

Environmental management



Why it's important

Enbridge operates across diverse landscapes, from densely populated areas to remote locations, creating and managing crucial energy infrastructure that fuels local communities and economies. We recognize the ecological and cultural significance of every location where we operate and work toward safeguarding the environment throughout the lifecycle of our projects. We are committed to minimizing our impacts on the environment while complying with all applicable laws and regulations in the jurisdictions where we operate.

Protecting natural resources and supporting conservation are priorities for Enbridge. We work closely with local stakeholders, Indigenous communities and our employees to mitigate impacts and to promote shared environmental values and priorities. We invest in programs that directly support and promote environmental stewardship.

Governance

We recognize that our business has interactions and dependencies with nature. We believe it is important to our business that we understand these interactions and manage nature-related risks to protect the environment and communities in which we operate.

We have strong governance practices for environmental management, including robust Board of Directors oversight and risk management practices.

Oversight of environmental, sustainability and ESG matters, including nature and biodiversity, is fully integrated into the responsibilities of our Board and all five of our Board committees. Each committee's expertise is relevant for specific ESG-related topics. Nature-related risks, dependencies and impacts fall primarily under the responsibility of both the Sustainability Committee and the Safety and Reliability Committee. The Sustainability Committee has oversight of environmental matters, including the Company's sustainability and ESG policies and practices and environmental risks and opportunities. The Sustainability Committee is also responsible for overseeing the integration of environmental factors into business strategy and decision-making. The Safety and Reliability Committee is responsible for policies directed at preventing and minimizing adverse environmental impacts, as well as oversight of operational matters, including environmental management, pipeline and facility integrity management, and emergency management and response.

Our approach

Our [Sustainability Policy](#) sets out the principles and values that underpin our operating practices at all levels of our organization, including protection of the environment. Our commitment to environmental protection is also articulated in our [Safety and Reliability Policy](#), which outlines the commitment to conduct our activities in a systematic, comprehensive and proactive manner that manages risk and prevents incidents. This policy establishes Enbridge's Management System Structure (MSS), an integrated management system that encompasses safety, security and protection of the environment by providing consistent expectations, standards and levels of discipline across our enterprise – and across asset lifecycles.

As part of our MSS, business units implement an integrated management system and the Environmental Protection Program (EPP) that defines environmental management accountabilities and responsibilities. The goal of the EPP is to anticipate, prevent, manage and mitigate operational risks and conditions that could significantly affect the environment by defining environmental management accountabilities and responsibilities in the organization. The development and implementation of this system is informed by industry-leading protocols including, but not limited to, ISO 14001.

Enbridge works in highly regulated jurisdictions within the United States, Canada and Europe, with stringent and rigorously implemented environmental legislation. We work cooperatively with regulatory agencies and aim to meet, if not exceed, expectations set by federal, state or provincial regulators. This makes environmental management and compliance risk management an important part of our operations.

Enbridge completes all necessary impact assessments for our new projects – including environmental, species at risk, siting, noise and cultural – and we develop avoidance and/or mitigation measures that aim to protect ecosystems and environmentally sensitive areas, maintain wildlife and marine life, and reduce land, water and habitat disturbances. We continually monitor our environmental performance and we and our primary regulators conduct periodic audits of our EPP to assess and enhance our environmental management practices.

We work with landowners and local and Indigenous communities that may potentially be affected by our projects and operations to meaningfully address their environmental priorities and concerns. Enbridge respects designated protected areas located near or adjacent to our operations and follows regulatory requirements, where applicable. We aim to build relationships with landowners, Indigenous groups and stakeholders by engaging directly with them to support their land use objectives – from agriculture to conservation to commercial activity.

Through Enbridge's Fueling Futures, our community investment program, Enbridge contributes to regional environmental organizations and invests in projects that support environmental initiatives and create benefits for the communities where we operate. We fund environmental research projects with universities and other research agencies, including topics such as habitat preferences that inform restoration activities.

Focus on nature

Enbridge is committed to conserving and restoring nature and we aim to minimize our impact on land, water, biodiversity, air and climate. We recognize that businesses in all industries depend on diverse and resilient ecosystems and the services that ecosystems provide.

Nature loss (including reduction in biodiversity, decrease in habitat, and changes to water resources), paired with the resulting impacts on ecosystem functions, has been identified as a critical global risk. Enbridge supports the Kunming-Montreal Global Biodiversity Framework (GBF), which aims to halt and reverse nature loss by 2030 and restore biodiversity levels by 2050. Enbridge is also closely monitoring the development of the Canadian government's 2030 Biodiversity Strategy.

Improvements in the resilience of natural ecosystems and biodiversity are essential to secure a prosperous future for business and society in current and future generations. Enbridge recognizes the importance of nature-related issues and we are working to evaluate dependencies and impacts on nature, assess the risks and opportunities to the organization and report on the results.

We recognize the integrated nature of climate change and biodiversity, and that climate change is playing an increasingly important role in the decline of biodiversity.¹ We recognize the benefits of taking an integrated approach to identifying, assessing and responding to climate and nature-related dependencies, impacts, risks and opportunities. We expect to leverage our processes and expertise in reporting in alignment with the TCFD recommendations to enhance our future reporting on nature in alignment with TNFD.

In contrast to the global nature of climate change, nature-related issues are location-specific and require differences in identification, assessment and management and require local, context-specific assessments and responses. We recognize the knowledge and expertise of local communities and Indigenous peoples in understanding these location-specific issues.

1 <https://www.un.org/en/climatechange/science/climate-issues/biodiversity>

Enbridge engages potentially affected communities, Indigenous groups and landowners and other stakeholders early to assess and develop measures to avoid and/or mitigate adverse social and environmental impacts of our projects and operations. As part of our [Indigenous Reconciliation Action Plan](#) (IRAP), we recognize the strong Indigenous connection to nature and the traditional importance of the land, air, animals and water and are committed to collaborative stewardship and inclusion of traditional cultural knowledge in our plans, projects and operations. Pillar 4 of the IRAP outlines commitments for Indigenous inclusion in the environmental review process and field work.

Biodiversity and land use

Biodiversity is the variety of life on earth, connecting us to nature through food, water and air. By safeguarding and respecting biodiversity, we help ecosystems essential to sustainable human development thrive and benefit us all.

Throughout the lifecycle of our projects, our engineering and technical services teams integrate biodiversity considerations into the design, construction, maintenance and operation of our assets to balance the protection of land, plants and animal life with business requirements. Where sensitive ecological features are identified, we implement a mitigation hierarchy to reduce potential impact to species and habitat. This includes avoidance, mitigation, restoration and offsets.

Prior to any new project, Enbridge undertakes a project planning and siting process that incorporates environmental and cultural assessments. As part of project planning phase, we:

- Undertake siting assessments to identify key ecological features, sensitive habitat, cultural resources and community priorities
- Aim to use pre-existing rights-of-way (ROWs), where possible
- Conduct baseline assessments on soil, vegetation, wildlife, biodiversity, aquatic environments, air quality and water quality
- Engage qualified professionals to identify sensitive areas, implement mitigation measures and implement a mitigation hierarchy

During construction, we implement management practices that include vegetation management and invasive species control measures, soil management and erosion control measures, protecting species at risk and sensitive habitats. Following construction, we begin reclamation of disturbed lands. ROWs are restored in rural areas so agricultural activities can resume.

During operations, project-specific environmental protection plans may be considered to identify and monitor any potential impact to land, water or wildlife. For each project, we develop unique plans that include avoidance and mitigation measures. We apply vegetation management methods at our facility and pipeline ROW locations and work with landowners and regulatory agencies to address the spread of invasive species that threaten valuable native species and natural plant and animal diversity. Wetland and watercourse crossing sites are monitored regularly following construction and we work to restore them to their previous function and value.

In the case of decommissioning, we return the site to equivalent land capability. We use techniques that are suitable for the landscape we are working in, including active reclamation and revegetation, natural regeneration, and environmental monitoring. We engage with local communities, landowners and Indigenous communities in developing the restoration goals. Following decommissioning of a site, we conduct environmental monitoring to verify the success of reclamation efforts.

Water

Water is a fundamental societal, environmental and economic resource and we are committed to using it responsibly and sustainably. We operate in freshwater ecosystems throughout our liquids and natural gas pipelines and utilities operations, and in ocean ecosystems through the development of our gas gathering system and offshore windfarms. Primary risks include impacts to water quality as a result of spills or hydrostatic testing, which may have implications for marine wildlife and ecosystems. Enbridge has robust operational practices focused on the protection of water quality and extensive experience in protecting water resources when pipeline infrastructure crosses a waterway.

Enbridge uses limited amounts of groundwater and surface water in our operations. We benefit from ecosystem services that support climate regulation, flood and storm protection, and stabilization and erosion control. Primary risks include withdrawing water from water stressed areas; limited water resources to support our operations; and impacts due to erosion, flooding or heavy rainfall.

Water use for operations

Our operations and engineering groups carefully manage water used for operations. Enbridge's main reason for drawing water is hydrostatic pressure testing, a practice critical to ensuring the integrity of our assets. Hydrostatic testing involves filling sections of pipe with water at high pressure and maintaining the pressure for a prescribed period to confirm the integrity of the pipeline. The exact volume of water use and location of withdrawal varies from year to year depending on our testing needs, which vary according to the number of projects under construction and our overall integrity management requirements.

To limit impacts on local water resources, we use recycled water as much as possible to meet our hydrostatic testing needs. This water does not need to be high-quality fresh water and can be delivered by a third-party water supplier, rented or reused from a previously tested section of pipeline. A negligible volume of water is consumed through hydrostatic testing; on average, more than 99% of the water used for this purpose is returned to the environment.

Our teams use detailed procedures to evaluate water quality prior to release to the environment or disposal. If the water can't be safely returned to the environment, we dispose of it using approved methods following regulatory requirements where they exist, or in the absence these requirements, following internal procedures based on best management practices. We expect that recycled water will remain central to Enbridge's approach to meeting our hydrostatic testing needs related to our safety requirements.

Enbridge also relies on water for other operational purposes including cooling systems, dust management during construction and operations, fire suppression systems and cleaning equipment.

Enbridge also has metered service connections to municipal water treatment and distribution systems supplied to Enbridge owned and leased facilities across the business. Some Enbridge facilities consume a small amount of unmetered water supplied by local wells or potable water delivery at remote operating locations.

Water risk assessments and mitigation

We operate around waterbodies and watercourses and recognize the potential impact to freshwater and ocean ecosystems, including water quality and marine life. We have a goal of zero releases of any of the hydrocarbons we transport because these types of releases have the potential to impact the environment, damage property and threaten the safety of workers and the public. We invest in preventing spills and releases – including in or near watercourses and environmentally sensitive areas – through rigorous asset integrity practices and emergency response and preparedness planning.

Enbridge uses a combination of approaches to identify, assess and mitigate potential water risks across our operations. We take a lifecycle approach to manage the safety and design of our assets and assess water risks as part of an established enterprise risk management framework.

During project planning and operations, we conduct risk assessments using regional government databases that help identify higher-risk environmental features, such as municipal water intake locations and recharge areas for municipal drinking water supplies. The risk assessments also consider subsurface conditions, such as the depth of the groundwater table and proximity of regulated areas like floodplains to our project footprint. These aspects are important determinants for permitting requirements and mitigating water risks.

Non-GHG air emissions

Operating our gas and liquids pipeline network may result in non-GHG air emissions associated with stationary combustion to move gas and working and breathing losses on process vessels and tanks.

Non-GHG air emissions known as criteria air contaminants (CACs) are released from our facilities and include carbon monoxide, nitrogen oxides and volatile organic compounds. CACs released in smaller quantities include sulfur dioxide, nitrogen oxide and particulate matter.

Enbridge operates in jurisdictions that have regulations to limit and report on air emissions. Our facilities have permits designed to prevent impacts to communities and ecosystems. Air dispersion modeling is completed and assessed as required by local regulatory agencies during project siting, permit renewal and environmental assessment. Facilities are managed and operated to comply with regulated ambient air quality requirements. We strive to ensure we keep air emissions from our operations in line with regulations and guidelines designed to protect the environment and the health of local communities. We have established management programs that define our roles, responsibilities and timelines for managing and reporting emissions to government agencies in both Canada and the U.S.

The global impact of GHG emissions on the climate is an important focus for our business and we have made a commitment to net-zero greenhouse gas emissions by 2050. We have reported extensively on this in the [Climate Change and the Energy Transition](#) section and [TCFD](#).

Waste

Waste, if not managed properly, can have impacts on soil and water and adversely impact plant, animal and human health. Minimizing waste and managing waste responsibly are important parts of reducing our environmental impact.

Waste is generated through the construction, operations, maintenance and decommissioning of our assets. Common types of waste from our assets and operations include construction debris, industrial waste and contaminated soil. We manage both hazardous and non-hazardous waste.

Waste minimization, source reduction and recycling offer both environmental and economic benefits. We look for opportunities to reuse or recycle construction materials, utilize recycled steel in construction projects and implement waste recycling and compost programs at our office locations, where possible.

Enbridge operates in jurisdictions where waste management is regulated and waste management reporting is required by local regulators. We follow all applicable regulations to manage waste from our operational activities and reduce our hazardous waste footprint whenever possible through treatment and recycling processes. This process requires proper testing, classification and management of the waste through Enbridge's contracted waste vendors. Several jurisdictions require hazardous waste minimization reports, which are completed annually and help support operational activities to improve our waste management processes. Waste reporting is generally handled according to jurisdictional requirements, with environmental teams reviewing jurisdiction requirements annually to ensure all data is gathered and reported as required. A centralized waste data repository is currently being evaluated to enhance timely and accurate reporting of Enbridge waste. The centralized system is expected to support the establishment of key performance indicators for waste minimization and allow for improved reporting.

In our Gas Distribution and Storage (GDS) business unit in Canada, we engage a third party to conduct an annual solid waste audit, as part of regulatory requirements, to identify, quantify and analyze the composition of the waste stream and identify the extent to which materials or products can be recycled or reused. The audits inform the development of a plan to further divert waste and enhance existing recycling initiatives.

In our corporate office and several of our major office locations we recycle items such as paper, plastic, cans and batteries. We continue to seek practical opportunities to reduce waste from our offices and field operations.

More information

See our [2023 Sustainability Report](#) for performance highlights.

See our [2023 ESG Datasheet](#) for TCFD reporting and environmental performance data.