

# Climate scenario analysis

OPG completed a climate-related scenario analysis in 2023 involving senior leadership and business unit subject matter experts across the enterprise. The climate-related scenario analysis was consistent with the TCFD recommendation to describe the resilience of the organization’s strategy, taking into consideration different climate-related scenarios, including a 2-degree Celsius warming or lower scenario. OPG assessed four scenarios grouped into two distinct energy futures, as summarized below. The company believes the analysis remains topical and that the resilience of its strategy has not changed materially as of Q2 2025.

Climate and investment projections, including data on physical and transition risks, were sourced from government and international organizations and reports. These included the Intergovernmental Panel on Climate Change, the International Energy Agency, U.S. National Climate Assessment Reports, the Climate Atlas of Canada, the Canada Energy Regulator, and the IESO. Such projections involve significant areas of uncertainty.

To carry out the analysis, OPG held internal sessions and workshops that included the participation of executives as well as business units and subsidiaries that focused on natural gas, hydropower, electrification growth opportunities, and nuclear.

OPG leveraged its ongoing consideration of climate-related risks and opportunities, including those identified and managed through the company’s Enterprise Risk Management (ERM) framework. OPG focused on qualitative assessment of potential outcomes given the company’s limited experience with TCFD-recommended climate scenario analysis. In line with the TCFD framework, the assessment considered acute and chronic physical risks, and transition risks, including those related to policy, technology, market, and reputational factors. It also considered opportunities involving resource efficiency, energy sources, products and services, markets, and resilience.

	Low-Carbon Energy Future		High-Carbon Energy Future	
	Global Net-Zero (GNZ) Scenario	Low-Carbon Scenario	Two Degree Scenario	High-Carbon Scenario
Headline	The global economy is on a path to net-zero emissions by 2050 without using negative emissions technology.	Alignment to the Paris agreement and achievement of energy-related UN Sustainable Development Goals.	Climate commitments announced by governments, including Nationally Determined Contributions (NDCs), are met.	Current and stated climate policies only. A business-as-usual (BAU) benchmark scenario.
Energy Transition	A complete transformation of how energy is produced, transported and consumed.	An ambitious transformation of the energy sector. Completion of all policies and private sector net-zero pledges in full and on time.	Energy-related emissions fall by around 40% by 2050. The electricity sector delivers the largest decline.	Energy demand continues to grow, and although there is growth in renewables, fossil fuels continue to play a significant role.
Warming Trends	Estimated Warming 2041-2060: 1.6°C 2081-2100: 1.4°C	Estimated Warming 2041-2060: 1.7°C 2081-2100: 1.8°C	Estimated Warming 2041-2060: 2.0°C 2081-2100: 2.7°C	Estimated Warming 2041-2060: 2.4°C 2081-2100: 4.4°C



## Resilience of the organization's strategy under different climate scenarios

OPG considered various climate-related risks and opportunities over the short- (1-5 years), medium- (5-20 years), and long-term (20-50+ years). These planning horizons generally overlap with OPG's business planning and long-term strategy and financial outlook processes. While certain risks and opportunities are consistent across the different business units of OPG, there are variations driven by unique geographical and technological factors.

OPG is taking steps to manage these risks and opportunities to support the resilience of the organization's strategy under different scenarios. As part of these efforts, OPG must consider inherent trade-offs associated with different electricity generation options and seek to optimally balance various environmental, social, and economic considerations. These include GHG reduction, affordability, reliability, advancing Indigenous Reconciliation, and supporting economic growth.

### Low-carbon energy future scenario

In the low-carbon energy future scenarios, significant increases in electrification and energy efficiency are expected to bring increased clean energy investment. As these two scenarios describe aggressive low-carbon futures, the risks associated with transitioning to a low-carbon economy receive greater focus for analysis in comparison to physical risks associated with a warming climate.

OPG is actively addressing transition risks by implementing its Climate Change Plan, which includes a comprehensive strategy to mitigate potential impacts on the organization. This includes exploring new potential generation sites, nuclear refurbishment activities, investing in SMRs, hydroelectric expansion and refurbishment, low-carbon hydrogen and energy storage development, electrification initiatives, and nature-based solutions. The strategy also includes the continued operation, and potential increase, of natural gas-fueled electricity production to enable the energy transition and ensure energy reliability and security in the interim.

In 2024, OPG's natural gas-fueled generation represented around 20% of OPG's earnings before interest and taxes (EBIT) from generating stations.

Opportunities under low-carbon energy future scenarios are the most pronounced for OPG as the world decarbonizes its energy systems at an aggressive pace.

### High-carbon energy future scenario

In the high-carbon energy future (and to a lesser extent under the low-carbon energy future), the physical risks to infrastructure, energy delivery capabilities, and employee safety are expected to rise. Increased risks are due to impacts from warmer temperatures and more frequent extreme weather events.

Like all businesses around the world, OPG faces operational challenges stemming from climate change. Potential impacts on the efficiency, reliability, and lifespan of plants and equipment are acknowledged concerns, subject to risk mitigation plans.

To address these challenges, OPG has developed an internal climate change adaptation strategy and roadmap designed to bolster its resilience. This includes incorporating climate-related considerations into key business areas, including capital investments and engineering. As climate-related effects are expected to worsen in the foreseeable future, OPG will continue to develop and implement its adaptation strategy and enhance its resilience in the face of these risks.

Transition risks related to existing legacy fossil fuel infrastructure are expected to be lower in this scenario. Moreover, companies with emitting assets could benefit from relatively stable market conditions, policy support, and investment opportunities, and may have more time to adapt and diversify their operations.

## Ongoing monitoring, management, and reporting

OPG will continue to monitor and evaluate potential climate-related risks and opportunities in the short-, medium-, and long-term. This includes maintaining focus on development of low-carbon generation assets and making necessary investments in infrastructure to adapt to climate change and enhance resilience over time. To this end, OPG actively monitors its funding requirements and forecasts availability of funds to ensure that it can meet the Company's operational needs, project and other commitments, and long-term obligations.

The organization also expects to continue enhancing data and modeling to inform its resilience-building strategies. OPG is committed to collaborating with various consortiums and industry groups to lead the development of sector-specific adaptation strategies and best practices. OPG will continue to report annually on progress.

Despite inherent uncertainties, climate scenario analysis remains important to the company as it provides an indication of where the likely negative impacts from climate change and opportunities from the energy transition will manifest themselves and, thus, where efforts to address priorities may take place.