An Overview of National and International Environmental Laws pertaining to Arctic States and the Work of the Arctic Council

Hayley-Bo Dorrian-Bak

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Re-navigating the Geopolitical Pivot: China in the Arctic-Heartland

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Abstract: The latest International Panel on Climate Change (IPCC) report published in August 2021 demonstrated that the Arctic region drastically feels the impacts of climate change. Several laws and policies contribute to the governance of the reduction of emissions which impact the Arctic polar region. This work will analyse the inclusion of language relating to the Arctic region in several key Arctic countries' climate policies and in their Nationally Determined Contributions (NDCs) submitted in requirement of being parties to the Paris Agreement. Arctic policies of these same countries will then be analysed to determine the degree to which they stipulate action relating to the Arctic environment. Finally, the several research projects and initiatives conducted by the Arctic Council's two working groups, the Arctic Monitoring and Assessment Programme (AMAP) and the Arctic Contaminants Action Programme (ACAP), will be overviewed to demonstrate their contributions to the best available science and practice in the region. This paper will look into how, and to what extent, the research of the Arctic Council working groups can be considered a mechanism of soft law in Arctic environmental governance. Consideration will also be given to how this relates to soft law governance stemming from the Law of the Sea (LOSC).

In 2021, the "Arctic Climate Change Update 2021," was published by the Arctic Council and revealed how quickly the region is changing due to the continual input of GHG emissions into the earth's atmosphere.[1] Despite governments worldwide committing to international treaties such as the United Nations Framework Convention on Climate Change (UNFCCC) and the United Nations Convention on the Law of the Sea (LOSC) which both obligate parties to safeguard the environment, gaps remain in the regulatory framework pertaining to the Arctic region due to the varying implementation of these agreements across Arctic states. Additionally, as the Arctic Council has operated as a forum for peaceful cooperation rather than a legally binding arrangement, its ability to contribute to governance in the region has varied.

This paper will analyse how and if the Nationally Determined Contributions (NDCs),[2] and national climate policies of several Arctic Council states have included the Arctic region in the language of these texts. While providing this analysis, reference will also be made to additional obligations under the Paris Agreement beyond the submission of a NDC such as the use of best available science. Additionally, the Arctic policies of these same Arctic Council states will be examined to illustrate if and how they prioritise climate change in the region. Information will then be provided on the research and working projects of the Arctic Council to determine the extent to which these activities contribute to emissions reductions and adhering to the obligations outlined in the Paris Agreement, and in international environmental law obligations more generally.

The countries chosen for this analysis include Russia, Canada, the United States of America (US), and the European Union (EU) (Finland and Sweden) to ensure geographic

[1] AMAP ,"Arctic Climate Change Update 2021: Key Trends and Impacts. Summary for Policy-makers," *AMAP Report* (Tromsø, 2021).

[2] Nationally Determined Contributions (NDCs) are a reporting requirement under the Paris Agreement.

coverage and variance in circumstances without becoming overly repetitive. Greenland (Denmark) is not included in this paper due to the island's sovereignty over environmental affairs from Denmark and hence is not attributable to Denmark's climate policy or the Danish NDC. The island itself is also not a party to the Paris Agreement independently or through association with the EU and/or European Economic Area and does not have a NDC. Therefore, it was deemed that they fall out of the scope of the research conducted.[3] Finland and Sweden were selected over Norway and Iceland due to less access to policy material in English and also due to the need to further explain their specific circumstances working towards the joint GHG emissions reduction goal.

The 2021 NDC submissions will be examined for each country. With the exception of Russia, the aforementioned 2021 NDCs are the second submissions to the UNFCCC by these states. The NDCs were analysed to determine if there are references specifically to climate change in the Arctic region. Subsequently, the listed climate policy within the text of each NDC or the most updated climate policy of each state will be examined also to determine its references to the Arctic environment. Where states have an Arctic policy, this will also be examined to determine references to climate change action conducted by the state. These climate policies have been chosen due to their ability and connection to fulfill the obligations outlined in the Paris Agreement. Meanwhile, the analysis of Arctic policies is important in illustrating if climate change action is being considered to the same extent as other Arctic policy focus areas.

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[3] D.A. Mokhorov, et al., "Greenland Environmental Laws at the Present Stage," *IOP Conference Series: Earth and Environmental Science* 539, no. 1 (January 2020), https://doi.org/10.1088/1755-1315/539/1/012021; Danish Ministry of Climate, Energy and Utility, *Act No.965 Climate Act,* 2020; During COP26 in Glasgow, Greenland has announced that they will sign the Paris Agreement and submit their own NDC independent of Denmark.

Several research studies conducted by the Arctic working groups, specifically the Arctic Contaminants Action Program (ACAP) and the Arctic Monitoring and Assessment Program (AMAP) will be examined to illustrate the climate change actions which have been facilitated through the auspices of the Arctic Council. Research projects from these two groups were chosen over the research from the remaining four working groups due to relevance to climate policy and the date of when the research occurred.

Arctic Country NDCs

In 2020-2021, countries that signed on to the Paris Agreement were obligated to submit their updated NDC to the UNFCCC.[4] Though all Arctic states have submitted updated NDCs, the only countries which mentioned their Arctic territories in relation to climate change are Canada and Russia. The Canadian NDC mentions their efforts in the Arctic to combat short-lived pollutants such as black carbon and references the efforts of the Inuit people in devising the National Inuit Climate Change Strategy (NICCS) in 2019 for the Inuit Nunangat region.[5] By contrast, the Russian NDC mentions the melting in the Arctic region as a positive for their nation as it would contribute to better conditions for transporting goods, reduce energy consumption during the heating season, and would allow for easier access to Arctic sea shelves and their

[4] United Nations Framework Convention on Climate Change, U.N. Doc. FCCC/CP/2015/L.9/Rev/1, Paris Agreement, 12 December 2015, art. 4(9): "[...] *Each Party shall communicate a nationally determined contribution every five years in accordance with decision 1/CP21 and any relevant decisions of the Conference of the Parties serving as the meeting of the Parties to this Agreement and be informed by the outcomes of the global stocktake referred to in Article 14.* [...]" https://treaties.un.org/doc/Treaties/2016/02/20160215%2006-03%20PM/Ch_XXVII-7-d.pdf.

[5] "Canada's 2021 Nationally Determined Contribution Under the Paris Agreement," UNFCCC - Canada, 2021, https://www4.unfccc.int/sites/ndcstaging/PublishedDocuments/Canada%20First/Canada's%20Enhanced%20NDC%20Submission1_FINAL%20EN.pdf; "Nationally Determined Contribution of the Russian Federation," UNFCC - Russia Federation, 2020, https://www4.unfccc.int/sites/ndcstaging/PublishedDocuments/Russian%20Federation%20First/NDC_RF_eng.pdf.

development.[6] The Canadian and Russian NDCs perspectives on how climate change will impact their respective regions not only demonstrates a difference in their priorities, but also illustrates that the changing Arctic impacts more than just its immediate environment; it has lasting impacts on the respective native communities and impacts the ability of southern populations' to participate in activities in this northern area. This is important to note and is significant to policy governing the area, as it demonstrates the need to examine and create actions that do not target climate change in silos, but approach mitigation and adaptation holistically. Although climate change is viewed differently in the Canadian and Russian NDCs, its inclusion in the language of submissions is appreciated and alludes to recognition of the changing Arctic. This inclusion also further strengthens recognition of the Arctic as an important region to protect under the Paris Agreement.[7]

Though the remaining Arctic states do not include language explicitly stating goals and actions pertaining to the region, their individual emissions reductions specified in their NDCs are still applicable in their national climate policies. As such, one must note the lack of specific language referencing the Arctic region in the other Arctic actors' NDCs stemming from a prior lack of policy specifically targeting the special geographic area which has been proven to be a major climate regulator through many international studies.[8]

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[6] See note above, 17.

[7] Abigail Steffen, Stephen Arturo Greenlaw, Maureen Biermann, and Amy Lauren Lovecraft, "Alaska's Climate Change Policy Development," *Center for Arctic Policy Studies & International Arctic Research Center*, (2021), https://uaf.edu/caps/our-work/CAPS-alaskas-climate-policy-development-March2021-corrected.pdf, 28.

[8] Michael Meredith, Martin Sommerkorn, et al, '*Polar Regions.': IPCC Special Report on the Ocean and Cryosphere in a Changing Climate, (*IPCC, 2019), https://www.ipcc.ch/site/assets/uploads/sites/3/2019/11/07_SROCC_Ch03_FINAL.pdf.

Furthermore, the GHG reduction targets of the Arctic countries being analysed are as follows:

Canada	40-45% reduction below 2005 levels by 2030
US	50-52% reduction below 2005 levels by 2030
Russia	"Reduction of GreenHouse Gases (GHG) by 2030 up to 70% compared to the 1990 level, taking into account the max possible absorptive capacity of forests and other ecosystems and subject to sustainable and balanced socio-economic development of the Russian Federation"
EU	55% reduction below 1990 levels by 2030

Climate and Arctic Policies

United States of America

The US's commitment to providing sweeping climate change legislation has waxed and waned due to changes in political power over the past decade. Though the NDC submitted in 2021 does commit to an emissions reduction, it does not specify strategies, plans, or actions in the Information for Clarity, Transparency, and Understanding chart.[9] The Clean Air Act is the primary law regulating air pollutants in the US and has been updated by President Biden in 2021 to reinstate regulations his predecessor, President Trump, had rolled back.[10] This law currently

[9] "The United States of America Nationally Determined Contribution," UNFCCC, United States of America, 2021 https://www4.unfccc.int/sites/ndcstaging/PublishedDocuments/United%20States%20of%20America%20First/United%20States%20NDC%20April%2021%202021%20Final.pdf; "Nationally Determined Contribution of the Russian Federation," UNFCCC, Russia Federation, 2020, https://www4.unfccc.int/sites/ndcstaging/PublishedDocuments/Russian%20Federation%20First/NDC_RF_eng.pdf; "Submission by Germany and the European Commission on Behalf of the European Union and its Member States," UNFCCC, European Union, 2020, https://www4.unfccc.int/sites/ndcstaging/PublishedDocuments/Finland%20First/EU_NDC_Submission_December%202020.pdf.

[10] London School of Economics, "Clean Air Act - United States of America," Grantham Research Institute on Climate Change and the Environment, November 13, 2021, https://climate-laws.org/geographies/united-states-of-america/laws/clean-air-act-3f2b9758-4a67-4db8-aa20-d603d856942d.

regulates GHG from mobile and stationary sources with the help of the US Environmental Protection Agency (EPA) which was established through the National Environmental Protection Act (NEPA) in 1969.[11] As such, the emissions targeted in this law do not pertain to any specific region of the US and hence do not discuss any specific actions for combating climate change in the Arctic.[12] Though the NEPA does not form a robust text for governing emissions reductions, it does provide the grounds for climate litigation by US citizens who would be interested in filing a case against the government.[13]

There is a clear lack of federal governance in this area of the US concerning the Arctic region, therefore, the efforts of the individual state of Alaska will hence be considered. Alaska has made prior efforts to engage its communities with climate change. In 2017, the Climate Action for Alaska Leadership Team published the "Alaska Climate Change Action Plan Recommendations to the Governor," which aimed to provide potential options for the State to consider.[14] It focuses on six main areas: 1) Communities and Partnerships, 2) Human and Ecosystem Health, 3) Economic Opportunity, 4) Clean Energy, 5) Outreach and Education, and 6) Investment. Within each, specific actions were suggested which would strengthen the climate governance in the state.[15] Unfortunately, when the new Governor took office in early 2019, they

[11] Environmental Protection Agency, "Summary of the National Environmental Policy Act," United States Environmental Protection Agency, 2021, https://www.epa.gov/laws-regulations/summary-national-environmental-policy-act.

[12] 7401. *Clean Air Act*, *U.S. Code 42*. (1990), §§ 7401 et seq.

[13] 4321. *National Environmental Protection Act, U.S. Code* 42 (1969), §§ 4321-4370h.

[14] "Alaska Climate Change Action Plan Recommendations to the Governor," Climate Action for Alaska Leadership Team, 2018, https://www.cakex.org/documents/alaska-climate-change-action-plan-recommendations-governor.

[15] See note 13.

dismantled the Climate Action for Alaska Leadership Team through an administrative order, effectively leaving the state with no official strategy for addressing climate change.[16]

At the end of 2019, Andy Josephson, a representative for Anchorage, Alaska, sponsored House Resolution 12 which would establish a House Special Committee on Climate Change.[17] Though these special committees are only established for two-year terms, they usually have the authority to draft and report legislation which would put Alaska at a significant advantage in encouraging climate change laws pertaining to its Arctic region. Unfortunately, there has not been further actions taken in support of the bill since early 2020.[18]

The aforementioned developments in Alaska illustrate inconsistency with the strength of state and federal development of climate change actions plans. Although outside the focus of this analysis, it must be noted that at the Alaskan local level, cities, smaller communities, and Tribes are addressing and have historically addressed climate change through their own climate action, adaptation, strategies, and assessments. At present there are currently at least 23 local climate policies within Alaska making efforts to reduce emissions and adapt to the changing climate. Five of these policies directly mention GHG emission reduction targets but two also precede the Paris Agreement and are quite outdated.[19] Many also remain reactive, focusing on adaptation to the climate change impacts, instead of being created to proactively mitigate climate change risks.

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[16] Yereth Rosen, "Alaska's New Governor Has Dismissed the State's Climate Team and Scrapped Its Climate Policy and Plan," ArcticToday, February 26, 2019, https://www.arctictoday.com/alaskas-new-governor-has-dismissed-the-states-climate-team-and-scrapped-climate-policy-and-plan/.

[17] Naqiya Motiwalla, "Local Climate Action Persists in Alaska," ClimateXchange, March 27, 2020, https://climate-xchange.org/2020/03/27/local-climate-action-persists-in-alaska/#:~:text=Anchorage%2C%20the%20largest%20city%2C%20recently,goal%20of%2040%25%20by%202030.

[18] The Alaska State Legislature, "Documents for Bill HR 1231st Legislature," *The Alaska State Legislature* accessed October 20th, 2021, http://www.akleg.gov/basis/Bill/Detail/31?Root=HR%20%2012#tab5_4.

[19] See note 7, Appendix C.

These actions are noted to demonstrate that although no current national policy applies, there is a governance framework in the region working to reduce their GHG emissions.

The US "National Strategy for the Arctic Region" was created in May 2013 and presented three main lines of effort for which Arctic affairs would focus.[20] These include advancing US security interests, pursuing responsible Arctic region stewardship, and strengthening international cooperation. The policy again only mentions climate change a few times making general and broad statements to suggest the country would work towards mitigating impacts of climate change. Its associated implementing document, "Appendix A: Implementation Framework for the National Strategy for the Arctic Region," was published in March 2016 and provided a much more specific outline for the actions to be taken.[21] Under the second line of effort (pursuing responsible Arctic region stewardship), climate change is stated as a risk to food and energy security alongside human health. The implementing framework mentions steps to be taken to monitor the impacts of the changing climate in association with the National Oceanic and Atmospheric Administration (NOAA) but again, these actions are more focused on making scientific discoveries regarding emissions more so than determining specific measures and technologies to decrease emissions. There is one actionable objective relating to enhancing collaboration with Arctic Native Communities which calls on the State of Alaska to partner with the federal government to develop plans and solutions for addressing threats caused by climate change.[22] Further, in order to strengthen international cooperation, the US wants to

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[20] "National Strategy for the Arctic Region," The White House Washington, 2013, https://obamawhitehouse.archives.gov/sites/default/files/docs/nat_arctic_strategy.pdf.

[21] Arctic Executive Steering Group "Appendix A: Implementation Framework for the National Strategy for the Arctic Region," The White House Washington, 2016, https://obamawhitehouse.archives.gov/sites/whitehouse.gov/files/documents/National%20Strategy%20for%20the%20Arctic%20Region%20Implementation%20Framework%20%28Appendix%20A%29%20Final.pdf, Appendix A.

[22] See note above, 18.

work through the Arctic Council to advance its objective regarding the reduction and monitoring of black carbon in the Arctic. The policy stipulates that these efforts will be conducted by the EPA in association with the Arctic Council and other US departments such as agriculture, commerce, and homeland security.[23]

The inclusion and acknowledgement of the need for further black carbon research and reductions in the Arctic is significant to the US Arctic policy as it demonstrates their recognition of these emissions as a climatic issue. Though it is noted that there was still a lack of language pertaining to the reduction of GHG emissions and that the reduction of black carbon was stipulated under the line of effort regarding international cooperation. This is not to deny the importance of international cooperation to reduce black carbon, but rather to distinguish that its inclusion was not found with other environmentally minded objectives, such as conservation of Arctic ecosystems, improving hazardous material spill prevention, and containment, under the line of effort to pursue responsible Arctic region stewardship.[24] Consequently, the policy demonstrates a dissociation with language relating to emissions reductions, GHG, and black carbon in areas in which the US wants to be a regional steward while opting to continue to internationally cooperate on matters relating to this language. This further illustrates how conservation of this region, as so found in this policy, seems to consider the conservation of Arctic ecosystems as separate from the GHG emissions conversation.

Russia

In early 2020, Russia published the "National Policy on Adaptation to Climate Change" which, similarly to the US' policies, focuses on the vulnerability of the Russian population to the

[23] See note 21, 28-29.
[24] See note 21, 13-14.

impacts more so than taking a proactive role in decreasing emissions at their source. The policy will run until 2022 and focuses on the risks of climate change to the Russian economy, measures to prepare departmental adaptation plans by industry, and efforts to prepare regional plans. Both the regional and sectoral plans will be implemented and monitored vis a vis the highest executive bodies of state power. The Ministry for the Development of the Far East and Arctic is the department which will be charged with implementing policies stemming from the national plan in the Arctic area. A concern for the national plan is the lack of attention for feedback of management, assessment of effectiveness within the sectors and regions. Additionally, there is concern for the updating of scientific information informing the policies as only 7 of the 27 activities contain terms to improve the quality of information over time.[25]

In 2020, the government of Russia also published an update to the "Basic Principles of Russian Federation State Policy in the Arctic to 2035."[26] Similar to their output of principles for the preceding policy in 2008, these points focus on ensuring Russian territorial sovereignty, guaranteeing and developing high standards of living, economic prosperity in the region (through transport corridors and resources), and protecting the Arctic environment. In comparison to past approaches, these principles are being applied regionally to decided Arctic clusters used in a prior 2014 State programme.[27] The listed priorities for these zones are focused on those which can house the development of hydrocarbons and solid materials and those with ocean access.

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[25] Dmitry Sergeev and Irina Chesnokova, "On the Implementation of the Russian National Plan for Adaptation to Climate Change in the Arctic," Arctic Yearbook, 2020, https://arcticyearbook.com/arctic-yearbook/2020/2020-briefing-notes/364-on-the-implementation-of-the-russian-national-plan-for-adaptation-to-climate-change-in-the-arctic, 4-5.

[26] Ekaterina Klimenko, "Russia's new Arctic policy document signals continuity rather than change," Stockholm International Peace Research Institute, April 6, 2020, https://www.sipri.org/commentary/essay/2020/russias-new-arctic-policy-document-signals-continuity-rather-change.

[27] Nazrin Mehdiyeva, "Strategy of Development of the Arctic Zone of the Russian Federation and the provision of national security for the period 2035," NATO, June 25, 2021, https://www.ndc.nato.int/research/research.php?icode=703#.

The aforementioned Russian policies demonstrate the lack of discussion relating to the reduction of GHG emissions in these policy areas for the country. This is expected considering their NDC submission quotes a vague emissions target of 'up to 70%' in comparison to the more specific targets of the remaining Arctic countries. In comparison to other Arctic states, Russia also demonstrates authoritarian environmentalism since the state alone has the right to perpetuate climate policy which can exclude civil society. This type of environmentalism has the potential to bar communities based in Arctic regions, which Russia deems as important for development, to lose their ability to voice their concerns about these projects. Russia has also demonstrated a repeated disregard to its climate mitigation commitments through its constant search for and production of coal and oil. This is exemplified by the coal port in Kola Bay which will have the capacity to handle 18 million tonnes of coal annually once complete in 2022.[28] Despite the fact that Russia submitted their first NDC recently, their actions do not demonstrate a quick or necessarily ambitious transition to align with their commitments to the Paris Agreement.

Canada

In Canada, the Minister of Environment and Climate Change is responsible for international and domestic policies, though shared jurisdiction over the environment occurs between the federal, provincial, and territorial governments.[29] The overarching policy framework which the individual governments must follow in regards to establishing the governance structure and coordinating the implementation of climate change plans stem from the

[28] Agne Cepinskyte, "Adaptation to Climate Change in Repressive Regimes: Authoritarian Environmentalism in Russia" Arctic Yearbook, 2020, https://arcticyearbook.com/arctic-yearbook/2020/2020-briefing-notes/362-adaptation-to-climate-change-in-repressive-regimes-authoritarian-environmentalism-in-russia, 1-2.

[29] See note 5, 14.

"Pan-Canadian Framework on Clean Growth and Climate Change" (PCF).[30] The policy outlines the actions which are currently being taken to reduce emissions sectorally and then informs what steps still need to be taken.[31] As such, it provides a robust framework for action in government sectors to drive emissions down. Alongside this framework, in late 2020 the Canadian Net-Zero Emissions Accountability Act (Accountability Act) established a legally binding process whereby the national emissions targets must be met every 5 years. This Act calls upon the use of the best available science, the fulfillment of international obligations under the Paris Agreement, and the use of Indigenous knowledge making it a significant addition to climate change legislation in the country.[32]

The Canadian Arctic encompasses three territories (Yukon, the Northwest Territories (NWT), and Nunavut) all of whom follow individual plans and targets for climate change which align with the aforementioned policy. At present, Yukon and the NWT have established policies while Nunavut is in the process of setting a GHG emissions target and creating a territorial policy.[33]

Yukon's policy, "Our Clean Future: Yukon strategy for climate change, energy and a green economy," sets a 30% GHG emission reduction target (based on 2010 levels) from activities relating to transportation, heating, electricity, and other commercial and industrial activities by 2030.[34] The policy also outlines many robust measures to ensure the implementation

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[30] Government of Canada, "Pan-Canadian Framework on Clean Growth and Climate Change," Government of Canada, 2016, https://publications.gc.ca/collections/collection_2017/eccc/En4-294-2016-eng.pdf.

[31] See note 37.

[32] Canadian Net-Zero Emissions Accountability Act. S.C. 2021, c.22, art 5.

[33] See note 5.

[34] "Our Clean Future: A Yukon Strategy for Climate Change, Energy and a Green Economy," Government of Yukon, September 22, 2020, https://yukon.ca/en/our-clean-future-yukon-strategy-climate-change-energy-and-green-economy, 20.

of actions by providing funding information, timeframes, and assessment periods for projects. The policy strongly aligns with the PCF and Accountability Act and consequently meets Paris Agreement obligations. Moreover, as the Yukon is a territory whose largest communities are located close to the Arctic Circle boundary, the impacts of these policies directly impact the reduction of emissions near the Arctic.

The NWT's "2030 NWT Climate Change Strategic Framework" also has an emissions reduction target of 30% by 2030 (based on 2005 levels) in alignment with the PCF, but this has yet to be legislated. Despite this, the annual report on the implementation of the actions for 2019/2020 showed that 99 of 104 actions were either on track or complete.[35] The general goals of this framework were then utilised in the "2030 NWT Climate Change Strategic Framework 2019-2023 Action Plan" which further specifies specific government projects and actions within the territory that are being facilitated.[36] As such, the aforementioned policies of the NWT are found to also align with the PCF, Accountability Act, and the Paris Agreement.

Nunavut is in the process of contracting a consultant to undertake an analysis on Nunavut's emissions and what recommendations can be made for the territory. Despite the lack of a territorial policy, several programs facilitated by the Canadian government in the region have been implemented which already support the reduction of emissions. These include the Municipal Green Infrastructure Program, implementing energy retrofits on buildings owned by

[35] "2030 NWT Climate Change Strategic Framework," 2030 NWT Climate Change Strategic Framework (Government of the Northwest Territories, 2021), https://www.enr.gov.nt.ca/en/services/climate-change/2030-nwt-climate-change-strategic-framework.

[36] "2030 NWT Climate Change Strategic Framework 2019-2023 Action Plan," 2019, Government of Northwest Territories, https://www.enr.gov.nt.ca/sites/enr/files/resources/128-climate_change_ap_proof.pdf.

the Nunavut government, and renovating public housing through the Accelerated Replacement and Retrofit Program.[37]

The "Statement on Canada's Arctic Foreign Policy" forms Canada's Arctic priorities and does include protection of the Arctic environment as a main priority.[38] Within this section, it is affirmed that an ecosystem-based management approach will continue to be taken in the region, that they will continue to contribute to international efforts to promote adaptation and mitigation of climate change impacts in the area, that they will continue to pursue international standards on environmental issues, and that they will continue to contribute to Arctic science spearheaded by the International Polar Year.[39] Canada has contributed to ecosystem-based management by taking on a leadership role in the Arctic Council's Arctic Ocean Review, which has the aim of ensuring sustainable practice in the Arctic Ocean. The country also leads the Arctic Council's Circumpolar Arctic Biodiversity Monitoring Program which provides information on Arctic species and ecosystems alongside any associated trends. The country's dedication to establishing marine protected areas and ecologically sensitive areas demonstrates Canada's commitment to ecosystem-based management approach stipulated under the Convention of Biological Diversity (CBD).[40] Though not the focus of this analysis, it should be noted that ecosystem-based management is utilised and mentioned in this policy as it demonstrates alongside the use of best available practice within these treaties. Moreover, continual participation with the Arctic Council and other Arctic organizations demonstrates Canada's contribution to determining the best

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[37] See note 5, 38.

[38] Government of Canada, "Statement on Canada's Arctic Foreign Policy" Government of Canada, 2017, https://www.international.gc.ca/world-monde/assets/pdfs/canada_arctic_foreign_policy-eng.pdf.

[39] See note 5, 18-21; There have been 4 International Polar Year programmes (1882-83, 1932-33, 1957-58, and 2007-08) which spearheaded international efforts in cooperative polar region science and research.

[40] United Nations. UNTS 1760 (79). Convention on Biological Diversity. (29 December 1993), https://treaties.un.org/doc/Treaties/1992/06/19920605%2008-44%20PM/Ch_XXVII_08p.pdf, art 8.

available science and practice in the region which can then be utilised under international environmental laws to become legally enforceable.

Additionally, “Canada’s Arctic and Northern Policy Framework” facilitates action in the region in several key areas pertinent to Arctic communities. Goal 5, aims for the Canadian Arctic and northern ecosystems to be healthy and resilient. Under this objective, it is stated that the national goals for GHG emission reduction need to be accelerated and intensified. This is significant as it demonstrated government acknowledgement of the need to meet national targets for the benefit of the Arctic region as territorial climate policies alone do not equate to the majority of emissions from the country. [41]

European Union (Finland and Sweden)

The two European Arctic states (Sweden and Finland) jointly agreed to a GHG emission reduction of 55% by 2030 in the EU NDC submitted in late 2020 by Germany and the European Commission. “Regulation 2018/1999 on the Governance of the Energy Union and Climate Action” provides the legislative foundation for transparency and a governance mechanism to ensure the achievement of the 2030 emissions targets.[42] This regulation implements the requirements set forth by the Paris Agreement in EU law and is extensive in doing so. It also mentions the NDC targets several times, states the necessity for EU state cooperation in ensuring that the EU attains their unified goal together, and lays out the reporting and monitoring requirements for these countries. Through this, countries have created their own national energy and climate plans which would establish a basis for these individual countries to develop national

[41] “Canada's Arctic and Northern Policy Framework,” Government of Canada, November 18, 2019, https://www.rcaanc-cirnac.gc.ca/eng/1560523306861/1560523330587.

[42] “Regulation 2018/1999 on the Governance of the Energy Union and Climate Action,” European Union, https://eur-lex.europa.eu/legal-content/EN/TXT/?toc=OJ:L:2018:328:TOC&uri=uriserv:OJ.L_.2018.328.01.0001.01.ENG.

plans for the 2021-2030 period.[43] Though these states have committed to a joint reduction of 55%, both have stated within their individual policies greater emissions reduction targets; Sweden has a target of 85% by 2045 and Finland has a target of 80% emissions reductions (based on 1990 levels) by 2050.

"The Climate Change Act 609/2015" provides the main legal text in Finland for climate change adaptation and mitigation. Through this Act, the medium term plan for climate change policy is introduced as a necessary document to be created at least once each electoral term to establish action plans to reduce anthropogenic emissions.[44] A recent plan which acts as a part of this policy is the "Action Plan for the Adaptation to Climate Change of the Environmental Administration" which was published in 2016.[45] This policy lists several measures and objectives for environmental protection, ecosystem services, management of marine areas, and shared adaptation measures which includes the recognition of the work with the Arctic Council. Under shared adaptation measures, the plan cites the Paris Agreement and Arctic Council as key components to climate adaptation and scientific research for climate impacts in the Arctic. The text indicates that Finland has made efforts internationally to support adaptation and mitigation to climate change and also contribute and facilitate the best available practice and science in these areas.[46]

In June 2021, the country published "Finland's Strategy for Arctic Policy" which has prioritised climate change mitigation and adaptation. The policy indicates strong cooperation

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[43] See note above, art. 14.

[44] Government of Finland, "The Climate Change Act 609/2015," https://www.finlex.fi/fi/laki/kaannokset/2015/en20150609.pdf, section 1 and 9.

[45] Ministry of Environment, "Action Plan for the Adaptation to Climate Change of the Environmental Administration," 2016, https://julkaisut.valtioneuvosto.fi/bitstream/handle/10024/79789/YMra_25en_2016.pdf?sequence=1&isAllowed=y.

[46] See note above, 32-33.

efforts internationally demonstrated through working with the Arctic Council, ratifying several environmental agreements (UNFCCC, CBD, LOSC), and participating in arrangements such as the Barents Euro-Arctic Council.[47] Within this main theme, measures are also outlined which aim to assist in the implementation of climate actions in this area.[48] Considering these themes, measures are then stated which provide information on the specific actions the plan.

In 2017, Sweden's government decided to introduce the climate policy framework which set out to implement the obligations under the Paris Agreement.[49] A part of this package was the Climate Act, which entered into force in early 2018 and forms the provisions of the government's climate policy. Through this Act, the creation of an updated climate action policy is necessitated every four years following the Swedish ordinary elections.[50] Through the requirements of the Climate Act, "Sweden's long-term strategy for reducing greenhouse-gas emissions" was created and published in December 2020. Though extensive in establishing action areas and instruments which will be used to implement measures, the policy only references the Arctic region once.[51]

Though there are few references to the Arctic in the long-term strategy for GHG emissions, "Sweden's strategy for the Arctic region" which was published in 2020, thoroughly lays out the country's priorities for environmental protection and sustainable development. The policy acknowledged the Paris Agreement, LOSC, and the CBD in its discussions on protecting

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[47] Finnish Government, "Finland's Strategy for Arctic Policy," Finnish Government, 2021, https://julkaisut.valtioneuvosto.fi/bitstream/handle/10024/163247/VN_2021_55.pdf?sequence=1&isAllowed=y, 26-28.

[48] See note above, 32-33.

[49] Government of Sweden, "Sweden's Climate Policy Framework," Government of Sweden, March 21st, 2021, https://www.government.se/articles/2021/03/swedens-climate-policy-framework/.

[50] Government Offices of Sweden Ministry of the Environment and Energy, "The Swedish Climate Act," (Sweden: 2020); Government Offices of Sweden, "Sweden's strategy for the Arctic region" (Sweden: 2020): 29-32.

[51] Government Offices of Sweden, "Sweden's long-term strategy for reducing greenhouse-gas emissions," Government Offices of Sweden, 2020, https://unfccc.int/sites/default/files/resource/LTS1_Sweden.pdf. 15.

the environment and reducing emissions throughout which is significant as it illustrates that the government outlined and acknowledged the plethora of governance arrangements and obligations they should meet in the region.[52] Further to this, Sweden specifically states that they will "limit Arctic warming by reducing global emissions of both long-lived and short-lived greenhouse gases."[53] Furthermore, the acknowledgement that the oceans function as a carbon sink which has directly led to the warming of the Arctic Ocean is explicitly made. This further exemplifies how this policy ties together the obligations under all three environmental law regimes: the oceans (LOSC), biodiversity (CBD), and climate change (UNFCCC). This is significant as it signals Sweden's recognition that emissions reductions nationally are fundamental to Arctic conservation despite not necessarily always occurring in the Arctic region of the country.[54]

Arctic Council AMAP and ACAP Contributions

Both AMAP and ACAP have contributed greatly to increased understanding of pollutants in the Arctic region and have created extensive recommendations on environmental issues which can be utilised by policy makers.[55] Their respective works will be overviewed to exemplify their contributions to Arctic governance.

ACAP

Promotion of Decreased Pollution	Through this program, research was conducted on the mitigation of short-lived climate pollutants ("SLCP") from associated petroleum gas

[52] Government Offices of Sweden Ministry of the Environment and Energy, "The Swedish Climate Act," (Sweden: 2020); Government Offices of Sweden, "Sweden's strategy for the Arctic region" (Sweden: 2020): https://www.government.se/49c150/contentassets/811c575eb9654a6383cf0ed4e0d5db14/the-swedish-climate-act.pdf?TSPD_101_R0=088d4528d9ab2000ca35be284c96e742d836b609c7a8950589c69ae57318a6f4ea3a7fab1f972f9e089a7b80d3143000531b81c3dba02d71d02f206fa91fc67c9daf5b4d46ce10b4835937696c016cd7285b8b13cc778e5365f7b95ce96febee.

[53] See note above, 24, 29 and 30.

[54] See note 52, 33.

[55] Arctic Council, "How we work," *Arctic Council,* accessed on October 23rd, 2021 from https://arctic-council.org/explore/work/.

in the Arctic Region with the Introduction of Best Available Techniques (BAT)	(APG) flaring.[56] Independent consultants from Russian company VYGON Consulting, and the Norwegian company Carbon Limits in cooperation with the Russian Ministry of Natural Resources, completed the research and as of June 2020, were compiling a comprehensive assessment on the environmental impact of APG.[57] The report on their findings is expected to include analysis on policy measures to cut emissions by particular Arctic states and suggests that the countries can learn from one another.[58]
Arctic Black Carbon Cases Platform	Countries and communities within the Arctic created the Arctic Black Carbon Cases platform to showcase mitigation projects and policies relevant to black carbon emissions reductions in the Arctic so that parties can showcase their efforts in this area.[59] Through this initiative, countries have been able to disseminate their experience when it comes to best available practices and policies. This has led to the creation of the Black Carbon and Methane Expert Group which created biannual summaries from the information submitted by Arctic States on the progress of reductions and gives further recommendations moving forward.[60]
Phase-Out of Ozone Depleting Substances and Fluorinated Greenhouse Gases at Fish and Seafood Processing Enterprises	This project focuses on fishing in the Murmansk Oblast region of Russia and aims to phase out approximately 18.65 ODP tonnes (Ozone-depleting potential) of ozone depleting substances (ODS).[61] This project was initiated by the Ministry of Natural Resources and Environment of Russia but is financed through the Arctic Council. The overarching goal of this initiative will be to determine the potential and effectiveness of transferring ozone and climate-safe technologies to onshore fish and sea processing enterprises which currently use chemicals which are ODS. The project commenced in 2021 and will run until 2023.
Mitigation of Black	This Arctic Council project conducted research into existing oil and gas

[56] "How to reduce emissions of black carbon and methane in the Arctic," Arctic Council, October 20, 2020, https://arctic-council.org/news/how-to-reduce-emissions-of-black-carbon-and-methane-in-the-arctic/.

[57] "Significant Economic and Environmental Gains can be Achieved by Applying Best Available Technology in the Oil Sector in the Arctic," Arctic Council, June 25, 2020, https://arctic-council.org/news/best-available-technology-in-the-oil-sector-in-the-arctic/.

[58] See note 44.

[59] "Arctic Black Carbon Case Studies Platform," Arctic Council, https://arctic-council.org/about/working-groups/acap/home/projects/arctic-black-carbon-case-studies-platform/.

[60] "Policy Experiences and Best Practices," Arctic Council, accessed on October 25th, 2021 from https://arctic-council.org/about/working-groups/acap/home/projects/arctic-black-carbon-case-studies-platform/policy-experiences-and-best-practices/.

[61] "Arctic Council project on the phase-out of ODS and F-gases in the fishing industry of the Murmansk Oblast," Ozone Program, accessed on October 26th, 2021 from https://www.ozoneprogram.ru/eng/project_murmansk/.

Carbon and Methane Emissions from APG Flaring in the Arctic Zone of the Russian Federation	infrastructure that have contributed to short term emissions through APG-flaring practices and sought to determine what best available technology (BAT) could facilitate a transition to their reduction.[62] One of the significant innovations to come from the study was APG reinjection which has the capacity to help significantly reduce emissions from this practice insofar as it can be facilitated and invested in for other oil and gas plants in the region.[63] This project also reviewed the regulatory framework for APG-flaring within Russia and Alberta, Canada as both have similar systems in place for regulation within their territory and industry-wide. Fundamentally, it was found that there was a positive economic incentive in using reinjection to scale down emissions in the Russian Novoportovskoye field and that it could be replicated in other areas of the Russian Arctic but would be limited to the area due to geological features needed for the technology to work. Considering the positive experience in Russia using this BAT, it was advised in the final report that Russia continue to utilise this technology to meet their NDC targets to the Paris Agreement.[64]

AMAP

POPs and Chemicals of Emerging Arctic Concern: Influence of Climate Change	Research conducted by AMAP alongside the United Nations Environmental Programme (UNEP) has examined Persistent Organic Pollutants in the region and determined that trends in these emissions need to be a focus of policy makers going forward. This summary paper provides a substantive overview of the climate change effects in the Arctic which can be connected to pollutants which include shifting seasons, permafrost degradation and thaw, altered ecological communities and food webs, northward movement of species, diminishing cryosphere, and changing climate patterns.[65] As such, the report calls on urgent action and strengthened efforts to the Stockholm

[62] Arctic Council and Arctic Contaminants Action Program, "Mitigation of Short-Lived Climate Pollutants from APG-Flaring," (ACAP:2021), https://oaarchive.arctic-council.org/bitstream/handle/11374/2607/MMIS12_2021_REYKJAVIK_ACAP_SLCP-Flaring.pdf?sequence=1&isAllowed=y.

[63] Arctic Council, "Mitigation of Black Carbon and Methane Emissions from APG Flaring in the Arctic Zone of the Russian Federation," *Arctic Council*, accessed on October 25th, 2021 from https://arctic-council.org/projects/mitigation-of-black-carbon-and-methane-emissions-from-apg-flaring-in-the-arctic-zone-of-the-russian-federation/.

[64] Arctic Council and Arctic Contaminants Action Program, "Mitigation of Short-Lived Climate Pollutants from APG-Flaring," 78.

[65] "POPs and Chemicals of Emerging Concern: Influence of Climate Change," *AMAP*, 2021, https://www.amap.no/documents/download/6757/inline, 4 and 9.

	Convention[66] (which pertains to POPs) by creating new laws regionally and nationally.[67] Continued research and development in the area is also encouraged.
Enhancing the Reduction of Black Carbon Emissions to protect the Arctic: Mapping the Policy Landscape of National, Regional, and International Action.	The technical paper produced on mapping the policy landscape for the reduction of black carbon emissions is a significant tool which can be used to identify effective policies and help disseminate their efficiencies into other policy landscapes. The report calls upon the continued monitoring of black carbon emissions and regularly coordinating internationally best available practices. Recently, they have had increasing engagement with the International Maritime Organisation (IMO) who contribute to some of the more direct regulations for emissions from shipping as exemplified by their Polar Code for Arctic shipping.[68] This initiative is funded by the EU and is being implemented through Carbon Limits (Norway), the Environmental Agency of Austria, the Finnish Environment Institute, the International for Applied Systems Analysis, the Norwegian Institute for Air Research, and the Swedish Environmental Research Institute under the EU Partnership Instrument.[69]
Reducing Black Carbon Emissions from Residential Heating in the Arctic EU-funded Action on Black Carbon in the Arctic	Similarly, to the project on mitigation of black carbon from APG flaring in Russian oil and gas fields, the technical report on reducing carbon emissions from residential heating aimed to establish best available practice in the area on the distribution of heat, burn right and loading properly, increasing insulation, and air-cleaning technology. The report further explores the suitability for different types of clean energy sources in different kinds of buildings and relays the nuances between the different options of heating. It concludes by suggesting several changes regarding black carbon which include, but are not limited to; establishing a limit on these emissions in the Arctic, harmonising the methodology by which studies measure black carbon residential heating, strengthening incentives for moving to BATs, and continuing to fund research and development projects in these areas.[70]

[66] The Stockholm Convention on Persistent Organic Pollutants is an international environmental law which regulates the production and use of these pollutants.

[67] See note 65, 14.

[68] EUA-BCA, "Enhancing the Reduction of Black Carbon Emissions to protect the Arctic: Mapping the Policy Landscape of National, Regional, and International Action," *AMAP Technical Report,* 2021: 18.

[69] AMAP, "The EU-funded Action on Black Carbon," *AMAP,* accessed on October 26th, 2021 from https://eua-bca.amap.no/.

[70] EUA-BCA, "Reducing Black Carbon Emissions from Residential Heating in the Arctic EU-funded Action on Black Carbon in the Arctic – Technical Report 4," AMAP Technical Report, 2021: 10-11.

Conclusions: The Arctic Council and International Environmental Governance

Despite the Arctic Council's non-binding legal status, the ACAP and AMAP have made substantial contributions to best available science and BAT in the Arctic region and their work has strengthened international standards. The innovative research of their programs and discovered best available science can be referenced and utilised in several ways dependent on jurisdictional scope. This is significant to the LOSC and Paris Agreement as they both utilise soft law language to enable these international standards to be compatible with the conventions. This is seen in several articles in the LOSC such as article 119 on High Seas fishing which refers to utilising best available science and in article 207 which further establishes that States need to cooperate and implement measures to prevent, reduce, and control pollution to the marine environment from land-based sources.[71]

Within national policy, the work of the Arctic Council can be seen to facilitate strengthened efforts in regards to reducing emissions. Most notably in the several projects of ACAP and AMAP related to Russian oil and gas and APG-flaring. Though the research found that the reinjection of emissions from APG-flaring is most effective and economically in Russia due to their geography, the project's findings have contributed to an important reduction in black carbon in the region from an Arctic state which has shown their interests to be less ambitious in regards to climate change.[72] The ability of Arctic states to work with the Arctic Council on the basis of coming to non-binding arrangements has facilitated heightened success in instances such as the aforementioned.[73]

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[71] United Nations Conference on the Law of the Sea. UNTS 1833 (3). United Nations Convention on the Law of the Sea. (16 November 1994), https://www.un.org/depts/los/convention_agreements/texts/unclos/unclos_e.pdf, art 119 & 207.

[72] See note 5 and 49.

[73] Oran R. Young, "Is it time for a reset in Arctic Governance?" *Sustainability* 11, 2019: 4.

Arctic states' participation and facilitation of projects within the working groups can hypothetically be utilised to ensure that they continue to submit NDCs which are based on the countries scientific and infrastructure capabilities under article 4 (3) of the Paris Agreement.[74] Despite the Arctic Council itself not having the capacity to impose legally binding decisions on its members, further consideration should be had on the applicability of the councils work as an international standard which can be utilised under the Paris Agreement to ensure continued progression with regard to ambition within NDCs. That stated, there is an abundance of legal discourse on the greying line of soft versus hard law within international environmental law which also needs to be considered.[75] In saying that, the increased movement towards utilising a holistic earth systems governance approach has continued to support the creation of new laws supporting rights to the environment in national jurisdictions due to the shift in understanding of the need to not govern in silos.[76]

Again, within LOSC, the applicability of Arctic Council research and recommendations would be advantageous in enforcing protocols and protections in this area, based on the most recent scientific knowledge. As demonstrated prior, the use of soft law through LOSC in articles pertaining to the conservation of the marine environment are plentiful. With the Arctic Council and International Panel for Climate Change clearly establishing the connection between emissions, ocean warming, and climate change, it is no longer unimaginable that increased emissions have been a catalyst for pollution to the marine environment incurring further climate

[74] United Nations Framework Convention on Climate Change, U.N. Doc. FCCC/CP/2015/L.9/Rev/1, Paris Agreement, 12 December 2015, article 4(3)

[75] Hema Nadarajah, "Prevalence of Soft Law in the Arctic, " *Yearbook of Polar Law* XII, 2020:285-307.

[76] See note 73, 7.

change.[77] As such, there would be a case to be made to incite action by States through their obligations to LOSC regarding the Arctic marine environment.

This paper has explored several policies and legal mechanisms which have a role in governing climate change pertaining to the Arctic. The NDCs and national laws analysed have illustrated the varying nuances and efforts each state has attributed to mitigate the effects of climate change in the region. Moreover, consideration has been given to how often Arctic climate change is referred to in the language of national policies. An overview of the obligations of states under LOSC and the Paris Agreement were then given before divulging into considerations over the research and work of the Arctic Council and their ability to influence Arctic State obligations to the aforementioned international agreements.

[77] See note 1.

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