ALBERTA INNOVATES

CLEAN RESOURCES

CLEAN TECHNOLOGY

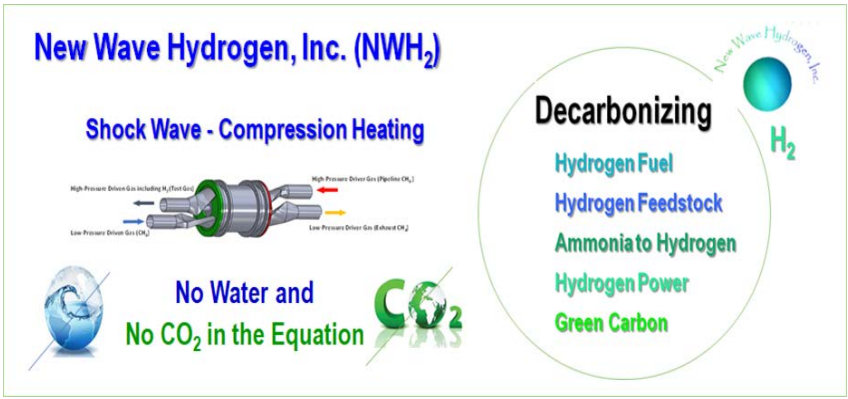
HYDROGEN

FUNDING DETAILS

A New Wave in Hydrogen Production

New Wave Hydrogen, Inc. (NWH2) brings a new energy paradigm to clean hydrogen via shockwave driven pyrolysis. The innovation uses no water, generates no direct CO2, and can move quickly to market. The HCOE award builds on an ERA-NGIF co-funded program in which NWH2 built the first Wave Reformers and designed the next scale through field pilot systems.

The outcome of HCOE funding is the initiation of a plan for successive market pilots and phased entry. NWH2 has unique attributes that can accelerate the hydrogen transition, advancing Alberta as a global leader in hydrogen production, export, and new carbon markets.



RECIPIENT:

New Wave Hydrogen, Inc.

PARTNERS:

Tangent Engineering Solutions
InnoTech Alberta
National Renewable Energy Lab
Stanford University
Simon Fraser University
University of Calgary
Norwegian Research Center

TOTAL BUDGET:

$2,372,000

AI HCOE FUNDING:

$1,000,000

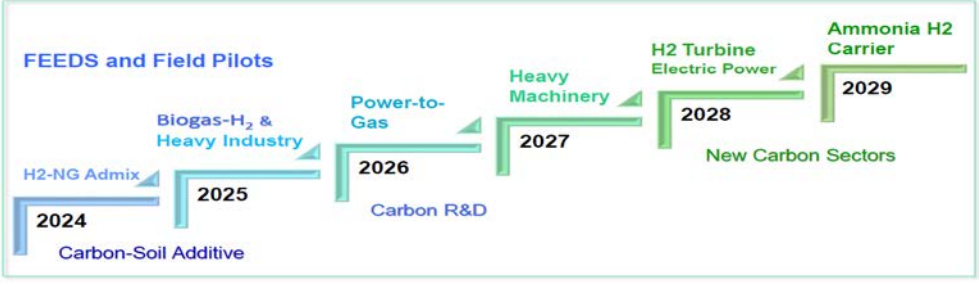
PROJECT DATES:

Mar 2023 – Aug 2024

PROJECT TRL:

Start: 4
End: 5

APPLICATION



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PROJECT GOALS

- Computational Fluid Dynamic (CFD) Modeling
- Multi-Sector Industry Advisory Board
- Sector-Commercial Integration Designs
- Wave Reformer Design Optimization
- Balance of Plant (System) Optimization
- Commercial Integration Designs
- Energy, GHG, and Cost Models
- Case Studies: Technical-Economic Assessments
- Dynamic Scenario/Benefit Tracking Model

BENEFITS TO ALBERTA

- Capacity Building – Wave Reformer Manufacturing
- Tax Revenue --Expand Demand for Decarbonized Natural Gas
- Expanded Exports for Natural Gas and Wave Reforming
- Jobs - Oil/Energy Sector Skills Transfer and Re-Training
- Added Diversity and Growth of Carbon Product Sectors
- Near-Term H2 Supply Stimulates Demand for H2 Vehicles, Turbines, etc.
- Water Savings >15,000 Liters of Water/tonne H2 Produced (relative to SMR, ATR, electrolysis)
- Net GHG Reduction 6 to 12 t More GHG Reduction /t H2 (relative to SMR/ATR)
- Low Electricity Demand – Growth is Not Dependent on New Regional Infrastructure
- No Solvents, No Hazardous Wastes

4 Publications

4 Students Trained

2 Patents

10 Project Jobs

500 Future Jobs

2 New Products/Services

1 Spinoff Company

400 kt/yr Future GHGs Reduced

CURRENT STATUS

FEB 2023

Funding approved.