Developing a Voluntary Carbon Offsets Program for Ontario

Discussion Paper

Ministry of the Environment and Climate Change

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Contents

Purpose 1

Climate change and its effects 2

Tackling climate change in Ontario 3

What are carbon offsets? 5

Ontario's carbon offset pathways 7

Getting there 8

Building Ontario's natural capital 11

Thinking globally, acting locally 13

Share your views with us 14

References 15

Purpose

Combatting climate change is a shared responsibility that requires collective action. The intent of this discussion paper is to start a conversation with Ontarians about the development of the proposed voluntary carbon offsets program, which will allow the Province to lead by example through making government operations carbon neutral beginning in 2018. This discussion paper aims to:

- Provide an overview of the key elements of the proposed Ontario voluntary carbon offsets program;
- Seek input on measures being considered;
- Provide an early opportunity for Ontarians to participate in development of the proposed Ontario voluntary carbon offsets program;
- Provide an overview of environmental co-benefits and opportunities to build Ontario's natural capital; and
- Promote opportunities for participation in the carbon market.

This discussion paper will also help the Ministry of the Environment and Climate Change in gathering information and gaining your insight on the following topics:

- The scope of the proposed Ontario voluntary carbon offsets program;
- Potential projects and activities; and
- Community participation in the carbon market.

Climate change and its effects

Climate change is the result of a buildup of carbon dioxide (CO_2) and other greenhouse gases (GHGs) which trap heat in the Earth's atmosphere. Figure 1 below illustrates this process. GHG emissions from manmade sources are higher than they have been in any other point in history (IPCC, 2014).

Across Ontario we have seen an increase in prolonged heat waves, torrential rain storms, windstorms, even drought. These events have become more common – a clear sign of a shift in our weather patterns (NRCan, 2014). This shift is called 'climate change.' It threatens our health and safety, our environment and our economy.

People and businesses in Ontario are already feeling the effects of these changes, which range from damaged infrastructure, extreme weather events such as flooding, to the reduced ability to grow food in some regions.

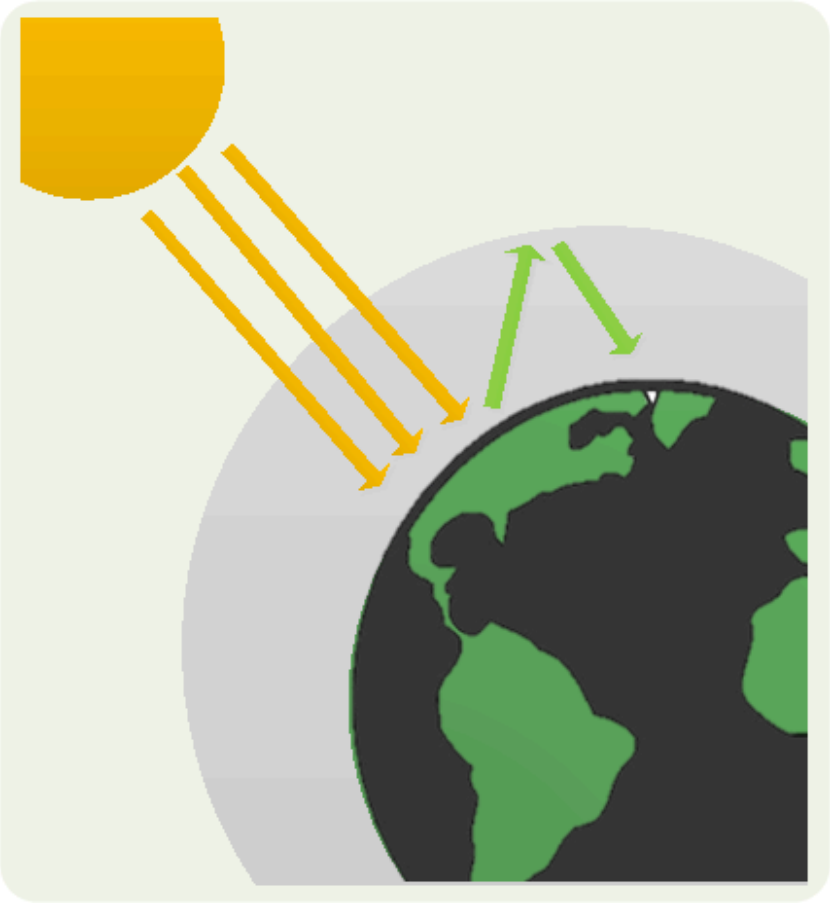

Figure 1. Carbon dioxide and other greenhouse gases trap heat in the earth's atmosphere.

Tackling climate change in Ontario

The Ontario government recognizes climate change as a problem with unique solutions and opportunities. *Ontario's Climate Change Strategy* and *Five Year Climate Change Action Plan (CCAP) 2016 – 2020* have been developed in order to tackle the complex challenge of climate change.

Ontario's Climate Change Strategy sets the long-term goal of reducing GHG emissions in Ontario by 80 percent below 1990 levels by 2050 as shown below in Figure 2. To meet this objective, mid-term targets of 15 percent below 1990 levels by 2020 and 37 percent below 1990 levels by 2030 have been set.

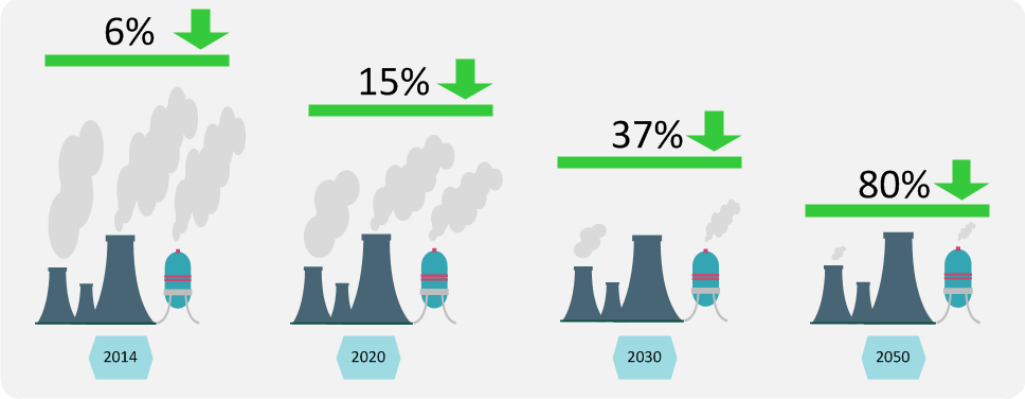

Figure 2. Ontario's greenhouse gas reduction targets.

To achieve these targets, the Province has implemented a cap and trade program to reduce greenhouse gas emissions and drive a prosperous low-carbon, high-productivity economy. In addition, the *Five Year Climate Change Action Plan (CCAP) 2016 – 2020* sets out the various activities that the government will undertake to mitigate the effects of climate change across our province. Actions under CCAP include:

- Reducing GHG emissions in sectors not covered by cap and trade to meet provincial GHG reduction targets;
- Creating a prosperous low-carbon economy with world-leading innovation, science and technology;
- Demonstrating government leadership and collaboration;
- Developing a resource efficient, high productivity society; and
- Facilitating adaptation and risk awareness to the impacts of climate change.

In addition, CCAP includes making government operations carbon neutral beginning in 2018. In order to accomplish this, Ontario will develop a separate quality, branded, voluntary carbon offset class for use by government, private sector and others, as an additional way to enable participants to reduce emissions, and to support the government's carbon-neutral commitment.

These actions build on the foundation already established in Ontario to innovate and invest in a high-productivity economy that values our natural capital. It shifts Ontario to an economy that supports growth and prosperity, while better protecting our air, land and water and leaving a strong environmental legacy of a healthy world for future generations.

What are carbon offsets?

A carbon offset is a reduction in emissions of carbon dioxide or other greenhouse gases (GHGs) to neutralize or offset emissions made elsewhere. These offsets are generated from projects that reduce, avoid or sequester (i.e., capture or contain) GHGs from sources that are not covered by a cap and trade program. Carbon offsets are a tool that can be used to mitigate and build resilience to the effects of climate change. One carbon offset credit represents the reduction of one metric tonne of carbon dioxide or its equivalent (CO_2e).

There are two markets for carbon offsets. In the compliance market, companies and other entities regulated under a cap and trade program can buy carbon offsets in order to comply with caps on the total amount of CO_2e they are allowed to emit. In Ontario, compliance offset credits can be used to a maximum of 8 percent to offset emissions under the cap and trade program.

In the voluntary carbon offsets market, governments and other entities not regulated by a cap and trade program can purchase carbon offsets to mitigate their own GHG emissions from transportation, heating buildings, and other sources. Voluntary carbon offsets can be used by these entities to achieve their own emissions reduction objectives (e.g., attain carbon neutrality).

An illustration of the relationship between the development and use of carbon offsets (both compliance and voluntary) is shown in Figure 3 below.

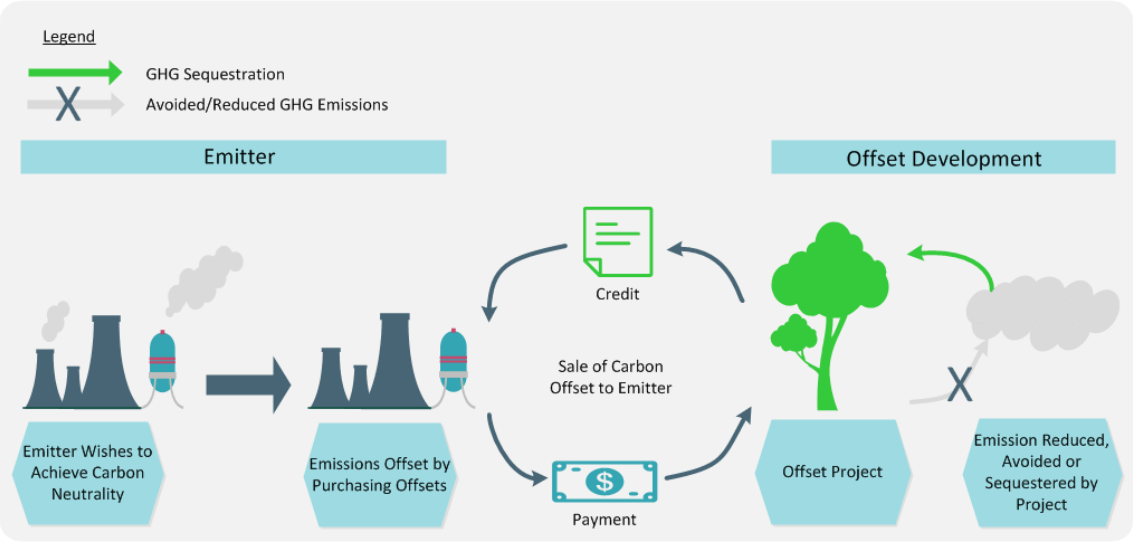

Figure 3. Carbon offset credits created from projects that reduce, avoid or sequester GHGs, can be sold to people, organizations and businesses that want to achieve emissions reductions.

Examples of activities that may generate offset credits in either the compliance or voluntary markets include the capture or destruction of methane emissions from landfills, re-establishing wetlands or planting trees to sequester carbon.

Methodologies, set out in carbon offset standards and protocols, define the rules that project developers must follow in order to create offset credits. Once offsets projects have been implemented, a project developer can sell these carbon offset credits to people, organizations or businesses that want to offset their emissions. Carbon offsetting allows GHG avoidance, reduction, and sequestration activities to occur in segments of the economy where they can be achieved most efficiently.

Ontario's carbon offset pathways

Ontario's proposed voluntary carbon offsets program is intended to be separate and distinct from the compliance offsets program under cap and trade. Voluntary carbon offset credits would not be eligible for use in Ontario's cap and trade program. Instead they would be used by government, the private sector and others to meet voluntary emissions reduction objectives (e.g., carbon neutrality commitments).

Another key distinction between Ontario's compliance and voluntary carbon offsets is the shift in focus from GHG reductions alone, to the inclusion of additional environmental co-benefits. Table 1 below illustrates the similarities and differences between Ontario's two offsets pathways.

Table 1. Ontario has proposed two distinct streams of carbon offsets.

Compliance grade carbon offsets	Voluntary carbon offsets
• A **compliance grade offset** credit is a credit for one tonne of GHG emission reductions that an entity can buy to help meet up to a maximum of 8 percent of its cap and trade compliance obligations in Ontario.	• A **voluntary offset** credit is for one tonne of GHG emission reductions which the government, private sector and others can purchase to meet voluntary emissions reduction goals (e.g., carbon neutrality commitments).
• **Compliance offsets** may be generated from projects in sectors not covered by the cap and trade program.	• **Voluntary offsets** may be generated from projects in sectors not covered by the cap and trade program**.**
• **Compliance-grade offset credits** would **be eligib**le for trading with jurisdictions that have linked their carbon market with Ontario (i.e., Quebec and California).	• **Voluntary carbon offset credits** would **not be eligible** for use in Ontario's cap and trade program.
• **Compliance offset projects** must be conducted and monitored in accordance with a protocol approved by Ontario. • Ontario is developing **compliance offset protocols** including the *Landfill Gas Capture and Destruction* protocol, currently posted to the Environmental Registry.	• Offset projects that wish to be issued **voluntary offset credits,** would be undertaken and monitored in accordance with a protocol approved by Ontario.
• Ontario's **compliance grade offsets program** is focused **exclusively on GHG reductions.**	• Ontario's **voluntary carbon offsets program** considers the **value of additional environmental, social and community benefits** in addition to GHG reductions.

Getting there

Ontario's proposed voluntary carbon offsets program would create a clear set of requirements for anyone who wants to facilitate the creation of carbon offsets projects to reduce, avoid, or sequester (i.e., capture or contain) GHGs and to sell the carbon offset credits generated from these projects.

Ontario's proposed program for quality, branded voluntary carbon offsets will position our province as a leader in a voluntary carbon offsets market. As illustrated in Figure 4 below, the program will:

- Support the government's commitment to carbon neutrality and meet annual offset demand;
- Promote additional environmental co-benefits;
- Facilitate participation by Indigenous, northern and agricultural communities and municipalities in the carbon market;
- Drive innovation and support the transition to a low carbon economy through investments in natural capital; and
- Provide a mechanism for government, private sector and others to reduce both their carbon and ecological footprints, ensuring that benefits accrue to the citizens of Ontario.

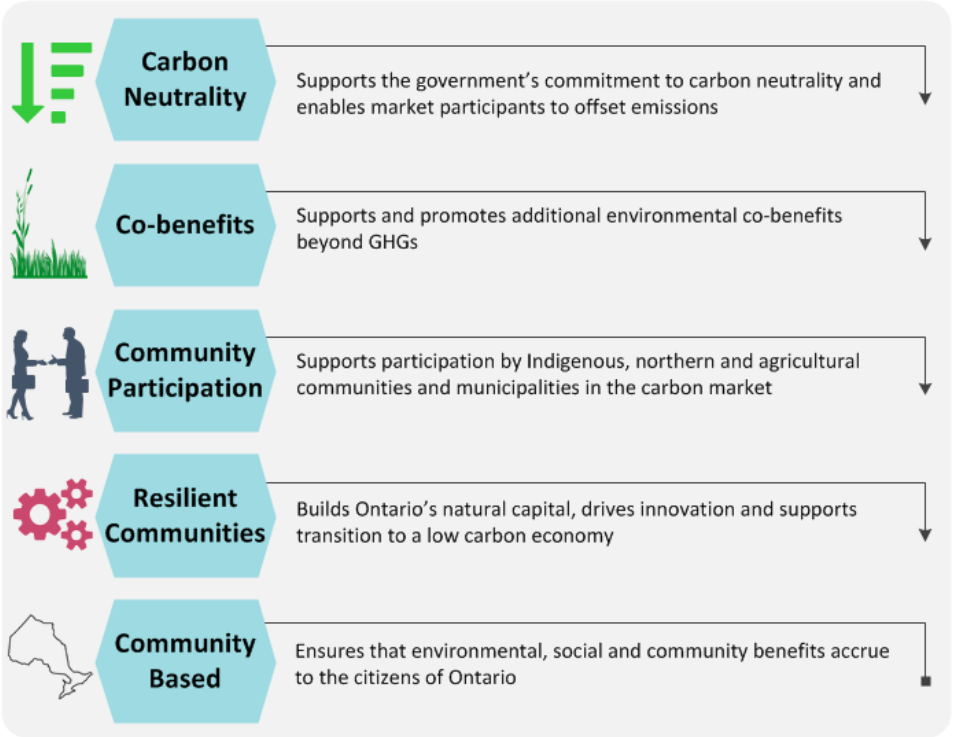

Figure 4. Ontario voluntary carbon offset program objectives.

The Ministry of the Environment and Climate Change is proposing to establish criteria for:

- Creating voluntary carbon offsets and ensuring they are credible; and
- Ensuring that voluntary carbon offsets that are generated are rigorous in quality and standard.

Project developers who wish to create voluntary carbon offset credits will be required to include environmental co-benefits in the development of their projects that support ecosystem adaptation to climate change and facilitate climate resilient communities as illustrated in Figure 5 below. Examples of such benefits include capturing and filtering rainwater to reduce flood risk, run-off and nutrient loading to the Great Lakes.

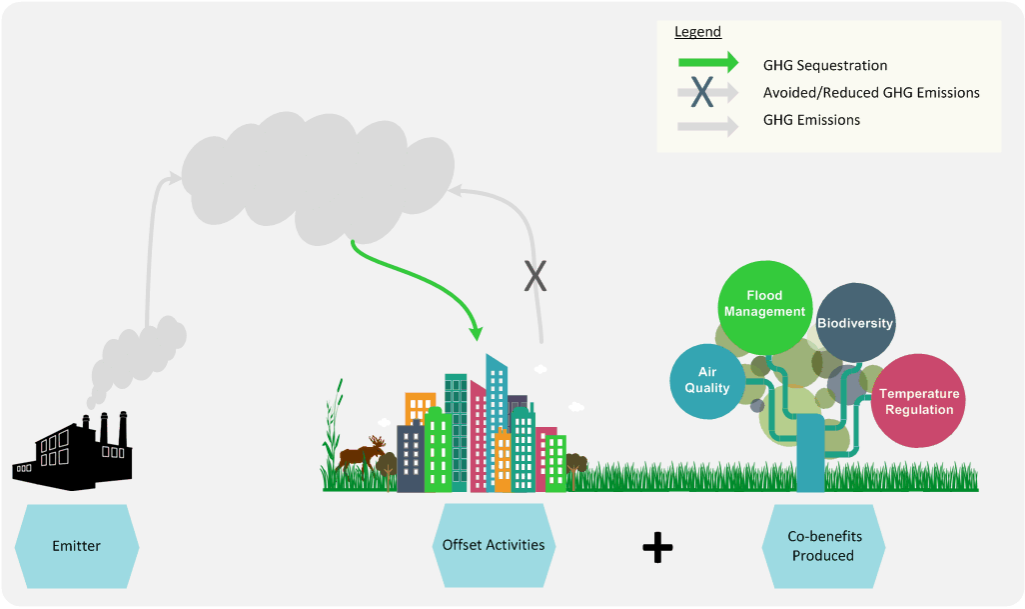

Figure 5. Voluntary carbon offsets would be measured in tonnes of CO_2e and demonstrate environmental co-benefits.

Ontario intends to develop and/or adapt a suite of methodologies, including GHG quantification standards and protocols, to support the development of projects under the voluntary carbon offsets program. These materials will support proponents in the development of projects that reduce/avoid/sequester GHG emissions and generate co-benefits.

The Ministry will establish a series of technical working groups that leverage scientific and technical expertise and traditional knowledge to inform program design and development for the government's proposed Ontario Voluntary Carbon Offsets Program. These technical working groups will provide input into standards development, methodologies and project criteria.

Existing standards and protocols that will be considered include those developed by the Climate Action Reserve (CAR), the American Carbon Registry (ACR), Verified Carbon Standard (VCS), Plan Vivo and Gold Standard as well as the ISO 14064 standards for greenhouse gas inventory and reporting.

In addition to establishing the technical working groups to inform the design of the proposed Ontario voluntary carbon offsets program, the Ministry of the Environment and Climate Change is continuing to engage with Indigenous organizations and community representatives, stakeholders and others to inform the development and implementation of the program including:

- Building knowledge and community partnerships; and
- Promoting opportunities for participation.

Figure 6 below sets out how the process described above will inform the development of the proposed the Ontario voluntary carbon offsets program.

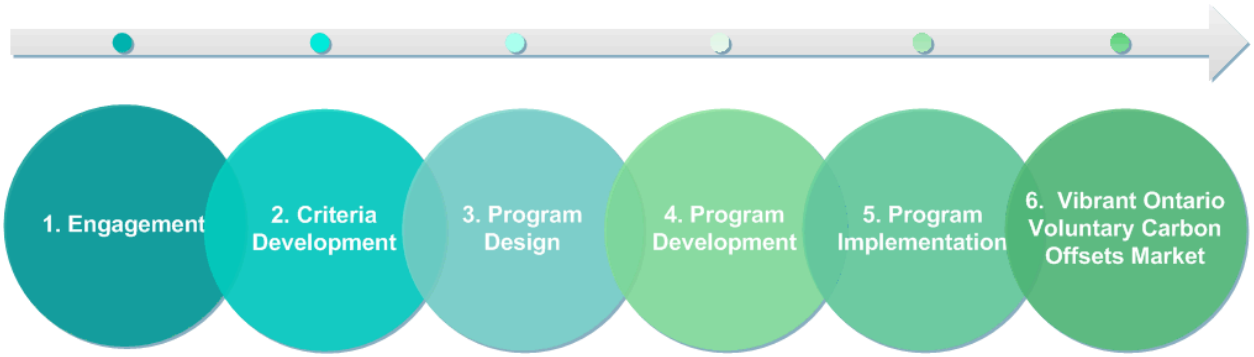

Figure 6. Ontario voluntary carbon offsets program development roadmap.

Building Ontario's natural capital

The development of a separate, quality, branded voluntary offset class provides a unique opportunity to mitigate climate change by leveraging land-use activities in the Province. By focusing on land-use to fight climate change, many environmental co-benefits such as flood management, are incorporated into the design of the program. As we consider the role of land-use in mitigating climate change in our province, we must also think of the complex interactions of natural systems and other important services they provide to Ontarians. Ecosystems provide many basic services that make human life possible such as flood management and erosion control provided by trees; air and water purification and natural cooling on hot days provided by forests and wetlands; and pollination by bees of plants and flowers that provide us with food.

These processes work together to make ecosystems healthy, sustainable, functional and resilient to climate change. Recognizing the importance of the complex interdependencies between natural and human systems and the need for a holistic, ecosystems-based approach is a message that the Ministry has heard often in discussions with Indigenous partners. As such, the voluntary carbon offsets program supports *Ontario's Climate Change Strategy*, which includes commitments to:

- Improve the resilience of our communities to climate change;
- Increase our natural capital; and
- Protect valuable agricultural lands, natural resources, and ecosystems for the future.

Increasingly, governments, communities and businesses are considering the value of these services provided by ecosystems and the value of natural capital. These services are often invisible in the way we measure economic growth, but are critical to our province's prosperity. Examples of land-use activities that build natural capital and could generate voluntary carbon offset credits may include:

- Integration of trees into the agricultural landscape to increase biodiversity;
- Building green infrastructure such as green roofs, green walls, bioswales, and reclaimed green space to: restore ecosystems; reduce landscape fragmentation; and improve inter-connected networks of green open spaces to improve habitat connectivity; and
- Re-establishing wetlands.

Project activities that can be used to generate voluntary carbon offsets, including those based on land-use, are shown below in Figure 7 below.

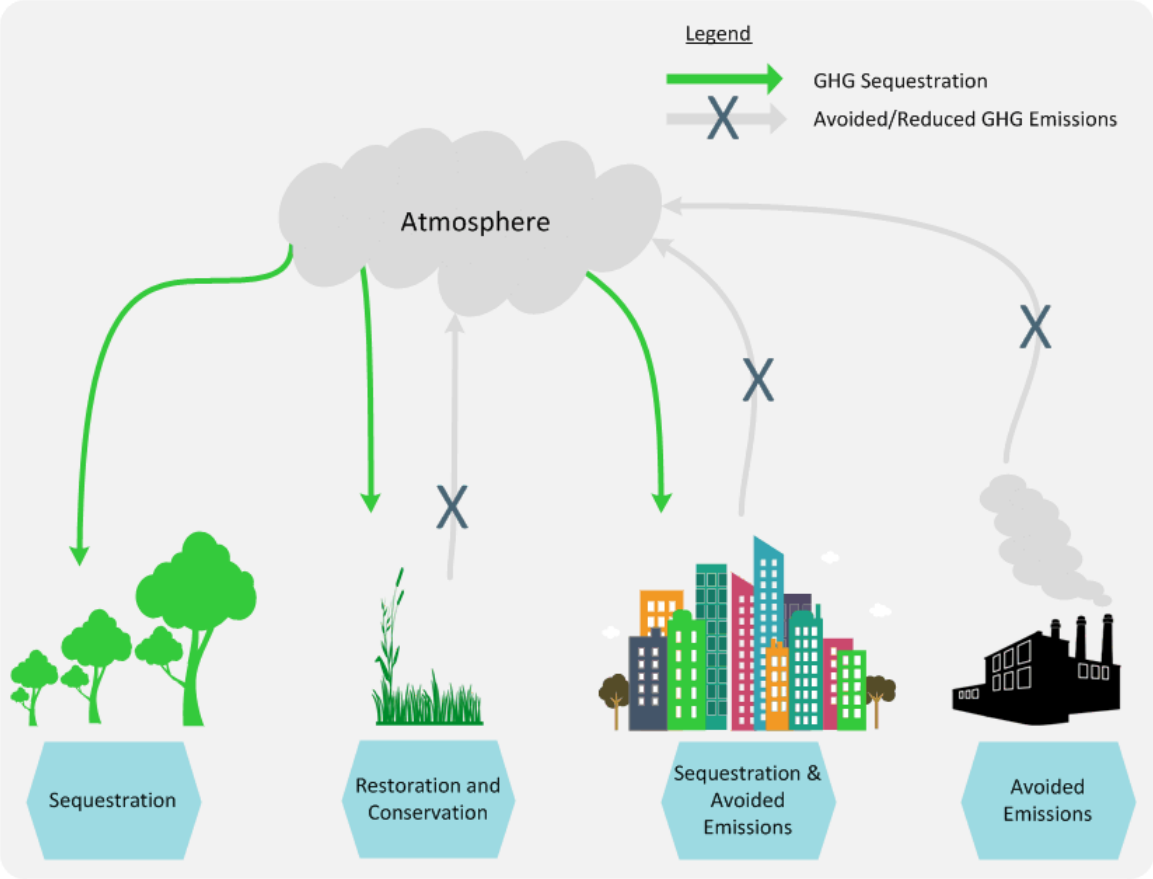

Figure 7. Various project activities can be undertaken to generate voluntary carbon offsets.

Wetland restoration and conservation

Wetland conservation and restoration activities facilitate carbon sequestration while producing additional environmental co-benefits like improved nutrient management and increased biodiversity. For example, coastal wetlands store and cycle nutrients, thereby protecting the Great Lakes from excess nutrient loading (MNRF, 2017). Carbon offset projects that target wetlands are an example of a project type that generates a carbon offset in addition to producing environmental co-benefits. Ontario has approximately 25 percent of all wetland areas in Canada, 10,000 square kilometres of which are located in southern Ontario. Wetlands in the southern part of the province continue to experience significant development pressures and cover a relatively small average area of 25 hectares (MNRF, 2017). At the same time, the value of the services provided by these wetlands – including both carbon and beyond-carbon benefits – ranges from between $15,171 to $354,632 per hectare per year depending on size and proximity to urban areas (Troy and Bagstad, 2009; MOECC, 2010). The sale of carbon offset credits created from wetlands conservation and restoration projects would recognize in part, the range of ecosystem service values that wetlands provide.

Thinking globally, acting locally

Climate change does not respect national or provincial borders and GHG emissions anywhere affect people everywhere. In addition to supporting the specific objectives that have already been noted, Ontario's voluntary carbon offsets program aligns with Canada's national climate change objectives as well as several international global development goals.

The Pan Canadian Framework on Clean Growth and Climate Change sets out a national plan to address climate change. As part of the framework, guidelines are being developed to ensure the transferability of GHG offset credits developed by different programs across the country. The proposed Ontario voluntary carbon offsets program will endeavour to incorporate the terms of this framework.

To strengthen the global response to climate change, countries have adopted the Paris Agreement, which came into force in 2016. In the Agreement, all countries have committed to working to limit global temperature rise this century to well below 2 degrees Celsius, and given the grave risks, to prevent an increase of no more than 1.5 degrees Celsius above pre-industrial levels. To this end, Canada has committed to reducing GHG emissions by 30 percent below 2005 levels by 2030 (Government of Canada, 2017; UNFCCC, 2014). Combatting climate change is a shared responsibility that requires collective action. Ontario is leading by example through its commitment to make government operations carbon neutral beginning in 2018. The proposed Ontario voluntary carbon offsets program would provide a flexible market-based mechanism that aligns with national GHG reduction goals and would enable the government, private sector and others to offset their GHG emissions.

A strong climate agreement backed by action on the ground will support the achievement of the United Nations (UN) Sustainable Development Goals (SDGs) to end poverty; build stronger economies; and safer, healthier, and more sustainable societies everywhere. In addition to Goal 13: Climate Action, many of the 17 SDGs directly involve taking action on climate change. By focusing on co-benefits beyond GHG reductions, the proposed Ontario voluntary carbon offsets program will align with many of the UN SDGs and their associated targets.

Share your views with us

Please consider the following questions and share your perspective with us:

1. Are there additional priorities related to the development of the proposed voluntary carbon offsets program that have not been considered in this document?
2. In addition to the five program objectives listed in this discussion paper (see "Getting there"), are there other objectives that you think the Ministry should consider?
3. Are there specific barriers to participation in the carbon market that the Ministry should consider when developing the proposed the Ontario voluntary carbon offsets program?
4. What is the best way for the Ministry to facilitate community participation in the proposed Ontario voluntary carbon offsets program?
5. What environmental co-benefits (e.g., flood management) should be prioritized in the proposed Ontario voluntary carbon offsets program?
6. What project types should be a priority for the Ontario voluntary carbon offsets program?
7. What actions can the Ministry take to support viable end markets for Ontario voluntary carbon offset credits?
8. Are there existing standards or methodologies that you feel the Ministry should consider when developing requirements for the creation of carbon offsets projects?

Please submit your comments through the Environmental Registry. Questions can be directed to: Vidya.Anderson@Ontario.ca.

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