

# The Biogenic Refinery

**Globally, an estimated 2.8 billion people rely on septic tanks, latrines or other improved non-sewered sanitation technologies.** There is a lack of solutions to adequately manage faecal sludge that collects in these technologies. This results in negative implications for public and environmental health, and economic development. There is a need for decentralized fecal sludge treatment that can be quickly deployed and affordably operated.

## Transforming Fecal Waste



The Biogenic Refinery is a thermal treatment solution using patented technology that provides treatment products such as pathogen free biochar, heat and electricity.

Thousands of hours of operational data have been collected from biogenic refineries operating on three continents, in temperatures as low as -20°C.

The Biogenic Refinery is transportable and can handle input products with moisture contents as high as 35%.



*"Fecal sludge management (FSM) services became a problem that is going unaddressed – the elephant in the (urban sanitation) room."*

WORLD BANK WATER BLOG

# Biogenic Refinery Benefits

## RAPID AVAILABILITY, SCALABILITY

A small footprint and modular design allow for fast deployment. Distributed and cascaded systems deliver high availability and scalability from 10 to 35,000 people.

## EFFECTIVE TREATMENT

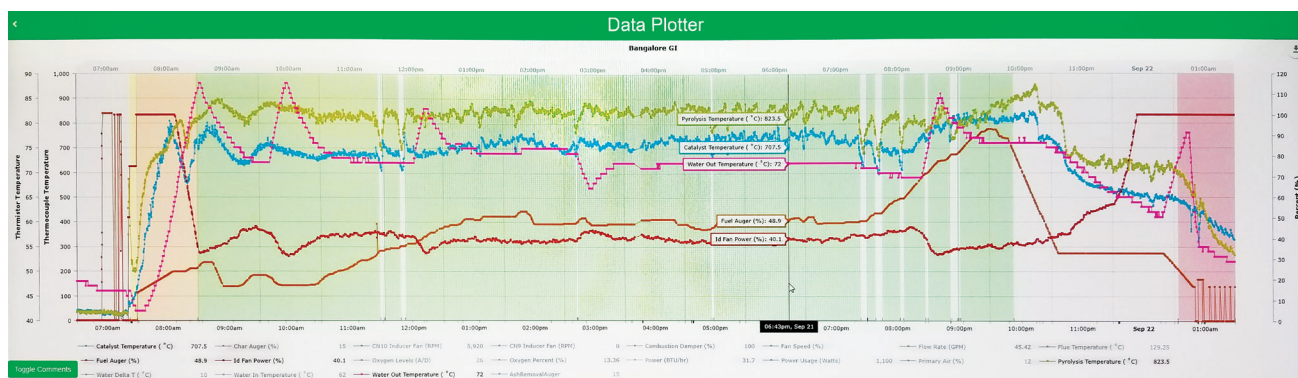
The thermal process destroys pathogens, viruses, bacteria, protozoa and helminth. It has also been shown to be effective for the removal of forever chemicals (PFAS, PFOS), pesticides, herbicides and pharmaceuticals.

## VALUABLE TREATMENT PRODUCTS

Biochar can be used for carbon sequestration, nutrient recovery, odor removal, stormwater filtration and as a soil amendment. Thermal energy can be used for pasteurization and drying of feedstocks.

## REMOTE PERFORMANCE MONITORING

The kelv'n software platform offers real-time reporting and alerts to operators and supervisors, allows for remote monitoring and provides user interaction through a mobile or web interface.



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