



# consulting-global-energy

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This webpage QR code

**Global Energy LLC**

**Consulting and Strategy Services by Global Energy for Container Kiln Drying and Capstone Turbine**

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Global Energy provides consulting and strategy services for distributed energy, Capstone Turbine, renewable energy, technology, and other related fields.

**PDF Version of the webpage (first pages)**

<https://globalmicroturbine.com/consulting-global-energy.html>

## Consulting

We present data in logical, easy to understand format with links for additional research or verification of data.

Minimum contract \$4,999. Up to 10 hours of consulting. Sold as-is and provided on a best efforts basis.

All time is documented and a summary log will be provided when requested.

Unused credit may be used for a period of six months after invoice date.

Consulting is provided via telephone, email, or other media as agreed to in writing (email).

Minimum billing is 30 minutes, so it is recommended to have questions, support, and consulting for at least that period of time. References available.

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## About Global Energy LLC

Global Energy has been selling renewable energy biomass systems (biomass burners, steam turbines, and steam engines) along with lumber/pallet/firewood container mounted dry kilns for the past 30 years.

**Container Kiln:** Global Energy invented the container kiln in 1991 for dimension lumber, timber frame, poles, pallets, and a novel market of kiln-dried firewood. When incorporating baskets or a drum drier, it can also be used for drying hemp and other botanicals.

**Capstone Microturbine:** In the past 20 years Global Energy set up the worldwide secondary market for distributed energy (microturbines) focusing on the Capstone Turbine via this Global Microturbine website. Applications: Primary or backup power. Greenhouse or grow operations. Hurricane power. Forest fire backup power when the grid goes down. Waste heat can be used directly for drying hemp, firewood, and lumber in a container kiln. Cogeneration to produce both heat, hot airflow, and power for drying operations.

**ORC Organic Rankine Cycle:** Branching off into the waste-heat-to-energy field, Infinity Turbine was organized in 2008. Since then, hundreds of small turbines have been sold and put into the field. Applications: industrial and commercial waste heat, including cloud server 30C (89F) waste heat using tribo effect power generation and supercritical CO<sub>2</sub>.

**Power Solutions:** Global Energy LLC and Infinity Turbine LLC have teamed up to provide comprehensive power solutions, including developing new power production methods, like TriboElectric Technology (solid state power generation using CO<sub>2</sub> and low grade heat) and the Lithium battery powered Ground Power Unit (GPU).

**Renewable Energy:** Global is starting to compile a database of solar PV panels to determine best cost, weight to power ratios, and other key data for land and marine use.

**Dry Kilns:** With the advent of huge price spikes in lumber and kiln-dried lumber, we are now offering plans for our epic container dry kiln system, which we developed in 1991. The system has been copied by lots of groups over the past 30 years (validating its profitability and access to the small commercial sawmill proprietors).

**FileMaker Database:** The background of all operations is Filemaker. It is a sophisticated, but easy-to-use organizer. Global has developed many solutions in all areas of business and energy.

**Consulting:** Since 1985 Global Energy has been in the renewable energy field, and has extensive knowledge in all forms of renewable energy.

## History of Global Energy Since 1985

Infinity Turbine LLC is pleased to announce its consulting and analyst services.

Energy: Since 1985, I have worked in the renewable energy industry as a researcher, developing sales and markets, along with many inventions and innovations. A wide breadth of subjects and project development includes some of the following subjects.

### History

Wood Energy: From 1985 until 2008: Doing business as Global Energy, developed and sold wood energy (biomass) systems. First with selling Waterwide Gasifiers from New Zealand in 1986, and then branching off into developing and selling my own systems, including steam turbines and steam engines.

Container Kiln: In the mid 1990s, developed and sold a shipping container lumber/firewood dry kiln system (Container Kiln), which was modular and portable.

### Section 29 Non-Conventional Fuel Credit:

Also in the 1990's developed and assisted groups wanting to get tax credits for landfill gas, as well as wood gas under the Section 29 (non-conventional fuel) tax credit. As a wood energy specialist, I pointed out that wood doesn't burn, but it's actually the gas released from the wood. Many companies saved (or got refunded) millions of tax dollars.

### Non-conventional fuel tax credit

#### Capstone Turbine Secondary Market:

In 2001 started consulting and selling the Capstone Microturbine (micro distributed grid power generator) and currently buy and sell these turbines into the secondary market.

### Capstone Turbine

#### Gas to Liquids:

In 2004 formed Ocean Ethanol LLC with an investor to develop my invention of converting CO<sub>2</sub> into fuel grade ethanol, methanol, and butanol.

With a short development window, we proved we could make alcohol fuel cheaper than existing fuel prices, but investor pulled out within 6 months, since he did not see an immediate return (even though it was projected to take at least 12 months to market).

We were able to produce methanol and butanol from reversing a fuel cell (i.e. input was liquid CO<sub>2</sub>, water, and electricity, and output was alcohol).

Catalysts were developed at PNL (Pacific Northwest Labs).

Research was also done simultaneously in Italy, and a lab was able to show we could produce butanol and methanol from liquid CO<sub>2</sub> by reversing a fuel cell.

## Products and Concepts Developed

### Our Research, Development, and Product History

Since 2004 we've specialized in CO2 waste heat to energy, CO2 to fuels, and sonochemistry. The first high-tech company was Ocean Ethanol LLC which resulted in two patents and a proven process to convert liquid CO2 into fuel grade liquids such as ethanol, methanol, and butanol. Some of which involved using a catalyst, while another process took liquid CO2, water, and electricity over a reverse fuel cell to make methanol, and butanol (considered by Richard Branson as the future jet fuel).

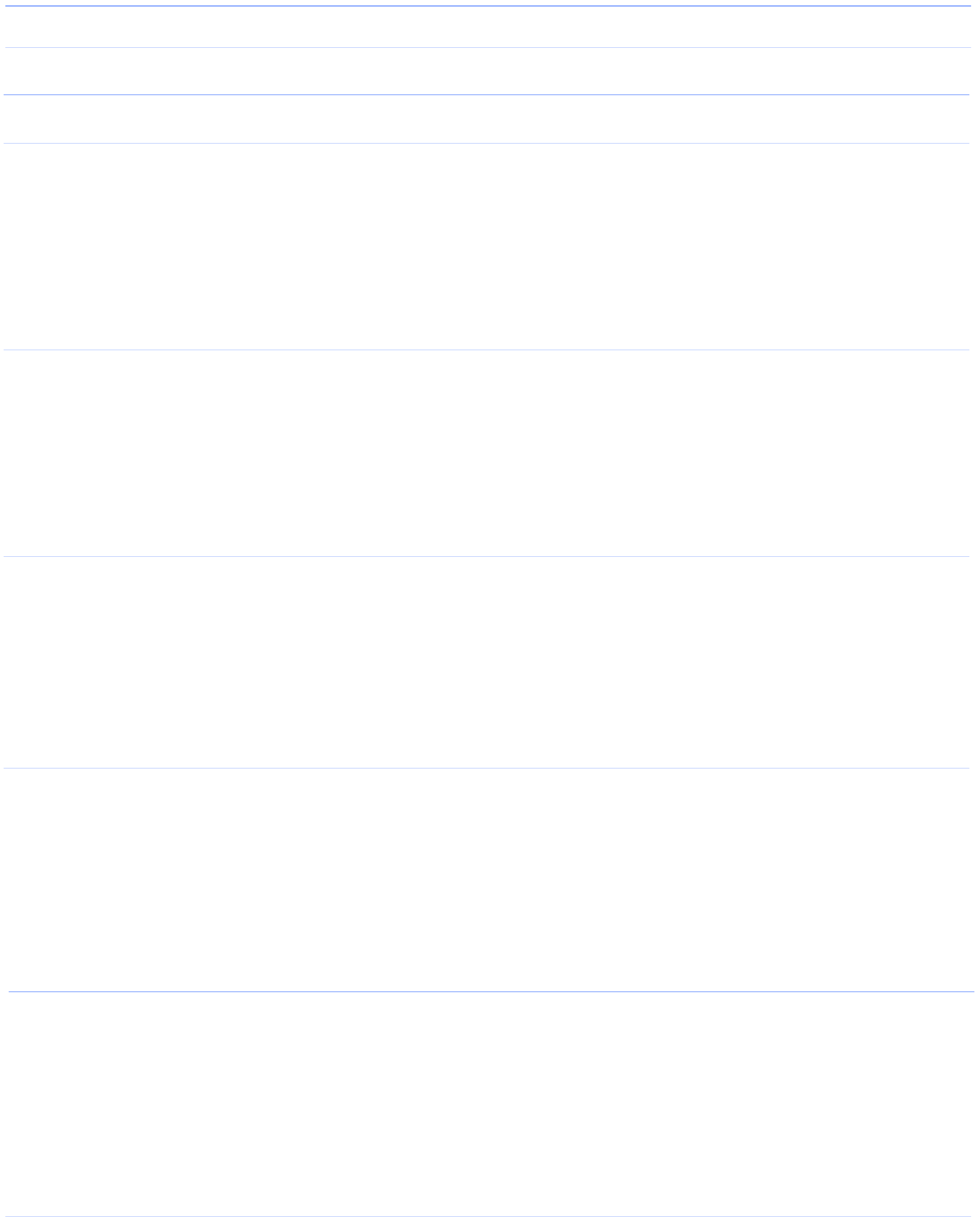
Since 2008 we've specialized in using Brayton and Organic Rankine Cycle (closed-loop phase change cycles) to make waste heat to energy, specifically using common refrigerants and carbon dioxide (CO2).

Developed supercritical phase change CO2 test demonstrator cart for developing micro turbines for supercritical CO2 with heat as low as 89F (which can be used by any solar thermal or cloud computer server farms, or even bitcoin cooling).

Since 2015 we've developed, built, and sold:

- Supercritical CO2 systems for the botanicals industry
- Experimented and developed hydrodynamic cavitation extraction system
- Developed vegetable oil solvent based extraction system for hemp and other botanical oil applications, including harvesting terpenes
- Developed home based DIY cosmetic system for formulating skin cream and oils
- Developed hydrodynamic cavitation extraction system for harvesting terpenes
- Researched spinning disc reactor for centrifugal partition chromatography
- Researched structured water for extraction, centrifugal separation, terpene harvesting, plant growth (hydroponics, fogponics) and other applications as presented by state-of-art Russian research and Viktor Schaubberger
- Researched spinning laser light for plant growth
- Experimented and developed a one moving part liquid cavitation pump
- Experimented and developed a modular fogponics system
- Experimented and developed a solid state chiller
- Experimented and developed super chilled salt water, ethanol, and CO2 systems
- Experimented with various methods of using pressure to perform extraction, including pulsed pressure, explosive nitrogen decompression, time pulsed pressure variation, and other schema
- Developed, marketed, and sold a single and dual bowl fast filter system for secondary processing of winterized extracts (system available for licensing)
- Developed a tribo electric CO2 expander with no moving parts
- Developed, built, and put into products a static generator used for collection of particulates, or esp electrostatic precipitator
- Researched and developed a comprehensive database of essential oils and botanical plants specific to the essential oil market and nutraceuticals
- Spoken to thousands of botanical and hemp investors, customers, farmers, start-ups, extractors, developers, dryers, processors, harvesters, retailers, and sales groups.
- Researched effects of LED lights on plant growth cycles and incorporated modular light design into fogponics system
- Developed Filemaker database modules for developing systems, testing, data silos, invoicing, sales, marketing, and other uses
- Using Capstone Turbine for providing co-generation to dry hemp flower

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