

Risk Assessment Report: Cameco Corporation

Investment Analysis for the Government Pension Fund Global

Executive Summary

This report presents a comprehensive risk assessment of the investment by the Norwegian Government Pension Fund Global (GPF) in Cameco Corporation, a Canadian-based global uranium producer. The assessment is conducted in accordance with the *Guidelines for Observation and Exclusion of Companies from the Government Pension Fund Global*.¹ The analysis focuses on three primary areas of potential risk: product-based criteria related to nuclear weapons, conduct-based criteria concerning environmental and social performance, and the company's exposure to significant geopolitical conflicts.

The assessment of **product-based risk** concludes that Cameco's activities do not meet the criteria for exclusion under Guideline §3a. Cameco is a producer of uranium concentrates and other upstream products for the civil nuclear power industry.² While these materials are dual-use, they are not "key components to nuclear weapons" as defined and consistently applied by the Council on Ethics. The Fund's own interpretive guidance and exclusion precedents make a clear distinction between producers of safeguarded raw materials for the energy sector and manufacturers of warheads or dedicated delivery systems.⁴ Cameco's operations and sales are subject to the stringent international safeguards regime of the International Atomic Energy Agency (IAEA), which is designed to prevent the diversion of nuclear material for military purposes.⁶

The assessment of **conduct-based risk** finds that while the company operates in a sector with inherent environmental and social challenges, its conduct does not present an

unacceptable risk of future, severe norm violations under Guideline §4.

- **Environmental Damage (§4e):** The most significant environmental issue is the historical contamination at the Port Hope facility, inherited from a predecessor state-owned entity.⁷ Cameco's current conduct is one of active, large-scale remediation under strict regulatory oversight, which mitigates the risk of future violations.⁸ Ongoing operations are managed under certified systems and are consistently found by regulators to be protective of public health and the environment.¹⁰
- **Human Rights (§4a):** Cameco demonstrates a strong record of engagement with Indigenous Peoples in Canada, its primary area of operation. It is a major employer of Indigenous individuals and has extensive business partnerships with Indigenous-owned companies, fostering high levels of community support.⁸ This proactive model serves as a significant mitigating factor against the human rights risks typically associated with the extractive sector.
- **Gross Financial Crime (§4g):** A protracted transfer pricing dispute with the Canada Revenue Agency (CRA) was definitively resolved in Cameco's favor by the Canadian judiciary, including a dismissal of the final appeal by the Supreme Court of Canada.¹³ This legal vindication confirms the company's actions were compliant with national law, neutralizing any claim of "gross financial crime."

The assessment of **geopolitical risk** acknowledges significant exposure through the company's 40% stake in the Inkai mine in Kazakhstan, a region subject to Russian and Chinese influence.² This presents considerable financial and operational risks related to supply chain stability. However, this geopolitical tension also enhances the strategic value of Cameco's assets in stable, allied jurisdictions (Canada and the US) as Western nations seek to secure non-Russian nuclear fuel supplies.¹⁵ This risk, while material to the investment's financial profile, does not directly trigger any of the GPFG's specific ethical exclusion criteria.

Based on this comprehensive analysis, the investment in Cameco Corporation is deemed to present an **acceptable risk**. The company's products and conduct do not meet the high threshold for exclusion or observation established in the Fund's ethical guidelines.

Final Risk Category: 4 - Acceptable Risk

Introduction: Profile of Cameco Corporation in the Global Nuclear Fuel Market

Corporate Overview

Cameco Corporation is a Canadian-based, publicly traded company headquartered in Saskatoon, Saskatchewan.¹⁷ Formed in 1988 through the merger of two crown corporations, Eldorado Nuclear Limited and the Saskatchewan Mining Development Corporation, Cameco has grown to become the world's largest publicly traded uranium company and the second-largest producer globally, accounting for approximately 12% of world mine production in 2022.¹⁷ The company is a cornerstone of the global nuclear energy sector, supplying uranium and fuel services to nuclear utilities worldwide for the generation of carbon-free electricity.¹⁷

Operational Scope

Cameco's operations are vertically integrated, spanning a significant portion of the nuclear fuel cycle. The company's activities begin with uranium exploration and mining, followed by milling, refining, conversion, and fuel manufacturing.² Its primary assets are considered "tier-one," characterized as long-lived, low-cost operations.¹⁷ These include the world's largest high-grade uranium mine at McArthur River and the world's highest-grade uranium mine at Cigar Lake, both located in northern Saskatchewan, Canada.²

Internationally, Cameco holds a 40% interest in the Inkai in-situ recovery (ISR) mine in Kazakhstan, a joint venture with the state-owned entity Kazatomprom.² It also operates ISR facilities in the United States through its subsidiary Cameco Resources in Wyoming and Nebraska.² Downstream, its Fuel Services Division in Ontario, Canada, operates the world's largest uranium refinery in Blind River and a key conversion facility in Port Hope, which produces uranium hexafluoride (

UF₆) for light-water reactors and natural uranium dioxide (UO₂) for CANDU heavy-water reactors.² Through strategic partnerships, Cameco also holds a 49% stake in Westinghouse Electric Company, a major nuclear plant services and technology provider, and Global Laser Enrichment, which is developing next-generation enrichment technology.²

Report Mandate and Structure

The mandate of this report is to conduct a thorough risk assessment of the GPF's

investment in Cameco Corporation. The analysis is strictly framed by the criteria set forth in the *Guidelines for Observation and Exclusion of Companies* issued by the Norwegian Ministry of Finance.¹ The purpose is to determine if Cameco's products or conduct present an unacceptable risk of contributing to serious violations of fundamental ethical norms.

The report is structured into four main sections:

1. **Product-Based Risk Assessment:** An evaluation of Cameco's products against Guideline §3a, which pertains to the production of key components for nuclear weapons.
2. **Conduct-Based Risk Assessment:** An analysis of the company's operational conduct against Guideline §4, focusing on risks of severe environmental damage (§4e), grave or systematic human rights violations (§4a), and gross financial crime (§4g).
3. **Geopolitical Risk Exposure:** An examination of the company's exposure to geopolitical conflicts and instability, particularly through its operations in Kazakhstan, and the implications for the investment.
4. **Synthesis and Final Risk Categorization:** A consolidated analysis of the findings, leading to a conclusive risk categorization and a final recommendation for the investment.

Section 1: Product-Based Risk Assessment (Guideline §3a)

This section assesses whether Cameco Corporation engages in activities that would warrant exclusion under Guideline §3a, which states the Fund shall not be invested in companies that "develop or produce...nuclear weapons, [or] central components to [such] weapons".¹ The analysis requires a precise understanding of Cameco's products, their position in the nuclear fuel cycle, and the specific interpretation of "key components" as applied by the Council on Ethics.

1.1. Cameco's Products and the Nuclear Fuel Cycle

Cameco's business is centered on the initial stages of the nuclear fuel cycle. The company's primary products are ²:

- **Uranium Concentrates (U3O8):** Often referred to as "yellowcake," this is the product of the mining and milling process. It is the raw material that feeds the rest of the fuel cycle.²⁰
- **Uranium Trioxide (UO3):** Produced at the Blind River Refinery, this is a purified,

intermediate product created by refining uranium concentrates.²

- **Uranium Hexafluoride (UF₆):** Produced at the Port Hope Conversion Facility, UF₆ is a gaseous compound that serves as the feedstock for the uranium enrichment process. It is sold to enrichers who supply fuel for the world's most common reactor type, the light-water reactor.²
- **Uranium Dioxide (UO₂):** Also produced at Port Hope, this is a stable ceramic powder used to fabricate fuel for CANDU heavy-water reactors, which do not require enriched uranium.²
- **CANDU Fuel Bundles:** Cameco Fuel Manufacturing fabricates finished fuel assemblies and reactor components for CANDU reactors.²³

Crucially, Cameco's direct operations end at the conversion stage. The company does not engage in uranium enrichment, the technologically complex process required to increase the concentration of the fissile U-235 isotope to levels suitable for use in nuclear weapons.²⁰ Its products are sold directly to nuclear utilities in 16 countries for the sole purpose of generating electricity.¹⁷

1.2. The Dual-Use Dilemma: Assessing the Link to Nuclear Weapons

The core of the product-based risk assessment lies in the dual-use nature of uranium. The same fundamental material that fuels a nuclear power plant can, after significant additional processing, be used to create a nuclear weapon. A technical understanding of this process is essential to evaluate the risk.

Natural uranium, as mined by Cameco, is composed of approximately 99.3% uranium-238 and only 0.7% uranium-235.²⁹ Only the U-235 isotope is fissile, meaning it can sustain a nuclear chain reaction with slow neutrons.²⁹ To be effective in a nuclear weapon, the concentration of U-235 must be dramatically increased through enrichment.

- **Low-Enriched Uranium (LEU):** Used in most commercial power reactors, LEU contains 3-5% U-235. This material cannot be used to create a viable nuclear weapon.²⁹
- **Highly Enriched Uranium (HEU):** Defined as uranium with over 20% U-235, HEU can be used to make a nuclear weapon. "Weapons-grade" HEU is typically enriched to 90% U-235 or more.²⁹

Cameco's products—natural uranium concentrates and unconverted UF₆—are precursors for both LEU and HEU. However, they are not directly usable in a weapon. The enrichment process is the primary technical barrier to nuclear proliferation, as it requires highly sophisticated technology (such as gas centrifuges) that is difficult and expensive to acquire and operate.²⁹ Therefore, while Cameco's products are an input to a potential weapons

program, they are several complex and distinct steps removed from being a weapons component themselves.

1.3. Interpreting "Key Components" within the GPFG Framework

The applicability of Guideline §3a hinges on whether Cameco's products constitute "key components" of nuclear weapons. The Fund's historical practice and interpretive documents provide clear guidance on this question. The Council on Ethics has previously undertaken a detailed review to define the scope of this criterion, establishing a critical distinction that directly addresses the dual-use nature of uranium.

In its 2005 recommendations on the exclusion of companies involved with nuclear weapons, the Council on Ethics stated that activities subject to exclusion include the production of fissile material *for warheads* and the development and production of missiles whose *sole purpose* is the delivery of nuclear warheads.⁵ However, the Council explicitly clarified what is

not covered by the exclusion criterion: "This includes production or enrichment of uranium for other purposes than nuclear weapons".⁵ This carve-out for the civil nuclear fuel cycle is fundamental to the assessment.

Furthermore, an examination of the companies that the GPFG has excluded under the nuclear weapons criterion reveals a consistent focus on firms involved in the final stages of weaponization and delivery. This list includes companies like General Dynamics, L3Harris Technologies, BAE Systems, and Boeing, which are involved in manufacturing or maintaining components for nuclear warheads, intercontinental ballistic missiles (ICBMs), and other dedicated delivery platforms.⁴ Cameco's business—the extraction and initial processing of a raw material for the global energy sector—is fundamentally different in nature and scope from the activities of these excluded entities. To recommend exclusion for Cameco would require a direct contradiction of the Fund's own established and consistently practiced interpretation of its guidelines. The risk is not whether Cameco's product

could be diverted by a third party for illicit purposes, but whether Cameco's *business* is the production of weapons components. The evidence overwhelmingly indicates it is not.

1.4. The Role of International Safeguards and Non-Proliferation Regimes

The dual-use risk inherent in the nuclear fuel cycle is not unmanaged. It is governed by a

robust international non-proliferation architecture designed precisely to prevent the diversion of nuclear materials from peaceful to military purposes. The cornerstone of this regime is the Treaty on the Non-Proliferation of Nuclear Weapons (NPT), which is verified by the International Atomic Energy Agency (IAEA) through its system of safeguards.³⁸

Cameco operates entirely within this framework. As a Canadian company, it is subject to the NPT, to which Canada is a signatory.⁶ The company explicitly states its commitment to meeting or exceeding all applicable regulations regarding nuclear safeguards. Its products are delivered only to licensed and safeguarded facilities in customer countries under bilateral Nuclear Cooperation Agreements (NCAs), and its sales contracts require that the uranium be used exclusively for peaceful power generation.⁶ Cameco's facilities in Ontario, which handle processed material, are subject to enhanced safeguards, including frequent inspections by the IAEA.⁶

The existence and application of this comprehensive, internationally recognized safeguards regime is a critical mitigating factor. It provides credible, independent verification that the nuclear material handled by Cameco and its customers remains in the peaceful domain.³⁸ The IAEA's mandate is to provide the international community with assurance against the very risk in question, and Cameco's compliance with this regime demonstrates its commitment to non-proliferation.

1.5. Conclusion on Product-Based Risk

The analysis concludes that Cameco Corporation's activities do not meet the criteria for exclusion under Guideline §3a. The company produces raw and intermediate materials for the civil nuclear fuel cycle, not "key components to nuclear weapons" as this term has been interpreted and applied by the Council on Ethics and Norges Bank. Its products require significant further processing—specifically, enrichment—to become weapons-usable, a stage of the fuel cycle in which Cameco is not involved. The company's activities fall squarely within the explicit carve-out for the civil nuclear industry provided in the Council's own guidance.⁵ All operations and sales are conducted under the stringent international safeguards of the IAEA, which serves as the primary mechanism for managing the proliferation risk of dual-use materials. The risk of Cameco violating Guideline §3a is therefore assessed as negligible.

The following table provides a summary of this assessment.

Table 1: Cameco Products vs. GPFG Product-Based Exclusion Criteria (§3a)

Factor	Cameco Corporation's Activities & Products	GPFG Guideline §3a Criterion	Council on Ethics Interpretation & Precedent	Assessment of Risk
Product	Uranium Concentrates (U3O8), UF6, UO2, CANDU Fuel Bundles. ²	Production of "key components to...nuclear weapons". ¹	Explicitly excludes "production...of uranium for other purposes than nuclear weapons". ⁵ Exclusions target manufacturers of warheads, delivery systems, etc.. ⁴	Negligible. Cameco's products are raw materials for the civil nuclear fuel cycle, not manufactured weapons components.
End-Use	Sold to nuclear utilities in 16 countries for electricity generation. ²⁷	"weapons that by normal use violate fundamental humanitarian principles". ¹	Focus is on the intended and designed function of the product.	Negligible. End-use is contractually and regulatorily restricted to peaceful power generation.
Safeguards	Operations and sales are subject to IAEA safeguards under the NPT framework. ⁶	Implicitly addressed by assessing if the product is part of a weapon system.	Safeguarded civil nuclear fuel cycle is distinct from military programs. ⁶	Negligible. The international safeguards regime is the primary tool for mitigating diversion risk of dual-use materials.

Section 2: Conduct-Based Risk Assessment (Guideline §4)

This section assesses whether there is an unacceptable risk that Cameco Corporation contributes to or is responsible for serious violations of fundamental ethical norms, as outlined in Guideline §4. The assessment is forward-looking, focusing on the probability of future norm violations, their severity, and the company's connection to them, in line with Guideline §6(4).¹ The analysis concentrates on the most relevant criteria for a mining and processing company: environmental damage (§4e), human rights (§4a), and financial integrity (§4g).

2.1. Environmental Impact and Risk of "Severe Environmental Damage" (§4e)

The extraction and processing of uranium, like all large-scale mining, carries inherent environmental risks. The assessment must determine if Cameco's management of these risks and its overall environmental performance create an "unacceptable risk" of "severe environmental damage."

2.1.1. Operational Footprint and Management Systems

Cameco's operations in Canada and the United States are subject to stringent regulatory oversight by national nuclear safety bodies, namely the Canadian Nuclear Safety Commission (CNSC) and the US Nuclear Regulatory Commission (NRC).¹⁰ These agencies enforce strict licensing conditions related to environmental protection, monitoring, and reporting.

To meet these requirements, Cameco has implemented robust environmental management systems across its operating sites, which are certified to the ISO 14001 international standard.⁴³ A core component of this system is the regular completion of comprehensive Environmental Risk Assessments (ERAs) for each site, which are reviewed and updated every five years to incorporate new monitoring data and scientific knowledge.⁴³ These assessments systematically identify and quantify potential risks to the environment and the public, informing the company's protective measures.⁴⁶

Independent regulatory reviews by the CNSC consistently affirm the effectiveness of these systems. For example, CNSC reports on the McArthur River and Cigar Lake operations in

Saskatchewan concluded that Cameco's environmental protection programs are effective, that people and the environment in the vicinity are protected, and that potential risks from releases are similar to those posed by natural background levels.¹⁰

Despite these systems, Cameco's operations are not without incidents. The company's own public disclosures detail a number of reportable events, including minor spills of industrial water, overflows from treatment systems, and a small release of Uranium Hexafluoride (UF₆).⁴⁶ However, the company's own environmental effect rating for the vast majority of these incidents is "Level 1 - no measurable impact to the environment," and corrective actions are documented and reported to regulators.⁴⁶ While these incidents require ongoing monitoring, they do not individually or collectively rise to the level of "severe environmental damage."

2.1.2. Legacy Contamination and Remediation at Port Hope

The most significant area of environmental concern is associated with Cameco's Port Hope Conversion Facility in Ontario. This site has a long history of radioactive and chemical contamination, with community groups raising persistent concerns about emissions, waste transport, and the facility's proximity to residential areas and Lake Ontario.⁷

A critical factor in this assessment is that the bulk of this contamination is historical, predating Cameco's formation and originating from the activities of its predecessor, the state-owned Eldorado Nuclear, which began operations in the 1930s.⁷ The issue, therefore, becomes one of distinguishing this inherited, legacy liability from the company's current conduct. The GPFG's guidelines are forward-looking, focused on the unacceptable risk of a company

*contributing to future norm violations.*¹

In this context, Cameco's current role is not one of causing this historical damage, but of actively managing and remediating it. The company is undertaking a massive, multi-year cleanup project known as "Vision in Motion," which involves the demolition of old, contaminated buildings and the removal of historic waste and contaminated soils for long-term storage.⁵¹ A major milestone was the recent removal of the legacy

UF₆ plant, a project that took five years and over 125,000 work-hours.⁸ This conduct represents a significant investment in addressing a historical environmental problem.

While community concerns remain ⁷, the CNSC's most recent environmental protection review for the Port Hope facility concluded that Cameco continues to implement effective environmental protection measures that adequately protect the environment and the health of people in the area.¹¹ The assessment finds that the risk of Cameco causing

new severe environmental damage is low, given its management systems and intense regulatory scrutiny. Its involvement with the *existing* severe damage is one of active, state-sanctioned remediation. Therefore, while the situation warrants continued observation, it does not meet the high threshold of an unacceptable risk of future contribution to severe environmental damage required for exclusion under §4e.

2.2. Human Rights and Community Relations (§4a)

This section evaluates the risk of Cameco's involvement in "grave or systematic krenkelser av menneskerettighetene" (grave or systematic violations of human rights). For an extractive company, these risks often center on the rights of Indigenous peoples, land use, and worker safety.

2.2.1. Engagement with Indigenous Peoples

Cameco's primary mining operations are located in northern Saskatchewan, the traditional territory of Dene, Cree, and Métis peoples. The company's relationship with these Indigenous communities is a central element of its operational strategy and stands in stark contrast to the often-adversarial relationships seen elsewhere in the global mining industry.⁵³

Cameco is one of Canada's largest industrial employers of Indigenous people.⁶ In 2024, 51% of the workforce at its northern Saskatchewan operations self-identified as Indigenous.⁸ This commitment extends to business development; in 2024, 71% of all spending on services at these sites was with northern-owned and Indigenous businesses.⁸ Since 2002, the company has signed over \$3 billion in contracts with such suppliers.¹²

This model of partnership, employment, and benefit-sharing has been developed over decades and is formalized in agreements with local communities.⁵⁵ The result is a high degree of local support for the company's operations, with surveys indicating approval ratings between 75% and 80% among the northern population.¹² This proactive and collaborative conduct serves as a powerful mitigating factor against the risk of human rights violations related to land rights and economic exclusion. Far from presenting a risk, Cameco's conduct in this area could be considered a best-practice example of how resource companies can operate in partnership with Indigenous peoples, directly addressing and mitigating the primary human rights risks associated with the sector.

2.2.2. Worker Health, Safety, and Labour Practices

The history of uranium mining is associated with significant occupational health risks, most notably an increased risk of lung cancer from exposure to radon gas, a decay product of uranium.⁴² Acknowledging this history is essential, but the assessment must focus on current practices and risks.

Modern mining operations at Cameco are conducted under strict safety protocols. Each site has a formal radiation protection program designed to ensure that worker doses are kept "As Low As Reasonably Achievable" (ALARA).⁴⁴ Monitoring data shows that radiation exposures for workers at sites like McArthur River and Key Lake are far below the regulated limits.⁴⁴ The long-term health of Canadian uranium workers continues to be monitored through the comprehensive Canadian Uranium Workers Study (CANUWS), which is supported by regulators and academic institutions.⁴²

In its 2024 Sustainability Report, Cameco acknowledged that its safety performance, as measured by the Total Recordable Injury Rate (TRIR), had not improved over the past three years and missed its target.⁵⁹ The company attributed this to the challenges of rapidly hiring and training a less experienced workforce to support a major production ramp-up at its Saskatchewan sites. In response, it has implemented enhanced training for supervisors and a company-wide safety awareness campaign.⁶ While this performance requires scrutiny, it does not indicate a systematic disregard for worker safety.

Cameco's corporate policies explicitly commit to respecting the Universal Declaration of Human Rights, prohibiting forced labour, child labour, and human trafficking in its operations and supply chain, and respecting employees' right to freedom of association.⁶ There is no evidence of violations in these areas. The overall risk of the company being responsible for grave or systematic human rights violations is assessed as low.

2.3. Governance and Financial Integrity (§4g)

This section assesses the risk of Cameco's involvement in "grov korrupsjon eller annen grov økonomisk kriminalitet" (gross corruption or other gross financial crime). The primary focus is the company's long-running and high-profile tax dispute with the Canadian government.

2.3.1. Analysis of the CRA Transfer Pricing Dispute

For over a decade, Cameco was engaged in a major legal battle with the Canada Revenue Agency (CRA). The dispute centered on Cameco's use of a marketing subsidiary in Zug, Switzerland, established in 1999.¹⁸ Cameco sold uranium from its Canadian mines to its Swiss subsidiary at a fixed price, and the subsidiary then sold the uranium on the global market. As uranium prices rose significantly in the following years, substantial profits were realized and taxed in Switzerland at a lower corporate rate than in Canada.¹⁸

The CRA challenged this structure, arguing it was a "sham" designed to improperly avoid Canadian taxes and issued reassessments that would have added billions to Cameco's taxable income in Canada.⁶¹ An allegation of this magnitude, if proven, could potentially approach the level of "gross financial crime" under the GPFG guidelines.

However, the allegation was rigorously tested in the Canadian judicial system, and Cameco was fully vindicated.

- In September 2018, the Tax Court of Canada ruled unequivocally in Cameco's favor, finding that its marketing structure was in full compliance with Canadian law and was not a sham.⁶²
- The CRA appealed this decision. In June 2020, the Federal Court of Appeal unanimously upheld the Tax Court's ruling, again finding definitively for Cameco.⁶³
- The CRA sought to appeal once more to the country's highest court. In February 2021, the Supreme Court of Canada dismissed the CRA's application for leave to appeal, bringing the dispute for the initial tax years (2003, 2005, and 2006) to a final and complete conclusion in Cameco's favor.¹³

Following these court victories, the CRA has begun to reverse its reassessments for subsequent years and refund hundreds of millions of dollars in cash and letters of credit that Cameco had been required to post.⁶¹ The complete and final victory in its home country's judicial system demonstrates that the company's conduct, while representing an aggressive tax planning strategy, was ultimately ruled to be legal and non-fraudulent. For an investor like the GPFG, the legal judgments of a robust, democratic judicial system like Canada's must be respected. There is no factual or legal basis to conclude that Cameco is responsible for "gross financial crime" in this matter.

2.3.2. Evaluation of Corporate Ethics and Anti-Corruption Frameworks

Cameco has a comprehensive governance framework to ensure ethical conduct. The company maintains a formal Code of Conduct and Ethics that applies to all employees,

officers, and directors.⁶⁶ The code explicitly prohibits bribery and corruption and is supported by mandatory training for employees.⁶⁸

Oversight is provided at the board level through several committees, including the Audit and Finance Committee and the Nominating, Corporate Governance and Risk Committee.⁷⁰ The company also provides an anonymous, third-party ethics hotline for employees and contractors to report concerns without fear of retaliation.⁶⁷ This governance structure is designed to comply with the requirements of both the Toronto Stock Exchange and the New York Stock Exchange, where Cameco is listed.⁷⁰ The risk under Guideline §4g is assessed as negligible.

Section 3: Geopolitical Risk Exposure

While geopolitical risk is not an explicit criterion for exclusion under the GPFG Guidelines, it is a critical contextual factor for any investment in the global energy and resources sector. It can influence a company's operational stability, supply chain security, and long-term financial viability, and in some cases, could lead to situations that do trigger conduct-based criteria. For Cameco, the most significant geopolitical exposure stems from its operations in Kazakhstan.

3.1. Operational and Political Risks in Kazakhstan

Cameco's 40% ownership of the Inkai ISR mine is a significant asset.² Kazakhstan is the world's undisputed leader in uranium production, accounting for over 40% of the total global supply.⁷³ This dominance makes the country indispensable to the global nuclear industry, but also concentrates a substantial amount of supply risk in a single, politically complex jurisdiction.

The country's stability was called into question in January 2022, when protests over fuel prices escalated into widespread, violent unrest, leading to a government resignation and a Russian-led military intervention.⁷⁴ While uranium production and exports from Cameco's and other facilities were ultimately not disrupted, the events caused a sharp, albeit temporary, spike in global uranium prices and highlighted the vulnerability of the supply chain.⁷⁴ The country remains heavily influenced by its powerful neighbors, Russia and China, creating a precarious geopolitical balancing act that introduces a high degree of uncertainty for Western

companies operating there.¹⁴

3.2. Navigating Russian and Chinese Influence in the Uranium Sector

Russia has historically exerted significant influence over Kazakhstan's uranium sector. A large portion of Kazakh uranium exports has traditionally been transported through Russia, particularly via the Port of St. Petersburg.⁷⁵ This reliance creates a potential choke point that could be exploited by Moscow. This risk has been amplified by recent developments; in 2022, Russia's state-owned nuclear corporation, Rosatom, acquired a 49% stake in the company that owns licenses for the giant Budenovskoye uranium field in Kazakhstan.⁷⁷ This move significantly increases Russia's direct control over Kazakh production and has raised concerns about reduced availability for Western markets.¹⁴

Simultaneously, China has emerged as a primary customer for Kazakh uranium, securing long-term supply agreements to fuel its ambitious nuclear power expansion program, which includes plans for dozens of new reactors.⁷⁴ This has created an intense geo-economic competition for Kazakhstan's resources, placing Cameco in a position where it must navigate the strategic interests of two major powers that have increasingly strained relations with the West.¹⁴ This could expose the company to political pressure, unfavorable regulatory changes, or disruptions to its operations and export routes.

3.3. Implications for Supply Chain Stability and Investment Security

The geopolitical landscape presents a complex, two-sided risk profile for Cameco. The vulnerability associated with its Kazakh operations is clear. However, the broader geopolitical context, particularly the global effort by Western nations to reduce dependence on Russian nuclear fuel following the invasion of Ukraine, simultaneously elevates the strategic importance of Cameco's other assets.¹⁵

As utilities in the Americas and Europe seek to de-risk their supply chains, demand for uranium from stable, allied jurisdictions has surged.¹⁶ This positions Cameco, with its tier-one mines in Canada and production capacity in the United States, as a critical supplier for Western energy security.¹⁵ This strategic importance can translate into favorable government policy, long-term contracts at premium prices, and a stronger competitive position relative to producers aligned with Russia or China.¹⁶

Therefore, the geopolitical risk is not a simple negative factor. It is a dynamic that creates a significant vulnerability in one part of the company's portfolio (Kazakhstan) while simultaneously creating a strategic opportunity and a potential "geopolitical premium" for another, larger part of its portfolio (Canada and the US). For the GPFG, this means the risk is not just about potential loss but also about the strategic realignment of the entire global nuclear fuel market, in which Cameco is a pivotal Western player. At present, this risk is primarily financial and strategic, and does not directly trigger an ethical exclusion criterion.

Section 4: Synthesis and Final Risk Categorization

This final section consolidates the findings from the product-based, conduct-based, and geopolitical analyses to form a holistic risk profile for Cameco Corporation and to provide a final, justified risk categorization in accordance with the GPFG framework.

4.1. Consolidated Risk Profile

The overall ethical risk profile for Cameco is shaped by the negligible risk on product-based criteria, a more complex but ultimately manageable risk profile on conduct-based criteria, and a significant but primarily financial and strategic geopolitical risk exposure.

- **Product-Based Risk:** The analysis confirms that Cameco is not a producer of nuclear weapons components as defined by the Fund's guidelines. Its activities are firmly within the safeguarded civil nuclear fuel cycle. The risk is **negligible**.
- **Conduct-Based Risk:** The company faces challenges common to the extractive industry, particularly in managing historical environmental liabilities. However, its current conduct demonstrates a commitment to remediation, strong regulatory compliance, and a best-in-class approach to Indigenous relations. Allegations of financial crime were disproven in court. The overall conduct-based risk is assessed as **low**. The table below summarizes the key findings.

Table 2: Summary of Conduct-Based Risk Assessment (Guideline §4)

Guideline Criterion	Identified Risk Factors	Mitigating Factors & Company Conduct	Assessed Risk of Future Norm Violation

<p>§4e: Severe Environmental Damage</p>	<p>Significant legacy contamination at Port Hope facility.⁷ Record of minor operational spills/releases.⁴⁶</p>	<p>Active, large-scale remediation of legacy contamination under regulatory supervision.⁸ Robust, certified environmental management systems (ISO 14001).⁴³ Positive regulatory assessments from CNSC.¹⁰</p>	<p>Low. The primary damage is historical; current conduct is focused on remediation and controlled operations. The high threshold for "unacceptable risk" of <i>future</i> severe damage is not met.</p>
<p>§4a: Grave/Systematic Human Rights Violations</p>	<p>Historical health risks associated with uranium mining (radon exposure).⁴²</p>	<p>Industry-leading engagement with Indigenous Peoples (high employment, business partnerships, community support).⁶ Strong worker safety and radiation protection programs.⁴⁴ Explicit human rights policies.⁶</p>	<p>Low. Proactive and positive relationships with Indigenous communities are a major mitigating factor. No evidence of current systematic violations.</p>
<p>§4g: Gross Corruption or Other Gross Financial Crime</p>	<p>Protracted, high-value transfer pricing dispute with the Canada Revenue Agency (CRA).⁶¹</p>	<p>Definitive and final legal victory in Canadian courts, which found the company's actions to be legally compliant and not a "sham".¹³ Formal anti-corruption policies and governance structures.⁶⁶</p>	<p>Negligible. The conduct was legally vindicated by the highest judicial authorities in its home country. There is no basis for an assertion of "crime."</p>

- **Geopolitical Risk:** This risk is **high** from a financial and operational perspective due to the exposure to Kazakhstan. However, it does not currently translate into a direct ethical violation under the GPFG Guidelines.

4.2. Forward-Looking Assessment and Probability of Future Norm Violations

In accordance with Guideline §6(4), which requires a forward-looking assessment, the probability of Cameco committing future, severe norm violations is deemed to be low. This conclusion is based on several factors:

- **Strong Governance and Regulatory Oversight:** The company's operations, particularly in its home jurisdiction of Canada, are governed by a robust internal ethics framework and are subject to intense scrutiny from one of the world's most stringent nuclear regulators.¹⁰
- **Embedded Social License:** Cameco's model of deep integration and partnership with Indigenous communities in Saskatchewan is not a temporary initiative but a core, long-term business strategy.¹² This significantly reduces the risk of social conflict and related human rights issues.
- **Demonstrated Commitment to Remediation:** The company's substantial and ongoing investment in remediating the historical contamination at Port Hope demonstrates a commitment to addressing its environmental liabilities, making a repeat of such severe damage unlikely under the current management and regulatory regime.⁸

The most significant forward-looking risks are geopolitical and market-driven, which are largely outside the company's direct control and do not fall under the specific product or conduct criteria for exclusion.

4.3. Final Recommendation and Justification

Based on the comprehensive analysis detailed in this report, the investment in Cameco Corporation is determined to fall into the lowest risk category.

Final Risk Category: 4 - Acceptable Risk

This categorization is justified by the following conclusions:

1. **No Violation of Product-Based Criteria:** Cameco's products are raw materials for the civil nuclear energy sector. They do not meet the Fund's established definition of "key

components to nuclear weapons," and the company's activities are explicitly carved out from this exclusion criterion by the Council on Ethics' own interpretive guidance.¹

2. **Conduct Does Not Meet Exclusion Threshold:** While the company operates in a sector with inherent risks, its current conduct does not present an unacceptable risk of future norm violations. It is actively remediating historical environmental damage, maintains a positive and collaborative relationship with Indigenous communities, and has been legally vindicated of allegations of financial crime. Its performance does not meet the high threshold for "severe" or "systematic" violations required for exclusion or observation under Guideline §4.¹
3. **Geopolitical Risk is Financial, Not Ethical:** The significant geopolitical risks associated with the company's Kazakh operations are primarily financial and strategic in nature. They do not, at present, implicate the company in conduct that would breach the GPFG's ethical guidelines.

The investment in Cameco Corporation does not present an unacceptable risk of the Fund contributing to serious violations of fundamental ethical norms. Therefore, continued ownership and engagement, where appropriate, is the recommended course of action.

Works cited

1. [ethical_guidelines.pdf](#)
2. Business Overview - Cameco, accessed on August 20, 2025, <https://www.cameco.com/invest/overview>
3. Cameco Corp Company Profile - Overview - GlobalData, accessed on August 20, 2025, <https://www.globaldata.com/company-profile/cameco-corp/>
4. Government Pension Fund of Norway - Wikipedia, accessed on August 20, 2025, https://en.wikipedia.org/wiki/Government_Pension_Fund_of_Norway
5. Recommendation on exclusion - Regjeringen.no, accessed on August 20, 2025, <https://www.regjeringen.no/en/dokumenter/Recommendation-on-exclusion/id419589/>
6. Social | Cameco, accessed on August 20, 2025, <https://www.cameco.com/about/sustainability/social>
7. Port Hope: A Case Study in Radioactive Risk - Natural Resources Canada, accessed on August 20, 2025, https://natural-resources.canada.ca/sites/nrcan/files/engagements/radwaste/PHC_HCCPresentation%2017March%202021%20%20final.pptx.pdf
8. Cameco Releases 2024 Sustainability Report, accessed on August 20, 2025, <https://www.cameco.com/media/news/cameco-releases-2024-sustainability-report>
9. Cameco Releases 2024 Sustainability Report - Moomoo, accessed on August 20, 2025, <https://www.moomoo.com/news/post/54802473/cameco-releases-2024-sustainability-report>
10. Summary of environmental protection review report: McArthur River Operation,

- accessed on August 20, 2025,
<https://www.cnscccsn.gc.ca/eng/resources/environmental-protection/reviews/environmental-protection-review-summary-mcarthurriver/>
11. Environmental protection review report summary: Cameco Fuel Manufacturing Inc., accessed on August 20, 2025,
<https://www.cnscccsn.gc.ca/eng/resources/environmental-protection/reviews/environmental-protection-review-summary-cfm/>
 12. Partnerships for First Nations and Métis in the North: A Corporate Success Story - Policy Magazine, accessed on August 20, 2025,
<https://policymagazine.ca/pdf/8/PolicyMagazineJuly-August-14-Willy.pdf>
 13. Cameco Pleased as Supreme Court Dismisses CRA Leave to Appeal, accessed on August 20, 2025,
<https://www.cameco.com/media/news/cameco-pleased-as-supreme-court-dismisses-cra-leave-to-appeal>
 14. The “Inkai Incident”: Under the Surface of Kazakhstan's Uranium Production - CACI Analyst, accessed on August 20, 2025,
<https://www.cacianalyst.org/publications/analytical-articles/item/13858-the-%E2%80%9Cinkai-incident%E2%80%9D-under-the-surface-of-kazakhstan%E2%80%99s-uranium-production.html>
 15. Fueling the Future: Recommendations for Strengthening U.S. Uranium Security - CSIS, accessed on August 20, 2025,
<https://www.csis.org/analysis/fueling-future-recommendations-strengthening-us-uranium-security>
 16. Uranium Market Dynamics Signal Investment Opportunities Amid Supply Constraints, accessed on August 20, 2025,
<https://www.cruxinvestor.com/posts/uranium-market-dynamics-signal-investment-opportunities-amid-supply-constraints>
 17. Corporate Profile - Amazon S3, accessed on August 20, 2025,
<https://s3-us-west-2.amazonaws.com/assets-us-west-2/annual/CCO-2023-corporate-profile.pdf>
 18. Cameco - Wikipedia, accessed on August 20, 2025,
<https://en.wikipedia.org/wiki/Cameco>
 19. Cameco Corporation, accessed on August 20, 2025, <https://www.cameco.com/>
 20. Our Operations - About Cameco, accessed on August 20, 2025,
https://www.cameco.com/sustainable_development/2016/about-cameco/our-operations/
 21. Uranium Operations - Cameco, accessed on August 20, 2025,
<https://www.cameco.com/businesses/uranium-operations>
 22. Cameco Resources, accessed on August 20, 2025,
<https://www.camecoresources.com/>
 23. Fuel Services - Cameco, accessed on August 20, 2025,
<https://www.cameco.com/businesses/fuel-services>
 24. Cameco Fuel Services, accessed on August 20, 2025,
<https://www.camecofuel.com/>
 25. Cameco U101, accessed on August 20, 2025,

- https://www.cameco.com/uranium_101/
26. Cameco U101 Fuel Processing, accessed on August 20, 2025, https://www.cameco.com/uranium_101/fuel-processing/
 27. Cameco Customers, accessed on August 20, 2025, <https://www.cameco.com/invest/markets/cameco-customers>
 28. Markets | Cameco, accessed on August 20, 2025, <https://www.cameco.com/invest/markets>
 29. Fissile Materials Basics | Union of Concerned Scientists, accessed on August 20, 2025, <https://www.ucs.org/resources/fissile-materials-basics>
 30. Nuclear Fuel Cycle - Reaching Critical Will, accessed on August 20, 2025, <https://www.reachingcriticalwill.org/resources/fact-sheets/critical-issues/5446-nuclear-fuel-cycle>
 31. Uranium - Wikipedia, accessed on August 20, 2025, <https://en.wikipedia.org/wiki/Uranium>
 32. Fact Sheet: Uranium Enrichment: For Peace or for Weapons, accessed on August 20, 2025, <https://armscontrolcenter.org/uranium-enrichment-for-peace-or-for-weapons/>
 33. Uranium and Depleted Uranium - World Nuclear Association, accessed on August 20, 2025, <https://world-nuclear.org/information-library/nuclear-fuel-cycle/uranium-resources/uranium-and-depleted-uranium>
 34. Uranium and nuclear power | EBSCO Research Starters, accessed on August 20, 2025, <https://www.ebsco.com/research-starters/power-and-energy/uranium-and-nuclear-power>
 35. Decisions on exclusion | Norges Bank Investment Management, accessed on August 20, 2025, <https://www.nbim.no/en/news-and-insights/the-press/press-releases/2024/decisions-on-exclusion3/>
 36. Decisions on exclusion | Norges Bank Investment Management, accessed on August 20, 2025, <https://www.nbim.no/en/news-and-insights/the-press/press-releases/2024/decisions-on-exclusion2/>
 37. Observation and exclusion of companies | Norges Bank Investment Management, accessed on August 20, 2025, <https://www.nbim.no/en/responsible-investment/ethical-exclusions/exclusion-of-companies/>
 38. IAEA Safeguards Agreements at a Glance - Arms Control Association, accessed on August 20, 2025, <https://www.armscontrol.org/factsheets/iaea-safeguards-agreements-glance>
 39. IAEA Safeguards - Serving Nuclear Non-Proliferation, accessed on August 20, 2025, <https://www.iaea.org/sites/default/files/18/09/sq-serving-nuclear-non-proliferation.pdf>
 40. Nonproliferation | Department of Energy, accessed on August 20, 2025,

- <https://www.energy.gov/nnsa/nonproliferation>
41. Canada Gazette, Part 1, Volume 158, Number 13: Regulations Amending Certain Regulations Made Under the Nuclear Safety and Control Act (Imports, Exports and Safeguards), accessed on August 20, 2025,
<https://gazette.gc.ca/rp-pr/p1/2024/2024-03-30/html/reg1-eng.html>
 42. Canadian Uranium Workers Study - Canadian Nuclear Safety Commission, accessed on August 20, 2025,
<https://www.cnsccsn.gc.ca/eng/resources/research/canadian-uranium-worker-study/>
 43. Environment & Safety - Cameco, accessed on August 20, 2025,
<https://www.cameco.com/businesses/uranium-operations/suspended/crow-butte/environment-safety>
 44. Environment & Safety | Cameco, accessed on August 20, 2025,
<https://www.cameco.com/businesses/uranium-operations/canada/mcarthur-river-key-lake/environment-safety>
 45. McArthur River Operation - Cameco, accessed on August 20, 2025,
https://www.cameco.com/sites/default/files/documents/McArthur_River_ERA_Public_Summary.pdf
 46. Environment & Safety | Cameco, accessed on August 20, 2025,
<https://www.cameco.com/businesses/fuel-services/conversion-port-hope/environment-safety>
 47. Independent Environmental Monitoring Program: Cigar Lake Operation - Canadian Nuclear Safety Commission, accessed on August 20, 2025,
<https://www.cnsccsn.gc.ca/eng/resources/maps-of-nuclear-facilities/iemp/cigar-lake/>
 48. Environmental Protection Review Report: McArthur River Operation, accessed on August 20, 2025,
<https://www.nuclearsafety.gc.ca/eng/resources/publications/reports/eprmcArthurRiver23/index.cfm>
 49. Environment & Safety | Cameco, accessed on August 20, 2025,
<https://www.cameco.com/businesses/fuel-services/port-hope-cobourg/environment-safety>
 50. Events Reporting: Uranium Mines and Mills - Canadian Nuclear Safety Commission, accessed on August 20, 2025,
<https://www.cnsccsn.gc.ca/eng/acts-and-regulations/event-reports-for-major-nuclear-facilities/event-reporting/uranium-mines-mills/>
 51. Cameco Port Hope conversion plant - Current Issues (Ontario, Canada) - Wise-uranium.org, accessed on August 20, 2025,
<https://www.wise-uranium.org/eopcdnph.html>
 52. Cameco Port Hope Public Opinion Survey Summary Report, accessed on August 20, 2025,
<https://www.camecofuel.com/sites/default/files/documents/2021-Port-Hope-Survey-Summary-Report.pdf>
 53. To Approve or not to Approve? A Comparative Analysis of State-Company-Indigenous Community Interactions in Mining in Canada and

- Sweden, accessed on August 20, 2025,
<https://pmc.ncbi.nlm.nih.gov/articles/PMC11023974/>
54. Cameco Releases 2024 Sustainability Report | INN - Investing News Network, accessed on August 20, 2025,
<https://investingnews.com/cameco-releases-2024-sustainability-report/>
 55. CAMECO CORPORATION Aboriginal Business Development Success Models, accessed on August 20, 2025,
<https://jaed.ca/index.php/jaed/article/download/530/500/939>
 56. Collaborating for Prosperity - Cameco Northern Saskatchewan, accessed on August 20, 2025,
<https://www.cameconorth.com/community/stories/collaborating-for-prosperity>
 57. Indigenous Peoples Relations - Supportive Communities - Cameco - 2016 Sustainable Development Report, accessed on August 20, 2025,
https://www.cameco.com/sustainable_development/2016/supportive-communities/indigenous-peoples-relations/
 58. Chapter 18: Recommendations 7-12, accessed on August 20, 2025,
https://bioethicsarchive.georgetown.edu/achre/final/chap18_2.html
 59. 2024 SUSTAINABILITY REPORT - Powering a secure energy future - Cameco, accessed on August 20, 2025,
<https://www.cameco.com/sites/default/files/documents/Cameco-2024-Sustainability-Report.pdf>
 60. Our Values | Cameco, accessed on August 20, 2025,
<https://www.cameco.com/about/sustainability/our-values>
 61. Cameco to Receive Substantial Refund of \$300 Million from Canada Revenue Agency, accessed on August 20, 2025,
<https://www.cameco.com/media/news/cameco-to-receive-substantial-refund-of-300-million-from-canada-revenue-agency>
 62. Cameco decision a serious blow to the CRA's aggressive transfer pricing audits - Doane Grant Thornton LLP, accessed on August 20, 2025,
https://www.doanegrantthornton.ca/globalassets/1.-member-firms/canada/insights/pdfs/transfer-pricing_cameco-case.pdf
 63. Cameco Pleaded as Federal Court of Appeal Unanimously Upholds Tax Court Decision, accessed on August 20, 2025,
<https://www.cameco.com/media/news/cameco-pleaded-as-federal-court-of-appeal-unanimously-upholds-tax-court-dec>
 64. Canada v. Cameco Corporation: Transfer Pricing and Income Tax Appeal, accessed on August 20, 2025,
<https://canadacommons.ca/artifacts/22372776/canada-v-cameco-corporation/23272831/>
 65. Cameco Corporation - Osler, Hoskin & Harcourt LLP, accessed on August 20, 2025,
<https://www.osler.com/en/about-us/representative-work/cameco-corporation-2/>
 66. Ethics andU - Cameco, accessed on August 20, 2025,
https://www.cameco.com/sites/default/files/documents/Cameco_Code_of_Conduct_and_Ethics_0.pdf

67. Code of Conduct & Ethics - Cameco, accessed on August 20, 2025,
<https://www.cameco.com/about/governance/code-of-conduct>
68. Ethics and U - Cameco, accessed on August 20, 2025,
https://www.cameco.com/sites/default/files/2023-08/Cameco_Code_of_Conduct_and_Ethics.pdf
69. Governance - Cameco, accessed on August 20, 2025,
<https://www.cameco.com/about/sustainability/governance>
70. Governance - Cameco, accessed on August 20, 2025,
<https://www.cameco.com/about/governance>
71. Board Committees - Cameco, accessed on August 20, 2025,
<https://www.cameco.com/about/governance/board-committees>
72. Cameco Corporation GOVERNANCE GUIDELINES, accessed on August 20, 2025,
<https://www.cameco.com/sites/default/files/documents/CCO-Corporate-Governance-Guidelines.pdf>
73. Uranium and Nuclear Power in Kazakhstan, accessed on August 20, 2025,
<https://world-nuclear.org/information-library/country-profiles/countries-g-n/kazakhstan>
74. Uranium Production in Kazakhstan Remains Unaffected by Unrest - Caspian Policy Center, accessed on August 20, 2025,
<https://www.caspianpolicy.org/research/security-and-politics-program-spp/uranium-production-in-kazakhstan-remains-unaffected-by-unrest>
75. Full article: Global uranium market dynamics: analysis and future implications, accessed on August 20, 2025,
<https://www.tandfonline.com/doi/full/10.1080/14786451.2025.2457376>
76. Geopolitical tensions cloud uranium market - Emerald Insight, accessed on August 20, 2025,
<https://www.emerald.com/insight/content/doi/10.1108/oxan-db274194/full/html>
77. Russia's influence in Kazakhstan is increasing despite the war in Ukraine - Chatham House, accessed on August 20, 2025,
<https://www.chathamhouse.org/2024/02/russias-influence-kazakhstan-increasing-despite-war-ukraine>
78. Kazakhstan's Uranium Exacerbating Geopolitical Conflict in Eurasia - Jamestown, accessed on August 20, 2025,
<https://jamestown.org/program/kazakhstans-uranium-exacerbating-geopolitical-conflict-in-eurasia/>
79. Supply & Demand | Cameco, accessed on August 20, 2025,
<https://www.cameco.com/invest/markets/supply-demand>
80. Navigating Uranium Market Challenges - Number Analytics, accessed on August 20, 2025,
<https://www.numberanalytics.com/blog/navigating-uranium-market-challenges>