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about-infinity- turbine-since-2008

Infinity Turbine
LLC

About Infinity Turbine LLC



This webpage QR code

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Company Name: Infinity Turbine LLC
 Product: Waste Heat to Energy Systems and Technology
 Working Fluid: Refrigerants, water, and CO2
 Machine: ORC and ROT Radial Outflow Turbine System
 Industry: Energy
 Applications: Waste heat to power, utilities, server farms, bitcoin mining, hot geothermal
 High Technology Uses: Converting waste heat to power starting at 30C.
 Machine Features: One moving part and solid state turbine technology.
 Other Technology: Tribo effect power, hydrodynamic cavitation hot water power and extraction. Modular block technology. Gas leverage turbine for production of fuels from liquid CO2.

PDF Version of the webpage (first pages)

<https://infinityturbine.com/about-infinity-turbine-since-2008.html>

About Infinity Turbine LLC

Waste Heat Power: For years we've been hearing requests from customers who would like to use their waste heat to generate power, both on land and marine applications. To meet that demand, we formed Infinity Turbine LLC in 2008 and developed the IT10, the worlds first production 10 kw ORC (Organic Rankine Cycle) waste heat to power generator. New developments in CO2 Brayton Cycle may allow efficiencies to reach 30-50 percent. This is a huge increase from the legacy ORC process which has a system efficiency (bottoming cycle) of 5-15 percent). We now offer a CO2 Turbine Development Platform for educators and energy developers.

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Value:

The value in waste heat to power is that it's a free energy source. The advantages are fuel, or electrical savings, but also displaces fossil fuel electrical production, and hence, reduces CO2 emissions. If you have to pay for your heat source, then ORC doesn't make economic sense. If you have high-grade heat, consider a topping cycle (Brayton Cycle using CO2).

Advantages:

The advantages go much further than cost savings. Waste heat can now be used to produce rotary shaft horsepower, to spin a generator, a pump, or without any moving parts, to generate static electricity. The heat can be used many times, including CHP applications such as chillers, desalination, CO2 harvesting from the ocean (via off-the-shelf membranes), and CO2 Fluid Extraction machines (which can be used for extracting oil from botanicals, regenerating catalysts, and methanol or other alcohol production via the use of catalysts).

CO2:

Infinity Turbine LLC already develops ORC green energy systems and is developing CO2 energy modules (in high temperatures can be over 40 percent efficient in the Brayton Cycle). Infinity is seeking funding to further this development. Until we get funding, we'll continue to develop the CO2 Rankine cycle.

Triboelectric Effect:

Infinity Turbine is also working on some new remarkable technology called TriboElectric Effect. Currently we have a patent-pending oil separation device that is used in the CO2 Fluid Extraction industry. Commonly referred to as electrostatic precipitation, Infinity discovered a way to passively generate static charge using CO2. This helps to apply a static charge to entrained oil in a gas, which allows it to adhere to the first thing it comes in contact with (collection/filter vessel).

Modular Fluid Handling Device:

Infinity Turbine uses rapid prototyping and development using the patented Modular Block (National Science Foundation quoted as saying it's an Industrial LEGO) allows fast deployment into the market.

Combining Technologies:

To bring the industry up to the current technology, Infinity is blending database, monitoring, smartphone, CO2 technology and green energy together. The result is a better user experience, results and profits.

Some Projects Since 1985 Include:

- Large Steam Engine Sales and Support
- Waterwide Biomass Burner Sales, Installation and Support
- Containerized Modular Dry Kilns for Lumber, Pallets and Firewood
- Capstone Microturbine Sales, Service and Support
- Biomass Energy Systems Sales and Support
- Cavitation On Demand Heating
- ORC Turbine Design, Sales and Support
- Waste Heat to Energy Systems
- Conversion of Marine and Transportation Diesel Engines to Vegetable Oil
- Design of Solar Thermal Panels
- Non-conventional Fuel Tax Credits (old IRS Section 29 USA Federal Tax Credits)
- Design of Compact Corn Pellet Burner/Boiler and Steam Engine Generator for Farms
- ORC Publications On CD Rom and Download
- Gas and Liquid Processing Blocks
- CO2 Catalysts For Direct Conversion from Gas to Liquid Methanol and Butanol
- SDR - Spinning Disc Reactors Technology
- CO2 Energy Systems
- CO2 Fluid Extraction Technology
- Vortex Tubes Design and Technology
- Peltier Cell Solid State Chiller
- Modular Beam Frame Building System
- 3D Plastic Printer Technology
- 3D Metal Printer Technology

Full Service Shop:

We had a full machine shop with a Vertical Manual Mill, 3D printer, laser cutter, high pressure stainless steel tubing system fabrication center, welders, and a small production line. We could build prototypes and production turbines, housings, rotors, stators, pumps, CO2 systems, full ORC systems, and bolt together modular frame systems. We also have a partner contractor in Toronto, Canada that builds commercial (and ASME rated) skid mounted heat exchangers for our larger IT50 and IT250 systems.

During the pandemic, we had to close our shop in Ferndale, Washington.

We continue to have our sub-contractor relationships, so we can still build systems when needed (just not in-house).

Flow Battery Technology

With the advent of huge tax credits (\$35/kW) available to manufacturers and sellers of batteries in the USA, we sought out the best unknown grid-scale battery technology. After months of research, we settled on the CFB (Chlorine Flow Battery) using salt water (NaCl) as one of the electrolytes.

Salgenx: The flow battery. Store electrical and thermal energy simultaneously with [Salgenx](https://salgenx.com).

We first hired a chemical engineer to vet out the technology, and went from there. We have been applying our 40 years of knowledge base in everything from CO2 flows, tribo effect, turbines, phase change, magnetics, and other specialities to put together our version of the Salt Water Battery.
