

# Capturing the Economic Development Opportunity of Carbon

Total Great Lakes Carbon Market Potential 2022-2050

**The Great Lakes St. Lawrence Governors & Premiers commissioned the Global CO<sub>2</sub> Initiative at the University of Michigan to assess how the region could become a “go-to” destination for voluntary carbon offsets with economic, environmental, climate, and social benefits.** The conclusion is that the Great Lakes St. Lawrence region has many possibilities to supply both nature-based (e.g., tree planting) and engineered projects (e.g., direct air capture) into the voluntary carbon offset markets.

Fifty-two gigatonnes (1 gigaton equals 10 billion tons) of at-scale, environmentally sound, high-quality carbon storage is available in the Great Lakes region by 2050 with a revenue potential of at least \$783B USD.

Compared to the region's annual CO<sub>2</sub> emissions of approximately 1.5 gigatons, this offers a comfortable margin for balancing regional emissions while selling some of the carbon storage potential into the global carbon offset markets to generate new regional revenues and significant environmental co-benefits.

The report includes policy and other recommendations designed to maximize carbon reduction and prioritize environmental, economic, and social benefits across the region.

## 52 gigatonnes

*1 gigaton equals 10 billion tons*

of at-scale, environmentally sound, high-quality carbon storage is available in the Great Lakes region by 2050 with a revenue potential of at least \$783B USD.

### Total Great Lakes Region Carbon Offset Market Potential 2022-2050

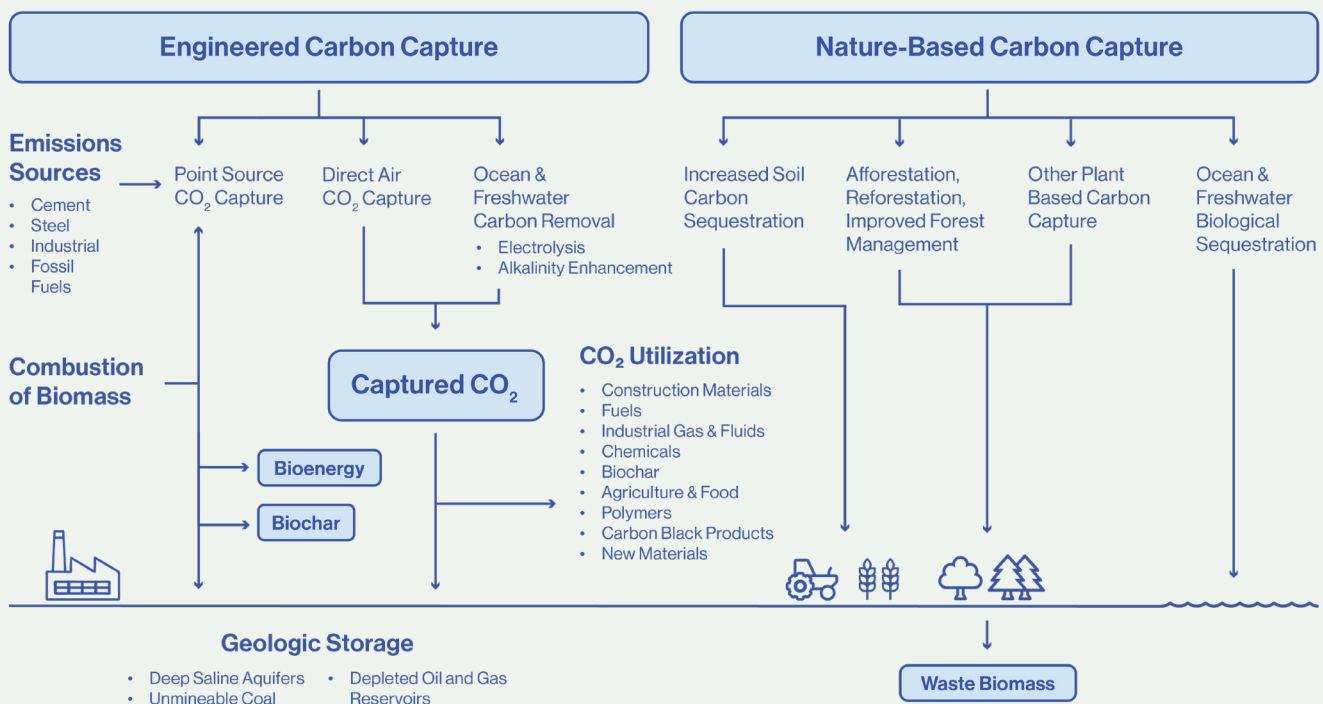
Revenue: \$205 - 783 billion      Carbon Utilization: 14.4 - 52 gigatonnes CO<sub>2</sub>

	Cumulative Revenue (billions \$USD)	Cumulative CO <sub>2</sub> Removal (gigatonnes)
<b>Reforestation - Public Lands</b>	\$0.85	0.034
<b>Reforestation - Private Lands</b>	\$5.5 - \$55	0.2 - 2.2
<b>Aggregates for Construction &amp; Concrete</b>	\$2.6 - \$12.6	0.16 - 0.79
<b>Precast Concrete</b>	\$0.003 - \$0.150	0.0001 - 0.0052
<b>Geologic Storage</b>	\$196 - \$714	14.0 - 51.0

- 1. Submit Primacy Applications to the EPA.** The region's U.S. states with significant geologic potential to store CO<sub>2</sub> in Class II or Class VI wells should submit a primacy application to the US EPA as soon as possible.
- 2. Coordinate Hard to Abate Industries.** State and provincial agencies should coordinate with "hard-to-abate industries" such as iron, steel, cement, and ideally all industry actors with substantial size for emissions abatement planning.
- 3. Hold 45Q Seminars.** The Great Lakes St. Lawrence region should hold 45Q Tax Credit, carbon emission reduction, and carbon offset seminars twice annually, so that regional companies and individuals are informed of the opportunities for carbon storage and to facilitate collaboration.
- 4. Establish a Regulated Carbon Market.** The Great Lakes St. Lawrence region should create a program similar to the Québec Cap and Trade System or Regional Greenhouse Gas Initiative (RGGI) to establish a regulated carbon market designed to maximize environmental and economic benefit.
- 5. Develop a Regional Sovereign Wealth Fund.** The Great Lakes St. Lawrence region should develop and support a sovereign wealth fund for the citizens residing in the eight states and two provinces as a means to protect the environment while accruing economic benefits for future generations.

The region's waters, abundant forests, agricultural regions, as well as vast geologic formations, hold the potential to store billions of tons of CO<sub>2</sub>. The region can take incremental steps over the next decade and beyond to position itself as a destination for high-quality carbon offsets for companies and other organizations to meet their 2030, 2040, and 2050 carbon neutrality goals. Significant regional planning is needed to harness this opportunity. If that planning starts now, the Great Lakes St. Lawrence region can fully take advantage of these opportunities and become a leading source of carbon offsets globally.

Our region can lead the world in managing carbon and turning emissions into profitable applications that also benefit the environment and the region's people. Beyond this, implementing a regional strategy for carbon removal, storage, and utilization will allow the region to protect our natural resources in perpetuity.



**Figure 1** Overview of nature-based and engineered carbon capture and storage options for the Great Lakes region.