GeoKiln
ENERGY INNOVATION

The Next Energy Revolution:

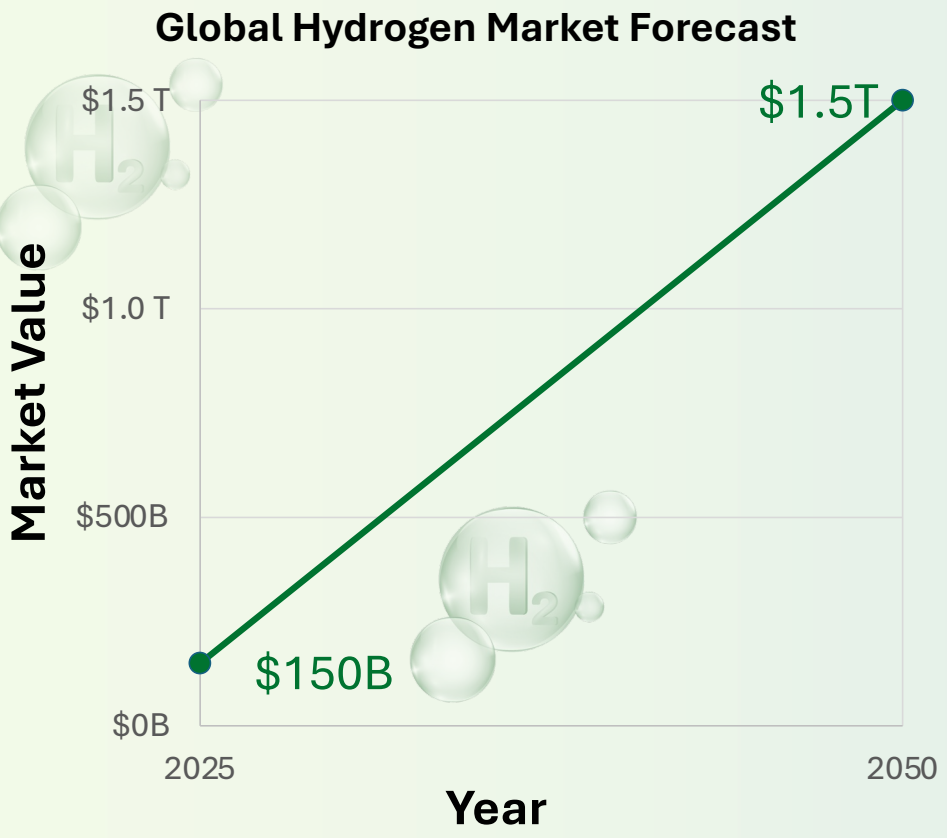
Clean Hydrogen Directly from Rock

THERMALLY STIMULATED GEOLOGIC HYDROGEN

LOW-COST • SCALABLE

MSSH™: Manufactured Subsurface Hydrogen

$1.5 Trillion Market – Supply is the Constraint

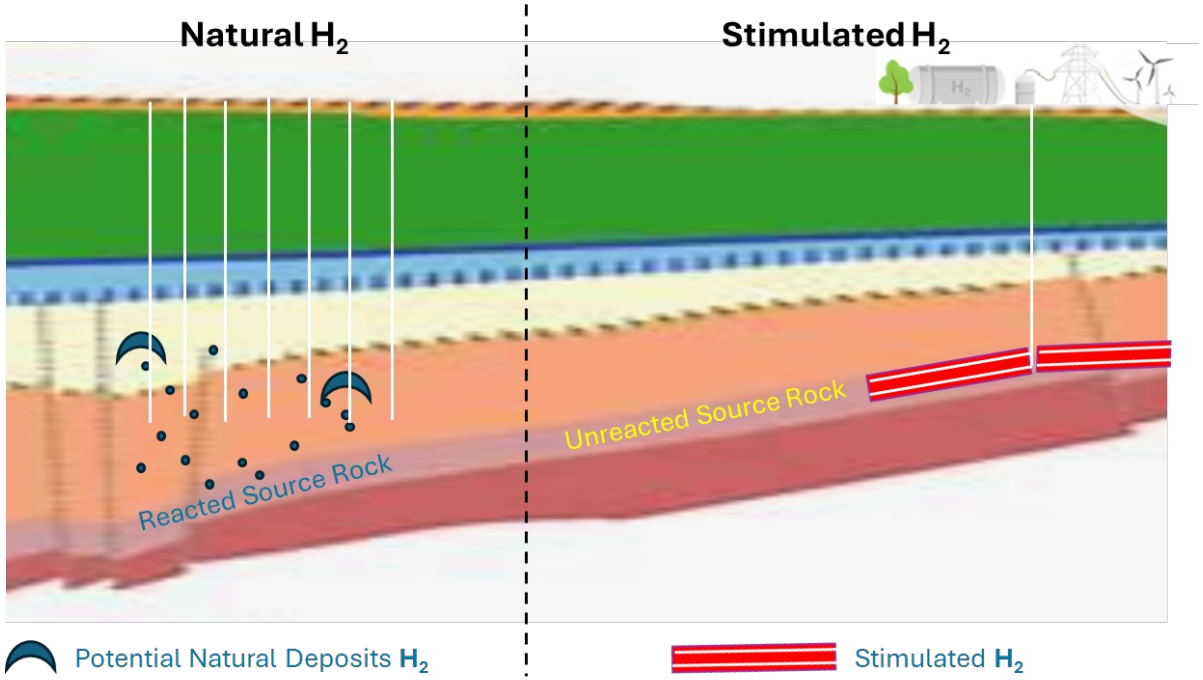


- Current methods: too costly or carbon-intensive
- Geologic H_2: huge promise but hard to find
- GeoKiln: unlocks H_2 with the right rock - reliably and at scale

Stimulated Hydrogen: Enhances Locations of Geologic H_2

Easier .. Just stimulate the shallower source rock

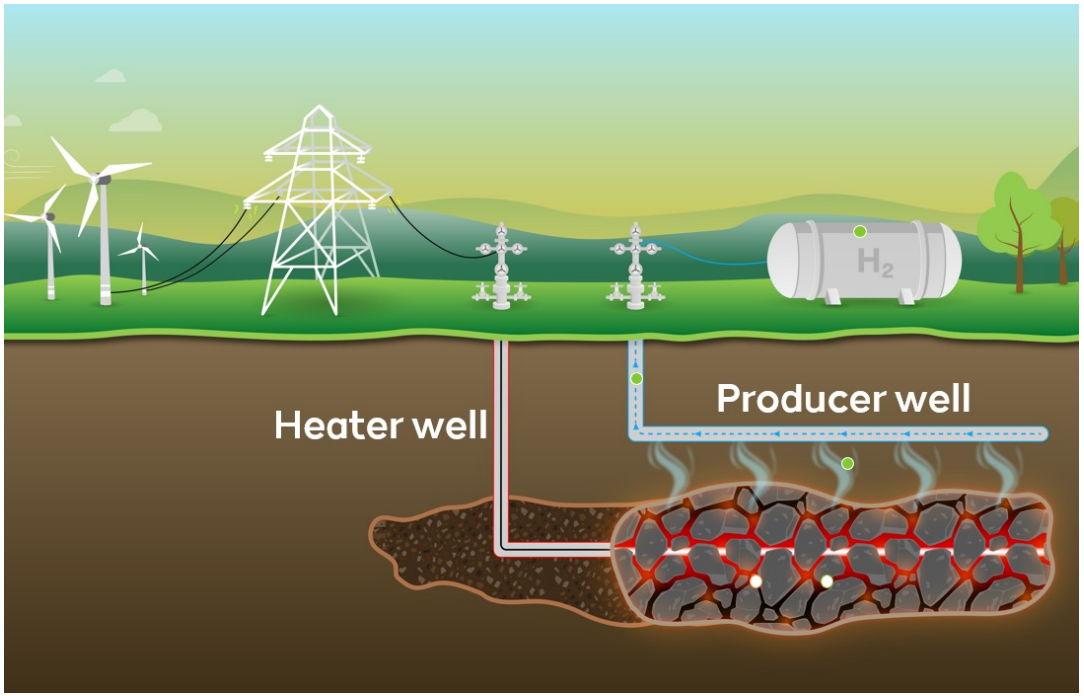
Also Known as
- Natural
- White



Also Known as
- Stimulated
- Manufactured
- Engineered

Unlocking Scalable, Net-Positive Hydrogen with Subsurface Heat

- Validated chemistry
- Proven oil & gas process
- No Water Injection
- Intermittent Power
- Proprietary subsurface simulation & engineering 1M times faster production!
- Energy Positive Process
- Off-the-shelf hardware
- Patent filing in process



GeoKiln's Manufactured Subsurface Hydrogen (MSSH™) Process places electric heaters into iron-rich rock to trigger a natural reaction that releases hydrogen

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120+ Years of Energy Leadership & Innovation

Proven industry experts with billion-dollar project delivery, breakthrough patents and early hydrogen production

Alexei Tcherniak, PhD.
Founder & CEO

- Led R&D for subsurface heating technology at Shell
- Managed large-scale capital projects and drove $1B+ impact

RICE Shell

Lorna Ortiz, PhD.
Founder & CCO

- Expert in partnerships, innovation and tech. commercialization
- Focused on technology scale-up and business development

University of South Carolina Shell

Natalia Branch, MBA
CFO

- Strategic finance leader with global energy experience
- Led finance for $1B+ portfolios with high CAPEX exposure

Shell Ambitney Group

Ernesto Fonseca, MsC
COO

- Onshore field operations manager
- Managed large-scale developments and deployed subsurface heaters in Canada and US

Shell

Robert Dombrowski, PhD.
Reservoir Engineering Excellence Advisor

- Specialist in reservoir modeling and thermal stimulation
- Led modeling of immature shales and heavy-oil formations

Michigan State University ExxonMobil Shell

Katie O'Shea, MsC
VP Market Development

- Implemented US DOE H_2 strategy as H_2 Hubs Program Mgr.
- Executed complex major capital O&G projects in Canada, Nigeria and Papua New Guinea

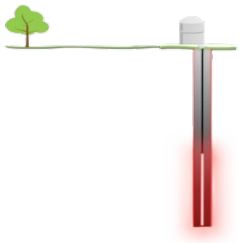
ExxonMobil U.S. Department of Energy

De-Risking Geologic Hydrogen Through a **Phased Early Production System (EPS)**

EPS Phase 1 - Validate Geology

- ✓ Retrofit existing well
- ✓ Confirm H_2 presence & collect sample

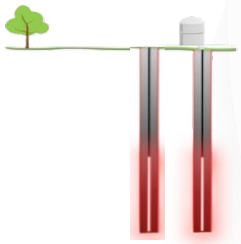
Risk retired: Is the geology suitable for thermal H_2 production?



EPS Phase 2 - Validate Productivity

- ✓ Add a dedicated heater well
- ✓ 0.6-1.5 tons /day H_2 (flared)

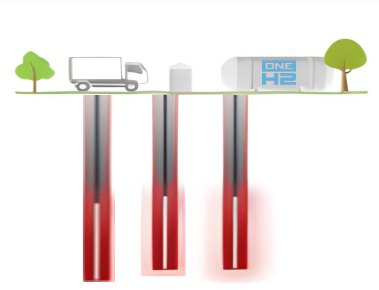
Risk retired: Is the geology productive and scalable?



EPS Phase 3 - Monetize Production

- ✓ Surface facilities & purification
- ✓ First revenue-generating asset

Risk retired: Can production be reliably monetized?



Each phase retires a specific subsurface risk, enabling financeable and repeatable hydrogen production

GeoKiln's Global Partnerships

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ALASKA

GeoKiln + Alaska: A H_2 Opportunity Built for the Arctic

The Opportunity

A unique match between Alaska's ultramafic geology, existing well infrastructure, and GeoKiln's Manufactured Subsurface Hydrogen (MSSH™) process to enable energy independence.

LAUNCH ALASKA

Energy

Replace costly imported fuels with local H_2 for power, heating, and industry.

Directly support mining, heavy industry, and oilfield services with scalable, modular hydrogen
.

Geology

Hydrogen-rich formations: Cook Inlet, Tonsina, Red Mountain, Donlin, Amber/Bokan.

Infrastructure

Extensive well network enables rapid, low-CAPEX pilot deployment.

People & Skills

Oilfield workforce + community-led development model.

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ALASKA

For Alaska, In Alaska, With Alaska…

Proposed Statutory Framework for Hydrogen and Critical Mineral Development

Permitting Classification
Authorize hydrogen-dominant projects to be permitted under existing oil and gas regulatory frameworks, with resource classification and reserves reporting aligned to SPE Petroleum Resource Management System (PRMS) standards for in-situ manufacturing processes; require projects co-producing hydrogen and critical minerals to proceed under the Application for Permits to Mine in Alaska (APMA).

Royalties and State Revenue Treatment
Establish a reduced royalty structure for hydrogen-dominant production, with state revenue participation aligned to the Alaska Mining License Tax (7% of net income), reflecting hydrogen's low environmental impact; require co-produced hydrogen and critical minerals to be taxed under AMLT for both production streams.

State Participation in Appraisal and Demonstration
Authorize state-funded or royalty-offset appraisal programs to develop shared subsurface maps for hydrogen and associated iron mineral systems, validated through drilling; provide cost-sharing and surface access for early demonstration projects to accelerate commercial validation and responsible development.

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Let’s Power the Next Energy Revolution Together

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**EPS Phase 3: Financeable, High-Return Asset

0.6-1.5 tonnes/day H_2

First revenue-generating Early Production System (2027)

Project Economics (Standalone)

- IRR ~50% (no 45V)
- IRR ~95% (with 45V)
- NPV ~$20M+
- Payback ~2.5 years

Capital Structure

- ~50% project financing
- ~50% equity (GeoKiln + JV partner)

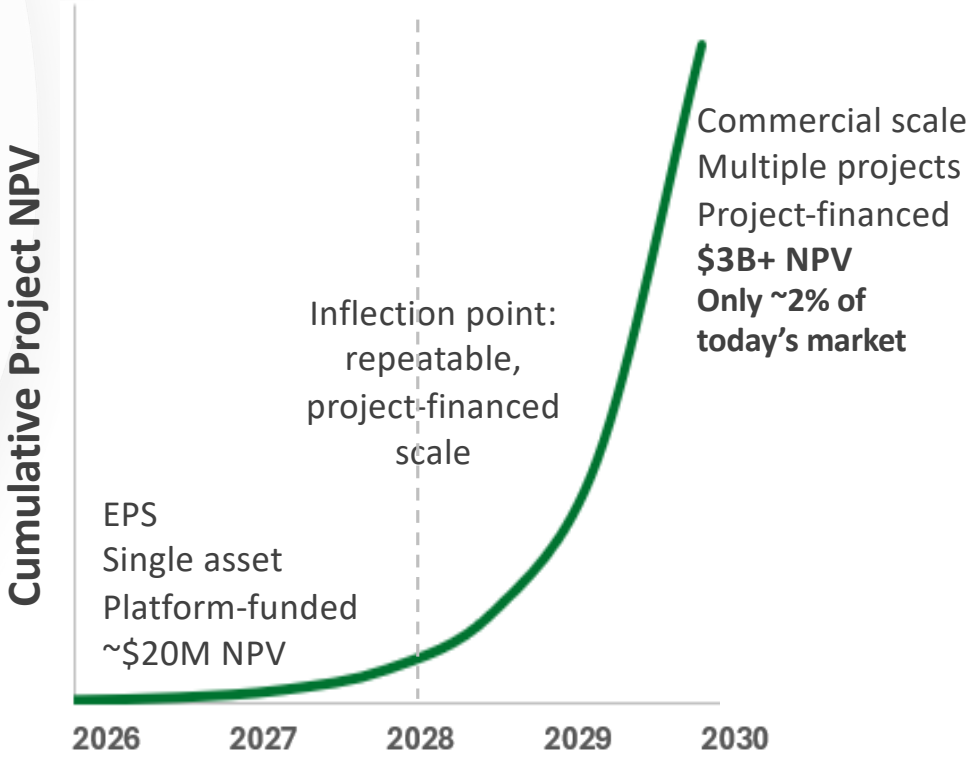
Investor Participation (Platform)

- Future projects primarily project-financed
- Pro-rata rights to participate in future rounds

Built on validated geology - designed for repeatable, project-financed growth

**A Capital-Efficient Path to Global Hydrogen Scale

- **250,000+ tonnes/year**
- **<$1.50/kg**
- **No subsidies required**
- **Low emissions**
- **Global reach:**
  - **NA, MENA, New Zealand, Europe**



Repeatable, project-financed deployment across sites drives multi-billion-dollar value