



Cyclone Hydrogen Furnace – H₂Cycl

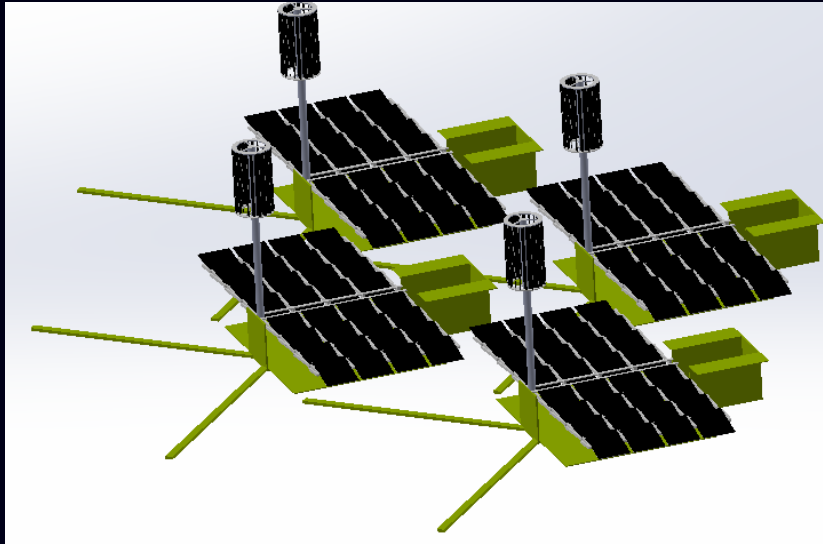
Mobile Energy Ecosystem to solve the MW-scale projects with 7% FID

Micro-Hub Concept

Patented Technology

Municipalities, industrial sites, dual use - waste disposal

Container Micro-Hubs: RES → H₂ → Waste Treatment



PEM electrolyser: 5 kW.

Hydrogen storage: 8–20 kg.

Refuelling interface: 200 bar up to
350 bar

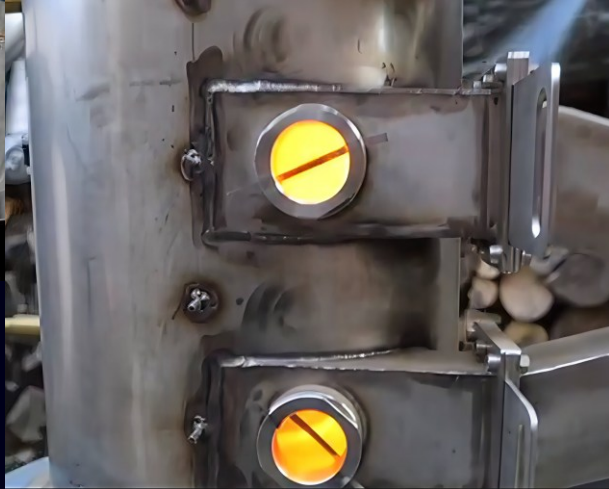
Surplus electricity beyond
electrolysis ->
H2Cycl for waste treatment
operations.

PV Solar
7 kWp photovoltaic array

Micro-Wind
2 × 5 kWp wind turbines

Total RES Output
≈52,500 kWh/year →
average ≈6 kW continuous

H₂Cycl: Design & Operating Window



Combustion Conditions

Primary Chamber

Flame temperature
1,000–1,700°C

Ignition

Tube ignited at
≈1,600°C in excess
oxygen

Flow Control

High Reynolds-number cyclonic flow from tangential fuel, material and secondary air inlets; secondary burners/air nozzles rotatable $\pm 30^\circ$ to control entrainment

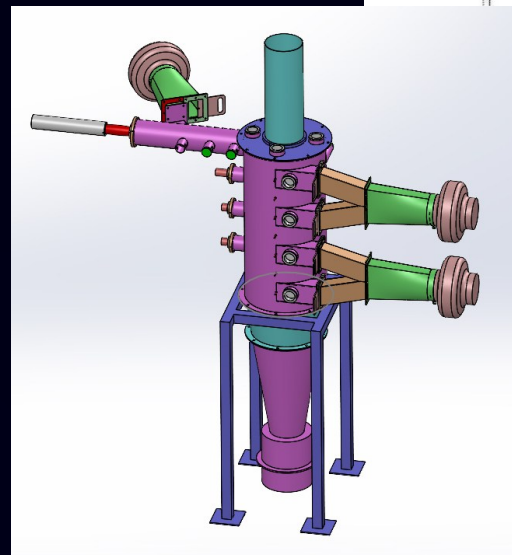
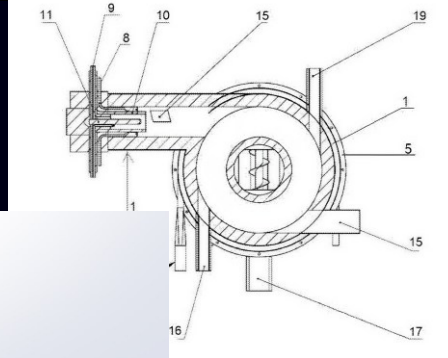
Performance, Compliance & Safety

DESIGNED FOR EU EMISSION AND RFNBO FRAMEWORKS

Waste & Emissions Performance

Design goal: **IED/waste-incineration limits** for dust, NO_x , SO_2 , HCl, HF and heavy metals even at low throughput.

H2Cycl as **chemical reactor** with automatic separation of gas and solid phases.



Electricity Metering

kWh metered at PV, wind, and electrolyser continuously

Hydrogen Metering

kg and purity of H_2 recorded for RFNBO proof

Waste & Flue Gas

kg/h waste feed + continuous flue-gas monitoring for permitting



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Join H₂Cyc: Part of a Deployable Clean Energy & Waste Solution System

Patented Core

RFNBO Compliant

Dual-Use Ready

TRL 5 → Scale

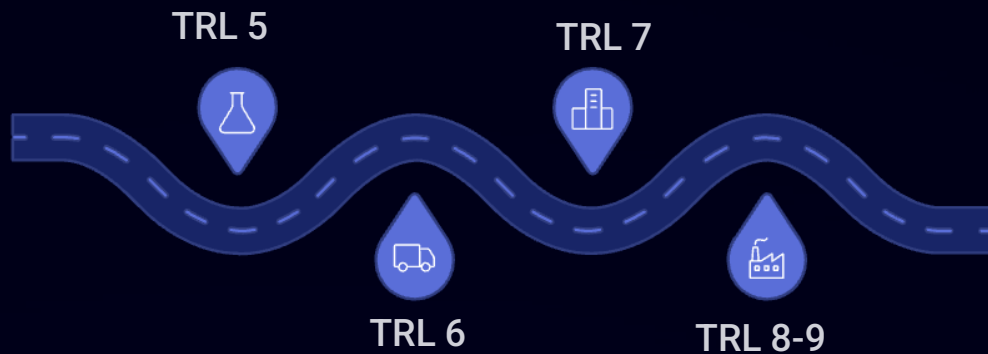


We invite you to engage on pilot deployment and co-development opportunities.

FROM TRL 5 TO DEPLOYABLE CAPABILITY

Patent **PCTSK2024050002**

Prototype validated in relevant environment



Municipal Waste Management



Industrial Parks & Chemical Sites



Defence & Civil Protection