Climate Risk Assessment

in alignment with TCFD guidelines

2025

Building a Climate-Resilient Utility for the Future

Algonquin Liberty™

Contents

About This Report: Integrating Climate Change into Algonquin's Business Decisions

Algonquin Power & Utilities Corp. ("Algonquin") evaluates climate-related risks and opportunities as part of its business decision-making. This includes assessing exposure to both the physical impacts of climate change and the transition to a lower-carbon economy, as well as the measures in place to manage these factors.

The Task Force on Climate-related Financial Disclosures ("TCFD") framework is used to guide the assessment and disclosure of climate-related issues, supporting consistency in evaluating risks, managing impacts, and informing strategic planning.

This report provides disclosures aligned with the TCFD framework, drawing on established guidance, industry practices, and internal analysis. It addresses all four TCFD pillars: Governance, Strategy, Risk Management, and Metrics and Targets. Related information is also available in Algonquin's Annual Reports, Sustainability Reports, Form 10-K filings, and Climate Disclosure Project ("CDP") climate change responses.

About Us: A Pure-Play Utility Company

Algonquin is a multi-utility company committed to delivering safe, reliable, and sustainable services to customers across a diverse geographic footprint. Operating in the United States, Canada, Bermuda, and Chile, we proudly serve approximately 1,265,000 customer connections.

In January 2025, the Company completed the divestment of its non-regulated renewable energy business, excluding its hydroelectric assets, along with its investment in Atlantica Sustainable Infrastructure plc. With these transactions finalized, Algonquin now operates with a streamlined structure focused on regulated utility operations.

The Company's core business is organized across two primary units:

- Regulated Services Group: This group owns and operates electric, natural gas, water distribution, and wastewater utility systems, as well as transmission operations. The Regulated Services Group owns and operates generation assets with a gross capacity of approximately 2.0 GW.
    - Electric Utility Systems: Located in the U.S. states of Arkansas, California, Kansas, Missouri, Nevada, New Hampshire and Oklahoma, as well as in Bermuda, serving approximately 310,000 connections.
    - Water and Wastewater Systems: Located in the U.S. States of Arizona, Arkansas, California, Illinois, Missouri, New York, and Texas as well as in Chile, serving approximately 577,000 connections.
    - Natural Gas Utility Systems: Located in the U.S. States of Georgia, Illinois, Iowa, Massachusetts, Missouri New Hampshire, and New York, and in the Canadian Province of New Brunswick, serving approximately 378,000 connections.
- Hydro Group: This group manages a portfolio of hydroelectric generation facilities located in Canada, which were retained following the divestment of the broader non-regulated renewables business. The total gross generation capacity of these hydroelectric assets is 115.5 MW.

Algonquin's focus is to become a premier pure-play utility, providing electricity, water, and natural gas services that are affordable, reliable, and aligned with the long-term needs of customers and communities. The Company is also dedicated to enhancing operational and infrastructure resilience and advancing sustainability initiatives.

Governance

Algonquin recognizes that governance is critical to effectively managing climate-related risks and opportunities. Oversight of sustainability and climate-related matters is embedded at both the board and management levels, ensuring that these considerations are integrated into strategy, risk management, and business operations. The following table outlines Algonquin's approach to the governance of climate-related issues, highlighting the board's oversight and management's role in assessing and managing climate-related risks and opportunities.

Climate Response Topic	Response
Describe the board's oversight of climate-related risks and opportunities.	Material climate-related risks are identified through Algonquin's standard enterprise risk management ("ERM") process that is the responsibility of the Chief Financial Officer ("CFO"). Risk assessment outcomes, climate-related or otherwise, are reported to the Risk Committee of Algonquin's Board of Directors on a quarterly basis and subsequently to the full board as appropriate. The Corporate Governance Committee also plays a role in the oversight of climate-related risks and opportunities through its mandate to oversee sustainability initiatives that include public disclosure of climate-related data, risks, and opportunities through various channels that historically have included an annual Corporate Sustainability Report, Sustainability Data Index, and third party forums such as the Climate Disclosure Project ("CDP"). The mandates of relevant committees can be found on Algonquin's website at: https://investors.algonquinpower.com/documents-and-filings/other-documents/default.aspx For more information on board oversight, see our Corporate Sustainability Report and our most recent CDP Submission from our ESG data hub at: https://algonquinpower.com/sustainability/esg-data-hub.html.

Climate Response Topic	Response
Describe management's role in assessing and managing climate-related risks and opportunities.	Material climate-related risks are identified and assessed through Algonquin's standard ERM process that is managed by the CFO. Issues identified are reviewed and evaluated by Algonquin's Executive Management Team, who ultimately have responsibility for operationalizing any necessary actions to manage risk. The Sustainability Group, overseen by the Chief Legal Officer ("CLO"), possesses internal expertise in sustainability matters, and in particular climate-related issues and disclosure practices. This group supports and contributes to the identification and quantification of climate-related risks, as well as supporting public disclosure of such items through the appropriate channels. More broadly, climate-related risks and opportunities are incorporated into Algonquin's typical business planning processes, overseen by the Executive Management team. Both risks and opportunities are assessed in relation to operations, development practices, strategic planning, capital programs, workforce considerations, and compliance to guide annual workplans and investment decisions.

Strategy

Climate-related risks and opportunities are considered when shaping long-term business strategy, financial planning, and operational decisions. By evaluating both risks and opportunities across short-, medium-, and long-term horizons, Algonquin aims to prioritize areas that may influence resilience, investment planning, and customer value. The following table outlines Algonquin's approach to identifying, assessing, and integrating climate-related risks and opportunities into its overall strategy.

Climate Response Topic	Response
Describe the climate-related risks and opportunities the organization has identified over the short, medium, and long term.	Based on scenario analyses and internal climate risk workshops, Algonquin has identified material climate-related risks and opportunities across its business lines. These have been assessed over short, medium, and long-term horizons, with both physical and transition-related pressures considered. The tables provided in Appendix A summarize Algonquin's key risks and opportunities across six major impact areas: • Transition Risks & Opportunities 1. Regulatory 2. Technology 3. Market 4. Reputational • Physical Risks & Opportunities 5. Acute physical events 6. Chronic physical changes Each entry in the tables is presented under a consistent framework that includes: • Impact Area and Description – concise description of the risk and/or opportunity linked to a specific climate driver (e.g., evolving regulations, low-carbon technologies, shifting market demand, stakeholder expectations, or physical hazards). • Business Unit and Scope – identifies where the issue is expected to manifest (Electric, Gas, Water, or Algonquin-wide). • Time Horizon – assessed over short term (1–5 years), medium term (6–10 years), and long term (beyond 10 years), aligned with Algonquin's strategic and planning cycles. • Scenario Level – evaluated under a low-carbon transition pathway (below 2°C scenario with elevated transition risks) and/or a high-carbon pathway (higher emissions, greater physical risks). • Potential Impacts – highlights expected implications for financial performance, operational reliability, customer service, reputational standing, or strategic execution. • Controls / Mitigation Measures – outlines current or planned responses, including infrastructure investments, policy alignment, technological innovation, market engagement, and climate resilience planning. This structured framework enables Algonquin to prioritize its focus, respond to emerging climate risks, and identify opportunities for long-term value creation in a decarbonizing economy. For detailed tables summarizing the identified risks and opportunities, please refer to Appendix A of this report.

Climate Response Topic	Response
Describe the impact of climate-related risks and opportunities on the organization's businesses, strategy, and financial planning.	Climate-related risks and opportunities influence Algonquin's businesses, strategic priorities, and financial planning across all regulated utility segments. These impacts, both physical and transition impacts, are evaluated through the ERM framework and are considered during planning cycles. At the business operations level, physical risks such as extreme weather events and chronic climate changes can affect service reliability, infrastructure performance, and operational costs across Algonquin's electric, gas, and water utilities. At the same time, opportunities arise from investments in system resiliency, distributed energy resources, and efficiency programs that strengthen reliability and address customer and regulatory expectations. From a strategic perspective, transition risks influence Algonquin's development plans and growth trajectory. Regulatory requirements, technological advances, evolving market dynamics, and stakeholder expectations are factors that guide corporate considerations. In response, Algonquin considers investments in renewable and low-carbon solutions where feasible, grid modernization, customer-focused programs, and engagement with policymakers as part of its approach to addressing climate-related objectives. Financial planning also reflects the impact of climate-related risks and opportunities. Capital planning, risk-adjusted investment decisions, and financing strategies take into account potential impacts on future capital requirements, operating expenditures, and access to funding opportunities in maintaining transparency on sustainability performance, for example through annual reporting, sustainability reports, state or provincial compliance filings, investor disclosures, and participation in voluntary frameworks, while also aligning with investor expectations and managing exposure to climate related financial risks in ways that support long term resilience. This integration incorporates climate-related considerations in Algonquin's near-term decision-making while also shaping the company's long-term strategic plans.

Climate Response Topic	Response
Describe the resilience of the organization's strategy, taking into consideration different climate-related scenarios, including a 2°C or lower scenario.	To assess the resilience of Algonquin's strategy against climate related risks and opportunities, climate scenario analysis has been applied to explore a range of plausible climate futures. In 2020, Algonquin engaged external experts to facilitate workshops with management and internal stakeholders. These sessions examined both transition and physical climate drivers, using the TCFD framework's tradeoff between transition risks under low carbon scenarios and physical risks under high carbon scenarios. Stress test scenarios, such as disorderly transitions and more severe climate outcomes, were also considered to capture a broader range of potential impacts. Internal workshops were then repeated in 2023 to update and inform the TCFD analysis and disclosure. For the most recent assessment, both low carbon and high carbon scenarios were used, incorporating updated climate models. The analysis draws on the latest CMIP6 datasets and Intergovernmental Panel on Climate Change ("IPCC") assessments. The low carbon analysis referenced the International Energy Agency ("IEA")'s Net Zero Emissions by 2050 ("NZE") pathway together with the IPCC SSP1 1.9 scenario, reflecting ambitious decarbonization consistent with limiting global warming to 1.5 to 2°C. The high carbon analysis used the IPCC SSP2 4.5 pathway and the IEA's Stated Policies Scenario ("STEPS") to reflect a less aggressive decarbonization trajectory with greater exposure to physical risks. Algonquin's earlier reliance on the SSP8.5 scenario was revised, as this pathway is now considered an implausible outcome. The structured scenario analysis process provided insights into how climate related risks and opportunities may affect Algonquin's operations, investment decisions, and long-term resilience planning. Workshops segmented by business unit, including electric, gas, and water utilities enabled the identification of risks and opportunities unique to each segment, providing a comprehensive perspective across the enterprise. The findings indicated that in low carbon scenarios, increased regulatory and policy requirements, rapid technological change, and shifting markets could create pressure for additional investment in renewable solutions, grid modernization, and efficiency initiatives. In high carbon scenarios, although near term regulatory requirements may be less stringent, businesses face greater physical risks such as extreme weather events, water stress, and higher long-term adaptation costs. Across both scenarios, financial and operational considerations were influenced by the balance between upfront investments in transition measures and exposure to longer-term climate impacts. Overall, these scenario analysis exercises provided Algonquin with perspectives on how risks and opportunities could materialize under both 2°C aligned and higher emissions pathways. The process supported management in evaluating potential vulnerabilities, identifying areas for further attention, and considering pathways for maintaining resilience across Algonquin's regulated utility businesses.

Risk Management

Identifying, assessing, and managing climate-related risks is an ongoing process integrated into Algonquin's broader ERM framework. Management continues to incorporate climate-related considerations into standard risk assessment processes, enabling a structured approach to risk evaluation and mitigation. The following table describes Algonquin's processes for identifying and assessing climate-related risks, managing them, and integrating these efforts into company-wide risk management practices.

Climate Response Topic	Response
Describe the organization's processes for identifying and assessing climate-related risks.	Algonquin has established a recurring process for identifying and assessing climate related risks that is embedded within the company's ERM framework. This process applies across all regulated utility operations, including electric, gas, water, and wastewater services. Risks are identified through annual enterprise and business unit risk reviews, climate scenario analysis aligned with the TCFD framework, materiality assessments, and input from cross functional working groups composed of sustainability, operations, engineering, and regulatory teams. Environmental dependencies such as water resources, weather variability, and ecosystem services are also considered as part of the assessment process. Risks are evaluated across short term (1–5 years), medium term (6–10 years), and long term (beyond 10 years) horizons. A standardized 5x5 matrix is used to assess both impact and likelihood. The Enterprise Risk Assessment Scale ranges from Catastrophic (5) to Insignificant (1), while the Likelihood Scale ranges from Almost Certain (5) to Rare (1). The impact scale includes categories such as safety and security, reliability, financial, and reputation, covering areas relevant to investors, customers, regulators, employees, communities, and the environment. Both transition and physical climate risks are considered, including acute events such as storms, floods, or wildfires, and chronic factors such as temperature change, water stress, or shifting precipitation patterns. Metrics and thresholds used in these evaluations are reviewed and updated annually. Reviews draw on historical data, input from stakeholders, and insights from industry benchmarks to align risk assessments with emerging information and trends. Risks are classified as substantive when they meet defined thresholds, typically where the potential impact is moderate or greater and the likelihood is possible or higher. Identified risks are then incorporated into Algonquin's enterprise risk profile for reporting to management and the board, providing a structured and consistent approach to evaluating climate related risks. Detailed tables summarizing the identified risks and opportunities, can be referred to in Appendix A of this report.
Describe the organization's processes for managing climate-related risks.	Algonquin manages climate-related risks through its ERM framework, which integrates environmental and climate considerations into the broader corporate risk oversight process. Once climate related

Climate Response Topic	Response
	risks are identified and assessed, management determines how they are addressed within business unit planning and enterprise level risk monitoring. Approaches to managing risks vary depending on the type of risk. For physical risks, management practices may include system hardening, vegetation management, water conservation initiatives, and infrastructure projects designed to improve operational reliability. For transition risks, management practices may involve monitoring regulatory developments, engaging in policy processes, evaluating the potential application of new technologies, and adjusting investment planning to reflect changing customer expectations and market signals. Risk management activities are carried out at both the enterprise and business unit levels. Business units incorporate climate-related risk considerations into their operational and capital planning, while the ERM function consolidates these risks with other material risks for reporting to senior leadership and the board. This approach provides visibility into how climate related risks are being managed alongside other strategic, operational, financial, and compliance risks across the organization.
Describe how processes for identifying, assessing, and managing climate-related risks are integrated into the organization's overall risk management.	Algonquin integrates climate related risks into its ERM framework, which provides a single structure for evaluating and overseeing all material risks across the organization. This integration means that climate related risks are not treated in isolation but are reviewed alongside operational, compliance, and strategic risks, giving management and the board a consolidated view of the overall risk profile. Climate related risks are identified and assessed through the same processes applied to other enterprise-wide risks, including annual enterprise and business unit reviews, materiality assessments, climate scenario analysis, and input from cross functional teams. Standardized impact and likelihood scales are applied to facilitate comparability across risk categories. Both transition and physical risks are assessed using criteria that include financial, operational, environmental, regulatory, and reputational dimensions. Management responses to identified risks are incorporated into operational and capital planning at the business unit level and consolidated within the ERM framework. This enables climate-related risks to be monitored through the same governance processes that apply to other risks, including reporting to senior leadership and the board. By embedding climate related risks into the established ERM framework, Algonquin benefits from a consistent, organization wide approach to risk oversight. This structure provides leadership with visibility into how climate related risks interact with broader enterprise risks and supports informed decision making on corporate strategy, operations, and long-term planning.

Metrics and Targets

Algonquin utilizes metrics and targets to monitor climate-related risks and opportunities in alignment with its strategy and risk management processes. By tracking greenhouse gas ("GHG") emissions, operational performance, and other relevant indicators, Algonquin uses data-driven insights to guide decision-making. The following table outlines the key metrics used, the disclosure of Scope 1, Scope 2, and where applicable Scope 3 emissions, as well as the targets that inform Algonquin's approach to managing climate-related risks and opportunities.

Climate Response Topic	Response
Disclose the metrics used by the organization to assess climate-related risks and opportunities in line with its strategy and risk management process.	Algonquin evaluates climate related risks and opportunities through a range of quantitative metrics that are integrated into its strategy and risk management processes. The organization's GHG emissions, energy efficiency, water use, waste, reliability, and compliance indicators are utilized to understand potential exposure to transition and physical risks, as well as opportunities for efficiency and resilience. On emissions, Algonquin measures Scope 1, Scope 2, and key Scope 3 categories in alignment with the GHG Protocol. Emissions intensity metrics, including generation-based and revenue-based measures, are used to evaluate exposure to carbon pricing and regulatory transition risks while tracking progress on efficiency initiatives. Operational efficiency metrics, such as energy consumption per MWh of power generation, consumption per customer connection, and internal energy use, are used to evaluate opportunities for cost savings and system improvements. Water metrics, including total withdrawals, consumption, and discharges, with emphasis on water stressed regions, support risk assessments related to resource availability and compliance. Physical and resilience related risks are monitored through grid reliability indicators, such as interruption frequency and duration, which provide insight into system performance under severe weather conditions. Biodiversity and land management metrics, such as habitat development for pollinators and species monitoring, help identify potential ecosystem impacts and opportunities to support resilience in local communities. Compliance and governance measures including environmental violations, anti-corruption training coverage, and Indigenous Rights oversight provide an additional lens for monitoring regulatory and reputational risks. Together, these metrics allow Algonquin to integrate climate related considerations into decision making, assess vulnerabilities across operations, and identify areas where operational performance and sustainability initiatives overlap with long-term business resilience.

Climate Response Topic	Response

Disclose Scope 1, Scope 2 and, if appropriate, Scope 3 greenhouse gas (GHG) emissions and the related risks.	Algonquin discloses greenhouse gas emissions in accordance with the GHG Protocol using an operational control approach. Reported emissions include Scope 1, Scope 2, and material Scope 3 categories.
	• Scope 1: Direct emissions totaled 1,883,937 metric tons CO_2e in 2024, from Algonquin's regulated electric, gas, water, and wastewater utilities, as well as from its Hydro Group. These emissions include fuel combustion, fugitive methane from natural gas distribution, SF_6 from electrical systems, and fugitive emissions from wastewater operations.
	• Scope 2: Indirect emissions from purchased grid electricity and transmission & distribution (T&D) losses totaled 76,776 metric tons CO_2e in 2024.
	• Scope 3: Indirect value chain emissions are material in the following categories:
	  ○ Category 3 (fuel and energy related activities that are not included under Scope 1 and 2): 1,043,817 metric tons CO_2e
	  ○ Category 11 (use of sold product: natural gas): 2,128,403 metric tons CO_2e
	  ○ Category 15 (investments: ownership in Iatan and Plum Point): 730,923 metric tons CO_2e
	Related Risks
	• Transition Risks: Scope 1 and 2 emissions expose Algonquin to potential costs from carbon pricing, evolving emissions regulations, and expectations for decarbonization. Emission intensity metrics, such emissions as per unit of power generated and per dollar of revenue, are tracked to evaluate efficiency and inform strategy.
	• Value Chain Risks: Scope 3 emissions, particularly from the use of sold natural gas, create exposure to customer demand shifts, policy changes, and long-term market trends toward electrification and low carbon energy.
	• Operational and Compliance Risks: Fugitive methane emissions and SF_6 leaks represent both environmental and compliance risks. These are managed through system monitoring, upgrades, and preventative programs.
	• Reputation and Market Risks: Transparent disclosure and reduction of Scope 1, 2, and 3 emissions are essential to meeting investor and stakeholder expectations, maintaining credibility, and maintaining access to sustainable financing.
	Monitoring these emissions can help Algonquin understand how regulatory, operational, and market risks intersect with business strategy, while also informing consideration of near-term exposure and long-term resilience.

Climate Response Topic	Response
Describe the targets used by the organization to manage climate-related risks and opportunities and performance against targets.	Algonquin has established climate related targets to guide the management of risks and opportunities across its regulated electric, gas, water, and wastewater operations. Targets are focused primarily on reducing GHG emissions, reflecting the most material environmental impact of the business, while also addressing broader aspects of sustainability performance. During the first target period (2019–2023), Algonquin set nine sustainability targets. Despite challenges, five were fully achieved and four were over 90 percent complete. A key achievement was the reduction of annual GHG emissions by one million metric tons of CO_2e, supported by the early retirement of a legacy coal facility and the addition of 600 MW of renewable wind generation capacity. These accomplishments provided a foundation for progress toward the company's long-term ambition of achieving net-zero Scope 1 and 2 emissions by 2050. Building on this experience, Algonquin introduced a new set of interim targets covering 2024–2030. These targets emphasize carbon intensity reductions across each of Algonquin's regulated product lines, using 2017 as the baseline for electric and gas operations and 2022 for water and wastewater operations. The targets include: • **Electric utilities:** 45 percent reduction in emissions intensity per MWh of power generated • **Natural gas utilities:** 50 percent reduction in emissions intensity per MMBtu of natural gas delivered • **Water utilities:** 19 percent reduction in emissions intensity per megalitre of water delivered • **Wastewater utilities:** 8 percent reduction in emissions intensity per megalitre of wastewater treated Progress against these interim targets is disclosed annually through Algonquin's sustainability report, alongside absolute emissions volumes. Emissions are also tracked by asset and emission source, to provide a clear view of progress toward emission reduction goals. In addition to GHG metrics, Algonquin monitors a range of climate aligned indicators that support resilience and operational performance. These include system reliability measures (SAIDI, SAIFI), water loss and leakage rates, demand side management program results, and green financing allocations. While not formal targets, these metrics provide management with additional insights into how climate related risks and opportunities are influencing the Company. Through this combination of interim carbon intensity targets and climate aligned metrics, Algonquin maintains a structured approach to evaluating performance and managing exposure to climate related risks and opportunities.

Financial Risk Assessment

Algonquin has evaluated potential exposure to climate-related financial risks using observed event benchmarks and scenario modeling consistent with TCFD guidelines for two key climate hazards: wildfire and extreme cold events.

This analysis does not represent a comprehensive or all-inclusive financial impact assessment of climate-related risks. The quantified scenarios presented are based on two of the most material and observable weather events experienced by Algonquin in recent years, the 2020 Mountain View Fire and the 2021 Winter Storm Uri.

The estimates reflect modeled changes in event frequency and severity under different climate scenarios and are designed to show directional sensitivity rather than precise forecasts. As a regulated utility, Algonquin has experience managing weather-related events as part of its normal course of business. Existing mitigation measures including insurance coverage, vegetation management, infrastructure hardening, regulatory cost recovery mechanisms, and emergency response programs are in place to limit financial exposure and maintain service reliability.

The figures presented are reference estimates derived from observed events and scenario assumptions to provide insight into potential future impacts. Estimates are translated to average annual impacts or Expected Annual Loss ("EAL") figures, to enable comparison across scenarios (e.g., today vs. 2035; orderly vs. delayed). The results of this financial assessment provide ranges of potential impact to support additional planning and analysis. Algonquin is not advancing a position on which scenario is more or less likely to occur. For further discussion of potential impacts and material business risks, please refer to Algonquin's Annual Report, Annual Information Form, and Management Information Circular ("MIC") on our website Algonquin Power & Utilities Corp.

Climate Response Topic	Response
Wildfire Risk (Mountain View Fire Benchmark)	The Mountain View Fire of 2020 provides a credible benchmark for assessing potential wildfire-related financial exposure. As of May 2025, Algonquin incurred $66.7 million in net costs, with projected financing bringing the total to approximately $78.2 million. This event informs both average-year and severe-year risk estimates. • **Expected Annual Loss (EAL):** Based on observed severity and frequency scenarios, Algonquin's normalized average-year exposure is estimated as:

Climate Response Topic	Response

Annual Frequency[1]	EAL Today	EAL by 2035 (Orderly Transition[2])	EAL by 2035 (Delayed Transition[2])	Percent Impact to 2024 Revenue (range)
0.10 (1-in-10 years)	$6.7M	$8.0M	$11.7M	0.29% to 0.50%
0.05 (1-in-20 years)	$3.3M	$4.0M	$5.8M	0.14% to 0.25%
0.03 (1-in-30 years)	$2.0M	$2.4M	$3.5M	0.09% to 0.15%

Based on the Mountain View Fire severity, the average year net exposure is estimated to be between $2 to $6.7 million today at 0.03 to 0.10 events per year, increasing to an estimated $3.5 to $11.7 million by 2035 under a delayed transition.

- **Wildfire — Likelihood & 10-Year Impact (California: Mountain View Fire net severity $66.741M)**

To put the EAL figures in context, the table below reframes them as simple probabilities and 10-year totals. Using the same Mountain View Fire severity and the frequency cases above, it shows the chance of at least one wildfire in a given year, the expected cumulative impact over a decade, and the 10-year likelihood of an event.

Annual frequency (λ)	One-year chance of ≥1 event	Expected 10-year total impact	10-year chance of ≥1 event
0.10 (1-in-10 yrs)	9.5%	$66.7M	63%
0.05 (1-in-20 yrs)	4.9%	$33.4M	39%
0.03 (1-in-30 yrs)	3.0%	$20.0M	26%

- Using our observed Mountain View Fire severity (net) and the illustrative annual frequencies, the one-year chance of a wildfire is roughly 3–10%; over ten years the expected cumulative impact is $20–$67 million (today) with a 26–63% chance of at least one event.

[1] The 0.10 / 0.05 / 0.03 events-per-year cases (about 1-in-10 / 1-in-20 / 1-in-30 years) are disclosure assumptions chosen to bracket plausible recurrence of claim-relevant wildfires for a small service territory. The lower-frequency tail (1-in-30) reflects the combination of a smaller footprint and planned mitigations (undergrounding, covered conductor, vegetation management) that should reduce event likelihood and/or severity. Results scale linearly with frequency; readers may substitute their own λ and recompute EAL = λ × severity.

[2] Frequency multipliers are assumptions used to translate pathway severity into near-term event frequency. We set ×1.2 for an Orderly (≈1.5°C) pathway, consistent with literature indicating ~20% increases in wildfire occurrence by the 2030s–2040s for the Sierra Nevada, and ×1.75 for a Delayed/Hot-House (≈2.7°C) pathway as a conservative stress case, consistent with larger increases in extreme fire weather and area burned projected under higher-warming scenarios. See NGFS scenario narratives and IPCC AR6/California Assessment projections.

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Tail Risk (Severe Year):
A severe wildfire year, modeled at 1.0–1.5× the Mountain View Fire gross loss[3], could result in net losses ranging from $64 million to $96 million after insurance recoveries.
Wildfire risk is material but manageable. Anchored to the Mountain View Fire, today's average-year exposure is 0.1–0.5% of Algonquin revenue, while potential impacts are mitigated by insurance and historical ability to recover costs through dedicated surcharges or rate adjustments as may be approved by regulators. In parallel, implementation of the Wildfire Mitigation Plan that includes ongoing grid hardening through undergrounding, covered conductor, risk-based vegetation management, advanced monitoring, and operational protocols are expected to reduce both event frequency and severity over the plan horizon.
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<tr><td>Extreme Cold and Fuel Price Risk (Winter Storm Uri Benchmark)</td><td>
Winter Storm Uri (2021) serves as the benchmark for assessing exposure to extreme cold and fuel price volatility. Algonquin has calculated the financial impact of URI to be $221.65 million, as was petitioned to the Missouri Public Service Commission ("PSC") to authorize securitization of extra-ordinary costs. For assessment purposes this value was used as a conservative impact value.
Expected Annual Loss (EAL):
Using the Missouri benchmark, Algonquin's normalized average-year exposure is estimated as:
<table>
<tr><th>Annual Frequency[4]</th><th>EAL Today</th><th>EAL by 2035 (Orderly Transition)[5]</th><th>EAL by 2035 (Delayed Transition)[5]</th><th>Percent Impact to 2024 Revenue (range)</th></tr>
<tr><td>0.10 (1-in-10 years)</td><td>$22.2M</td><td>$26.6M</td><td>$33.3M</td><td>0.96% to 1.44%</td></tr>
<tr><td>0.075 (1-in-13 years)</td><td>$16.6M</td><td>$20.0M</td><td>$24.9M</td><td>0.72% to 1.07%</td></tr>
<tr><td>0.05 (1-in-20 years)</td><td>$11.1M</td><td>$13.3M</td><td>$16.6M</td><td>0.48% to 0.72%</td></tr>
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[3] Tail severity is modeled as a multiple (m) of the observed Mountain View Fire gross claims. We set m=1.0–1.5 to span a repeat event through a 50 percent worse event. These multipliers are modeling assumptions for stress testing and are not prescribed by regulation.

[4] The 0.10 / 0.075 / 0.05 events-per-year cases (about 1-in-10 / 1-in-13 / 1-in-20 years) are disclosure assumptions selected to span a reasonable range for extreme cold plus fuel-price shock exposure. The mid-case 1-in-13 provides a practical midpoint between 10- and 20-year cadences, acknowledging recent winters (e.g., Uri, Elliott) that indicate non-negligible but not annual recurrence risk. Results scale linearly with frequency; stakeholders can apply alternative λ values and recompute EAL = λ × severity. **Why they differ?** Wildfire frequencies are set lower on the bottom end to reflect a smaller service footprint and expected mitigation effects, while Uri-type frequencies include a higher midpoint (1-in-13) to capture regional cold-weather and fuel-market stress that can recur more often than a CalPeco-scale wildfire loss.

[5] 2035 multipliers are modeling assumptions calibrated to authoritative evidence of persistent winter reliability and fuel-price scarcity risk. An Orderly pathway assumes +20 percent exposure by 2035, consistent with NERC and FERC assessments that severe cold continues to elevate risk even as mitigation improves. A Delayed pathway applies a +50 percent stress, reflecting higher exposure under weaker policy action and tighter gas markets as LNG exports grow. See NGFS scenario narratives, NERC Winter Reliability Assessment 2024–2025, FERC Winter Assessment 2024–2025, NERC Long-Term Reliability Assessment 2024, SPP Uri reviews and reserve actions, and DOE/EIA LNG analyses.

Climate Response Topic	Response
	Today the average year exposure is about $11.1 million to $22.2 million across the 0.05 to 0.10 event frequency cases, rising to $16.6 million to $33.3 million by 2035 under a delayed transition. • **Winter Storm Uri — Likelihood & 10-Year Impact (Missouri: petitioned severity $221.65M)** To put the EAL figures in context, the table below reframes them as simple probabilities and 10-year totals. Using the petitioned Missouri Uri severity and the frequency cases above, it shows the chance of at least one Uri-scale cold-weather cost event in a given year, the expected cumulative impact over a decade, and the 10-year likelihood of an event. **Annual frequency (λ)** / **One-year chance of ≥1 event** / **Expected 10-year total impact** / **10-year chance of ≥1 event** 0.10 (1-in-10 yrs) / 9.5% / $221.7M / 63% 0.075 (1-in-13 yrs) / 7.2% / $166.2M / 53% 0.05 (1-in-20 yrs) / 4.9% / $110.8M / 39% Using the petitioned Missouri Uri severity and these frequencies, the one-year chance of a Uri-scale event is roughly 5–10%; over ten years the expected cumulative impact is $111–$222 million (today) with a 39–63% chance of at least one event. • **Tail Risk (Severe Year):** A severe cold-weather event could result in gross costs of $278–333 million, based on a 25–50% uplift[6] from the observed Uri severity. Winter-storm risk tied to Uri-type events is material but manageable. Anchored to the Missouri petitioned Uri severity ($222 million), today's average-year exposure is 0.5–1.0% of Algonquin revenue. Potential impacts are anticipated to be mitigated through securitization, which recovers approved amounts over a reasonable timeframe. In parallel, strengthened winter preparedness across planning, operations, and risk management is expected to reduce financial impact of extreme cold events over the plan horizon.

[6] Tail severity is modeled as a +25 to +50 percent stress on a documented Uri severity anchor. Algonquin requested securitization of $221,645,532 in qualified extraordinary costs; this petitioned figure is recorded in the Missouri PSC docket and summarized by the Missouri Court of Appeals. The percentage stress is a modeling assumption supported by FERC, NERC, and EIA findings on fuel supply constraints, price spikes, congestion, and duration effects during severe cold events.

Appendix A

Identified Transition Risks and Opportunities

The tables below focus on climate-related transition risks and opportunities related to policy and regulations, technologies, markets and the company's reputation.

	Impact Area	Business Line	Opportunity & Risk	Time Horizon (Years)	Carbon Scenario	Potential Impacts	Controls / Mitigations
Regulatory	**Carbon Pricing & Low-Carbon Transition**	Electric & Gas (Carbon-intensive jurisdictions)	**Opportunity**: Reducing carbon intensity of operations can help lower costs for both Algonquin and its customers. **Risk**: Introduction of carbon pricing could increase compliance costs and affect the purchase or sale of carbon-intensive products or services.	Medium to Long Term (5–15 years)	Low	• Increased costs for products and services • Early retirement of owned or jointly owned fossil-fuel generating assets due to changing regulations, environmental risks, or litigation • Financial impacts such as asset impairments or reduced liquidity	• Invest in low-carbon energy sources • Integration of carbon pricing assumptions into investment evaluations, economic modeling, resource planning, and long-term forecasting
	Policy Alignment & Business Strategy	Algonquin wide	**Opportunity**: Aligning business strategy with policy enables execution synergies and regulatory credibility. **Risk**: Lack of policy alignment may hinder Algonquin's ability to effectively implement its decarbonization strategy or raise costs.	Medium-Term (5–10 years)	Low	• Higher costs passed to customers due to delayed or misaligned policy response • Increased cost of capital if business is not aligned with evolving policy expectations • Strategic fragmentation and reduced execution capability	• Government affairs team monitors policy developments and informs management • Active participation in industry associations to shape and respond to regulatory changes • Direct engagement with policymakers to provide Algonquin's perspective • Algonquin's geographically diversified asset base helps mitigate risks from localized regulatory changes
	Resilience & Policy Support	Electric, Gas, and Water	**Opportunity:** Supportive policy environments improve the cost-effectiveness of resilience investments. **Risk:** Lack of policy and regulatory support may delay or constrain Algonquin's efforts to adapt infrastructure to withstand severe climate impacts.	Medium to Long Term (5–15 years)	High	• Increased costs associated with resilience projects • Failure to implement necessary infrastructure upgrades leading to service reliability issues and increased customer burden • Escalating risks under high-carbon scenarios when policy support is lacking	• Advocacy for supportive and preemptive policy and regulatory processes to reduce risk and cost impacts • Invest in resilience-focused initiatives, (e.g., Distributed Energy Resources (DERs), Demand-Side Management (DSM) conservation, and system hardening projects) • Strategic assessment of short-, medium-, and long-term physical climate exposures to guide resilience investment decisions

	Impact Area	Business Line	Opportunity & Risk	Time Horizon (Years)	Carbon Scenario	Potential Impacts	Controls / Mitigations
Technology	**Grid Modernization & Low-Carbon Energy Integration**	Electric	**Opportunity**: Increase grid capabilities for low-carbon energy solutions enabling increased grid decarbonization, modernization, and resilience. **Risk**: Failure to upgrade the grid may reduce reliability and limit the ability to deploy low carbon energy and distributed energy resources (DERs).	Medium to Long Term (5–15 years)	Low	• Inability to scale renewable energy projects or integrate DERs effectively • Delays in deploying low-carbon technologies needed to meet decarbonization goals • Missed opportunities to improve system efficiency, productivity, and reliability	• Enterprise-wide business systems upgrade to enhance asset productivity and customer services • Grid modernization initiatives in key jurisdictions (e.g., distribution automation, grid hardening) • Deployment of advanced metering infrastructure (AMI) and battery storage systems
	Low-Carbon Gas Technology Development	Gas	**Opportunity:** Increased investment in low-carbon gas alternatives provides growth opportunities and preserves market access. **Risk:** Failure to integrate emerging low-carbon gas technologies may limit Algonquin's ability to transition its gas business and meet sectoral climate goals.	Medium to Long Term (5–15 years)	Low	• Missed business growth opportunities in low-carbon fuel markets • Decarbonization setbacks due to underinvestment or lack of partnerships • High capital costs and infrastructure needs to scale new gas solutions • Growing pressure from electrification trends	• Distribution upgrades via leak prone pipe replacement and network upgrades • Renewable fuels integration and deployment • Monitoring emerging industry trends (e.g., low-carbon fuels, geothermal networks, etc.)
	Water Technology & Climate Resilience	Water	**Opportunity:** Integration of innovative water technologies can enhance system resilience and address long-term water availability challenges. **Risk:** Inability to adopt emerging technologies may increase exposure to water scarcity and reduce service reliability.	Medium to Long Term (5–15 years)	High	• Greater vulnerability to water scarcity and physical climate risks • Reduced capacity to provide reliable water access for customers	• Conducting climate risk and water stress assessments to identify high-risk service areas • Investing in smart water technologies, including advanced leak detection, real-time pressure monitoring, and smart meters • Exploring water reuse/recycling technologies for non-potable applications • Modernizing aging water infrastructure to reduce system losses and improve resilience • Developing drought preparedness and contingency plans

	Impact Area	Business Line	Opportunity & Risk	Time Horizon (Years)	Carbon Scenario	Potential Impacts	Controls / Mitigations
Market	**Demand growth, resiliency requirements, & emerging technologies**	Electric	**Opportunity:** Increasing investment opportunities in grid infrastructure and generation to meet demand driven by electrification and Artificial Intelligence (AI) **Risk:** Disruption from non-traditional participants (e.g., DERs, energy storage), increasing complexity of grid management, potential stranded investment	Short to Medium Term (1–10 years)	Low/High	• Increasing opportunity for capital investment to support demand growth and grid resiliency • Increased competition from new entrants and technologies pressures existing generation assets • Technology investments required to integrate and manage DER and support customer demands	• Proven performance in regulated renewable energy investments • Proactive engagement with emerging demand segments (AI) • Proactive engagement with regulators • Active engagement with transition partners
	Demand-Side Management – Energy	Electric, Gas	**Opportunity:** Growth in demand-side management (DSM) and energy conservation programs can open new business models and customer engagement opportunities. **Risk:** Reduced energy consumption could decrease revenue from lower electricity and gas volumes.	Medium Term (5–10 years)	Low	• Reduced volumetric sales and associated revenue • Declining reliance on centralized generation, transmission, and distribution infrastructure • Increased fixed costs per unit of energy delivered	• Revenue stability from decoupled rate structures • Customer DSM and behind-the-meter programs support affordability and self-sufficiency • Ongoing regulatory engagement to align rate design with changing consumption patterns
	Demand-Side Management – Water	Water	**Opportunity**: Increased investment in DSM programs supporting water efficiency and conservation, new business opportunities, and growth. **Risk:** Increased demand for water efficiency and conservation leading to reduced customer demand.	Medium Term (5–10 years)	Low	• Reduced customer demand and revenue from lower water volumes • Higher fixed costs per unit of water delivered	• Water revenues supported by decoupled rate structures • Active implementation of water conservation initiatives across service areas • Investment in water reuse, recycling, and aquifer recharge projects to support long-term supply resilience

	Impact Area	Business Line	Opportunity & Risk	Time Horizon (Years)	Carbon Scenario	Potential Impacts	Controls / Mitigations
Reputational	**Talent Attraction & Retention**	Algonquin wide	**Opportunity**: Attracting and retaining talent enables transition success. **Risk:** Failure to secure skilled talent limits growth opportunity and slows decarbonization transition.	Medium Term (5–10 years)	Low	• Increased competition in sustainability and technical talent markets • Workforce skill gaps for transition-related roles • Cultural misalignment with low-carbon and innovation agendas	• Developing workforce strategies to support evolving market and energy transition • Enhancing internal communications and change management around decarbonization
	Customer Alignment & Energy Transparency	Electric	**Opportunity:** Meeting customer expectations for low-carbon energy and sourcing transparency can enhance Algonquin's market positioning. **Risk:** Failure to deliver on these expectations may lead to reputational loss and reduced competitiveness.	Short to Medium Term (1–10 years)	Low	• Increased pressure for sourcing transparency • Missed opportunity to position Algonquin as a trusted transition partner • Potential loss of customers to more proactive competitors	• Partner and collaborate with core stakeholders on energy transition • Expand low carbon options to diversify offerings
	Stakeholder Expectations on Cost, Reliability, Decarbonization & Transition	Algonquin wide	**Opportunity:** Demonstrating responses to physical and transition risks can foster positive stakeholder perception and long-term support. **Risk:** Ineffective response may damage investor, customer, and regulatory confidence.	Medium to Long Term (5–15 years)	High	• Negative perceptions of Algonquin's readiness and competence • Higher cost of capital impacting affordability and investment capacity • Slowed progress on decarbonization and resilience	• Strong track record in delivering decarbonization and resilience outcomes across regulated operations • Recognized as a trusted low-carbon energy provider • Proactive use of scenario analysis to anticipate and respond to emerging physical and transition risks

Identified Physical Risks and Opportunities

The tables below focus on climate-related physical risks and opportunities related to acute and chronic changes in climate.

	Impact Area	Business Line	Opportunity & Risk	Time Horizon (Years)	Carbon Scenario	Potential Impacts	Controls / Mitigations
Physical Risks - Acute	**Precipitation Risk to Generation Facilities**	Electric – Thermal Generation	**Opportunity:** Managing flood and drought exposure can enhance the resilience of thermal generation assets in water-constrained or flood-prone regions. **Risk:** Flooding and droughts may impair equipment operability and system cooling, affecting facility performance.	Medium Term (5–10 years)	High	• Flooding of low-lying facilities may lead to operational disruptions • Drought conditions may reduce water availability critical for thermal cooling • Long-term water stress may challenge thermal asset viability	• Extreme weather event preparation including flood mitigation • Continued investment in low-water-use renewable energy assets • Deployment of water-saving and alternative water solutions • Exploration of redundant water supply sources for critical thermal facilities
	Severe Weather Risk to Wind Generation	Electric – Wind Generation	**Opportunity:** Managing climate-driven turbine exposure increases wind portfolio resilience. **Risk:** Severe winter storms and precipitation impacts may hinder wind turbine operability and increase long-term degradation.	Medium to Long Term (5–15 years)	High	• Severe cold may render turbines inoperable and prevent meeting contractual obligations • Excess precipitation can cause blade erosion, reducing asset life and performance	• Use of hedging strategies to manage revenue volatility • Regular maintenance programs to prevent and repair damage
	Extreme Weather Impact on Electric T&D	Electric – T&D	**Opportunity:** Strengthening electric transmission and distribution (T&D) systems improves system reliability and customer trust. **Risk:** Wildfires, severe storms, and floods may damage infrastructure, disrupt services, and create regulatory or liability exposure.	Short to Medium Term (1–10 years)	High	• Wildfires, especially in California, pose safety and liability risks under inverse condemnation • Storms and floods may damage infrastructure or cause outages via vegetation interference • Reputational and financial consequences if risks are not managed proactively	• Deployment of wildfire and storm hardening programs: microgrids, covered conductors, spacer cables, fuse and substation upgrades • Distribution automation, vegetation management, and selective undergrounding • Regulatory engagement and wildfire mitigation planning
	Extreme Cold and Flooding Impact on Gas Distribution	Gas	**Opportunity:** Enhancing system reliability during extreme cold and flooding improves customer service and system integrity. **Risk:** Climate-driven events may stress aging gas infrastructure and supply reliability, especially during demand spikes.	Short to Medium Term (1–10 years)	High	• Extreme cold may exceed supply capacity, risking service reliability and safety • Flooding may breach aging infrastructure or stress low-pressure systems	• Investment in energy efficiency programs to reduce peak demand • LNG and propane backup supply reserves • Network decentralization and interconnectivity upgrades • Development of RNG and local alternative fuel supply • Collaboration with local distribution companies to balance supply constraints

	Impact Area	Business Line	Opportunity & Risk	Time Horizon (Years)	Carbon Scenario	Potential Impacts	Controls / Mitigations
Physical Risks - Chronic	**Precipitation Changes on Water Services**	Water	**Opportunity:** Proactively managing shifting precipitation patterns can improve water and wastewater system resilience during drought and flood events. **Risk:** Increased droughts and floods may impact infrastructure, operational reliability, and public trust.	Medium to Long Term (5–15 years)	High	• Droughts may reduce water availability and raise costs due to sourcing alternatives • Floods may damage low-lying equipment and interrupt service • Reputational risk if community reliability expectations aren't met	• Deployment of reclamation and aquifer recharge facilities • Conservation programs targeted at water-stressed service territories • Continuous weather monitoring and water forecasting • Long-term tracking of chronic water source variability
	Temperature Extremes on Substations, Transformers, and other Infrastructure	Electric – T&D	**Opportunity:** Investing in passive and active cooling measures improves the resilience of substation and transformer equipment under heat stress. **Risk:** Higher temperatures may reduce equipment efficiency and reliability, increasing operational costs and risks.	Medium Term (5–10 years)	High	• Reduced cooling capacity and increased risk of failure for heat-sensitive assets • Higher operational costs due to cooling retrofits and protective measures	•Proactive evolution of design standards to account for increasing heat impacts • Planning for shortened lifecycle of temperature impacted equipment
	Renewable Output Uncertainty	Electric – Regulated Renewables	**Opportunity:** Improving climate resilience of renewable assets enhances performance reliability and strengthens Algonquin's position in the clean energy market. **Risk:** Changes in solar irradiance, wind patterns, and river flow may affect generation output	Medium to Long Term (5–15 years)	High	• Variable wind shear or speeds can disrupt wind generation • Changes in solar irradiance and temperature can reduce solar output • Fluctuating river flows impact hydro generation capacity	• Business model and asset diversification to balance geographic and technology variability • Real-time weather forecasting and performance monitoring • Preventive maintenance and climate adaptation plans for generation assets • Long-term climate data integration into resource planning
	Customer Energy Demand Shifts	Electric, Gas	**Opportunity:** Addressing evolving heating and cooling patterns allows Algonquin to better serve customer needs while managing operational and revenue risks. **Risk:** Temperature-driven changes in customer demand may challenge infrastructure and impact financial performance.	Medium Term (5–10 years)	High	• Reduced or increased energy demand may affect revenue and infrastructure planning • Seasonal shifts in peak loads may challenge system flexibility • Increased need for DSM programs to manage changing demand profiles	• High proportion of decoupled revenues (53.4% electric, 86.4% gas) reduces sensitivity to volume swings • Expansion of DSM and behind-the-meter programs (e.g., storage, solar) • Geographic and business model diversification buffers against regional load shifts