Competing Futures

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The Arctic is one of the most climate-sensitive and geopolitically contested regions on Earth. While it holds an estimated 13% of the world's undiscovered oil reserves and 30% of its untapped natural gas (Gautier et al., 2009). The Arctic is also warming nearly four times faster than the global average, turning it into both a zone of economic opportunity and a climate risk hotspot. Since the 1980s, the Arctic has lost nearly 50% of its summer sea ice, and researchers expect the first ice-free Arctic summer could occur by 2030 (NSIDC, n.d.). Melting Arctic glaciers contribute approximately one-third of global sea level rise, threatening low-lying countries like the Netherlands and many small island nations (WWF, n.d.). The loss of reflective sea ice also intensifies warming through the albedo effect (where less

ice means less sunlight is reflected), while disrupted jet stream patterns linked to Arctic warming are making extreme weather more frequent and intense across North America, Europe, and Asia (WWF, n.d.). Some scientists even warn that glacier retreat may trigger volcanic eruptions by destabilizing the crust, releasing additional carbon dioxide and complicating climate forecasts (Fickling, 2023). Meanwhile, the opening of new shipping routes like the Northern Sea Route and the Northwest Passage, cutting transit time between Europe and Asia by up to 40%, brings increased traffic, emissions, and black carbon deposits that further speed up ice loss (Fickling, 2023). Arctic wildlife is also under pressure: species like polar bears, walruses, and seals are losing hunting grounds as sea ice disappears, while fish and marine mammals are migrating north into waters that were previously too cold for their survival (Fickling, 2023).

The Arctic is no longer a distant frontier: it is a global climate accelerator and a symbol of the Anthropocene, where environmental changes happen faster, geopolitical tensions rise quicker, and the consequences are felt worldwide. How do future climate dynamics play out in the Arctic? Within the rapidly shifting region, Russia and China have emerged as key players, each projecting a different vision of the future. Russia continues to pursue fossil-fuel dominance and militarized sovereignty, reflecting a desire to extend the industrial past, while China positions itself as a climate-tech power, combining Arctic resources, diplomacy, and long-term strategic influence. Together, they represent clashing timelines: one resisting transition, the other seeking to define it. In this region, the future is already happening.

2. Russia's Arctic strategy and climate stance

Russia's Arctic policy is shaped by a vision of the future that seeks to delay structural transformation, prioritizing sovereignty, security, and fossil-fuel extraction over ecological transition. Russia's interest in the Arctic is both strategic and existential. The region accounts for roughly 20% of Russia's GDP, and about 80% of its gas and 17% of its oil exports originate from the Arctic zone (Buchanan, 2023). Beyond resources, the Arctic gives Russia access to emerging commercial shipping routes, particularly the Northern Sea Route (NSR), which Moscow sees as a key trade corridor insulated from Western-controlled paths (Conley et al., 2021). Russia's longest coastline borders the Arctic Ocean, and the region is deeply embedded in its national mythology, military posture, and vision of great-power status.

At the heart of Russia's Arctic approach is a temporal logic of preservation and control. As climate change accelerates transformations in the Arctic, Russia's policies do not aim to mitigate these changes but to capitalize on them while maintaining continuity with the past. The climate emergency is treated not as a disruption but as an enabler: melting ice provides new extraction and shipping opportunities, reinforcing fossil-fuel dependence (The Arctic Institute, 2024).

This vision resists a global transition to clean energy. Instead, it embraces a hydrocarbon-centric timeline, reinforced by large-scale investments in liquefied natural gas (LNG) projects like Yamal LNG and Arctic LNG 2 (The Arctic Institute, 2024). These projects have been declared "of national interest," and supported by favorable legal frameworks and state-backed financing. Russia's timeline is also heavily securitized. Since 2014, and especially after the 2022 invasion of Ukraine, the Kremlin has reframed the Arctic as a military and sovereignty frontier, shifting from economic expansion to defense consolidation (Wilson Rowe, 2021; Yakovlev, 2024). The Arctic is no longer seen only as a zone for development but as a strategic bastion for resisting Western influence.

Russia has made massive investments in Arctic infrastructure:

Despite Western sanctions, Russia has worked to "sanction-proof" its Arctic ambitions. It has shifted financing toward domestic institutions, increased its reliance on Chinese partnerships, and aimed to localize key technologies (The Arctic Institute, 2024). Looking forward, Russia's Arctic vision remains tied to fossil fuel extraction, infrastructure resilience, and militarized sovereignty. Even as climate risks increase, Moscow's policy continues to focus on resource control and geopolitical insulation rather than climate adaptation.

3. China's Arctic involvement and climate framing

China's Arctic engagement reflects a leapfrog vision of the future: one where the country uses the urgency of climate change and the shifting geopolitics of the Arctic to accelerate its role as a global power. Unlike Russia, which treats the Arctic as a resource frontier tied to traditional energy and territorial defense, China frames itself as a "near-Arctic state" and a forward-looking stakeholder, focused on science, innovation, and sustainable development (INSS, 2024). This strategic identity allows China to justify its growing presence in a region where it has no physical territory but increasingly vast ambitions.

China's interest in the Arctic is multifaceted. First, the Arctic is a critical component of China's Polar Silk Road, part of the broader Belt and Road Initiative (BRI). With ice melting rapidly, China sees the Northern Sea Route as a key shipping lane that could reduce transport time between Asia and Europe by up to 40% (The Arctic Institute, 2024). Second, China is attracted to the region's vast resources (including rare earth minerals, fisheries, and potential oil and gas reserves) and has positioned itself as a partner in Arctic research and infrastructure development. Third, the Arctic provides a diplomatic and symbolic opportunity for China to build influence in international institutions, such as the Arctic Council, and portray itself as a responsible actor in global climate governance (Modern Diplomacy, 2024).

China's Arctic strategy is grounded in a temporal logic of acceleration. It seeks to leap ahead in global standing by using the Arctic as a site of

technological experimentation, geopolitical diplomacy, and environmental branding. The country's "Vision for Maritime Cooperation under the Belt and Road Initiative" emphasizes infrastructure, data collection, and satellite monitoring in the Arctic, presenting a future where China contributes to and even shapes Arctic governance norms (INSS, 2024). This framing supports China's broader climate diplomacy: while still the world's largest emitter, it increasingly uses the language of "green development" to position itself as a climate leader, even in territories far from its own borders.

China has already built a significant Arctic presence despite being a non-Arctic state. It operates the Yellow River Station in Svalbard, conducts frequent Arctic scientific expeditions via its icebreaker Xue Long, and has invested in key energy projects in Russia's Yamal Peninsula. The 14th Five-Year Plan (2021–2025) includes Arctic development goals in science, climate monitoring, and shipping, signaling that Arctic engagement is no longer peripheral but integrated into national planning (The Arctic Institute, 2024).

Looking forward, China is likely to pursue a dual strategy: expanding its physical footprint through polar science and infrastructure while enhancing its soft power through climate diplomacy. The U.S. Department of Defense (2023) has expressed concern over China's growing influence in the Arctic, warning that dual-use scientific outposts could mask strategic intent. While China continues to present itself as a benign actor, its efforts to shape Arctic governance, without being a formal Arctic state, challenge the traditional norms of sovereignty and raise questions about long-term balance in the region. Nonetheless, China's leapfrog approach offers a futurist model: rather than resisting change, it aims to get ahead of it, making the Arctic not just a site of extraction but a platform for its vision of global influence in a warming world.

4. Comparing Climate ambitions and realities

While Russia and China each construct strong narratives of Arctic engagement, there is often a significant disconnect between their stated ambitions and their actual behavior. In both cases, climate commitments serve as instruments of strategic positioning more than evidence of genuine transformation. As climate pressures mount in the Arctic, these two powers use the language of responsibility and innovation. From another perspective, however, their on-the-ground actions tell a more ambivalent story.

While China uses the Arctic to position itself as a forward-looking climate actor, Russia does not even attempt to frame its Arctic strategy around sustainability. Instead, it openly pursues a fossil-fueled, sovereignty-first model, seeing climate change not as a crisis to mitigate, but as an opportunity to expand access to shipping lanes and hydrocarbons. The gap in Russia's case is not between rhetoric and action: it is between what global climate targets demand and Russia's unapologetic commitment to

business-as-usual extraction. China, on the other hand, claims to lead on climate issues. It promotes scientific cooperation, renewable energy corridors, and green shipping. But its actions, particularly its investments in fossil fuel projects, often contradict that message. This contrast reveals two different ways of engaging with the Arctic's future: one that resists environmental responsibility altogether, and one that embraces its language while hedging its bets.

For Russia, its concrete policies remain centered on intensified fossil fuel extraction and militarized sovereignty. Flagship projects like Yamal LNG and Arctic LNG 2 are not part of a clean energy transition: they are meant to emphasize Russia's role as a global gas supplier while bypassing Western routes and markets (The Arctic Institute, 2024). Russia's emissions have not declined in line with global climate targets, and it has made no serious move toward renewable energy in the Arctic. Moreover, since its 2022 invasion of Ukraine, Russia has increasingly isolated itself from the international climate community, including the Arctic Council and COP processes (Yakovlev, 2024; Conley et al., 2021). Its climate rhetoric serves to legitimize extractive expansion, not to transition away from it and actions match rhetoric.

China, shows discrepancies between the two. It positions itself as a future-oriented actor, emphasizing its investments in polar science, green shipping, and multilateral engagement. It has integrated Arctic ambitions into national development goals through instruments like the 14th Five-Year Plan, highlighting innovation and sustainability (The Arctic Institute, 2024). However, a closer look reveals a more complicated reality. China remains the world's largest carbon emitter, and it continues to invest in Arctic fossil fuel infrastructure, often in partnership with Russia. It plays both sides: claiming its commitment to climate leadership while expanding its stake in projects that undermine that same commitment. This duality is characteristic of China's "leapfrog" logic: it positions itself ahead of the transition curve, but hedges against it by staying invested in the carbon economy it claims to transcend. Even in technological and scientific domains, where China appears most advanced, the picture is mixed. Yes, China operates the Yellow River Station in Svalbard, has launched multiple Arctic expeditions, and deploys state-of-the-art icebreakers like Xue Long 2. But much of this activity is diplomatic in nature, aimed at reinforcing its legitimacy as a "near-Arctic state" rather than delivering direct climate mitigation outcomes (Modern Diplomacy, 2024). Russia, in contrast, channels technological investment primarily into extractive logistics and military readiness, building dual-use infrastructure that favors control over transparency, and defense over data (Conley et al., 2021).

Ultimately, both states treat the Arctic as a site of future leverage, not planetary stewardship. Their strategies reflect two versions of ambition that fall short in practice: Russia openly rejects climate transition while claiming pragmatic development; China promotes a green vision but has yet to make

that vision structurally credible. In this sense, the Arctic is not just where their futures diverge, but where the limits of geopolitical climate ambition are most exposed. While the planet accelerates toward climate thresholds, Russia and China still treat the Arctic as a resource theater: one resisting change, the other simulating it.

5. Implications for Arctic Governance and Global climate goals

The divergent Arctic strategies of Russia and China are reshaping the dynamics of international cooperation in the region, and not always for the better. Russia's withdrawal from multilateral forums like the Arctic Council, especially since its 2022 invasion of Ukraine, signals a shift toward isolationism and securitized control. This move undermines trust, reduces transparency, and weakens the very institutions designed to foster peaceful cooperation, environmental stewardship, and crisis response in the region (Yakovlev, 2024; Conley et al., 2021). In contrast, China actively engages in multilateral Arctic diplomacy, even as a non-Arctic state. It participates in scientific collaborations, invests in shared research infrastructure, and frames itself as a constructive stakeholder through climate and environmental discourse (Modern Diplomacy, 2024; INSS, 2024). Yet this cooperative posture is also strategic: designed to increase influence without challenging sovereignty rules outright. The result is an asymmetry in Arctic governance: while China expands its presence by embedding itself in future-oriented cooperation, Russia increasingly asserts its role through exclusion and unilateralism. These conflicting approaches put a strain on collective action and signal a troubling trend: as Arctic urgency grows, the geopolitical space for meaningful climate collaboration may be shrinking.

6. Conclusion

The Arctic is not only where climate change is happening the fastest: it is also where the future is being politically constructed. The future of climate is shaped in the region. What we see in the actions of Russia and China is not just environmental response but the projection of competing timelines: one rooted in the past, the other claiming to get ahead of the future. Both strategies are shaping global climate outcomes in real time.

Russia's Arctic policy slows down the global transition by doubling down on fossil fuels and militarized sovereignty. It treats the climate crisis not as a call to transformation, but as a strategic opening for short-term power. China, by contrast, treats the Arctic as a place for green leadership and global governance but continues to contradict itself by investing in carbon-heavy projects. This is not just a case of ambition versus action. It is a struggle over how quickly the world should change and who leads that change.

The result is a future imagined from the top down, fast-moving, competitive, and built to serve the strongest. The Arctic becomes not a zone of

shared climate urgency, but a terrain where the pace of change is set by those most able to exploit it. If we want a future that aligns with planetary limits and human equity, we can't just look at emissions or ice loss. We have to look at the political timelines being written in the Arctic. That is where the climate future is being constructed, not just environmentally, but ideologically.

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