



Lo Carbon Solutions

For a Green Future

MICROALGAE-BASED LIQUID TREES: A SUSTAINABLE FUTURE

REVOLUTIONIZING URBAN GREENERY &
CARBON SEQUESTRATION



About Us

Lo Carbon Solutions, a leading climate tech company committed to addressing the pressing challenges of climate change by leveraging the potential of agricultural lands in India. Our pioneering project focuses on the generation and trading of carbon credits, empowering a cluster of farmers to participate in carbon markets and contribute to global efforts in carbon offsetting.

Lo Carbon Solutions, work to help to develop, implement and evaluate comprehensive strategies to reduce carbon emissions by transforming sustainability into competitive advantages. At LoCarbon Solutions, we partner with our growing client base to help them tackle the obstacle of climate change to create a sustainable and impartial world for tomorrow.



The Kerala University of Fisheries and Ocean Studies (KUFOS) is a university established by the Government of Kerala devoted to studies in fisheries and ocean sciences. KUFOS has its headquarters in the premises of the College of Fisheries, Panangad, near Madavana Junction along the Kochi Bypass. The College of Fisheries, established in 1979, was a constituent college of the Kerala Agricultural University.

KUFOS is the first university in India exclusively dedicated to studies in fisheries and allied disciplines. It is the primary instrument of Kerala state in providing human resources, skills and technology required for the sustainable development of fisheries and the ocean.

Project Overview



Lo Carbon Solutions, in collaboration with KUFOS, has launched revolutionary project, micro-algae-based liquid tree that combines technology and nature to combat climate change.

The liquid tree has the immense potential of micro algae to mitigate climate change. The developers, Lo Carbon Solutions, envision installations in public spaces, transportation hubs, and commercial zones to enhance urban greenery and promote cleaner air. KUFOS will be providing the R&D and supply of micro-algae and related media for this Venture.



Brief Overview of Liquid Trees

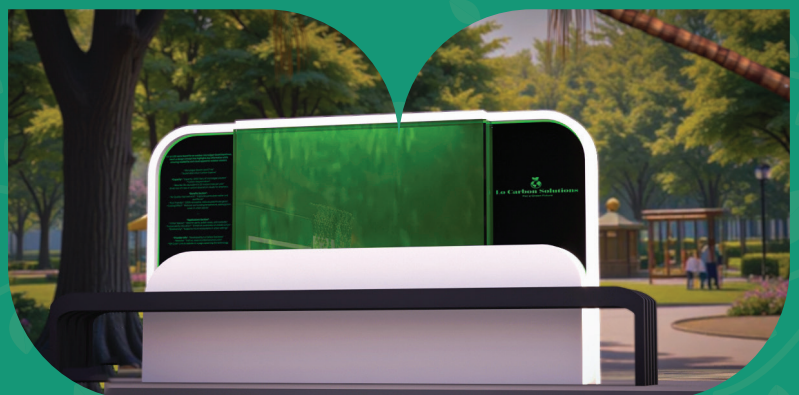
What Are Liquid Trees?

Liquid trees are advanced environmental systems that use microalgae to capture carbon dioxide (CO₂) and purify air in urban environments. They consist of transparent containers filled with water and nutrients, where microalgae perform photosynthesis.

Key Features

- Compact Design
- Continuous Operation
- High Efficiency

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Introduction to Microalgae and Its Role in Sustainability

What is Microalgae?

- Single-celled organisms that thrive in aquatic environments such as oceans, rivers, and lakes.
- Capable of rapid photosynthesis, converting sunlight, CO₂, and nutrients into energy, while producing oxygen.
- Known for their high biomass productivity and efficient carbon absorption, making them an ideal candidate for sustainable technologies.

A Key Player in the Future of Urban Sustainability

Applications

- Urban Air Purification
- Climate Action



How Microalgae-Based Liquid Trees Function ?

Microalgae as the Core Component

Compact Design for Urban Use

Minimal Resource Requirements

Continuous Air Filtration

Low Maintenance



Importance and Sustainability

Why Liquid Trees Matter

- Innovative Urban Solution
- Tackling Climate Change
- Space-Efficient Greenery

Sustainability Benefits

- Low Resource Consumption
- Adaptability to Harsh Conditions
- Scalable Green Infrastructure



Global Urbanization Trends and Need for Liquid Trees

- Urbanization & Environmental Challenges
- Liquid Trees as the Solution
 - Compact & Space-Efficient



Global Deployment Potential of Liquid Trees

- Key Regions for Liquid Tree Deployment
 - India, Middle East, Africa
- Scalability & Impact
 - Modular Design, Sustainability Initiatives, Global Partnerships



Detailed Comparison of Carbon Absorption Rates



Microalgae (Liquid Trees)

- Absorbs 10-50x more CO₂ per square meter compared to conventional trees.
- Faster photosynthesis due to simple cellular structure & higher surface area.
- Can absorb CO₂ continuously, even in controlled urban environments.
- A 1000 Litres capacity Liquid Tree (~10 sq ft area) can sequesterate 183.33 g of CO₂ per day and generate 106.70 g of O₂ per day.



Conventional Trees

- Absorb around 22 kg of CO₂ per year (per mature tree).
- CO₂ absorption fluctuates with seasons, growth phase, & environmental conditions.
- Slower in urban areas due to stressors like pollution and lack of space.
- Growth & full CO₂ sequestration potential take years to achieve.

Efficiency of Microalgae in CO₂ Sequestration & Large-Scale Potential

Microalgae Efficiency in Continuous CO₂ Absorption

- 24/7 CO₂ Absorption
- Compact System
- Scalability

Potential for Large-Scale Urban Carbon Sequestration

- High Sequestration Capacity
- Urban Integration
- Scalable Infrastructure



Liquid Trees



Commercial Benefits

Revenue Generation
Cost Efficiency
Brand and Market Positioning
Public and Private Sector Opportunities
Market Expansion

Application Areas

Urban Environments
Industrial Applications
Transportation Hubs
Residential Areas
Educational Institutions

Future

Technological Advancements
Market Expansion
Sustainability and Impact
Business Opportunities



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