2021 Climate Change Disclosure Report

Powering a sustainable future for people and planet

Capital Power

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Additional reports

You can find our 2021 Integrated Annual Report, which aligns our financial and environmental, social and governance (ESG) reporting, and the combined impact on our total value creation, here.

A letter from our Chief Sustainability Officer & Chief Financial Officer

Kate Chisholm
Senior Vice President, Planning, External Relations & Chief Sustainability Officer

Sandra Haskins
Senior Vice President, Finance & Chief Financial Officer

Action against climate change is fundamental to Capital Power's business.

Since our inception in 2009, our strategy has evolved to integrate financial and environmental, social and governance (ESG) priorities. At its core, sustainability *is* our strategy. This year, we've further elevated the critical role sustainability plays in our business by formalizing a corporate purpose: *to power a sustainable future for people and planet*. With our purpose driving us forward, we are confident in our decarbonization strategy and ability to transform our energy system to support a carbon-neutral future, while maintaining reliability and affordability.

In 2021, we accelerated our efforts to reach net carbon neutrality through the implementation of several decarbonization initiatives as outlined in our roadmap to 2050. Our roadmap is a realistic and practical pathway to decarbonization that enables us to progressively meet key milestones, track performance against our targets, and remain agile while exploring emerging technologies that may make a significant impact in the fight against climate change. We are focused on increasing efficiency and reducing emissions (with the aim to mitigate them altogether) from thermal generation and expanding our renewables portfolio to increase clean energy capacity for our grids. Our strategic focus also includes the application of technologies such as carbon capture, utilization and storage (CCUS), hydrogen, direct air capture and battery storage, which will be essential to reduce emissions and manage the intermittency of renewables.

In this report, we are proud to share the significant progress we've made to deliver on our strategy, effectively increasing our velocity to reach our net carbon neutral by 2050 target. Our 2021 Climate Change Disclosure Report is our fourth annual disclosure aligned to the Task Force on Climate-related Financial Disclosure (TCFD) recommendations. The report outlines our analysis of climate risks and opportunities, as well as our strategy and targets to address this global challenge. We're committed to transparency and are proud to provide consistent and decision-useful information for our stakeholders through our annual disclosures. As we continue to elevate and incrementally improve our reporting practices, we support the global implementation of mandatory and standardized reporting requirements aligned to the TCFD recommendations and hope our leadership in this area can serve as a positive example of the benefits reporting plays in business. We speak with intention, turn our ambitions into action and demonstrate accountability by openly reporting on our progress for the benefit of our shareholders, employees, communities, regulators, partners and other stakeholders.

For this report, we have expanded on our disclosures relating to our strategy and our expectations around its resilience. This report includes a detailed assessment of climate change outcomes based on three International Energy Agency (IEA) World Energy Outlook 2021 climate change-related scenarios, as well as an examination of how our current strategic direction proves resilient, agile and well-positioned to mitigate risks and capitalize on opportunities arising from each scenario. The IEA (2021) data set is used and referenced by other comparable industry partners, is publicly available, is peer reviewed and uses data sets at global, national and regional levels. Additionally, the data sets are aligned to the TCFD recommendations, enabling a better comparison of climate-related risks within our sector.

The scenarios presented illustrate the complexities of the transformation to a net-zero energy system, underscoring the importance of expanding renewable power generation capacity and a continued, critical role for natural gas to support the intermittency of renewable power sources in the medium term. As the deployment of energy storage

technologies accelerates, it will play an increasing role in managing the flexibility of the power system and is expected to be a key part of our long-term strategy. The utilization of natural gas paired with decarbonization technologies – such as CCUS, hydrogen blending and direct air capture – is also highlighted in these scenarios.

The successful execution of our strategy in 2021 demonstrates that our business is well-positioned to address the risks and opportunities presented in these scenarios. In 2021, we showcased ongoing momentum in expanding our renewables portfolio through the completion of the phase 2 and 3 expansions of Whitla Wind, making it Alberta's largest wind facility at 353 megawatts (MW). We also began construction on our Strathmore Solar and Enchant Solar projects and announced plans to move forward with a 151 MW phase 2 expansion of our Halkirk Wind facility. At the end of 2021, we had 425 MW of renewables projects in advanced development in Alberta and North Carolina (five solar projects and one wind project) and acquired a portfolio of 20 solar development sites in the United States, with up to 1,298 MW of generation capacity and the potential to co-locate over 1,200 megawatt hours (MWh) of energy storage. On the natural gas front, we made tremendous progress on our nearly $1 billion investment to repower our Genesee Generating Station Units 1 and 2 to best-in-class natural gas combined cycle turbines – which will reduce emissions by 40% and make them the most efficient units in Canada. We also announced our intent to proceed with a FEED study for a carbon capture and sequestration project for the repowered units and are supporting Enbridge's efforts to develop a local carbon hub to sequester the emissions captured from those units along with other industrial emissions.

Investing in a sustainable future

From the top down, our Board of Directors and corporate teams incorporate ESG considerations into their modelling and assessments, including our investment decision methodology, to ensure all our actions are consistent with our strategy and support our ability to achieve our sustainability targets. The robust integration of our decarbonization priorities was a highlight of our corporate performance in 2021 – we're proud to share that we're on track or ahead of schedule to deliver on our emissions reduction targets. We also delivered on our targets to develop company-wide water management and sustainable sourcing strategies.

To further integrate our financing and sustainability priorities, we secured $1 billion of Sustainability-Linked Credit facilities (SLCs) in 2021. The SLCs are linked to one of our sustainability targets – *to reduce Scope 1 CO_2 emission intensity by 65% by 2030 from 2005 levels* – and include terms that reduce or increase borrowing costs if we meet or miss annual targets in relation to that goal. This financing decision reinforces our commitment to be net carbon neutral by 2050, by linking reductions in greenhouse gas (GHG) emissions intensity to our credit facilities while ensuring we maintain access to sufficient liquidity to continue to fund our decarbonization efforts and growth.

We're also increasing accountability in the organization for achieving our sustainability objectives. In the coming year, the percent of incentive pay of Capital Power management based on social and environmental targets, including achieving lower GHG emissions, will remain at 25%, however, we're expanding accountability to meet our targets to include all leadership. Performance share units granted to the Executive Team and leadership will now include a 20% weighting to our performance on sustainability-related goals, including a 30% reduction in fleet emissions intensity by 2024. This reinforces our commitment to achieve our goals and makes it clear that we all have a role to play.

Delivering value for people and planet

We're growing our business to deliver long-term value for our stakeholders, and each decision we make reflects the analysis outlined in this report and is grounded in ESG best practices. As we've expressed, sustainability is our strategy and the foundation upon which we are building the carbon neutral energy system required for our global wellbeing.

In 2021, we have demonstrated that the successful execution of our strategy creates value, as seen by our resilient cash flows, ability to meet revised higher financial guidance, and successful debt and equity financing activities completed in the year to support our growth initiatives. Beyond the balance sheet, our strategy creates value for society by enabling us to electrify the world reliably and affordably while protecting the planet for future generations.

We **are** *powering a sustainable future for people and planet*.

Sincerely,

Kate Chisholm
Senior Vice President, Planning,
External Relations and Chief Sustainability Officer

Sandra Haskins
Senior Vice President, Finance &
Chief Financial Officer

About this report

This fourth Climate Change Disclosure Report builds on last year's report by expanding the assessment of our strategy and its resilience in relation to climate change scenarios to address the recommendations of the Task Force on Climate-related Financial Disclosures (TCFD). The expanded assessment includes greater consideration of the key tenets of our strategy and how they are expected to perform in evolving policy environments that seek to limit the impacts of climate change. This report is aligned to the four central themes of the TCFD recommendations, which include governance, strategy, risk management, and metrics and targets.

This report describes:

- Our climate-related governance from our Board of Directors (Board) and Executive Team through the entire organization
- How climate-related risks, opportunities and mitigation are identified, assessed and managed in accordance with our business strategy and long-term plan, which are updated and reviewed annually
- Our assessment of the resilience and sustainability of our strategy relative to alternative climate change scenarios based on the 2021 International Energy Agency (IEA) World Energy Outlook
- Current metrics and targets describing our performance and progress in managing climate-related risks and opportunities

Our reporting

Capital Power has always aimed to engage stakeholders and help them understand the material financial and non-financial aspects of our business through our reporting. This includes how issues related to emissions and climate change are managed and assessed, along with other business risks.

We have regularly disclosed and reported on our environmental and climate-related risks through our past Management's Discussion and Analysis (MD&A), Annual Information Forms (AIF), corporate sustainability reports and integrated annual reports. We have also reported to the Carbon Disclosure Project (CDP) and Canadian Electricity Association's sustainable electricity reporting framework for many years.

Capital Power will continue to advance our climate change reporting and disclosure to ensure our stakeholders understand the role we are playing to mitigate the impacts of climate change while ensuring we continue to deliver reliable and affordable power to the communities where we operate.

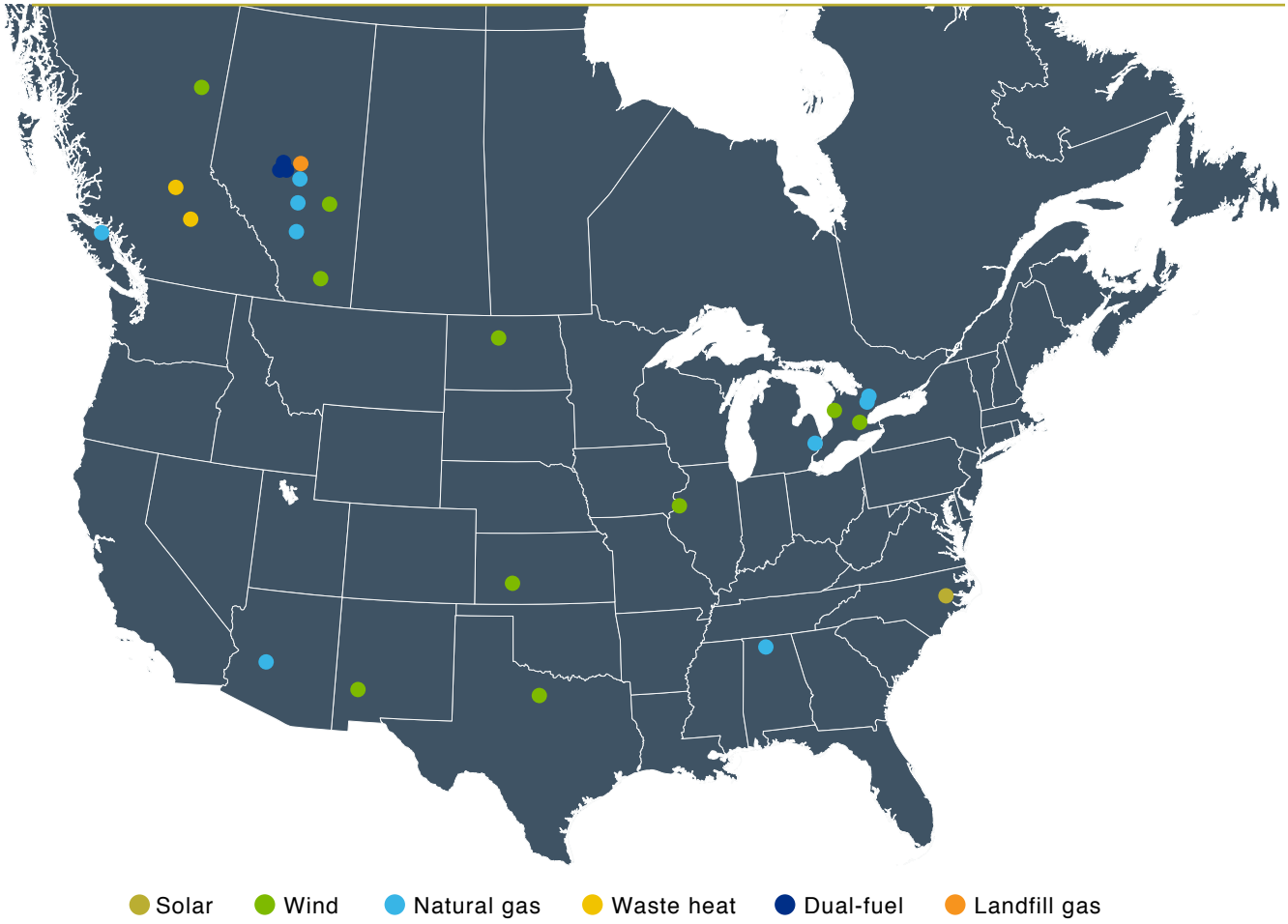
About Capital Power

We are a growth-oriented, publicly traded (TSX: CPX) North American independent power producer headquartered in Edmonton, Alberta, with a corporate purpose *to power a sustainable future for people and planet*. We create innovative electricity solutions to electrify the world reliably and affordably while protecting the planet for future generations. We build, own and operate high-quality, utility-scale generation facilities that include renewables such as wind, solar and waste heat, and thermal such as natural gas and coal.[1] We are committed to be off coal in 2023 and are making investments in carbon capture, utilization and storage to reduce our carbon impact from natural gas generation in the future.

We work to create a brighter world powered by responsible energy, through the development, acquisition, ownership and safe operation of renewable and thermal power generation facilities. Currently, we own approximately 6,600 megawatts (MW) of power generation capacity at 26 facilities. Projects in advanced development include approximately 425 MW of owned renewable generation capacity in North Carolina and Alberta and 512 MW of incremental natural gas combined cycle capacity, from the repowering of Genesee 1 and 2 in Alberta.

[1] The Company's power generation operations and assets are owned by Capital Power L.P. (CPLP), Capital Power L.P. Holdings Inc. and Capital Power (US Holdings) Inc., all wholly owned subsidiaries of the Company. In this report, any reference to the Company or Capital Power, except where otherwise noted or the context otherwise indicates, means Capital Power Corporation together with its subsidiaries.

Our operations



Purpose

To power a sustainable future for people and planet

Vision

Electrifying the world reliably and affordably while protecting the planet for future generations

Mission

Implementing and operating innovative energy solutions

Values

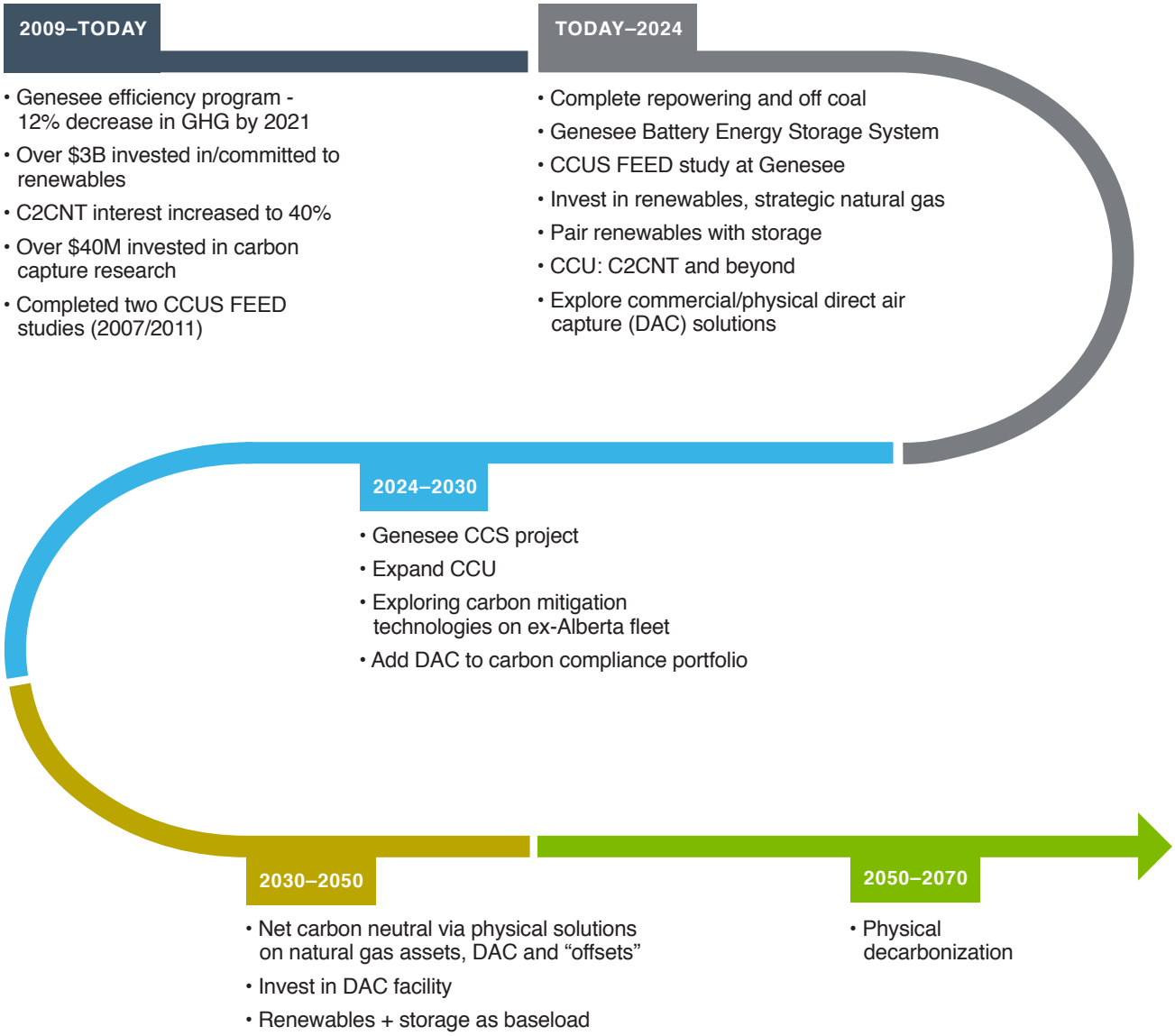
- We manage our impact on the Environment to leave a healthy planet
- We value equity, diversity and inclusion, listen with open minds, and treat all People with respect
- We are committed to the Safety and Wellbeing of our people
- We act with Integrity and take responsibility for our decisions and actions
- We embrace Innovation by fostering creativity and harnessing technology

Our path to net carbon neutral by 2050

In 2021, Capital Power continued to evolve and accelerate the steps we are taking to become carbon neutral by 2050. Our power generation facilities are a hub of innovation, where we are continuously learning, adapting and developing to create cleaner, reliable and cost-effective electricity. Accelerating this work demonstrates our ongoing commitment *to power a sustainable future for people and planet*.

We believe a holistic transformation of our energy system requires an "all of the above" solution from our industry – one that expands the use of renewable energy, employs storage technologies to optimize those renewable sources, and transitions to low-carbon thermal generation through improved efficiency and the deployment of carbon capture, utilization and storage (CCUS) technology and hydrogen. This strategy will strengthen our business and support our ability to deliver total shareholder value of 10% to 12% as we progress toward decarbonization.

The illustration below outlines an achievable pathway to decarbonization.



Metrics & targets

Monitoring the execution of our strategy is essential to track our progress, measure results and, where necessary, make course corrections to ensure our actions yield the desired results.

We have a pathway to achieve our goal to be net carbon neutral by 2050 and we are on track to get there. Below are key targets we aim to reach along our journey and our progress toward achieving them.

Target	Progress
Achieve net carbon neutrality by 2050	On track
Construct all new natural gas generation units to be carbon capture and/or hydrogen ready	On track
Reducing Scope 1 CO_2 emissions at Genesee by 50% by 2030 from 2005 levels	Ahead of schedule
Reducing Scope 1 CO_2 emissions by 10% by 2030 from 2005 levels, based on our 2019 fleet[1]	On track
Reducing Scope 1 CO_2 emission intensity by 65% by 2030 from 2005 levels[1]	On track
Invest in carbon capture and utilization technology to help us achieve net carbon neutrality by 2050 and eventually physically decarbonize our natural gas fleet (ongoing)	On track
Complete the Genesee Carbon Conversion Centre	Delayed
Sustainable sourcing strategy	Complete
Water management strategy	Complete
Target of at least 30% women on the Board and Executive Team	Complete

[1] As required by internationally accepted calculation methodologies, we recalculate our base-year emissions for any significant impacts as a result of changes in calculation methodologies and major acquisitions or divestments.

Corporate governance

Capital Power is committed to responsible corporate governance as being critical to long-term performance and investor confidence. Our governance practices promote accountability, transparency and resilience, and support sound decision making in the interest of all our stakeholders. Strong governance is essential for us to achieve our corporate purpose – *to power a sustainable future for people and planet*. Our Board[1] oversees the creation and execution of Capital Power's strategy, long-term plan,[2] and the identification, management and mitigation of risks to the strategy through our enterprise risk management (ERM) system.

In addition, the Board's strategic mandate expressly includes the obligation to consider "the opportunities, risks and sustainability of the business" and to receive reports from management "on matters relating to, among others, ethical conduct, human rights, diversity and inclusion, and other sustainability matters," which include climate change.

The Board reviews the corporate risk register biannually, conducts site visits and consults regularly with shareholders for first-hand perspectives on their topics of interest. The Board and the CEO set the tone for management in driving the behaviours and attitudes needed to support corporate-wide alignment on a strong sustainability culture.

The Board's focus on climate change includes annually approving the long-term plan, which contains strategies relating to decarbonization, technology and the pursuit of renewable generation. The Board recognizes that limiting global warming to well below 2 degrees Celsius will require a transformation of the energy system, including how electricity is generated. In order for Capital Power's business to be sustainable, Capital Power must therefore evolve with the power market. This means that we must increasingly focus on decarbonization. The Board has therefore approved emission reduction targets and receives regular reports in respect of Capital Power's progress toward meeting them.

The Board's Health, Safety and Environment Committee provides a structured approach to, among other things, monitoring and assessing the effectiveness of Capital Power's environmental stewardship (including the environmental impact of our operations) and reviewing related goals, compliance practices and policies (including matters relating to GHG emissions and climate change).

As part of its mandate, the Board's Audit Committee reviews the Company's public disclosures and recommends them for Board approval. This includes annual financial reporting such as the Management's Discussion and Analysis and the Annual Information Form (which provide information on risks and significant events, including those related to environmental and social factors) and portions of the ESG reporting contained in our Integrated Annual Report, including the scope and scale of our physical emissions.

The Board's People, Culture and Governance Committee is responsible for oversight of governance-related matters including reviewing and recommending compensation targets and the related framework to the Board. Executive remuneration is linked to social and environmental targets including worker safety, employee retention, diversity and climate change initiatives, including achieving lower GHG emissions. These targets cascade throughout Capital Power. The targets and remuneration framework are reviewed and approved annually by the Board. Further information regarding metrics and targets is provided in the Metrics & Targets section of this report.

[1] More information regarding our Board of Directors can be found under Who We Are > Corporate Governance at www.capitalpower.com.

[2] Capital Power's long-term plan is an internal document that provides a 10-year outlook that is updated annually to ensure it remains current. The current plan provides a 10-year outlook from 2021–2031. For competitiveness reasons, this document is not public.

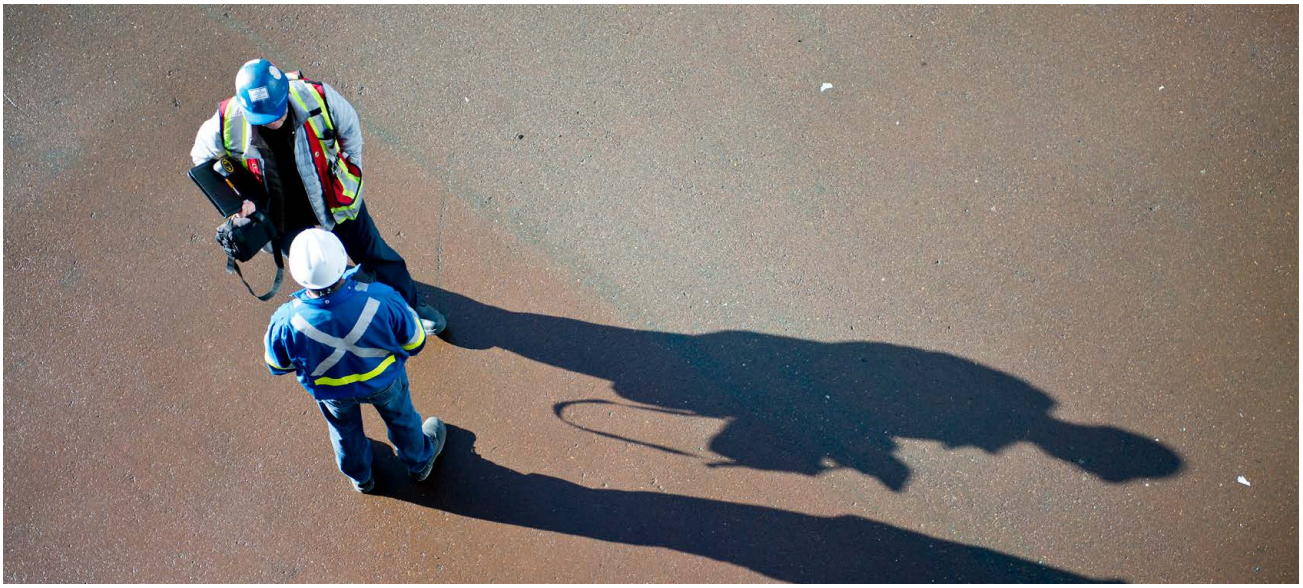
Organizational structure

Under the Board's oversight, the CEO is responsible for acting on climate-related issues. The Executive Team as a whole is responsible for addressing climate change-related issues, assessing implications, risks and opportunities for Capital Power, and ensuring our strategy is sustainable. The Chief Sustainability Officer (Senior Vice President, Planning, External Relations and CSO), Chief Financial Officer (Senior Vice President, Finance and CFO), Senior Vice President, Operations, Senior Vice President, Construction and Engineering, Chief Legal Officer (Senior Vice President and Chief Legal, Development and Commercial Officer), and the Senior Vice President, People, Culture and Technology are all members of Capital Power's Executive Team and report directly to the CEO.

Climate change-related issues are a key consideration of Capital Power's strategy and long-term plan and are broadly and consistently considered in all current operational decisions and future investments and developments. Direct management responsibility for climate-related issues lies with the CEO because climate-related issues are constantly monitored and considered in all major strategic decisions and all aspects of the business. The annual corporate strategic planning process is completed with extensive direction and input from the Executive Team based on its understanding of climate change and other risks, impacts and opportunities for our business.

Climate-related risks are monitored and managed by the CEO with specific input from the CSO and the rest of the Executive Team. Members of the Executive Team hold the following specific responsibilities with regards to the assessment and monitoring of climate-related issues:

- The Chief Sustainability Officer (Senior Vice President, Planning, External Relations and CSO) leads Capital Power's strategic and sustainability planning and reporting, market forecasting and analytics, regulatory and government relations, environmental policy, stakeholder engagement, community investment, communications, ethics and compliance, and internal audit functions. The CSO ensures sustainability is embedded in the Company's strategy and decision-making process. This includes ensuring sustainability-related factors are incorporated into long-term forecasts and scenario analyses, which are used for financial planning and investment decisions. These analytics and scenario analyses are developed and regularly reviewed and refined by the Market Assessment and Forecasting team. The CSO communicates with the Board, management, shareholders, customers, employees and other stakeholders to address sustainability matters.



- The Chief Legal Officer (Senior Vice President and Chief Legal, Development and Commercial Officer) is responsible for legal affairs, in addition to pursuing investment in renewables, low-carbon generation and strategy relating to the creation and management of our carbon offsets and environmental credit portfolio. Additionally, the Senior Vice President and Chief Legal, Development and Commercial Officer considers sustainability risks and opportunities and legal compliance.
- The Senior Vice President, Operations, is responsible for the safe, efficient and reliable operation and maintenance of all of Capital Power's generating facilities. With respect to climate change-related considerations in operations, key responsibilities relate to environmental compliance, operational emissions, reporting to government on emissions, leading efforts to physically reduce emissions and continued optimization of fleet operations to improve efficiency. The Senior Vice President, Operations is also responsible for security.
- The Senior Vice President, Construction and Engineering, is responsible for the safe, cost-effective and timely construction of all Capital Power's development projects. From an environmental and climate change standpoint, key responsibilities include environmental compliance during construction, plant optimization initiatives that achieve operational efficiencies, and leading engineering and design efforts related to decarbonization, including CCS/CCUS and hydrogen firing. The Senior Vice President, Construction and Engineering also works with the Senior Vice President, Operations to support the safe, efficient and reliable operation and maintenance of all of Capital Power's generating facilities.
- The Chief Financial Officer (Senior Vice President, Finance and CFO) is responsible for our long-term financial strategy and planning, financial administration with respect to carbon taxes and offsets, financial disclosure, corporate finance, including sustainability-linked finance, and financial sustainability. The CFO portfolio also includes insurance.
- The Senior Vice President, People, Culture and Technology, is responsible for developing a people and technology strategy that ensures our workforce is ready for the future and ensures equipment and infrastructure is planned with consideration for its overall sustainability. Our attraction, retention and engagement of a diverse and future-focused workforce ensures that we have the ability to address sustainability matters, including those relating to climate change. Our people strategy supports the successful execution of our business strategy by hiring people with diverse backgrounds and the right skills for our business now and in the future. Our strategic workforce planning also ensures we can fulfill the needs of our changing business, while we enable our employees and leaders to grow in the identified competencies related to sustainability through training and development. The Senior Vice President, People, Culture and Technology is also responsible for managing risks and threats to cyber and asset security.

Senior management actively and continuously assesses climate change-related issues as part of our ongoing review of various business, market, technical, operational, regulatory, policy and strategy-related matters.

Direct management responsibility for climate-related issues lies with the CEO because climate-related issues are constantly monitored and considered in all major strategic decisions and all aspects of the business.

Our strategy

Capital Power's strategy positions us to deliver value to all our stakeholders through growth from the development of renewables and energy storage and strategic natural gas acquisitions in North America. This strategy is supported by our commitment to be an industry leader in sustainability and the transition to a low-carbon future. Executing on this approach will allow us to dramatically reduce carbon emitted by our operations and accelerate our shift to renewable energy and other low-carbon energy sources, consistent with our goal of being net carbon neutral by 2050.

In pursuit of our goal to be net carbon neutral by 2050, Capital Power will advance development of decarbonization technologies, including CCUS, hydrogen blending and direct air capture. While CCUS and hydrogen blending could be applied directly at some of our facilities, direct air capture offers the potential to physically offset emissions from our portfolio that are not technically or economically feasible to eliminate at source.

While we continue to monitor other existing and emerging technologies for their strategic fit within our portfolio, we believe the mix of wind, solar, storage and mitigated natural gas will form the basis for our long-term strategy.

Approaches to decarbonization

Becoming net carbon neutral by 2050 requires a defined pathway toward that goal and concrete, measurable steps to mitigate emissions along the way. Capital Power believes that CCUS, hydrogen blending and direct air capture technologies will be essential parts of our decarbonization efforts. Toward that end, we're pursuing and investing in these technologies to support the resilience of our current and future assets, focused on opportunities that reduce emissions from Capital Power's portfolio of assets. These investments will be critical to reduce our emissions in the latter part of this decade and meet our long-term sustainability targets.

We believe that a hierarchy of emission reduction strategies must be pursued to achieve our objectives. We will apply the following priority when pursuing emission reduction efforts in the years ahead.

1. Emissions will be physically reduced onsite through operational enhancements, as well as post-combustion capture or hydrogen blending.
2. Where emissions cannot be reduced onsite due to technical, economic or social constraints, we will pursue equivalent physical emission reductions elsewhere in our generation portfolio or through other forms of negative emissions, such as direct air capture.
3. Where emissions cannot be reduced through physical means, Capital Power will procure certified offsets in quantities sufficient to achieve our goal of being net carbon neutral.

Scenario analysis & testing the resilience of our strategy

Capital Power's strategy is established through rigorous review of the Company's competitive advantages as well as market fundamentals, changing public policies and evolving long-term dynamics that are shaping the power sector. Through regular assessments, we test and review our strategy to ensure resilience. This process includes Board oversight and extensive management review to ensure Capital Power's strategy and tactics are adjusted as the competitive environments in which we operate continue to change.

To support this process, Capital Power uses extensive modelling and analysis that evaluate opportunities and risks under varying climate change scenarios. Scenario analysis is employed to understand the resilience of our strategy, as assumptions and outcomes are varied.

The IEA scenarios and underlying assumptions are considered in Capital Power's analysis. The scenarios provide a high-level starting point for assessment of climate change impacts and allow us to model scenarios in specific jurisdictions that result in equivalent outcomes. As we evaluate the risks and opportunities that may arise in these scenarios, our analysis focuses on the material risks that are relevant to our business.

IEA scenarios

The IEA scenarios make assumptions about technology advancement, policy, CO_2 prices, fuel prices and socioeconomic drivers, including population and GDP, and consider global trends toward increasing net-zero commitments by governments and corporations. The IEA scenarios simulate the interactions among supply and demand fundamentals and generate the resulting energy flows, CO_2 emissions and investments to 2050.[1]

The following includes a summary of each of the three main scenarios from the 2021 IEA report used in Capital Power's analysis:

- **Stated Policies Scenario** (STEPS) assumes that existing and announced policy is implemented by governments. The cumulative contributions that result are material, however, not sufficient to achieve the sustainable development goals or limit the worst effects of climate change.
- **Announced Pledges Scenario** (APS) assumes that climate-related commitments made by governments and implemented through Nationally Determined Contributions (NDCs) will be met in full. Temperature rise is held to around 2.1 degrees Celsius in 2100.
- **Net Zero Emissions by 2050 case** (NZE2050) sets out the pathway for the global energy sector to achieve the ambition of net zero CO_2 emissions by 2050

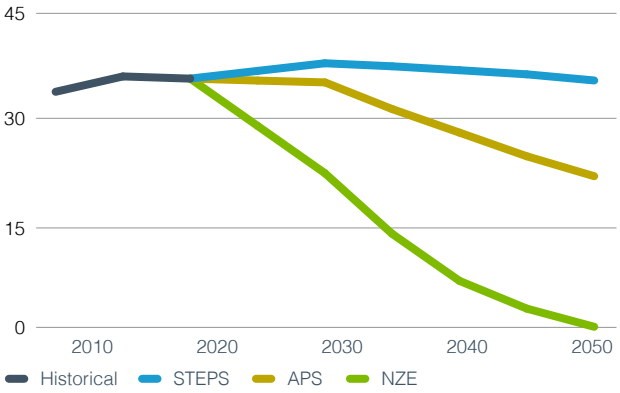
[1] The IEA's 2021 World Energy Outlook Report provides a framework for thinking about the future of global energy. It does not make predictions about the future. Instead, it sets out what the future could look like based on different scenarios or pathways, with the aim of providing insights to inform decision making by governments, companies and others concerned with energy.

Overview of 2021 IEA scenarios & the resilience of our strategy

The 2021 IEA scenarios are focused on the critical steps required to achieve net-zero commitments and limit the effects of climate change. The following provides an overview of key assumptions that are directly relevant to the power sector and the expected resilience of Capital Power's strategy under different climate-related scenarios.

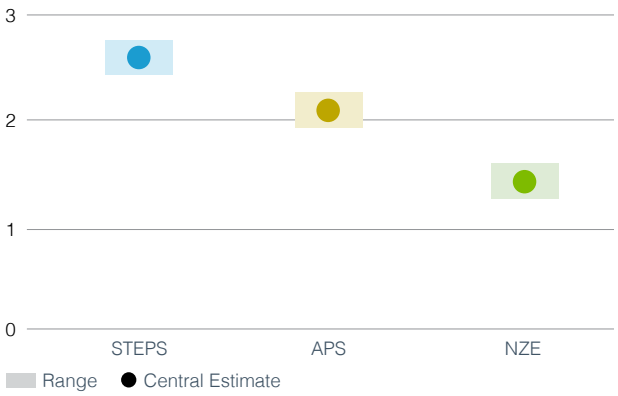
CO_2 emissions & temperature rise

CO_2 emissions
($gtCO_2$)



Source: International Energy Agency (2021), World Energy Outlook 2021, IEA, Paris.

Temperature rise in 2100
(°C)



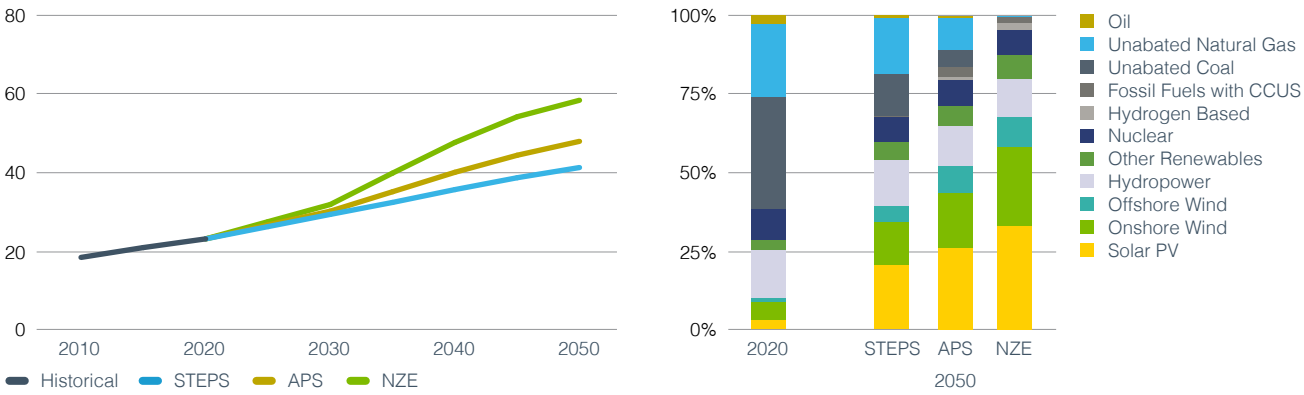
Source: International Energy Agency (2021), World Energy Outlook 2021, IEA, Paris.

The science is clear; we must limit global warming. We are working to align our actions with the objective of limiting global temperature rise to well below 2 degrees Celsius.

Electricity demand & generation mix

Global electricity demand & generation mix by scenario

(Thousand terawatt hours)

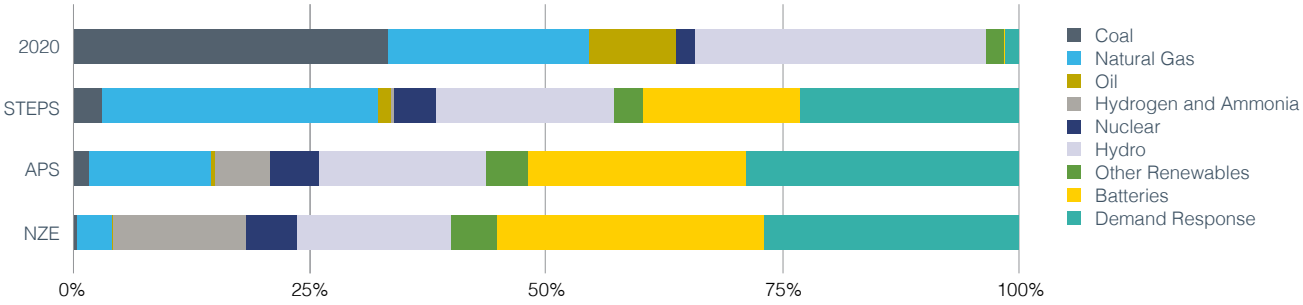


Source: International Energy Agency (2021), World Energy Outlook 2021, IEA, Paris.

As global electricity demand grows, a mix of low-carbon energy sources will be needed to power the global economy. Capital Power's strategic focus on renewable energy development will be resilient in all future scenarios. Our thermal generation will undergo an accelerated transformation in scenarios where there are greater efforts taken to reduce emissions. A transition in thermal generation from unabated generation toward combustion of low-carbon fuels and operations paired with decarbonization technologies will be essential to long-term resilience. The pace at which this transition occurs will vary by scenario.

System flexibility

Electricity system flexibility by source & scenario, 2020 & 2050
(Advanced economies)



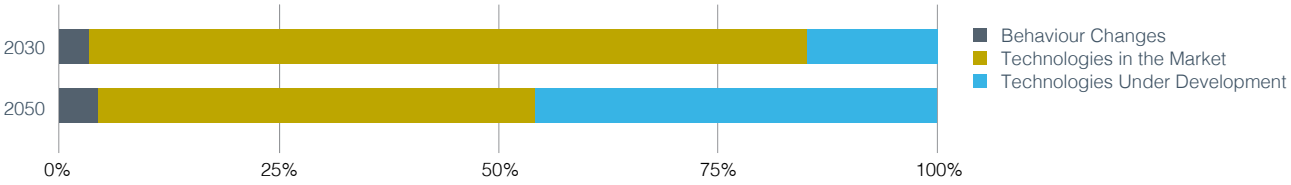
Source: International Energy Agency (2021), World Energy Outlook 2021, IEA, Paris.

Note: The IEA data represents the contribution of different resource types to managing power system flexibility, which is the hour-to-hour ramping requirements after removing wind and solar production from electricity demand.

Increased penetration of intermittent generation will significantly increase the need for flexible sources of supply to maintain reliability. This need grows as ambition toward reducing emissions increases. Natural gas will continue to play an integral role in meeting this need as we progress toward the goal of net-zero emissions. As net-zero objectives are pursued, energy storage is increasingly used to maintain reliability and is expected to be an important source of growth in our strategy.

Decarbonization

Annual CO_2 emissions savings in the net-zero pathway, relative to 2020



Source: International Energy Agency (2021), World Energy Outlook 2021, IEA, Paris.

To achieve net-zero emissions, carbon abatement must not wait. Contributions to emissions reductions by 2030 will rely heavily on technologies in the market today. Capital Power is advancing the development of these technologies to contribute to a low-carbon future. Carbon capture, utilization and storage, hydrogen and direct air capture will be essential components of our strategy and ensure our long-term resilience.

Managing climate risks & opportunities

At Capital Power, we believe that strong risk management encompasses culture, capabilities, practices, strategy setting and performance. Together, they are key to our success. We aspire to operational excellence through the consistent use of standards, processes and procedures to continually improve our performance, safety and reliability.

Our framework of controls enables us to operate in a cost-effective and environmentally responsible way by:

- Managing risks
- Ensuring safe and reliable operations
- Providing plans to mitigate environmental and social impacts
- Developing and sharing best practices
- Supporting continuous improvement

We use an enterprise risk management (ERM) program and occupational health and safety management system (OHS MS) to support our overall risk monitoring and management.

Through our ERM process, we identify, assess, categorize, respond to, monitor and report on the Company's top risks to senior leaders and the Board of Directors, along with details of the risk assessments and corresponding management plans. A team within our financial planning and analysis department manages the ERM process and works to expand a risk-aware culture aimed at minimizing risk exposures and protecting shareholder value. Risks are also discussed in our Integrated Annual Report under the Business Report Risks and Risk Management section.

Approach to risk management: We view risk management as an ongoing process and continually look for ways to enhance our risk management programs and procedures. Our company-wide ERM Program embeds the principles of risk management into all aspects of our operations and ensures risks are effectively managed across the entire organization. Our ERM Program is aligned with the Committee of Sponsoring Organizations' standard for enterprise risk management (COSO ERM – Integrated Framework) and is supported by our enterprise risk management policy framework (*ERM Policy*).

Our ERM Program uses a systematic approach to identify, treat, monitor and report on risk. ERM practices are embedded in two key corporate processes (strategic and long-term planning, and operational planning and budgeting), so we can identify risks that could prevent us from achieving our strategic and business objectives and develop strategies to mitigate those risks. This includes assessing specific risk areas, including unpredictable or unusual risks, as well as emerging risks to our business. We expect everyone to understand the risks that fall within their areas of responsibility and to manage these risks within approved risk tolerances. Open communication is a key part of the process. We need our people to share the best available information (quantitative and qualitative), drawing from historical data, experience, stakeholder feedback, observation, forecasts and their expert judgment.

Risk governance: Our ERM Program is governed by our *ERM Policy*, which is reviewed annually by the Board. The Board also approves our risk-tolerance levels, which govern our decisions and policies associated with risk. The President & CEO is ultimately accountable for managing our risks and approving the ERM framework. He manages the ERM Program and the Executive Team. The Vice President of Financial Planning & Analysis has day-to-day responsibility for the ERM framework and reports to the Chief Financial Officer. Under the *ERM Policy*, all employees are also expected to understand the risks they are responsible for, manage them within approved tolerance levels and disclose new risks as they appear.

Key risks: We use our ERM Program to identify, assess, categorize, respond to, monitor and report on key risks that may affect the achievement of our strategic and related business objectives. Key risks are identified in a risk register and assessed in a risk matrix, in terms of their respective probability, velocity and potential impact, which is updated twice per year. We use various controls and procedures for reducing controllable risks to acceptable levels and to identify appropriate actions in cases of risks outside of management's control.

The top sustainability risk ranked from our 2021 ERM process was climate change transitional risk. The potential impact to our natural gas portfolio could be significant should deep decarbonization policies and regulations for GHG emissions and water usage outpace carbon capture technology's ability to economically comply with them and/or Capital Power's ability to incorporate hydrogen blending, direct air capture and other technological advancements.

Risks & opportunities tables

Transitional risks & opportunities

The tables below identify short- and long-term transitional risks that may materialize in scenarios where increasing measures are taken to mitigate the impacts of climate change. Similarly, transitional opportunities that may arise in these scenarios are evaluated over the short and long term.

Markets, Policy & Regulatory

Key assumptions

- Carbon pricing remains a central mechanism of climate policy in Canada; prices rise over time while performance benchmarks are increased; complementary pricing and regulatory mechanisms are implemented and strengthened
- Carbon pricing is gradually adopted and expanded across the United States; pricing is implemented in the long term with material escalation of prices
- Stimulus spending by governments is increasingly focused on energy and green infrastructure
- Demand growth accelerates globally from recent levels due to increasing levels of electrification in industry as a way to reduce emissions
- Carbon markets continue to expand across North America

Risks

Short term

- Changes in governments create uncertainty with respect to future climate change-related policy
- Current portfolio is exposed to carbon pricing; as prices rise this may result in higher compliance obligations and reduced margins for existing facilities
- Unexpected variation in carbon prices and regulation may lead to material variances in budgets

Mitigation

- Capital Power actively participates in industry groups to monitor and engage with government officials on emerging policy development relating to climate change and carbon pricing
- Carbon costs are passed through to counterparties on select power purchase agreements, minimizing exposure to carbon price
- Capital Power actively manages compliance costs through participation in environmental commodity markets and through continuous investments in operational efficiencies and enhancements to reduce emissions at our generating facilities
- Scenarios and sensitivity analysis relating to carbon prices and regulation is embedded in all commercial decision making and due diligence to ensure appropriate consideration of climate change-related risks

Long term

- Accelerated decarbonization of the power sector is being considered by governments in Canada and the United States
- Adoption and escalation in carbon prices continue in response to increasing pressure to reduce emissions through market mechanisms; prices rise well above current levels, while performance benchmarks are made more stringent

Mitigation

- Unmitigated thermal assets are increasingly expensive to operate; we actively pursue CCUS and hydrogen blending to minimize exposure to carbon pricing, with a target of net carbon neutrality before 2050
- Capital Power continues to actively manage compliance costs through participation in carbon markets and investments in operational efficiencies and enhancements that reduce emissions at our facilities
- Carbon costs are passed through to counterparties on select power purchase agreements, minimizing exposure to carbon price
- The costs and risks associated with emissions abatement from thermal assets are considered in all commercial and business development decision making and due diligence; capital allocation decisions may favour assets and technologies that minimize potential exposure

Markets, Policy & Regulatory

Opportunities

Short term
- In some areas, carbon taxes are structured in a way that enables rising carbon prices to be flowed through to consumers
- Expansion of carbon markets continues across North America

Response
- Where Capital Power's portfolio has exposure to wholesale power prices, the Company may realize increased margins on assets as prices rise
- Expertise in carbon markets leads to reduced compliance costs through hedging and origination of lower-cost credits; trading activity increases in environmental markets

Long term
- Demand growth accelerates as industries are increasingly using electrification as a means to reduce emissions
- Emission-intensive assets with limited opportunities for abatement operate less often and then retire as rising carbon costs limit the economic viability of the assets

Response
- Rising demand for power and the retirement of emission-intensive assets result in an increase in investment opportunities for Capital Power

Renewable Energy Development

Key assumptions
- Investment in renewables is pursued to decarbonize electricity grids and mitigate the impacts of climate change
- The cost of renewable technologies continues to decline; capacity values of renewables increase with technological improvements, expanded regional diversity and co-location with storage assets
- Penetration of renewables continues to increase as demand grows and retirement of existing assets continues
- Intermittency remains a concern for grid reliability; natural gas and storage are essential to integration in the long term
- New transmission development is required to expand the capacity of renewable generation

Risks

Short term
- Increasing penetration of intermittent renewable energy affects the profile of supply fundamentals

Mitigation
- Capital Power operates a diverse fleet of assets that includes a growing renewables portfolio as well as storage and baseload and peaking thermal units well-suited to varying market conditions

Long term
- Long-term declines in the cost of renewables, as well as reduced intermittency through the addition of storage, increase the relative competitiveness of these assets and result in increased development
- Capital Power's existing fleet of thermal assets may be affected by this increased penetration. This may result in reduced operating hours for certain thermal assets or increased cycling, which results in higher operational expenses.

Mitigation
- Capital Power invests strategically in assets that are expected to remain competitive with increasing levels of renewable penetration
- As the long-term competitiveness of renewables improves relative to gas, Capital Power would rebalance the Company's portfolio of assets and consider shifting capital allocation to increase development of renewables

Renewable Energy Development

Opportunities

Short term
- There are expanded opportunities in renewables across North America as cost declines and policy supports new development
- Intermittent renewable generation increases the volatility of power prices and creates a need for flexible capacity to support integration

Response
- Capital Power actively pursues development opportunities in renewables, including wind and solar; a growing portfolio of renewable assets reduces the overall emissions intensity of our fleet and provides competitive returns
- Capital Power operates flexible natural gas assets that provide critical reliability services to the grid. These assets will be compensated for the services they provide, which are increasingly valuable as renewable penetration increases.

Long term
- Long-term declines in the cost of renewables increase the relative competitiveness of these assets and result in increased development

Response
- Capital Power is well-positioned to pursue development opportunities for new renewable assets. This growth would positively affect Capital Power's overall fleet emissions intensity and financial position.

Natural Gas Competitiveness & Decarbonization

Key assumptions
- Natural gas remains part of the supply mix long term; regulation of carbon emissions is gradually increased to limit both the intensity and absolute emissions from thermal assets
- Decarbonization of the fuel mix through hydrogen blending and post-combustion capture through CCUS are expanded through policy and funding that support innovation and deployment
- Operating profiles of thermal assets change as they are increasingly used to meet the net demand from intermittent renewables; flexible assets in strategic locations remain competitive

Risks

Short term
- Policy and regulation directed at reducing carbon emissions from thermal assets may increase operating costs and may reduce margins on certain assets
- Increasing competitiveness of renewables and other low-emission sources of electricity will reduce market share for natural gas generation and limit the dispatch of assets

Mitigation
- Capital Power invests in mid-life thermal assets that provide critical services to support grid reliability and renewable integration; these assets are expected to remain competitive under increasingly stringent carbon regulations and are at reduced risk due to their shorter operating life relative to new builds
- Economic assessment of development of new gas assets assumes shorter asset lives to account for long-term uncertainty
- Capital Power invests in assets with existing contracts and pursues additional off-take agreements and extensions; the Company seeks to mitigate exposure with provisions that flow-through costs to counterparties
- Capital Power invests in operational efficiencies and enhancements that lower carbon emissions and ensure assets remain competitively situated in the merit order

Natural Gas Competitiveness & Decarbonization	
Risks	**Long term** • Policy that limits the use of natural gas as a fuel source for electricity generation poses a risk to long-term viability of new and existing thermal assets; regulation of this nature would affect Capital Power's strategy, financial position and capital allocation decisions **Mitigation** • Capital Power actively engages with policymakers and industry associations to ensure there is a long-term role for low-emitting natural gas generation in the supply mix to support renewable integration and maintain reliability • Capital Power actively pursues decarbonization of fuel through hydrogen production and blending, with targets to achieve net carbon neutrality across the Company's portfolio before 2050 • Capital Power actively pursues advocacy to ensure policy support and wide-scale adoption of technologies that support decarbonization; post-combustion emissions are reduced through wide-scale deployment of CCUS technology • Where policy and market forces limit the opportunity for long-term value creation with natural gas assets, Capital Power may redirect capital to non-emitting sources of generation. Capital Power would rebalance the Company's portfolio of assets accordingly as fundamentals evolve.
Opportunities	**Short term** • Policy and regulation directed at carbon emissions from thermal assets affect supply fundamentals and, in certain jurisdictions, may increase the wholesale price of power • Increasing penetration of intermittent sources of energy increases the need for flexible back-up power **Response** • Investment in operational efficiencies and enhancements that improve emissions performance allows assets to realize increased margins through reduced compliance costs and improved competitiveness • Capital Power allocates capital to flexible natural gas assets situated at strategic locations on the grid; these assets realize increased margins as flexibility services are in higher demand **Long term** • Uncertainty over long-term opportunities in natural gas assets limits competition for acquisitions **Response** • Capital Power pursues acquisitions of mid-life natural gas assets where their services are critical to reliability and integration of renewables • Capital Power's commitment to net carbon neutrality and track record of operational excellence mitigate long-term risks through deployment of technologies that achieve decarbonization, including hydrogen blending and post-combustion CCUS technologies • In jurisdictions where competitiveness of natural gas is significantly reduced, Capital Power may shift capital allocation to alternative assets including renewables. Capital Power would rebalance the portfolio of assets accordingly as fundamentals evolve.

Disruptive Technology & Energy Transition

Key assumptions

- Climate change will drive significant innovation and transformation of the power sector
- Awareness and concern among end-use consumers of their contribution to climate change will drive behavioural changes in energy consumption
- Decarbonization, decentralization and digitalization will drive transformation of energy production and consumption
- Use of technologies for emissions abatement is increasingly deployed across the power sector; CCUS is commercially viable in the long term with increasing carbon prices

Risks

Short term

- A trend toward decentralized sources of non-emitting energy, including demand response, reduces overall rates of growth; the reduced levels of growth may decrease wholesale prices and result in reduced revenues
- New sources of competition for dispatchable natural gas emerge from non-emitting resources and demand response; this may reduce competitiveness of natural gas generation

Mitigation

- Capital Power actively monitors policy and market fundamentals that may drive investment in disruptive technologies that could affect asset competitiveness and financials
- Due diligence assessments identify site-specific impacts that may arise from trends in decentralization and decarbonization

Long term

- Development and improved competitiveness of non-emitting technologies that fall outside of Capital Power's current core competencies may affect strategy and capital allocation
- Competition among emission abatement technologies may reduce viability of hydrogen and CCUS as mechanisms to extend the useful life of strategic natural gas assets; technological breakthroughs in direct air capture or other technologies may reduce policy support and deployment of CCUS technologies

Mitigation

- Capital Power monitors emerging technologies and evaluates their potential economic impact
- Capital Power actively monitors emission abatement technologies and assesses opportunities to expand its portfolio of technologies that may have direct application in reducing emissions in natural gas generating assets

Opportunities

Short term

- Commercial-scale deployment of emissions abatement technology is supported through policy and regulation; public funding is available to encourage adoption
- Policy support for early-stage development of emission abatement technology encourages the pursuit of new innovations and pilot-scale technology deployment

Response

- Capital Power actively pursues technologies that are assessed to be commercially deployable at scale in the power sector to reduce emissions from natural gas generation, including CCUS, hydrogen and direct air capture applications; Capital Power seeks funding for projects to reduce emissions in line with the Company's strategies to achieve carbon neutrality
- Capital Power establishes partnerships to advance innovations and early-stage emissions abatement technologies

Long term

- Technological advancement and digitalization allow greater control of energy generation and consumption by demand-side market participants; this expands opportunities for new sources of revenue for Capital Power
- Emission abatement technologies that support long-term viability of natural gas proliferate and expand development opportunities

Response

- Capital Power possesses expertise in energy management and associated services to support evolving customer needs and compete in new markets that may emerge
- Capital Power actively pursues partnerships with a portfolio of companies that are pursuing technologies that have high likelihood of commercial deployment in electricity generation for emissions abatement

Reputational

Key assumptions

- Climate change creates material reputational risks for Capital Power; we actively manage our exposure and transparently report on the risks and mitigation

Risks

Short term

- Debt and equity investors are increasingly averse to investments that exhibit higher risks from exposure to climate change; Capital Power's cost of capital rises due to changing investor sentiment
- Stakeholders are increasingly focused on our exposure to the impacts of climate change, creating public perception risks related to Capital Power's portfolio, which includes carbon-intensive assets
- Attracting and retaining employees becomes more challenging as preferences for employment favour companies with reduced exposure to climate change and fewer or no carbon-intensive assets
- Contract counterparties and off-takers favour generators with lower exposure to climate change

Mitigation

- Capital Power is achieving ambitious climate change-related targets, including reduced emissions intensity across our fleet and pursuing carbon neutrality by 2050, in line with our corporate purpose – *to power a sustainable future for people and planet*
- Capital Power is pursuing opportunities to tie our environmental performance to our financing activities to demonstrate our commitment and leadership in achieving our corporate objectives. We issued a sustainability-linked credit facility in 2021, which ties our cost of borrowing to our ability to meet our environmental targets relating to emissions intensity.
- Coal-fired generation and solid fuels will be phased out, with investments in repowering at the Genesee facility and retirement of our Southport and Roxboro facilities; this removes the highest-emitting resources from Capital Power's portfolio of assets
- ESG criteria is integrated into our investment decisions to ensure appropriate consideration of climate change-related risks
- Capital Power is committed to transparent reporting and disclosure to help address concerns and risks among investors and stakeholders

Long term

- Increasing frequency and severity of climate change-related events may affect company assets and create reputational and investor risk

Mitigation

- Capital Power is committed to transparent reporting and disclosure to help address concerns and risks among investors and stakeholders
- Dedicated subject matter experts are retained in areas related to disaster management, risk management, regulatory compliance and community engagement to proactively manage the impacts of climate change-related events on the Company's physical assets, financial position and reputation
- Capital Power may consider changes to capital allocation where long-term reputational risks arising from climate change cannot be mitigated with decarbonization strategies. Capital Power's portfolio of assets would be rebalanced accordingly as fundamentals evolve.

Reputational	
Opportunities	**Short term** • Climate change-related impacts that affect operations may also affect Capital Power's reputation as a reliable power generator in the communities where we operate • The pursuit of credible decarbonization strategies demonstrates leadership that builds trust with investors and stakeholders **Response** • Capital Power has demonstrated leadership in responsible construction, operation and maintenance of power generating facilities that ensures resilience from increasing climate change-related risks that could negatively affect the Company's reputation • Capital Power provides transparent communication and reporting of progress toward the deployment of decarbonization strategies that aim to achieve long-term commitments to lower emissions across the Company's portfolio of assets **Long term** • Companies that actively manage their exposure to climate change-related risks are expected to outperform those that do not adequately address the risks • Achieving ambitious reductions in emissions through aggressive pursuit of decarbonization strategies helps to ensure long-term sustainability of the Company **Response** • Capital Power sets ambitious targets, provides transparent reporting and achieves measurable progress toward carbon neutrality before 2050 through aggressive deployment of decarbonization strategies

Physical risks & opportunities

The following tables assess physical risks and opportunities that may be realized in scenarios where the impacts of climate change are increasingly observed in the power sector.

Acute	
Key assumptions	• Climate change will cause an increase in extreme weather affecting Capital Power's current and future assets; extreme weather events will become increasingly frequent and severe
Risks	**Short term** • Extreme weather events caused by climate change (e.g., tornadoes, hurricanes, floods, droughts and ice storms) could have an impact on our operations and critical infrastructure and trigger increased insurance costs and potential liabilities **Mitigation** • Given the geographical areas in which our facilities operate, increases in extreme weather are included in our normal risk assessment process • Capital Power actively monitors the insurance market for material changes to policies that may affect our ability to seek coverage for high-risk assets; Capital Power's insurance program ensures adequate coverage is in place • Emergency preparedness and response plans are in place for our facilities; we ensure our responses are tested through simulated disasters in tabletop exercises; continuous improvement processes ensure learnings are incorporated in future responses. Sustaining capital is directed to enhancements that mitigate risk. • We have dedicated subject matter experts such as market forecasters, trades specialists, crisis and disaster management specialists, and engineers who assist in managing key issues related to acute and chronic physical risks • Our talent recruitment and development strategy ensures that we attract appropriate competencies when positions become available and that the skills of our current workforce are up to date • Capital Power assesses climate change-related physical risk in the due diligence process for new acquisitions; where physical risk is too high, capital allocation will be directed to lower-risk assets **Long term** • A persistent and material increase over time in the frequency and severity of extreme weather events caused by climate change may affect insurance costs and the ability to secure coverage on specific high-risk assets **Mitigation** • Capital Power actively monitors the insurance market for material changes to policies that may affect our ability to seek coverage for high-risk assets • Capital Power assesses climate change-related physical risk in the due diligence process for new acquisitions; where physical risk is too high, capital allocation will be directed to lower-risk assets
Opportunities	**Short term** • Increasing frequency and severity of acute climate impacts may affect delivery of energy through wire infrastructure from assets situated on remote parts of the transmission system and that are at risk due to single points of failure **Response** • Capital Power invests in strategically located assets that minimize the risks related to energy delivery that may arise from acute climate change-related events; the value of these assets may increase as they are increasingly used to maintain grid reliability **Long term** • Increasing frequency and severity of acute climate impacts may affect delivery of energy through wire infrastructure from assets situated on remote parts of the transmission system and that are at risk due to single points of failure **Response** • Capital Power invests in strategically located assets that minimize the risks related to energy delivery that may arise from acute climate change-related events; the value of these assets may increase as they are increasingly used to maintain grid reliability

Chronic

Key assumptions

- Water resources are increasingly affected by climate change (impacts vary by jurisdiction); water conservation and use are increasingly scrutinized and subject to more stringent regulation
- Long-term changes in weather patterns will affect the design and operation of new and existing renewable assets

Risks

Short term

- Water use and conservation efforts are increasingly scrutinized, and requirements are strengthened to mitigate the chronic impacts of climate change on water resources

Mitigation

- Capital Power has approved and is executing a water management strategy that will mitigate risks associated with increasing scarcity of water resources
- Actions to move off coal will reduce Capital Power's overall water consumption
- Capital Power monitors developments in policy and regulatory frameworks that address management of water resources
- Risks relating to the regulation and management of water are identified and mitigated in due diligence processes

Long term

- Physical risks associated with climate change, such as changing wind patterns and extreme weather, may reduce the capacity factor of renewable assets
- Water use and conservation requirements may limit physical access to water resources; additional investments may be required to manage cooling requirements; operations may be limited due to restrictions on water use

Mitigation

- We actively seek opportunities to optimize production from our wind assets, including strategies for optimizing operations and maintenance activities; assessing turbine production; revising OEM contracts to support reliable operations; and implementing upgrades to turbine blades with aerodynamic enhancements and turbine-control software
- Capital Power actively monitors water use and implements strategies consistent with our water management strategy to reduce consumption at our facilities, which may result in new capital investments and operational costs; where long-term risk cannot be mitigated, capital allocation may be directed away from high-risk assets and jurisdictions

Opportunities

Short term

- Potential changes in wind patterns and wind regimes may impact operations at our wind facilities and may enable us to generate wind power more efficiently and deliver more renewable energy
- Costs associated with increasing water management requirements may affect supply fundamentals

Response

- Capital Power incorporates climate change-related risk mitigation in the engineering, design and operation of our assets. Capital Power's Renewables Operations Centre (ROC) optimizes the energy output and financial performance of our wind assets by increasing our remote monitoring and analytics capabilities
- Capital Power proactively manages water resources inline with our water management strategy to ensure we remain competitive in jurisdictions where increasing costs may limit dispatch and competitiveness

Long term

- Technological advancements in renewables will allow for improved operations in response to persistent changes in climate and weather conditions
- Where long-term changes in climate reduce potential energy output from certain types of assets, there may be increasing value attributed to dispatchable assets with secure fuel sources

Response

- Capital Power monitors and invests in operational efficiencies and enhancements that capture additional revenues or mitigate risks that arise from long-term climate-related changes in weather patterns
- Investments in strategically located natural gas assets that are critical to renewable integration and grid support are pursued; Capital Power is pursuing strategies to ensure these assets remain competitive with decarbonization through deployment of CCUS technologies, hydrogen blending and direct air capture

Upstream

Key assumptions	• Climate change will affect Capital Power's upstream operations and financial results through changing availability and security of fuel sources • Disruptions to supply chains will become more frequent due to climate change-related events
Risks	**Short term** • Increased compliance costs attributed to coal and natural gas use could negatively affect competitiveness of assets and decrease revenues • Increasing stringency of methane regulation could increase costs of production for natural gas and reduce access to reliable fuel sources • Disruption of supply chains due to climate change-related impacts may result in development, operational or financial impacts to Capital Power **Mitigation** • Capital Power continuously invests in operational efficiencies and enhancements of existing assets to mitigate the risk of increasing compliance costs; conversions and repowering of coal plants will reduce exposure to increasing compliance costs associated with coal use • Capital Power monitors regulatory developments relating to fugitive methane emissions to assess risks to fuel supply and costs • Capital Power has approved and is implementing a sustainable sourcing strategy that will support the resilience and sustainability of our operations. Disruptions to supply chains are managed through contractual provisions for liquidated damages. Alternative supply routes and delivery points are considered to mitigate delivery risk. Local sourcing is used where possible. **Long term** • Long-term changes that affect production of natural gas may reduce security of supply and increase cost of fuel; development of new pipeline infrastructure may be limited due to regulatory delays and reduced social acceptance • Changes to wind regimes and solar resources may reduce the revenues and competitiveness of existing resources **Mitigation** • Capital Power will direct capital to optimal locations for renewable development; this may result in a changing development footprint in the long term
Opportunities	**Short term** • Pursuing digitalization and artificial intelligence technologies will allow companies to capitalize on upstream physical and commercial opportunities associated with climate change and improve adaptation or reduce vulnerability to climate change events • Development and expansion of markets for products derived from carbon emissions may improve the economics and deployment of CCUS and direct air capture technologies • Securing and optimizing supply chains may mitigate upstream climate risk and improve competitiveness of Capital Power's assets **Response** • Capital Power optimizes the engineering, design and operation of our assets through the deployment of artificial intelligences strategies at our sites • Capital Power is committed to operational excellence and strives for asset optimization through innovation efforts such as our Genesee Performance Standard and Ops 2030 programs • We are exploring advanced pattern recognition to use data and artificial intelligence to detect patterns that can lead to more advanced maintenance strategies • Capital Power's Genesee Carbon Conversion Centre, which is currently in development, will reduce emissions at the facility and create marketable products from captured carbon in the flue-gas stream • Capital Power adopts measures that ensure self-reliance in critical components and consumables; improvements in reliability and competitiveness are realized through more secure supply chain management • Local sourcing is used where possible, positively affecting the communities in which we operate through increased economic opportunities. Benefits are realized through reduced travel times for supplies and lower environmental impacts of transportation and delivery.

Upstream	
Opportunities	**Long term** • Low-carbon fuels are increasingly adopted as an alternative fuel source for new and existing thermal assets • Sequestration associated with post-combustion capture or direct air capture mitigates the risks of long-term use of natural gas **Response** • Capital Power is developing strategies to assess and integrate low-carbon fuels, such as hydrogen, as a fuel source at existing facilities through production and blending • Capital Power continues to advance CCUS strategies where low-carbon fuels may not achieve decarbonization of the fuel source

Downstream	
Key assumptions	• Downstream risks from climate change will affect delivery of energy with operational and financial impacts to the power industry • Corporate entities will increasingly look to procure power from low-emitting sources; the market for corporate power purchase agreements will expand • Electrification of end-use sectors will support long-term decarbonization
Risks	**Short term** • Outages on downstream electricity grids from climate change-related events may cause disruptions to operations, resulting in negative financial impacts to Capital Power **Mitigation** • Capital Power actively manages delivery risks and ensures contingency plans are in place to manage shut-down and short-term cessation of operations as a result of outages on the grid that affect energy delivery • Strategically located assets are well-suited to supply critical services for restoration events **Long term** • Increased downstream risks due to changing social behaviours over the long term could result in increased costs of generation and compliance • Markets and operating environments may become more difficult to forecast due to changing climate-driven regulations and policies, which could, in turn, increase volatility of Capital Power's operations and financial results **Mitigation** • Capital Power has dedicated subject matter experts, including energy traders, origination specialists, market forecasters, and regulatory and commercial managers who assist in stewarding key issues related to downstream physical risks
Opportunities	**Short term** • Increasing investment by corporate entities to secure contracted sources of renewable power to meet their own demand requirements increases the opportunities for development of renewable assets **Response** • Capital Power actively pursues contracting opportunities with corporate off-takers to secure the output of new and existing assets **Long term** • Decarbonization through increased electrification will support long-term emission reduction objectives, including net-zero commitments **Response** • Development opportunities will grow as electrification of end-use sectors grows; Capital Power is well-positioned to pursue new development opportunities to meet this growing demand

TCFD alignment table

TCFD theme	TCFD recommendations	Alignment to Capital Power/Reference
Governance	a. Describe the Board's oversight on climate-related risks and opportunities.	• See Corporate Governance • See Who We Are > Corporate Governance (www.capitalpower.com)
	b. Describe management's role in assessing and managing climate-related risks and opportunities.	• See Organizational Structure
Strategy	a. Describe the climate-related risks and opportunities the organization has identified over the short, medium and long term.	• See Risks & Opportunities Tables
	b. Describe the impact of climate-related risks on the organization's business strategy and financial planning.	• See Risks & Opportunities Tables
	c. Describe the resilience of the organization's strategy taking into consideration different climate-related scenarios including a 2°C or lower.	• See Our Strategy • See Risks & Opportunities Tables
Risk management	a. Describe the organization's process for identifying and assessing climate-related risks.	• See Managing Climate Risks & Opportunities
	b. Describe the organization's process for managing climate-related risks.	• See Managing Climate Risks & Opportunities
	c. Describe how processes for identifying, assessing and managing climate-related risks are integrated into the company's overall risk management.	• See Our Strategy • See Approaches to Decarbonization • See Managing Climate Risks & Opportunities
Metrics & targets	a. Disclose metrics used by the organization to assess climate-related risks and opportunities in line with its strategy and risk management process.	• See Metrics & Targets • See 2021 Integrated Annual Report
	b. Disclose Scope 1, 2 and, if appropriate, Scope 3 GHG emissions and the related risks.	• See 2021 Integrated Annual Report • See CDP 2021
	c. Describe the targets used by the organization to manage climate-related risks and opportunities and performance against targets.	• See Metrics & Targets

Our commitment to resilience

Capital Power has embedded climate change considerations into our strategy and decision-making processes, and has effective governance and mitigation processes in place to effectively monitor and address climate-related risks and capitalize on opportunities. The IEA scenarios highlight the continued role and importance that natural gas and renewables will have in the North American energy system. They also support our focus on these technologies and our ongoing efforts to optimize performance and reduce emissions at our thermal facilities. We are confident CCUS technologies and low-carbon fuels will be essential to achieving global carbon reduction objectives. We are committed to continuing our leadership to accelerate their deployment and advancement in the power industry.

Our geographic diversification, combined with our insurance and risk management initiatives, also position us well to manage physical risks arising from climate change under the different scenarios. We understand the importance of continually tracking and refining key metrics that influence the strength and resilience of our business, recognizing that there is great uncertainty as to how the future will unfold.

Advancing our carbon disclosure efforts

As we completed our assessment, we noted variation across scenarios and within sources depending on which assumptions one makes. This increased the complexity of assessing the overall resilience of our business. It is important to note that the climate change scenarios and their implications for Capital Power are inherently speculative and future events are subject to change. We believe that this report, taken together with our integrated annual report, is an important step in furthering our disclosure efforts with respect to climate-related risks and opportunities. We will build on this effort in the future.

Forward-looking information statement

Forward-looking information or statements included in this Climate Change Disclosure Report are provided to inform the Company's stakeholders about management's assessment of Capital Power's strategy, future plans and operations in the context of climate change. This information may not be appropriate for other purposes. The forward-looking information in this Climate Change Disclosure Report is generally identified by words such as "will", "anticipate", "believe", "plan", "intend", "target" and "expect" or similar words that suggest future outcomes. By their nature, such statements are subject to significant risks, assumptions and uncertainties, which could cause Capital Power's actual results and experience to be materially different than the anticipated results.

Forward-looking information in this document includes, among other things, information relating to:

i. Decarbonization and the transition to a low-emission economy and the expected role of different energy sources, including natural gas and hydrogen, and different technologies, including carbon capture, utilization and storage and direct air capture.

ii. The three energy scenarios (International Energy Agency's Stated Policies Scenario, Announced Pledges Scenario, Net Zero Emissions by 2050 case) used to test the resilience of our strategy and opportunities and risks under those scenarios.

iii. The key assumptions embedded in the three energy scenarios, including with respect to electricity demand and generation mix, system flexibility and decarbonization.

iv. Our conclusions from our scenario analysis using the three scenarios on the resilience of Capital Power's strategy.

v. Expected climate-related (transitional and physical) opportunities and ways to pursue them.

vi. The effectiveness of our risk management strategies, including in mitigating climate-related risks, including transitional and physical risks.

vii. Our aim to be net carbon neutral by 2050 and our pathway to decarbonization, including the role of renewable energy, storage technologies, transitions to low-carbon thermal generation through improved efficiency and deployment of carbon capture, utilization and storage technology and hydrogen.

viii. Our key targets along the decarbonization pathway and progress toward achieving them.

These statements are based on certain assumptions and analyses made by the Company considering its experience and perception of historical and future trends, current conditions and expected future developments, and other factors it believes are appropriate. The material assumptions used to develop these forward-looking statements relate to: (i) electricity and other energy prices, (ii) performance, (iii) business prospects and opportunities including expected growth and capital projects, (iv) status of and impact of policy, legislation and regulations, (v) effective tax rates, (vi) the development and performance of technology, (vii) assumptions relating to the three energy scenarios, and (viii) the key assumptions referenced in the Risks & Opportunities tables.

Whether actual results, performance or achievements will conform to the Company's expectations and predictions is subject to several known and unknown risks and uncertainties which could cause actual results and experience to differ materially from the Company's expectations. Such material risks and uncertainties include: (i) power facility availability and performance including maintenance expenditures, (ii) changes in electricity prices in markets in which Capital Power operates, (iii) regulatory and political environments including changes to environmental, climate, financial reporting, market structure and tax legislation, (iv) acquisitions and developments including timing and costs of regulatory approvals and construction, (v) ability to fund current and future capital and working capital needs, (vi) changes in energy commodity market prices and use of derivatives, (vii) changes in market prices and availability of fuel, (viii) changes in general economic and competitive conditions, (ix) changes in the performance and cost of technologies and the development of new technologies, new energy efficient products, services and programs, and (x) risks referenced in the Risks & Opportunities tables and in the Risks and Risk Management section of the Company's 2021 Integrated Annual Report.

Readers are cautioned not to place undue reliance on any such forward-looking statements, which speak only as of the date made. The Company does not undertake or accept any obligation or undertaking to release publicly any updates or revisions to any forward-looking statements to reflect any change in the Company's expectations or any change in events, conditions or circumstances on which any such statement is based, except as required by law.

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