

Operational Energy

Delivering cost effective power and energy solutions for mobile, aircraft ground support, and deployable applications that improve sustainability and mission performance.



Concurrent Technologies Corporation (CTC) brings together the right scientists, engineers, and subject-matter experts concurrently to deliver enduring and innovative operational energy solutions whether on the flightline, battlefield, or basecamp. With decades of experience developing technology solutions reaching back to the 1990s and the first Hybrid Electric Humvee (HE-HMMWV) to today's U.S. Air Force Research Labs' Towbarless Tow Vehicle (TTV), CTC's energy experts are prepared to take on the most current energy challenge in an ever-evolving and more power demanding environment. Specializing in hybrid power, fuel cell, high density primary or auxiliary power units, range extenders, and energy storage, CTC's goal is to deliver optimized solutions and assured outcomes for every client.



Energy and Environment

Concurrent Technologies Corporation (CTC) is an independent, nonprofit, applied scientific research and development organization. As a nonprofit, CTC partners with clients to provide the best possible advanced energy solutions. We offer extensive operational energy expertise, including:

- Deployable Power
- Flightline Equipment and Vehicles
- Energy Technology Siting
- Portable Power Systems

CTC  *Concurrent Technologies Corporation*

CTC's quality management system is certified to the ISO 9001:2015 and AS9100D:2016; CTC's environmental management system is certified to 14001:2015.

Operational Energy

Deployable Power



Generating hydrogen fuel through on-site waste conversion, eliminating the potential need to transport fuel/energy sources into the field

Successfully designed, built, and demonstrated a deployable syngas to hydrogen system capable of producing an average of 4.2 kilograms/day of hydrogen from the syngas generated by the gasification of 5 pounds of biomass per hour in a WTE system. The estimated cost to produce 1 kilogram (Kg) of Hydrogen using this CTC-developed technology is \$3.90/Kg of Hydrogen which is less than the cost to generate the same amount of Hydrogen from processes like electrolysis and natural gas reforming.

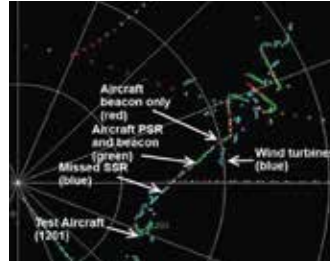
Flightline Equipment and Vehicles



Demonstrating alternative fuel use in USAF support equipment & vehicles (SE&V)

The fleet demonstration of 50/50 blend of hydro-processed renewable jet fuel certification (HRJ)/JP8 was conducted with a cross-section of pieces of SE&V at Selfridge Air National Guard Base (ANGB), Michigan and Robins Air Force Base (AFB), Georgia: 12 vehicles and 33 ground support equipment assets. The demonstration results of 50/50 blended fuels at Selfridge ANGB and Robins AFB documented no impacts or degradation to USAF SE&V operating with the blended fuels. As a result, JP-8 Mil Spec was amended to include 50/50 blended HRJ as a drop-in fuel furthering the USAF's options for using renewable energy sources.

Energy Technology Siting



Reducing the risks and operational impact caused by renewable energy encroachment on military bases and ranges

CTC engineers enhanced existing tools and developed new, advanced tools for tracking, reviewing, and evaluating new renewable energy siting projects that may impact military operational and training areas. These tools are currently being leveraged by the U.S. Navy and Air Force to provide information to the Office of the Secretary of Defense (OSD) Energy Siting Clearinghouse when determining if, and to what extent, a proposed renewable energy project will impact military operations.

Portable Power Systems



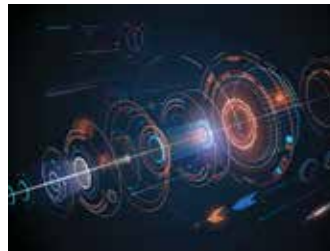
Providing quiet, light weight, and energy-efficient power and energy technologies to U.S. armed forces soldiers to reduce logistical burden

Developed a proof-of-concept engine and generator combination with hybrid and silent watch capabilities. The system is able to produce 120 volts of Alternating Current (AC) at 2 kilowatt peak power. In addition, the CTC H2000 Hybrid Generator will readily scale-up (2x's) with near negligible footprint deviation from the demonstrator as it is organically designed to do so. This system is packaged in a manner to minimize the volume and weight and represents a significant reduction in footprint in comparison to the legacy 3kW generator system.

Core Capabilities



Engineering and Prototyping



Technology Design, Development, and Integration



Unbiased Technology Assessment and Validation



Asset Configuration and/or Optimization

Contact

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