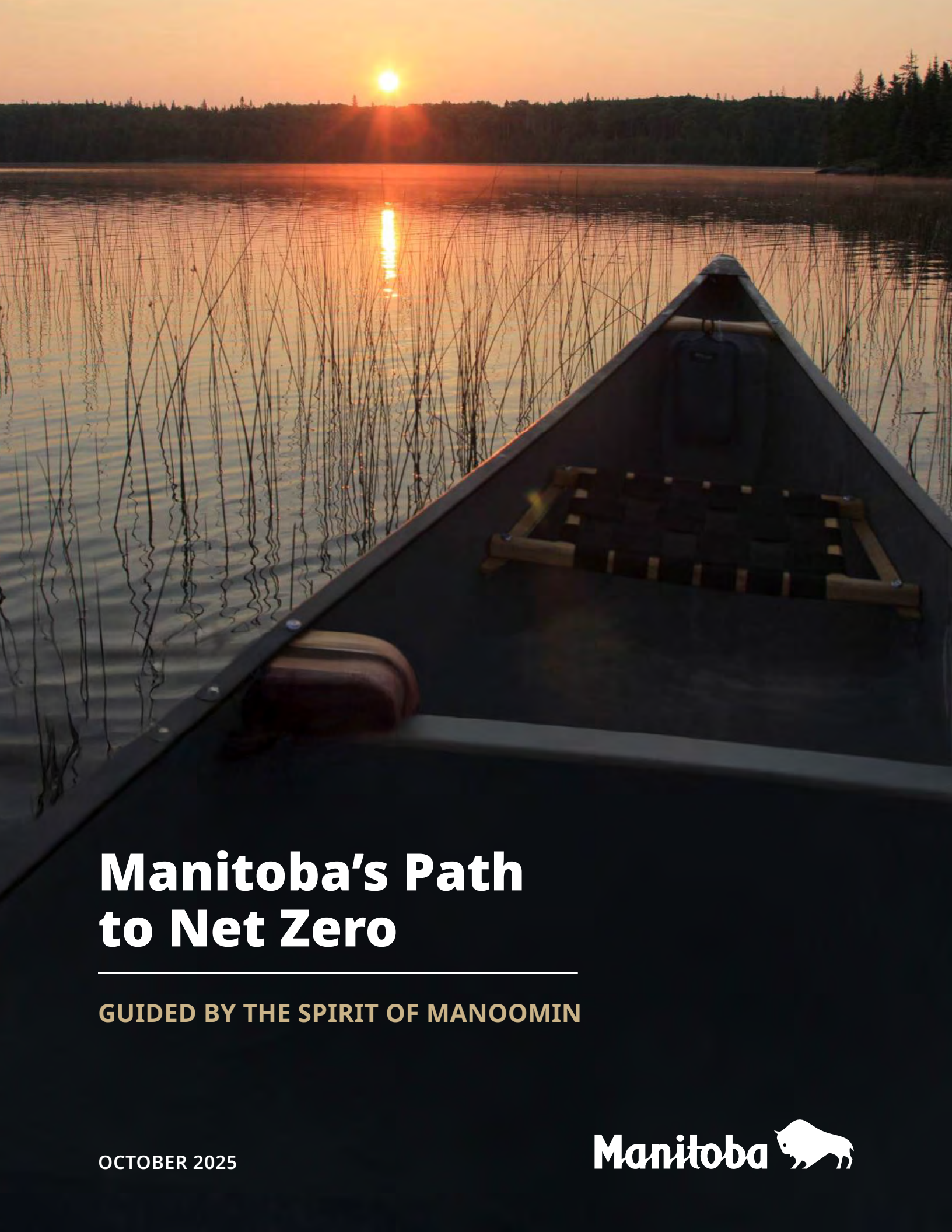




Manitoba's Path to Net Zero

GUIDED BY THE SPIRIT OF MANOOMIN

OCTOBER 2025

Manitoba 

Land Acknowledgement

We recognize that Manitoba is on the treaty territories and ancestral lands of the Anishinaabe, Anishinewuk, Dakota Oyate, Denesuline, Nehethowuk Woodland Cree and Inninewuk Swampy Cree peoples.

We acknowledge Manitoba is located on the Homeland of the Red River Métis, that northern Manitoba includes lands that were and are the ancestral lands of the Inuit.

We respect the spirit and intent of Treaties and Treaty Making and remain committed to working in partnership with Ininew, Anishinaabe, Anishinew, Dakota, Dene, Inuit, and Red River Métis people in the spirit of truth, reconciliation and collaboration.

We acknowledge the Indigenous Peoples of Manitoba as the original stewards of these lands and environment, the knowledge they have developed over millennia of living in harmony with nature.

An Offering

Indigenous Nations in Manitoba share some common practices: one is to make offerings to the land. The practice of offering tobacco in gratitude for what the lands and waters provide is one way to honour the impact humans have on their environment, and in this spirit, this path to net zero is both a commitment and an offering.



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Message from the Minister of Environment and Climate Change



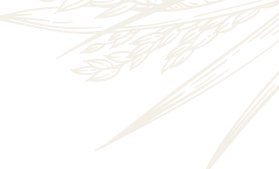
Manitoba has a rich environment shaped by its distinct ecosystems, seasons, geography and diverse cultures. Manitoba, whose name comes from the Anishinaabemowin term Manito Abi, meaning 'where the Creator sits,' is home to the shores of Hudson Bay, vast boreal forests, expansive prairies, and thousands of lakes and waterways. Manitobans are passionate about protecting these areas that are increasingly affected by a changing climate.

We saw this past summer the significant effect climate change has on communities, with the worst wildfire season in 30 years. Without globally reducing the greenhouse gas emissions (GHG) that contribute to climate change, we will face more extreme weather like floods, severe storms, tornados and drought. Manitoba's Path to Net Zero by 2050 sets out a roadmap to reduce our emissions and create new opportunities to build a secure and affordable future for ourselves and generations to come.

As we approach the challenge of climate change and its impacts in Manitoba, we must recognize the important cultural, traditional and spiritual significance of lands and waters to Indigenous Nations. This strategy lays out a pathway that centres respect and responsibility, balancing protection for the environment with economic growth necessary in our path forward. The entire plan rests on a teaching from Indigenous cultures: All human activities impact the environment. As we take from it, we must make offerings back in reciprocity.

Manitoba's Path to Net Zero is a strategy to guide our collective work to achieve net-zero greenhouse gas emissions in Manitoba. It aligns closely with our Affordable Energy Plan, Securing Our Critical Mineral Future strategy, and Manitoba's newest Economic Development Strategy.

We will move toward net zero by expanding our use of affordable, renewable energy, being more energy efficient and transitioning away from fossil fuels when and where we can. We will work to advance new technologies and nature-based actions that can support the sequestration of carbon. We will become climate prepared, recognizing that climate change brings both new risks and opportunities.



The transition away from fossil fuels to renewable energy presents new economic opportunities for our province. Manitoba is positioned to take advantage of the net-zero transition with its existing low-carbon renewable energy, critical minerals, skilled labour market, strong business sector and access to global markets. The net-zero opportunity is a chance to modernize our economy and create quality job opportunities for youth while protecting the natural environment, creating healthy communities and making life more affordable.

While our horizon for this transition is long, we need to act now to build the net-zero economy of the future. We are committed to a just and fair net-zero transition that creates good jobs for workers so that all Manitobans can prosper. This strategy is designed to be flexible and enable a wide range of opportunities that move Manitobans and our economy along the path to net zero. Each day we are seeing new innovations that improve how we live our lives, including the evolution of new technologies to reduce carbon emissions.

On behalf of the Manitoba government, I look forward to beginning our net-zero journey together, guided by Indigenous Nations of this land.

Hon. Mike Moyes,
Minister of Environment and Climate Change

Introduction

Our leader for this path to net zero is the Anishinaabe teaching of manoominikenzhii, the spirit of the wild rice. Just as tobacco is offered to the Creator in gratitude before harvesting manoomin, and just as some rice is returned as offerings to the Creator, this plan is our offering back to the environment after generations of taking. Each action, like a single grain of manoomin placed with care, can grow into a feast when gathered together. So too, every step of this path matters. Improving efficiency, investing in clean technology, and conserving resources all build the systemic change needed to restore balance.

Achieving net zero is about sustaining life across generations. Manoomin is gathered, dried, and stored through long winters to nourish communities in difficult times. In the same way, our plan reduces emissions today while ensuring a future where our children and grandchildren can thrive.

This strategy is also about health. Manoomin, the high-protein wild rice, has long supported a nutritious diet for Anishinaabe people. It nourishes the body and provides lasting energy. In the same way, this plan strengthens the health and well-being of our communities. It helps to provide cleaner air and water, so families can breathe more easily and drink safely. It restores balance to the land by cutting greenhouse gas emissions and easing the pressures of climate change, so that our rivers, forests, and prairies can grow stronger and more resilient.

To create healthier communities, we must also look ahead and use new tools to strengthen our path. New technologies like artificial intelligence will play an important role in meeting our goals. They will help Manitoba cut costs and emissions by making our energy grid smarter, our farms more resilient, and our communities safer from climate risks. For generations, the Anishinaabeg cared for manoomin by blending ceremony with innovation. Canoes and ricing sticks are still used in some places, while elsewhere machines and industry ovens support larger harvests. The practices change, but the teachings of reciprocity remain. In the same way, new technologies will help us bring innovation to the timeless responsibility of protecting the land, carrying forward what is sacred while adapting to today's challenges.

Finally, this work is about preparedness and resilience. For centuries, manoomin was stored as a safeguard against scarcity, a storehouse of life that ensured survival in hard times. In that same spirit, this plan is Manitoba's storehouse, building renewable power, resilient infrastructure, and strong communities to withstand a changing climate.

Just as the harvest of manoomin ends with a feast where families and Nations gather around a common table, this path to net zero is an invitation for Manitobans from all walks of life to come together in a spirit of gratitude and responsibility. It is a collective table where everyone has a place, each contributing and each sustained. As with the closing feast of the Anishinaabe wild rice harvesting season, where communities give thanks for the rice and pray for the harvest to continue, this plan is both a celebration and a commitment, a way to ensure that future generations will inherit abundance, resilience, and balance with the land.

Overview

Manitoba's Path to Net Zero is a high-level blueprint to guide the government's approach to reducing greenhouse gas emissions. The framework has three parts:

1. Guiding principles to anchor the plan.
2. This Path, which sets out a broad, balanced roadmap toward net zero over 25 years.
3. Action plans, to be developed on a three-year cycle, that will identify concrete, time-bound measures.

Net zero means that any emissions produced are offset by actions that remove the same amount of greenhouse gases, resulting in no net increase in emissions.

Guiding Principles

Manitoba will Remain Affordable while it Grows and Prospers

The transition to net zero will deliver broad economic, environmental and social benefits for individuals, workers, communities, and businesses. The shift to more renewable energy and lower emissions will keep life affordable for Manitobans by using new and innovative ways to help families and businesses save money while reducing energy use and emissions.

Just as manoomin is gathered and shared so that every household has food through the winter, the benefits of this transition must be distributed so that families across Manitoba can count on security and affordability.

To Succeed in the Renewable Energy Transition, We Have to Work Together

The Manitoba government will partner with all governments to secure our shared environmental and economic future, especially through strong partnerships with the Ininew, Anishinaabe, Anishininew, Dakota, Dene, Inuit, and Red River Métis to advance economic reconciliation. We know that the way we get difficult things done is by doing them together.

The harvest of manoomin has always required many hands: those in the canoe, those with the ricing sticks, those drying and parching, and those preparing the feast. In the same way, Manitoba's path to net zero can only succeed when everyone contributes their part.

Responsive and Anchored in Evidence

The transition to net zero will be anchored in science, traditional Indigenous knowledge and evidence-based decision making. Our actions to reduce greenhouse gas emissions will be guided, by trusted information, shaped both by the leading-edge technology of this millennium and by people who have cared for these lands for millennia.

Respect, Responsibility and Reciprocity with Air, Lands and Waters

The path to net zero will be anchored by a deep respect for and responsibility to safeguard Manitoba's environment, thinking ahead seven generations into the future. Reaching Manitoba's climate and economic goals must be done without compromising the protection of the air, lands and waters.

In Anishinaabe teachings, manoominikenzhii, the spirit who dwells in the wild rice, is tended to with tobacco, prayer, and gratitude.

So too will Manitoba keep faith with the air, the lands, and the waters: not as commodities to exhaust, but as sacred relations to honour and sustain.

A Net-Zero Transition that Provides Good Jobs for Manitoba Workers

A just and fair transition will create family-supporting blue-collar jobs, and help all Manitobans take part and benefit from the move to net zero regardless of their age or where they live and work, for today and into the future.

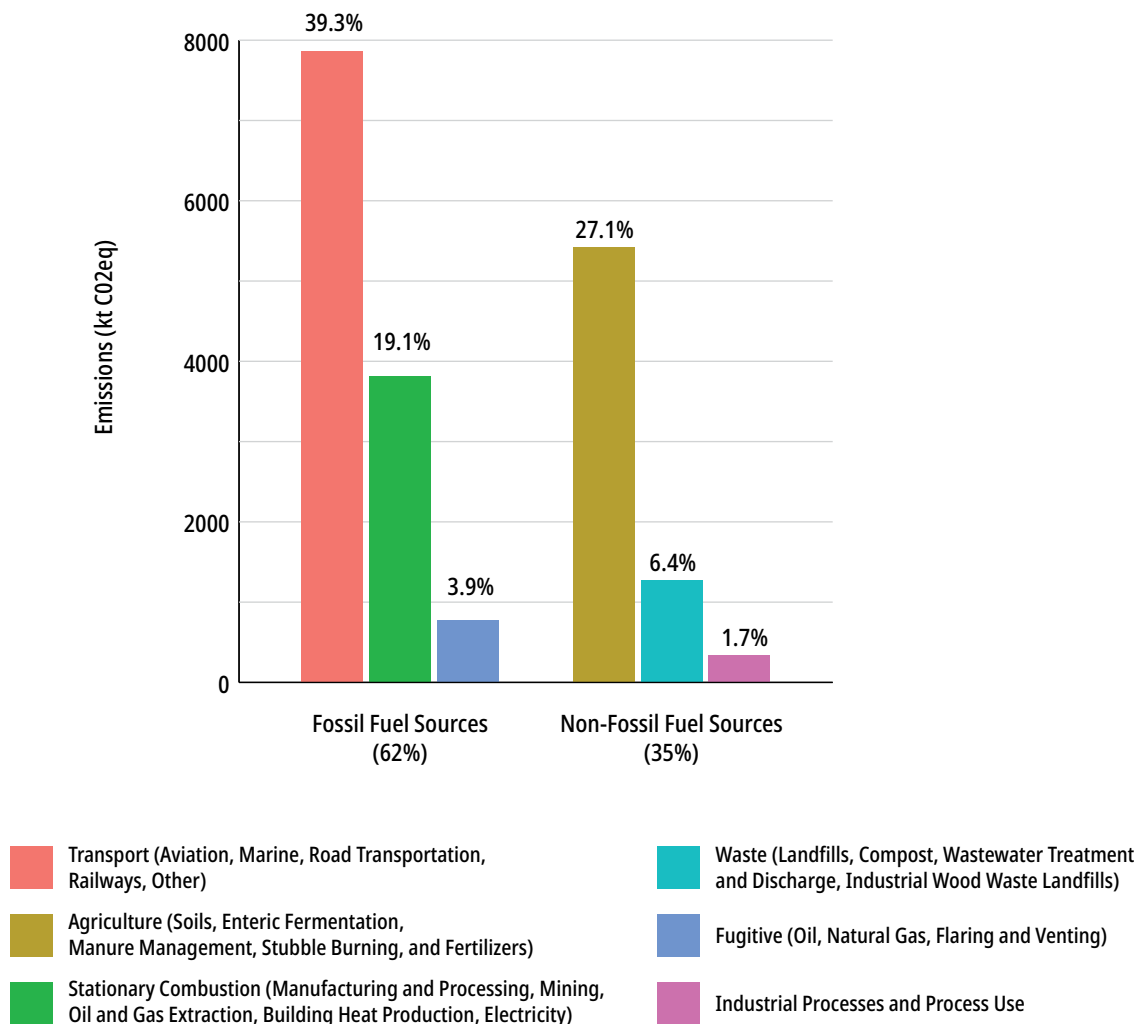
Manitoba's Emissions Profile

In 2023, Manitoba's total greenhouse gas emissions were 21.3 megatonnes (Mt) of carbon dioxide equivalent (CO₂e), accounting for approximately 3.01 per cent of Canada's national emissions of 708 Mt. Manitoba's emissions per capita are 15.3 tonnes of CO₂e, which is 16 per cent below the Canadian average of 18.2 tonnes per capita.

Emissions categorized based on the International Panel on Climate Change (IPCC) sectors (see below), shows that approximately 62 per cent of Manitoba's emissions are from fossil fuel intensive activities. This includes consumption of fossil fuel for transportation (39 per cent) and stationary combustion sources (19 per cent) like heating buildings and homes, generating electricity, fuel use for mining, construction and manufacturing, and fuel use for agriculture.

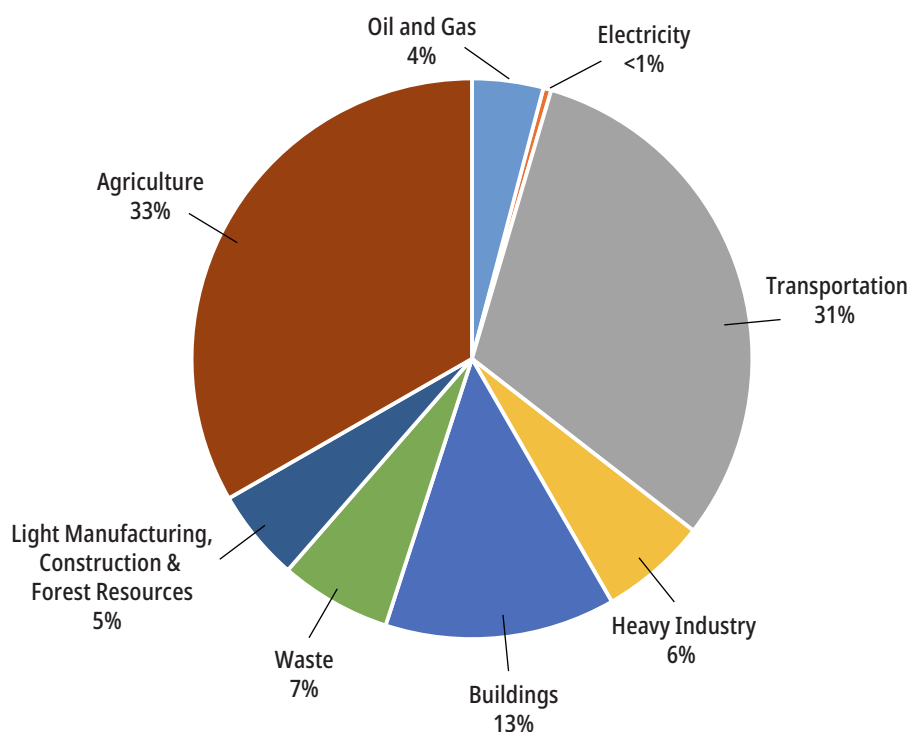
Greenhouse gases from fossil fuels are also released through fugitive sources (4 per cent) like production, processing or storage of oil and natural gas (includes venting and flaring). The remaining emissions (35 per cent) come from non-energy intensive sources like methane from livestock, manure management and inorganic fertilizer use in the agriculture sector (27 per cent), methane from landfills and wastewater treatment in the waste sector (6 per cent) and other industrial processes (2 per cent) that do not use fossil fuels like production of ammonia, lime, and glass.

Figure 1 – Provincial Emissions: Fossil Fuel Versus Non-Fossil Fuel Sources (2023)



Broken down by economic sector, agriculture accounts for approximately 33 per cent of GHG emissions, followed by transportation at 31 per cent, building heat at 13 per cent, industry (heavy, light manufacturing, construction and forestry) at 11 per cent, waste at seven per cent, and oil and gas at four per cent. Electricity accounts for less than one per cent of Manitoba's GHG emissions.

Figure 2 – Manitoba's Emissions by Economic Sector (2023)



While agriculture is the single largest source of emissions, producers are also on the frontlines of climate change and care deeply for the land, water, and animals that sustain us. Farmers are already using new tools, innovative technologies, and practices that reduce emissions. Working with producers and agriculture organizations to build on these advancements and accelerate emissions reduction is essential to meet our net-zero goals.

Manitoba's historic growth of emissions has remained relatively flat and lower than the Canadian average. From 2005 to 2023, Manitoba's economy has grown more rapidly than emissions, with emissions intensity for the entire economy (GHG per GDP) declining by 25 per cent over this period. This progress reflects improvements in energy efficiency, the phase-out of coal, fuel switching, and other measures. It is important to note, however, that while data is lagging, smoke from forest fires is expected to be a significant source of emissions in 2025, underscoring the urgency of strengthening resilience and prevention efforts alongside ongoing emission reductions.

Manitoba's analysis of different net-zero pathways shows a scale-up of emissions reduction activities is needed over the 2030 to 2035 period. It is at this point that the models show a wide range of emissions reducing technologies will be commercially available and have a significant effect on enabling a downward emissions trend.



Modelling by Navius Research for the Canadian Climate Institute shows that “safe bet” technologies that are already commercial will become widely deployed, displacing fossil fuel alternatives. Heat pumps and electric vehicles are leading examples. Manitoba is already at the forefront, with new programs offering rebates of up to \$20,000 for homeowners to install high-efficiency heat pumps. Nearly 500 households have already made the switch, showing how this technology cuts emissions, lowers energy bills, and provides reliable heating and cooling. As these proven solutions scale up, emerging options such as renewable natural gas, hydrogen, and advanced biofuels will also begin to reach the market.

In addition to reducing and eliminating emissions, Manitoba will require removing or offsetting emissions through a combination of activities that could include land and water-based carbon sequestration, carbon capture utilization and storage (CCUS), carbon stored building materials, and carbon offsets. Recognizing that action on negative emissions needs to begin early in the net-zero pathway, Manitoba has developed CCUS legislation and is developing regulations for this purpose, while other opportunities such as carbon offset programs require buildout.



Opportunities in the Net-Zero Economy

Our government is committed to making life more affordable, and the clean energy transition is central to that vision. The shift to a net-zero economy will strengthen Manitoba's competitive advantage, drive innovation, and keep more money in the pockets of families through lower energy costs. It will also deepen partnerships with the Ininew, Anishinaabe, Anishinew, Dakota, Dene, Inuit, and Red River Métis, advancing renewable energy and nature-based climate solutions that benefit the land and all who depend on it.

Growing our Economy while Reducing our Reliance on Imported Fossil Fuels

Currently, renewable electricity supplies approximately 30 per cent of our overall energy needs, with the remainder coming from imported fossil fuels including natural gas, diesel and gasoline. Under a net-zero pathway, investment and consumer spending will shift away from importing fossil fuels toward locally produced renewable energy sources, including biofuels.

This is an opportunity to transform our strength in renewable energy into new economic opportunities. By investing in locally produced energy, we will build the technology and skills development that will help both reduce emissions while improving efficiencies and increasing productivity – which is also a key goal of our new Economic Development Strategy.

Like manoomin, which grows here on our own lakes and rivers, homegrown renewable energy is a gift that strengthens sovereignty. When we rely on what we can grow and sustain ourselves, we reduce dependence on outside forces and build abundance that stays in Manitoba.

The transition to net zero will improve Manitoba's energy security in a shifting global economy, insulating Manitobans from increasing price volatility and supply shortages. It also means we are less vulnerable to the kind of external shocks we have seen from tariffs, and the threat of new tariffs on our exports. By building up clean, homegrown energy, we stand up for our economy and support Manitoba families to thrive on the strength of our own choices, not at the mercy of foreign tariffs.

Building Strong Partnerships with Indigenous Peoples

Getting to a net-zero future will benefit from close partnerships with the Ininew, Anishinaabe, Anishinew, Dakota, Dene, Inuit, and Red River Métis. Our Affordable Energy Plan commits to advancing government-to-government agreements on wind power projects with First Nations and Métis, creating new opportunities to lead and benefit from the net-zero economy. As we continue to advance toward our net-zero by 2050 goal, future development opportunities for renewable energy and critical minerals will benefit local communities through jobs, joint management and ownership. Close partnerships with Indigenous Nations will help identify nature-based solutions that will increase resilience while helping to meet our climate goals.

For the first time in Manitoba's history, Manitoba Hydro is building new utility-scale electricity generation in partnership with First Nations and Métis. Natural Resources and Indigenous Futures with the Department of Finance are establishing the \$300 million Manitoba Indigenous Loan Guarantee Program to support Indigenous Nations to participate as majority owners in utility-scale wind energy generation projects being advanced through Manitoba Hydro's Call for Wind.

Creating Good Jobs and Improving Affordability for Manitoba Families

Keeping our energy dollars here at home will require investments to update infrastructure, modernize equipment, and implement new systems and processes leading to new high quality job opportunities for skilled labour. The path to net zero builds on the skills and ability of our existing workforce and charts a path to continue to strengthen the partnerships among businesses, sector councils, organized labour, communities, and post-secondary institutions so that we're prepared to take advantage of emerging opportunities in the net-zero economy.

Manoomin harvests have always relied on skilled hands. From the knowledge of when the rice is ready, to the careful paddling of the canoe, to the precise rhythm of the ricing sticks. In the same way, Manitoba's transition will rely on the skill, care, and dedication of our workforce to ensure success.

This will involve setting up programs and services to provide skills development and transition supports to ensure fair access to these new opportunities, while at the same time keeping focused on making life more affordable for Manitoba families.

Manitoba's Net-Zero Path

Manitoba's net-zero transition is a complex but achievable goal that will require concerted effort, innovation and collaboration. This includes building on the expertise of our business sector, organized labour, research and post-secondary institutions, municipalities, community-based organizations, the Ininew, Anishinaabe, Anishininew, Dakota, Dene, Inuit, and Red River Métis, and Manitoba's public service.

Manitoba can lead the way in achieving a sustainable, resilient and prosperous future for all. Our province's Path to Net Zero by 2050 prioritizes these key actions to achieve this goal:

- Government leadership toward net zero, including a new Climate Change Committee of Cabinet and making important changes to provincial climate legislation.
- Collaborating with Indigenous Nations on renewable energy and net-zero initiatives.
- Creating good jobs in the low-carbon economy, including for the next generation of workers.
- Enabling actions across all sectors to support Manitoba's net-zero economic transition.



Province-Wide Strategies

1. Government leadership toward net zero

Enable the conditions for society to reduce emissions and transition to a net-zero economy in a way that benefits Manitobans, protects the environment and future generations, and creates prosperity and good jobs.

1.1 Establish a Climate Change Committee of Cabinet and climate lens to support progress on the net-zero transition

Across government, decisions made every day affect GHG emissions and the environment. A Climate Change Committee of Cabinet will coordinate these choices so that all policies consider climate risks and opportunities.

1.2 Advance the sustainability of government and public institutions

Modernize government operations to support Manitoba's path to net zero by updating the Green Building Policy, transitioning vehicle fleets to zero-emission where possible, and aligning procurement with sustainability goals. Provide targeted programs and supports to help municipalities, Northern Affairs and remote communities, schools, hospitals, and post-secondary institutions to reduce emissions.

In the rice fields, paddler and poler must move in rhythm to steer the canoe through the tall stands of manoomin. When they work together with balance and precision, the canoe glides smoothly and the harvest is strong. The Committee will bring that same coordination, ensuring every part pulls in rhythm so Manitoba stays on course toward net zero.

1.3 Modernize legislation and strengthen Manitoba's climate target-setting and reporting

Amend the Climate and Green Plan Implementation Act to reflect Manitoba's evolving climate and net-zero priorities. This includes setting up a framework to create time-bound GHG reduction targets and improve reporting requirements to increase accountability and transparency. The Expert Advisory Council will play a key role in advising government on these priorities and monitoring progress. Ensure the mandate for Crown Corporations and the Public Utilities Board reflects net-zero objectives.

The manoomin harvest shows that abundance depends on the whole community working together, from the rice chiefs who set the timing, to the families in the canoes, to the Elders and children who help along the shore. In the same way, Manitoba's transition must be province wide, with each partner contributing so the collective effort can thrive.

1.4 Build strong partnerships to help communities access net-zero funding

Municipalities and Northern Affairs Communities are essential partners in the transition to net zero. To better support actions to reduce local GHG emissions, continue to work with communities to build local capacity for climate action. Building strong partnerships with regional and national organizations like the Federation of Canadian Municipalities will improve local municipalities' access to over \$1 billion in national net zero and climate resiliency funding, while developing sustainable funding frameworks so that local communities can continue to invest in net-zero actions.

2. Partner with Indigenous Nations on renewable energy and net-zero initiatives

Establish and strengthen respectful and collaborative partnerships with Indigenous Nations and communities to develop and advance inclusive, culturally grounded climate solutions that help communities thrive.

2.1 Collaborate with Indigenous Nations on Climate and Clean Energy

Recognizing the central role of the Ininew, Anishinaabe, Anishininew, Dakota, Dene, Inuit, and Red River Métis in the net-zero transition and in Manitoba's Economic Development Strategy, the province will work together with Indigenous Nations to determine the best approach for ongoing collaboration. This partnership will create space for meaningful engagement in the design, delivery, and implementation of policies and programs that advance net zero.

2.2 Co-develop Wildfire Prevention and Preparation Approach

Building on established science-based forest management planning and practice, Manitoba will work in partnership with the Ininew, Anishinaabe, Anishininew, Dakota, Dene, Inuit, and Red River Métis to co-develop a wildfire prevention and preparation approach that reflects Indigenous leadership, land-based knowledge, and nature-based solutions.



3. Supporting innovation and equipping the next generation for a net-zero economy

Promote innovation by supporting low-carbon technology development, entrepreneurship, and cross-sector collaboration, while also making sure skilled workers are ready for the emerging low-carbon economy. This aligns with Manitoba's Economic Development Strategy, as investments into low-carbon economic development can support increased productivity.

3.1 Develop a net-zero innovation and labour market plan

Work in partnership with industry, business sectors, organized labour, post-secondary and research institutions, and the Ininew, Anishinaabe, Anishinew, Dakota, Dene, Inuit, and Red River Métis to advance collaborative research and support the commercialization of new technologies and processes that build on Manitoba's competitive advantages.

Work with the Minister of Business, Mining, Trade and Job Creation, and the Minister of Advanced Education and Training to ensure that transition to clean jobs is considered in all labour market strategies. Work with the Minister of Education and Early Childhood Learning to ensure youth employment programs promote careers within the low-carbon economy.

In the rice fields, young people learned the harvest by working alongside Elders. Each stage required patience and guidance until the skills became second nature. Manitoba's innovation and labour market strategies will follow this same path, ensuring workers today and future generations have the training, mentorship, and opportunities needed to thrive in a changing economy.

3.2 Climate Change Education for Manitobans

Develop curriculum on climate awareness and action to prepare Manitoba's students for the opportunities and challenges of a changing climate.

In learning the rice harvest, children first listened to the sound of kernels falling into the canoe, a soft rain that taught patience and possibility. In the same way, climate education will give students early lessons that grow into lifelong skills.



Sector-Based Net-Zero Opportunities

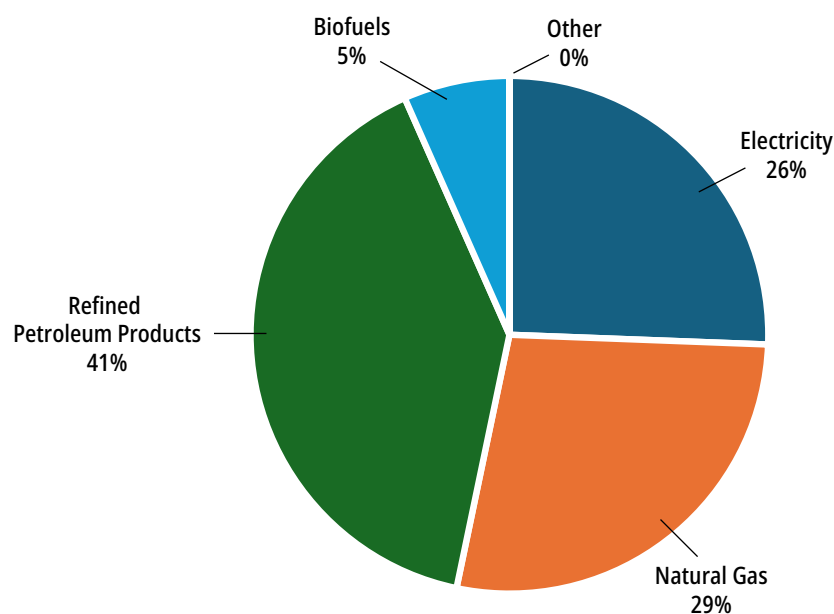
Energy

Manitoba's Affordable Energy Plan guides the province in advancing the low-carbon energy transition and sets the foundation for our net-zero transition. This includes maximizing energy savings through energy efficiency, expanding low-carbon heating for buildings to improve affordability, advancing Indigenous owned wind power generation, and enhancing our electric grid to support more generating capacity and renewable power.

Manitoba's low-emission and low-cost electricity has been a long-standing advantage to both commercial and residential rate payers and will remain a key advantage in the net-zero transition. Over 99 per cent of Manitoba's electricity currently comes from renewable sources, including hydro and wind. As a result, emissions from the electricity sector remain very low, accounting for only 0.3 per cent of total provincial GHG emissions. Manitoba imports all its refined fossil fuels, while producing crude oil for export, which accounts for much of the province's GHG emissions from energy.

To support the net-zero transition, energy efficiency and renewable electricity must become our primary energy resources, with renewable fuels like biofuels, biomass energy, and green hydrogen playing an increasing and targeted role. Demand for clean electricity will continue to grow, requiring that we prioritize energy efficiency to minimize the need to build more generation capacity.

Figure 3 – Energy Consumption in Manitoba by Energy Type (2020)



4. Leverage Manitoba's renewable energy to achieve our net-zero goals

Build on the actions in Manitoba's Affordable Energy Plan through additional net-zero actions to modernize the energy grid and integrate emerging energy technologies, accelerate hydrogen and renewable fuel innovation and maximize energy efficiency to achieve net-zero targets.

4.1. Work toward making a net-zero electricity grid by 2035

Manitoba will modernize and expand its hydroelectric system while adding new renewable electricity generation. Investments in a provincial smart grid will enhance storage, improve reliability, and increase efficiency. Today, over 99 per cent of Manitoba's grid already comes from renewable sources, providing a strong foundation to reach a fully net-zero electricity grid by 2035.

4.2. Help remote northern communities reduce reliance on fossil fuels and transition to affordable electricity

Building on our commitment to provide clean electricity to Nunavut through the Kivalliq Hydro-Fibre Link, work with the Denesuline, Inninewuk and the federal government to transition remote northern Indigenous communities away from diesel and fossil fuels to renewable energy. This will reduce emissions while providing a number of co-benefits, including improved resiliency in the event winter roads cannot be accessed to deliver fuel, healthier communities by reducing the amount of fossil fuels being burned, and economic development opportunities through building community-based energy systems.

4.3. Energy and emissions savings through energy efficiency

Expanding energy efficiency actions provides a cost-effective approach to reducing emissions in the near-term, while enabling an increased supply of electricity needed to meet broader net-zero goals across the economy in all sectors. Efficiency Manitoba will expand and enhance electric and natural gas efficiency savings across all customer sectors by developing new programming for demand response and beneficial electrification, and expand programming to support building owners and operators to reduce emissions from building equipment and systems.

4.4. Reduce fossil fuel use through efficiency programming

New Efficiency Manitoba programming to cut energy waste and reduce reliance on fossil fuels across all fuel types and within the transportation sector, including propane, fuel oil, and other fossil fuels. Programs will focus on upgrading equipment, improving building efficiency, and supporting fuel-switching options so households and businesses can lower costs while shrinking emissions on the path to net zero.

4.5. Advance the use of district energy systems

Manitoba will look at how district energy systems can contribute to net zero by cutting emissions and lowering household energy costs. District energy, also called community or neighbourhood energy, uses renewable or recovered heat in a central location to provide hot water, steam, or cooling through underground pipes to nearby homes and buildings. Where these systems prove affordable and effective, the province will work with Manitoba Hydro to evaluate options for community-scale implementation. Coordinating electricity, geothermal, and natural gas planning will help avoid unnecessary costs as the energy transition unfolds. Manitoba will also study how organizing and expanding geothermal work under existing Crown corporations could deliver both affordability and climate benefits.

4.6. Invest and innovate distributed energy generation, energy storage and batteries

Distributed energy systems are small-scale generation and storage systems located close to where the energy is consumed. Using these types of systems that rely on renewable energy sources can help increase energy supply and improve overall grid resilience. Emerging technologies such as solar, battery storage, microgrids, and other systems are expected to make distributed energy systems economical for applied uses as we approach 2050. In addition, to help take advantage of intermittent energy sources like wind and solar, support the continued innovation and advancement of lithium-ion, flow batteries and other storage technologies.



Transportation

Manitoba's transportation sector accounted for 31 per cent (6.6 Mt) of total provincial GHG emissions in 2023. More efficient and integrated land use planning that incorporates active and public transportation systems will also help Manitobans to rely less on their personal vehicles for day-to-day travel. This has the added benefit of supporting healthier communities as more people use active transportation options.

While the transportation sector has seen rapid advancements in technologies and approaches to lower emissions, people will transition when it makes sense for them. Supporting a range of net-zero options for individuals and communities will ensure greater choice and flexibility moving forward. While this strategy lays out a realistic path to reduce most GHG emissions from the province's transportation sector, the transition in some sub-sectors such as aviation, railways and marine vehicles may extend beyond 2050 with improved efficiency and shifts to lower carbon fuels.

5. A net-zero transportation sector through targeted investments and policy leadership

Drive the advancement of a net-zero transportation sector in Manitoba by advancing low-carbon transportation and mobility solutions, infrastructure and policies that reduce emissions while supporting economic growth.

5.1 Public sector investment in EV charging infrastructure

Manitoba has already taken steps to make electric vehicles more affordable with our EV rebate program. Building on this success, we will work with Manitoba Hydro to expand public sector investment in charging infrastructure across the province so Manitobans can confidently choose electric vehicles knowing they will have access to reliable, convenient charging options across the province.

The Manitoba government is contributing \$23.4 million, with an additional \$15 million from the federal government, to support NFI's All-Canadian Build facility in Winnipeg. This investment will allow the plant to build the equivalent of about 240 heavy-duty zero-emission transit buses each year by 2027 – enough to supply major transit systems across Canada. It will also create up to 250 direct green jobs and see the first buses roll off the line in the fourth quarter of 2025.

5.2 Coordinate transportation planning and create low-carbon shipping routes

Coordinate how trucks, trains, and other modes connect, so goods can move more efficiently across Manitoba. This will save fuel, cut emissions, and strengthen the movement of goods by focusing on low-carbon transportation corridors that provide access to clean fuels like biodiesel and electricity.

5.3 Supporting public transportation

Public transportation is important in reducing reliance on passenger vehicles, and Manitoba will work with municipalities to expand public and regional transit systems while prioritizing net-zero vehicles. This includes exploring expansion of access to rural and inter-city public transportation and converting to zero-emission busses.

5.4 Expand all-season active transportation networks

Changing how we get around by walking, biking or using other active transportation options will reduce emissions while improving Manitobans' overall health. Manitoba will work with municipalities to develop more active transportation infrastructure and trails in local communities to reduce Manitobans' reliance on passenger vehicle use.

5.5 Advance fuel switching to low and zero emitting fuels

Develop renewable fuels strategies and support industry to set up production facilities and infrastructure for hydrogen, biomass, biofuels, and renewable natural gas for Manitoba's use and export. This will include working with industry to develop refueling infrastructure for hydrogen-powered vehicles and equipment in key locations such as transit depots, highways, and farms.



Agriculture

Agriculture and agri-food account for over 7 per cent of Manitoba's GDP, employ 34,000 people, and generate about one-third (7.10 Mt) of provincial GHG emissions. These emissions come from energy use in equipment and vehicles, as well as fertilizers, soils, and livestock.

Agriculture alone cannot achieve net-zero emissions. There are inherent limitations to fully eliminating GHG emissions from the sector due to the biological nature of agricultural production, including emissions from soils, fertilizers and livestock. Agriculture can contribute toward net-zero goals through emission reductions and carbon sequestration. Natural processes in soils, plants, and grasslands offer valuable opportunities to remove carbon from the atmosphere. Support for these processes will be key to maximizing agriculture's role in an overall provincial net-zero target.

Supporting a provincial net-zero goal will need to involve actions by both the agriculture sector and government, including enhancing land management practices, optimising fertilizer use, transitioning from fossil fuels to alternative energy sources, and investing in nature-based or new carbon sequestration strategies.

6. Leverage and expand Manitoba's expertise in sustainable agriculture

Make Manitoba a leader in climate-smart farming to reduce GHG emissions and make the agri-food system more resilient to climate change. This includes transitioning from fossil fuels to renewable energy sources in agri-food production, including machines, buildings and processes.

6.1. Advance regenerative agriculture and beneficial management practices (BMP)

Build on collaborative work with producers and researchers to design programming and pilot projects that improve productivity and profitability while enabling the adoption of practical, long-term resilient farming approaches. Central to this effort is the further advancement of BMPs that support both environmental and economic outcomes, with a particular focus on reducing GHG emissions. Priority focus areas include:

- Emission Reductions – BMPs aim to reduce greenhouse gas emissions by optimising fertiliser use, improving nitrogen use efficiency, reducing methane emissions from enteric fermentation, and optimizing manure use.
- Soil Health and Carbon Sequestration – BMPs enhance soil structure and fertility through practices like cover cropping, reduced tillage, and perennial crop integration, all of which support long-term carbon sequestration and help lower agricultural emissions.
- Energy Transition – BMPs support the transition to low-emission energy systems by adopting renewables, upgrading equipment and infrastructure, and improving combustion efficiency across farm operations.



In 2025, the Manitoba government signed a fifth 4R Nutrient Stewardship memorandum of understanding with Keystone Agricultural Producers and Fertilizer Canada. 4R Nutrient Stewardship is a science-based framework for nutrient management practices that improve agricultural productivity while mitigating risks to the environment. Established by Fertilizer Canada, the framework's principles and practices use the right source, right rate, right timing and right placement of fertilizer to maximize crop uptake and reduce adverse impacts to the air, soil and water.

6.2. Strengthen local food systems

Building networks that connect local producers and consumers based on practical, regionally adapted approaches can help reduce food waste, improve affordability, and support broader environmental outcomes.

6.3. Strengthen broadband connectivity throughout rural and northern Manitoba

To support more efficient agriculture production and increase productivity, expanding broadband connectivity throughout rural and northern Manitoba will allow producers and Indigenous communities to take advantage of new farming and food production technologies that help reduce GHG emissions.

6.4. Advance agricultural research and partnerships

Foster collaboration among academic institutions, industry, and producer groups to develop innovative practices and tools that reduce GHG emissions and intensity across cropping and livestock systems. This will continue to align research priorities with industry needs to accelerate adoption and maximise impact. Prioritize research that supports Manitoba's cold climate realities and circular economy approaches that repurpose excess biomass and methane emissions into renewable energy. Enhance support for applied research through diversification centres and strategic funding streams with a focus on production efficiency, water management, and climate resilience.

6.5. Strengthen knowledge transfer and mentorship for sustainable production

Strengthen agriculture's extension and knowledge transfer capacity so producers can learn from one another about how science-based innovations are effectively implemented on farms, helping producers make practical, science-based decisions that support net-zero goals.

6.6. Improve agricultural land use planning

Protect high-value agricultural lands through integrated land use planning that prioritizes long-term food production and climate resilience.

Nature-Based Solutions

Forests, wetlands, grasslands, peatlands and other natural assets like Netley Creek and the Lemay Forest can support emission reductions by capturing and storing carbon emissions. Indigenous-led initiatives like protecting the Seal River watershed are examples of nature-based solutions to climate change that can store carbon, protect intact ecosystems, and support biodiversity conservation while delivering social and economic co-benefits. Looking at how these natural assets are used and protected, including how competing land uses are balanced, will help us reach our net-zero goals.

Elders once called to “rest the rice” so it could ripen with the help of sun, rain, and wind. Manitoba must let forests, wetlands, grasslands, and peatlands rest and regenerate. Protecting and balancing the use of these natural assets will ensure they continue capturing and storing carbon, helping us reach our net-zero goals for future generations.

7. Prioritize nature-based carbon sequestration

Increase nature-based carbon sequestration activities to offset GHG emissions that build more climate resilient rural and urban landscapes that also improve public spaces.

7.1 Prioritize measures that restore, conserve, and enhance natural ecosystems

Building on our goal to protect 30% of Manitoba’s lands and waters by 2030, work with Indigenous Nations and other partners to designate more peatlands as Provincially Significant Peatlands, and identify other natural ecosystems such as wetlands, grasslands, and forests that support natural carbon sequestration for permanent protection.

7.2 Plant one million trees each year

Contribute to Canada’s 2 Billion Trees program by planting up to 1 million trees in Manitoba each year to 2031, while ensuring the long-term health of trees for maximum carbon sequestration.

As a part of Canada’s 2 Billion Trees commitment, Manitoba signed an agreement with Natural Resources Canada to plant one million trees annually through 2030.

This program focuses on three components: reforestation, urban forest management and Indigenous community participation. Program goals include planting trees in areas affected by wildfires, insects, or other natural events on Crown lands, planting trees in urban areas to increase community forest canopies and improve invasive species resiliency, and facilitating Indigenous participation on reforestation initiatives through tree planting, site selection and capacity building.



7.3 Modernize land-use planning for net zero

Update provincial planning policies to align with Manitoba's net-zero goals. Encourage municipalities to include climate planning and nature-based solutions in municipal and district development plans, and developing standardized practices for estimating emissions.

7.4 Protect Manitoba's waterways from impacts of climate change

Implement climate adaptation measures and actions to strengthen Manitoba's resilience to a changing climate and extreme events, including floods and droughts, and improve surface water management at the watershed scale, including retention and drainage.

7.5 Recognize Manitoba's sensitive marine environment

Western Hudson Bay is internationally recognized and celebrated as one of the best places in the world to see polar bears, beluga whales, and migratory birds, while also being home to vibrant northern Indigenous cultures. As we expand and develop the Port of Churchill, it is important to recognize this sensitive marine environment. Manitoba will work with the Federal government to support a feasibility study on a National Marine Conservation Area in western Hudson Bay to balance nature, culture, and economic opportunities.

Buildings and Infrastructure

Buildings are Manitoba's third largest source of emissions (2.8 Mt), making up 13 per cent of provincial GHGs, mostly from heating. Efficiency Manitoba already offers more than 40 programs with loans and grants to improve efficiency, helping to make efficiency affordable. To reach net zero by 2050, the majority of buildings will shift to non-fossil fuel heating systems. High-efficiency and ground-source heat pumps are central to this transition, which is why our government has supported new programs offering rebates of up to \$20,000 in 2025. Nearly 500 households have already installed or are installing heat pumps, cutting emissions, lowering bills, and proving momentum toward an affordable net-zero future.

8. Decarbonize buildings and infrastructure through investments in renewable energy and retrofits

8.1 Adopt higher energy efficiency tiers for buildings

Manitoba is already committed to adopting a higher tier of energy efficiency in building and energy codes. As we work toward our goal of net zero by 2050, we will continue working with Manitoba's building sector to adopt the highest energy efficiency tier across all building types over time.

8.2 Champion low-emission buildings to grow industry and build awareness

Canada's first and tallest net-zero residential building is currently being built in Winnipeg, and innovation linked to cold climate buildings is being incubated here in the province. Demonstrating successful projects and making information publicly available about reduced operational costs and materials can help to develop public and professional understanding of emission reduction opportunities.

8.3 Adopt a recognized home labeling system for energy consumption

Working with the development and real estate sectors, Manitoba will adopt a recognized federal energy home labeling system. This will provide transparency on the energy performance of buildings and homes to inform purchasers, financial lending institutions and insurance providers.

8.4 Property Assessed Clean Energy Framework

Work with municipalities to establish a framework for Property Assessed Clean Energy (PACE) financing to make energy efficiency renovations more affordable.

8.5 Reduce embedded carbon through local building materials

The embedded carbon in cement, steel, or lumber is the total GHG emissions associated with a product's lifecycle, and choices made at the start of a project shape its impact for decades. By sourcing materials locally, Manitoba can lower these hidden emissions while also supporting local industries and jobs.

8.6 Build all-weather roads to remote and northern communities

As part of our broader investments to build up Churchill and establish an energy corridor, build and upgrade all-weather roads to remote and northern communities. Reliable year-round road access will lower emissions by enabling the use of electric vehicles and cleaner freight options, while also improving affordability, safety, and economic opportunity for northern residents.

Industry, Mining and Business

A healthy environment underpins long-term economic growth. As the world shifts to a low-carbon economy, Manitoba can attract investment and compete globally by leveraging its renewable energy, stable climate plan, and industry partnerships with Indigenous Nations to ensure shared prosperity. Manitoba's critical minerals are in high demand to power net-zero technologies, positioning the North as a vital link to global markets. By balancing environmental protection with premium low-carbon development, Manitoba is charting a path for businesses and industries to lead in the global clean economy.

9. Support businesses and the mining sector to be leaders in powering Manitoba's net-zero economic growth

Focus on targeted supports and capacity building for businesses, helping to drive investment, job creation, and long-term competitiveness in the global low-carbon economy.

9.1 Develop a net-zero path for small and medium enterprises (SMEs)

Manitoba's SMEs are the economic engine of this province. By working collaboratively with SMEs, sector councils, industry associations, labour, and chambers of commerce, including the Indigenous Chamber of Commerce, to develop a net-zero SME strategy, Manitoba businesses can reduce emissions while improving operational efficiencies and productivity.

9.2 Funding programs to support emission reductions

Working with Canada, Manitoba introduced two new co-funded programs to support industry, businesses, agricultural producers, municipalities and communities to invest in capital upgrades to reduce emissions. These programs provide grant funding that proponents can use to access other public and private funding. This helps reduce emissions while increasing capital investments that also increase economic productivity.

9.3 Develop low-carbon strategies for Manitoba's mining sector

New mines in Manitoba are already taking steps to reduce emissions through electrification. We will work with Manitoba's mining industry to find more ways to reduce GHG emissions while providing premium, low-carbon minerals to the world. This would include opportunities to switch from the use of fossil fuels for industrial processes toward renewable and non-emitting energy, such as renewable electricity, green hydrogen, and other sources.

Waste and Circular Economy

Waste accounted for approximately 7 per cent of Manitoba's emissions (1.36 Mt) in 2023, mainly from landfill methane (91 per cent) and wastewater (7 per cent). Managing waste is costly, energy-intensive, and creates land use challenges.

10. Reduce waste production and use residual waste as an input resource for new products

Advance Manitoba's circular economy while using the polluter pays principle to reduce waste.

10.1 Incentivize waste diversion and emission reductions

Incentivise waste diversion, recycling and composting through revised pricing and other incentive-based strategies. This includes modernizing the extended producer responsibility framework to improve outcomes and harmonize it with other jurisdictions.

A circular economy minimizes the use of resources, cuts waste and reduces carbon emissions by keeping products in use for as long as possible. By repairing, recycling, and repurposing goods, it is possible to minimize the number of new goods that must be produced.

10.2 Promote circular economy solutions to reduce waste

Collaborate with industry and stakeholders to develop strategies to reduce waste such as diverting construction, renovation, and demolition materials from landfills to be used in other applications. Work with industry to implement standards on the use of recycled content in the materials used in buildings and infrastructure.

In the rice fields, the work of *baweshkaachige*, or winnowing, was done with birchbark baskets curved shallow and wide, shaken in rhythm so the wind could carry off the chaff. What blew away was not discarded. The fine dust and husks became *mazaan*, a cereal food eaten plain, mixed with blueberries, or added to pemmican for strength on the trail. Nothing was wasted, every part found a use.

10.3 Minimize or capture GHG emissions from methane sources

Work with municipalities and other partners to develop projects to capture methane at landfills, wastewater treatment facilities and other sources to be converted to renewable natural gas.

Our Affordable, Net-Zero Future

Reaching net zero will require smart investments that create jobs, lower costs, and make life more affordable for Manitobans. The fuel for Manitoba's net-zero transition is innovation and investment. Public funding from federal and provincial governments can spark private sector investment, ensuring that the benefits of the transition, from cleaner energy to more efficient homes, flow directly to families, businesses, and communities and create pathways for good, well-paying jobs in the net-zero economy.

Manitoba will develop a financing approach to guide these investments with a focus on affordability, economic opportunity, and strong support for workers. This includes exploring tools such as green bonds to raise capital, connecting investors with local projects, and creating the right conditions for innovation and market growth. The strategy will also look ahead to emerging technologies, including promising technology breakthroughs like nuclear fusion, battery storage technology, and low-emission cold climate building practices, to ensure Manitoba is positioned to take advantage of future opportunities. By aligning public and private investment, we will strengthen Manitoba's clean energy advantage, create secure careers for workers, and build lasting prosperity for people across the province.

Conclusion

Manitoba's Path to Net Zero sets an ambitious goal for our province by 2050. Climate change and its impacts present significant challenges. In the same way that the harvest of manoomin brings all people together around a common table, the way we get difficult things done is by doing them together as One Manitoba.

This plan, guided by the Anishinaabe teaching of manoominikenzhii - the spirit of wild rice - offers a pathway that will make future Manitobans feel proud. It is an offering back to the environment and generations to come, securing a healthy and affordable future for our children and grandchildren. As a comprehensive plan it includes province-wide priorities, government action to lead the change, collaboration with Indigenous peoples, building the next generation of workers, and actions to take across all sectors. Just like manoomin, it will sustain a good life in Manitoba now and across generations. The harvest of manoomin brings together communities across Manitoba. This plan is an invitation for all Manitobans to gather as well – coming together towards our ambitious, shared goal.



The Path to Net Zero is guided by a blend of knowledge systems that together chart a more balanced future for Manitoba.

Sources include:

Hosterman, H. R., Ritter, K., Schuldt, N., Vogt, D., Erickson, D. M., Griot, O. L., Johnston, E., Schmidt, K., Ravindran, E., LaBine, R. D., Chapman, E., Graveen, W. J., Peroff, D. M., Camacho, J. T., Dance, S., Krumwiede, B. S., & Stirratt, H. (2023). Lake Superior Manoomin cultural and ecosystem characterization study. *Ecology and Society*, 28(3), Article 17.

Kinew, K. A. (1995). *Manito Gitigaan: Governing in the Great Spirit's Garden: Wild rice in Treaty #3 from pre-Treaty to the 1990s* (Doctoral dissertation, University of Manitoba).
University of Manitoba.

Luby, B., Lehman, M., Bradford, A., Mehlretter, S., & Mariotti, J. (Eds.). (2024). *Manomin: Caring for ecosystems and each other*. University of Manitoba Press.