlight the importance of close collaboration with indigenous groups (see **Text Box 5**). Indeed, one of the largest Arctic indigenous groups has issued a set of principles for responsible resource development, specifically stressing that "international standard-setting bodies must seek and secure direct and meaningful input from Inuit," and that the Arctic Council's *Guidelines* should be respected as "minimum standards."[160]

However, despite this broad recognition that indigenous communities must be an active and vital part of any decisions on offshore oil and gas development, in the view of one expert with whom we spoke there is no consensus on how best to accomplish this; "No one has quite gotten this right yet in terms of best practice." In the U.S., while there have been some improvements in providing indigenous groups a more "meaningful part in decisions relating to offshore oil and gas development in the Arctic" since Deepwater Horizon, the

[160] "A Circumpolar Inuit Declaration on Resource Development Principles in Inuit Nunaat," (ICC 2011) Inuit Circumpolar Council, 2011, (https://www.itk.ca/sites/default/files/Declaration%20on%20Resource%20Development%20A3%20FINAL%5B1%5D.pdf).

process is "incremental" and "non-systemic."[161] Thus, the emphasis is shifting from institutionalizing acknowledgment of the importance of indigenous input and expertise to "operationalizing" ways to promote an "informed community." For instance, one way to do so could be developing mechanisms that allow local communities at the village level to access the information they need in order to make informed, collective decisions.

There is also no monolithic view amongst Arctic indigenous populations concerning offshore oil and gas development, and this is reflected in varying views on the balance between protecting

Box 5: Recognizing the Role of Indigenous Peoples in the Arctic

- The U.S. National Strategy for the Arctic Region specifically cites "addressing the needs of indigenous communities" as one of the country's central interests.
- The Arctic Governance Project highlights the need to "recognize the rights of indigenous peoples to participate in decision making."
- Arctic Council's AOR recommends that "The Arctic states should work with Arctic residents to identify and promote effective models for enabling inclusion of traditional knowledge and input into decision-making processes for marine development and sustainable resource management."
- Arctic Council's *Arctic Offshore Oil and Gas Guidelines* contains a separate section dedicated to indigenous peoples indicating, in part, that Arctic states should "incorporate local and traditional knowledge into the decision-making process including the initial siting studies and disposition of resource use rights, pursue regulatory and political structures that allow for participation of indigenous people and other local residents in the decision making process as well as the public at large, urge and, where appropriate, require industry to integrate cultural and environmental protection considerations into planning, design, construction and operational phases of oil and gas activities, and improve cross-cultural communication methods to ensure full and meaningful participation of indigenous residents."
- The OGP states that "Within the Arctic regions, the operators must take into account the special needs of indigenous peoples and should refer to industry guidance in establishing their engagement strategy.
- The IPIECA (International Petroleum Industry Environmental Conservation Association) has issued a report on emerging good practice for the oil and gas industry's interaction with indigenous peoples, and while not Arctic-specific, it does include a case study from Alaska.

Sources: The White House, National Strategy for the Arctic Region, May 2013; "Arctic Governance in an Era of Transformative Change: Critical Questions, Governance Principles, Ways Forward," Report of the Arctic Governance Project, 14 April 2010 (Arctic Governance Project 2010); AOR May 2013; Arctic Council Guidelines 2009; OGP May 2013; "Indigenous Peoples and the oil and gas industry: Context, issues and emerging good practice," IPIECA 2012.

[161] Betsy Baker, "From the Gulf of Mexico to the Beaufort Sea: Inuit Involvement in Offshore Oil and Gas Decisions in Alaska and the Western Canadian Arctic," Environmental Law Reporter, Volume 43 No. 10, October 2013, pp. 10925-10937.

indigenous cultural and other interests, with the need to take advantage responsibly of resources for much-needed economic development. This balance is perhaps most articulately expressed in the "Declaration on Resource Development Principles" issued by the Inuit Circumpolar Council.[162]

Some prominent indigenous voices are emphasizing the importance of economic development benefits flowing from oil and gas development. For example, the Premier of Greenland has stated that minerals and oil and gas offer great opportunities and are especially vital in developing a domestic revenue stream so that it can become economically independent of Denmark.[163]

There are also concerns, however. In the aftermath of the Deepwater Horizon spill, the leader of Canada's Inuit called for "an immediate pause on drilling in the Beaufort Sea in order to take stock."[164] One representative of an indigenous community indicated that, while he is in favor of resource development on a sustainable basis that helps promote economic development for local peoples, there are concerns over the impact of seismic testing and lack of infrastructure. For example, the non-existence of pre-positioned assets and ports in the region is a serious issue. He pointed out that the *Search and Rescue Agreement* and *Arctic Oil Pollution Agreement* are positive developments, though meaningless without ports and other infrastructure.

We also heard that, broadly speaking, the Arctic Council is the best institutional structure for indigenous groups to be heard. In the words of one representative of indigenous populations, "the 'soft law' approach of the Arctic Council provides for a more inclusive process." He is opposed to imbuing the Council with more legal authority, stating that treaties and other binding legal instruments would largely be established among member states, reducing the indigenous voice.

[162] For more information, see: "A Circular Inuit Declaration on Resource Development Principles in Inuit Nunaat", (http://inuitcircumpolar.com/files/uploads/icc-files/Declaration_on_Resource_Development_A3_FINAL.pdf).
[163] From remarks given at the Arctic Circle event in Reykjavík, Iceland, October 2013.
[164] Michel Comte, "Inuit call for Arctic offshore oil drilling moratorium." Agence France Press, 26 May 2010, (http://www.google.com/hostednews/afp/article/ALeqM5i1_XTMLKiMs1AW5Su6kyLjSRwPfg).

6. Conclusions and Recommendations

Conclusions

There is consensus that the U.S. government should elevate the Arctic as a priority national interest. The changing Arctic is outpacing the government's current policy and institutional structure to deal with it. As a former U.S. Department of State official stated, "The U.S. government needs to understand the 'need for speed' in molding its Arctic policy." This requires a shift from viewing the Arctic primarily as a security threat in a strictly military and geopolitical sense, to focusing on a *safety threat* in the Arctic in the context of climate change, sustainability of indigenous communities, and protection of the environment.

The existing governance framework for offshore oil and gas activities in the Arctic region needs to be strengthened, especially in the area of oil spill prevention, containment, and response. Given large distances, severe climate conditions, the pristine nature of the Arctic, and the potential for oil pollution to affect more than one national jurisdiction, a critical part of strengthening governance is oil spill prevention, containment and response. There is growing awareness and criticism that the current, multilayered framework is too fragmented and is not tailored to the unique conditions of the Arctic marine environment. Specifically, while the coastal states implement and oversee the most targeted and legally binding governance instruments for offshore operations, national laws and regulations in place vary in their overall systematic approach and ability to enforce them. There is also concern that current regulations are not sufficiently Arctic-specific or Arctic-tested to address operations taking place in more ice-covered regions. Perhaps more important than the development and implementation of standards, however, is ensuring that they are supported by equipment and infrastructure-sharing arrangements that allow timely and appropriate preparedness and response. For example, while a legally binding *Arctic Oil Pollution Agreement* has been signed by all Arctic states, it is difficult to implement without physical infrastructure and equipment in place.

The most effective governance strengthening approach is to build-on the existing regulatory framework. A new, Arctic-wide, legally binding legal instrument addressing offshore oil and gas, and accompanying institutional structures, is not feasible in the near-term. First, it is a top-down approach that, since it involves so many sovereign and other interests, could be unwieldy and take many years to enact similar to the experience with the Polar Code. Second, such a high-level, consensus-driven process—with sovereign interests at stake and differing conditions throughout the Arctic—could result in weak, watered down regulations in a "regulatory race to the bottom." Third,

the prospect of developing a new legal architecture has already been addressed by the Ilulissat Declaration in which five Arctic states explicitly recognize the adequacy of the existing legal framework. Fourth, attempting to craft a new legal framework could overwhelm other more useful and effective efforts in the short-term.[165]

"We should emphasize what works, and the Arctic Council works"

—NGO official

The Arctic Council should be strengthened to play a stronger role in enhancing offshore oil and gas governance, but its current mandate and legal character should not be changed. The Arctic Council works and thus any governance approach should build on it. It has been an invaluable institution in raising awareness of the importance of the Arctic, especially in elevating the voice of indigenous peoples throughout the region, and it should continue to play a key role in enhancing oil and gas governance. We do not support changing the Arctic Council's fundamental mandate, including proposals for making it a legal entity with treaty powers. In sum, the Arctic Council should remain a policy-shaping body, and not become a policy-making entity. Dramatically changing its mandate, structure, and character may ruin its value. Nevertheless, the Council should be imbued with enhanced internal structural and process changes that prioritize and elevate oil and gas issues allowing for a more structured and effective convening of all relevant actors to move the strengthening of the offshore oil and gas governance regime forward.

Localized, regional, or bilateral approaches have significant merit: they have been used extensively to yield timely, meaningful, and practical results. This approach takes into consideration similar "neighborhood" conditions (perhaps including resources, environmental concerns, and indigenous populations), builds on already existing exchanges and lower level dialogues, provides concrete localized governance mechanisms that can then be adopted or modified for wider application, and offers a more streamlined and less complex path (since it would not initially involve multiple sovereign actors) to reach a meaningful short-term solution. This method is best characterized by the Barents 2020 process between Russia and Norway. In addition, this approach has some support from the industry: an oil company executive in our discussions stated: "One can envision having overarching principles that address key issues Arctic-wide, and then have more specific standards by zone."

There is considerable room for better communication, coordination, and information sharing amongst a wide array of institutions, conventions, and treaties. Networks, exchanges, and other peer-to-peer mechanisms on a multilateral and bilateral basis, as well as industry collaborative efforts, have been in place for many years throughout the Arctic, and they work. Moreover, there are precedents in other regions and sectors that provide workable models for how to implement networks that can enhance the regulation of offshore activity in the Arctic (for example in fisheries and law enforcement). One clear benefit of the networking approach is that it helps fill gaps in knowledge by sharing lessons and experience—there is widespread consensus on the value of, and need for

"A network approach is better than a political approach."

—Oil and gas regulator in an Arctic state

[165] Oran R. Young, "Arctic Ocean", pp. 327-334.

expanding this concept. Also the networking approach allows more entrees for the private sector into the process, a need we also heard in our research discussions.

The private sector should be better integrated into efforts to strengthen Arctic governance. Since hydrocarbon development in the Arctic will be undertaken by companies, they need to be involved in the process of establishing standards. This does not mean that oil and gas operators dictate their final form. Rather they should have a seat at the table of a collaborative process from the early stages of any effort. There are a number of industry entities undertaking efforts in this area, as well as joint efforts among consortia of companies researching oil spill response technology, or providing mutual aid in response capabilities. The key is collaboration and involvement in order to leverage the expertise and resources—both financial and in equipment and infrastructure while taking advantage of lessons learned and sharing/exporting best practices.

It is critical to involve indigenous groups in decisions concerning offshore oil and gas activities, including the development and implementation of governance instruments. There is broad acceptance of the critical importance of dialogue and public consultation with local communities. This view is shared by governments and the oil industry. There is also growing awareness that indigenous input into the development of standards is necessary to leverage traditional knowledge. This can have an impact on a range of regulatory issues such as area and seasonal drilling and seismic testing, and their interaction with marine mammal activity.

Recommendations

The U.S. government "needs to decide if it is an Arctic nation or not and what our vital interests in the region are."[166] Based on our analysis and conclusions, we believe that it is in the U.S. national interest to lead in strengthening the Arctic offshore oil and gas governance regime. The cornerstone of U.S. leadership should be enhancing oil spill prevention, control and response through the development of Arctic-specific standards and resource sharing arrangements to ensure that adequate standards, procedures, financial resources, and equipment and infrastructure are in place and available.

This policy approach supports important objectives of the *U.S. National Arctic Strategy* to strengthen international cooperation and "promote Arctic oil pollution preparedness, prevention, and response." It also addresses U.S. obligations to meet the Arctic Council's Kiruna Declaration to develop effective ways to implement the *Arctic Oil Pollution Agreement*—namely to "encourage future national, bi-national, and multinational contingency plans, training, and exercises, to develop effective response measures." Moreover, it supports recommendations from the Deepwater Horizon Commission, the Offshore Energy Safety Advisory Commission, and the Department of Interior to develop Arctic-specific regulations. In short, we believe that our recommendations provide an opportunity for the U.S. to increase domestic awareness of the strategic importance of the region, improve governance of Arctic offshore oil and gas activities, while meeting stated objectives and commitments of U.S. policy in the region.

Strengthening governance offshore oil and gas activities is a priority commensurate with the growing emphasis on prevention: that we need to be better prepared for incidents in advance of activity taking place in ice-covered regions. Specifically there is increasing recognition that, even with some legal agreements and recommended

[166] Comment from a former senior U.S. government official, private interview.

practices in place, there is little to no equipment and infrastructure in place to make these arrangements operational. Establishing robust resource sharing arrangements to prepare for, prevent, and respond to an offshore incident will help address this gap. Resource sharing involves delineating the physical implementation of appropriate infrastructure, assets and other resources, how they can be shared, paid for and utilized, as well as other possible aspects such as joint exercises. Implementing the resource sharing concept could involve several approaches including arrangements among governments, the private sector, indigenous communities, and other stakeholders.

While this policy paper does not focus on how to address the key domestic policy challenges of: better balancing federal and Alaskan state interests, streamlining the coordination among multiple federal agencies with a policy role in the region, improving mechanisms for integrating indigenous communities in the policy making process, or budgeting appropriate resources, these are critical issues to address; they are an important part of conveying to the general public and lawmakers alike that the U.S. is an Arctic nation with important strategic and commercial interests both in Alaska and the broader Arctic region. The issue of budgetary resources is particularly vital. There must be a frank discussion with the Congress on what needs to be spent to allow the development of our natural resources in the Arctic, build the requisite onshore and offshore infrastructure, protect our fisheries, and deal with the impact of climate change while protecting the livelihood and way of life for Alaska's indigenous inhabitants. Meeting these challenges will not be inexpensive. Both the Coast Guard and the Navy will need a number of ice-worthy new ships which cost hundreds of millions of dollars each. Likewise, the development of ancillary offshore ports and supporting facilities will cost the oil and gas industry billions of dollars. As one senior U.S. government official stated: "The U.S. government has to put money where its mouth is. We are only reluctantly coming to the table and need to step up our game. The Department of State, White House and others in the government must make a significant commitment."[167]

Our detailed recommendations are provided below.

Recommendation #1: **Establish oil spill prevention, control, and response as the overarching theme for the U.S. chairmanship of the Arctic Council in 2015-2017.** This supports the administration's *Implementation Plan for the National Strategy for the Arctic Region* which identifies the promotion of oil pollution preparedness, prevention, and response and working through the Arctic Council to promote U.S. interests as two key avenues in strengthening international cooperation in the region.

Recommendation #2: **Create the diplomatic post of "Arctic Ambassador."** We support Secretary Kerry's recent announcement calling for the designation of a "special representative for the Arctic Region." However, commensurate with Sen. Mark Begich (D-AK) of Alaska's proposal in S. 270, the post of "Arctic Ambassador" should be created to institutionalize and prioritize the importance of the region.[168]

Recommendation #3: **Establish a Regional Bureau for Polar Affairs in the Department of State**. This Bureau should be created to centralize the wide range of issues under consideration, streamline coordination with other agencies, and move the Arctic to the forefront of the U.S. foreign policy agenda.

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[167] Private interview.

[168] Mia Bennett, "Alaskan Senator Mark Begich advocates creating U.S. Arctic ambassador," Foreign Policy Association, 16 April 2013, (http://foreignpolicyblogs.com/2013/04/16/alaskan-senator-mark-begich-advocates-creating-u-s-arctic-ambassador/).

Recommendation #4: **Accelerate the ongoing development of Alaska-specific offshore oil and gas standards and discuss their applicability in bilateral and multilateral forums**. A key component of U.S. leadership in strengthening offshore oil and gas governance in the region is the Department of Interior's current effort to develop Arctic-specific standards for the Alaska OCS. Based on this effort, the U.S. should use the Arctic Council to engage with other nations, industry, and indigenous groups to discuss broader adoption of Arctic-specific standards.

Recommendation #5: **Strengthen bilateral regulatory arrangements for the Chukchi Sea with Russia, and the Beaufort Sea with Canada.** The U.S. should prioritize working with Russia and Canada in strengthening the localized regulatory framework specific to their shared marine environments. There are issues of mutual interest the U.S. could raise with the respective countries, building on existing dialogue and cooperation. First, this is an effective way to focus on resource sharing for oil spill prevention, control, and response with discussions conducted in the context of the existing Joint Contingency plans in place with each country, or perhaps under a separate instrument. In addition, Canada is preparing for more exploration in the Beaufort Sea and is rapidly transitioning to a performance based regulatory system (for example, establishing suitable metrics). There may be scope to cooperate on this process since the U.S. is also moving in this direction, and the BSEE already has a cooperation agreement in place with the NEB. With regard to Russia, there may be scope for undertaking several activities jointly if both countries are issuing tenders for leases in the Chukchi. This could include aligning schedules to embark on data sharing, undertaking joint EIAs, conducting resource evaluations (critical to knowing the value of resources as part of the tendering), and jointly developing requirements for marine mammal protection and same season relief wells. The U.S. Coast Guard has cooperated for many years with counterparts in Russia, so there are examples of cooperative working mechanisms that could serve as models.

"There are 'bite size' issues that the U.S. could select to initiate dialogue with Canada and Russia as part of a process to establish a more formal bilateral regulatory arrangement for their respective shared marine environments."

Recommendation #6: **Support the industry-led establishment of an Arctic-specific resource sharing organization for oil spill response and safety.** The oil and gas industry has taken initiatives to strengthen oil spill prevention, response, and control capabilities, especially in the aftermath of Deepwater Horizon. The OGP has formed the *Subsea Well Response Project (SWRP)* and in the U.S. the MWCC and the COS have been established to address spill response and safety in the Gulf of Mexico. These organizations are in the nascent stages of development and are not Arctic-specific.

In line with the concept of developing polar-relevant standards and tools, as well as with the "neighborhoods and networking" approach, the U.S. should urge and support the creation of a similar organization specific to the Arctic. The goal is to leverage industry assets to address this specific geographic area. This could be applied across national boundaries in neighboring marine areas, or, alternatively, existing organizations such as the Subsea Well Response Project and the Center for Offshore Safety could add the Arctic region to their current portfolios, although this may not be feasible in the short-term given that they recently began operations. At a minimum, the U.S. government could promote this concept at the highest levels bilaterally with neighboring governments, and by working with companies.

Recommendation #7: **Support and prioritize the strengthening of the Arctic Council through enhanced "thematic coordination" of offshore oil and gas issues.** First**,** our recommendation to strengthen the inner governance of the Arctic Council, rather than alter its legal personality directly supports and preserves the continuation of the Council as the critical forum for integrating the voice of indigenous populations.

In the area of enhancing governance of offshore oil and gas activities, the Arctic Council is emphasizing prevention, standards, and policy harmonization, increased dialogue and information sharing, and greater interaction across various organizations and conventions, and a focus on prevention. To implement this scope of work, the U.S. should support the strengthening of the Council's internal thematic coordination of offshore oil and gas governance. Specifically we propose the formation of a structural unit to coordinate the Council's oil and gas related activities (see **Exhibit C**). Assessing the option of what the exact design of this unit would look like is beyond the scope of this report, but it could use the existing "expert group" structure or some form of "joint committee."

This approach is similar to, and draws on the experience of, OSPAR as a working precedent, and supports the observations of many experts participating in our research. In particular, some called for establishing more sector specific structural mechanisms under the Arctic Council that could function as a policy or agenda setting group—but any such mechanisms should not be made too formal or legally binding.[169] This could provide a way for the Council to provide input into other international conventions and processes. For example, the Kiruna Declaration called for the Arctic Council to better link with the work of the IMO, OSPAR, ISO, and others. Perhaps a Council oil and gas sector specific group could also be useful in incorporating the private sector and observers. This type of approach reflects a sentiment to "test out a close knit setting on real issues" as a way forward. In short, the sectoral approach on specific technical issues—with work carried out by those most familiar with the actual technical and operating parameters—would be better able to elevate and spearhead specific programs (such as oil spill prevention) as well as feed into activities of relevant groups outside of the Council.

The oil and gas thematic coordinating unit could be responsible initially for the following:

- *Develop a Strategy for Enhancing Offshore Oil and Gas Governance*. The strategy would coordinate and support the implementation of the main recommendations coming out of the Kiruna Declaration, as well as the oil and gas-related goals of the PAME, EPPR, and AMAP work plans.
- *Coordinate with international bodies and conventions*: This will involve establishing suitable coordination mechanisms such as MOUs, prioritizing the following key international institutions:
    - **OSPAR:** Establish a formalized link with OSPAR's Oil and Gas Committee, and work to establish a complementary set of activities similar to those currently implemented by OSPAR
    - **OGP:** To better integrate the private sector, initiate process for, and approve, the International Oil and Gas Producers Association as an observer to the Arctic Council, and work with OGP on standards development

[169] Kankaapää and Young.

- **MARPOL:** Examine the feasibility of developing Arctic specific regulations under special areas Annex 73/78
- **IMO:** Examine feasibility of including fixed and MODUs in its conventions
- **ISO:** Collaborate on updates to ISO 19906, specifically the work of Subcommittee 8 (developing standards for Arctic offshore structures)

Finally, as part of its leadership role and strengthening the Arctic Council's role in offshore oil and gas governance, the U.S. must strongly support the activities of the Task Force on Arctic Marine Oil Pollution Prevention. While most participants in our discussions seemed to believe that it is unlikely for this process to yield a final agreement by the end of the Canadian chairmanship of the Council, there was strong support, and indeed expectation, that the U.S. should continue to move the process forward in 2015 and beyond.

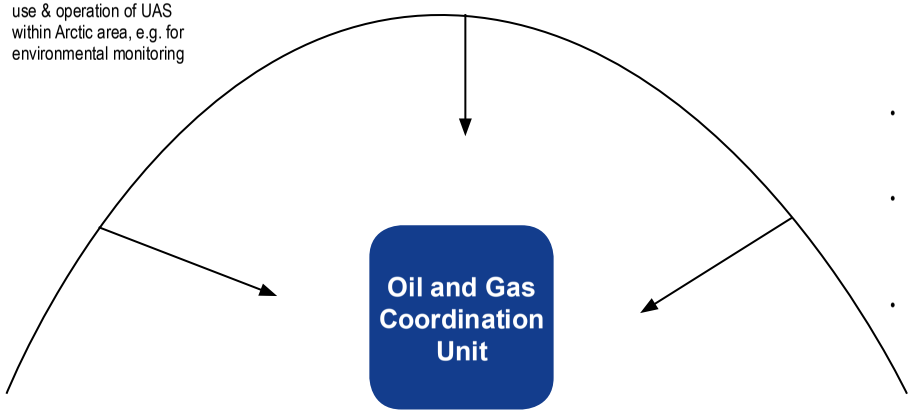
Recommendation #8: **Support the Establishment of an Arctic Regulators Association for Oil and Gas (ARA).** The Arctic Council has cited the need to improve collaboration among regional regulators: the EPPR Working Group has called for "establishing a mechanism whereby regulators are able to share information on best practices, processes and regulatory approaches as well as compliance and operational information," and the AOR recommended that "Arctic States should further engage…regulator involvement." In meeting these goals and in the spirit of networking, the ARA would function as an association of regulators dealing with offshore oil and gas. This could be modeled along the precedent of the Energy Regulators Regional Association (ERRA) created on December 11, 2000 by a group of 15 national energy regulatory agencies from Eastern Europe and Central Asia.[170] Similar to ERRA, ARA's objectives would be to "Increase communication, and the exchange of information, research, and experience among members, increase access to energy regulatory information and experiences…and promote opportunities for training, and provide educational and training programs."[171] The Arctic Council's oil and gas coordinating unit recommended above should liaise with the ARA to ensure coordination and information sharing, and in particular to enable the lessons learned from the national regulators to flow into the Council's work, such as further updates of the *Guidelines*. The ARA could also serve as an arena to discuss and share experiences and lessons learned with different regulatory regimes, approaches to resource sharing, and specific regulations such as those employed by the U.S. with Shell in the Chukchi Sea.

While the IRF already exists for global offshore oil and gas regulators, as noted it is not Arctic-specific and does not include Greenland, Iceland and Russia. The ARA, as a smaller club of regulatory experts dedicated exclusively to offshore oil and gas in the Arctic region, could provide the best operational and technical focus, as well as the ability to keep pace with developments under changing Arctic conditions.

[170] ERRA was designed to improve the energy regulation of members through cooperation and information sharing. It was originally funded by the U.S. Agency for International Development (USAID) although financing gradually began to shift to the member states through membership dues from 2004 onwards. ERRA became financially self-sufficient in 2009.

[171] Michael LaBelle, "Energy Regulators Regional Association Celebrating 10 Years! Assessing a Decade of Regulatory Cooperation," ERRA, April 2011.

Exhibit C: Arctic Council's Existing Scope of Oil & Gas Activities and Recommended Thematic Coordination



Kiruna Declaration

Encourage future activities & measures to implement the Agreement on Cooperation on Marine Oil Pollution Preparedness and Response in the Arctic

Encourage Arctic States to pursue further work under the Recommended Practices in the Prevention of Arctic Marine Oil Pollution Project

Establish a Task Force to develop an action plan or other arrangement on oil pollution prevention

Conservation of Arctic Flora & Fauna (CAFF)

- Require incorporation of biodiversity objectives & provisions into all Arctic Council work, encourage same for on-going and future international standards, agreements, plans, operations and/or other tools specific to development in the Arctic, including oil and gas
- Support development of appropriate prevention & clean up measures and technologies responsive to oil spills in Arctic, especially in ice-filled waters, such that they are ready for implemention in advance of major oil and gas developments.

Arctic Monitoring & Assessment Programme (AMAP)

- Developing possible follow-up to Oil and Gas Assessment
- Unmanned Aircraft Systems (UAS) Expert Group has evaluated scientific use & operation of UAS within Arctic area, e.g. for environmental monitoring

Oil and Gas Coordination Unit

- Develop an Oil and Gas Strategy
- Coordinate oil and gas efforts of Working Groups
- Coordinate with key outside entities & conventions

Protection of Arctic Marine Environment (PAME)

- Developing HSE report
- Developed report on use and carriage of Heavy Fuel Oil by vessels in Arctic

Recommendations from AOR

- Arctic Council should urge its members to support efforts in ISO and other processes to develop standards relevant to Arctic oil and gas operations.
- Arctic states should move toward circumpolar policy harmonization in discrete sectors
- Arctic Council should promote interactions with the appropriate international treaty bodies on offshore oil and gas issues
- Arctic states should further engage industry and regulator involvement, as appropriate

Emergency Prevention, Preparedness & Response (EPPR)

Recommendations from Summary Report

- Arctic Council catalog all applicable oil and gas standards for Arctic activities (e.g.: facilities management, ice management, escape route and drills, training logistics, security) and highligh differences in the standards.
- Establish a mechanism whereby regulators are able to share information on best practices, processes, regulatory approaches as well as compliance and operational information

Source: AOR Report, May 2013

ANNEX A

SUPPLEMENTAL INFORMATION ON CURRENT GOVERNANCE FRAMEWORK

International Mechanisms

International Convention for the Prevention of Pollution from Ships (MARPOL 73/78)

Entering into force in 1973 and supplemented by a 1978 protocol, MARPOL 73/78 aims at eliminating air and marine pollution from oil and other chemical substances resulting from seagoing vessel operation. As the AOR highlights, the agreement is not Arctic-specific and "explicitly excludes from its definition" any pollution from offshore resource exploration or production.[172] In addition, MARPOL does not address pollution from mobile offshore drilling units (MODUs). There is one possible avenue for expanding MARPOL to include offshore oil and gas activities: Annex I of the agreement allows for Special Areas to be designated, although this has not been done for the Arctic.[173]

1972 Convention on the Prevention of Marine Pollution by Dumping of Wastes and Other Matter (London Convention)

The London Convention is signed by all eight Arctic states, although a 1996 Protocol to the Convention is signed by five. The Convention is not Arctic-specific and does not address disposal of wastes and other matter from activities related to offshore resource exploration and production. It does, however, prohibit the "deliberate disposal of platforms."[174]

Regional Mechanisms

Arctic Council

The Arctic Council's Working Groups comprise "representatives at expert level from sectoral ministries, government agencies, and researchers."[175] The Working Groups' mandates are determined by the governments of the Council's member states. The Working Groups mainly dealing with oil and gas activities are:[176]

- **PAME** (Protection of the Marine Environment): "addressing policy and non-emergency pollution prevention and control measures related to the protection of the Arctic marine environment from both land and sea-based activities."
- **AMAP** (Arctic Monitoring and Assessment Programme): "providing reliable and sufficient information on the status of, and threats to, the Arctic environment, and providing scientific advice on actions to be taken in order to support Arctic governments in their efforts to take remedial and preventive actions relating to contaminants"
- **EPPR** (Emergency Prevention, Preparedness, and Response): "addressing various aspects of prevention, preparedness, and response to environmental emergencies in the Arctic"

Of the Council's four active Task Forces, two have a link to offshore oil and gas activities:

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[172] AOR May 2013, p. 58.
[173] Ibid, p. 59. The AOR also points out that the IMO has voluntary guidelines for MODUs, but there remains some disagreement as to whether the IMO could adopt binding regulations for MODUs.
[174] Ibid. The AOR also notes that there are other platform disposal provisions in the IMOs voluntary guidelines and in OSPAR's provisions.
[175] "Arctic Council – Working Groups", (http://www.arctic-council.org/index.php/en/about-us/working-groups).
[176] Ibid.

- **Task Force on Arctic Marine Oil Pollution Prevention:** mandate is "to identify how best the Arctic Council can contribute to marine oil pollution prevention in the Arctic, to recommend a concrete plan of action, and, as appropriate, to develop cooperative arrangements to implement the Action plan." Recommendations will be presented to the Ministerial Meeting in 2015.

- **Scientific Cooperation Task Force:** goal is "to work towards an arrangement on improved scientific research cooperation among the eight Arctic States." Co-chaired by Russia, Sweden, and the U.S., recommendations will be presented to the Ministerial Meeting in 2015.

Arctic Council's recommended *Arctic Offshore Oil and Gas Guidelines* adopt four core principles: precautionary approach, polluter pays, continuous improvement, and sustainable development. The main sections of the *Guidelines* address the following:[177]

- Arctic Communities, Indigenous Peoples, Sustainability and Conservation of Flora and Fauna
- Environmental Impact Assessment
- Environmental Monitoring
- Safety and Environmental Management
- Operating Practices
- Emergencies
- Decommissioning and Site Clearance

The Arctic Council served as a negotiating forum for the establishment of the *Arctic Oil Pollution Agreement*. It contains provisions related to the following:

- Systems for Oil Pollution Preparedness and Response
- Authorities and Contact Points
- Notification
- Monitoring
- Requests for Assistance and Coordination and Cooperation in Response Operations
- Movement and Removal of Resources across Borders
- Reimbursement of Costs of Assistance
- Joint Review of Oil Pollution Incident Response Operations
- Cooperation and Exchange of Information
- Joint Exercises and Training

Annex I proposes broad operational guidelines for implementing the provisions of the agreement, but these are non-binding.

Convention for the Protection of the Marine Environment of the North-East Atlantic (OSPAR 1992)

OSPAR's *2010 North-East Atlantic Environment Strategy* highlights several goals related to offshore hydrocarbons up to 2020 including:[178]

- Coordinated information collection, environmental monitoring, and assessment

- Where necessary, revise existing measures and/or develop and adopt new measures, taking climate change impacts into account

- With a view to progressively develop Best Available Techniques (BAT) and Best Environmental Practice (BEP) for environmental issues, promote the sharing of information and experience between Contracting Parties, non-governmental organizations, and relevant research and development forums

[177] "Arctic Offshore Oil & Gas Guidelines".
[178] OSPAR Commission, *The North-East Atlantic Environment Strategy,* pp. 19-20.

- Continue to promote the use and implementation by the offshore oil and gas industry of environmental management mechanisms, including elements for auditing and reporting
- Assess the suitability of existing measures to manage oil and gas activities in Region I and, where necessary, offer to contribute to the work on offshore oil and gas activities taking place under the Arctic Council, specifically under PAME

In addition, OSPAR has developed a Joint Assessment Monitoring Programme (JAMP) designed to provide detailed guidance on how OSPAR's member governments are supposed to work together to carry out the critical mandate of the Commission: "cooperate in carrying out monitoring programmes…and develop quality assurance methods, and assessment tools."[179] JAMP outlines specific "products" in the offshore oil and gas area over the 2010-2014 timeframe.

Bilateral Mechanisms

Barents 2020

In March 2010, the Barents 2020 project released a report recommending:[180]

- A basic list of internationally recognized standards for use in the Barents Sea
- Standards for design of stationary offshore units against ice loads in the Barents Sea
- Standards for Risk Management of major Hazards, such as Fires, Explosions and Blow-outs on offshore drilling, production and storage units in the Barents Sea
- Standards for evacuation and rescue of people from ships and offshore units, including standards for rescue equipment
- Standards for working environment and safety related to human performance and decision making (Human factors) for operations in the Barents Sea
- Safe standards for loading, unloading and ship transportation of oil in the Barents Sea—to minimize risk of accidental oil spills
- Standards for operational emissions and discharges to air and water in the Barents Sea

[179] OSPAR Commission, *Joint Assessment and Monitoring Programme 2010 – 2014,* April 2010, (www.ospar.org/html_documents/ospar/html/10-04e_jamp.doc)

[180] "Barents 2020: A four year project on harmonization of HSE standards for the Barents Sea now moves out into a circumpolar setting," DNV GL, 24 September 2012, (http://www.dnv.com/industry/oil_gas/publications/updates/arctic_update/2012/01_2012/BARENTS2020.asp).

Summary of Key International Treaties and Conventions Relevant to Offshore Oil and Gas Activities

Instrument	Major Features Relevant to Arctic	Key Issues
UNCLOS (U.N. Convention on the Law of the Sea)	• In force since 1982 • Requires states to cooperate regionally to develop rules, standards, and practices, etc. for protection of environment (Article 197) • "States have obligation to protect and preserve the marine environment" (Article 192) • States should take all measures (including cooperatively) to "prevent, reduce and control pollution…from any source…and endeavor to harmonize their policies" (Article 194(1)) • States should work to prevent spread of pollution from their jurisdiction to another (Article 194(3)(c)) • Coastal states to adopt governance instruments related to pollution from sea bed activities "no less effective than international rules, standards, recommended practices, and procedures" • States should ensure that liability regime is in place nationally for pollution damages and work toward developing an international law relating to liability issues	• All Arctic states are signatories and have ratified, except the U.S.
MARPOL 1973 International Convention for the Prevention of Pollution from Ships	• In force since 1983 • Objective: "Prevent pollution from ships by oil; by noxious liquid substances carried in bulk; harmful substances carried by sea in packaged form; sewage, garbage; and the prevention of air pollution from ships"	• All eight Arctic states are signatories • Is not Arctic-specific • Specifically excludes pollution from "offshore processing of seabed mineral resources," and from Mobile Offshore Drilling Units
London Convention 1972 Convention of the Prevention of Marine Pollution by Dumping of Wastes and other Matter	• In force since 1975 • Objective: "Promote the effective control of all sources of marine pollution and to take all practicable steps to prevent pollution of the sea by dumping of wastes and other matter."	• All eight Arctic states are signatories • Five are signatories to the 1996 Protocol • Is not Arctic-specific, does not include pollution from offshore resource activities • Does include disposal of platforms

Source: AOR Review, May 2013, and IMO website for MARPOL and London Convention

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The Brookings Institution
1775 Massachusetts Ave., NW
Washington, D.C. 20036
brookings.edu