Leading Practices Guide for Developing a Municipal Carbon Offset Policy

Clean Air Partnership

CLEAN AIR COUNCIL

Clean Air Partnership

Clean Air Partnership (CAP) is an environmental charity that works in partnership to promote and coordinate actions to reduce greenhouse gases for healthy communities. CAP's mission is to transform cities into more sustainable, resilient, and vibrant communities where resources are used efficiently, the air is clean to breathe, and greenhouse gas emissions are minimized.

The Clean Air Council (CAC) is a network of 44 municipalities and health units across Ontario. Since 2000, CAC members have been working collaboratively on the development and implementation of clean air, climate change, sustainability and resilience actions. Convened by CAP, the CAC is based on the premise that municipalities benefit from actions that reduce energy use, reduce emissions, make the movement of people and goods more efficient, and make communities more livable, competitive and resilient.

ACKNOWLEDGEMENTS:

This project was made possible through funding from the Clean Air Council (CAC) network. We extend our gratitude to CAC municipal staff for their valuable input which was essential to the creation of this guide.

Table of Contents

GLOSSARY

- **Cap-and-Trade Program:** A market-based regulatory system designed to reduce greenhouse gas (GHG) emissions by setting a fixed limit (cap) on total emissions from covered sectors. Entities subject to the cap receive or purchase emission allowances, each representing a specific amount of emissions (e.g., one metric ton of CO_2).
- **Carbon Credits/Offsets**: A tradable unit representing one metric tonne of greenhouse gas (GHG) emissions reduced or removed from the atmosphere through a verified project.
- **Carbon Markets:** are systems that enable the buying and selling of carbon credits to help drive cost effective greenhouse gas (GHG) reductions. Carbon markets are designed to help entities meet climate targets by either reducing their own emissions or purchasing verified carbon credits from projects that remove or avoid emissions elsewhere.
- **Carbon Pricing:** An economic tool that assigns a monetary cost to greenhouse gas (GHG) emissions to incentivize emission reductions and drive investment in cleaner alternatives. Carbon pricing mechanisms help municipalities and other entities integrate the cost of carbon into decision-making and climate action planning.
- **Carbon Offset/Credit Aggregators:** Entities that bundle multiple small-scale carbon reduction projects into a single, tradable pool of carbon credits, making it easier for municipalities and other participants to access carbon markets. Aggregators facilitate the verification, registration, and sale of offsets.
- **Carbon Sequestration:** The process of capturing and storing atmospheric CO_2 to reduce GHG concentrations and mitigate climate change. Municipalities can leverage natural and technological sequestration methods to enhance local climate resilience and contribute to GHG inventories.
- **District Energy Systems:** A system that supplies heating, cooling and power to multiple buildings from a centralized plant or from several interconnected but distributed plants. The system is comprised of pipes, heating equipment and/or cooling equipment, heat exchangers, as well as the social infrastructure for management. The benefits of this type of system over current building-based systems include increased efficiencies due to economies of scale, reduced operating costs, increased reliability, reduced emissions such as greenhouse gases, and a broader choice of fuels including renewable energy and low grade heat.
- **Double Counting of Reductions:** a situation in which the same greenhouse gas (GHG) reduction is claimed more than once by different entities.

- **Greenhouse Gas Coefficient:** A conversion factor used to estimate the amount of greenhouse gas emissions (measured in CO_2 equivalent or CO_2e) produced per unit of energy consumed.
- **Global Protocol for Community-Scale Greenhouse Gas Inventories (GPC):** A standardized framework for measuring and reporting greenhouse gas (GHG) emissions at the community level. Developed by the World Resources Institute (WRI), C40 Cities, and ICLEI, the GPC provides municipalities with a consistent, transparent, and globally recognized method for tracking emissions.
- **Partners for Climate Protection (PCP) Protocol:** A framework for municipal GHG emissions accounting and climate action planning in Canada, developed by the Federation of Canadian Municipalities (FCM) and ICLEI Canada. The PCP protocol provides municipalities with a standardized approach to measuring, managing, and reducing emissions from both corporate operations and community-wide activities.
- **Natural Capital Assets:** The ecosystems, land, and natural resources that provide environmental, social, and economic benefits to municipalities. These assets include forests, wetlands, urban green spaces, soils, and water bodies, which play a critical role in carbon sequestration, community livability, climate resilience, and biodiversity conservation.
- **Net-Zero Emissions:** A state where a municipality's greenhouse gas (GHG) emissions are fully balanced by an equivalent amount of emissions removals or offsets, resulting in no net increase in atmospheric GHG levels.
- **Regenerative Agriculture:** Farming practices that increases carbon sequestration in the soil. Examples include cover cropping, crop rotation, intercropping, agroforesty, and no-till practices. Regenerative agriculture improves soil health, cuts operating costs, and reduces emissions.
- **Regulatory and Voluntary Carbon Trading Systems:** There are two main types of carbon markets. Regulatory (compliance) markets, which are government-mandated systems, such as cap-and-trade programs, where entities must meet legally binding emissions caps; and voluntary markets, where businesses, municipalities, or organizations voluntarily purchase offsets to meet sustainability goals or net-zero commitments.
- **Renewable Natural Gas:** Methane produced by the anaerobic digestion of organic matter. Unlike methane derived from fossil fuels renewable natural gas can be produced from waste products such as landfills, food or agricultural waste. Once it has been refined, it can be used the same way as fossil natural gas.

- **Retired Offsets/Credits:** The permanent removal of GHG emissions from the market, ensuring that the associated greenhouse gas (GHG) reduction or removal is claimed only once and cannot be resold or reused.
- **Science-Based Greenhouse gas (GHG) Reduction Targets:** are emissions reduction goals that align with the latest climate science to limit global warming to well below 2℃ and ideally 1.5℃ above pre-industrial levels, as outlined in the Paris Agreement. These targets are determined based on the level of emissions reductions required globally to prevent the worst impacts of climate change.

EXECUTIVE SUMMARY

As municipalities advance their climate commitments and strive to meet ambitious greenhouse gas (GHG) reduction targets, municipalities are developing carbon offset policies to improve their transparency and accountability and ensure that:

- double counting of reductions does not occur;
- the municipal sale of offsets does not undermine the ability of municipalities to achieve their GHG reduction targets;
- municipal decisions related to the purchase of offsets to meet GHG targets follow leading practices; and
- lessons learned across the Clean Air Council network related to the role of carbon offsets play in municipal climate action commitments are shared.

This Guide is for municipalities considering participation in carbon markets—whether through selling carbon offsets to generate revenue or purchasing offsets to meet their climate commitments. It outlines the fundamental concepts of carbon markets, the differences between regulatory and voluntary carbon trading systems, and the key considerations municipalities should address when developing a carbon offset policy.

In alignment with the Paris Agreement, Canada has set ambitious climate targets, including a 40–45% reduction in GHG emissions below 2005 levels by 2030 and achieving net-zero emissions by 2050. Municipalities play a crucial role in achieving these targets by developing policies and implementing climate actions that address emissions from buildings, transportation, and waste management, while also preparing for climate impacts such as extreme weather and heat events.

Most municipal climate plans with net-zero targets include identifying the need for the purchase of some amount of carbon offsets to achieve their goals. Few, if any, developed robust policies, implementation strategies or budgets to support the purchase of offsets.

With limited revenue streams beyond property taxes, municipalities are exploring carbon markets as a financial mechanism to support their climate action implementation. However, participation in these markets presents challenges, including ensuring the quality of offsets, avoiding double counting of emissions reductions, and understanding the implications of selling versus purchasing carbon offsets.

KEY INSIGHTS ON CARBON MARKETS AND OFFSETS

- Carbon Trading Mechanisms: The document provides an overview of regulatory and voluntary carbon markets, explaining how carbon credits (allowances under a regulated cap-and-trade system) and carbon offsets (emissions reductions traded in a voluntary carbon market) function.
- Lessons from Other Markets: Insights from established emissions trading programs, such as the EU Emissions Trading System, California's cap-and-trade program, and the Regional Greenhouse Gas Initiative, illustrate best practices for ensuring market transparency, integrity and effectiveness.
- Municipal Considerations for Carbon Market Participation: Municipalities in Ontario currently lack access to a regulatory carbon market, leaving the voluntary market as their only avenue for carbon trading. This document explores the trade-offs between selling offsets for revenue versus retaining them to meet GHG reduction targets.
- Opportunities for Municipal Carbon Offsets: Municipalities may generate offsets from projects such as transit electrification, renewable natural gas (RNG), solar PV generation, and/or district energy systems. However, verification and administrative costs must be factored into financial planning and the impacts the ownership and selling of reductions in the carbon market places on municipal targets.
- Risks and Challenges: Participation in carbon markets carries risks, including reputational risks concerns related to offset quality and high transaction costs for verification and compliance. The document emphasizes the importance of adhering to Core Carbon Principles to ensure credibility and environmental impact.

To guide decision-making, the document outlines how municipalities can develop a Carbon Offset Policy. This includes:

- **Criteria for Selling Offsets**: Establishing guidelines on when and how municipalities could sell GHG reductions, ensuring it does not compromise their ability to meet their own climate targets.
- **Criteria for Purchasing Offsets:** Ensuring that purchased offsets meet stringent verification and additionality requirements, prioritizing projects that actively remove carbon from the atmosphere.
- **Leading Examples:** A case study from the Cities of Toronto will illustrate how municipalities are structuring their offset policies to balance accountability towards their climate commitments and greenhouse gas reduction targets and securing the necessary resources to advance GHG reduction actions.

INTRODUCTION

The Paris Agreement is an international treaty on climate change adopted by nearly every country in the world in December 2015 at the United Nations Framework Convention on Climate Change (UNFCCC) in Paris. It aims to limit global warming to below 2°C, with an aspirational goal to limit it to 1.5°C above pre-industrial levels. To meet this commitment, greenhouse gas emissions need to be cut globally by about 45% by 2030 and be net zero by 2050.

Canada signed onto the Paris Agreement and committed to reducing greenhouse gas (GHG) emissions and developed policies to align with the Agreement including:

» **Setting a GHG Emissions Reduction Target:** Canada committed to a 40 – 45% reduction below 2005 levels by 2030 and net zero emissions by 2050.

» **Pan-Canadian Framework on Clean Growth and Climate Change (PCF)**: Canada's first national climate plan was approved in 2016, and included commitments to implement carbon pricing, GHG reduction efforts across sectors, initiatives to adapt to climate impacts and the acceleration of clean technology adoption.

» **Greenhouse Gas Pollution Pricing Act:** In 2018 Canada implemented carbon pricing setting a minimum carbon price that applies to all provinces and territories.

» **Net Zero Emissions Accountability Act:** Requires the federal government to set 5-year interim targets, provide public progress reports, and adjust to ensure progress towards committed targets.

» **Clean Energy Transition:** Includes federal investments in tax credits and programs to advance renewable energy projects, electrification, and grid modernization.

» **Green Buildings Strategy**: Sets out the vision and next steps for greener, more efficient and affordable homes and buildings. Includes national model building codes and retrofit codes and extreme weather resilience while advancing economic development and job creation.

» **Clean Fuel Standard:** Set targets to ensure all new light-duty cars sold are zero-emission by 2035, supported by incentives and investments in charging infrastructure.

» **Climate Related Financial Disclosures:** In 2024, Canada announced mandatory climate-related financial disclosure for large federally incorporated companies to increase transparency and align with global leading climate reporting standards.

» **Offset Credit Program:** Is a federal initiative under Canada's Greenhouse Gas Pollution Pricing Act. It provides a framework for creating and trading carbon offset credits from projects that reduce or remove greenhouse gases outside of the sectors regulated under Canada's carbon pricing system, such as forestry, agriculture, and land management.

Municipalities are also advancing their climate commitments and action implementation and committing to science-based greenhouse gas reduction targets and Climate Action Plans that include actions such as:

- Developing and advancing their net zero emission plans for their own facilitates, fleets and operations.
- Developing Green Development Standards to reduce the climate implications and vulnerabilities of new developments.
- Delivering building retrofit programs addressing retrofit market gaps such as financing, and customer support.
- Transportation investments to increase residents' transportation options and increase safety.
- Preparing for more frequent and intense extreme weather events, with a particular focus on flooding, heat and resilience hubs.
- Investments in urban greening initiatives such as tree planting and maintenance, green and cool roofs, and wetland and green space preservation to enable carbon sequestration, air quality improvements and heat reduction.
- Waste reduction and circular economy initiatives such as organics and recycling programs to reduce waste sent to landfill and incineration, and methane recovery to produce renewable natural gas.

WHAT IS A CARBON MARKET?

The climate system is indifferent to the geographical origin of greenhouse gas emissions, or the location of their reductions, since atmospheric concentrations of greenhouse gases have the same climatic impact regardless of where they were emitted. The goal of a carbon market is to achieve the most greenhouse gas reductions at the lowest cost. Therefore, those who can achieve less costly GHG reductions in one location, can sell their reductions to entities that would face higher costs to reduce their own GHG emissions. Thereby optimizing cost-effectiveness and maximizing climate benefits.

Trading emission systems are not limited to greenhouse gases. Emission trading systems for air pollutants (ex. Acid Rain Program) and chlorofluorocarbons (CFCs) have provided important insights and lessons for the development and participation in carbon markets. Some of the lessons learned include:

- **Cost-Effective Reductions:** By allowing companies to trade emissions allowances, the Acid Rain Program reduced SO_2 emissions by around 50% at a lower cost than anticipated, demonstrating that market mechanisms can incentivize cost-effective reductions.

» **Clear and Declining Cap**: A well-defined, gradually declining cap helped to ensure consistent emissions reductions, setting a model for carbon markets to follow. The consistent reduction goal gave companies certainty and encouraged investment in long-term solutions.
» **Robust Monitoring and Compliance:** A robust monitoring and compliance system is critical for ensuring market integrity and is critical for transparency and accountability. This underscores the importance of reliable emissions tracking and verification in carbon markets to prevent fraud and increase credibility.

The Montreal Protocol (1987) targeted the phase-out of CFCs and other ozone-depleting substances (ODS). While not a trading system per se, it allowed for limited trading and demonstrated the potential for continual reduction requirements and international cooperation, both very important lessons and factors relevant to the global climate imperative.

WHAT ARE CARBON CREDITS AND WHAT ARE CARBON OFFSETS?

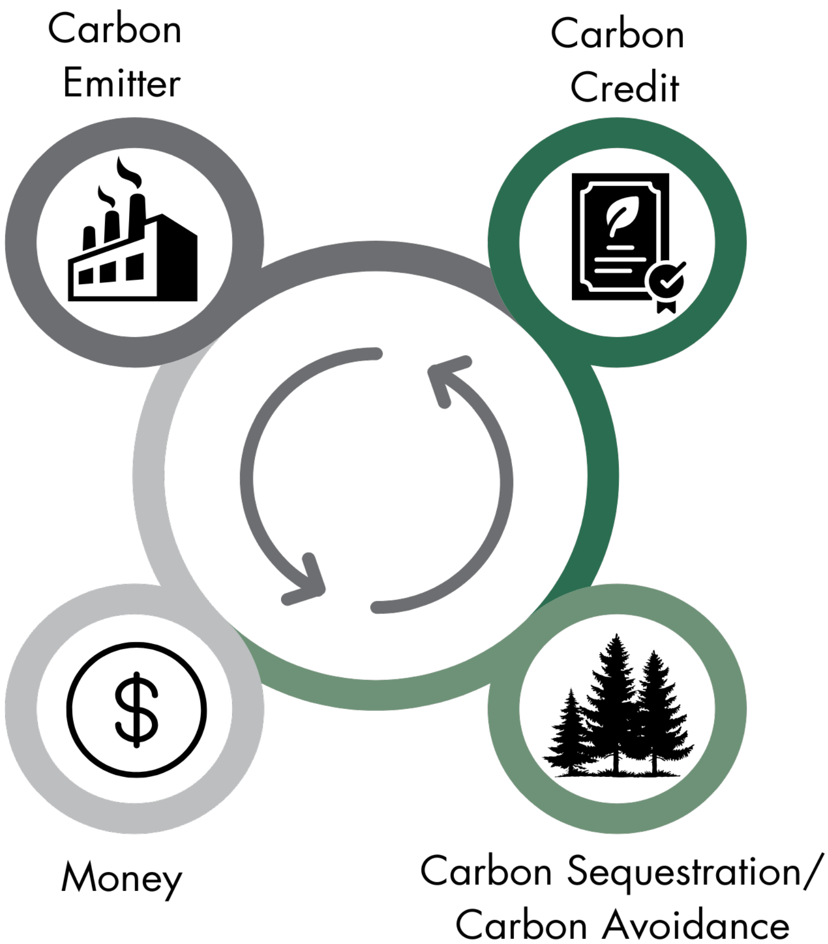
The terms carbon credits and carbon offsets are often used interchangeably, but it is worthwhile to provide a definition for how these terms will be used in this Guide.

Carbon credits (also sometimes referred to as carbon allowances) identify the amount of greenhouse gas emissions an entity is allowed to release. With carbon credits, carbon revenue flows from companies to regulators. Companies that end up with excess credits over their emissions cap, can sell their credits to other companies within their trading geography.

Offsets involve trading between two entities. When one entity removes a unit of greenhouse gas emissions from entering the atmosphere, they can generate a carbon offset. Other entities can then purchase that offset to meet their greenhouse gas reduction targets. It is critical to understand and ensure that once a carbon offset is sold to another entity, there likely will not be the ability for the seller to apply that reduction to their own target.

Carbon credits is a term most often used in a regulatory trading market and offsets are a term most often used in a voluntary market.

Figure 1: How Carbon Credits Work



VOLUNTARY CARBON MARKET

Within the voluntary carbon market, entities purchase credits on a voluntary basis to offset their own carbon emissions as part of their climate commitments and targets, not due to regulatory requirements. The voluntary market typically offers more flexibility than a regulatory one, but often features a much wider range of offset qualities. It is incumbent upon entities purchasing offsets to ensure that the reductions are verified and meet the additionality requirement, which is a leading practice in carbon trading. Both the cost and quality of offsets tend to vary more in the voluntary market in comparison to the regulatory market.

What is Additionality?

In the carbon market, additionality refers to the principle used to assess whether a carbon reduction project results in genuine, additional greenhouse gas emission reductions or removals that would not have occurred without the project. For a project to be considered "additional," it must demonstrate that:

- *The reductions would not have occurred without the revenue from carbon offsets. The emission reductions are beyond what would have taken place under a "business-as-usual" scenario. The project should be financially or technically dependent on the sale of carbon credits to be additional rather than viable.*
- *The reductions exceed regulatory requirements or common practices: The project's actions must exceed legal mandates and standard practices within its sector or region.*
- *The reductions deliver real climate benefits: Additionality ensures that the offsets sold in the carbon market represent actual, verifiable emissions reductions that contribute to the overall climate goals, and ensures that there is no double counting of reductions.*

REGULATORY CARBON MARKET

Within the regulatory carbon market, participation is mandated by law for certain industries or sectors that emit greenhouse gases above a specified cap. Governments establish a cap on allowable emissions and issues emission permits that entities can trade within the market. The regulatory market is typically more structured, featuring stringent reporting, monitoring, and verification processes to ensure compliance and minimize the risk of double counting emissions reductions. Prices in this market are influenced by supply and demand within the capped environment, along with regulatory changes and other economic factors.

The regulatory carbon market more reliably verifies actual greenhouse gas reductions since it operates under a specific emissions cap. It generally enforces more structured rules for the generation, sale, and compliance of carbon credits across various sectors.

Conversely, the voluntary carbon market exhibits a greater variation in the types of offsets available and has less stringent offset verification requirements. Participants in the voluntary market must exercise greater diligence in securing offsets that genuinely represent greenhouse gas reductions, meet the additionality requirements, and are not at risk of double counting. Issues that this Guide will explore in more detail.

Examples of Regulatory Carbon Markets (Worldwide)

The European Union (EU) Emissions Trading System (ETS), initiated in 2005, was the first significant carbon trading market. It covered greenhouse gas emissions from power generation, industrial processes, and aviation. The system was designed to help EU member states comply with the Kyoto Protocol and to foster a transition to a low-carbon economy.

In the United States, California's cap-and-trade program is the largest emissions trading system, encompassing sectors such as electricity generation, industrial processes, and transportation fuels. It allows for the trading of allowances with linked carbon markets in British Columbia (BC) (launched in 2008) and Quebec (2013). BC's carbon market is integrated into their carbon tax mechanism rather than in tradable allowances. Quebec's carbon market was designed to cap emissions from large industrial emitters and power plants.

The Regional Greenhouse Gas Initiative (RGGI), established in 2009, is a cap-and-trade program that mandates emissions reductions from the power sector across twelve U.S. states in the Northeast and Mid-Atlantic regions. Each participating state enforces RGGI regulations through state laws, which set a cap on total CO_2 emissions from power plants and require utilities to obtain allowances for each ton of CO_2 emitted.

CARBON MARKETS IN CANADA

The Government of Canada Carbon Offset System

The Government of Canada's Offset Credit Program, launched in 2021, is a federal initiative under Canada's Greenhouse Gas Pollution Pricing Act. It provides a framework for creating and trading carbon offsets from projects that reduce or remove greenhouse gases outside of the sectors regulated under Canada's carbon pricing system, such as forestry, agriculture, and land management.

The program develops specific protocols that set the rules for eligible project types. Each protocol outlines how projects can generate, verify, and register offset credits based on reductions achieved. The first protocols include target sectors like landfill methane management, afforestation (the process of establishing a forest in an area where there was no forest before, or not for a long time, usually longer than fifty years ago), sustainable agriculture, and forest management. To generate offsets, projects must demonstrate "additionality," meaning their emissions reductions go beyond what would have occurred without the project. They must also meet other criteria, such as permanence to ensure long-term offset value.

Once a project is registered and its emissions reductions are verified, it can issue offsets. These offsets can be sold to entities to achieve their greenhouse gas reduction targets, such as companies with net-zero goals or other regulated entities within Canada's carbon pricing framework. This creates a new revenue stream for project developers and promotes emissions reductions across sectors. The program requires third-party verification to ensure that offsets reflect genuine emissions reductions.

As of the end of 2024, three protocols have been released.

» Landfill Methane Recovery and Destruction
» Reducing Greenhouse Gas Emissions from Refrigeration Systems
» Improved Forest Management on Private Land

A second federal offset market is available via the Clean Fuel Regulation which provides opportunities for municipalities to help reduce greenhouse gas emissions, particularly from transit and waste services. Actions such as electrifying transit fleets result in greenhouse gas reductions that may then be applied to the Clean Fuel Standard. The federal government then retires those offsets, thereby enabling the municipality to receive revenue for undertaking these actions while still enabling the municipality to apply those reductions towards its own greenhouse gas reduction targets.

Projects that generate offsets via the Clean Fuel Regulation cannot seek offsets under the Greenhouse Gas Offset Credit System or any other program or regulations.

CARBON MARKETS IN ONTARIO

Ontario used to have a regulated carbon market: the cap-and-trade program which ran from January 2017 to July 2018. Since the cancellation of the cap-and-trade program, the only carbon market available to Ontario municipalities is the voluntary carbon market. There are two voluntary carbon markets available in Ontario: The Clean Fuel Standard described above and the Clean Energy Credit Program.

Ontario Clean Energy Credit Program

Ontario launched the Clean Energy Credit (CEC) program which is delivered by the Independent Electricity System Operators (IESO). CECs are electronic certificates representing 1 MWh of clean energy generated and are intended to be exclusively purchased and retired by a load customer within Ontario. The CECs are managed via the Midwest Renewable Energy Tracking System (M-RETS). In the case of the scenario where Ontario entities are interested in purchasing CECs, rather than reducing their own greenhouse gas emissions, it creates the risk that the sale of CECs can impact the greenhouse gas coefficient associated with electricity production. The electricity production greenhouse gas coefficient influences municipal greenhouse gas emissions inventories, and a low carbon electricity system is critical for the achievement of municipal climate targets. While the IESO has committed to reporting annually on the transfer of CECs by volume and energy source, there is a significant lack of clarity for how the system will track and report on purchases and how the purchase of CECs will affect the GHG coefficient for electricity production. At present, the design of the CEC does not meet the recommended leading practices for carbon markets.

MUNICIPAL CONSIDERATIONS FOR CARBON MARKET PARTICIPATION

Municipalities in Ontario can only engage in the voluntary carbon credit market because there is no carbon market in Ontario that places regulatory requirements or emissions caps on municipalities. However, over 60 Ontario municipalities have declared climate emergencies and are in the process of developing or implementing their Climate Action Plans, with ambitious 2030 and net zero targets for 2040 or 2050. As a result, many municipalities are exploring how the carbon market can either support or hinder their ability to achieve these greenhouse gas reduction goals.

Generating offsets would be easier for municipalities if their targets were incremental targets (e.g., 10-15% reduction target). However, with the science-based targets that municipalities aim to meet, the option of having spare credits above and beyond municipal commitments is far more challenging than it would be with 10-15% greenhouse gas reduction targets. Net zero emissions targets greatly impact the ability of municipality to achieve offsets that surpass their GHG reductions targets.

In addition to setting net zero targets for their own operations, municipalities have also set similar goals for their communities. It is recognized that while municipalities have complete control over their own operations, their authority over community emissions is much more limited and challenging. Consequently, municipalities rely on policy development, program delivery and community stakeholder engagements to influence and drive greenhouse gas reductions within the wider community.

WHY WOULD A MUNICIPALITY WANT TO SELL THEIR CARBON REDUCTIONS?

Facing ambitious greenhouse gas reduction targets and limited revenue options beyond property taxes, municipalities are exploring new funding sources to support their climate initiatives. They are considering how the voluntary carbon market might provide revenue to drive their greenhouse gas reduction efforts forward.

HOW ARE MUNICIPAL GREENHOUSE GAS REDUCTION TARGETS IMPACTED WHEN A MUNICIPALITY SELLS CARBON OFFSETS?

If a municipality sells its carbon reductions via an offset to an entity within their municipal geography, the municipality cannot count those sold reductions towards their own corporate reduction targets, but they can then be applied to their community inventory calculation. This transaction may make sense if it the sale of the offset provided additional revenue that was critical to enabling the project to occur and doesn't negatively impact the ability of the municipality to apply those reductions to its community greenhouse gas reduction targets.

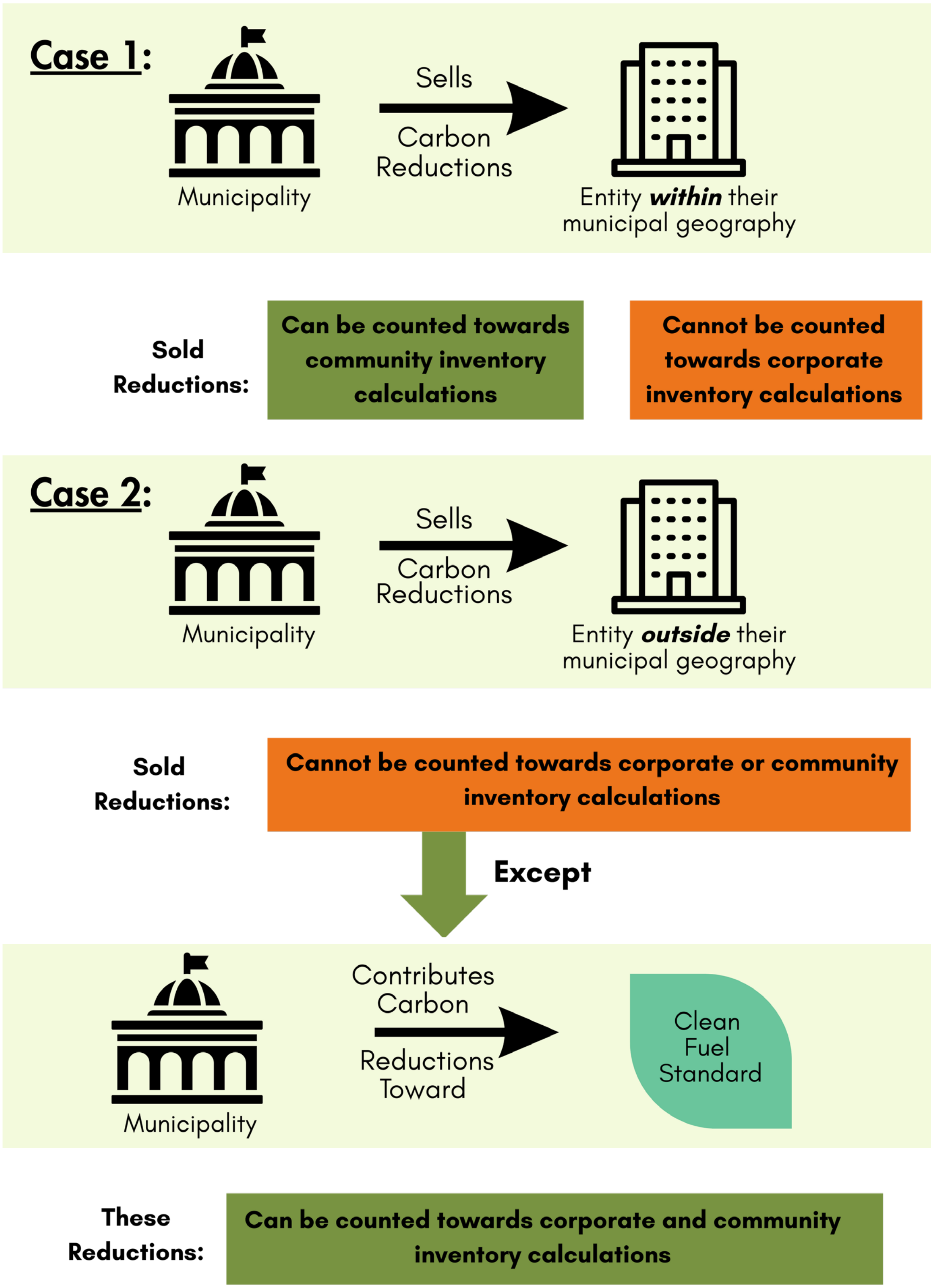
If a municipality sells carbon offsets generated from their own greenhouse gas reductions to an entity outside the municipality's geography, those reductions can then no longer be counted towards reduction targets at either the corporate or community level and negatively impact the ability of the municipality to achieve their greenhouse gas reduction targets.

An exception to this scenario is the Clean Fuel Standard. It appears that reductions contributing to the Clean Fuel Standard can receive funding and, because they are retired and/or applied to federal greenhouse gas reduction targets, those reductions can then still be applied to municipal greenhouse gas reduction targets.

It is important for municipalities to recognize that there will always be a transaction cost related to any sale of their carbon offset credits. This is due to the costs associated with verifying reductions and then the administration associated with the sale of credits.

There are two different models for how verifiers and sellers manage these costs. One model is where the verifier and seller work on commission often taking up to 50% of the value of the sale price. The other translation cost model that is available is to pay directly for the verification and sale via a fee for service model. Ultimately it means that revenue will not be available for all municipal carbon offset credit sales due to these administration costs.

Figure 2: Impact of Selling Carbon Offsets on Municipal Greenhouse Gas Reduction Targets



WHY WOULD A MUNICIPALITY WANT TO PURCHASE CARBON OFFSETS?

With ambitious 2030 and net zero emission targets most municipalities need to advance all greenhouse gas reduction avenues available to them. If a municipality is not able to eliminate all its fossil fuel use and/or greenhouse gas emissions, then it will need to purchase greenhouse gas reductions from other entities to apply against its own emissions. If the municipality purchased those offsets from an entity within its municipal boundary, then those offsets can only be applied to the municipality's own GHG inventory and can no longer be used by the entity that sold the offsets to apply to its GHG inventory. There is the ability for the municipality to help advance community GHG reductions by purchasing the GHG reduction offsets and applying them to their corporate inventory.

EMISSIONS ACCOUNTING AND SEQUESTRATION IN A MUNICIPALITY

Municipalities calculate their greenhouse gas (GHG) emissions inventories using standardized protocols such as the Global Protocol for Community-Scale Greenhouse Gas Inventories (GPC) and the Partners for Climate Protection (PCP) protocol. These frameworks help municipalities measure and report emissions occurring within their boundaries.

Many municipalities are now working to integrate carbon sequestration from natural assets such as forests, wetlands, and soil into their GHG inventories. Unlike participation in the voluntary carbon market, municipalities can account for sequestration from natural capital in their inventories as long as they follow established protocols and consider emissions released through decomposition of these assets.

Furthermore, municipalities are not required to meet additionality criteria when including sequestration in their inventories, provided they retain ownership of the natural capital assets.

SUMMARY OF MUNICIPAL OPPORTUNITIES FOR GENERATING CARBON OFFSET CREDITS

Some of the scenarios that municipalities have identified as possible reductions that may be significant enough to be considered for offsets (considering the rigorous monitoring and verification process that will be needed to verify the quality of reductions) include:

» Transit Electrification
» Renewable Natural Gas (RNG)

» Solar PV Generation
» Regenerative Agriculture
» District Energy Systems

ADDITIONAL RISKS RELATED TO MUNICIPAL PARTICIPATION IN THE CARBON MARKET

For municipalities wanting to participate in carbon markets and generate additional revenue through the sale of carbon offsets, there are risks related to the high transaction costs of verification requirements for higher quality (and higher value) carbon offsets that need to be factored into the business decision on whether a municipality should sell or retain their carbon reductions. All else being equal, it will also be better for a municipality to retain ownership over their greenhouse gas reductions so they can apply to municipal targets.

Access to financial resources to advance climate reduction actions is the primary motivation for municipalities to consider participation in carbon markets. It is also important to remember that in many cases the verification costs related to participation in carbon markets will reduce the value of the reduction and the revenue received by 50% because of the high transaction costs of verifying the offsets. These verification and transaction costs need to be factored into the municipal decision of whether the sale of carbon offsets can provide sufficient additional revenue that will lead to additional greenhouse gas reductions than would have been achieved without the carbon offset revenue.

In addition, for municipalities that purchase offsets to apply against their GHG emissions there is a reputational risk to consider due to the lower levels of verification and offset quality assurance within carbon markets, especially within the voluntary carbon market. It is also important to recognize that carbon offsets are often sold for a period of time (ex. one year) and will require additional annual purchases to be able to continue to apply those reductions to future year targets.

LEADING PRACTICES FOR MUNICIPAL CARBON OFFSET PURCHASING

If a municipality intends to purchase offsets to meet their greenhouse gas reduction targets, they should ensure leading practices are used to verify the quality of the offsets. To ensure leading standards, Core Carbon Principles have been developed to ensure that the quality of carbon offsets purchased include:

- **Additionality:** The reductions, removals, and avoidances must be actions that would not have occurred without funding from the sale of carbon offsets.
- **Permanence**: The reductions, removals, and avoidances must be maintained out of the atmosphere for at least 100 years.
- **Robust Quantification:** Emissions reductions and removals must be quantified using scientific methods.
- **No Double Counting:** Carbon credits and offsets must not be counted more than once.
- **Effective Governance:** Management must ensure transparency and integrity.
- **Tracking:** A registry must be used to accurately track reductions, removals, and avoidances.
- **Transparency:** Information must be publicly available and provided in a digital format.
- **Robust Independent Third-Party Validation and Verification:** All activities must undergo validation and verification by independent third parties.
- **Sustainable Development Benefits and Safeguards:** The project must include tools and guidance to ensure adherence to established protocols.
- **Contribution to Net Zero Transition:** The project must support the broader goals of achieving net zero emissions.

These principles and practices are crucial for maintaining the credibility and effectiveness of carbon markets and ensuring meaningful environmental impacts.

MUNICIPAL CARBON OFFSET POLICIES

It is essential for municipalities to define and clarify the criteria they will use to decide whether to sell any of their greenhouse gas reductions and/or purchase offsets to account for their own greenhouse gas emissions. This often occurs by adopting an Offset/Credit Policy. A municipal Offset Policy establishes guidelines for selling and purchasing offsets to meet a municipality's greenhouse gas reduction goals or raise revenue to invest in reduction actions. This policy provides a framework for how and when a municipality should consider selling their reductions via offsets and what the sale of the offsets means to municipal GHG reduction target commitments, and the role that offsets will play in the achievement of municipal GHG reduction targets.

An example of a municipal carbon offset policy is City of Toronto. Toronto's Carbon Credit Policy summarizes key terms, the new responsibilities the City will be undertaking, and procedures surrounding sales. Toronto's Carbon Credit Policy also requires the City to only sell offsets that it generates from its projects that reduce emissions from municipalities operations, if the sale of those offsets do not have negative implications on their ability to apply those reductions to their own greenhouse gas reduction targets. An example of a scenario that would meet these criteria is the sale of the offsets resulting from transit fleet electrification to the Clean Fuel Regulation system. Whereby, because the offsets are being retired by the federal government, they are still able to be applied to municipal greenhouse gas targets as well. With regards to offset purchase considerations, the City will prioritize reducing emissions related to its own operations and will only purchase offsets that result from projects that remove carbon from the atmosphere.

The City of Brampton is in the process of developing a Carbon Offset Credit Policy and has retained a consultant to help them develop the criteria that would guide municipal decision making on how the City will either sell or purchase offsets.

CANADIAN CARBON OFFSET CREDIT AGGREGATORS AND SELLERS

Below are some examples of the businesses and organizations working in the voluntary carbon market to purchase and sell offsets credits.

- Clear Blue Markets
- Karbon-X
- Climate Impact X
- Carbonzero
- Less (Bullfrog)
- Ostrom Climate

CONCLUSION

This document serves as a resource for municipalities navigating the challenge of achieving GHG reduction targets while identifying revenue sources to support climate action. It provides background on key factors municipalities should consider when assessing the potential role of carbon offset purchases in meeting their GHG reduction goals. Ultimately, this guide offers practical guidance on the implications of both selling and purchasing carbon offsets, emphasizing the importance of clear policies for carbon market participation. By establishing well-defined strategies, municipalities can align offset decisions with their climate commitments, maximize local benefits, and contribute meaningfully to global decarbonization efforts.

KEY TAKEAWAYS

- Municipalities should consider the need for GHG reduction targets to be aligned with science-based targets that align with the Paris Agreement, supporting a 30-45% GHG reduction by 2030 and net zero by 2050.
- Carbon offsets must represent real, measurable, and additional GHG reductions that would not have occurred without the offset revenue. Robust verification, monitoring, and compliance mechanisms are essential to maintain credibility and prevent greenwashing.
- While carbon markets can help optimize cost-effectiveness of reductions, municipalities should prioritize direct GHG reductions that deliver local benefits such as reduced energy costs, improved air quality, biodiversity conservation, job creation, and climate resilience. This ensures offsets contribute to both emissions reductions and community well-being.
- Offset programs like Canada's Greenhouse Gas Offset Credit System and Clean Fuel Regulation create opportunities for municipalities to generate revenue while reducing emissions (e.g., through landfill methane recovery or transit electrification).
- Municipalities should be cautious about the potential impact of Clean Electricity Credit transactions on their greenhouse gas (GHG) inventories and advocate for clearer tracking and reporting mechanisms. Without transparency in how CEC purchases affect Ontario's electricity GHG coefficient, municipalities risk misrepresenting emissions reductions and undermining progress toward their climate targets.
- Selling municipal offsets to an entity within municipal boundaries removes them from the municipality's corporate inventory but allows them to be counted in community GHG reductions.
- Selling offsets outside municipal boundaries means the reductions cannot be counted toward either corporate or community targets, potentially undermining local climate goals.
- While selling carbon offsets can provide revenue for climate action, high transaction and verification costs (often up to 50% of offset value) may reduce financial benefits. Municipalities should carefully evaluate whether selling offsets will lead to greater emissions reductions than if they retained the reductions for their own climate targets.

- Municipalities can account for carbon sequestration from forests, wetlands, and soil in their GHG inventories without meeting additionality requirements, provided they retain ownership of these natural assets. This approach allows municipalities to recognize the climate benefits of their natural capital in their GHG inventories.
- Purchasing offsets to meet municipal GHG targets carries reputational risks, particularly in the voluntary market, where offset quality and verification standards vary. Additionally, since offsets are often valid for only one year, municipalities will need to re-purchase credits annually to maintain compliance with long-term targets.
- If purchasing offsets, municipalities should adhere to Core Carbon Principles, ensuring that credits meet key criteria such as additionality, permanence, transparency, and third-party verification. This protects the credibility of municipal climate commitments and ensures offsets contribute to meaningful emissions reductions.

APPENDIX 1: OFFSET CREDITS POLICY TEMPLATE

*This Offset Credits Policy Template provides recommended language for municipalities to adopt. Municipalities are requested to consult with their legal teams for their opinion on this policy before advancing this effort in their jurisdictions. This Policy template has been adapted from the City of Toronto City of Toronto Policy – Offset Credits.

Access the Offset Credits Policy Template here.

Photo Credits:
Micheile Henderson via Unsplash