

Arctic Oil & Gas Development: The Case of Greenland

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Despite the fact that not a single barrel of Greenlandic oil was ever extracted, refined and consumed in or exported from Greenland, hydrocarbon has nevertheless played a significant role in contemporary economical, environmental, and political discourses. Not least as a key political issue in Greenland as well as between Greenland and Denmark is the discourse about Greenland's development from a colony to Self-Governance (2009) via status as a Danish county (1953) and Home Rule (1979). One of the article's foci is how the discourse about and the gradual acknowledgement of the Greenlanders' rights to the Greenland subsurface has been an important part of Greenlandic nation building. Furthermore, visions for an independent Greenland have been fuelled by the hopes for 'a shortcut' via discoveries of oil and gas that eventually could compensate for the Danish block grant and pave the way for an independent Greenland. In 2012 Greenland Self-Governance took over the full authority of mineral resources including oil and gas. 2012 was also the year following explorative drillings of eight wells that were all dry. The following years were characterised by a rapidly declining interest from the oil industry in developing hydrocarbon activities in Greenland waters and demonstrated Greenland's dependency on the international market for oil. Greenland being part of a globalised world also became apparent when Greenland was confronted with, for instance, environmental concerns caused by Greenland's wish to be an oil-producing country. Conflicting interests internationally were also reflected in the results based on a national survey on attitudes to, perceptions of as well as hopes and concerns related to oil development. Some results are presented in the article.

Introduction

The Greenland history of petroleum exploration activities dates back to the mid-1970s when the Danish state planned to initiate oil exploration. The plans were met by concerns by many Greenlanders not least because of the potential impacts on the natural environment, on marine mammals and fisheries and on traditional ways of living.

Despite the lack of economic benefits from petroleum exploration activities so far, Greenlandic discourse about oil and gas is, however, significant in different ways – not least because future petroleum exploration activities to some are seen as potential drivers for economic self-sufficiency and thus developing a key precondition for Greenland being politically independent from Denmark and a sovereign state.

The existence of a national oil and minerals strategy from 2014-2018 and the plans of the Greenland government to update the strategy despite the actual lack of interest from the large international oil companies indicate that different government coalitions both have been and are

determined to include petroleum exploration activities in their economic development strategies. At the same time there is a considerable public concern that petroleum exploration and possibly production in case of a discovery, especially in Arctic waters, might cause environmental disasters and disturbances to the marine environment.

The article will focus on different aspects of Greenland's oil and gas discourse over time including how the focus on oil and minerals has been a key element in Greenlandic nation building, Greenland's oil and mineral strategies and economic development policies. It will further include some results from a Greenland public opinion research study focussing on perceptions, trust and important factors in decision making concerning petroleum exploration activities.

Arctic Oil and Gas Experiences in Brief¹

The first Arctic oil field was developed in the Canadian Arctic at Norman Wells in the Mackenzie Valley in the 1920s, following which exploration was conducted in Alaska, the Canadian and the Russian Arctic. Several decades passed, however, until commercial production started in other parts of the Arctic as for instance in the Timan-Pechora Basin in the Russian North; the North Slope in northern Alaska (since 1974); Northwest Territories/Yukon in the Canadian Arctic and offshore Norway (the Norwegian Sea and since 2015 the Barents Sea) (AMAP, 2010: 2_13-2_172).

Most Arctic regions have, for a shorter or longer period of time, been affected by petroleum activities; but not necessarily the whole process from exploration to production. In addition the preparatory processes vary between states, countries, and regions but often include public information meetings, hearings or consultation processes based on different kinds of reviews such as environmental and social impact assessments.

Whereas Denmark has been an oil producing country since the 1970s, neither of the Arctic parts of the Danish Kingdom, Greenland and the Faroe Islands, have experiences with petroleum activities beyond oil exploration. The Faroe Islands had a number of exploration drilling activities offshore in the first decade of the 21st century (Denmark, Greenland and the Faroe Islands, 2011).

Greenland has had offshore exploration drilling activities in the 1970's and most recently in 2010 and 2011 in the Davis Strait between Greenland and Canada. Furthermore, onshore explorations have been carried through in Central East Greenland in the 1980s. Neither of the exploration drilling activities, however, led to discovery of hydrocarbons at any commercially viable scale.

Hydrocarbon Exploration in Greenland: Early Days²

Hydrocarbon exploration in Greenland dates back to 1939 where the interest was focused on the Nuussuaq Peninsula. The interest in the Nuussuaq Peninsula and Disko Island region, onshore as well as offshore, has remained and manifested in a number of geological exploration campaigns including seismic acquisition, mapping and exploration drillings (1966-1978 and 1993-2000).

Since the late 1960s a number of fieldwork and core drilling activities have been carried out to develop relevant geo-information related to, for instance seabed features and petroleum systems to expand the knowledge and understanding of the Greenland petroleum geology. These activities have been carried out primarily (but not solely) by the Geological Survey of Greenland (GSGU)/the Geological Survey of Denmark and Greenland (GEUS)³ to stimulate the interest of the oil and gas industry.

The 1970s: Hydrocarbons and Home Rule

Rights to the Greenland Subsurface: Mineral Resources Including Hydrocarbon – A Key Political Controversy Unsolved in the Act of Home Rule

The ownership of and the rights to ‘mineral resources’ (including both oil and gas, gemstones and other minerals) has, since the 1970’s, been a prominent theme in all discussions about Greenland’s road towards still more economic and political self-determination and in the political movement towards Greenland Home Rule it is fair to say that this controversy was a significant driver in its own right.

The judicial point of departure was a Royal Decree from 1935⁴ stating that ‘All mineral resources in Greenland belong to the State’. The Legal Act of Mining that substituted the Royal Decree in 1965 contained the same wording (Nielsen & Larsen, 1985).

In 1975 the Danish state granted licenses to explorative drillings⁵ on the fishing grounds off and north of Sisimiut. This led to protests because of concern that the environment might suffer from exploration activities. Protests also included an occupation of the Ministry of Greenland Affairs in Copenhagen by ‘Unge Grønlænderes Råd’ (the Association of young Greenlanders) as the young Greenlanders feared that the Danish state might profit from a potential oil development at the expense of Greenland (Sejersen, 2014: 17). 1975 was also an election year and in both the Danish Parliament and the Greenland provincial council election campaigns, the property rights to the subsurface was in focus (Sejersen, 2014: 63).

A unanimous decision by the Greenland provincial council in 1975 following the election stated that the Greenland subsurface should belong to the permanent residents of Greenland. This decision was targeted at the discussions of the, then recently (October 1975), established joint Danish-Greenlandic Home Rule Commission (Skydsbjerg 1999; Frandsen et al., 2017)

The Danish position on the ownership to the subsurface was made perfectly clear by the Danish Premier, Anker Jørgensen who, in an interview with Greenland Broadcasting in 1976, indicated that having the title/proprietary rights to the Greenland subsurface/subsoil would mean a definitive split between Greenland and Denmark and, following, that Greenland would have to become economically self-sufficient (ibid.). The Danish stance was – at least partly – based on the expectation that mineral resource earnings might eventually result in compensating the Danish state part of the expenses related to Greenland.⁶ Furthermore, there was a hope that oil discoveries in or around Greenland might contribute to the Danish energy consumption.⁷

The Greenland position was not least based on the quest for being economically self-reliant as a means of becoming more politically independent and the struggle can be seen as an important part of the Greenland nation-building.

The disagreement was discussed at length in the Commission concluding that ‘(t)he resident population of Greenland has fundamental rights to Greenland’s natural resources.’ (Act No. 577, 1978: Section 8, 1).⁸ This wording was a compromise as the Greenland delegation in the commission had strongly argued for a wording stressing ‘... **the** fundamental rights ...’ (author’s accentuation) (Dahl 1986: 91-92; Nielsen & Larsen, 1985: 100).

The Commission report stated, however, that the term ‘fundamental rights’ was merely a declaration of political principles than based on a judicial foundation (Frandsen et al., 2017; Kommissionen om hjemmestyre i Grønland, 1978: bind I: 107) and according to Nielsen and Larsen the chairman of the commission later emphasized that the wording had a moral but hardly a judicial content (Nielsen & Larsen, 1985: 100).

This compromise, concluding the, probably, most complicated and conflictual part of the Home Rule Commission’s negotiations, was – as a part of the Home Rule Act – adopted by the Danish Parliament in 1978 and by a Greenland referendum in 1979 whereas all other aspects related to mineral resources in Greenland including rules of procedure, political decisions, and administration was regulated in legislation decided by the Danish Parliament.⁹

The significance of the mineral resource discourse in the 1970s – not least based on the on-going debates about the power to grant oil exploration licenses and the potential environmental impacts on marine resources – was also mirrored in the formation of Greenland parties in the process towards the establishment of Home Rule. Three political parties were founded: Siumut (a social democratic party) in 1977, Atassut (a liberal conservative party), and Inuit Ataqatigiit (IA) (a socialist oriented party) both founded in 1978. The latter of the parties, Inuit Ataqatigiit (IA) advocated for a self-reliant and independent Greenland but campaigned against the Home Rule arrangement because the rights of the people of Greenland to the subsurface/subsoil was not recognised (Skydsbjerg, 1999).

Whereas the Greenland Home Rule Act did not meet the demand for Greenland’s right to the subsurface the acknowledgement of ‘fundamental rights’ and the establishment of a Joint (Danish-Greenland) committee on Mineral Resources in Greenland¹⁰ might be perceived as ‘a step forward’. The appointment of a ‘Joint Committee’ might also be seen as, to some degree, complying with Greenland claims, despite, as emphasized by Dahl, there was still an asymmetric balance of power as the advisory institutions and administrative capacities were all located in Copenhagen (Dahl, 1986: 120).

Apart from the basic demand for the ‘right to the Greenland subsurface’ several overall problems were in focus in the decades following the introduction of Home Rule including the prospect for Greenland to govern and influence the hydrocarbon policy – including the economic activities ensuring that Greenland society would benefit economically. Furthermore, monitoring, inspection, and safety issues were prominent in the public discourse (Nielsen & Larsen, 1985; Sejersen, 2014: 20-21).

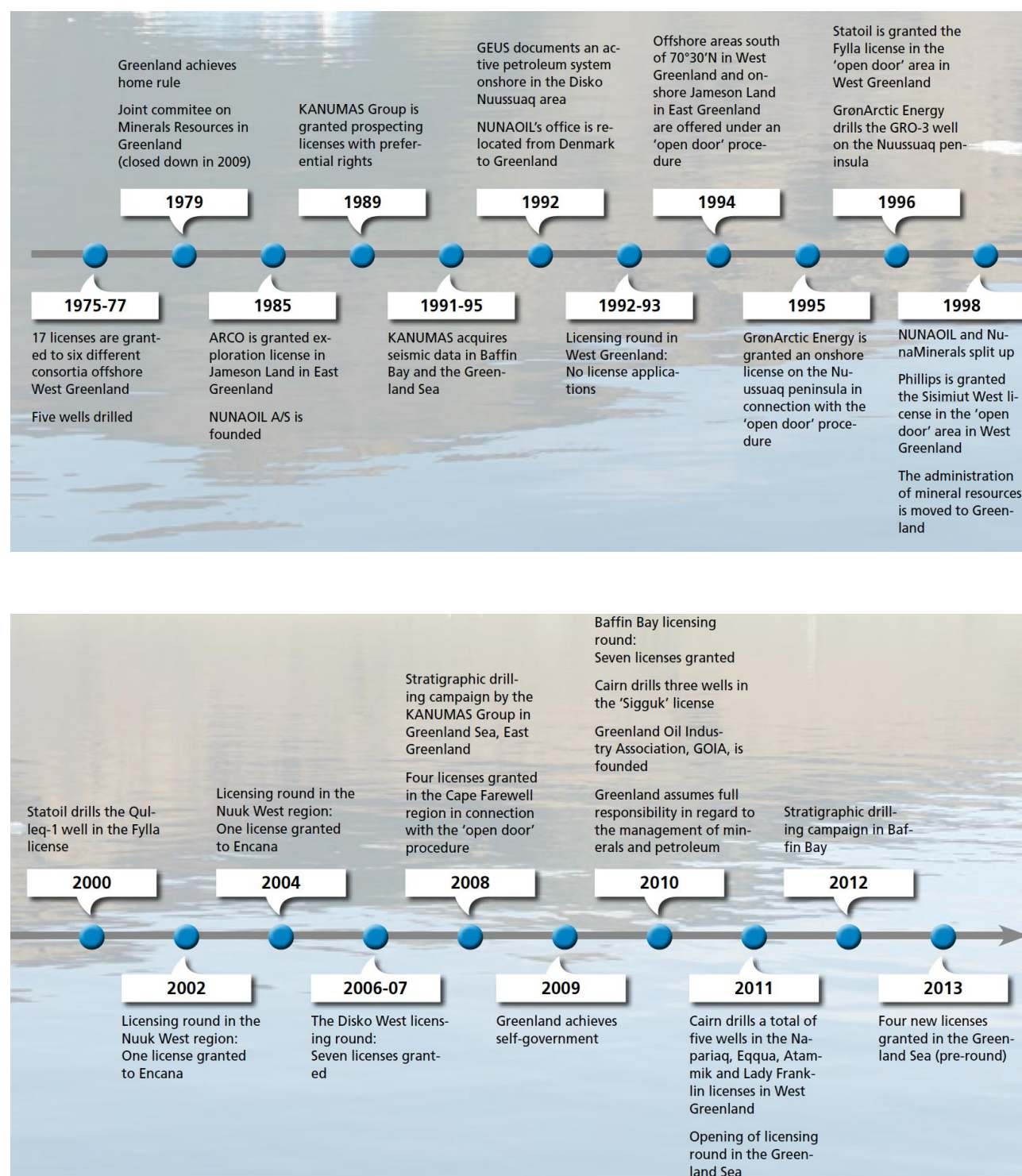
Hydrocarbon Exploration Including Drilling Activities in the 1970s

In 1969 the Danish government appointed an advisory commission on hydrocarbon licensing. The commission delivered its report ‘The report of the commission on hydrocarbon licensing’ including a ‘model concession’ for oil and gas. The conclusions and recommendations of the report led to rewarding 13 exploration licenses offshore Southern West Greenland to six groups of companies (19 non-Danish companies (including major oil companies such as Chevron, BP, Mobil and Gulf) and one Danish Consortium) (AG Ekstra, 1975: 7).

The exploration was not least based on pilot studies conducted between 1969 and 1972 on the offshore of Greenland’s west coast and concluded in five deep drillings. The five wells were drilled

in 1976 and 1977 in the Davis Strait south of the Disko Island between Maniitsoq and Aasiaat. As all five wells were dry the licenses were surrendered in 1979 (Henriksen, 2008: 238-39; 2015: 64-65). Figure 1 shows a 'Timeline' with key hydrocarbon related activities including granting of licenses and drilling campaigns in Greenland in the period 1975 – 2013.

Figure 1: Timeline – hydrocarbon related activities including granting of licenses and drilling campaigns. Greenland 1975 – 2013



Source: Nunaoil (2013). Annual Report.

Environmental Concerns: Before and After the Introduction of Greenland Home Rule and Beyond

As mentioned above the petroleum exploration drilling campaign offshore West Greenland in the mid-1970s had raised environmental concerns. These concerns were substantiated when the USN tanker Potomac on August 5, 1977 hit a small iceberg and leaked about 380 tons of heavy fuel into the Melville Bay, 100 km south of Savissivik.¹¹ The local hunters in Avanersuaq reported declining seal catches and marine animals soiled by oil and the hunters thus sued the Potomac but got no compensation¹² (Fægteborg, 2013: 86).

The Potomac incidence influenced the resistance to the Arctic Pilot Project (APP)¹³, a proposal to ship liquefied natural gas (LNG) in ice breaking super tankers from Lancaster Sound in Northern Canada through Melville Bay and Davis Strait to North American markets. The concerns were both related to potential leakages and the impacts on the marine mammals from the level of noise produced by the vessels. Furthermore, the disturbance that would be caused by the vessels when sailing through the waters where the hunters hunted marine mammals and fished was of major concern. Not only the hunters perceived the APP as a threat to their living conditions and the traditional livelihood of the citizens and communities of northern Greenland. The governments of both Greenland and Denmark also opposed the project and while environmental hearings of the “northern component proceeded ... the project proponents withdrew the project from the regulatory process” (Heginbottom, 2018). According to both Heginbottom (2018) and Fægteborg (2013: 87) the most likely reason for abandoning the APP was, however, the drop in the world market prices on natural gas.

Sailing and navigating in the waters of East Greenland is generally perceived to be as challenging as sailing and navigating in the Baffin Bay. It thus came as a surprise to many Greenlanders that Atlantic Richfield Corporation (ARCO) was granted an exploration license (onshore) in East Greenland in 1985, as the large vessels would have to go through icy waters to and from the exploration site (Fægteborg, 2013: 88). At the same time the exploration activities meant a positive economic impact to a number of households and individuals as well as to the municipality of Ittoqqortoormiit (Scoresbysund) (Larsen, 1989).

Environmental concerns has played and still plays a significant role in the Greenland discourse about mineral exploration and exploitation in general and not least in relation to hydrocarbon activities. As this theme is not the main focus of the article, just one example will be mentioned. Therefore the discourse related to environmental and social impacts assessments, will not be dealt with (see e.g. Olsen & Hansen 2014; Hansen 2016; Hansen & Johnstone 2018) and neither will the debates on, for instance, the use of chemicals in explorative drillings.

Particularly when there is a risk that explorative activities impact local or regional marine mammals and/or fish negatively and thus threaten hunting and fishing and ultimately a way of life, concerns have been raised. This has for example been the case in the Baffin Bay where a consortium led by Shell has carried out a series of seismic site surveys in 2012-2014, some of which overlapped with the narwhal protection zone. After these surveys had finished, hunters from Melville Bay communities reported that narwhal behaviour was different and that the hunt had been influenced negatively due to the seismic activities in the area.

Marine biologists and hunters in Greenland have also begun to express concern over the possible effects of intense seismic survey activities and increased shipping on marine mammals and the future of hunting communities, and are calling for long-term monitoring programmes to be put in place (see e.g. Heide-Jørgensen et al. 2013a). There are concerns that seismic noise affects narwhals, particularly increasing the possibility of ice entrapment (Heide-Jørgensen et al., 2013b).

Home Rule in Action: 1979-2009

Gradual devolution of Administrative Power to Greenland Authorities and the Establishment of a National Oil Company for Greenland

During the Home Rule period a number of agreements between the Greenland and the Danish governments resulted in changed legislation implying for instance 50% of all revenues from mineral activities to the Home Rule government¹⁴ and a gradual devolution of administrative power and facilitating Greenland's development of expertise illustrated by the foundation of NUNAOIL A/S in 1985 and moving the company to Nuuk, Greenland in 1992: "NUNAOIL A/S is responsible for Greenland's Government's participation in hydrocarbon licenses as well as tasks in and outside Greenland which are naturally connected to this."¹⁵

NUNAOIL A/S is thus Greenland's national oil company and is a carried partner in the exploration phase in all hydrocarbon licenses in Greenland with an ownership interest in the licenses varying from 6.25% to 12.5%: "NUNAOIL participates in the exploration licenses on behalf of Namminersorlutik Oqartussat (the Government of Greenland) and collaborates with various international oil companies on the exploration of commercial deposits of oil and gas in Greenland".¹⁶

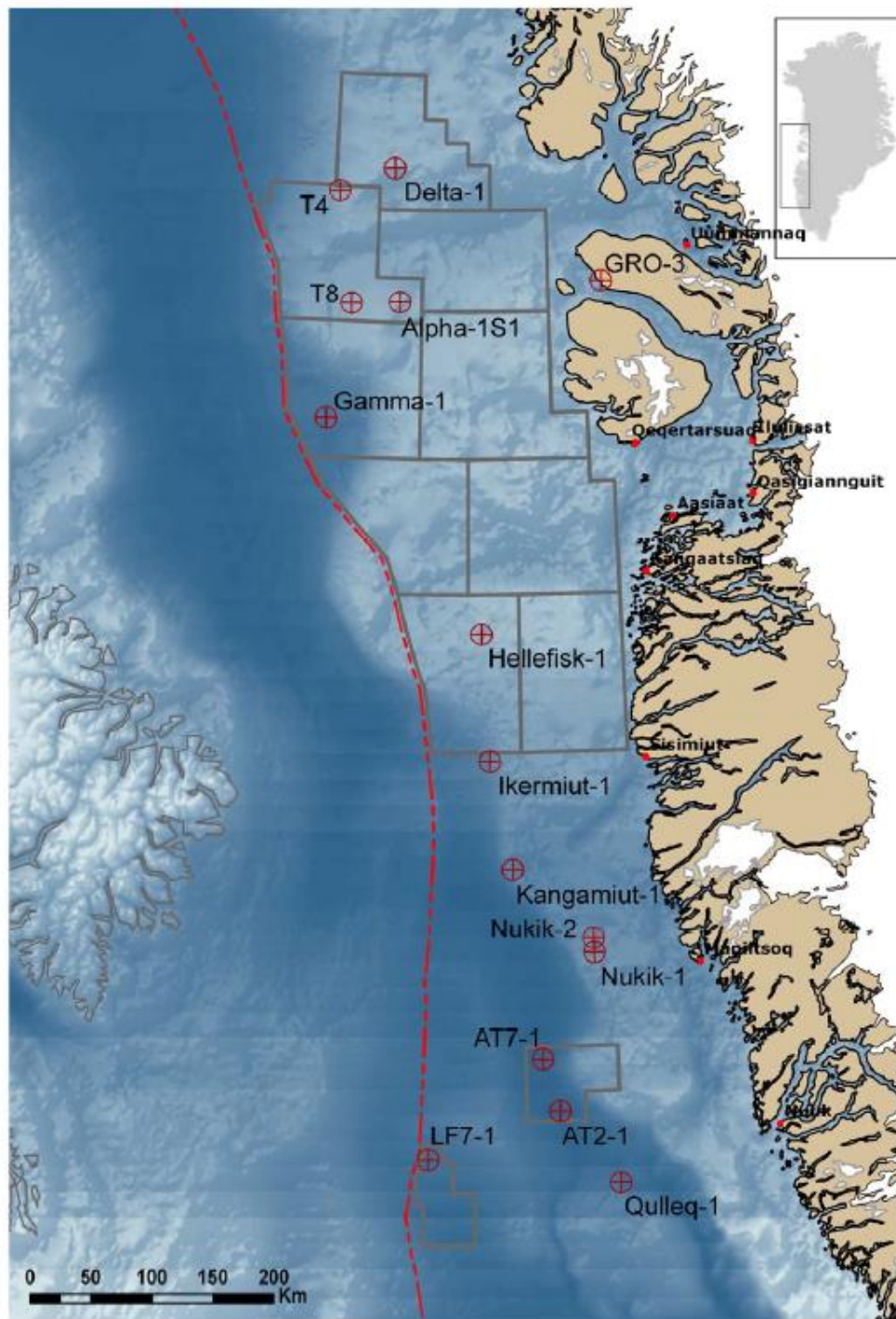
Furthermore, the administration of mineral resources (Bureau of Minerals and Petroleum) and the authority to grant licenses¹⁷ was transferred to Greenland in 1998. This gradual devolution of administrative power to Greenland authorities strengthened the Greenland self-confidence and thus contributed to the nation-building process paving the way for Greenland's ambitions of acknowledgement of the subsurface rights.

Hydrocarbon Exploration Including Drilling Activities in the Home Rule Period

To revitalise the interest of the oil and gas industry following the decline of exploration activities because of, not least, the five dry wells in 1976 and 1977, a number of activities were initiated from the mid 1990s and onwards. One of the most significant was the so-called KANUMAS (Kalaallit Nunaat Marine Seismic – Kalaallit Nunaat is Greenlandic for Greenland) project. The overall goal of KANUMAS was to acquire 22,000 line km of new marine seismic data offshore East, Northeast and Northwest Greenland and re-examine 8,000 line km of seismic data from West Greenland. The project was politically upheld in 1989. Nunaoil was granted an exploration license as a carried partner in a consortium including six oil companies: BP, Exxon, Japan National Oil Company, Shell, Statoil and Texaco that financed the project. The seismic surveys conducted for the KANUMAS project between 1990 and 1996 have provided data for the licensing rounds in 2010 and 2012-2013¹⁸ (Henriksen, 2008: 241, 2015: 131-133).

In 1993 the Geological Survey of Greenland conducted an onshore stratigraphic drilling at Marrat Killit on the Nuussuaq Peninsula, finding traces of oil. Following this discovery, GrønArctic Energy Inc. carried out four onshore exploration drillings on the Nuussuaq Peninsula in 1995 and 1996 (Henriksen, 2015: 64).

Map 1: Explorative hydrocarbon drillings (15) in Greenland 1975-2011.



Source: Government of Greenland, Bureau of Minerals and Petroleum, 2011:
<https://www.govmin.gl/en/images/Documents/UulexNewsletter/2011Uulex02.pdf>.

Hydrocarbons and Self-Governance: 2009 to 2013

Greenland's Move to Self-Governance and Responsibilities over Hydrocarbon Development

As the Home Rule Act was exhausted (the original goals had been reached) at the beginning of the new millennium a political process towards further Greenland self-determination was initiated. A Greenland Commission on Self-Government¹⁹ prepared a report that became a point of departure for a joint Greenland-Danish Self-Government Commission.²⁰ The efforts of the joint commission resulted in the Act on Greenland Self-Government that was set into effect June 21, 2009.²¹

Mineral resource rights were high on the agenda in the work of both the Greenland and the joint Commission and among the more prominent achievements for the Greenlanders, following more than 30 years of disagreement with the former colonial power, the Greenlanders' subsurface rights were acknowledged²² (Explanatory notes to the Mineral Resources Act, 2009).

The Act on Greenland Self-Government listed a number of fields of responsibility that the Greenland Self-Government authorities could decide to assume responsibility over. The 'mineral resource area' was – as the first field of responsibility according to the Self-Government Act – transferred to the Greenland Self-Government on January 1, 2010 as the Inatsisartut (Parliament of Greenland) Act no. 7 of December 7, 2008 on mineral resources and related activities (the Mineral Resources Act) came into force.²³ Finally, Greenland's subsurface rights were recognised and the implications were that the Greenland Self-Government now had the legislative as well as the executive power within the mineral resource area, which included the right to control Greenland's hydrocarbon potential Greenland-Danish Self-government Commission 2008: 193-194).²⁴ A cornerstone was thus established in the process of nation building.

Mapping Greenland's petroleum systems and making seismic and other relevant data accessible to the petroleum industry has increasingly been accompanied and promoted by the public authorities. Not least the establishment of the Greenland Home Rule in 1979 and the gradual transfer of administrative powers²⁵, knowledge and eventually also the decision making power which happened as a continuation of the introduction of Greenland Self Governance in 2009²⁶ has been followed by initiatives – including national oil and mineral strategies (Greenland government, 2009; 2014) and a number of licensing rounds – to attract interest and eventually investments from major international oil companies.

The 2009-2013 Coalition Government and its Strategy Documents

The optimism generated²⁷ is illustrated by a few examples of how different aspects and the significance of potential mining and hydrocarbon development was portrayed in government documents such as government coalition agreements, the hydrocarbons strategy (Government of Greenland, 2009) and in interviews as well as in a number of well-attended conferences in Greenland.²⁸

In the coalition agreement, signed less than two weeks before the introduction of self-governance, the three parties agreed that:

The prospect of globally rising prices for minerals and fossil fuels has reinvigorated the possibilities of exploiting our non-living resources whose economic reach can be very high. Therefore, it is very important that Naalakkersuisut's (Government of Greenland's) mineral exploration policy is closely coordinated with business policy, labour market policy, environmental policy, education policy, language policy and integration policy (Government of Greenland, 2009b: 16) (author's translation).

A Hydrocarbons Strategy (Hydrocarbons Strategy 2009) was published in December 2009 stating, among other things, that

(t)here is broad political consensus in Greenland to work towards developing the mineral resources sector into a sustainable industry which will make positive contributions to economic development and create new jobs. The objectives are an important part of the long-term economic policy to support development of alternative business sectors to fisheries, partly with the goal to reduce the large current dependence on the annual block grant from Denmark (Government of Greenland, 2009a: 5).

This is one of several examples that the mineral resource sector including hydrocarbon activities potentially providing the necessary future economic foundation is perceived as an important precondition in the continued Greenland nation building.

Parallel to stating that "hydrocarbon activities should be promoted aiming at increasing employment and earnings" (Government of Greenland, 2009a: 5) in political documents, strategies and interviews it was most often also emphasized that oil and gas activities should be "carried out safely and with due consideration for the environment. The Arctic environment is vulnerable, and the Greenland commercial basis and culture is very much linked to nature and the environment" (ibid.) and furthermore, that ensuring "the direct contributory influence and involvement of the population in decision-making processes" (ibid.: 16) (author's translation) was important.

The political coalition governing Greenland from 2009 to 2013 further elaborated on its political goals and issued a joint vision named 'Our Future – the responsibility of you and me – on the way towards 2025'.²⁹ On developing hydrocarbon activities a number of initiatives – including 'stable framework conditions', 'comparison and adaptation of taxation systems in relation to other relevant countries', 'efforts to increase corporate and employee competencies' "together with the conducting of new licensing rounds every 2 to 3 years, will ensure that investment in oil and gas exploration is maintained at a high level in order to promote the possibility of a commercial oil and gas fund being made by 2025" (ibid.: 22). It was further added that direct impacts would not be manifest until after 2025 as no economically interesting discoveries had yet been found (Idem.).

In an interview, January 11, 2011 under the heading: 'Greenland steps up its independence calls as oil ambitions grow', Kuupik Kleist (Prime Minister of Greenland 2009-2013) said:

The recent discoveries of possible findings of oil have increased the debate on the issue of independence. It is a goal and every day we are coming closer to that (and he added) "If everything goes as we wish, 5-10 years would probably be the time table for oil production to start" (Stigset, January 11, 2011).

A more in-depth interview³⁰ with Premier Kleist under the heading 'Greenland is NOT for sale' (Greenland Oil and Minerals, 2011) added, however, nuances to the optimism:

Fast wealth brings lots of risks. Not only with regard to the environment, but also with regard to an influx of foreign workers. You only have to take a look around the world to see how bad things can turn out. Multinational companies in the oil and mineral business like to try to influence political decisions. We are already finding that companies are trying to gain sway by influencing the public in

general, so it is important that we are ready, should Greenland become an oil and mineral nation. And there is fortunately wide political agreement about how we should prepare for this (Greenland Oil and Minerals, 2011).

Premier Kleist also addressed the potential economic implications emphasising that,

“(...) an economic boost would make Greenland less financially dependent on the dominating fishing industry and on the annual block subsidy of more than DKK 3.4 billion from Denmark. With increased revenue from, e.g. the oil industry we would have more resources to develop and improve a series of social concerns, including raising the standard of living where necessary. But it is important that this takes place through an economic model we can handle” and Kleist further stated that “like the Norwegians, we will place the money in an oil fund and only use the interest the capital earns (Greenland Oil and Minerals, 2011).

Mineral Resource – Including Hydrocarbon – Activities: Intensified Initiatives

In several ways 2009 and the following years became epoch-making years for Greenland, not least because of:

- The introduction of Greenland Self-Governance and the optimism based on this next step in Greenland’s road towards still more political autonomy and even sketching the road map towards independence;
- A general election that resulted in a political regime change just a few months before Self-Governance became a reality, as a coalition between the left-wing party (Inuit Ataqatigiit, IA), the social liberal party (Demokraatit) and a centre party (Katusseqatigiit Partiat) formed the government for the period 2009-2013.

Also in relation to minerals – especially hydrocarbons – marked changes occurred

- A *Hydrocarbons Strategy 2009* was released in December 2009.
- Greenland assumed full responsibility for the minerals including hydrocarbon, January 1, 2010.³¹
- The number of active exploration and exploitation hydrocarbon licenses increased from 2 in 2007 to 13 in the period 2008-2010 and 20 in 2011.
- The Scottish oil company Cairn Energy conducted 3 explorative offshore drillings in 2010 and further 5 in 2011.

Both the Greenland Hydrocarbon strategy 2009 (Government of Greenland 2009a) and the Arctic strategy of the Danish Kingdom (Denmark, Greenland and the Faroe Islands, 2011: 24), jointly developed by Denmark, Greenland and the Faroe Islands in 2011 are generally optimistic when it comes to both oil and gas and mineral activities. The expectations to hydrocarbon activities in Greenland was based partly on a number of successful licensing rounds and not least on the United States Geological Survey’s (USGS) assessment for yet unproven oil and gas resources in Greenland territorial waters: 31 billion barrels of oil and gas off the coast of Northeast Greenland and 17 billion barrels of oil and gas in areas west of Greenland and east of Canada could be discovered (Government of Greenland, 2009a; Bird et al., 2008)

In the drilling seasons of 2010 and 2011 the Scottish oil company, Cairn Energy spent roughly 5 billion DKK (573 million USD) on drilling 8 exploration wells in the Davis Strait between

Greenland and Canada bringing the total number of drillings in Greenland since 1975 up to a total of 15.³² The eight exploration drillings, however, did not find a sufficient amount of hydrocarbon to develop any of the drillings to production. The Greenland government maintained its optimism, and in Greenland's oil and mineral strategy 2014-2018 one of the statements is: "Based on the current assumptions, the establishment of two oil fields – a 500m barrel field from 2020 and a 2bn barrel field from 2025 – would generate more than DKK 435bn to the Mineral Resources Fund³³ until 2060" (Government of Greenland 2014:8).³⁴ For several reasons, however, this projection did not come true, as the only exploration activities in recent years have been stratigraphic drilling campaigns in the Baffin Bay by a consortium with Shell as operator. (NUNAOIL Annual Reports, 2013; 2014; 2015; 2016; 2017).

Exploration activities, offshore as well as onshore, have generally been set on hold, and all licenses in North and West Greenland have been relinquished or are under relinquishment, primarily because of the decrease in world market oil prices³⁵, that only recently (since December 2017) have increased to a level above \$60. Figure 2 (Holmgren & Ronnle, 2012) and Figure 3 (NUNAOIL, 2014) illustrate the development of world market prices and hydrocarbon exploration drillings in Greenland and seismic testing respectively. Both figures indicate a close relationship between the petroleum industry's commercial interest in Greenland and the development of crude oil price. Interviews with oil company executives and market analysts confirm this relationship and further point to the generally high operating costs in Greenland (see e.g. Lindkvist 2015 and McGwin 2016) as well in other parts of the Arctic.³⁶ In an interview in 2016 when Statoil, GDF Suez and Dong had recently surrendered their Baffin Bay licences, Roy Ledholm, a ConocoPhillips executive and head of GOIA (Greenland Oil Industry Association) was less pessimistic about long term perspectives for Greenland as an oil-producing country but specified that "Clearly the drop in the oil prices entails very real challenges for the industry. Choices have not become easier and companies will indeed only move to drilling in Greenland if the opportunities are competitive within their global portfolios" (McGwin 2016: 20-21).

To some analysts the changed political attitude towards issuing licenses that was reflected in the Coalition Agreement of March, 26, 2013 between Siumut, Atassut and Partii Inuit: "Exploration and extraction permits in the field of hydro-carbons are in force, though further permits will be granted reluctantly" further created an uncertainty among the oil companies (see Nyvold 2014: 32-33).

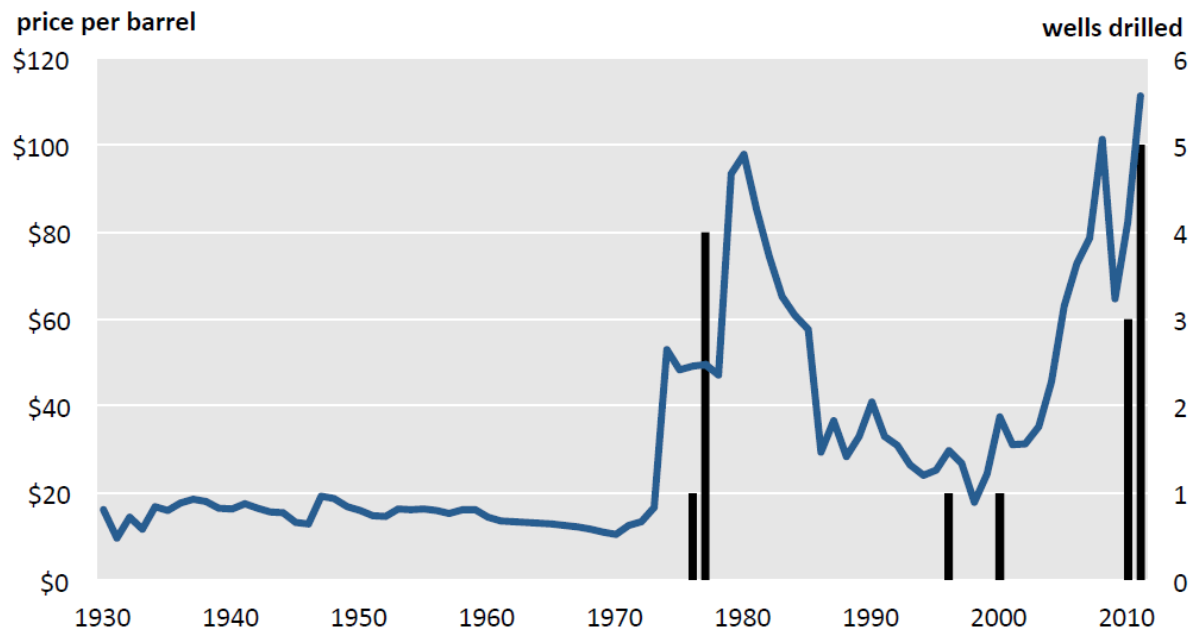
Another, and contributing, reason to the hesitance from the oil industry seems to be the increased international concern about the environmental risks accompanying oil and gas activities in Arctic waters. One of the world's largest oil companies, Total, which in 1976 was among the first companies to drill off the coast of West Greenland warned in an interview in Financial Times (September 25, 2012) against Arctic offshore drilling for oil:

"Christophe de Margerie, Total's chief executive, told the Financial Times the risk of an oil spill in such an environmentally sensitive area was simply too high. "Oil on Greenland would be a disaster," he said in an interview. "A leak would do too much damage to the image of the company" (Chazan September 25, 2012).

Total thus surrendered its licenses. The other licensees did not go that far but Mærsk oil, as an example, emphasized the significance of 'environmental challenges'. When asked about Mærsk

Oil's future Greenland exploration activities, the company's Global Head of Exploration, Lars Nydahl Jørgensen, stressed that the company's decision would be based on two things: "... how attractive it looks in terms of exploration. Secondly, we need to be absolutely convinced that we can control any environmental challenges, which may arise" (Nyvold 2013: 43).

Figure 2: Number of wells drilled in Greenland 1975-2011 and real oil prices (USD/barrel) 1930-2011.



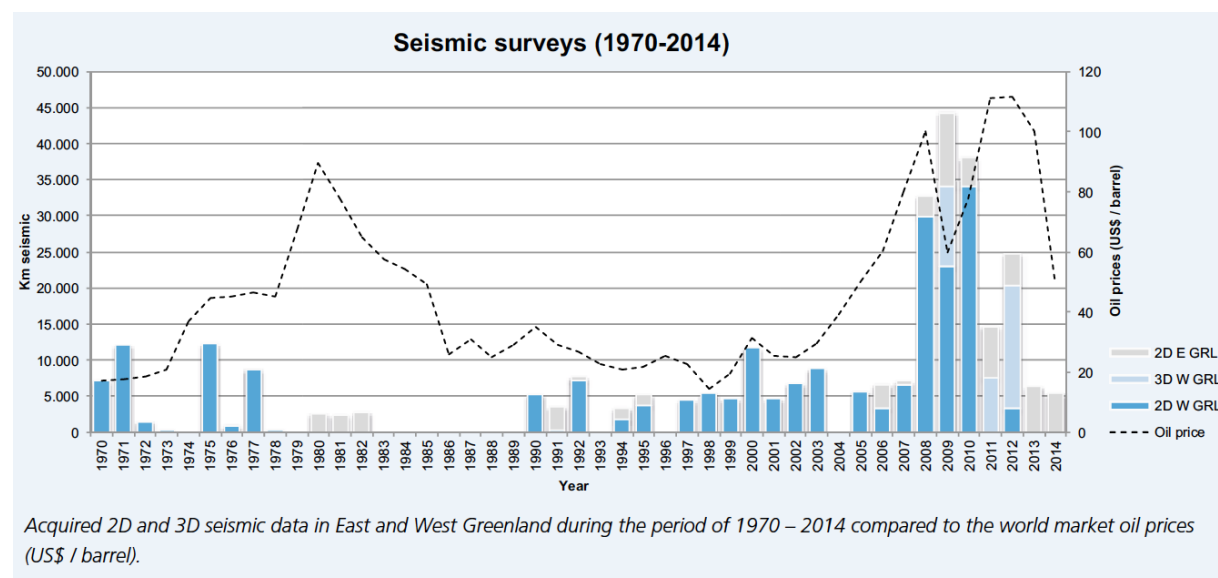
Source: Holmgreen & Ronnle, 2012

The International Petroleum Context

The international 'petroleum context' in which the abovementioned took place was characterised by a number of events and developments that affected international oil companies' interest in the Arctic and not least the Greenland hydrocarbon potential – to mention just a few important occurrences:

- In 2008 the U.S. Geological Survey (Bird et al., 2008) announced its projections of the undiscovered technically recoverable resources in the Arctic. According to the USGS the sea North East of Greenland holds more than 30 billion barrels of oil equivalent and the subsurface under the waters between Canada and Greenland hold 17 billion barrels of oil equivalent (Bird et al., 2008).
- Oil prices peaked in the years 2011-14 reaching, in these years, and going beyond the 100 USD a barrel crude oil level (see Figure 3).

Figure 3: Seismic surveys in East and West Greenland 1970-2014 and the world market oil prices (USD/barrel)



Source: NUNAOIL Annual Report 2014: 10

***Attitudes Toward Natural Resource Development and the Marine Environment:
A 2013 Greenland Public Opinion Study Focusing on Oil and Gas Development***

In September and October of 2013 – roughly six months after an election that once again handed over the majority to a Siumut (social democratic) led government – a telephone survey, representative of the Greenland population was conducted among adults age 17 and above.³⁷ The focus of the survey was ‘attitudes towards natural resource development and the marine environment’ and the overall topic was approached via 14 questions about perceptions, views, and attitudes related to for instance the significance of oil and gas development in the waters around Greenland.

Some of the main findings will be presented and discussed below (the number of the question in the questionnaire is noted in brackets).

The telephone survey was conducted at a time when a new political coalition had come into power and had agreed upon limitations in the license policy: “Exploration and extraction permits in the field of hydro-carbons are in force, though further permits will be granted reluctantly” (Greenland government, 2013: 11-12).³⁸ It was two years since Cairn Energy carried through the company’s final explorative drillings, and the price of crude oil was still more than 100 USD/barrel prices.

A few of the overall findings from the survey – not all unequivocal – can be summarized in the following statements:

- A majority finds oil and gas development important to the economic future of Greenland;
- A majority also finds that in the long run most or all Greenlanders would benefit from petroleum development;
- Half of the adult population agreed that ‘economic growth should be a priority for Greenland, even if we have to take some environmental risks’.

- Two thirds of the Greenlanders considered oil spills to be the biggest threat to Greenland waters;
- Almost all agree that Greenlanders are a people with a powerful connection to the sea.

Whereas a telephone survey does not necessarily give answers to the reasons why – at least at first glance – some perceptions, attitudes and points of view seem conflicting, some of the answers might contribute to a more in-depth understanding of the mixed concerns and expectations of the Greenlanders and, following, challenges to the Greenland politicians and other decision makers when it comes to strategic as well as short-term decisions about oil and gas development.

Answers to the question about “factors to consider when making decisions about oil development in Greenland” illustrate some of the conflicting goals among Greenlanders. Almost all – including the majority that finds offshore drilling very or fairly risky and the majority that prioritises “economic growth for Greenland, even if we have to take some environmental risks” – find that “Protecting long-term health and well-being of communities” as well as “Protecting nature and the environment” ‘matters a lot’ (89 and 87 per cent respectively) and no one finds that it does not matter at all.

All in all, survey results stating some of the hopes, concerns, dilemmas and potential inconsistencies among the general public towards hydrocarbon activities that have been and still are part of the political discourse in Greenland and with stakeholders outside Greenland.

Declining Crude Oil Prices, Environmental Concerns and Diminishing Interest from the Petroleum Industry: 2013 to Present

Coalition Agreements/Government Policy 2013 - 2018

Four government coalitions³⁹ – all led by Siumut (the social democratic party) – have been in power since the 2009-2013 coalition and all coalition agreements have contained sections on oil and minerals focussing primarily on framework conditions for the minerals resource sector, environmental considerations and ensuring inclusion of and benefits to local communities (Government of Greenland 2013; 2014a; 2016; 2018).

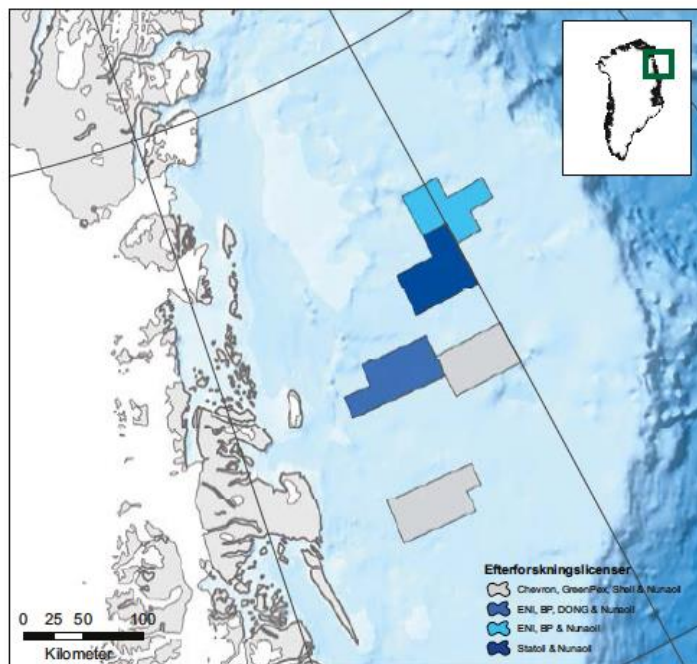
The coalition agreement from 2013 stated that “(e)xploitation and exploitation permits in the field of hydro-carbons are in force, though further permits will be granted reluctantly” (Government of Greenland 2013: 12). A combination of eight dry wells in Cairn Energy’s 2010-2011 campaign – or at best – discoveries that were not commercially viable, decreasing world market prices on oil, and concerns, internationally, because of the extraordinary risks as well as costs conducting oil explorations in Arctic waters led to a markedly decline in interest from the petroleum industry in applying for new licenses.

Despite the declining interest from the petroleum industry, the Greenland Oil and Mineral Strategy 2014-2018 was still – and not least seen in retrospect – (overly) optimistic, as the oil price level plummeted in the second half of 2014.⁴⁰ The Oil and Mineral Strategy assumed that “(b)ased on the current assumptions, the establishment of two oil fields – a 500m barrel field from 2020 and a 2bn barrel field from 2025 – would generate more than DKK 435bn to the Mineral Resources Fund until 2060” (Government of Greenland, 2014b: 8).⁴¹

Since the Greenland Oil and Mineral Strategy was published exploration and extraction licenses have been surrendered to the Greenland authorities resulting in just seven active exploration and extraction licenses for hydrocarbon – all in East or North East Greenland (status: June 2018).⁴²

In an article from June 7, 2017 entitled ‘Last oil company exits West Greenland’ the Greenland newspaper AG quoted Deputy Minister for Minerals and Petroleum Jørgen Hammeken-Holm as saying that Cairn Energy as the last oil company had surrendered its licenses on the Greenland West Coast following major former licensees such as Shell, Maersk Oil, ConocoPhillips, Statoil, Dong and GDF Suez. In the article it was further stated that the only remaining active licenses were five offshore blocks in North East Greenland and an onshore on Jameson Land in East Greenland. (AG June 7, 2017: 12).⁴³ The active licenses are included in Map 2 below.

Map 2



Source: Nunaoil Annual Report 2017

Current Status of Petroleum Licenses and Hydrocarbon Initiatives

The current status (June 2018)⁴⁴ of petroleum exploration, exploitation and prospecting licenses according to the Greenland Bureau of Minerals and Petroleum is listed below:

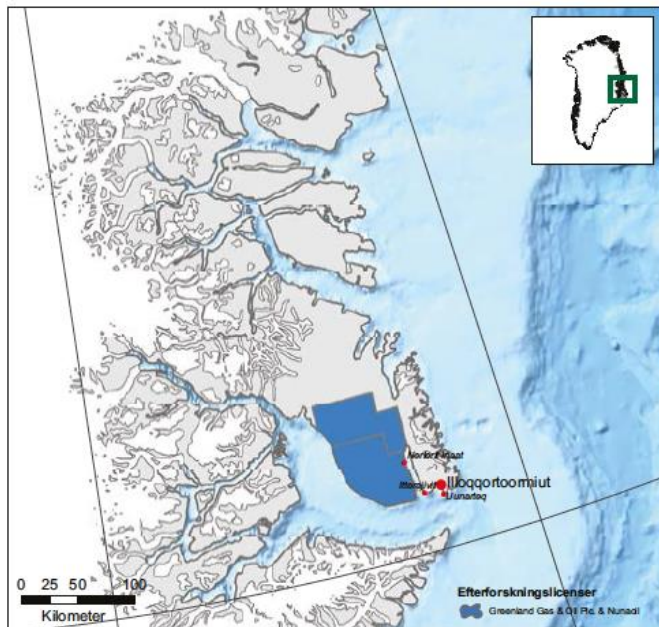
Petroleum exploration and exploitation licenses (exclusive) for hydrocarbons:

- 6 offshore licenses in North and North West Greenland (surrender is on-going)
- 5 offshore licenses in North East Greenland (see MAP 2)
(the following companies are licensees (with number of licenses): ENI Denmark BV (2); BP Exploration Operating Company Ltd. (2); DONG E&P Grønland A/S (1); Statoil Greenland A/S (1); Chevron East Greenland Exploration A/S (2); Greenland Petroleum Exploration Co. Ltd. (2); Shell Greenland A/S (2); and Nuna Oil (5) as a carried partner.⁴⁵
- 2 onshore licenses in East Greenland (see Map 3 below)
(Licensees: Greenland Gas and Oil A/S & Nuna Oil A/S)⁴⁶

Petroleum prospecting licenses (non-exclusive) for hydrocarbons:

- 8 offshore licenses (North Greenland (3); West Greenland (3); North Greenland (2))
- 2 onshore licenses (East Greenland)

Map 3



Source: Nunaoil Annual Report 2017

One of the more manifest consequences of the decline in the interest from the international petroleum industry has been a reduction in 2017 in the staff as well as in the number of board members in the national Greenland oil company NUNAOIL A/S.

When the recently elected Naalakkersuisut (government) came into office (May 2018) the administration and management of hydrocarbons was separated from the administration and management of minerals into two departments. No explicit arguments for the separation have yet been shared publicly. The newly published draft Budget for 2019 states, however, that 'Naalakkersuisut, the Greenland Government, has decided to increase focus on the hydrocarbon field (oil and gas) to make the hydrocarbon field an economic potential for Greenland. Therefore 48 million DKK is included in the budget to fund, among other things, acquisition of data' (Government of Greenland 2018: 486).

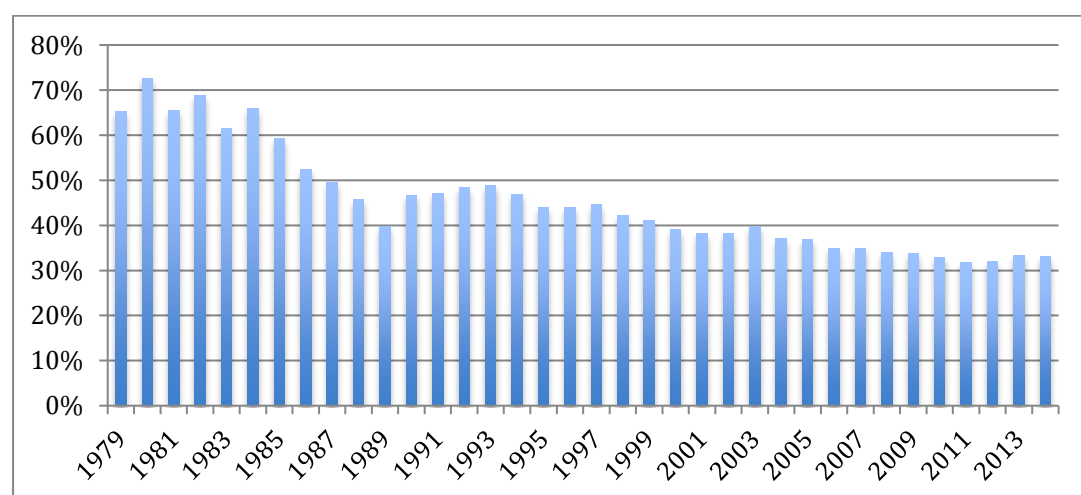
The former government planned to update and publish an Oil and Mineral strategy 2019-2023. It is expected that an oil strategy 2019-2023 is going to be developed to reinforce hydrocarbon activities.

A Digression on the Danish Block Grant & Other Danish State Expenditures in Greenland

One of the core figures in the discourse on 'how far is Greenland to be economically self-sufficient' is the Danish block grant that annually is transferred to the Government of Greenland.⁴⁷ The block grant amounted in 2017 to 3.7 billion DKK (equal to roughly 500 million EUR, July 10, 2018).

Furthermore, the Danish state has expenditures in Greenland on non-transferred activities amounted to roughly 600 million DKK (equal to roughly 80 million EUR, July 10, 2018). A total of 4.3 billion DKK (equal to roughly 580 million EUR, July 10, 2018) is the annual Danish spending and thus the amount Greenland would have to earn to compensate the block grant and the transfers to become economically independent. Figure 4 shows the total Danish state expenditure as part of Greenland's GDP and thus the development in dependency, economically. The overall trend is a decreasing dependency rate not least because of an increased Greenland value creation enhanced by the impacts of the mechanisms regulating the magnitude of the block grant.⁴⁸

Figure 4: Total expenditures (block grant and state expenses) of the Danish state related to Greenland. Percentage of Greenlandic gross domestic product (GDP) 1979-2014.



Source: Statistics Greenland 2016.

Greenland as an International Actor in Relation to Hydrocarbons and Climate Change Negotiations – Also a Part of Nation-Building

Greenland, no doubt, was in focus of the international press in the beginning of the century's second decade, and the Arctic Council Ministerial in Nuuk, May 2011 was yet another occasion to call attention to the visions for Greenland.⁴⁹

More frequent participation in international conferences, trade fairs/trade shows, bilateral visits with foreign heads of states etc. definitely expanded the visibility of Greenland, the nation building process taking place, and the vision of an independent Greenland. Greenland's visibility was further promoted as heads of states and international political leaders at several occasions were invited to Greenland by the Greenland and/or the Danish Government – the invitations of the latter were most often for the invitees to watch the retrieving glacier in the Ilulissat Ice Fiord that has been showcased as 'the visualisation' of global warming and climate change.

In one of the abovementioned interviews (Greenland Oil and Minerals, 2011) Premier Kuupik Kleist stated that:

Cairn's test drilling has definitely put Greenland on the map, although all the applications in the 2010 licensing round were received before drilling started. The international press has also shown

interest in Greenland and we will, of course, try to exploit this. We will also seek to expand our international relationships (Greenland Oil and Minerals, 2011).

Two internationally reported and much debated occasions - one directly and another, more indirectly - related to hydrocarbon activities highlighted some of the challenges facing the self-governing Greenland when the country, being a nation-in-the-making, deals with 'hot topics' such as explorative off-shore hydrocarbon drillings (Cairn Energy's 2010 drillings) and global warming/climate change (the Paris 2015 Climate Accord). They are summarised below.

Greenpeace's Campaign Against Cairn Energy's Explorative Offshore Drillings, 2010

During Cairn Energy's first hydrocarbon exploration drilling campaign in August 2010 Greenpeace conducted a campaign entering one of the oilrigs (four campaigners attached themselves to the oilrig). The Cairn Energy drilling campaign took place just a few months after the oil spill disaster in the Gulf of Mexico following explosions and fire that finally sank the Deepwater Horizon oilrig.⁵⁰

According to an article in the Guardian (Carrell, August 31, 2010)⁵¹ Greenpeace had described the drilling site as "an important battleground" and had argued, "that deep-sea Arctic drilling is extremely perilous because of the sea ice and intense weather conditions in the region." Figure 5 depicts the notion 'battleground'. Greenpeace thus believed the risks posed by this operation go "far beyond the Deepwater Horizon oil disaster in the Gulf of Mexico".⁵²

Figure 5: - Oil exploration in troubled waters: Greenpeace's MV Esperanza protest ship (left) and a Royal Danish Navy patrol vessel (right) keep near the Stena Don drilling platform off Greenland's West coast.



Photo caption: Will Rose, Greenpeace (<http://www.dailymail.co.uk/news/article-1305779/British-oil-company-Cairn-Energys-Arctic-fuels-hope-new-reserves.html>)

Greenpeace further argued that “(i)n the Arctic an oil spill would destroy vulnerable and as yet untouched habitats, while the cold water would prevent the oil from breaking down quickly” and that “any emergency operation to tackle a disaster would encounter huge technical and logistical problems in such a remote area.” Finally, the Guardian reported, “campaigners warn this will lead to a dangerous rush to exploit one of the world's last major untapped oil and gas fields in one of the planet's most fragile locations” (Carrell, August 31, 2010).

The same article also reported that:

Kuupik Kleist, the government's socialist prime minister, denounced the campaigners' actions, claiming they were damaging the economy of the country, now largely independent from Denmark, and ignoring the strict environmental and safety regulations Greenland had imposed on oil companies. “This is clearly an illegal act, ignoring the rules of democracy” he said in a statement. Kuupik Kleist further stated, “(t)he cabinet regards Greenpeace's action as very serious and an illegal attack on the country's constitutional rights. It is worrying that Greenpeace, in their hunt for media exposure, violate security rules made to protect human lives and the environment” (Carrell, August 31, 2010).

Greenland at COP21 and the Rights of Indigenous Peoples

Another event that, internationally, brought Greenland centre stage occurred at the United Nations Conference on Climate Change, COP21⁵³ in Paris, November 30 – December 12, 2015. Although Greenland is a part of the Danish Kingdom, Greenland is not a party to the UN Framework Convention on Climate Change. During the conference, the Greenland delegation, headed by Greenland Minister of Finance, Mineral Resources and Foreign Affairs, Vittus Qujaukitsoq, the government of Nunavut (Canada) and the Inuit Circumpolar Council (ICC) worked to have Indigenous peoples' rights acknowledged and included in the COP21 final document.

In a joint statement from the governments of Nunavut, Greenland and from the ICC (Governments of Nunavut, Greenland and ICC December 8, 2015), they confirmed the need to take “measures ... to make certain global temperature increases will remain between 1.5°C and 2°C” stating that “(e)ven slight changes in the temperature cause major disruptions in the way that northern communities live and work”. Further stating that “current greenhouse gas emissions are caused by industrialized nations from activities that have taken place outside the Arctic” the two governments and the ICC urged the United Nations member states “to deliver a Paris agreement” that “(e)nsures equal access to the right to development, also for the peoples of the Arctic”.

Without explicitly referring to the ILO Convention on Indigenous and Tribal Peoples⁵⁴ (ILO 169 1989) or the UN Declaration on the Rights of Indigenous Peoples⁵⁵ (UNDRIP 2007) the reference to ‘equal access to the right to development’ is, in a condensed form, a paraphrase of the content of two key articles in these documents:

The rights of the peoples concerned to the natural resources pertaining to their lands shall be specially safeguarded. These rights include the right of these peoples to participate in the use, management and conservation of these resources” (ILO 169, 1989: article 151) and “Indigenous peoples have the right to determine and develop priorities and strategies for the development or use of their lands or territories and other resources (United Nations, 2007: article 23).

Apart from claiming the rights of Indigenous peoples, the joint statement from the governments of Nunavut and Greenland with the association of the Indigenous peoples of these countries (as

well as of Inuit in other parts of the Arctic) argued that global warming is caused by the industrialised nations and demanded significant financial aid from these industrialised nations.⁵⁶ These positions expressed by Arctic Inuit are parallel to the positions taken by developing states in the UN climate negotiations and agreements but the demands were not included in the Paris Accord.

The Greenland economy is based partly on annual transfers (block grants) from the Danish state⁵⁷ and it goes without saying that Greenland will have to develop its economic base to be still more economically self-sufficient. As articulated by Minister of Finance, Mineral Resources and Foreign Affairs Vittus Qujaukitsoq in an interview with the Guardian:⁵⁸ “The economic situation gives us no choice but to develop mining and oil. We would most likely [seek] a territorial reservation. It would be very costly if we were to submit to a binding agreement” (Vidal, January 28, 2016). This stance was further emphasized in the same article in the Guardian as the deputy minister Kaj Holst Andersen stated: “If we sign it will cost us hundreds of millions of dollars and we would never be independent”. The interview further quoted Andersen as saying: “New emissions restrictions on Greenland would be almost impossible to honour”... “(i)f we want to make a living we cannot afford to make an agreement that will bind us [to cutting emissions]. We are not an independent state. Independence is cancelled if we sign [Paris]” (Vidal, January 28, 2016).

The two disagreements were handled by two Greenland governments with somewhat different political orientations but both governments were prepared for confrontations to emphasize the long-term goal: an economically self-reliant and politically independent nation. The point of departure in both situations was defending Greenland’s rights as a self-governing country but also defending Greenlanders’ rights as Indigenous peoples. And that included, according to both Greenland governments, the right to develop hydrocarbon activities.

Different ‘Battlefields’

Greenpeace’s action took place in Greenland waters, where the authority to exercise sovereignty still lies within the Danish Kingdom. Greenland thus had to rely on the Danish state and how the Danish authorities (in this situation: the Danish Police and Arctic Command) interpreted and decided to handle a situation that by the Greenland government was considered “a very serious and an illegal attack on the country’s constitutional rights” (Premier Kuupik Kleist in: Carrell, August 31, 2010).

The disagreement about Greenland’s demands to the UN climate accord took place at the COP21 in Paris and whereas the allied power of the Greenland government in the conflict with Greenpeace was the Danish police and navy, the allies in Paris were Indigenous partners reflecting the different rules in the different battlefields that Greenland has to master in the process of continued nation-building.

The two disagreements provided food for thought in several aspects including the stakeholders, the partners, the disputes, and the responses, nationally and internationally, and how Greenland’s image was affected. A more detailed analyses is beyond the scope of this article but it is worth noting that among the lessons learned was the need to develop, refine and promote an argument for how to create the preconditions to become an economically self-sufficient nation partly relying on income from non-renewable resources including oil and, at the same time, maintaining ‘sustainable development’ as the long term development goal.

Concluding Remarks

'Rights to the Greenland subsurface' has been a key political issue in the discussions in Greenland as well as between Greenland and Denmark on Greenland's development from a Danish colony to Self-Governance via status as a Danish county (1953) and Home Rule (1979). In this process hydrocarbon exploration has been of particular interest from a Greenland perspective because oil finds might mean a shortcut to a self-reliant national economy and thus developing the precondition for an economically independent and politically sovereign Greenland. At the same time both hydrocarbon exploration and exploitation have raised concerns – especially offshore – because of the special challenges in Arctic waters and thus the potential environmental risks including the feared negative impacts on marine mammals and fish stocks.

A process has developed over the last fifty years that in retrospect can be viewed as a key part of Greenland nation-building: from a Danish point of departure where the Greenland subsurface beyond discussion belonged to the Danish state and where decisions about and administration of the subsurface were Danish fields of responsibilities. In continuation of this standpoint earnings potentially generated from mineral exploitation belonged to the Danish state. Gradually, and driven by a persistent political movement and a maturing Greenland administration, devolution of administrative power and influence has been transferred to Greenland until – in 2010 – the Greenlanders' rights to the subsurface was recognised and all political and administrative power was in the hands of Inatsisartut (the Parliament of Greenland) and Naalakkersuisut (the Government of Greenland).

Whereas many Indigenous peoples around the world are opposed to and fight hydrocarbon exploitation for environmental reasons and potential threats to traditional ways of living the Greenlanders (being both an indigenous peoples and the majority population in Greenland) has not only (and successfully) claimed the right to the subsurface but has also claimed the right to mineral development including hydrocarbon exploration and exploitation to pursue the long term goal, an economically and politically independent Greenland.

The official attitude of Greenland governments, so far, towards hydrocarbon activities has been in favour, while some international environmental organisations have warned against engaging in these activities because of the extraordinary difficult conditions for offshore drillings in Arctic waters. Not least because of the relatively low crude oil prices the interest from the petroleum industry has been almost absent during the latest licensing rounds and the public discourse nationally and internationally has not been prominent for the last couple of years.

A national survey on 'attitudes towards natural resource development and the marine environment' was conducted in 2013 when the general rhetoric still talked about Greenland as a country with a hydrocarbon potential. Without jumping to conclusions it seems fair to say that the public opinion expressed through the survey reveals some of the hopes, concerns, dilemmas and potential inconsistencies among the general public towards hydrocarbon activities that have also been and still are part of the political discourse in Greenland and with stakeholders outside Greenland.

The future of hydrocarbon activities in Greenland is, for several reasons – not least due to conditions that Greenland cannot influence – unsure. There is, however, no doubt that the Greenlanders' efforts over several decades to ensure that the subsurface rights were acknowledged have been important in creating a national identity. Likewise, developing the vision of a partly non-

renewable resource based foundation for economic self-reliance has contributed to further the nation-building process and the – in recent years – intensified discourse about Greenland as a politically independent nation. It is fair to assume that Greenland participation in international political forums – for instance in relation to minerals including hydrocarbon activities – apart from providing insights and useful experience to the government and its administration also contributes to the general public's perception of Greenland as a nation in the making.

Acknowledgements

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I would like to acknowledge the funding and support from the following: The Research Council of Norway, the Nordland Research Institute (partner and project owner), and Hans Kristian Olsen, former CEO of NUNAOIL A/S for valuable insights and feedback.

Notes

1. For further and more in depth studies on Arctic oil and gas development (activities and perspectives) see e.g. Nuttall & Wessendorf (2006); AMAP (2010); Lindholt and Glomsrød (2017); AMAP (2018).
2. For further and more in depth studies on Greenland oil and gas activities and perspectives see e.g. AMAP (2010); Henriksen (2008); Nuttall (2012); Henriksen (2015); Wilson (2015).
3. In 1995 the Geological Survey of Denmark (DGU) and the Geological Survey of Greenland (GGU) were merged into Geological Survey of Denmark and Greenland (GEUS).
4. Royal Decree no. 153 of April 27, 1935 that in 1965 was substituted by the so-called Legal Act of Mining 1965 (Lov om mineralske råstoffer, 1965).
5. 13 licenses were granted and five explorative drillings were conducted in the Davis Strait in the period 1975-1978.
6. Both before the introduction of Home Rule in 1979 and according to the 1979 Home Rule Act the net earnings from mineral resource extraction in Greenland would revert to the Danish state.
7. It should be noted that the negotiations in the joint Danish-Greenlandic Home Rule Commission took place just a few years after the so-called 'energy crises'.
8. Act No. 577 of 29 November 1978. The Greenland Home Rule Act. <http://www.stm.dk/p12712.html> retrieved 180602.
9. For a more detailed analysis of the discourse about Greenland mineral resources in the 1970s see: Nielsen & Larsen, 1985.
10. The Joint Committee was closed down in 2009.
11. The resume is based on a more thorough description in Fægteborg (2013).

12. The hunters sued the Potomac for damages as they experienced a severe decrease in the number of seals caught. Two years later the Junior Counsel to the Treasury informed the Ministry of Greenland that a lawsuit could not be raised against a naval vessel according to civil law.
13. The project was formally proposed in 1979 and was relinquished in 1983. Both Fægteborg (2013) and Heginbottom (2018) <https://www.climate-policy-watcher.org/canadian-arctic/arctic-pilot-project.html> (retrieved July 1, 2018) contain more in-depth descriptions of the APP and its potential implications.
14. In 1988 an agreement between the Home Rule Government and the Danish Government was fleshed out in an amended Mineral Resources Act, adopted as Act No. 844 of December 21, 1988 on Mineral Resources.
15. See (<http://nunaoil.gl/en/about-nunaoil/by-laws.html>)
16. See (<http://nunaoil.gl/en/about-nunaoil.html>)
17. An amendment to Mineral Resources Act, effective of July 1, 1998 was included in the Consolidated Act No. 368 of 18 June 1998 on Mineral Resources in Greenland.
18. It should be noted that the KANUMAS project (and its participating oil companies) has preferential rights in the licensing rounds where the project has acquired seismic data.
19. The Greenland Commission was established in 2000 and delivered its report in 2004.
20. The joint Greenland-Danish Self-government Commission was established in 2004 and delivered its final report in 2008.
21. See (<http://naalakkersuisut.gl/~media/Nanoq/Files/Attached%20Files/Engelske-tekster/Act%20on%20Greenland.pdf>)
22. Furthermore, and of outmost importance to the Greenlanders, the Act on Greenland Self-Government also acknowledges that the people of Greenland is a people pursuant to international law with the right of self-determination and thus having the right to determine if and when Greenland should be independent.
23. The Mineral Resource Act replaced the Consolidation Act No. 368 of June 18, 1998.
24. The Commission Report emphasized, however, that until Greenland became independent, the sovereignty of the Greenland territory (land, sea and airspace) was still responsibility of the Danish state.
25. In 1998 the administration of mineral resources including hydrocarbon was moved to Greenland.
26. As a part of the Home Rule arrangement a Joint Committee on Mineral Resources in Greenland was established in 1979. The Joint Greenland-Danish committee operated until 2009. When the Act on Greenland Self-Government entered into force on 21 June 2009 the Government of Greenland was given the opportunity to decide taking over authority over a number of fields of responsibility, including mineral resources (The Greenland-Danish Self-government Commission's Report on Self-Government in Greenland, 2008). The 2009 Hydrocarbon Strategy summarized the content of the new legislation on minerals: "With the new Self-Government scheme all proceeds from mineral activities accrue to the Government of Greenland including revenues via Greenland and Danish authorities in the form of licenses, taxes, ownership shares etc." (Government of Greenland 2009a: 7), and further: "On 1 January 2010 the Inatsisartut act no. 7 of 7 December 2009 on mineral raw materials and related activities (Mineral Resources Act)

- entered into force, replacing the former Danish act on mineral resources in Greenland cf. Consolidated Act no. 368 of 18 June 1998” (Government of Greenland 2009a: 8).
27. It should, however, be mentioned that the optimism related to hydrocarbon development in Greenland was not just a Greenland local fad. This can be illustrated by the following quote from US Geological Surveys 2011 Minerals Yearbook: “Greenland has abundant mineral and natural resources. More areas for exploration are expected to open up if global warming continues, and new mineral deposits are likely to be discovered as a result. Finding new sources of hydrocarbons will continue to be very important for Greenland as possible sources of revenue and offshore exploration is expected to increase as interest in this area increases. The country’s independent status and the government’s encouragement are expected to continue to accelerate the development of the mineral industry in Greenland” (U.S. Department of the Interior U.S. Geological Survey, 2013).
 28. In the autumn of 2011, as an example, two conferences focussing on oil were convened in Nuuk, Greenland:
 - *Joining Forces 2011. Greenland Conference on Oil and Minerals*. Convened by the Greenland Employers’ Association, September 21-22, 2011
<http://www.ga.gl/LinkClick.aspx?fileticket=rOr6nZ6F9VQ%3D&tabid=36&language=da-DK> &
 - *2011 Arctic Dialogue Greenland. Conference and Workshop*. Convened by Ilisimatusarfik, University of Greenland, September 24-26, 2011.
<https://www.uni.gl/media/1434044/1112222011arctic-dialogue-greenlandconferenceworkshop-summary.pdf>
 29. See <http://www.ft.dk/samling/20121/almindel/gru/bilag/16/1200391.pdf>
 30. In: Greenland Oil and Minerals (2011). Greenland is NOT for sale. By Christian Schultz-Lorentzen.
 31. On January 1, 2010, the *Inatsisartut act no. 7 on mineral resources and related activities* came into force. The Mineral resource Act replaced the Consolidation Act No. 368 of June 18, 1998.
 32. Map 1 includes all 15 explorative offshore drillings since 1975.
 33. By Act no. 6 of December 5, 2008 on Greenland’s Mineral Resource Fund the Greenland Parliament decided to establish a Fund (the Act has been updated and amended by Inatsisartut Act no. 25 of December 2015; Inatsisartut Act no. 31 of November 28, 2016 and Inatsisartut Act no. 49 of November 23, 2017) of December 5. The Act is inspired by the Norwegian Oil Fund and the overall purpose of the Act is to secure long term Greenland societal interests through the investments and disposals of revenues from hydrocarbon and mineral activities.
 34. See <http://naalakkersuisut.gl/da/Naalakkersuisut/Departementer/Erhverv-og-Energi/Naalakkersuisuts-strategier>
 35. See e.g. world crude oil price history: <http://www.macrotrends.net/1369/crude-oil-price-history-chart>
 36. As an example an article in the magazine ‘Greenland Oil and Minerals’ refers to a number of major oil companies such as Chevron in the Beaufort Sea, ConocoPhillips in the Arctic as a whole, and Statoil in Alaska (Lindquist 2015: 51).
 37. The survey: Greenland 2013: Attitudes towards natural resource development and the marine environment. Results of a national public opinion research study survey was

conducted by HS Analysis (Nuuk) on behalf of Pew Charitable Trusts between September 8, 2013 and October 14, 2013. A random sample (n=721) would be considered within a +/- 3.62 % statistical uncertainty. Unpublished.

38. Coalition agreement (March 26, 2013) between Siumut, Atassut and Partii Inuit.
<http://naalakkersuisut.gl/~media/Nanoq/Files/Attached%20Files/Naalakkersuisut/DK/Koalitionsaftaler/Koalitionsaftale%202013-2017%20endelig%20version%20dansk.pdf>
39. Apart from a recently founded party every party now represented in Inatsisartut, the Greenland parliament has at least once been part of a cabinet.
40. See history of oil price for a more detailed overview
<http://www.macrotrends.net/1369/crude-oil-price-history-chart>
41. See <http://naalakkersuisut.gl/da/Naalakkersuisut/Departementer/Erhverv-og-Energi/Naalakkersuisuts-strategier>
42. See
<https://www.govmin.gl/images/Documents/CurrentLicencesandActivities/ListofLicences-19-06-2018.pdf>
43. See <http://m.sermitsiaq.ag/olieeventyr-slut-sidste-olieselskab-ude-vestgroenland>
44. See
<https://www.govmin.gl/images/Documents/CurrentLicencesandActivities/ListofLicences-19-06-2018.pdf>
45. See
<https://www.govmin.gl/images/Documents/CurrentLicencesandActivities/ListofLicences-17-09-2018.pdf>
46. See note 16 above.
47. The block grant was a key part of the Home Rule arrangement from 1979 stating that neither the Greenland Home Rule nor the Danish state should benefit from transfer of responsibilities from Danish to Greenland authorities. Thus, an amount equal to the operating costs of an activity should 'follow' the activity. This principle was not included in the Act of Self-Governance for transfer of future responsibilities but the accumulated block grant from 1979-2009 was frozen at an inflation adjusted 2009 level.

In the Act of Greenland Self-Governance it is stated that income from mineral – including hydrocarbon - activities beyond 75 million DKK (roughly € 10 million) shall be shared equally between the Government of Greenland and the Danish state (reducing the block grant) until the block grant is reduced to zero. Then negotiations between the Government of Greenland and the Danish state about future economic (and political) relations shall start.

48. Whereas compensation followed every transfer of authority from the Danish state to the Greenland Home Rule Government from 1979 – 2009, the Greenland Self Government has to finance all activities transferred from Danish to Greenland authority since the Act on Self Governance came into effect in 2009. Furthermore, the, since 2009, frozen block

grant is regulated by the Danish inflation rate which tends to be lower than the inflation rate in Greenland.

49. An interview on the BBC program 'Hard talk' with Premier Kleist provided an opportunity to expand the preconditions (including earnings from new industries such as oil and minerals) and visions for an independent Greenland.
50. The Deepwater Horizon blowout caused eleven dead, a number of injured and the largest marine oil spill ever, as more than four million barrels of crude oil leaked into the ocean.
51. See <https://www.theguardian.com/environment/2010/aug/31/greenland-greenpeace-arctic-oil-rig>
52. Greenpeace based their argument on comparing conditions in the Gulf of Mexico that would appear more favourable compared to Arctic waters (shorter distances to search and rescue assistance, warmer weather, no ice bergs, etc.) to conduct emergency operations and handling major disasters including oil spills. Despite these better conditions it lasted almost three months (87 days) from the explosion and until the well was capped.
53. Conference of the Parties for the United Nations Framework Convention on Climate Change, COP21, December 2015.
54. ILO C169: Convention concerning Indigenous and Tribal Peoples in Independent Countries (Entry into force: 05 Sep 1991) Adoption: Geneva, 76th ILC session (27 Jun 1989) <http://www.ilo.org/global/topics/indigenous-tribal/lang--en/index.htm>
55. The United Nations Declaration on the Rights of Indigenous Peoples (UNDRIP) was adopted by the General Assembly on Thursday, 13 September 2007. http://www.un.org/esa/socdev/unpfii/documents/DRIPS_en.pdf
56. It should be noted that Greenland is ranked on par with OECD countries in relation to the Kyoto Protocol and the Paris Climate agreement based on the GDP per capita measure.
57. See the subsection on 'Greenland economic dependency on the annual block grant from Denmark'.
58. See <http://www.theguardian.com/environment/2016/jan/28/independent-greenland-could-not-afford-to-sign-up-to-paris-climate-deal>

References

- AG Ekstra (1975). AG ingimiikut/AG EKSTRA. Ministeriet for Grønland: Statusrapport om olie- og mineralaktiviteter December 4, 1975.
- AMAP, 2010. Assessment 2007: Oil and Gas Activities in the Arctic – Effects and Potential Effects. Volume I. Arctic Monitoring and Assessment Program (AMAP), Oslo, Norway. vii + 423 pp.

- AMAP, 2018. Adaptation Actions for a Changing Arctic: Perspectives from the Baffin Bay/Davis Strait Region. Arctic Monitoring and Assessment Programme (AMAP), Oslo, Norway. xvi + 354pp
- Bird, K.J., Charpentier, R. R., Gautier, D. L. (CARA Project Chief), Houseknecht, D. W., Klett, T. R., Pitman, J. K., Moore, T. E., Schenk, C. J., Tennyson, M. E., & Wandrey, C. J. (2008). *Circum-Arctic Resource Appraisal: Estimates of Undiscovered Oil and Gas North of the Arctic Circle*. U.S. Geological Survey. Fact Sheet 2008-3049. <http://pubs.usgs.gov/fs/2008/3049/>
- Bureau of Minerals and Petroleum, Greenland (2011): *Uulex Newsletter 02*, 2011. <https://www.govmin.gl/images/Documents/UulexNewsletter/2011dUulex02.pdf> (retrieved 180531)
- Carrell, S. (August 31, 2010). Greenland's prime minister lambasts Greenpeace for raiding Arctic oil rig. *The Guardian*. <https://www.theguardian.com/environment/2010/aug/31/greenland-greenpeace-arctic-oil-rig>
- Chazan, G. (2012). Total warns against oil drilling in the Arctic. Financial Times, September 25, 2012. Financial Times. <https://www.ft.com/content/350be724-070a-11e2-92ef-00144feabdc0>
- Dahl, J. (1986). *Arktiske selvstyre*. København: Akademisk forlag.
- Denmark, Greenland and the Faroe Islands (2011): Kingdom of Denmark. *Strategy for the Arctic 2011– 2020*
- Frandsen, N. H., Gulløv, H. C., Heinrich J., Jensen E. L., Marquardt O., Rud S., Seiding, I., Toft, P. A., & Thuesen, S. (2017). Grønland - Den arktiske koloni. Vol. 5 in: Olsen, P., Brimmes, N. & Gulløv, H. C. (eds.) *Gads Kolonihistorie*. København: Gad. ISBN: 9788712049555.
- Fægteborg, M. (2013). *Råstofaktiviteter i Grønland. En historisk introduktion til efterforskning, udnyttelse og følger i en sårbar natur og et samfund i forvandling*. Inuit Circumpolar Council (ICC) & World Wildlife Foundation (WWF).
- Government of Greenland, Bureau of Minerals and Petroleum. (2009a) *Hydrocarbon strategy*. (Exploration and exploitation of hydrocarbons in Greenland - Strategy for license policy). Continuous publication of Bureau of Minerals and Petroleum No. 6. Published December 2009. Printed May 2010© ISBN 978-87-91864-15-5. https://www.govmin.gl/images/stories/about_bmp/publications/mineral_strategy_2009.pdf
- Government of Greenland (2009b). *Coalition Agreement 2009-2013*: Inuit Ataqatigiit, Demokratit and Katusseqatigiit. <http://www.ft.dk/samling/20121/almdel/gru/bilag/16/1200391.pdf> (retrieved May 31, 2018)
- Government of Greenland (2012). *Our Future – the responsibility of you and me – on the way towards 2025*. <https://www.ft.dk/samling/20121/almdel/gru/bilag/16/1200391.pdf> (retrieved May 31, 2018)
- Government of Greenland (2013). *Coalition Agreement 2013-2017*: Siumut, Atassut, and Partii Inuit. http://naalakkersuisut.gl/~media/Nanoq/Files/Attached%20Files/Naalakkersuisut/DK/Koalitionsaftaler/Coalition%20Agreement%202013_2017%20ENG.pdf (retrieved May 31, 2018)

- Government of Greenland (2014a). *Coalition Agreement 2014-2018*: Siumut, Demokratit, and Atassut.
<http://naalakkersuisut.gl/~media/Nanoq/Files/Attached%20Files/Naalakkersuisut/DK/Koalitionsaftaler/Koalitionsaftale%202014-2018%20engelsk.pdf> (retrieved May 31, 2018)
- Government of Greenland/Naalakkersuisut. (2014b). *Greenland Oil and Mineral Strategy 2014-2018*. Nuuk: Naalakkersuisut
<http://naalakkersuisut.gl/da/Naalakkersuisut/Departementer/Erhverv-og-Energi/Naalakkersuisuts-strategier>
- Government of Greenland (2016). *Coalition Agreement 2016-2018*: Siumut, Inuit Ataqatigiit, and Parti Naaleraq.
http://naalakkersuisut.gl/~media/Nanoq/Files/Attached%20Files/Naalakkersuisut/DK/Koalitionsaftaler/Koalitionsaftale_S_IA_PN_eng.pdf (retrieved May 31, 2018)
- Government of Greenland (2018). *Koalitionsaftale 2018-2022* (Coalition Agreement 2018-2022; only in Danish): Siumut, Parti Naaleraq, Atassut, and Nunatta Qittornai.
http://naalakkersuisut.gl/~media/Nanoq/Files/Attached%20Files/Naalakkersuisut/DK/Koalitionsaftaler/040518%20Siumut_Naleraq_Atassut_Nunatta%20qitornai_Final_da.pdf (retrieved May 31, 2018).
- Government of Greenland (2018). *Forslag til finanslov for 2019*.
<https://naalakkersuisut.gl/~media/Nanoq/Files/Attached%20Files/Finans/DK/Finanslov/2019/FFL2019%20-%20med%20sidetal%20og%20linket%20indholdsfortegnelse%20-%20DK.pdf> (retrieved September 25, 2018).
- Governments of Nunavut and Greenland & Inuit Circumpolar Council (December 8, 2015). *Joint statement on climate change*. Paris, France.
- Hansen, A.M. (2016). Offshore oil exploration and impact assessment in Greenland. In: Northern Public Affairs.
- Hansen, A.M. & Johnstone, R.L. (2018). Improving Public Participation in Greenland Extractive Industries In: Hossain, K. & Petrétei, A. (eds.). *Current Developments in Arctic Law*, 2017 (5), 29-33. University of Lapland.
- Heide-Jørgensen, M.P., Guldborg Hansen, R., Fossette, S., Hjort Nielsen, N., Villum Jensen, M. & Hegelund, P. (2013a). *Monitoring Abundance and Hunting of Narwhals in Melville Bay during Seismic Surveys in 2012*, Nuuk, Greenland: Greenland Institute of Natural Resources.
- Heide-Jørgensen, M.P., Guldborg Hansen, R., Westdal, K., Reeves, R. & Mosbech, A. (2013b). "Narwhals and seismic exploration: is seismic noise increasing the risk of ice entrapments?" *Biological Conservation* 158: 50-54.
- Henriksen, N. (2008). *Geological History of Greenland. Four billion years of Earth evolution*. Copenhagen: De Nationale Geologiske Undersøgelser for Grønland og Danmark (GEUS).
- Henriksen, N. (2015). *Grønlands geologi udforskes. Glimt af geologernes arbejde*. København: Geological Survey of Greenland and Denmark (GEUS).

- Heginbottom (2018) <https://www.climate-policy-watcher.org/canadian-arctic/arctic-pilot-project.html> (retrieved July 1, 2018)
- Holmgren, M. & Ronnle, E. (2012). *Hydrocarbons in Greenland – Prospects for the Greenlandic Economy*. Lund: E-husets tryckeri. ISSN 1651-0100.
- ILO C169: Convention concerning Indigenous and Tribal Peoples in Independent Countries (Entry into force: 05 Sep 1991) Adoption: Geneva, 76th ILC session (27 Jun 1989) <http://www.ilo.org/global/topics/indigenous-tribal/lang-en/index.htm>
- Larsen, F. B. (1989). Scoresbysund - olieaktiviteterne og lokalsamfundet. *Tidsskriftet Grønland*, 37(6), 185-196.
- Lindholt, L. & Glomsrød, S. (2017). Arctic petroleum extraction under climate policies. In: Glomsrød, S., Duhaime, G. & Aslaksen, I. (eds.). *The Economy of the North 2015*. Oslo: Statistics Norway.
- Lindquist, A. (2015). The Government of Greenland BUY TIME for oil companies. *Greenland Oil & Minerals 2015(13)*, 50-51.
- McGwin, K. (2015). Oil firms in Greenland: We're still here. *Greenland Oil & Minerals 2016(15)*, 20-21.
- Nielsen, K. M. P. & Larsen, F. B. (1985). Grønlandsk råstofpolitik - grønlandsk indflydelse? *Politica*, 17(1), 96-113.
- | | | | |
|---|--------|---------|------|
| NUNAOIL | Annual | Reports | 2013 |
| http://nunaoil.gl/fileadmin/nunaoil/pdf/Annual_reports/Nunaoil_Aars2013_UK.pdf | | | |
| NUNAOIL | Annual | Reports | 2014 |
| http://nunaoil.gl/fileadmin/nunaoil/pdf/Annual_reports/Nunaoil_Aars2014_UK_web.pdf | | | |
| NUNAOIL | Annual | Reports | 2015 |
| http://nunaoil.gl/fileadmin/nunaoil/pdf/Annual_reports/Nunaoil_Aars2015_UK.pdf | | | |
| NUNAOIL | Annual | Reports | 2016 |
| http://nunaoil.gl/fileadmin/nunaoil/pdf/Annual_reports/Nunaoil_Aars2016_UK_web.pdf | | | |
| NUNAOIL | Annual | Reports | 2017 |
| http://nunaoil.gl/fileadmin/nunaoil/pdf/General_Meetings/2018/Nunaoil_Aars2017_UK.pdf | | | |
- Nuttall, M. (2012) Imagining and governing the Greenlandic resource frontier. *The Polar Journal* 2(1): 113-124.
- Nuttall, M. & Wessendorf, K. (eds.) (2006). Arctic Oil and Gas development. *Indigenous Affairs 2-3/06*. Copenhagen: IWGIA. https://www.iwgia.org/images/publications//IA_2-3-06.pdf
- Nyvold, M. (2013). Oil hunters are setting their sights. *Greenland Oil & Minerals 2013(8)*, 40-43.
- Nyvold, M. (2014). Coalition on unnecessary erratic course. *Greenland Oil & Minerals 2014(9)*, 31-32.

- Olsen, A.-S.H., Hansen, A.M. (2014). Perceptions of public participation in impact assessment: A study of offshore oil exploration in Greenland. In: *Impact Assessment and Project Appraisal* 32 (1), 72-80. ISSN 1461-5517.
- Pew Charitable Trusts. (2013). *Greenland 2013: Attitudes towards natural resource development and the marine environment. Results of a national public opinion research study survey*. Conducted by HS Analysis (Nuuk). Unpublished.
- Sejersen, F. (2014). *Efterforskning og udnyttelse af råstoffer i Grønland i et historisk perspektiv*. Baggrundspapir. Udvalget for samfundsgavnlig udnyttelse af Grønlands naturressourcer. København. Greenland Perspective
<http://www.northernpublicaffairs.ca/index/magazine/volume-4-issue-2/offshore-oil-exploration-and-impact-assessment-in-greenland/>
- Schultz-Lorentzen, C. (2011). Greenland is NOT for sale. In: *Greenland Oil and Minerals*. Nuuk: Sermitsiaq (publisher). <http://www.ggg.gl/docs/GREENLAND-Oil-&-Minerals-Magazine/Greenland-Oil-&-Minerals-1.pdf>
- Skydsbjerg, H. (1999). *Grønland - 20 år med hjemmestyre*. Nuuk: Atuagkat.
- Stigset, M. (January 11, 2011). 'Greenland steps up its independence calls as oil ambitions grow'. Bloomberg News. <https://www.bloomberg.com/news/articles/2011-01-11/greenland-steps-up-demands-for-independence-as-oil-revenue-spurs-ambitions>
- United Nations Declaration on the Rights of Indigenous Peoples (UNDRIP) was adopted by the General Assembly on Thursday, 13 September 2007.
http://www.un.org/esa/socdev/unpfii/documents/DRIPS_en.pdf
- U.S. Department of the Interior. U.S. Geological Survey. (2013) Minerals Yearbook (2011) Denmark, the Faroe Islands, and Greenland. The Mineral industries of Denmark, the Faroe Islands, and Greenland.
- Vidal, J. (January 28, 2016). *Independent Greenland could not afford to sign up to Paris deal agreement*. Article in the Guardian. <http://www.theguardian.com/environment/2016/jan/28/independent-greenland-could-not-afford-to-sign-up-to-paris-climate-deal>
- Wilson, E. (2015). *Energy and Minerals in Greenland: governance, corporate responsibility and social resilience*. London: International Institute for Environment and Development, IIED.

Legislation and Commission Reports (chronological ordered)

- Royal Decree no. 153 of April 27, 1935 on applying the principles of the Danish Subsoil Act to Greenland.
- Legal Act on Mining 1965 (Lov om mineralske råstoffer).
- Kommissionen om hjemmestyre i Grønland (1978). Hjemmestyre i Grønland (bel. 837/1978), bd. 1 and 2.
- Act No. 577 of 29 November 1978. The Greenland Home Rule Act.
<http://www.stm.dk/p12712.html> retrieved 180602.
- Act No. 844 of December 21, 1988 on Mineral Resources.

Consolidated Act No. 368 of 18 June 1998 on Mineral Resources in Greenland.

The Greenland-Danish Self-government Commission's Report on Self-Government in Greenland, April 2008.

Act no. 473 of 12 June 2009. The Act on Greenland Self-Government.
<http://naalakkersuisut.gl/~media/Nanoq/Files/Attached%20Files/Engelske-tekster/Act%20on%20Greenland.pdf>

Inatsisartut Act no. 7 of 7 December 2009 on mineral raw materials and related activities (Mineral Resources Act).

Explanatory notes to the Mineral Resources Act 2009.
<http://naalakkersuisut.gl/~media/Nanoq/Files/Attached%20Files/Engelske-tekster/Act%20on%20Greenland.pdf> (retrieved

Links & Websites

2011 Arctic Dialogue Greenland. Conference and Workshop. Convened by Ilisimatusarfik, September 24-26, 2011. <https://www.uni.gl/media/1434044/1112222011arctic-dialogue-greenlandconferenceworkshop-summary.pdf>

Crude oil prices' history. <http://www.macrotrends.net/1369/crude-oil-price-history-chart>

Government of Greenland: 'strategies' including oil and minerals strategies.
<http://naalakkersuisut.gl/da/Naalakkersuisut/Departementer/Erhverv-og-Energi/Naalakkersuisuts-strategier>

Government of Greenland, Bureau of Minerals and Petroleum:
<https://www.govmin.gl/en/geology/> (180327)

Joining Forces 2011. Greenland Conference on Oil and Minerals. Convened by the Greenland Employers' Association, September 21-22, 2011
<http://www.ga.gl/LinkClick.aspx?fileticket=rOr6nZ6F9VQ%3D&tabid=36&language=da-DK>

NUNAOIL A/S (<http://nunaoil.gl/en/about-nunaoil.html>)