

REACHING NET-ZERO: CLIMATE MITIGATION AT THE CITY SCALE

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Agenda

- Sustainable urban environments
 - Sustainable Development Goals
 - Climate mitigation
- Climate action in Canadian cities
 - Canada's commitments
 - Local government commitments
- Municipal Net-Zero Action Research Partnership
 - National research project to support Canadian cities

Global → Local SDGs



(UNDP, 2018)

TOPICS BY CATEGORY

ENVIRONMENTAL:



SOCIAL:



ECONOMIC:



(MacDonald, A., Clarke, A., Huang, L., Roseland, M., and Seitanidi, M., 2018)

- MacDonald, A., Clarke, A., Huang, L., Roseland, M., & Seitanidi, M. M. (2018). [Cross-Sector Partnerships \(SDG #17\) as a Means of Achieving Sustainable Communities and Cities \(SDG #11\)](#). In W. Leal Filho (Ed.), *Handbook of Sustainability Science and Research*. New York, USA: Springer Publishing Company.

Climate change

- Humans are influencing earth's climate (IPCC, 2021)
- Dangerous climate impacts are already being felt in all areas of the world (IPCC, 2021)
- To limit climate change to tolerable levels (1.5°C), global emissions reductions of 45% by 2030 and **net-zero by 2050** are necessary (IPCC, 2018)
- Every 0.1 of a degree we can mitigate, helps reduce extreme weather from getting even worse (IPCC, 2023)

- IPCC. (2018). *Global Warming of 1.5°C [IPCC Special Report]*. Cambridge University Press. https://www.ipcc.ch/site/assets/uploads/sites/2/2022/06/SR15_Full_Report_LR.pdf
- IPCC. (2021). *Climate Change 2021: The Physical Science Basis: Summary for Policymakers. Contribution of Working Group I to the Sixth Assessment Report of the Intergovernmental Panel on Climate Change*. Cambridge University Press. https://www.ipcc.ch/report/ar6/wg1/downloads/report/IPCC_AR6_WGI_SPM.pdf
- IPCC. (2023). *Synthesis Report of the IPCC Sixth Assessment Report*.



With every increment of global warming, regional changes in mean climate and extremes become more widespread and pronounced

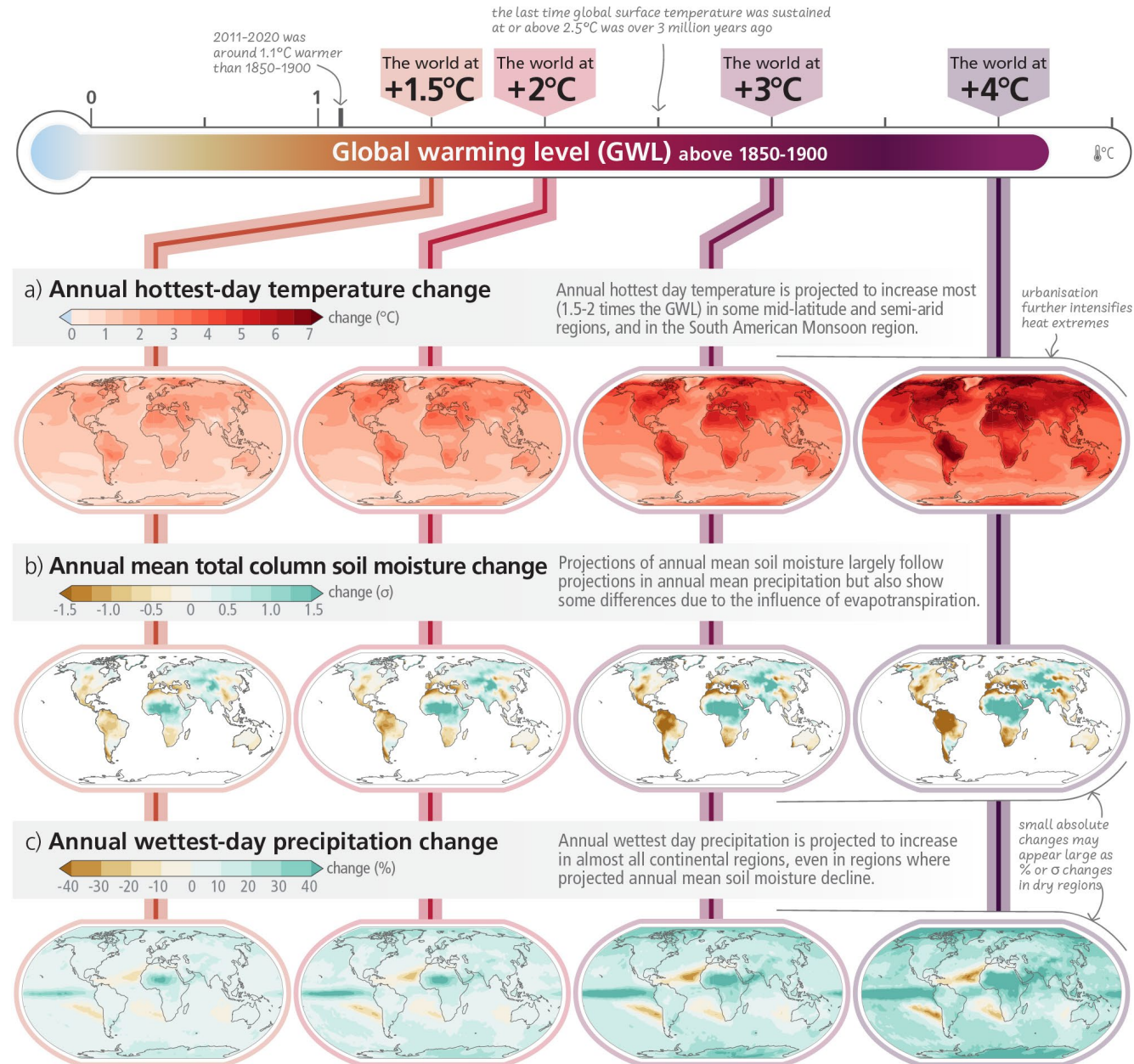


Figure 3.1 – IPCC. (2023).
Synthesis Report of the IPCC
Sixth Assessment Report.

Canada's targets

- The Canadian Net-Zero Emissions Accountability Act, which became law on June 29, 2021, enshrines in legislation Canada's commitment to achieve **net-zero emissions by 2050**.
- The 2030 Emissions Reduction Plan is a roadmap that outlines a sector-by-sector path for Canada to reach its emissions reduction target of **40 percent below 2005 levels by 2030** and net-zero emissions by 2050.

• Canada's 2021 Nationally Determined Contribution Under the Paris Agreement. https://cuspnetwork.ca/wp-content/uploads/2021/07/Canada%27s_Enhanced_NDC_Submission_EN.pdf
• Net-Zero Emissions by 2050. <https://www.canada.ca/en/services/environment/weather/climatechange/climate-plan/net-zero-emissions-2050.html>



Cities & climate change

60%

**Global population
will live in urban areas by
2030
(UN-Department of Economic
and Social Affairs-Population
Division, 2018)**

71-76%

**Global emissions
Come from urban
areas
(IPCC, 2014)**

52%

**Direct or indirect
control of emissions
For local governments
(Tozer, 2013)**

- UN DESA - Population Division. (2018). *The World's Cities in 2018 - Data Booklet*. United Nations Department of Economic and Social Affairs. https://www.un.org/en/development/desa/population/publications/pdf/urbanization/the_worlds_cities_in_2018_data_booklet.pdf
- IPCC. (2014). *Climate Change 2014: Synthesis Report. Contribution of Working Groups I, II and III to the Fifth Assessment Report of the Intergovernmental Panel on Climate Change*. Intergovernmental Panel on Climate Change. https://www.ipcc.ch/site/assets/uploads/2018/02/SYR_AR5_FINAL_full.pdf
- Tozer, L. (2013). Community Energy Plans in Canadian Cities: Success and Barriers in Implementation. *Local Environment*, 18(1), 20-35. <https://doi.org/10.1080/13549839.2012.716406>

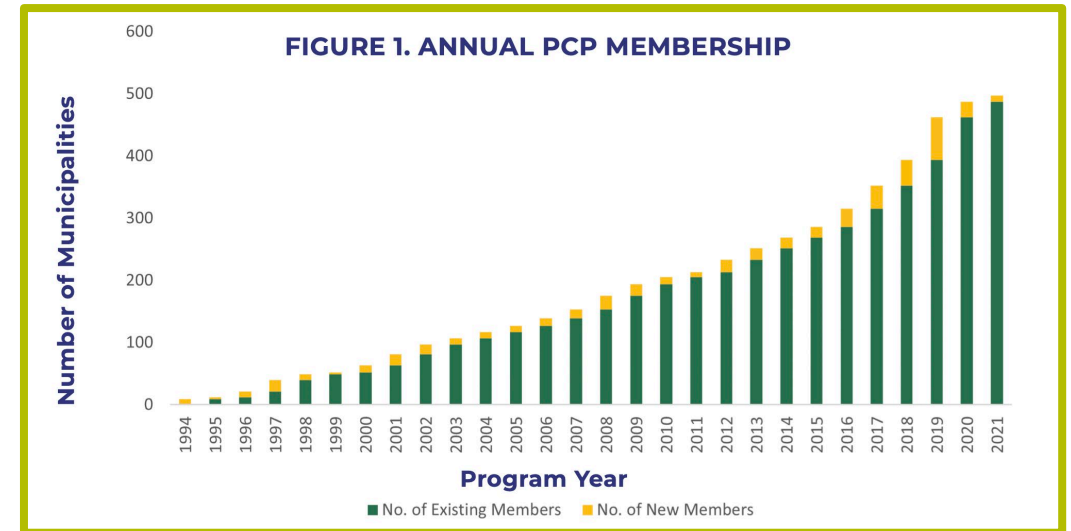


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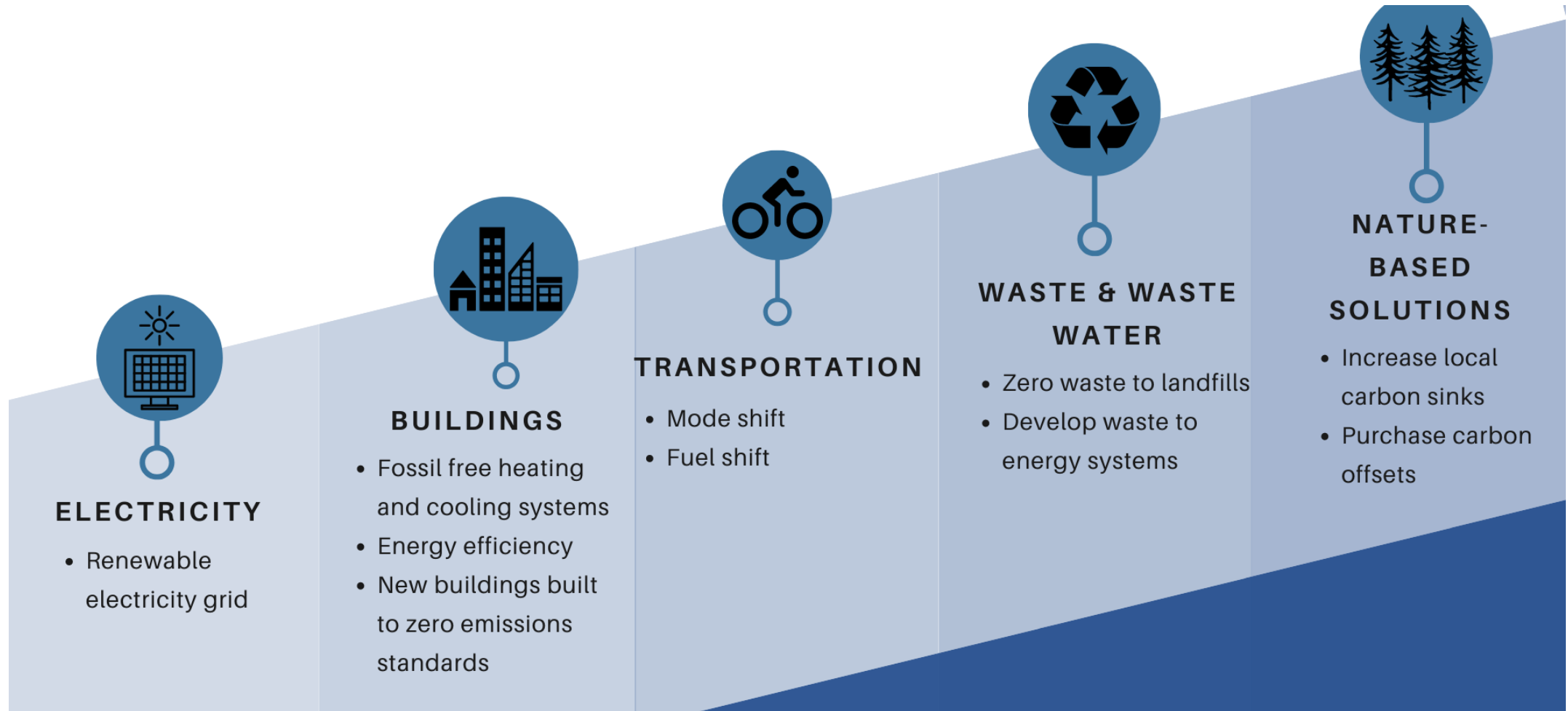
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Local climate action planning in Canada

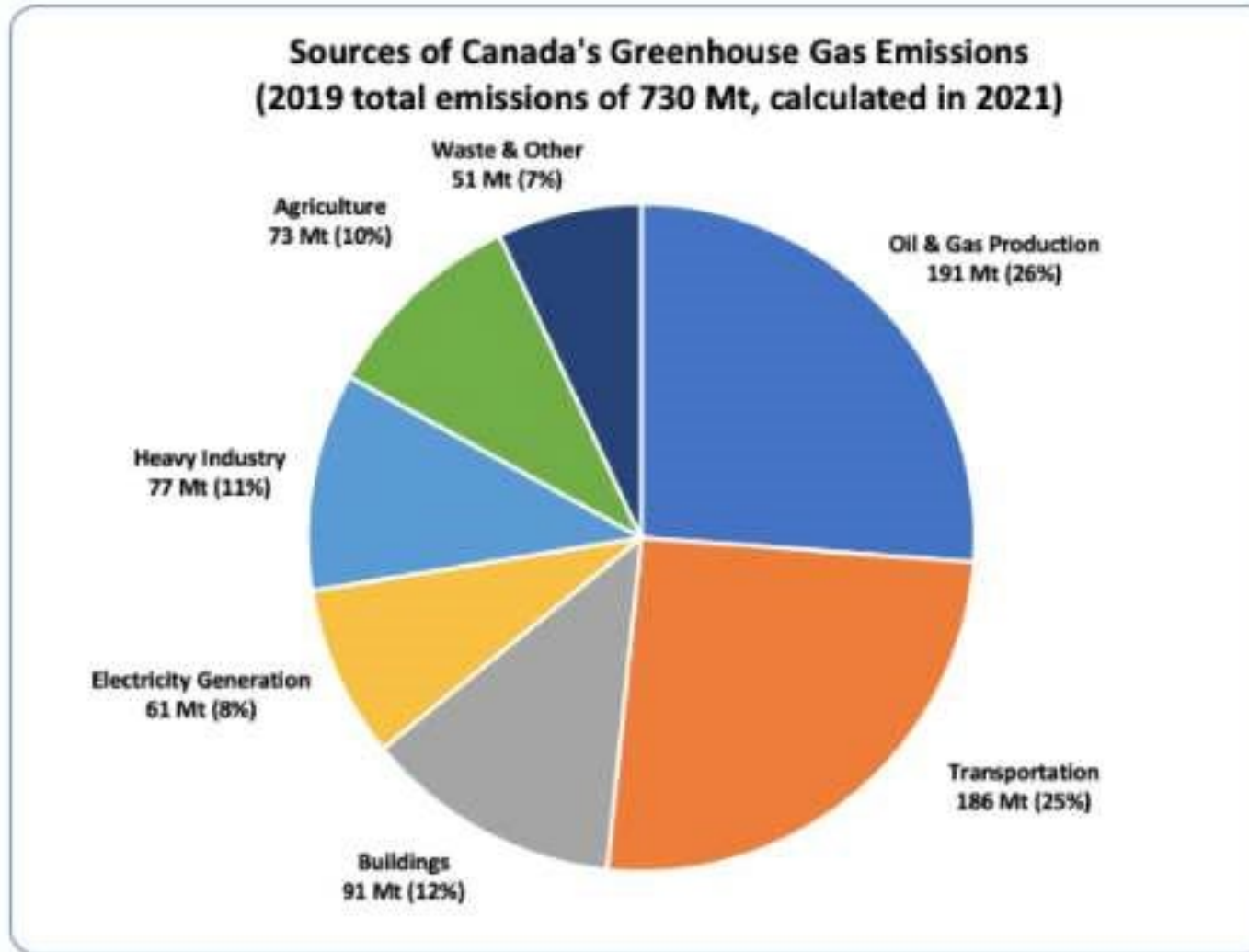
- Over 600 Canadian municipal governments have declared a **climate emergency** (Climate emergency declaration, 2022).
- Increasingly, Canadian municipalities are pledging to reduce GHG emissions to net-zero by the year 2050 (FCM & ICLEI, 2021).
- Municipalities have been responding with local corporate and community climate action plans



GHG emissions sources in municipalities



Canadian GHG emissions by sector



Data Source: Environment and Climate Change Canada, *National Inventory Report: 1990-2019*, Part 3, p. 11, Table A10-2.



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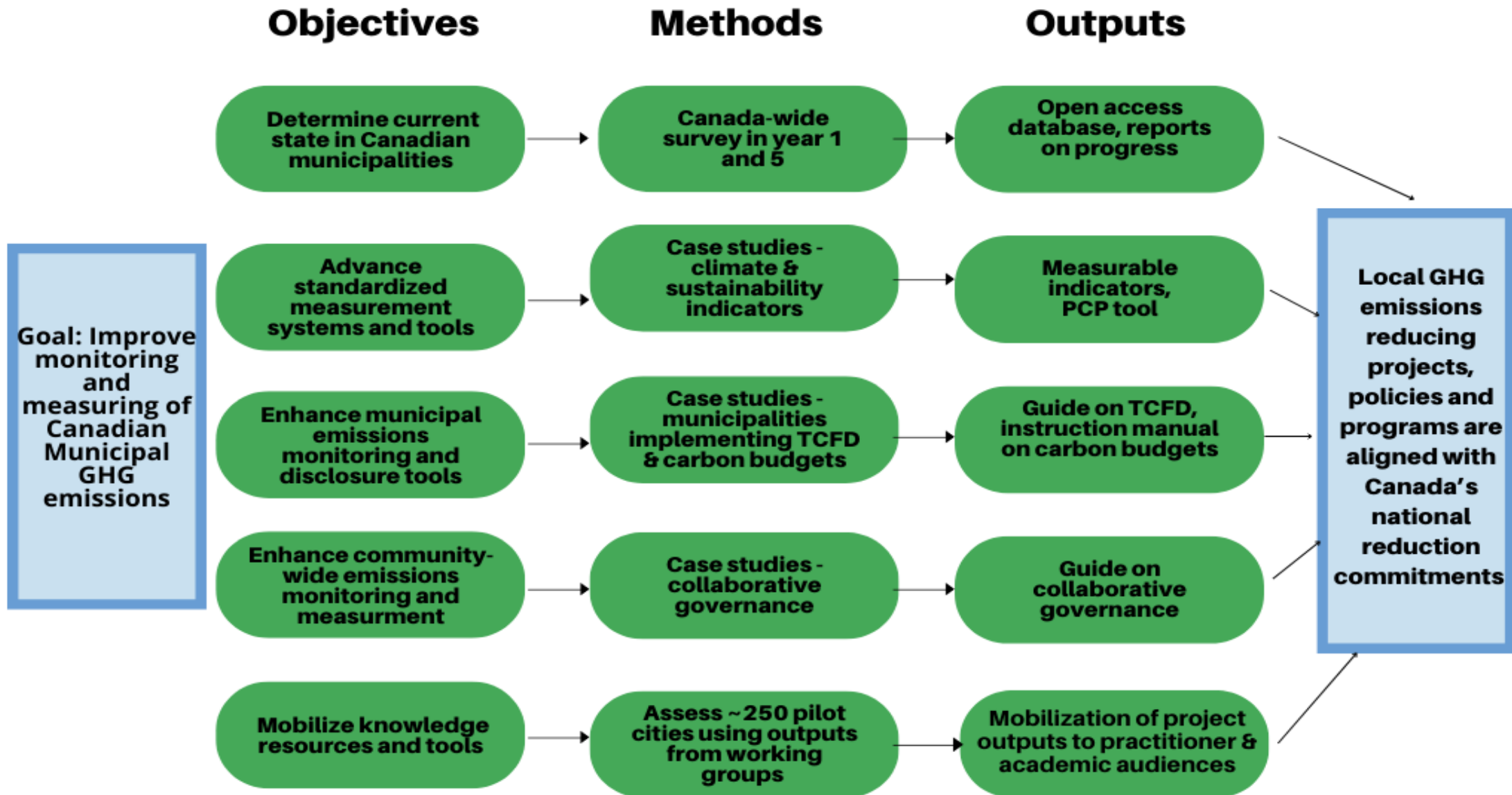
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MUNICIPAL NET-ZERO ACTION RESEARCH PARTNERSHIP (N-ZAP)



High level goals

Main Goal	To support Canadian municipalities to monitor, measure, and achieve their GHG mitigation goals.
Aim	Ensure municipal emissions reduction projects, policies and programs are aligned with Canada's national reduction commitments.
Intervention	Study and create improved measurement, analysis and monitoring systems for both municipal and community-wide GHG emissions



Project timeline



Engagement profile



Thank you

- For more information visit our website: <https://uwaterloo.ca/nzap>



Our Goal

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