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Spreading Oil, Spreading Conflict? Institutions Regulating Arctic Oil and Gas Activities

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In order to assess whether the Arctic region is evolving into a region of cooperation or one of confrontation, a thorough understanding of the existing (and evolving) bilateral, regional and international institutional frameworks with relevant regulations for the Arctic and their adequacy for solving possible controversies is paramount. Disputes can flare up over various issues, as the Arctic has aptly demonstrated in recent years. They can concern ownership of resources, extent of sovereign rights over waterways, or questions of precaution, preparedness and liability in case of environmental damage. Whether these disputes erupt into conflict or are handled cooperatively depends significantly on the rules and regulations that respective parties have set up. Depending on the nature of the conflict, rules need to show different characteristics to be effective, concerning for example their degree of obligation, precision and provisions for dispute settlement. While most of the literature on Arctic cooperation and conflict has dealt with the issue of resource ownership, this paper argues that the more significant potential source of controversy between Arctic states are issues of responsibility, liability, precaution and preparedness concerning possible transboundary environmental risks and dangers, and generally protection of the fragile Arctic ecosystem.

Keywords: Arctic, institutions, resources, conflict

Recent years have seen an increasing pace in oil and gas exploration and exploitation, especially in the Eurasian Arctic in Russia and Norway, but also in plans and activities in the US and Canadian Arctic and Greenland. While no large-scale rush to these resources is expected in the short term, due to the tight interconnectedness of Arctic resource supply and international demand (and not least geopolitical developments), in the mid- to long-term future, increasing development of Arctic offshore oil and gas resources – especially in the Russian and Norwegian Arctic – is likely because of the large domestic relevance of these resources for the respective economies.¹ Given the possible transboundary consequences of such offshore activities – especially on the fragile marine and coastal environment in the region – an assessment of the institutional framework concerning environmental protection in relation to the development of Arctic oil and gas resources appears especially timely. Against this background, the research question addressed in this article is: are the international institutions for governing Arctic oil and gas activities adequate

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¹ Keil, "The Arctic", 166–9, 174–6.

for containing potential lines of conflict, especially with respect to the transboundary consequences for the environment in the region?

Background

Melting Arctic sea ice, especially in the summer season, has raised expectations of increasing accessibility of so far undiscovered oil and gas resources, especially among the five Arctic coastal or littoral states,² on whose continental shelves the majority of Arctic oil and gas resources are expected. While the numbers look substantial (more on this later), no large-scale rush to these resources is expected in the short term due to the many uncertainties related to the viability of Arctic resource supply, the international demand for these resources and, not least, geopolitical developments. First of all, the predictions concerning undiscovered Arctic oil and gas resources have a significant margin of uncertainty.³ Then, future energy market developments in major economies in Europe, Asia and North America will crucially determine the profitability and thus pace of Arctic oil and gas development. The fate of the Shtokman gas field in the Barents Sea is a prime example: the project was postponed in August 2012 because of soaring costs, the loss of the US as a key market due to massive shale gas production, and the general uncertainty concerning profitability.⁴ As another example, the recent geopolitical tensions between Russia and Western countries over the crisis in Ukraine have put a brake on already ongoing development projects in the Russian Arctic.⁵ Nevertheless, in the mid- to long-term future, increasing development of Arctic offshore oil and gas resources is likely.⁶ This is reflected in the increasing Arctic offshore energy exploration and exploitation over recent years. The prospect of satisfying increasing demand for energy worldwide, even with capital intensive, equipment demanding, and generally risky Arctic resources is apparently reason enough for energy companies to invest in Arctic oil and gas endeavours.

According to the 2008 USGS,⁷ the Arctic is expected to hold about 22 percent of the world's undiscovered conventional oil and natural gas resources, which amounts to about 30 percent of the world's undiscovered natural gas, 13 percent of the world's undiscovered oil and 20 percent of the world's undiscovered natural gas liquids (NGL). Of these resources, 84 percent are expected to be offshore and mostly in shallower waters on the continental shelf. Included in the assessment are those geological areas considered to have at least a 10 percent chance of one or more significant oil or gas accumulations, which are volumes larger than 50 million barrels of oil or 300 billion cubic feet (bcf) of gas. These percentages translate into a total amount of 412

² Canada, Denmark (via Greenland), Norway, Russia and the US, also referred to as the 'Arctic Five' or 'A5'.

³ Gautier *et al.*, "Assessment of undiscovered oil and gas", 1178; Keil, "The Arctic:", 178 f. See also Gautier, "Petroleum Resource Potential of Arctic Region".

⁴ "Sakhalin over Shtokman", *Barentsnova*, 3 June 2013, <http://barentsnova.com/node/2364> (I was unable to find this article at this URL ???)

⁵ ExxonMobil halted its only recently started drilling campaign in the Kara Sea, conducted as part of a joint venture with Russian Rosneft to develop offshore oil deposits, and is further "bringing to an end all activities associated with the project". E.Crooks, "Exxon winds down Russian Arctic drilling campaign", *Financial Times*, 19 September 2014, <http://www.ft.com/intl/cms/s/0/8910fe7c-401f-11e4-936b-00144feabdc0.html>

⁶ Keil, "The Arctic:", 166–9, 174–6.

⁷ Bird *et al.*, *Circum-Arctic Resource Appraisal*; Gautier *et al.*, "Assessment of undiscovered oil and gas".

billion barrels of oil equivalent (bboe)⁸, of which 22 percent are oil (90 billion barrels⁹) and 78 percent natural gas (1669 trillion cubic feet (tcf)¹⁰) and NGL (44 billion barrels).¹¹

These numbers sparked exploration and extraction activities all over the Arctic, especially in the Norwegian and western Russian Arctic. Some activity has also been discernible in US Arctic waters in recent years, namely in the Chukchi Sea, while the Canadian government has issued exploration licenses for the Canadian Beaufort Sea.

While US and Canadian core hydrocarbon production areas are not in the Arctic (but rather in the Texas/Gulf of Mexico region and in Alberta, respectively), Russia is eager to develop new Arctic reserves to offset the depletion of principal mainland fields in Western Siberia, which have been producing for over 20 years.¹² Three regions in northwest Russia with commercial oil and gas reserves have been singled out for exploration and development: the oil-bearing Pechora Sea and the gas-bearing central Barents and South Kara Seas.¹³ Gazprom anticipates producing over 200 billion cubic meters of gas and about 10 million tons of oil from the Russian continental shelf by 2030.¹⁴ Rosneft has been granted production licenses covering most of the Russian part of the previously disputed area with Norway in the Barents Sea. In May 2012, Rosneft and Statoil agreed on the joint development of the Perseyevsky field in the northern part of the formerly disputed waters.¹⁵

Norway is also investing heavily in mapping potential petroleum resources to make up for depleting sources, and has been very active in granting exploitation licenses. As Norway has been successful – the only Arctic country so far – in receiving jurisdiction over its extended continental shelf, it can now expand these activities over its 235,000 km² large continental shelf, equivalent to three-quarters the size of mainland Norway.¹⁶ Furthermore, the 2010 agreement between Norway and Russia on the exact maritime delimitation in the Barents Sea¹⁷ has opened this area for exploration. In total, the year 2013 saw 13 hydrocarbon discoveries in Norwegian Arctic waters.

⁸ The USGS uses a natural gas to oil conversion factor in which 6000 cubic feet of gas equals 1 barrel of oil (Budzik, *Arctic Oil and Natural Gas*, 5).

⁹ 90 billion barrels is the mean estimate of yet-to-be found recoverable oil. The range is between 44 and 157 billion barrels (Gautier, "Petroleum Resource Potential of Arctic Region").

¹⁰ 1669 tcf is the mean estimate. The range is between 770 tcf and 2990 tcf (*Ibid.*).

¹¹ For all numbers, consult the tables in Bird *et al.*, *Circum-Arctic Resource Appraisal*; and Budzik, *Arctic Oil and Natural Gas*, 5.

¹² Øverland, "Shtokman and Russia's Arctic Petroleum", 8.

¹³ Bellona, "Transporting oil and gas".

¹⁴ "Russian continental shelf", Gazprom, <http://www.gazprom.com/about/production/projects/deposits/shelf/>.

¹⁵ A. Staalesen, *BarentsObserver*, "Rosneft secures licenses in Barents Sea", 20 Jan. 2012

<http://www.barentsobserver.com/rosneft-secures-licenses-in-barents-sea.5010461-116320.html>; and "Taking the

risks with Rosneft", 9 May 2012, [http://barentsobserver.com/en/energy/taking-risks-rosneft?utm_source=The+Telegraph&utm_campaign=d5b9a049d6-](http://barentsobserver.com/en/energy/taking-risks-rosneft?utm_source=The+Telegraph&utm_campaign=d5b9a049d6-Top_of_the_World_Telegraph_Vol_8_Issue_195_8_2012&utm_medium=email)

[Top_of_the_World_Telegraph_Vol_8_Issue_195_8_2012&utm_medium=email](http://barentsobserver.com/en/energy/taking-risks-rosneft?utm_source=The+Telegraph&utm_campaign=d5b9a049d6-Top_of_the_World_Telegraph_Vol_8_Issue_195_8_2012&utm_medium=email)

¹⁶ Oljedirektoratet (Norwegian Petroleum Directorate), *Continental Shelf Submission*, "Extent of Norway's continental shelf in the High North clarified", press release, 15 April 2009,

http://www.regjeringen.no/nb/dep/ud/pressemeldinger/2009/sokkel_avklaring.html?id=554718

¹⁷ Treaty between the Kingdom of Norway and the Russian Federation concerning Maritime Delimitation and Cooperation in the Barents Sea and the Arctic Ocean, 2010,

http://www.regjeringen.no/upload/ud/vedlegg/folkerett/avtale_engelsk.pdf

Resource estimates for the area are still increasing¹⁸ and there is continuing high industry interest in licenses especially in the Barents Sea.¹⁹

No major hydrocarbon fields have been discovered in Greenland to date. However, Greenland's Bureau of Minerals and Petroleum continues to issue licenses for its offshore areas.²⁰

What conflicts are likely?

'Conflict' is a situation in which two or more actors pursue incompatible goals or prefer different means to achieve a common goal. In other words, actors find themselves in a non-harmonious situation.²¹ Conflict should thus not be understood as one extreme of a continuum that has cooperation on the other end. Rather, conflict is in fact a necessary condition for cooperation to occur. As Keohane put it,

[c]ooperation takes place only in situations in which actors perceive that their policies are actually or potentially in conflict, not when there is harmony. Cooperation should not be viewed as the absence of conflict, but rather as a reaction to conflict or potential conflict. Without the spectre of conflict, there is no need to cooperate.²²

The potential conflict situation under scrutiny in this analysis is the well-known conflict line between possibly achieving economic benefits through resource exploration and exploitation in the Arctic and the need to protect the fragile environment from the harmful effects of economic activity, especially oil and gas development in offshore Arctic waters. While the USGS numbers may spark enthusiasm among the industries vying for new economic resources, the environmental risks and dangers in a harsh environment like the Arctic are not to be underestimated. Even under the most stringent control systems and with state-of-the-art technology, risks to the Arctic's fragile ecosystem, such as pollution and physical disturbances through tanker spills, pipeline leaks and other accidents, cannot be entirely eliminated. Hydrocarbons degrade less quickly in the Arctic environment due to low temperatures, which means that the environment only recovers very slowly; this is also because clean-up in such remote regions is very difficult.²³ Techniques that have been successfully deployed, for example during the Deepwater Horizon oil spill, such as skimming, burning and the application of chemical dispersants, could turn out to be ineffective or less effective in Arctic waters. Suction devices to absorb the oil could be clogged by ice, booms could freeze and, depending on the time of year, daylight can be scarce, hampering clean-up efforts. The lack of infrastructure and the general remoteness of the Arctic region also contribute heavily to the difficulties of an oil spill response.²⁴ Many experts are sceptical that the oil industry is prepared to deal with a large spill in

¹⁸ A. Staalesen, "Amid downslide, a boom for Norwegian Arctic oil", *BarentsObserver*, 17 January 2014, <http://barentsobserver.com/en/energy/2014/01/amid-downslide-boom-norwegian-arctic-oil-17-01#!>

¹⁹ See Norwegian Petroleum Directorate, <http://www.npd.no/en/Topics/Production-licences/Theme-articles/Licensing-rounds/>.

²⁰ See license map at <http://licence-map.bmp.gl/>; Hammeken-Holm, "European Arctic Oil & Gas".

²¹ Keohane, *After Hegemony*, 51; Oye, "Explaining Cooperation under Anarchy", 6 f.

²² "Cooperation and International Regimes", 54.

²³ *Arctic Monitoring and Assessment Programme* (AMAP), "Arctic Oil and Gas 2007", 29 f., <http://www.amap.no/oga/>

²⁴ D. Cappiello, "Gulf anniversary renews debate on Arctic drilling", *The Associated Press*, 23 April 2011, http://www.boston.com/news/nation/articles/2011/04/23/gulf_disaster_renews_debate_over_arctic_oil_spill/;

difficult Arctic circumstances. The National Commission on the BP Deepwater Horizon and Offshore Drilling concluded in 2011 that appropriate clean-up capabilities currently do not exist, especially not in challenging regions like the Arctic.²⁵

Given the potentially transboundary and trans-issue effects of pollution in the Arctic, which are expected to be especially severe in the marine areas where most of the future oil and gas exploitation is expected to take place, many actors have concerns about the matter. The core actors are the five Arctic coastal states – Canada, Denmark (through Greenland), Norway, Russia and the US – because of their jurisdiction over their internal and territorial Arctic waters, as well as their respective Arctic continental shelves and exclusive economic zones (EEZs), where oil and gas activities are already taking place and planned to increase in the future. This is especially prevalent in the Barents Sea, which is shared by Norway and Russia, but also in the Beaufort Sea, which is shared by the US and Canada, the Chukchi and Bering Seas shared by Alaska and Russia, the Baffin Bay area shared by Greenland and Canada, and offshore Greenland generally.

A concrete conflict situation could be that a pollution accident happens offshore – for example from a deep or shallow blow-out at an oil rig or through crude oil transport –, the spilled oil extends into the waters of a neighbouring country, and no clear bilateral, regional and/or international regulations exist how to handle issues of clean-up, liability, cooperation requirements, and dispute settlement. That such transboundary pollution is possible has been demonstrated by WWF in an interactive map showing four types of oil spills under different conditions in an area in the Beaufort Sea where oil exploration licenses have been granted.²⁶ Next to all scenarios show that spilled oil will expand across Canadian and Alaskan waters, sometimes even far west into the Chukchi Sea.

While national legislation for the prevention and mitigation of pollution incidents in relation to oil and gas activities exists in the five Arctic littoral states, it has frequently been assessed as not sufficient. First of all, there are only few nationally protected areas offshore, which require higher environmental standards and restriction of certain activities (fully or during certain parts of the year).²⁷ Second, in some areas in the Arctic, the oil and gas industry is faced with relatively little financial risk since liability caps for operating in Arctic areas are relatively low. Different liability rules apply from country to country. According to the US Oil Pollution Act, the liability cap is only USD 75 million for companies operating offshore Alaska (except in cases of fault or gross negligence). Canada's very low liability cap for Arctic Ocean operations of CAD 40 million was increased to at least CAD 1 billion in 2013.²⁸ While in Russia and Norway in principle unlimited liability for investors applies, a number of loopholes exist, such as if a case of force majeure can be proven.²⁹ Given the harsh weather and, generally, environmental conditions in the Arctic, such

A. Mayeda, "No way to clean up oil spill under Arctic ice: Expert", *The Vancouver Sun*, 15 June 2010, <http://www.vancouver.sun.com/news/clean+spill+under+Arctic+Expert/3158005/story.html>; Nuka Research and Pearson Consulting, *Oil Spill Prevention and Response*; OSPAR Commission, *Assessment of impacts of offshore oil*.

²⁵ Graham *et al.*, *Deep Water*.

²⁶ WWF, "Oil Spills in the Beaufort Sea – Exploring the Risks", <http://arcticpolls.wwf.ca/#intro/>.

²⁷ Livingstone *et al.*, *Circumpolar Protected Areas Monitoring*. See also map at <http://www.grida.no/graphicslib/detail/existing-and-proposed-coastal-and-marine-protected-areas-of-the-arctic-cdbb>.

²⁸ Emmerson and Lahn, *Arctic Opening*, 41; Lewis, "Logistics and environment". However, in perspective, this still appears rather low. For example, the Deepwater Horizon blowout in the Gulf of Mexico cost more than CAD 40 billion. Porta and Bankes, *Becoming Arctic-Ready*, 6.

²⁹ Emmerson and Lahn, *Arctic Opening*, 41, 54.

a case could be relatively easy to prove. In Russia, there are further concerns about the politicisation of the enforcement of liability demands and environmental regulations generally.³⁰ Denmark and Greenland stand out with a rather strict liability system, which includes unlimited liability even in accidental cases and stringent demands on companies on equity to qualify for an offshore license.³¹ Generally, however, “ecosystem damage and degradation are notoriously difficult to put a value on and are not currently accounted for under national regimes”.³² Moreover, the activities and plans of oil and gas companies show that there are few restrictions on the geographical range of their Arctic endeavours.

Finally, the fact that environmental risks connected to Arctic oil and gas development, especially offshore, are potentially transboundary in character, makes national regulations for Arctic oil and gas activities even more inadequate. Differences in the laws, regulations and regulatory regimes and their implementation by the various oil and gas producing countries pose a regulatory challenge to Arctic oil and gas exploitation.³³ Consequently, the potentially transboundary effects of environmental destruction on other Arctic coastal and even non-coastal states demand bilateral, regional or international regulations. Only by committing to sufficiently strict and detailed environmental regulations can states try to avoid and mitigate environmental pollution from oil and gas activities.

Possible conflict lines exist between actors since some have an interest in environmental regulation of Arctic oil and gas activities due to other Arctic economic activities such as fishing, the potential to be affected by accidents and environmental pollution incidents, a need to safeguard indigenous peoples' livelihoods and the Arctic environment, or their own strong national environmental standards. These interests stand in contrast to the incentive, especially for oil- and gas-rich countries like Russia, to favour less strict environmental regulations, if any, in order to make access to their hydrocarbon resources as easy and cost-effective as possible. Political incentives might also play a role, as in Greenland where hydrocarbon exploitation is a crucial means of achieving independence from Denmark. Of course, international energy companies have an interest in less strict and fewer binding regulations and bureaucracy to increase profit margins, which potentially results in heavy lobbying for watered down regulations. This does not mean that companies favour no regulation at all, since they are interested in abiding by some rules in order to avoid reputational damage in case severe accidents happen. However, oil and gas companies prefer voluntary regulations and best practices rather than binding regional and international rules, since they remain in business with no lasting effect on their reputation even after disastrous accidents, as the one in the Gulf of Mexico in April 2010 demonstrated.³⁴

³⁰ *Ibid.*, 54.

³¹ *Ibid.*, 41, 54.

³² *Ibid.*, 41.

³³ AMAP, "Arctic Oil and Gas 2007", v ff., 22 ff.

³⁴ While some countries established a temporary moratorium on new oil drilling activities after the accident, this appeared to be a means to bridge the time until the accident had faded again from the media and the general public's attention. For example, Norway established a moratorium in deep-water drilling ("Norway stalls all deep-water drilling", *BarentsObserver*, 8 June 2010, <http://www.barentsobserver.com/?id=4791064&cat=0&language=en>). But not even two weeks later, the government announced the 21st licensing round with a record number of new blocks being made available for drilling ("Norway announces drilling boom in Barents Sea", 23 June 2010, <http://www.barentsobserver.com/?id=4796086&cat=0&language=en>). See also B.Reddall, "Analysis: Oil firms hurt

In sum, while it can be expected that all Arctic coastal states have an interest in some environmental regulation, there will be disagreement concerning the degree and kind of regulation of Arctic oil and gas activities and the necessity to go beyond national legislation. Furthermore, the Arctic environment can be seen as a common pool resource since it is difficult to exclude actors from utilising it, and consumption – in the sense of potentially polluting a formerly clean environment – prevents other actors from utilising it, for example for fishing.³⁵ This quality of an unspoiled “Arctic environment” as a common pool resource complicates cooperative approaches.

Thus, the potential conflict situation is a tricky one, given that actors with an interest in strong international regulation of oil and gas activities are dependent on countries with a substantial interest in oil and gas development cooperating and carrying out their part of the obligation. In other words, while the latter have an incentive not to cooperate on regional and/or international environmental regulations so as to have less strict and fewer regulations, the former need the consent of the latter for strict transboundary environmental rules to be effective. Since countries that establish and adhere to strict national environmental standards cannot trust all the others, they are likely to lose out unless their strict national rules are supplemented by regional and/or international agreements. Thus, in the face of a lack of trust and the reluctance of hydrocarbon-rich countries to agree on strong rules, there is little incentive for other actors to pursue regional and/or international agreements. In the end, however, this leaves all actors worse off, given the higher likelihood of and unpreparedness for environmental pollution due to oil and gas activities. This conflict situation is often referred to in the literature as a “dilemma game”.³⁶ This is the situation in the areas where Arctic oil and gas development is happening and planned to increase in the future.

What would appropriate institutions look like?

According to neoliberal institutionalism,³⁷ “states use international institutions to further their own goals, and they design institutions accordingly”.³⁸ From this follows that an institution has to have certain characteristics and capacities in order to successfully regulate a conflict situation in a certain issue area. To find out about what characteristics and capacities make an institution (in)appropriate for a specific conflict situation, it is important to distinguish between the legislative components of obligation, precision and delegation, as described by Abbott *et al.*³⁹

Obligation sets out if actors are legally bound by a rule or commitment.⁴⁰ High levels of obligation and strong controlling mechanisms can be assumed if a treaty text uses certain language, often indicated by the verb ‘shall’, and calls for traditional legal formalities of signature, ratification,

by Gulf spill welcome back drill rigs”, *Reuters*, 10 April 2012, <http://www.reuters.com/article/2012/04/10/us-usa-gulf-of-mexico-idUSBRE8390IG20120410>).

³⁵ Ostrom *et al.*, *Rules, Games, & Common-Pool Resources*, 6 f.; Ostrom, “The challenge of common-pool resources”, 11.

³⁶ See e.g. Martin, “Interests, power, and multilateralism”, 769 ff.; Zürn, *Interessen und Institutionen*, 163 ff., and “Problematic Social Situations”.

³⁷ Axelrod and Keohane, “Achieving Cooperation under Anarchy”; Keohane and Nye, *Power and Interdependence*; Keohane *et al.*, *After Hegemony*, “International Institutions: Two Approaches”, and *International Institutions And State Power*.

³⁸ Koremenos *et al.*, “Rational Design of International Institutions”, 762, also 766 f.

³⁹ Abbott *et al.*, “The Concept of Legalization”.

⁴⁰ Abbott *et al.*, “The Concept of Legalization”, 408 f.

entry into force, and registration with the UN. Also calling the treaty a ‘convention’ and referring to pre-existing rules of customary international law are seen as indicators of high obligation. Texts called ‘recommendations’ or ‘guidelines’, which contain devices such as contingent obligations, escape clauses, and hortatory commitments which often only require parties to ‘endeavour’, ‘seek’ or ‘take steps’, are then considered to be towards the other end of the obligation spectrum.⁴¹

Precision depends on whether the rules unambiguously define the conduct they require, authorise or proscribe, thus narrowing the scope for interpretation.⁴² High levels of precision are given if each rule is unambiguous on its own and if the rules together form a coherent framework. Another indicator is if rules are highly elaborate with details about the conditions of application and information about required or proscribed behaviour in numerous situations with little room for deviation. Low levels of precision mean broad areas for discretion, often indicated by calling on parties to ‘create favourable conditions’, ‘avoid unreasonable behaviour’, or to ‘negotiate’ or ‘consult’ without specifying particular procedures.⁴³ Of primary importance to the precision analysis, moreover, is whether or not the institutions provide Arctic-specific rules and regulations.

Delegation depends on whether a) the institution contains rules for dispute resolution, and b) central bodies with strong operating and implementing responsibilities are established by the institution.⁴⁴ High degrees of delegation concerning dispute settlement are provided when parties agree to binding third-party decisions, usually by courts, which can interpret and supplement rules, and low degrees are when the process only involves political bargaining. In between these two extremes lie institutionalised forms of bargaining such as mediation, conciliation and arbitration. Another dimension of delegation, rule making and implementation or centralisation, assesses if an institution has strong central bodies with strong operating and implementing responsibilities or if it is merely a forum for consultation.⁴⁵ Indicators are the existence of full-fledged bureaucracies, which gather and disseminate information relevant to rule implementation. Other indicators for high delegation values are centralised enforcement authority, ability to confer or deny benefits, and provisions for compliance supervision.

An institution’s appropriateness does not stand in a linear relationship with increasing values for obligation, precision and delegation. A ‘hard’ regulation endowed with sanction mechanisms is not automatically more appropriate than a rather ‘soft’ convention, which relies on parties’ wishes to comply. Rather, an institution’s appropriateness depends on the characteristics of the issue area itself, its conflict potential, which results from the involved countries’ interests and options for action, and the relation between the components of legislation. For example, while binding rules have many advantages, such as a normative pull when it comes to compliance, they have the disadvantage of being rather fixed and hard to change, while non-binding provisions are much more flexible and easier to adapt. Depending on the issue area, adaptability can be a highly valuable asset and thus a strong factor in the appropriateness of an institution. Furthermore, a trade-off often exists between legal status and substantive content, that is legally binding

⁴¹ *Ibid.*, 410–2.

⁴² *Ibid.*, 412 f.

⁴³ *Ibid.*, 412–5.

⁴⁴ *Ibid.*, 415 f.

⁴⁵ Koremenos *et al.*, "Rational Design of International Institutions", 761.

agreements are often shallow with regard to content.⁴⁶ Nevertheless, depending on the specific conflict situation, high values for obligation, precision and delegation may be warranted for containment of potential conflict situations. This is specifically the case when confronted with a dilemma game situation as outlined above.

Although a dilemma game is characterised by a high likelihood of confrontational behaviour in the absence of institutions and a low likelihood of institution-building, actors can nevertheless agree to establish common institutions, especially given the assumption that all Arctic coastal states have an interest in a certain degree of environmental regulation of Arctic oil and gas activities. Appropriate institutions for the dilemma game should thus contain bilateral, regional and/or international rules committing the Arctic coastal states to the prevention of environmental pollution and concrete mitigation means in case of accident. They should be further characterised by high obligation, high precision and endowed with verification and monitoring provisions, that is high values for delegation.⁴⁷ Concretely, the institutions are expected to contain a number of bilateral and/or regional regulations dealing with the environmental protection of shared Arctic waters including the Barents Sea (shared between Norway and Russia), the Beaufort Sea (US and Canada), the Chukchi and Bering Sea (US and Russia) and the Baffin Bay area (Greenland and Canada). Multilateral regulations should include the wider Arctic Ocean including at least the five Arctic coastal states, but preferably also the other Arctic states and non-Arctic states interested in Arctic hydrocarbon development.

What institutions exist and with what characteristics?

Eleven institutions relevant for regulation of Arctic energy resources activities in relation to environmental protection were analysed with respect to

- their membership scope (international/multilateral, regional, bilateral),
- when they were signed and adopted, and when they entered into force,
- which of the A5 are parties to them,
- if they are a regulation or a convention,
- their values for obligation, precision and delegation, and
- their Arctic geographical scope.⁴⁸

International institutions

A first relevant international institution is the 1982 United Nations Convention on the Law of the Sea (UNCLOS), which confers responsibility for the protection and preservation of the marine environment upon the coastal states. All Arctic littoral states are parties except the US. With the exception of Part XI, the US however recognises and adheres to UNCLOS' core provisions as part of international customary law. As the binding character, the frequent use of

⁴⁶ Referring to the Arctic on these issues, see Young, *Arctic Governance: Emerging Challenges*, "Whither the Arctic?", and "Review article".

⁴⁷ Martin, "Interests, power, and multilateralism", 770; Zürn, *Interessen und Institutionen*, 202 f.

⁴⁸ For a detailed overview of this institutional analysis, see Keil, *Cooperation and Conflict in the Arctic*.

the word 'shall', and the formal rules concerning signature, ratification and entry in force (Part XVII, Art. 305 ff.) suggest, UNCLOS has high values for legal obligation.

With 320 articles and nine annexes, UNCLOS has a very wide scope. This comes at a cost in terms of precision, given that the convention applies to all the world's oceans and seas. However, UNCLOS rules are also characterised by high levels of coherence and often required or prohibited behaviour is spelled out elaborately. Still, there is comparatively little room for specific maritime rules, for example concerning the polar regions, which are areas characterised by rather special and unique features. Part XII provides generally applicable rules governing marine environmental pollution which also apply to offshore oil and gas activities. As Elferink and Rothwell emphasise, "notwithstanding the tremendous significance for both polar regions of their respective maritime spaces, it remains a curiosity that the law of the sea has failed to address the unique issues which arise in these regions."⁴⁹ Thus, UNCLOS' precision level is only ranked medium in relation to environmental issues of Arctic oil and gas development.

UNCLOS provides a rather comprehensive and binding procedure for the settlement of disputes between states (Part XV).⁵⁰ Because of some important exceptions for sensitive cases involving national sovereignty or military activities (Art. 297(3a), 298), however, UNCLOS's delegation value in terms of dispute resolution is considered medium. Concerning rule making and implementation, UNCLOS ranks rather high since it has an Authority and an International Tribunal for the Law of the Sea to manage The Area. The Division for Ocean Affairs and the Law of the Sea of the United Nations Office of Legal Affairs provide assistance to states and monitoring. Implementation rests largely with the state parties (Art. 207 ff. and Art. 213 ff.), but their leeway is constrained by the frequently employed provision that national rules shall be no less effective than international rules. UNCLOS also demands that states report their monitoring and environmental assessment efforts (Art. 204 f.). Given that UNCLOS has codified many customary law provisions, it can be expected to exert a certain compliance pull on parties aiming to promote themselves as trustworthy members of the international community. Delegation in terms of rule-making and implementation is thus medium/strong.

A second relevant international institution is the 1990 International Convention on Oil Pollution Preparedness, Response and Cooperation (OPRC),⁵¹ established under the umbrella of the International Maritime Organisation (IMO), which entered into force in 1995. This Convention requires parties to establish necessary measures to prepare for and respond to an oil pollution incident (Art. 1, 4, 7). All Arctic states are parties. The Convention only applies to commercial shipping, excluding warships or any non-commercial ship owned or operated by a state (Art. 1(3)). The provisions have binding effect, which is reflected in the frequent use of the word 'shall' and the legal formalities required. Obligation is thus medium/high.

OPRC shows medium levels of precision because it leaves wide areas of interpretation for the parties. Although the Convention covers oil pollution not only from ships but also from offshore units, sea ports and oil handling facilities (Art. 3), it only calls for minimum standards of national preparedness and response (Art. 6). International cooperation is only "subject to capabilities and the availability of relevant resources" and "when the severity of such incident so justifies" (Art.

⁴⁹ Elferink and Rothwell, *The Law of the Sea*, 338.

⁵⁰ http://www.un.org/depts/los/convention_agreements/texts/unclos/unclos_e.pdf

⁵¹ [http://www.imo.org/About/Conventions/ListOfConventions/Pages/International-Convention-on-Oil-Pollution-Preparedness,-Response-and-Co-operation-\(OPRC\).aspx](http://www.imo.org/About/Conventions/ListOfConventions/Pages/International-Convention-on-Oil-Pollution-Preparedness,-Response-and-Co-operation-(OPRC).aspx)

7). The characteristics of the necessary oil pollution emergency plans are not elaborated. The parties only “agree to encourage [...] the development of standards for compatible oil pollution combating techniques and equipment” (Art. 8(4)). No specific provisions on the Arctic are included.

The Convention does not refer to any dispute resolution procedure. Thus only the general obligation holds by which the parties as subjects of international law are obliged to refer to peaceful means of conflict resolution pursuant to Art. 2(3) and 33 of the UN Charter. The Convention does not provide any centralised enforcement authority to the IMO or any other international body. The Convention also leaves assessment and subsequent actions to be taken in response to an oil spill completely in the hands of the state parties (Art. 5). Because of the limited role of the IMO, rule making and implementation is medium/weak.

Regional institutions

The most ‘direct’ regional institution is the Agreement on Cooperation on Marine Oil Pollution Preparedness and Response in the Arctic,⁵² negotiated under the auspices of the Arctic Council and signed by all Arctic Council members in May 2013. The Agreement is not in force yet. It generally applies to the waters within A8⁵³ jurisdiction but the core provisions also apply to areas beyond state jurisdiction (Art. 3). The Agreement only applies to commercial ships. The frequent use of ‘shall’ and the institutional formalities indicate high obligation, but some weaker formulations also exist like in Art. 7 where parties “shall endeavor to undertake appropriate monitoring activities”, and in Art. 11 where parties “shall make best efforts to conduct a joint review” of response operations. Further, “[i]mplementation of this Agreement [...] shall be subject to the capabilities of the Parties and the availability of relevant resources” (Art. 15(2)). Also the Appendices are not an integral part of the Agreement and explicitly not legally binding (Art. 20), which is especially noteworthy for Appendix IV, which contains operational guidelines. Obligation is thus medium.

The agreement has 23 articles and five appendices, of which appendix IV is a 59-page document containing detailed operational guidelines. The aim of the agreement 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” (Art. 1), and it includes definitions with a wide application (Art. 2). It acknowledges the polluter pays principle as “a general principle to be applied” and is mindful of “precautionary measures” to avoid oil pollution. Art. 4 calls for national response systems with minimum requirements but no further information about what exactly such minimum standards have to provide. A further focus is on national authority and 24-hour contact points to react and render assistance (Art. 5, Appendices I-III). Precision is thus medium/high.

The agreement merely states that parties shall resolve disputes through “direct consultations” (Art. 18), no central or centralised enforcement authority is established. The focus of the agreement is on national responsibility for oil spill preparedness and response (Art. 4). National

⁵² <http://www.arctic-council.org/eppr/agreement-on-cooperation-on-marine-oil-pollution-preparedness-and-response-in-the-arctic/>

⁵³ A5 plus Finland, Iceland and Sweden.

parties have to establish if an incident is an oil pollution incident or not and which steps are necessary “within available resources” (Art. 6(1)). Delegation is thus weak.

Another regional institution is the Arctic Council Arctic Offshore Oil and Gas Guidelines,⁵⁴ developed under the auspices of the Arctic Council’s Protection of the Arctic Marine Environment Working Group (PAME). The Guidelines were first adopted in 1997 and revised in 2002 and 2009. They apply to the Arctic areas of the eight Arctic Council states, which includes the five Arctic littoral states and all Arctic offshore waters.

Obligation is low given that the document’s recommendations, standards and best practices are not legally binding. Despite only aiming for minimum standards “to protect the Arctic marine environment from unwanted environmental effects caused by offshore oil and gas activities” (preamble), which leaves the state parties discretion to take further steps on the national level, the Guidelines provide a rather elaborate list of recommendations for Arctic oil and gas activities, including related onshore activities. While not providing for very explicit and stringent behavioural rules, the precautionary approach, the polluter pays principle and sustainable development are included as general principles for Arctic oil and gas activities. Another factor contributing to the high level of precision is the strong coherence of the separate chapters. Concerning delegation, no mention is made of dispute settlement, nor are rule making and implementation centralised in an international body.

Another regional instrument applicable to oil and gas activities is the Convention for the Protection of the Marine Environment of the North-East Atlantic (also called the OSPAR Convention),⁵⁵ which entered into force in 1998. Of the Arctic countries, Denmark, Finland, Iceland, Sweden and Norway have signed and ratified the Convention, so only Denmark and Norway of the littoral states.⁵⁶ The OSPAR area is divided into five regions,⁵⁷ one of them, region I, called ‘Arctic waters’, includes the Norwegian part of the Barents Sea, the Greenland and Norwegian Seas, and the Denmark Strait.

In comparison to other conventions, OSPAR includes increased coverage, the precautionary principle, best available techniques, and best environmental practices. The five annexes and three appendices contain detailed information concerning pollution from various sources, limiting parties’ room for interpretation. The most relevant part of the Convention for Arctic oil and gas exploitation is Annex III, which deals with prevention and elimination of pollution from offshore sources, including prohibition of waste dumping (Art. 3, 6 Annex III), regulations for emissions (Art. 4, Annex III) and the dismantling of disused offshore installations.⁵⁸ Arctic waters are identified as a separate region within the northeast Atlantic, and concrete provisions are given concerning Arctic oil and gas activities. Precision is thus high.⁵⁹ The Convention’s provisions

⁵⁴ <http://arcticportal.org/uploads/F7/aC/F7aCQhSrOfC4y9XIaHWZpw/Arctic-Guidelines-2009-13th-Mar2009.pdf>

⁵⁵ http://www.ospar.org/html_documents/ospar/html/OSPAR_Convention_e_updated_text_2007.pdf

⁵⁶ Given the regional character of the Convention, the non-participation of the US, Canada and Russia makes sense, although extended cooperation would be reasonable given the transboundary effects of activities in the North-East Atlantic.

⁵⁷ See map at http://www.ospar.org/content/regions.asp?menu=00020200000000_000000_000000.

⁵⁸ See the OSPAR Decision 98/3 on the Disposal of Disused Offshore Installations available at <http://www.ospar.org/documents/dbase/decres/decisions/od98-03e.doc>, accessed 3 November 2014.

⁵⁹ This is in line with Warner (*Protecting the Oceans*, 199) who has coined especially Annex V to the OSPAR Convention as one of “the most detailed and comprehensive legal and policy instrument [...] for integrated environmental protection of a substantial marine area beyond national jurisdiction at the regional level.”

have legally binding status. Importantly, contracting parties are obliged to apply the precautionary principle, the polluter pays principle and to ensure that they use the best available technology.⁶⁰

The OSPAR Commission has certain rule-making authority and compliance supervision competencies indicating high levels of delegation for rule making and implementation. The Commission supervises the Convention's implementation, receives reports from the state parties and may "call for steps to bring about full compliance with the Convention" (Art. 22, 23). It reviews the effectiveness of adopted measures, may adopt proposals for the amendment of the Convention (Art. 10), and has the competence to adopt legally binding decisions.

Art. 32 outlines a detailed dispute settlement procedure including the option to submit a dispute to an arbitral tribunal, whose award "shall be final and binding upon the parties to the dispute." Dispute resolution is thus medium.

A final relevant regional institution is the 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 from 1993.⁶¹ The Agreement applies to the parties' internal and territorial waters, continental shelves and EEZs (Art. 2), which includes the Arctic waters of Greenland, Iceland and Norway. Obligation of the Agreement is at medium levels. The frequent use of the word 'shall' indicates some binding obligations for the parties but generally the parties merely "undertake to cooperate in the protection of the marine environment" (Art. 1). While not providing provisions for ratification, Art. 15 determines the Agreement's entry into force and there is the possibility to amend and denounce the Agreement.

Precision is medium. Large areas of discretion exist especially because the parties themselves are responsible for monitoring their respective waters (Art. 3), they only "undertake to cooperate in the protection of the marine environment" (Art. 1), and they "shall endeavour to develop cooperation in the field by formulating plans and guidelines" (Art. 13). More precise rules concern the enabling and facilitating of cross-border activities (Art. 9), reimbursement of expenses (Art. 11), and compensation for damages (Art. 11).

No reference is made to a specific dispute settlement. Art. 11 merely states that in connection to compensation for damages "[t]he requesting Party shall be required to participate in any legal proceedings or to negotiate an out-of-court settlement". No central body with rule-making and/or implementation competencies is created, no centralised decision-making takes place, and the implementation of the Agreement is left entirely to the state parties.

Bilateral institutions

On the bilateral level, the 1983 Agreement Between the Government of Canada and the Government of the Kingdom of Denmark for Cooperation relating to the Marine Environment⁶² aims at the prevention, reduction and control of pollution of the marine environment resulting from offshore installations. The Agreement covers the Arctic marine area between Canada and Greenland consisting of Nares Strait, Baffin Bay and Davis Strait (Art. I (a)).

⁶⁰ Tromp and Wieriks, "The OSPAR Convention", 624.

⁶¹ http://untreaty.un.org/unts/144078_158780/10/5/3331.pdf

⁶² http://untreaty.un.org/unts/60001_120000/12/2/00022093.pdf

For the same reasons as the regional agreement outlined before, obligation is at medium levels. It is noteworthy that the whole area covered by the Agreement is located in the Arctic, thus the Agreement contains rules specifically framed for Arctic areas. Relatively precise provisions for state action are included, and a joint contingency plan for pollution incidents resulting from offshore hydrocarbon exploration and exploitation (Annex A.) However, the Agreement's main provisions remain rather broad. Although Art. V requires that the parties' offshore installations have the least possible negative effect on the marine environment, no details are given on how this should be achieved. While Annex A provides detailed rules of behaviour in the event of a pollution incident, it does not outline rules for the prevention thereof. Art. XIII refers to the settlement of disputes, including the option of an ad hoc tribunal but no mention is made of the binding nature of a decision taken by the tribunal, thus dispute resolution is medium/weak. No centralised rule-making or enforcement authority exists, the implementation of the Agreement is entirely left to the state parties, and no monitoring or compliance provisions exist.

There is also an Agreement Between the Governments of the Kingdom of Norway and the Russian Federation on Cooperation in Environmental Matters⁶³ from 1992, renewing the original agreement from 1988. The geographical scope of the collaboration is the Barents region. Obligation is low given that the parties agree to cooperate on environmental protection (Art. I), may agree on cooperation in the environmental field on the basis of this Agreement (Art. II), and encourage the creation and development of contacts and cooperation between both countries (Art. IV).

The Agreement touches upon a wide array of environmental protection issues, and prevention of environmental accidents (Art. II). Art. III explicitly outlines implementation measures. A concrete project launched under the auspices of the Agreement is the BarentsPortal to strengthen information exchange.⁶⁴ Although concrete provisions such as the commercial and legal aspects of cooperation are given, the broad scope of the Agreement leaves substantial leeway for its concrete implementation. Precision is thus medium.

No dispute settlement procedure is included. A Joint Norwegian-Russian Commission on Environmental Protection was established (Art. VI), which prepares proposals for concrete actions and gives policy guidance. In 2005 a Norwegian-Russian working group on marine environmental cooperation was established and in 2009 a working group on pollution. There is also a Norwegian-Russian expert group for investigating radioactive contamination in the northern areas. The implementation of the Agreement rests with the two parties; according to Art. III the parties should exchange information about the state and the fulfilment of their obligations. Rule-making and implementation is thus medium.

Two more bilateral agreements are of relevance to Arctic oil and gas exploitation. One is the 1989 Agreement Between the United States and the Soviet Union Concerning Cooperation in Combating Pollution in the Bering and Chukchi Seas in Emergency Situation⁶⁵ and the other the 1994 Agreement Between the Government of the Kingdom of Norway and the Government of

⁶³ <http://lovdata.no/traktater/index.html>

⁶⁴ http://www.barentsportal.com/barentsportal09/index.php?option=com_content&view=article&id=472&Itemid=28&lang=en.

⁶⁵ http://www.akrrt.org/mou/Kp-US_USSR_89.pdf

Russian Federation on Cooperation and Response to Oil Pollution in the Barents Sea.⁶⁶ They are analysed together as they both contain very similar, in large part identical provisions. The 1989 US-Russia Agreement evidently served as a model for the 1994 Norway-Russia Agreement.⁶⁷

Obligation is medium. On the one hand, the parties “shall develop the Joint Contingency Plan Against Pollution in the Bering and Chukchi Seas” and they “commit themselves to the development of national systems that permit detection and prompt notification of [...] pollution incidents” (Art. I, III).⁶⁸ On the other hand, the Joint Contingency Plan “can only be undertaken when the competent authorities of the Parties agree” (Art. VIII 1989, Art. IX 1994). Consequently, while there is an obligation to develop a Joint Plan, there is no obligation to make use of it in the case of a pollution incident.

As the 1989 Agreement covers Arctic and sub-Arctic waters of the US and Russia (Bering and Chukchi Seas), and the 1994 Agreement the Norwegian and Russian Barents Sea, the Agreements’ provision can be expected to fit Arctic conditions. The parties commit themselves to notify each other of pollution incidents and to provide means to minimise adverse effects on the environment (Art. III).⁶⁹ They agreed to exchange information and to periodically conduct joint pollution response exercises and meetings (Art. IV, XI 1989). But the parties commit themselves to national notification systems only “consistent with their means” and to provide means to minimise adverse environmental effects “within their power” (Art. III). Nevertheless, the Agreements’ main issue are the Joint Contingency Plans Against Pollution in the Bering and Chukchi Seas and the Barents Sea respectively, for which detailed behavioural provisions are given. Precision is thus high. No reference is made to dispute resolution. The implementation of the Joint Contingency Plans is left entirely to the parties (Art. V).

Through an exchange of notes,⁷⁰ the US and Canada concluded an Agreement relating to the establishment of joint pollution contingency plans for spills of oil and other noxious substances in 1974, which was revised in 1984 and 2003.⁷¹ Initially, the plan only covered the Great Lakes area but in 1984 four more regions were included, among them US and Canadian Arctic waters in the Beaufort Sea. The Agreement aims to provide a coordinated system for planning, preparedness and responding to harmful substance incidents in the contiguous waters.

Obligation is low given that the core of the Agreement is the joint plan, which is not intended to be legally binding. It “facilitates [...] coordination of response activities” (103.2) and “procedures for consultation between the Parties on response actions” (103.3). The Joint Response Teams are only convened at request of either party, and “a coordinated response may be activated or deactivated” (403.1). Precision is also low because large areas of discretion remain. The joint plan only supplements national response systems, the issue of funding is left to the state parties (801)

⁶⁶ Ministry of Foreign Affairs Norway, Avtale Mellom Regjeringen i Kongeriet Norge og Regjeringen i den Russiske Føderasjon angående Samarbeid om Bekjempelse av Oljeforurensning i Barentshavet.

⁶⁷ Where the provisions are basically identical, the analysis refers to the 1989 provisions because they are in English in the original language in contrast to the 1994 Agreement whose original languages are Norwegian and Russian.

⁶⁸ The 1994 Agreement is weaker in Art III by stating that parties “påtår seg”, i.e. *undertake to* develop national systems.

⁶⁹ The 1994 Agreement has an additional provision that the 1989 does not have, which is Art. IV saying that each party shall immediately alert the other in case of an oil pollution, which can affect the other party.

⁷⁰ Exchange of Notes between the Government of Canada and the Government of the United States of America concerning a Joint Marine Pollution Contingency Plan, 1974, <http://www.treaty-accord.gc.ca/text-texte.aspx?id=101890>

⁷¹ Canada-United States Joint Marine Pollution Contingency Plan (JCP), 2003, http://www.ccg-gcc.gc.ca/folios/00025/docs/canadaus_pub-eng.pdf

and the five response phases, which are to be taken to respond to a harmful substance incident, remain vague.

The plan merely states that any disputed issue should be solved “consistent with the respective laws of the relevant Party” (405). No independent bodies were created for rule making and implementation. The plan relies on national legislation for implementation (203.2) and, while Joint Response Teams are established, they only “give advice, counsel to facilitate, prepare reports and recommendations, and provide advisory support” (304.5). Similar to the previous agreements, the joint plan is a convention because any joint action is contingent upon parties’ approval.

Table 1: Institutions relevant for Arctic energy resources and environmental protection

Table 1. Institutions regulating Arctic energy development in relation to environmental protection

Scope	Institution	Signed/adopted	In force	A5 parties	Kind (regulation, convention)	Obligation (high, low)	Rule precision (high, low)	Delegation (dispute resolution) (strong, weak)	Delegation (centralization) (strong, weak)	Arctic geographical scope
International/ Multilateral	United Nations Convention on the Law of the Sea (UNCLOS)	1982	1994	CAN, RUS, NOR, DEN, (US)	Regulation	High	Medium	Medium	Medium/Strong	All Arctic waters
	International Convention on Oil Pollution Preparedness, Response and Co-operation (OPRC)	1990	1995	US, CAN, RUS, NOR, DEN	Regulation	Medium/High	Medium	Weak	Medium/Weak	All Arctic waters
Regional	Agreement on Cooperation on Marine Oil Pollution Preparedness and Response	2013	Not in force	US, CAN, RUS, NOR, DEN	Convention	Medium	Medium/High	Weak	Weak	All Arctic waters
	Arctic Council Arctic Offshore Oil and Gas Guidelines	1997, updated in 2002 & 2009	-	US, CAN, RUS, NOR, DEN	Convention	Low	High	Weak	Weak	All Arctic waters
	Convention for the Protection of the Marine Environment of the North-East Atlantic (OSPAR)	1992	1998	NOR, DEN	Regulation	High	High	Medium	Strong	Norwegian part of Barents Sea, Greenland & Norwegian Sea, Denmark Strait
Bilateral	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	1993	NOR, DEN	Convention	Medium	Medium	Weak	Weak	Denmark Strait, parts of Norwegian and Greenland Sea
	Agreement between Denmark and Canada for Cooperation Relating to the Marine Environment	1983	1983	DEN, CAN	Convention	Medium	Medium	Medium/Weak	Weak	Nares Strait, Baffin Bay, Davis Strait
	Agreement Between Norway and Russia on Cooperation in Environmental Matters	1988, updated 1992	1992	NOR, RUS	Convention	Low	Medium	Weak	Medium	Barents Sea
	Agreement Between the US and the Soviet Union Concerning Cooperation in Combating Pollution in the Bering and Chukchi Seas in Emergency Situations	1989, updated 1997	1989	US, RUS	Convention	Medium	High	Weak	Weak	Bering and Chukchi Seas
	Agreement Between Norway and Russia on Cooperation and Response to Oil Pollution in the Barents Sea	1994	1996	NOR, RUS	Convention	Medium	High	Weak	Weak	Barents Sea
	Agreement relating to the establishment of joint pollution contingency plans for spills of oil and other noxious substances	1974, updated in 1984 & 2003	1974	US, CAN	Convention	Low	Low	Weak	Weak	Beaufort Sea

Table 2: Overview of institutions as regulations or conventions and according to obligation, precision and delegation values

Institutions which are	
Regulations	3
Conventions	8

Institutions with	
Medium/high to high obligation	3
Medium obligation	5
Medium /low to low obligation	3

Institutions with	
Medium /high to high precision	5
Medium precision	5
Medium /low to low precision	1

Institutions with	
Medium /strong to strong delegation (dispute settlement)	0
Medium delegation (dispute settlement)	2
Medium /weak to weak delegation (dispute settlement)	9

Institutions with	
Medium /strong to strong delegation (centralisation)	2
Medium delegation (centralisation)	1
Medium /weak to weak delegation (centralisation)	8

To recapitulate, appropriate institutions for environmental protection in relation to Arctic energy development should have high obligation, precision and delegation values. The analysis shows varying degrees of obligation values. Five institutions have medium/high to high precision values, and another five have medium levels. The medium values weigh heavily on the negative side, however, since they are mostly due to the lack of Arctic-specific provisions, which are crucial given the specific environmental and climatic conditions in the Arctic. No institution has strong values for dispute settlement, and a majority also have weak values for centralisation; exceptions are OSPAR and UNCLOS. If bodies or bureaucracies are established within an institution, these are usually endowed with either no or only very limited rule-making and implementation competencies.

OSPAR and UNCLOS seem to have the most fitting values. OSPAR is especially strong because of its high value for precision. UNCLOS' appropriateness is impeded by the lack of Arctic-specific provisions. This leaves OSPAR as the only institution with fitting values for nearly all criteria. Geographically, this means that, of the areas identified as especially important, only the Norwegian part of the Barents Sea is covered by institutions with appropriate characteristics. However, the Arctic waters of the Greenland and Norwegian Seas and the Denmark Strait are also covered by OSPAR. Of the Arctic countries, Denmark, Finland, Iceland, Sweden and Norway have signed and ratified the Convention, so only Denmark and Norway of the five Arctic coastal states. Given the regional character of the Convention, the non-participation of the US, Canada and Russia makes some sense, although extended cooperation – especially with Russia and Canada – would be reasonable given the transboundary effects of activities in the northeast Atlantic.

While this is good news in the sense that the Norwegian part of the Barents Sea already has a high level of exploration and development activity, other areas are seeing increasing activities and development plans, especially Russia's but also Canada's and Greenland's Arctic waters.

While for the Bering, Chukchi and Barents Seas, institutions with high and medium precision levels are available, they suffer from only medium obligation and weak delegation values. Similarly, the Arctic Council Arctic Offshore Oil and Gas Guidelines have high precision and cover all Arctic waters but the institution is a convention with low obligation and weak delegation. Institutions covering the Nares Strait, Baffin Bay and the Davis Strait only have medium obligation and precision values and are weak on delegation. The only institution covering the Beaufort Sea area has weak and low values on all criteria.

From a positive angle, while only a small geographical area is covered by institutions with appropriate characteristics, all important Arctic areas are covered by institutions, which means there is already a basis on which to build and possibly to reform to fit the potential conflict situations. Furthermore, some institutions have high or medium levels on at least some of the criteria (such as the Agreement on Cooperation on Marine Oil Pollution Preparedness and Response with high precision, covering all Arctic waters and, once in force, binding for all five Arctic coastal states, and OPRC, which is a regulation covering all Arctic waters and including many parties, including all Arctic states). What is noticeable, however, are the frequent medium levels of precision, mostly due to the lack of Arctic-specific provisions. This is definitely an area in dire need of reform and improvement, given the special and potentially quickly changing environmental and infrastructure conditions in the Arctic. The other reform potential is surely in the area of delegation competencies, which are weak for the majority of institutions.

Conclusion

This article refutes the often-held claim that the Arctic is an area characterised by anarchy since there is no Arctic Treaty that resembles the Antarctic Treaty System. Instead, there are a number of international, regional and bilateral cooperation agreements for the regulation of Arctic oil and gas activities to prevent harmful effects on the Arctic environment. However, this analysis shows

that it is not the mere existence of an institution that needs to be the focus of attention but also its characteristics and their appropriateness for containing or regulating a potential conflict situation. In this respect, the analysis shows that the institutions with relevance for the regulation of Arctic energy resource activities in relation to transboundary environmental protection leave much to be desired in terms of respective values and geographical coverage. Only the Norwegian part of the Barents Sea is covered by institutional rules and provision with appropriate characteristics (through the OSPAR Convention). All other geographical areas identified as crucial in the sense of ongoing or planned Arctic offshore oil and gas activities are covered by international, regional and/or bilateral institutions that have partially or entirely unsuitable characteristics. Especially worrisome is the frequent lack of Arctic-specific provisions, lowering the value of precision for many institutions, and the generally weak values for delegation.

These Arctic-specific findings are in line with international regulation of oil and gas activities more broadly, which tends to be rather weak wherever it occurs. Energy policies more generally, including investment, trade and decisions on energy mix, are usually firmly in the hands of national regulators and not delegated to broader regional and global levels.⁷²

The findings suggest that conflicts between affected actors could arise, given the limited adequacy of many institutions to contain a possible conflict situation in transboundary environmental incidents. Yet, institutions and their characteristics are surely not the only determinants of whether a conflict situation will be handled cooperatively or confrontationally. But the above analysis can provide one piece of the puzzle when aiming to determine what kind of institutions are needed for the successful regulation of the Arctic region.

Due to limitations on scope and space, this article did not include an analysis of the effectiveness of the institutions in question, but rather focused on their characteristics and adequacy for containing possible conflict situations posed by transboundary environmental accidents. Given the low numbers of institutions showing the appropriate characteristics, the analysis suggests rather low effectiveness of a majority of these institutions. However, a thorough analysis of this aspect of the institutions needs to be conducted in order to provide more solid conclusions, even though this may be hard to achieve, due to the paucity of test cases and the immaturity of oil and gas development in many Arctic waters. Fragmentation of the existing institutional framework is another question that deserves further scrutiny.⁷³

Finally, this discussion did not include the general concern about what increasing oil and gas exploration and exploitation (not only in the Arctic, but all over the world) mean in terms of greenhouse gas emissions and, thus, for the future of the global climate and the Arctic climate specifically. A crucial challenge beyond the Arctic marine and coastal environmental dangers and their potential to lead to conflict between Arctic actors is the need to get away from fossil fuel-driven economies. The upcoming COP 21 negotiations in Paris in late 2015 will hopefully provide a path towards this goal. In the end, Arctic oil and gas resources might not be only a great danger to the Arctic environment and a potential reason for conflict between Arctic states.

⁷² The author would like to thank an anonymous reviewer for pointing out this issue.

⁷³ Humrich, "Fragmented International Governance".

Ultimately, they – together with all other oil and gas development endeavours – run counter to a much-needed long-term strategy for protecting the planet’s climate.

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