



GREENFIELD HYDROPONICS GLOBAL

Turnkey System for creating Urban Organic Produce Farms



1

WHAT DO WE DO?

We build hydroponic indoor cultivation equipment.

We design industrial facilities to grow organic vegetables and hydroponic fodder in controlled environments.



Agriculture for the Future

The current global population is 7.8 billion, and it is expected to reach 9.7 billion by 2050. The current prediction is that we will need to increase global food production by up to 70% to feed everyone. To make matters worse, we will need an additional 20% of land to achieve this using current agricultural practices.

Climate change is already affecting farmers worldwide with extreme weather patterns, including floods and heatwaves, increasing in both frequency and intensity.

Furthermore, an increasing dependence on chemical herbicides and pesticides not only has a higher cost for farmers but also for natural ecosystems and the organic matter necessary to maintain soil quality.

Controlled Environment Agriculture (CEA) can help take positive steps towards a more sustainable and profitable future by reducing water consumption, the need for chemical intervention, logistics, and land use. In fact, farmers in Saudi Arabia are using CEA to grow fresh produce where it would be nearly impossible with the scorching outdoor temperatures of the country and is ideal due to abundant sunlight for solar energy.

According to a report by the Boston Consulting Group (BCG), around one-third of food produced worldwide goes to waste, and a significant portion of that loss occurs along the global supply chain. Overall, this translates to 1.6 billion tons of food, with an approximate value of \$1.2 trillion.

CEA enables locally grown and quickly marketable products that can be purchased and consumed where they are produced, with the traceability and integrity demanded by food supply chains.

Instead of shipping their products worldwide, farmers can use CEA to cultivate a wider variety of products locally. This benefits everyone involved in the supply chain, including the consumer. In addition to a better choice of products, CEA allows for consistent quality and quantity of food delivery. There is also no need to add preservatives or wax coatings to keep the produce fresh and ready for the consumer.

From an environmental perspective, the WorldWatch Institute found that the conventional food distribution system uses 4 to 17 times more CO2 than local and regional systems.

ALL GROWING SYSTEMS

FOOD FOR PEOPLE

/ 01

Hydroponic Tower

Design for leafy/strawberry/herb vertical planting

Name	Grow Tower
Type	6P7/6P10/6P15
Plant Hole	42/60/90
specification	With/without rack/water supply and drainage/water pump/LED lamp



02.

NFT Channels

ZIP System



Name	NFT Channels
Type	Single/double side design
Plant type	Green Leafy Vegetables
specification	With water supply and drainage/water pump/LED lamp

03.

Vertical Channels

Design for **planting** green leafy / herbs and green decoration.

Name	ZIP System
Type	Single/double side design
Plant type	Green Leafy Vegetables
specification	With water supply and drainage/water pump/LED lamp



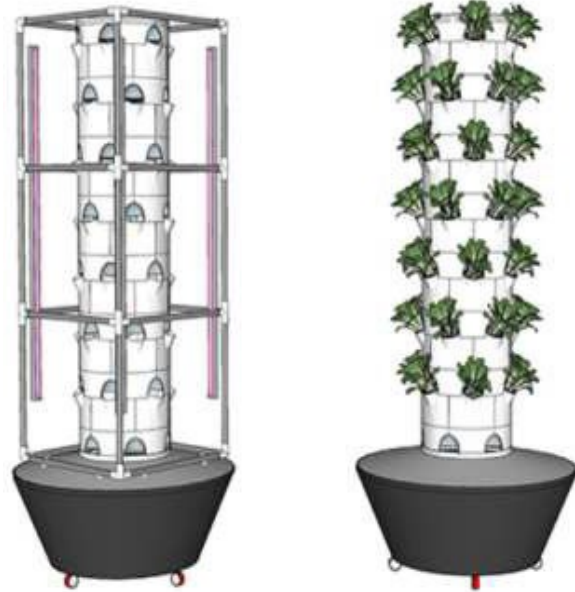
04.

Microgreens



Name	Microgreen System
Type	3-1/3-2/5-2/5-3/7-2/7-3
Daily Output	20KG-150KG
Specification	With/without water tank/water supply and drainage/water pump/LED lamp and rack/wheels

/ 01 Hydroponic Tower



System Type : Commercial/Household
 Character : with movable wheels
 Hydroponic System Type : Vertical Garden Tower
 Total Planting Layer : 7 Layers
 Total Planting Holes : 42 Holes
 Crop Type : Lettuce/Leafy Vegetables/tomato
 Water pump : AC100-240V 50/60HZ,DC12V/24W
 Water tank Volume :100L
 More vegetables:amaranth,cabbage,Spinach, etc

Sizes

68 plants per tower · 1.4 m (height) · 9 stackable modular sections
 100 plants per tower · 1.8 m (height) · 13 stackable modular sections
 132 plants per tower · 2.1 m (height) · 17 stackable modular sections
 164 plants per tower · 2.5 m (height) · 21 stackable modular sections
 196 plants per tower · 2.9 m (height) · 25 stackable modular sections



With HGH Grow Tower, you can grow up to 30% more food, 3x faster — while saving up to 90% more space and 98% more water compared to traditional growing methods. Plus, there's no digging, weeding, or watering.

You can grow food in a variety of unlikely places indoors and out — thanks to the unique design of our vertical aeroponic growing systems. Starter systems require about 225 SF, a clean water source, electrical outlet, and sunlight (or grow lights).

For most herbs and leafy greens, the seedling to harvest cycle can be as short as 21 days.

Many hydroponic farming systems limit what you can grow. But **HGH Grow Tower supports more than 150 different plants** from delicate herbs and greens to hearty fruiting crops, such as tomatoes and squash. As a result, you can adapt your crop selection strategy on the fly to meet market demand.

1

WHAT CAN WE GROW IN THE TOWERS? Fruit and Vegetables

Amaranth (vegetable type)

Arugala

Bayam

Beans: Lima, Bush, Pole, Shell, Fava, Green

Broccoli

Broccoli Raab

Brussels Sprouts

Cabbage & Chinese Cabbage

Cauliflower

Chard, all types

Chicory

Collards

Cucumbers

Cress

Dandelion, Italian

Eggplant, European & Asian

Endive

Escarole

Garbanzo Beans

Courds, edible & ornamental

Kale

Kinh Giol

Kohlrabi

Komatsuna

Leeks

Lettuce, all types

Mesclun varieties

Melons, all types

Misome

Mizuna

Mustard Greens

Ngo Fai

Okra

Pak Choy

Peas, all types

Peppers, all types

Radicchio

Sorrel

Spinach

Squash, all types

Strawberries

Tomatoes, all types



WHAT CAN WE GROW IN THE TOWERS?

Herbs

Angelica	Echinacea (Coneflower)	Nettle
Anise Hyssop	Epazote	Oregano
Basil, all types	Feverfew	Parsley (leafy types only)
Bee Balm	Flax	Passion Flower
Borage	Garlic Chives	Pleurisy Root
Calendula	Goldenseal	Pyrethrum
Catmint	Hyssop	Rosemary
Catnip	Lavender	Rue
Chamomile	Leaf Fennel	Sage
Chervil	Lemon Balm	Salad Burnet
Chives	Lemon Grass	Saltwort
Cilantro (Coriander) & Culantro	Lovage	Savory
Citrus Basil	Marjoram	Shiso
Cumin	Mexican Mint Marigold	Stevia
Cutting Celery	Mibura	Thyme
Dandelion	Milk Thistle	Valerian
Dill	Mint, all varieties	Wormwood



1

WHAT CAN WE GROW IN THE TOWERS?

Flowers

Edible

- Calendula
- Carthamus
- Dainthus
- Hyacinth Bean
- Marigolds
- Monarda
- Nasturtiums
- Pansies
- Salvia
- Scarlet Runner Bean
- Sunflowers (swarf varieties only)
- Violas



Ornamental

- | | | | |
|------------------|---------------|------------------|-------------|
| Ageratum | Celosia | Impatiens | Rudbeckia |
| Agrostemma | Coleus | Kale, ornamental | Sanvitalia |
| Amми | Cosmos | Morning Glory | Scabiosa |
| Amaranth, globe | Craspedia | Nigella | Snapdragon |
| Amaranthus | Datura | Petunia | Statice |
| Artemisia | Delphinium | Phlox | Stock |
| Aster | Digitalis | Poppy | Strawflower |
| Bells of Ireland | Eucalyptus | Polygonum | Sweet Peas |
| Bupleurum | Eurphorbia | Ptilotus | Thunbergia |
| Cardoon | Forget Me Not | Safflower | Verbena |
| Centaurea | Hibiscus | Salpiglossis | Yarrow |
| | | | Zinnia |

NFT Laminar Nutrient Flow Technique

The advantage of the NFT system that stands out in relation to other hydroponic systems is the high quality obtained in different horticultural products in a short period of cultivation, as well as in yield. The constant supply of water and nutrients allows plants to grow without stress and obtain the productive potential of the crop.

In addition, it is possible to obtain earliness, which allows a better price in the market and presence in all seasons. On the other hand, perhaps the most important advantage is the saving of water in these cultivation systems, as well as fertilizers by allowing the recirculation of the nutrient solution.



WHAT CAN WE GROW IN THESE CHANNELS?

Amaranth (vegetable type)

Arugala

Bayam

Beans: Lima, Bush, Pole, Shell, Fava, Green

Broccoli

Broccoli Raab

Brussels Sprouts

Cabbage & Chinese Cabbage

Cauliflower

Chard, all types

Chicory

Collards

Cucumbers

Cress

Dandelion, Italian

Eggplant, European & Asian

Endive

Escarole

Garbanzo Beans

Courds, edible & ornamental

Kale

Kinh Giol

Kohlrabi

Komatsuna

Leeks

Lettuce, all types

Mesclun varieties

Melons, all types

Misome

Mizuna

Mustard Greens

Ngo Fai

Okra

Pak Choy

Peas, all types

Peppers, all types

Radicchio

Sorrel

Spinach

Squash, all types

Strawberries

Tomatoes, all types



1

03. Vertical Growth Channels

Design for planting green leafy / herbs and green decoration.

For most of the time, plants have been limited to growing in the ground and have therefore had to grow horizontally: roots downwards, stems and leaves upwards. The advent and popularization of hydroponics changed all that. By isolating nutrients and minerals from the soil and adding them directly to the water, the plants were able to grow freely away from the soil, leading to the practice of "vertical farming."

The growing area of our container houses 88 panels of high-density five-channel plants. More than any other feature, these panels maximize usable space on the farm to unlock new growing possibilities, growing styles, and yield potentials. The removable panels, lightweight and resistant, are made of high-impact polystyrene suitable for food. **The five channels are paired with a cross-linked foam culture medium and a strip that absorbs drip, giving the plants a structure on which to grow, while ensuring moisture remains at the root.**

The five-channel design also allows you to maximize production, by also activating the unused space between plants:

For example, while large plants occupy channels 1-3-5, the operator can use the remaining channels 2 and 4 to grow small root vegetables. Alternatively, you can plant small crops that can be planted at each farm, also taking advantage of the entire linear growing space.



The mobile GHG ZipRacks

Tower-carrying ZipRacks save time and labor. Big crop yields lead to healthy profits. Time to break-even is measured in months, not years.

Tailored plumbing kits with automated water management systems take the stress out of making sure your plants are happy and healthy.

Proven crop yields range from 2 to 6 kilograms of produce per tower depending on the crop.

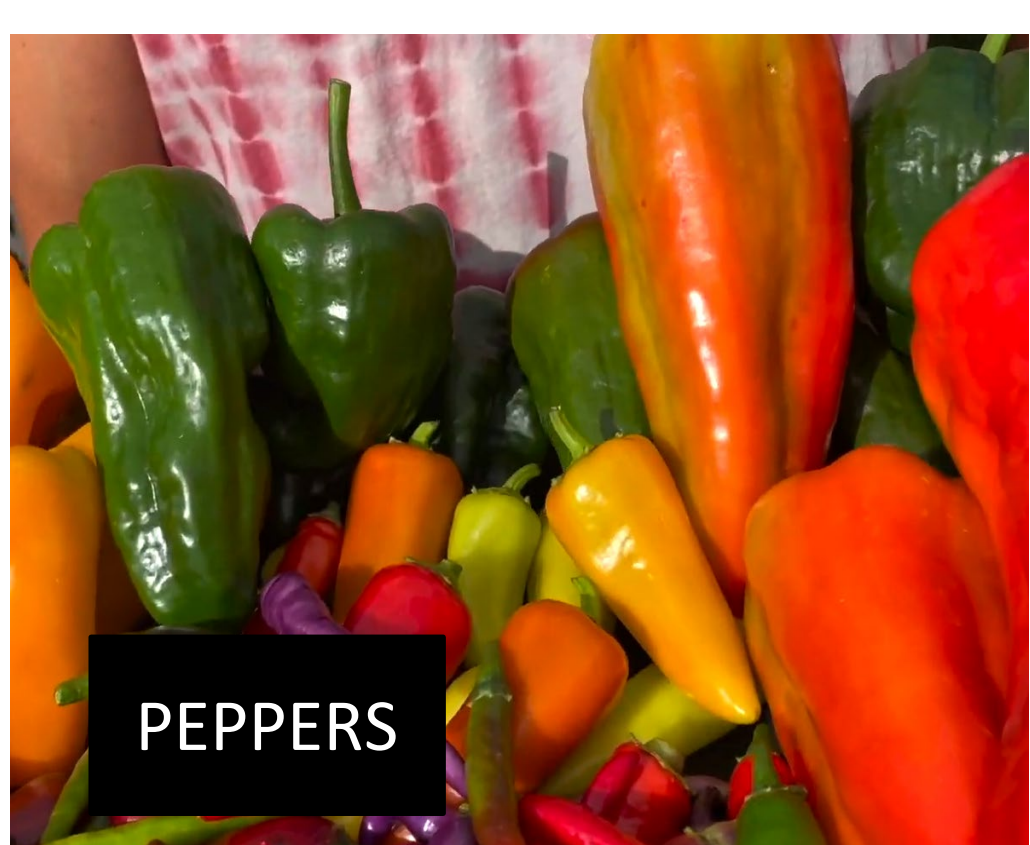
Crop turns as short as two weeks. Custom, high-efficiency LED lights maximize efficiency and crop production.



CABBAGE



BROCCOLI



PEPPERS



ZUCCINI



TOMATOES



CELERY



ZUCCINI / COURGETTE



MELONS



CULTIVATION TOWERS



STRAWBERRIES

Vertical Growth Channels

Lettuce

Adriana Butterhead	* Green Star Leaf	Ruby Sky Leaf
Aerostar Romaine	Iceberg Lettuce	* Salanova Green Butter
* Alkindus Butterhead	Lettony Leaf	Salanova Green Incised
Annapolis Romaine	Livinga Lollo Rossa	Salanova Green Oakleaf
Antonet Lollo Rossa	* Magenta Summer Crisp	* Salanova Green Sweet Crisp
Auvona Romaine	Mirlo Butterhead	* Salanova Red Butter
Bambi Bibb	Monte Carlo Romaine	* Salanova Red Oakleaf
Black Seeded Simpson Leaf	Mottistone Summer Crisp	Salanova Red Sweet Crisp
Blackhawk Leaf	Muir Summer Crisp	Salvius Romaine
Breen Romaine	Nancy Butterhead	Skyphos Butterhead
Buttercrunch Bibb	* Nevada Summer Crisp	Sparx Romaine
Celinet Summer Crisp	* New Red Fire Leaf	Spretnak Bibb
Cherokee Summer Crisp	Newham Bibb	Spritzer Oakleaf
Coastal Star Romaine	Oscarde Oakleaf	Starfighter Leaf
Concept Summer Crisp	Outredgeous Romaine	Sulu Oakleaf
Dark Red Lollo Rossa	Panisse Oakleaf	Sylvesta Butterhead
Deer Tongue Bibb	Parris Island Romaine	Tamarindo Leaf
Defender Romaine	Red Cash Romaine	Tango Oakleaf
Dragoon Romaine	Red Cross Butterhead	Teide Summer Crisp
Edox Butterhead	Red Sails Leaf	Thurnius Romaine
Fenberg Romaine	Red Saladbowl Oakleaf	* Tropicana Leaf
Firecracker Leaf	Red Rosie Romaine	Truchas Romaine
Flashy Trout Back Bibb	* Rex Butterhead	Two Star Leaf
* Fusion Green Romaine	Ridgeline Romaine	Vulcan Leaf
Garrison-Oakleaf	Rosaine Bibb	Waldmann's Dark Green Leaf
Green Forest Romaine	Rouge d'Hiver Romaine	Winter Density Bibb
Green Saladbowl Oakleaf	* Rouxai Oakleaf	

Leafy Greens

* Astro Arugula	* Koji Tatsoi
Sylvesta Arugula	* Red Kingdom Mizuna
* Wasabi Arugula	* Golden Frills Mustard Greens
Farao Cabbage Leaves	Ruby Streaks Mustard Greens
Red Express Cabbage Leaves	Scarlet Frills Mustard Greens
Claytonia	Suehlihung No. 2 Mustard Greens
* Flash Collards	Dark Green Orach
* Champion Collards	Ruby Red Orach
Dandelion	* Green Pac Choi
Eros Escarole	Li Ren Choi
Rhodos Endive/Frisee	* Red Pac Choi
* Black Magic Kale	Perseo Radicchio
Red Russian Kale	Seaside Spinach
Redbor Kale	Space Spinach
* Scarlet Kale	* Bright Lights Swiss Chard
Toscana Kale	Ruby Red Swiss Chard
* Winterbor Kale	Watercress

Herbs

Armaranth	Sweet Marjoram
Elidia Basil	Zaata Marjoram
* Genovese Basil	Common Mint
Lemon Basil	* Greek Oregano
Red Rubin Basil	Moss Curled Parsley
* Thai Basil	* Giant of Italy Parsley
Cutting Celery	Primed Rosemary
Vertissimo Chervil	Pipicha
Dolores Chives	Rosemary
Purly Chives	Common Sage
* Calypso Cilantro	Pineapple Sage
Confetti Cilantro	Green Shiso
Marino Cilantro	Britton Shiso
Goldkrone Dill	* Red Shiso
* Hera Dill	Red Veined Sorrel
Bronze & Green Fennel Leaf	Orange Thyme
Grosfruchtiger Fennel Leaf	* Summer Thyme
Lemon Verbena	* Winter Thyme



The interest in microgreens or micro-sprouts, as in sprouts, is growing more and more within the United States, we have seen how the consumption of these live foods has had a very interesting exponential growth. From our point of view, we believe that this boom may be because every time these micro vegetables are gaining more prominence in healthy eating, too, because more and more hoteliers are looking to add differentiating culinary touches that make their dishes something out of the ordinary. Be it one or the other, the important thing is that the demand is increasing and will grow more and more.



High demand product

Potential customers: hospitality, hotels, individuals

organic farming



We identified all the components. Now we will create a customized urban farms

An urban farm is a space used to grow food and plants in an urban environment. These types

of farms are placed in an indoor controlled environment. Advantages are:

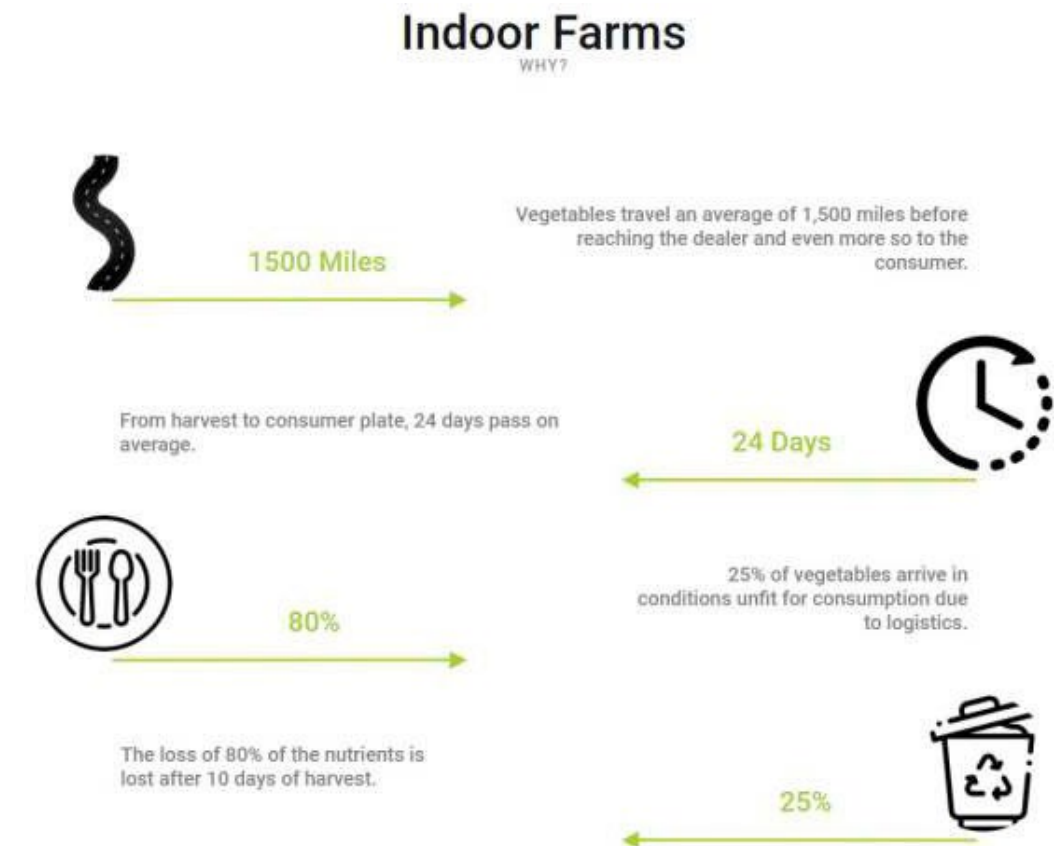
- **Reducing the carbon footprint:** By growing food locally, you reduce carbon dioxide emissions that occur in the transport and storage of food products.
- **Efficient use of water:** cultivation systems in controlled environments allow for more efficient water management, reducing its use and avoiding waste.
- **Pesticide Control:** Growing in controlled environments allows for the use of sustainable agricultural techniques, such as biological control of pests and diseases, thus eliminating the need for pesticides.
- **Food safety:** cultivation in controlled environments allows monitoring and quality control of the food produced, ensuring that it is safe and healthy for human consumption.
- **Promotion of urban agriculture:** cultivation in controlled environments promotes urban agriculture, a sustainable practice that is beneficial for the environment and the health of people living in cities.

Reasons Why Urban Farming is the Future of Agriculture

As the human population grows, more people continue to starve worldwide. Whether its rural areas or urban cities, people are hungry everywhere.

According to a report by the U.S. Department of Agriculture, there has been a substantial increase in the number of people who are bound to survive in areas with limited access to grocery stores, supermarkets or other sources of healthy food.

Since the widespread awareness of global warming, it has become almost a necessity to move towards an ecofriendly living. Adopting urban farming is one step that you can take towards sustainable life.



**Point of Use Decentralized Delivery Atmospheric Water Generators
100% Independent of existing water resources**



Greenfield Hyd



Custom-Built Standby Generators



Greenfield Hydroponic Global





URBAN FARM PROJECT PRELIMINARY SCOPE

Greenfield Hydroponics offers Project Scope, Definition, Pricing, Project Management, Installation Services, Implementation and On-Going Support to ensure a successful Urban Farm.

Whether you are reclaiming brownfields that can longer be used for any other purpose or are considering a Greenfield Greenhouse Project, our agriculture technology will meet your needs in an environmentally-friendly manner coupled with the scientific use of water-savings techniques employing drip irrigation and Atmospheric Water Generators that are 100% independent of existing and rapidly depleted groundwater resources.

Our synergistic grow systems that leverage state-of-the art hydroponic vertical grow towers, NFT Channels and ZipRacks enable 24 x 7 x 365 cycles that produce fresh, organic and tasty products grown specifically in close proximity to the market to mitigate costly freight charges, delays in delivery and reduction in spoilage.

Each Project is custom-designed to meet your crop selection requirements and budget.

Our professional design team has years of experience in AgTech that supports a multitude of varieties of crops as well as knowledge on organic growth techniques that employ nutrients that are healthy for both human and animal consumption.

Please contact our team to discuss your requirements.



Project Location: _____

Academic _____ **Commercial** _____ **Residential** _____ **Brownfield** _____

New Greenhouse _____ **Existing Building Structure** _____

Allocated Space to grow organic produce/flowers _____ **SF**

Crop Selection:

Name _____ **Anticipated Yield in lbs** _____

Name _____ **Anticipated Yield in lbs** _____

Name _____ **Anticipated Yield in lbs** _____

Business Purpose:

Off Take Agreement _____ **Wholesale** _____ **Retail** _____

Food Desert _____ **Restaurants** _____ **Non-Profits/Food Banks** _____

Knowledge of farming/agriculture **Yes** _____ **No** _____

Training Required **Yes** _____ **No** _____



CONTACT

Allan M. Olbur

224-425-9236

amo@GreenTechnologyGlobal.com

