Energy Systems for battlefield mobility

Distributed and decentralised fuel production for military mobility & in country energy security

CATAGEN®

Transforming waste and power into fuel at the point of need

Explore the opportunity for SAF, Hydrogen and E-fuel production

Company Overview

CATAGEN, a UK-based, WIRED Trailblazer and Future Fifty company is redefining how and where energy is produced. CATAGEN's nextgen technologies enables defence organisations to produce fuel on-site, reducing reliance on vulnerable supply chains and improving operational agility.

CATAGEN provides two proprietary, modular reactor systems that together create an end-to-end sustainable fuel solution - ClimaHtech E-FUEL GEN and BIOHGEN.

These technologies enable the defence and security sector — enabling military bases and deployed operations to generate sustainable fuels on-site, from waste sources and renewable electricity, ensuring supply resilience wherever missions demand.

WHY DOES THIS MATTER NOW?

Mission Resilience & Energy Security

- Enables fuel independence on military bases and remote operations
- Reduces vulnerability to disrupted logistics or contested supply lines.
- Provides on-demand generation of aviation, marine, and vehicle fuels.

Sovereign Capability & Net Zero Defence

- Fully UK-developed technology — no foreign IP reliance.
- Supports NATO and MOD energy-transition goals and net-zero strategies.

Dual-Use, Deployable Infrastructure

- Systems can be permanently sited or containerised for expeditionary missions.
- Integrates with microgrids, renewables, or waste-to-energy systems.

THE TECHNOLOGY

A modular platform for multi-fuel production

ClimaHtech
BIOHGEN

A high-efficiency system that converts waste derived feedstocks into low-carbon hydrogen and biogenic CO_2

- Twice as much Biohydrogen produced per unit of renewable electricity consumed, less water used in production compared to electrolysis
- Ease and speed of deployment
- Biogenic CO_2 - a valuable by-product
- Blended synthetic fuels can be produced
- Modular - compatible with other low carbon technologies

ClimaHtech
E-FUEL GEN

Power-to-Liquid system converts hydrogen and CO_2 into drop-in hydrocarbons such as SAF / Jet Fuel, e-Diesel, and e-Methane.

- Drop in or blended fuel solution
- Produces an energy dense transportable storage medium
- Compact, transportable design suitable forbase or forward deployment
- Fully compatible with DEF STAN 91-091 and ASTM D7566 standards
- Can be combined with BIOHGEN to produce advanced biofuels

Explore how distributed fuel production can transform **energy security and resilience**

KEY BENEFITS

Energy Resilience

On-site production reduces dependency on vulnerable supply chains.

Operational Agility

Rapid-deploy modules (40-ft containers) set up within weeks.

Multi-Fuel Capability

Hydrogen, SAF, e-Diesel, e-Methane — adaptable to mission needs.

Soverign Control of IP

100 % UK-owned technologies; no reliance on foreign licences.

Integration Ready

Compatible with base microgrids and renewable power assets.

Carbon Reduction

Up to 90 % lifecycle CO_2 savings; uses biogenic CO_2 from waste.

Low Maintenance And Simple Operation

Simple operation; designed for defence-grade O&M standards.

USE CASES

USE CASES	DESCRIPTION
Base energy dependance	Produce SAF, e-diesel, and e-methane on-site from renewable electricity and waste CO_2.
Forward operations	Containerised fuel systems for contested logistics environments.
Aviation fuel supply	Generate drop-in SAF at airbases for aircraft and drones.
Naval and grounds fuel	Supply e-diesel and e-methane for tactical vehicles and vessels.
Training and testing facilities	Demonstrate full fuel cycle sustainability for MOD innovation programs.
In country	Distributed energy systems for civilian energy systems.

catagen.com/climahtech