

TECHNOLOGY DEVELOPMENTS

1. Electro Pulse Boring (EPB) for low-cost access to ultra-deep (5-10 km) geothermal heat without abrasive drill rig or deep fracking
2. Low-cost "distributed" wind-source Hydrogen and/or Ammonia C-free fuels via Self Excited Induction Generator (SEIG) and close-coupling of electrolysis stacks or NH₃ synth reactor to DC bus; simplify and consolidate controls
3. Low-cost, durable, thin-shell concrete quasi-spherical shelters for rapid, remote, on-site construction with minimum import of material, tools, tooling, expert labor: fwd base; disasters

COMPANY INTRODUCTION

Mission: Transform the world's largest industry from ~ 85% fossil to ~ 100% renewable energy sources, quickly, prudently, and profitably

Year Founded: 1990

Number of Employees: 0; contractors only

Facility Description: 13-turbine Palm Springs windplant and electrolysis plant for conversion

Product Sales: Wind-generated electricity and Hydrogen fuel; consulting; novel IP

RESEARCH NEED: RISK-SHARING FUNDING

1. \$30M: Electro Pulse Boring (EPB): Down Hole Pulse Generator (DHPG) plus progressively-deeper field drilling program; build power plant
2. \$3M: Wind-source C-free fuels: NREL CRADA to design and field test pilot plant complete wind-to-Hydrogen or wind-to-NH₃ pilot demo windplant with SEIG, close-coupling
3. Thin-shell concrete structures: Design and Build tooling by which to produce sets of FRP forms for building "domes" in the field; test structures; lease or sell forms sets

OPPORTUNITIES

1. Baseload, autonomous, inexhaustible, benign electricity and DHS heat, ubiquitous on Earth, via Microgrids, at low cost, without Grid connection or deploying big drill rig. Fast clean base energy supply
2. SEIG wind-to-H₂, NH₃: Low-cost Hydrogen and Ammonia C-free fuels from "distributed" (without Grid connection) windplants, for transport and CHP, with low-cost energy storage as H₂ and NH₃.
3. Thin-shell concrete: Low-cost, low embodied and O&M energy, multi-use structures for remote base, disaster recovery. May be Earth sheltered: safety