

## Brief Overview of GWT Carbon Certification and Project Activities

Gross-Wen Technologies (GWT) has developed a novel wastewater treatment technology known as the Revolving Algal Biofilm (RAB) system. This technology is designed to treat effluent in municipal and industrial wastewater treatment facilities, resulting in significant reductions in greenhouse gas emissions and providing additional environmental and economic benefits.

### Offsets and Main Offsets

- **Primary Offsets:** The primary offsets are achieved through the reduction of greenhouse gas emissions, specifically direct avoidance of nitrous oxide (N<sub>2</sub>O) and indirect carbon dioxide (CO<sub>2</sub>) from the avoidance of constructing large grey infrastructure. The Gross-Wen Technologies' Revolving Algal Biofilm (RAB) system treats effluent at wastewater treatment plants (WWTP). This process enhances energy efficiency and captures carbon, contributing to significant emissions reductions. The GHG savings are estimated to be approximately 96% from indirect CO<sub>2</sub> avoidance (excludes N<sub>2</sub>O).

### Broader Ecological Health

- **Environmental Benefits:** The implementation of the RAB system improves aquatic ecosystems by reducing nutrient loading, leading to cleaner water bodies. It aligns with several Sustainable Development Goals (SDGs), including SDG 6 (Clean Water and Sanitation), SDG 13 (Climate Action), and SDG 14 (Life Below Water). Additionally, as nutrient regulation continues to be reduced, the system becomes especially attractive based on the limited number of technologies that perform at the required level.

### Smaller Municipalities

- **Application to Smaller Municipalities:** While the focus is on municipalities with populations greater than 10,000 due to existing anaerobic digesters, smaller municipalities with adequate infrastructure could also benefit. The scalability of the RAB system allows for adaptation to various facility sizes.

### Market Size of the Credits

- **Carbon Credit Market:** Preliminary evaluation shows algae infrastructure could save \$15.6 billion dollars, 21.2 terawatt-hours of electricity, and 29.8 million tonnes of carbon dioxide equivalent emissions per year. This analysis is based on our work which has been published in Nature: <https://www.nature.com/articles/s43247-024-01359-x>

### Geographical Working Area

- **Global Applicability:** The project is globally applicable, with particular suitability in regions with stringent water quality standards, including North America, Europe, and parts of Asia.

### Pilot Projects

- **Initial Implementations:** Pilot projects are anticipated in major U.S. municipalities with existing anaerobic digesters. These projects will demonstrate the efficacy of the RAB system in reducing GHG emissions and producing valuable byproducts like algae-based biofertilizer.

This brief provides an overview of the main components of GWT's carbon certification project and its expected impacts on ecological health, smaller municipalities, and the carbon credit market. The focus is on global applicability and the potential for widespread adoption in regions with established wastewater treatment infrastructure.