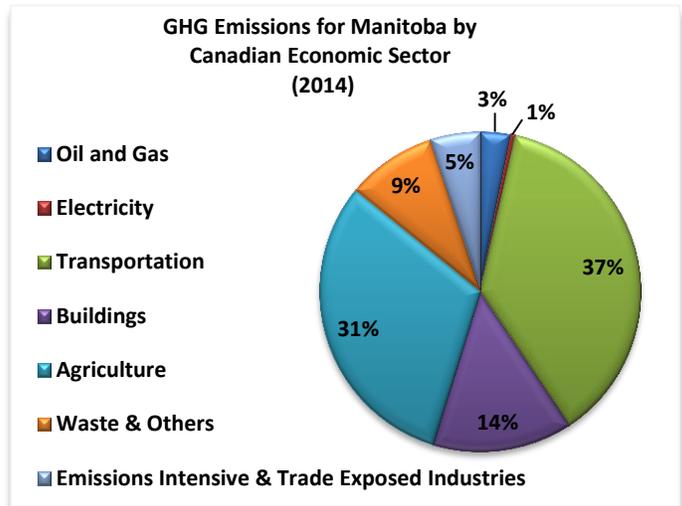
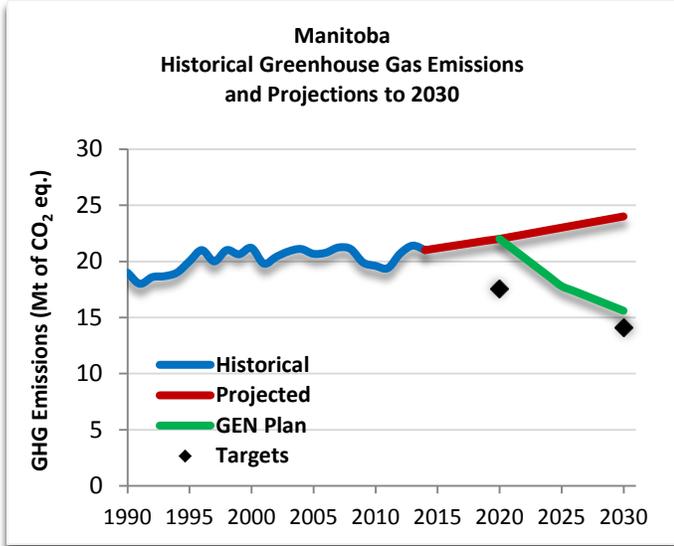


# One Million Climate Jobs Challenge for Canada: 52,690 Climate Jobs in Manitoba

The Green Economy Network (GEN) has calculated that Manitoba could create over 50,000 person-years of employment over a five-year period through a total public investment of \$3.86 billion in energy efficiency and conservation, renewable energy, and public transit. In addition, targeted public investment in these three priority areas will reduce Manitoba's annual greenhouse gas (GHG) emissions by up to 6.4 megatonnes (Mt), transitioning the province to a lower-carbon economy and bringing Manitoba much closer to achieving its emission reductions targets for 2020 and 2030, while creating jobs and strengthening communities.



## Summary of Calculations for Manitoba

	\$Billions Invested Over 5-Year Period	Total Person-Years Created	GHG Emission Reduction (Mt CO <sub>2</sub> eq)
Renewable Energy	\$0.992	12,274	1.9 – 3.3
Energy Efficiency (incl. building retrofits)	\$2.1	30,660	1.6 – 2.2
Public Transit (improvement and expansion)	\$0.77	9,756	0.7 – 0.9
<b>5-Year TOTALS</b>	<b>\$3.86</b>	<b>52,690</b>	<b>4.2 – 6.4</b>

## Energy Efficiency and Conservation

Targeted public investment of \$2.1 billion in energy efficiency and conservation over a five-year period, in combination with complementary workforce development policies, would generate 30,660 person-years of employment in Manitoba and reduce annual GHG emissions by up to 2.2 Mt.

- Nearly 15% of the province's GHG emissions are from heating and cooling buildings;
- Manitoba has the oldest housing stock in Canada, with over 16% of homes built before 1946;
- Manitoba has one of the country's highest rates of energy consumption per square metre; and
- Over 79% of the province's housing stock is still in need of energy efficiency retrofits.

Investments in home and building retrofits will save a significant amount of energy, reduce GHG emissions, reduce energy poverty, create opportunities to complete apprenticeships, and generate employment.

## Emissions

- Manitoba's GHG emissions were 21.5 Mt in 2014, representing 2.9% of total annual emissions in the country;
- Manitoba's annual emissions have increased 15% since 1990; and
- Manitoba's Climate Change and Green Economy Action Plan has set ambitious GHG reduction targets for the coming decades:
  - Reduction of emissions by one-third over 2005 levels by 2020;
  - Reduction of emissions by one-half over 2005 levels by 2050; and
  - Carbon neutral by 2080.

## Unemployment

In 2016, Manitoba had an annual average of 41,400 unemployed workers and an annual average unemployment rate of 6.1%, one of the lowest average annual unemployment rates in the country. However, Manitoba's average annual unemployment rate in 2016 was the highest it has been since 1997.

For references and additional information, please see <http://greeneconomy.net.ca/>

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## Types of Jobs in Energy Efficiency and Conservation:

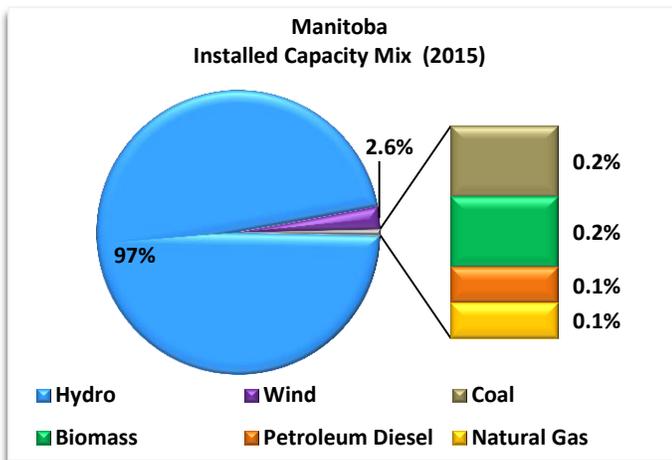
- Architect
- Boilermaker
- Carpenter
- Civil Structural Engineer
- Community and Social Services
- Construction Equipment Operator
- Construction Labourer
- Education and Health Services
- Electrical Engineer
- Electrician
- Energy Efficiency Auditor
- HVAC Installer
- HVAC Technician
- Ironworker
- Office and Administrative Support
- Pipefitter
- Plumber
- Roofer
- Service Industry Occupations
- Steelworker
- Weatherization Installer/Technician

## Types of Jobs in Renewable Energy:

- Boilermaker
- Community and Social Services
- Construction Worker
- Drilling Equipment Operator
- Education and Health Services
- Electrician
- Engineer
- Excavator
- Heavy Equipment Operator
- Ironworker
- Land Surveyor
- Machinist
- Mechanic
- Office and Administrative Support
- Pipefitter
- Plumber
- Service Industry Occupations
- Scientist
- Sheet Metal Worker
- Steelworker
- Surveyor
- Welder

## Renewable Energy

A total public investment of \$992 million in renewable energy- including investments in modernizing electricity infrastructure, such as smart grids and microgrids, and large-scale and small-scale energy storage systems - would create 12,274 person-years of employment in Manitoba over a five-year period. In addition, this investment will result in an annual GHG emission reduction of up to 3.3 Mt.



Manitoba is already a leader in renewable energy, with over 99% of installed capacity coming from renewables. Manitoba is also leading the country in geothermal heat pump installations and has made investments in wind power. However, the province has tremendous potential to develop additional renewable energy capacity with the potential to profit from additional energy exports.

There are also opportunities to integrate renewable energy into agriculture, which accounts for 31% of annual emissions in Manitoba. Renewable energy technologies, including wind, solar, biomass, and biogas systems, can provide farmers and rural landowners with additional income, reduce emissions, and create jobs.

The transition to a renewable energy economy will require an increase in electrification and must be a Just Transition that respects the rights of Indigenous Peoples, revitalizes communities, and ensures that workers in carbon-intensive industries are protected and able to support their families.

## Public Transit

A total public investment of \$770 million in public transit - including investments in transportation demand management - would create 9,756 person-years of employment in Manitoba over five years. Targeted public investment in public transit will also reduce Manitoba's annual GHG emissions by up to 0.9 Mt, with the potential for greater emissions reductions over time.

- The transportation sector was responsible for almost 40% of Manitoba's GHG emissions in 2014;
- Over half of these emissions come from passenger transportation, including personal vehicles;
- Winnipeg's public transit infrastructure is at capacity and more public investments are needed; and
- A study commissioned by the federal government shows it would cost 50% more to meet new travel demands by car than it would by public transit.

Targeted investments in public transportation will introduce more comprehensive and accessible services while making fares more affordable for low-income families. Implementing these priorities as part of a public transportation strategy will ensure that underserved communities and individuals - including (but not limited to) women, people of colour, youth and students Indigenous Peoples, seniors, and persons with disabilities - will benefit from increased access to health services, recreation, education, and employment, including the employment opportunities that are created through the creation and expansion of transit services.

## Types of Jobs in Public Transit:

- Automotive Technician
- Bus and Transit Driver
- Civil Engineer
- Community and Social Services
- Construction Equipment Operator
- Construction Labourer
- Education and Health Services
- Electrician
- Industrial Engineer
- Machinist
- Mechanic
- Mechanical Engineer
- Metal Fabricator
- Office and Administrative Support
- Service Industry Occupations
- Transportation Planner
- Urban Planner
- Welder

This plan for Manitoba lays the foundation for tackling climate change while creating jobs. It also provides a strategy to address poverty and inequality. The proposals outlined in this plan will not only serve displaced workers from polluting industries, but will also create opportunities for workers from industries suffering the impacts of climate change, the unemployed, the working poor, as well as Indigenous Peoples, racialized communities, women, youth, LGBTI individuals, and persons with disabilities. Let's act now to make this plan for Manitoba a reality, make our cities stronger and more liveable, and give our children the future that they deserve.