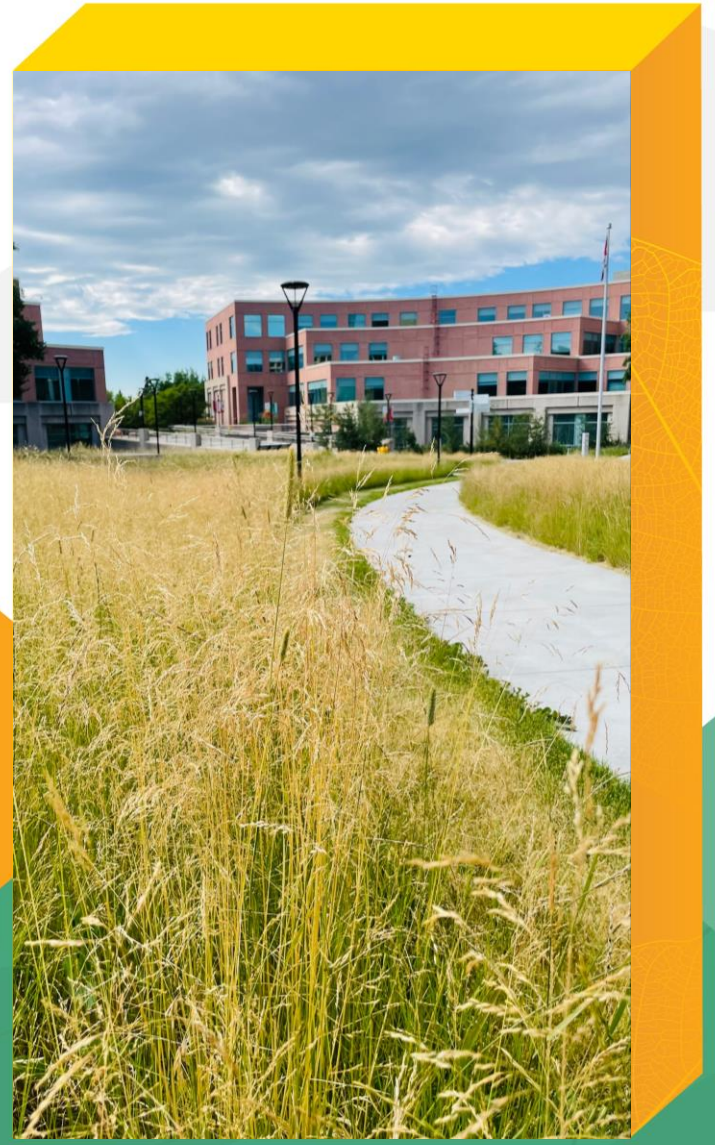
MOBILIZING ALBERTA

Greenhouse Gas Calculators & Tools



UNIVERSITY OF CALGARY

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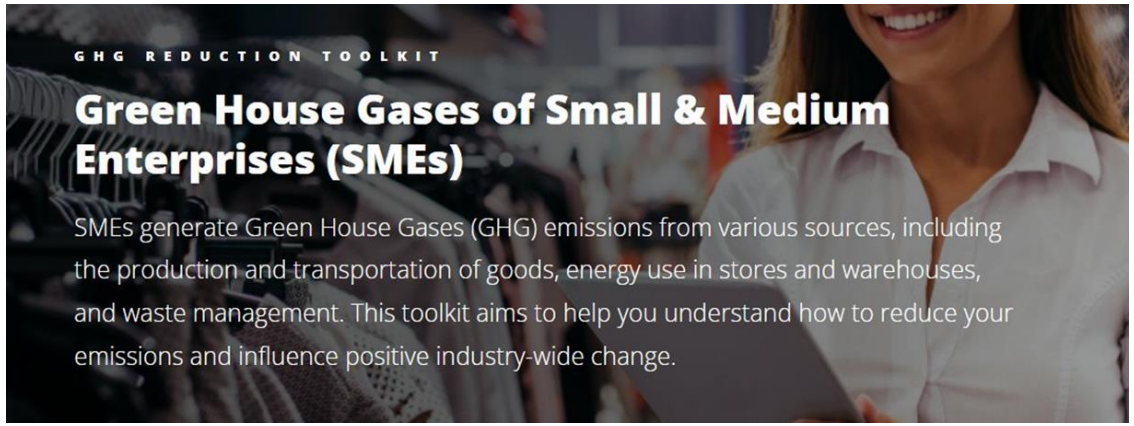
Greenhouse Gas Emissions Calculators & Tools

- Greenhouse gas (GHG) calculators and tools are resources that help individuals, organizations, businesses, and countries estimate their total greenhouse gas emissions - also known as a carbon footprint - so they can take action to reduce their GHG emissions.
- GHG tools can be helpful, however they do not consider the underlying systemic causes (including economic, political, and social) that drive high levels of GHGs. GHG tools typically offer individual choices one can make to reduce GHGs, but they do not consider the inequities embedded in these capitalistic and colonial systems that make many of these 'choices' inaccessible. (Ursula Wolfe-Rocca, 2023, *Ecological footpint calculators are bad for the environment.* RethinkingSchools: https://rethinkingschools.org/articles/ecological-footprint-calculators-are-bad-for-the-environment/)
- At a national level, calculating emissions does not consider the dynamic of emitting large GHGs to produce goods that are transported to be consumed by financially wealth countries. (Climate Change Performance Index, 2024,*Historical Responsibility for the Climate Crisis: The Roots of the Unfair Imbalance.* https://ccpi.org/historical-responsibility-for-the-climate-crisis-the-roots-of-the-unfair-imbalance/)

ECO Canada



To access toolkit, visit: https://eco.ca/educators/ghg-reduction-toolkit/

GHGs of Small & Medium Enterprises (SMEs) - Emissions Reduction Toolkit

- The toolkit provides guidance on reducing greenhouse gas emissions by:
  - Optimizing production processes;
  - Increasing the efficiency of transportation;
  - Streamlining distribution networks;
  - Increasing the efficiency of facilities heating and lighting systems;
  - Reducing energy use in facilities;
  - Utilizing renewable energy sources to power facilities operations; and
  - Investing in energy-efficient technologies.

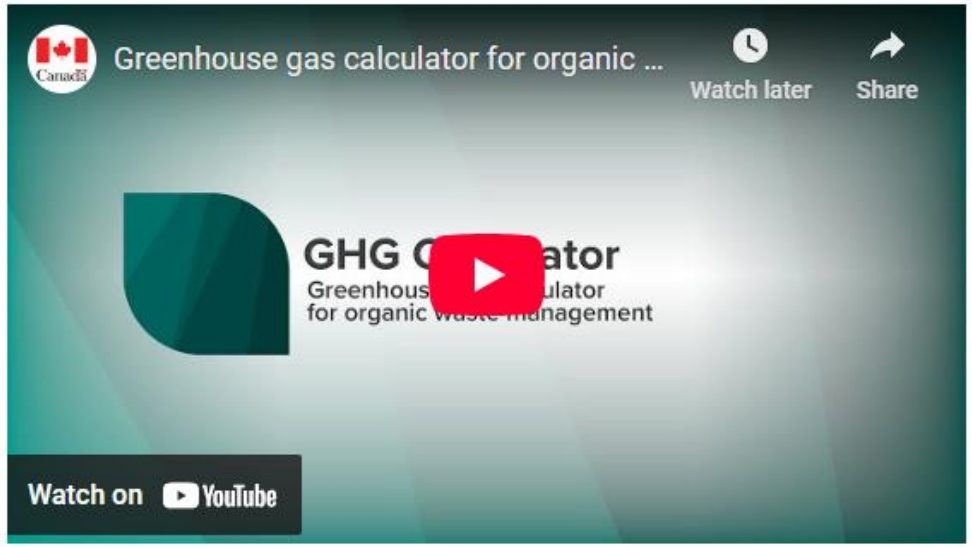
Business Development Bank of Canada (BDC)

To access resource, visit: https://www.bdc.ca/en/articles-tools/sustainability/climate-action-centre/calculate-greenhouse-gas-emissions

BDC provides information on how to calculate a company's GHG emissions. This is shown by providing a roadmap to calculating GHG emissions by:

- Choosing a carbon accounting standard,;
- Collecting emissions data;
- Calculating actual emissions;
- Reporting data; and
- Making a GHG reduction plan.

Environment and Climate Change Canada



To access resource, visit: https://eco.ca/educators/ghg-reduction-toolkit/

GHG Calculator for Organic Waste Management

- This tool helps municipalities, project developers, waste generators, and other users to estimate the impact on GHG emissions for different organic waste management approaches.

Municipal Climate Change Action Centre (MCCAC)

How to calculate greenhouse gas emissions

January 25, 2021

4-minute read

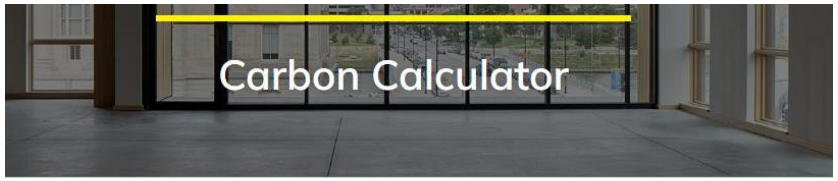
Follow this simple approach for calculating emissions reductions to understand your carbon impact.

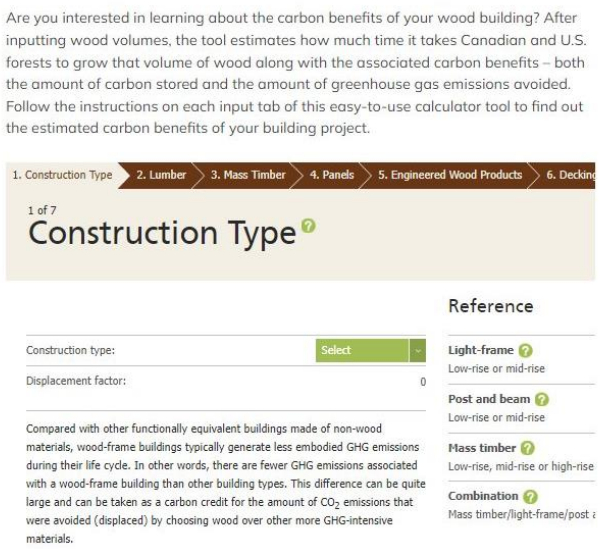
To access resource,
visit: https://mccac.ca/2021/01/25/how-to-calculate-greenhouse-gas-emissions/

Basic Method for Calculating GHG Emissions

- MCCAC offers a method and supporting resources to calculate the GHG emissions of potential municipal projects (e.g., building or an asset that has yet to be constructed).

Canadian Wood Council (CWC)



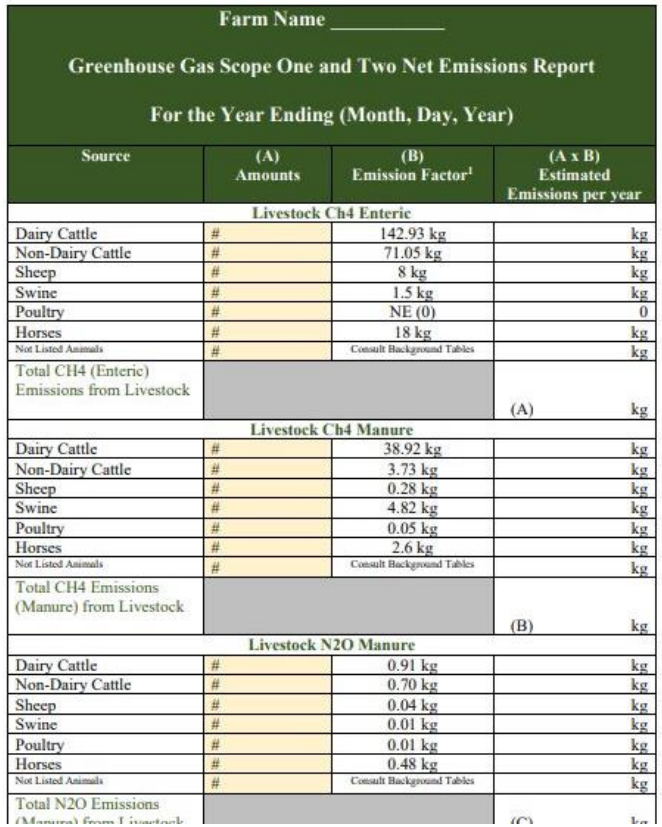


Calculate the Carbon Benefits for a Wood Building

To learn about the carbon benefits of a wood building, this tool provides an estimate of how much time it takes Canadian and U.S. forests to grow that volume of wood along with the associated carbon benefits (carbon stored and the amount of greenhouse gas emissions avoided) for a wood building.

To access resource, visit: https://cwc.ca/design-tool/carbon-calculator/

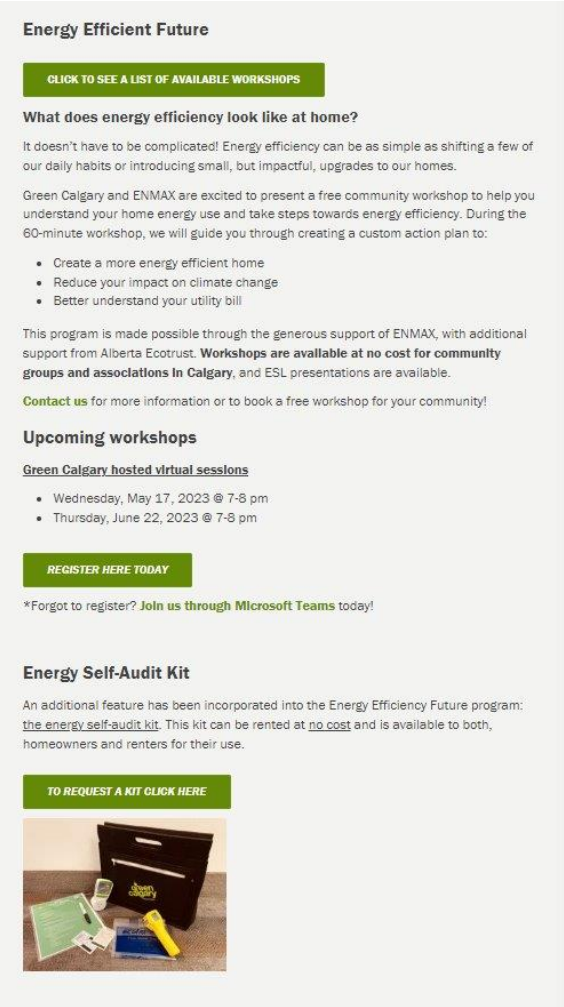
Biological Carbon Canada



Farm Name _____ Greenhouse Gas Scope One and Two Net Emissions Report For the Year Ending (Month, Day, Year)			
Source	**(A) Amounts**	**(B) Emission Factor[1]**	**(A x B) Estimated Emissions per year**
Livestock Ch4 Enteric			
Dairy Cattle	#	142.93 kg	kg
Non-Dairy Cattle	#	71.05 kg	kg
Sheep	#	8 kg	kg
Swine	#	1.5 kg	kg
Poultry	#	NE (0)	0
Horses	#	18 kg	kg
Not Listed Animals	#	Consult Background Tables	kg
Total CH4 (Enteric) Emissions from Livestock			(A) kg
Livestock Ch4 Manure			
Dairy Cattle	#	38.92 kg	kg
Non-Dairy Cattle	#	3.73 kg	kg
Sheep	#	0.28 kg	kg
Swine	#	4.82 kg	kg
Poultry	#	0.05 kg	kg
Horses	#	2.6 kg	kg
Not Listed Animals	#	Consult Background Tables	kg
Total CH4 Emissions (Manure) from Livestock			(B) kg
Livestock N2O Manure			
Dairy Cattle	#	0.91 kg	kg
Non-Dairy Cattle	#	0.70 kg	kg
Sheep	#	0.04 kg	kg
Swine	#	0.01 kg	kg
Poultry	#	0.01 kg	kg
Horses	#	0.48 kg	kg
Not Listed Animals	#	Consult Background Tables	kg
Total N2O Emissions (Manure) from Livestock			(C) kg

- The ESG Emission Calculator Tool is used for measuring Scope 1,2, and 3 of farms through a Farm Scope Manual Spreadsheet.
- Measures CO^2 emissions of livestock, operational chemicals (e.g., nitrogen), energy sources, and land/soil sinks.
- To access resource, visit: https://biologicalcarbon.ca/

Green Calgary



Energy Efficient Future

CLICK TO SEE A LIST OF AVAILABLE WORKSHOPS

What does energy efficiency look like at home?

It doesn't have to be complicated! Energy efficiency can be as simple as shifting a few of our daily habits or introducing small, but impactful, upgrades to our homes.

Green Calgary and ENMAX are excited to present a free community workshop to help you understand your home energy use and take steps towards energy efficiency. During the 60-minute workshop, we will guide you through creating a custom action plan to:

- Create a more energy efficient home
- Reduce your impact on climate change
- Better understand your utility bill

This program is made possible through the generous support of ENMAX, with additional support from Alberta Ecotrust. **Workshops are available at no cost for community groups and associations in Calgary**, and ESL presentations are available.

Contact us for more information or to book a free workshop for your community!

Upcoming workshops

Green Calgary hosted virtual sessions

- Wednesday, May 17, 2023 @ 7-8 pm
- Thursday, June 22, 2023 @ 7-8 pm

REGISTER HERE TODAY

*Forgot to register? **Join us through Microsoft Teams** today!

Energy Self-Audit Kit

An additional feature has been incorporated into the Energy Efficiency Future program: the energy self-audit kit. This kit can be rented at no cost and is available to both, homeowners and renters for their use.

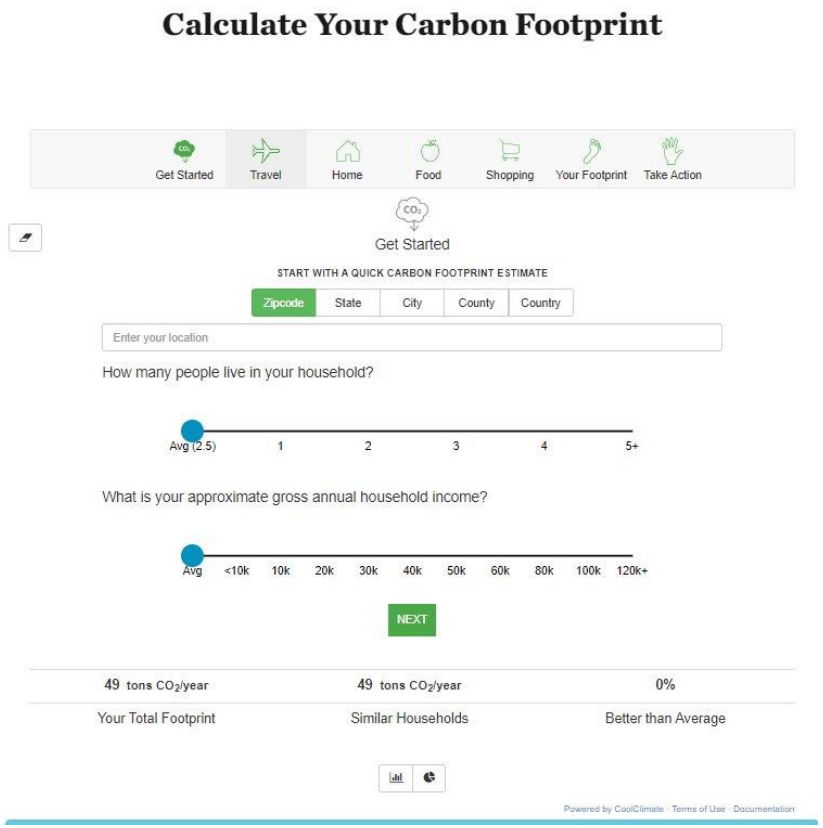
TO REQUEST A KIT CLICK HERE

Energy Efficiency for Homes

- Green Calgary offers workshops, resources and an energy self-audit kit to help reduce GHG emissions in your home.

To access resource, visit: https://www.greencalgary.org/programs/green-homes-communities/energy-efficient-future

The Nature Conservancy



Individual Carbon Footprint Calculator

- This interactive tool helps individuals to learn more about how their current activities contribute to GHG emissions and ways they can reduce their carbon footprint.

To access resource, visit: https://www.nature.org/en-us/get-involved/how-to-help/carbon-footprint-calculator/

References

- Biological Carbon Canada. *ESG Emission Calculator Tool.*https://biologicalcarbon.ca/
- Business Development Bank of Canada. *Calculate your greenhouse gas emissions.*https://www.bdc.ca/en/articles-tools/sustainability/climate-action-centre/calculate-greenhouse-gas-emissions
- Canadian Wood Council. *Carbon Calculator.* https://cwc.ca/design-tool/carbon-calculator/
- Climate Change Performance Index, 2024,*Historical Responsibility for the Climate Crisis: The Roots of the Unfair Imbalance.* https://ccpi.org/historical-responsibility-for-the-climate-crisis-the-roots-of-the-unfair-imbalance/
- Eco Canada https://eco.ca/educators/ghg-reduction-toolkit/
- Environment and Climate Change Canada: https://www.canada.ca/en/environment-climate-change/services/managing-reducing-waste/municipal-solid/waste-greenhouse-gases-canada-actions/calculator.html
- Green Calgary. *Energy Efficient Future*. https://www.greencalgary.org/programs/green-homes-communities/energy-efficient-future
- Municipal Climate Change Action Centre. *How to Calculate Greenhouse Gas Emissions.*https://mccac.ca/2021/01/25/how-to-calculate-greenhouse-gas-emissions/
- The Nature Conservancy. *Carbon Footprint Calculator.* https://www.nature.org/en-us/get-involved/how-to-help/carbon-footprint-calculator/
- Ursula Wolfe-Rocca, 2023, *Ecological footpint calculators are bad for the environment.* RethinkingSchools: https://rethinkingschools.org/articles/ecological-footprint-calculators-are-bad-for-the-environment/