

Hybrid Renewable Energy → H₂ → Green Steel / Ammonia

Vision: New integrated analysis capability, GreenHEART, to analyze optimized GW-scale off-grid, purpose-built systems composed of wind/PV/storage tightly coupled electrolyzers, optimized for LCOH, co-located with steel/ammonia production facilities.

National Roadmap, locally optimized for green H₂ production and industry end use.

Novelty and Advantages:

- Optimized LCOH for the specific end use,
- Holistic approach, increased efficiency, & reduced capital costs,
- Independence from natural gas price volatility, grid connection permits and new large-scale transmission build outs.

Reduce risks and accelerate H₂-based pathways to industrial decarbonization.

5 DOE Lab Collaboration NREL (lead) + ANL, LBNL, ORNL, & SNL

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