# Hydrogen Policy Guidebook
# Volume IV: Directory of Hydrogen Projects by State

*Please find the spreadsheet version of this document here:* *Hydrogen Projects in the US*

## Alabama

NAME:
Alabama Linde Hydrogen Plant
Description:
Linde, a leading global producer of industrial gases, plans to build a new hydrogen plant in Washington County as part of an $83 million growth project that will have a substantial impact on the community's economy.
City, State:
McIntosh, Alabama
Lead Partner:
Linde
Feedstock:
N/A
End Use:
local merchant market
Corporate Partners:
N/A
Academic Partners:
N/A
Production Capacity:
30 tons per day of liquid hydrogen
Funding Costs:
$83 million
Sources for Information:
https://www.linde.com/news-and-media/2023/linde-increases-hydrogen-production-in-southeast-united-states ,

https://www.madeinalabama.com/2022/06/linde-plans-to-build-83-million-hydrogen-plant-in-alabama/

## Alaska

Name:
Ravn Alaska Hydrogen Planes
Description:
Alaskan Airline Ravn Alaska ordered 30 of ZeroAvia's hydrogen-electric engines and announced a partnership with Edmonton International Airport to bring hydrogen flight to Canada
City, State:
Anchorage, Alaska
Lead Partner:
Ravn Alaska
Feedstock:
hydrogen-electric engines
End Use:
Unknown
Corporate Partners:
ZeroAvia
Academic Partners:
N/A
Production Capacity:

Funding Costs:

Sources for Information: https://www.hydrogenfwd.org/united-states-of-hydrogen/ , https://simpleflying.com/zeroavia-overhaul-north-american-regional-connectivity/

## Arizona

Name:
Arizona Hydrogen

Description:
The facility, when complete, will mark Fortescue's first U.S. green hydrogen hub, consisting of an 80-megawatt electrolyzer and liquefaction facility capable of producing more than 11,000 tons of liquid hydrogen annually.
City, State:
Buckeye, Arizona
Lead Partner:
Fortescue
Feedstock:
Alkaline; 80MW electrolyzer procured
End Use:
Unknown
Corporate Partners:
100% Fortescue
Academic Partners:
N/A
Production Capacity:
Up to 11,000 tons of liquid green
Funding Costs:
~US$550 million
Sources for Information:
https://fortescue.com/what-we-do/our-projects/arizona-hydrogen ,
https://www.thehydrogenmap.com/?country=463

Name:
Green hydrogen facility
Description:
This zero-carbon liquid hydrogen facility, which will use two thyssenkrupp nucera electrolyzers to produce gaseous hydrogen, which will be converted to liquid hydrogen, is expected to be on-stream in 2023.
City, State:
Casa Grande, Arizona
Lead Partner:
Air Power

Feedstock:
10 metric ton per day facility to produce green liquid hydrogen
End Use:
Product will be sold to the hydrogen for mobility market in California and other locations requiring zero-carbon hydrogen
Corporate Partners:
Baker Hughes
Academic Partners:
N/A
Production Capacity:
10 metric ton per day
Funding Costs:
~US$550 million
Sources for Information:
https://www.thehydrogenmap.com/?country=463 ,
https://www.airproducts.com/company/news-center/2022/03/0308-air-products-green-liquid-hydrogen-production-facility-in-arizona

Name:
Pilot hydrogen production (Palo Verde nuclear power plant)
Description:
Evaluate the integration of nuclear energy with hydrogen production at the Palo Verde nuclear plant. Funding provided by the Department of Energy.
City, State:
Tonopah, Arizona
Lead Partner:
Arizona Public Service, Idaho National Laboratory, DOE's Hydrogen and Fuel Cell Technologies Office (HFTO), DOE's Office of Nuclear Energy (NE)
Feedstock:
Low-temperature electrolysis system
End Use:
Six tonnes of stored hydrogen will be used to produce approximately 200 MWh electricity during times of high demand, and may be also used to make chemicals and other fuels.
Corporate Partners:
PNW Hydrogen LLC

Academic Partners:
N/A
Production Capacity:
N/A
Funding Costs:
$20 million
Sources for Information:
https://www.thehydrogenmap.com/?country=463 ,
https://inl.gov/integrated-energy/xcel-energy-inl-hydrogen-production/ ,
https://www.energy.gov/articles/doe-announces-20-million-produce-clean-hydrogen-nuclear-power

Name:
Southwest Gas ASU Pilot Project
Description:
Southwest Gas' EMRF in Tempe will host university engineers to test pre-bottled hydrogen blends with a mixture of 20%.
City, State:
Tempe, Arizona
Lead Partner:
Southwest Gas
Feedstock:
N/A
End Use:
N/A
Corporate Partners:
N/A
Academic Partners:
Arizona State University
Production Capacity:
N/A
Funding Costs:
N/A
Sources for Information:
https://www.swgas.com/en/news/swgas-announces-groundbreaking-hydrogen-blending-pilot-program

# Arkansas

Name:
Syntex Hydrogen Power Plant
Description:
The facility will generate more than 500 MW of emission-free electricity and support Clarksville's economic development by providing low-cost and renewable electricity to energy-intensive businesses.
City, State:
Clarksville, Arkansas
Lead Partner:
SyntexNRG
Feedstock:
75 MW solar-to-hydrogen facility
End Use:
Support Clarksville's economic development by providing low-cost and renewable electricity to energy-intensive businesses.
Corporate Partners:
N/A
Academic Partners:
N/A
Production Capacity:
500 MW of renewable electricity
Funding Costs:
$250 million
Sources for Information:
https://renewablesnow.com/news/syntex-to-build-500-mw-hydrogen-power-plant-in-arkansas-823163/ , https://talkbusiness.net/2023/05/renewable-hydrogen-power-plant-to-be-built-in-clarksville-100-plus-jobs-to-come/ , https://www.powermag.com/500-mw-hydrogen-power-plant-planned-in-arkansas/

Name:
Southwest Clean Hydrogen Innovation Network (SHINe)
Description:
Supporting the development of a clean hydrogen hub across Arizona, the Navajo Nation, Nevada.

City, State:
Regional
Lead Partner:
Center for an Arizona Carbon-Neutral Economy (AzCaNE) at ASU
Feedstock:
Renewable energy to power water electrolysis
End Use:
Transportation, electricity
Corporate Partners:
174 Power Global Corp., Air Liquide, Arizona Commerce Authority, Arizona Public Service, Arizona Solar Energy Industries Association (AriSEIA), EDF Renewables, Elemental Resources, First Mode, Hyve 1, Linde Inc., Navajo Nation, NextEra Energy Resources LLC, Nevada Governor's Office of Energy, Nikola Corporation, Phoenix Hydrogen, Regional Transportation Commission of Southern Nevada, Salt River Project, SidePorch Consulting LLC, Stonebridge Sustainability Solutions, Inc., Southwest Gas, Tucson Electric Power, Vopak New Energies
Academic Partners:
Arizona State University, Northern Arizona University, University of Arizona, University of Nevada Las Vegas
Production Capacity:
N/A
Funding Costs:
Up to 7 billion
Sources for Information:
https://news.asu.edu/20221117-regional-clean-hydrogen-hub-develops-desert-southwest

Name:
Brenda Green Hydrogen Project
Description:
Production of Fuel Cell Electrical Vehicle-grade liquid hydrogen using solar thermal energy
City, State:
Brenda, Arizona
Lead Partner:
Heliogen
Feedstock:
Water via solar-powered electrolyzers

End Use:
Fuel cell electric vehicles
Corporate Partners:
Bloom Energy
Academic Partners:
N/A
Production Capacity:
20k metric tons/ year
Funding Costs:
$266 million
Sources for Information:
https://www.heliogen.com/wp-content/uploads/2023/07/Brenda-Green-Hydrogen_Project-Brief-March-2023_c.pdf,
https://www.heliogen.com/press-releases/heliogen-awarded-exclusive-right-to-lease-brenda-solar-energy-zone-for-green-hydrogen-production/,
https://www.heliogen.com/press-releases/heliogen-inc-announces-fourth-quarter-and-full-year-2023-financial-and-operational-results-appoints-new-cfo/

Name:
Gila Hydrogen Facility
Description:
Hydrogen plant aimed to produce liquid hydrogen solutions for fleet and other industries.
City, State:
Tonopah, Arizona
Lead Partner:
Gila Hydrogen LLC
Feedstock:
Renewable energy (solar, wind) powering electrolyzers
End Use:
Hydrogen for corporate fleets and distributing through industry
Corporate Partners:
Linde, NextEra Energy Resources
Academic Partners:
N/A

Production Capacity:
120 metric tons/ day
Funding Costs:
1 billion in investments
Sources for Information:
https://www.abc15.com/news/business/1-billion-hydrogen-plant-proposed-for-170-acre-site-in-far-west-valley,
https://www.bizjournals.com/phoenix/news/2023/11/02/linde-nextera-hydrogen-facility-phoenix-tonopah.html, https://www.enr.com/articles/58024-southwest-pulse-january-2024

Name:
Phoenix Hydrogen Hub
Description:
Development of first-party salt cavern storage assets, manufacturing of zero-emission battery-electric and hydrogen-electric vehicles, electric vehicle drivetrains, vehicle components, energy storage systems, and hydrogen station infrastructure
City, State:
Buckeye, Arizona
Lead Partner:
Nikola/ acquired by Fortescue in 2023
Feedstock:
Water + electrolyzers, clean plower
End Use:
Nikola's FCEV semi-trucks, as well as a combination of commercial, residential, industrial decarbonization efforts
Corporate Partners:
Nikola, TC Energy, KeyState
Academic Partners:
N/A
Production Capacity:

Funding Costs:
$24 million

Sources for Information:
https://www.phoenixhydrogen.com/, https://www.ycombinator.com/companies/phoenix-hydrogen, https://www.prnewswire.com/news-releases/nikola-and-fortescue-future-industries-commit-to-creating-american-green-energy-jobs-with-acquisition-of-nikolas-phoenix-hydrogen-hub-301881613.html

## California

Name:
Green hydrogen project
Description:
The proposed project is a roughly 75 MW solar-to-hydrogen facility using Fusion Fuel's HEVO technology, capable of producing up to 9,300 tons of green hydrogen annually.
City, State:
Bakersfield, California
Lead Partner:
Fusion Fuel, Electus Energy
Feedstock:
75 MW solar-to-hydrogen facility
End Use:
Once operational, this project will provide enough hydrogen fuel to support over 1,000 Class 8 trucks or buses per day.
Corporate Partners:
Black & Veatch, Cornerstone Engineering and Headwaters Solutions
Academic Partners:
N/A
Production Capacity:
Producing up to 9,300 tons of green hydrogen per annum including nighttime operation
Funding Costs:
~$180 million
Sources for Information:
https://www.thehydrogenmap.com/?country=463 ,
https://ir.fusion-fuel.eu/news-releases/news-release-details/fusion-fuel-and-electus-energy-announce-exclusive-agreement

Name:

Green hydrogen production facility

Description:

As the largest green hydrogen production facility on the West Coast, the plant will produce 30 metric tons of liquid green hydrogen daily. The facility will use a new 300 megawatt zero-carbon solar farm to power 120 megawatts of Plug Power's PEM electrolyzers, which split water into hydrogen and oxygen through an electro-chemical process.

City, State:

Mendota, California

Lead Partner:

Plug Power

Feedstock:

300 megawatt zero-carbon solar farm to power 120 megawatts of Plug Power's PEM electrolyzers, which split water into hydrogen and oxygen through an electro-chemical process.

End Use:

As part of building the green hydrogen production plant in Mendota, Plug is building a tertiary water treatment plant for the city. The plant will take treated sewage effluent or secondary treated water, currently being disposed of in evaporation ponds, and produce recycled or "purple pipe" water that can be used for industrial purposes such as green hydrogen production. Recycled water cannot be used for human consumption or for food crop irrigation, but can be used for irrigation of sports fields, parks, other city landscaping needs, and non-food agricultural uses.

Corporate Partners:

N/A

Academic Partners:

N/A

Production Capacity:

The plant will produce 30 metric tons of liquid green hydrogen daily.

Funding Costs:

N/A

Sources for Information:

https://www.thehydrogenmap.com/?country=463 ,
https://www.ir.plugpower.com/press-releases/news-details/2021/Plug-Power-to-Build-Largest-Green-Hydrogen-Production-Facility-on-the-West-Coast-2021-9-20/default.aspx ,
https://www.plugpower.com/plugs-california-green-hydrogen-plant-saves-water-creates-new-energy-source/

Name:

Lancaster Clean Energy Center

Description:

Located on 1,165 acres less than 100 miles from the ports of Los Angeles and Long Beach, this facility will rely on ground-mounted PV solar and alkaline electrolysis to produce 20,000 tons of renewable hydrogen annually.

City, State:

Lancaster, California

Lead Partner:

Element Resources, City of Lancaster

Feedstock:

This facility is self-sufficient, integrated and off-grid and consists of a 650 megawatt PV solar generating facility; 330 MWh battery long duration energy storage system; and a green hydrogen production plant incorporating 400 MWe of electrolyzers, liquefied hydrogen storage in up to two horizontal cylindrical tanks with a capacity of 30 metric tons each, and up to three 100 mt spherical liquefied hydrogen tanks. Onsite gaseous hydrogen storage consists of approximately 30 metric tons in a linear surface pipe storage arrangement.

End Use:

The plant will provide energy to the City of Lancaster

Corporate Partners:

N/A

Academic Partners:

N/A

Production Capacity:

~21,000 mt per annum base (expandable)

Funding Costs:

N/A

Sources for Information:

https://www.thehydrogenmap.com/?country=463 ,
https://www.elementresources.com/our-projects/lancaster-energy-center/ ,
https://ceqanet.opr.ca.gov/2024020266 ,
https://www.cityoflancasterca.org/Home/Components/News/News/10113/20

Name:

SGH2

Description:

Global energy company SGH2 green hydrogen plant will feature its pioneering technology, which uses recycled mixed paper waste to produce “greener than green” hydrogen that reduces carbon emissions by two to three times more than green hydrogen produced using electrolysis and renewable energy, and is five to seven times cheaper. The City of Lancaster will host and co-own the green hydrogen production facility, according to an MOU.

City, State:

Lancaster, California

Lead Partner:

SGH2, City of Lancaster

Feedstock:

The facility will process 42,000 tons of recycled waste annually.

End Use:

The plant will provide energy to the City of Lancaster.

Corporate Partners:

N/A

Academic Partners:

N/A

Production Capacity:

Will be able to produce up to 11,000 kilograms of green hydrogen per day, and 3.8 million kilograms per year.

Funding Costs:

N/A

Sources for Information:

https://www.thehydrogenmap.com/?country=463 ,
https://www.businesswire.com/news/home/20200520005256/en/World%E2%80%99s-Largest-Green-Hydrogen-Project-Launch-California

Name:

Solar-powered Hydrogen Project

Description:

By combining the near 24/7 carbon-free power and steam generated by Heliogen’s Sunlight Refinery

solar power generation system with Bloom Energy's solid oxide electrolyzer, the companies will produce green hydrogen that can replace fossil-derived fuels in commercial and industrial applications. The companies' first integrated solution is intended to be deployed at Heliogen's facility in Lancaster, California by the end of 2021.

City, State:
Lancaster, California
Lead Partner:
Heliogen, Bloom Energy
Feedstock:
By combining near 24/7 carbon-free power and steam, generated by Heliogen's Sunlight Refinery solar power generation system, with Bloom Energy's highly efficient solid oxide electrolyzer.
End Use:
The plant will provide energy to the City of Lancaster.
Corporate Partners:
N/A
Academic Partners:
N/A
Production Capacity:
N/A
Funding Costs:
N/A
Sources for Information:
https://www.thehydrogenmap.com/?country=463 ,
https://www.bloomenergy.com/news/bloom-energy-and-heliogen-join-forces-to-harness-the-power-of-the-sun-to-produce-low-cost-green-hydrogen/

Name:
Long Beach Fuel Cell plant
Description:
To be demonstrated at the Port of Long Beach in Southern California, FuelCell Energy's first full-scale commercial SureSource Hydrogen Plant will produce clean electricity, hydrogen, and hot water.
City, State:
Long Beach, California
Lead Partner:
FuelCell Energy

Feedstock:
The Tri-gen system uses biogas to produce renewable electricity, renewable hydrogen, and usable water.
End Use:
Was built to support the vehicle processing and distribution center for Toyota Logistics Services at Long Beach.
Corporate Partners:
Port of Long Beach, Toyota
Academic Partners:
N/A
Production Capacity:
The system is capable of generating up to 1,200 kg/day of hydrogen for fuel cell electric vehicles
Funding Costs:
N/A
Sources for Information:
https://www.thehydrogenmap.com/?country=463 , https://investor.fce.com/press-releases/press-release-details/2020/Development-of-the-FuelCell-Energy-Project-at-Toyotas-Port-of-Long-Beach-Facility-to-Proceed---California-Public-Utilities-Commission-Reaffirms-that-the-Use-of-Directed-Biogas-under-the-Bioenergy-Market-Adjusting-Tariff-BioMAT-Program-is-Permissible/default.aspx , https://www.fuelcellenergy.com/port-of-long-beach , https://pressroom.toyota.com/fuelcell-energy-and-toyota-motor-north-america-celebrate-launch-of-worlds-first-tri-gen-production-system-at-the-port-of-long-beach/ , https://polb.com/port-info/news-and-press/renewable-energy-project-powers-port-with-hydrogen-05-02-2024/#:~:text=The%20Tri%2Dgen%20system%20uses,Toyota%20and%20Lexus%20vehicles%20annually.

Name:
Boeing (RSOC demonstrator)
Description:
Sunfire has developed the world's largest commercial reversible electrolysis (RSOC) module and delivered it to U.S. partner Boeing. The energy system uses hydrogen as its storage medium and ensures the reliable supply of electricity originally generated using wind power or photovoltaic arrays.
City, State:
Port Hueneme, California
Lead Partner:
U.S. Navy Boeing Southern California Edison Sunfire

Feedstock:
The system is the first of its kind using a technology called a “reversible solid oxide fuel cell” to store energy from renewable resources (including wind and solar), producing clean, zero-emissions electricity
End Use:
The cell is being tested to determine its ability to support the energy needs of military and commercial customers.
Corporate Partners:
Sunfire, US Navy
Academic Partners:
N/A
Production Capacity:
N/A
Funding Costs:
N/A
Sources for Information:
https://www.thehydrogenmap.com/?country=463 ,
https://boeing.mediaroom.com/2016-02-08-Boeing-Delivers-Reversible-Fuel-Cell-based-Energy-Storage-System-to-U-S-Navy

Name:
Waste-to-hydrogen Project
Description:
Raven SR will initially process up to 99.9 tons of organic waste per day at Republic Services’ West Contra Costa Sanitary Landfill and produce up to 2,000 metric-tons per year of renewable hydrogen as well as power for its operations
City, State:
Richmond, California
Lead Partner:
Raven SR
Feedstock:
Raven SR to process upward of 99.9 tons of organic waste per day
End Use:
Raven plans to sell the hydrogen to commercial fueling stations, as well as to zero-emission truck

manufacturer Hyzon, and achieve a negative carbon intensity under the state's low carbon fuel standard (LCFS) credit.

Corporate Partners:

Republic Services, POWER Services, Stellar J

Academic Partners:

N/A

Production Capacity:

Create up to 2,000 metric tons per year of green hydrogen

Funding Costs:

N/A

Sources for Information:

https://www.thehydrogenmap.com/?country=463 ,
https://boeing.mediaroom.com/2016-02-08-Boeing-Delivers-Reversible-Fuel-Cell-based-Energy-Storage-System-to-U-S-Navy

Name:

SunLine Transit Agency

Description:

This company operates hydrogen powered buses working fixed routes.

City, State:

Thousand Palms, California

Lead Partner:

SunLine Transit Agency

Feedstock:

SunLine Transit Agency uses the process of electrolysis to produce hydrogen.

End Use:

Once the hydrogen is made, hydrogen and oxygen enter the bus's fuel cell, which conducts electricity to power the engine.

Corporate Partners:

N/A

Academic Partners:

N/A

Production Capacity:

Create up to 2,000 metric tons per year of green hydrogen

Funding Costs:
N/A
Sources for Information:
https://www.thehydrogenmap.com/?country=463 ,
https://www.sunline.org/projects/alternative-fuels/clean-fleet

Name:
Proposed Hydrogen Blending Demonstration Project
Description:
On March 1, 2024, SoCalGas filed an application amendment with the California Public Utilities Commission to propose a hydrogen blending demonstration project at Anteater Recreation Center. The SoCalGas project is included in a joint application consisting of five hydrogen blending demonstration project proposals coming from all four of California's investor-owned gas utilities (SoCalGas, SDG&E, Southwest Gas and PG&E).
City, State:
Irvine, California
Lead Partner:
SoCalGas
Feedstock:
It is the process of blending hydrogen into natural gas and injecting it into the natural gas infrastructure.
End Use:
The project intends to mix hydrogen (up to 20 percent) into SoCalGas' infrastructure serving the Anteater Recreation Center
Corporate Partners:
SDG&E, Southwest Gas, PG&E
Academic Partners:
University of California, Irvine
Production Capacity:
N/A
Funding Costs:
N/A
Sources for Information:
https://www.cleanegroup.org/initiatives/hydrogen/projects-in-the-us/ , https://uci.edu/hydrogen/

Name:

CEC Clean Energy Hydrogen Program

Description:

Supporting scale up of clean hydrogen projects. It mandates using hydrogen made from water via renewable energy sources.

City, State:

Statewide

Lead Partner:

California Energy Commission (CEC)

Feedstock:

Water/ electrolysis

End Use:

Broad usage of hydrogen– transportation, industrial, storage, energy industries

Corporate Partners:

SoCalGas, Sueston, Build Momentum, Zero emission industries, Private Associations, ARCHES

Academic Partners:

UCI, UCR, UCLA, Cerritos College

Production Capacity:

H2CENTRAL: ≥ 5 metric tons/day, H2ONSITE is distributed and is onsite production and use of hydrogen

Funding Costs:

~$40 million

Sources for Information:

https://www.energy.ca.gov/programs-and-topics/programs/clean-hydrogen-program, https://www.caclimateinvestments.ca.gov/clean-hydrogen-program

Name:

ARCHES

Description:

A Department of Energy hydrogen hub that supports clean hydrogen production as well as other initiatives (FCEV, infrastructure, etc).

City, State:

Statewide

Lead Partner:

ARCHES

Feedstock:
Renewable energy sources such as solar and wind, biomass, biogas
End Use:
Transportation sector, transit fleets, ports, industrial applications
Corporate Partners:
Amazon, Chevron, SoCalGas, Edison International
Academic Partners:
UC system, CSU system, tribal partners
Production Capacity:
~500 tons/ day
Funding Costs:
$1.2 billion in federal funding
Sources for Information:
https://advocacy.calchamber.com/2024/07/19/california-arches-hydrogen-hubs-project-secures-12-6-billion-in-initial-funding/, https://archesh2.org/, https://www.gov.ca.gov/2024/07/17/california-launches-world-leading-hydrogen-hub/

Name:
Valley Link Hydrogen Train
Description:
A project to build a 42-mile passenger rail line between the Tri-Valley and San Joaquin Valley using hydrogen
City, State:
Tracy -> San Joaquin, California
Lead Partner:
Tri-Valley–San Joaquin Valley Regional Rail Authority
Feedstock:
“Green” hydrogen via electrolyzer plant onsite in Tracy
End Use:
Zero emission passenger railroad
Corporate Partners:
Linde North America
Academic Partners:
N/A

Production Capacity:
5 tons/ day
Funding Costs:
$1.8 billion
Sources for Information:
https://www.valleylinkrail.com/news-releases,
https://www.mantecabulletin.com/news/local-news/valley-link-color-the-coming-rail-line-green/

Name:
ZEMU Hydrogen Train
Description:
Passenger train (FRA compliant) powered by onboard hydrogen fuel cells and batteries, running through Redlands- San Bernardino.
City, State:
San Bernardino to Redlands, California
Lead Partner:
San Bernardino County Transportation Authority (SBCTA), Stadler
Feedstock:
Onboard green hydrogen stored on train
End Use:
Passenger railroad
Corporate Partners:
Stadler Rail; Caltrans funding
Academic Partners:
N/A
Production Capacity:
One functioning 108 seat train
Funding Costs:
~$60 million
Sources for Information:
https://www.gosbcta.com/wp-content/uploads/2019/09/20190710_RPT_ZEMU_Concept_Feasibility_Study_Report_with_appendices_FINAL.pdf,
https://www.gosbcta.com/project/zero-emission-multiple-unit-zemu/

Name:

Caligosta Resiliency Center Micogrid

Description:

A microgrid to provide backup power during public safety power shutoff events, using green hydrogen fuel cells and lithium ion batteries

City, State:

Calistoga, CA

Lead Partner:

Energy Vault and PG&E

Feedstock:

Electrolytic green hydrogen

End Use:

Emergency power for municipal and community facilities

Corporate Partners:

Plug Power, Chart Industries

Academic Partners:

N/A

Production Capacity:

8.5 MW peak power

Funding Costs:

$28 million

Sources for Information:

https://www.energyvault.com/projects/calistoga, https://www.businesswire.com/news/home/20250401457593/en/Energy-Vault-Achieves-Successful-Close-of-%2428-million-in-Project-Financing-for-the-Calistoga-Resiliency-Center-the-Worlds-First-Ultra-Long-Duration-Hybrid-Green-Hydrogen-Energy-Storage-Microgrid-serving-Californias-PGE

Name:

Golden Empire Transit

Description:

A transformation of Bakersfield's transit line to hydrogen fuel cell powered buses. They are supported by onsite hydrogen fueling stations.

City, State:

Bakersfield, CA

Lead Partner:

Golden Empire Transit District
Feedstock:
Onsite hydrogen station, sourced via fueling infrastructure
End Use:
Public transit line
Corporate Partners:
Nikkiso (fueling station)
Academic Partners:
N/A
Production Capacity:
10 Hydrogen buses
Funding Costs:
~$4.3 million
Sources for Information:
https://www.getbus.org/,
https://www.getbus.org/wp-content/uploads/2023/08/RFPG133-Hydrogen-and-EV-Charging-System-2.pdf

## Colorado

Name:
Xcel Energy Production Hub – Eastern Colorado
Description:
Xcel Energy proposes building dedicated hydrogen pipelines to serve its power generation facilities and large users in the refining, transportation, and industrial sectors as well as for potential cryogenic liquefication for high-impact users in the Denver area.
City, State:
Eastern Colorado
Lead Partner:
Xcel Energy
Feedstock:
N/A

End Use:
Hydrogen pipelines to serve its power generation facilities and large users in the refining, transportation, and industrial sectors
Corporate Partners:
N/A
Academic Partners:
N/A
Production Capacity:
N/A
Funding Costs:
N/A
Sources for Information:
https://energyoffice.colorado.gov/sites/energyoffice/files/documents/Control%20Number%202779-1540_WIH2_Concept%20Paper%20redact%20V5.pdf

Name:
Wind2H2 demonstration project at NREL
Description:
A real-world demonstration system that integrates wind turbines (and PV) with electrolyzers to convert renewable electricity into hydrogen. It stores hydrogen for fueling or electricity generation during peak demand, and investigates efficiency, cost, and system-level integration with variable energy sources.
City, State:
Boulder (National Wind Technology Center near Golden/Boulder), Colorado
Lead Partner:
National Renewable Energy Laboratory (NREL), in partnership with Xcel Energy
Feedstock:
Wind electricity (with added PV electricity) is used as the energy feedstock to electrolyze water into hydrogen.
End Use:
Stored hydrogen for use at an onsite fueling station; Conversion back to electricity via hydrogen internal combustion engine or fuel cell to supply the grid during peak hours.
Corporate Partners:
Xcel Energy, Proton Energy Systems (provided PEM electrolyzers), Teledyne (provided alkaline electrolyzer)

Academic Partners:
N/A
Production Capacity:
Hydrogen produced via: 33 kW alkaline electrolyzer and two HOGEN 40RE PEM electrolyzers; Wind turbines generating: northern Power Systems 100 kW and bergey 10 kW.
Funding Costs:
Funded by the U.S. Department of Energy's Office of Energy Efficiency & Renewable Energy (EERE), in partnership with Xcel and NREL; Specific total project cost not stated in public fact sheets.
Sources for Information:
https://www.osti.gov/biblio/993651, https://www.nrel.gov/hydrogen/wind-to-hydrogen, https://www.power-eng.com/renewables/wind-energy/nrel-xcel-energy-partner-on-wind-to-hydrogen-project/,

## Connecticut

Name:
Nel Hydrogen Expansion Project
Description:
The expansion will bring annual production capacity towards 500 MW in 2025, a significant increase for the company. Nel's CEO, Håkon Volldal, said, "This is an important milestone for Nel. With this expansion, we will increase PEM production capacity substantially and simultaneously reduce stack cost and improve stack efficiency."
City, State:
Wallingford, Connecticut
Lead Partner:
Nel Hydrogen
Feedstock:
N/A
End Use:
The development of the ~500 MW PEM production line will be a substantial contributor to further expansion plans in the US, where developing a quality production concept is crucial for preparing Nel's planned Gigafactory.
Corporate Partners:
N/A

Academic Partners:
N/A
Production Capacity:
~500 MW PEM
Funding Costs:
N/A
Sources for Information:
https://nelhydrogen.com/articles/in-depth/expanding-production-capacity-in-wallingford/

## Delaware

Name:
Versogen Electrolyzer Project
Description:
Versogen is moving development of its prototype electrolyzer stacks and expanding production of their patented anion exchange membranes to a lab at FMC Stine Research Center in Newark
City, State:
Newark, Delaware
Lead Partner:
Versogen
Feedstock:
N/A
End Use:
Versogen has been developing a commercial version of its electrolyzer, which separates hydrogen and oxygen from water, and doesn't produce a harmful carbon dioxide byproduct.
Corporate Partners:
N/A
Academic Partners:
University of Delaware
Production Capacity:
N/A
Funding Costs:
N/A

Sources for Information:
https://delawarebusinesstimes.com/news/versogen-expansion-fmc/ ,
https://www.hydrogenfwd.org/united-states-of-hydrogen/

## Florida

Name:
FPL Cavendish NextGen Hydrogen Hub
Description:
Co-located with the FPL Okeechobee Clean Energy Center, this system will be composed of five Cummins HyLYZER-1000 PEM electrolyzers for a total of 25 MW, or 10.8 tons of hydrogen produced per day.
City, State:
Okeechobee, Florida
Lead Partner:
Florida Power & Light Company (FPL)
Feedstock:
The FPL Cavendish NextGen Hydrogen Hub will leverage solar energy to power the electrolysis process that produces "green," or carbon-free, hydrogen from water.
End Use:
Once produced, the "green" hydrogen will be blended with natural gas and used to power an existing combustion turbine at the co-located FPL Okeechobee Clean Energy Center – creating cleaner energy that will help power FPL customers across the grid.
Corporate Partners:
Cummins Inc.
Academic Partners:
N/A
Production Capacity:
10.8 tons of hydrogen produced per day
Funding Costs:
N/A
Sources for Information:
https://www.thehydrogenmap.com/?country=463 ,
https://www.businesswire.com/news/home/20220228005567/en/FPL-Announces-Cummins-to-Sup

ply-Electrolyzer-for-Florida%E2%80%99s-First-%E2%80%9CGreen%E2%80%9D-Hydrogen-Plant-%E2%80%93-Potential-Key-to-Carbon-Free-Electricity

Name:

Okeechobee

Description:

On 24 July 2020, NextEra, through its Florida Power & Light utility, proposed a $65M pilot in Florida that will use a 20MW electrolyzer to produce 100% green hydrogen from solar power.

City, State:

Okeechobee, Florida

Lead Partner:

Florida Power & Light Company (FPL)

Feedstock:

20-megawatt electrolyzer to produce 100 percent green hydrogen from solar power

End Use:

Cleaner energy that will help power FPL customers across the grid.

Corporate Partners:

NextEra

Academic Partners:

N/A

Production Capacity:

10.8 tons of hydrogen produced per day

Funding Costs:

$65 million

Sources for Information:

https://www.thehydrogenmap.com/?country=463 ,
https://www.globalenergyworld.com/news/sustainable-energy/2020/07/27/nextera-energy-build-its-first-green-hydrogen-plant-florida

## Georgia

Name:

Kingsland Green Hydrogen Plant

Description:

This project is a green hydrogen facility in Camden County, Georgia, operated by Plug Power. The plant will produce 15 tonnes of hydrogen per day, which will be liquefied and stored before being loaded for transport. The project is expected to create over 200 construction jobs and start to operate by the end of 2023.

City, State:

Camden County, Georgia

Lead Partner:

Plug Power

Feedstock:

Produced using 100% renewable energy

End Use:

To serve customers across the southeastern United States

Corporate Partners:

Okefenokee Rural Electric Membership Corporation

Academic Partners:

N/A

Production Capacity:

15 tonnes of hydrogen per day

Funding Costs:

$84 million

Sources for Information:

https://www.airswift.com/blog/green-hydrogen-projects-usa#:~:text=Sauk%20Valley%20Green%20Hydrogen%20Plant,-This%20is%20the&text=Starting%20operations%20in%202023%2C%20the,6kg%20of%20hydrogen%20per%20hour. ,
https://www.ir.plugpower.com/press-releases/news-details/2021/Plug-Power-Announces-Green-Hydrogen-Plant-in-Camden-County-Georgia-2021-6-10/

## Hawaii

Name:

Hydrogen Buses

Description:

The Hawai‘i Department of Transportation (HDOT) announces that 21 alternative energy and

low-emission buses will be deployed across the state thanks to the “Buses and Bus Facilities” and “Low or No Emission” grants under President Biden’s Bipartisan Infrastructure Law (BIL).

City, State:
Hawaii
Lead Partner:
Hawai’i DOT
Feedstock:
N/A
End Use:
N/A
Corporate Partners:
N/A
Academic Partners:
N/A
Production Capacity:
N/A
Funding Costs:
$35 million
Sources for Information:
https://hidot.hawaii.gov/blog/2022/08/16/kauai-hawaii-island-and-maui-all-land-new-buses-thanks-to-competitive-federal-grant/

## Idaho

N/A

## Illinois

Name:
Sauk Valley green hydrogen plant
Description:
Equipped with Ohmium's PEM electrolyser, which produces 6 kg of hydrogen per hour, this plant has a capacity of 52 tonnes per year and will be able to store 400 kg of hydrogen on site.

City, State:
Illinois
Lead Partner:
Invenergy
Feedstock:
The project will generate green hydrogen by utilizing power from Invenergy's co-located solar plant and Ohmium International low-carbon electrolysis technology
End Use:
N/A
Corporate Partners:
Ohmium International
Academic Partners:
N/A
Production Capacity:
The Sauk Valley Hydrogen Project is expected to generate up to 52 tons of hydrogen annually.
Funding Costs:
N/A
Sources for Information:
https://www.thehydrogenmap.com/?country=463 ,
https://invenergy.com/news/invenergy-launches-first-green-hydrogen-project-deploying-ohmium-international-solution-accelerating-clean-energy-transition ,
https://www.airswift.com/blog/green-hydrogen-projects-usa#:~:text=Sauk%20Valley%20Green%20Hydrogen%20Plant,-This%20is%20the&text=Starting%20operations%20in%202023%2C%20the,6kg%20of%20hydrogen%20per%20hour.

Name:
NEL-Champaign-Urbana Mass Transit District
Description:
A purchase order was received for a megawatt scale containerized Proton PEM® electrolyser which will be used to produce green hydrogen for a fleet of up to 12 fuel cell electric buses at the Champaign-Urbana Mass Transit District (MTD) in Urbana, Illinois.
City, State:
Urbana, Illinois
Lead Partner:
Nel Hydrogen US

Feedstock:
1 megawatt containerized Proton PEM® electrolyzer
End Use:
The electrolyser will be used to produce hydrogen for a fleet of fuel cell electric buses in Urbana, Illinois, USA.
Corporate Partners:
Trillium Transportation Fuels, LLC, Federal Transit Administration, State of Illinois
Academic Partners:
N/A
Production Capacity:
1 megawatt
Funding Costs:
$2.2 million
Sources for Information:
https://www.thehydrogenmap.com/?country=463 ,
https://nelhydrogen.com/press-release/nel-asa-received-purchase-order-for-a-1-mw-containerized-pem-electrolyzer-in-the-us/

Name:
Avina Clean Hydrogen SAF Facility
Description:
Will use KBR's alcohol-to-jet technology to produce up to 120 million gallons of sustainable aviation fuel annually, leveraging existing infrastructure to supply major airports.
City, State:
St. Louis, Illinois
Lead Partner:
Avina Clean Hydrogen
Feedstock:
Low-carbon ethanol/ $CO_2$ via PureSAF process
End Use:
Blend into conventional jet fuel, supplying major airport hubs
Corporate Partners:
KBR
Academic Partners:
N/A

Production Capacity:
Up to 120 million gallons per year of SAF
Funding Costs:
$820 million total investment
Sources for Information:
https://www.h2-view.com/story/illinois-to-host-avinas-820m-saf-production-facility/2119119.article/#:~:text=Avina%20Clean%20Hydrogen%20will%20invest,million%20gallons%20of%20SAF%20annually,
https://avinah2.com/avina-clean-hydrogen-and-gov-pritzker-announce-sustainable-aviation-fuel-facility-in-southwest-illinois

Name:
ISGS Hydrogen Storage Research
Description:
Evaluates underground hydrogen storage in non-salt geological formations for reservoir/ caprock performance
City, State:
Urbana-Champaign, Illinois
Lead Partner:
Illinois State Geological Survey
Feedstock:
N/A
End Use:
Subsurface hydrogen storage
Corporate Partners:
Gas Technology Institute, Mitsubishi
Academic Partners:
University of Illinois
Production Capacity:
N/A
Funding Costs:
DOE funded grant (~316k)
Sources for Information:
https://isgs.illinois.edu/research/hydrogen-storage , https://blogs.illinois.edu/view/7447/1565010469,

https://experts.illinois.edu/en/publications/storage-and-recovery-of-hydrogen-in-non-salt-bearing-strata-for-f-2

MACH2 Hydrogen Hub

## Indiana

Name:
Clean hydrogen production project
Description:
WVR is developing a multiproduct facility, where the hydrogen can be combusted in a turbine to produce clean baseload power. The completed facility should have the capability to produce up to 336 tons per day of hydrogen, enough to generate approximately 285 megawatts of clean electricity.
City, State:
Terre Haute, Indiana
Lead Partner:
Wabash Valley Resources LLC
Feedstock:
The project plans to use solid waste byproducts such as petroleum coke combined with biomass to produce clean, sustainable hydrogen for transportation fuel and base-load electricity generation while capturing CO2 emissions for permanent underground sequestration.
End Use:
This investment is anticipated to give Nikola a significant hydrogen hub with the ability to offtake approximately 50 t/d to supply its future dispensing stations within an approximate 300-mile radius, covering a significant portion of the Midwest. Exercising its offtake right will likely require significant additional investment by Nikola to build liquefaction, storage, and transportation services.
Corporate Partners:
Nikola Motors Corporation
Academic Partners:
N/A
Production Capacity:
The completed facility should have the capability to produce up to 336 t/d of hydrogen, enough to generate approximately 285 MW of clean electricity
Funding Costs:
Nikola is investing $50 MM in cash and stock in exchange for a 20% equity interest

Sources for Information: https://www.thehydrogenmap.com/?country=463 , https://h2-tech.com/news/2021/06-2021/nikola-wabash-valley-resources-to-produce-h2-for-zero-emission-trucks/ , https://www.nikolamotor.com/tre-fcev

Name:

BP Whiting refinery

Description:

Refinery processing crude oil -> transportation fuels and asphalt

City, State:

Whiting, Indiana

Lead Partner:

BP Products

Feedstock:

Crude oils

End Use:

Producing gasoline, diesel, jet fuel, US asphalt

Academic Partners:

N/A

Production Capacity:

440k barrels of crude oil/ day

Funding Costs:

Not specified

Sources for Information:

https://www.bp.com/en_us/united-states/home/what-we-do/production-and-operations/refineries.html,
https://www.bp.com/content/dam/bp/country-sites/en_us/united-states/home/documents/what-we-do/business-factsheets/bp-refineries-fact-sheet.pdf,
https://www.offshore-technology.com/projects/bt_whiting

MACH2 Hydrogen Hubs

## Iowa

Name:

University of Iowa Project

Description:
University of Iowa researchers are working with a California-based startup company to make clean energy from sunlight and any source of water. The university recently renewed a one-year research agreement to further develop the technology with HyperSolar, a company that aims to commercialize low-cost renewable hydrogen.
City, State:
Iowa
Lead Partner:
University of Iowa
Feedstock:
A small solar-powered electrochemical device that can be placed in any type of water, including seawater and wastewater
End Use:
N/A
Corporate Partners:
HyperSolar
Academic Partners:
N/A
Production Capacity:
N/A
Funding Costs:
N/A
Sources for Information:
https://now.uiowa.edu/news/2016/06/ui-scientists-using-sunlight-water-make-clean-energy

## Kansas

Name:
Avium/University of Kansas Project
Description:
A startup firm with roots in the University of Kansas School of Engineering and Center for

Environmentally Beneficial Catalysis will leverage a two-year, $750,000 Small Business Innovation Research grant from the National Science Foundation to advance technology that can broaden the popularity and ease of owning cars with hydrogen fuel cells, while also making hydrogen production friendlier to the environment.

City, State:

Lawrence, Kansas

Lead Partner:

Avium LLC

Feedstock:

Dual Element Matrix (DEM) Water Electrolyzer

End Use:

The invention has potential to transform markets for hydrogen in transportation, as well as other markets, including glass manufacturing, power-plant turbine cooling, pharmaceutical manufacturing and semiconductor processing.

Corporate Partners:

N/A

Academic Partners:

University of Kansas

Production Capacity:

N/A

Funding Costs:

N/A

Sources for Information:

https://news.ku.edu/news/article/2020/05/19/new-nsf-grant-firm-aims-cheaply-produce-hydrogen-consumers-water-splitting-breakthrough

Name:

Nemaha Project

Description:

By mid-2024, HyTerra secured drilling permits from the Kansas Corporation Commission for the Sue-Duroche-3 well, located near the historical Sue-Duroche-2 well that had yielded up to 92%

hydrogen. HyTerra conducted a similar drilling campaign at the Blythe 13-20 and McCoy 1 wells, with the latter yielding concentrations of hydrogen up to 83% . Specifically, “At 1,696m, McCoy 1 is also HyTerra’s deepest well to date, drilled by Murfin Drilling Company as part of a three-well campaign completed on time and on budget.”

City, State:
Kansas City & Wichita, Kansas
Lead Partner:
HyTerra, a Perth-based energy explorer
Feedstock:
Geological Hydrogen
End Use:
The geological hydrogen project is intended to be connected via railways, roads, and pipelines to nearby ethanol and ammonia manufacturers, as well as petrochemical plants.
Corporate Partners:
Murfin Drilling Company
Academic Partners:
N/A
Production Capacity:
TBD, drilling in progress
Funding Costs:
TBD, since the feedstock is geological hydrogen, which is naturally abundant
Sources for Information:
https://fuelcellsworks.com/2025/08/19/green-hydrogen/hyterra-confirms-83-percent-hydrogen-at-nemaha-project-s-mccoy-1-well
https://hyterra.com/projects/

## Kentucky

Name:
Airgas Hydrogen Plant
Description:
Airgas builds a liquid hydrogen plant in Calvert City.
City, State:
Calvert City, Kentucky

Lead Partner:
Airgas
Feedstock:
N/A
End Use:
Electrical power generation; the production of metals, glass, chemicals, and food products; and emerging applications for hydrogen-powered fuel cells.
Corporate Partners:
N/A
Academic Partners:
N/A
Production Capacity:
Ten tonnes per day of liquid hydrogen
Funding Costs:
N/A
Sources for Information:
https://www.hydrogenfwd.org/united-states-of-hydrogen/ ,
https://www.gasworld.com/story/kentucky-hydrogen-plant-construction-announced/2078157.article/

## Louisiana

Name:
Ascension Clean Energy
Description:
Located in Ascension Parish, Louisiana, ACE aims to be the most cost competitive, low-carbon intensity clean ammonia producer globally. The first phase is expected to deliver 2.4 MTPA by 2028-2029, with additional phases up to 7.2 MTPA.
City, State:
Ascension Parish, Louisiana
Lead Partner:
Clean Energy Works
Feedstock:
Ammonia

End Use:
Clean Ammonia
Corporate Partners:
ExxonMobil, Mitsui O.S.K Lines, Hafnia
Academic Partners:
N/A
Production Capacity:
The first phase is expected to deliver 2.4 MTPA by 2028-2029, with additional phases up to 7.2 MTPA.
Funding Costs:
$7.5 Billion
Jobs Created:
1,500
Sources for Information:
https://chw.lytleworks.com/the-ace-project/
https://www.opportunitylouisiana.gov/key-industry/energy/energy-diversity/hydrogen

Name:
St. Gabriel Green Hydrogen Plant
Description:
The project is a green hydrogen plant starting operations in 2023 in Louisiana with a capacity of 15 tonnes per day to supply the fuel cell market. Plug Power Inc. and Olin Corporation launched a joint venture called Hidrogenii. Olin will produce hydrogen and provide operational support, while Plug Power will be responsible for marketing the hydrogen and providing logistical support.
City, State:
St. Gabriel, Louisiana
Lead Partner:
Power Plug Inc. and Olin Corporation
Feedstock:
N/A
End Use:
The joint venture, named Hidrogenii, will support reliability of supply and speed to market for green hydrogen throughout North America
Corporate Partners:
N/A

Academic Partners:
N/A
Production Capacity:
500 tons/day of liquid green hydrogen
Funding Costs:
N/A
Sources for Information:
https://www.airswift.com/blog/green-hydrogen-projects-usa#:~:text=Sauk%20Valley%20Green%20Hydrogen%20Plant,-This%20is%20the&text=Starting%20operations%20in%202023%2C%20the,6kg%20of%20hydrogen%20per%20hour. ,
https://www.ir.plugpower.com/press-releases/news-details/2022/Plug-Power-and-Olin-Corporation-Partner-to-Produce-Green-Hydrogen-in-15-Ton-Per-Day-Plant-to-Serve-North-America/default.aspx ,
https://www.ir.plugpower.com/press-releases/news-details/2022/Plug-Olin-Corporation-Launch-Joint-Venture-for-15-Ton-Per-Day-Hydrogen-Plant/default.aspx

Name:
Donaldsonville Green Hydrogen Project
Description:
This project is constructing a 20MW alkaline water electrolysis plant to produce green hydrogen at the Company's Donaldsonville, Louisiana, manufacturing complex. The plant will be integrated into existing ammonia synthesis loops and produce 20,000 tonnes of green ammonia per year.
City, State:
Donaldsonville, Louisiana
Lead Partner:
CF Industries
Feedstock:
20MW alkaline water electrolysis plant to produce green hydrogen
End Use:
N/A
Corporate Partners:
ThyssenKrupp
Academic Partners:
N/A
Production Capacity:
Produce 20,000 tonnes of green ammonia per year

Funding Costs:
N/A
Sources for Information:
https://www.airswift.com/blog/green-hydrogen-projects-usa#:~:text=Sauk%20Valley%20Green%20Hydrogen%20Plant,-This%20is%20the&text=Starting%20operations%20in%202023%2C%20the,6kg%20of%20hydrogen%20per%20hour. ,
https://www.cfindustries.com/newsroom/2021/donaldsonville-electrolyzer

## Maine

Name:
Chewonki Renewable Hydrogen Project
Description:
Accelerating the deployment of renewable energy systems using hydrogen generators, storage and fuel cells; Benefitting educational, research, governmental and business interests and stimulating hydrogen technology business development in Maine; and developing and enhancing relationships among renewable energy interests, educational and research organizations, industry organizations, code enforcement officials, and renewable energy designers and contractors who would specify, install and maintain these systems.
City, State:
Maine
Lead Partner:
The Chewonki Foundation
Feedstock:
Fossil Fuels
End Use:
N/A
Corporate Partners:
Hydrogen Energy Center and Maine Energy Investment Corporation
Academic Partners:
Maine Technology Institute
Production Capacity:
Systems for the hydrogen project will include the Hydrofiller 15 electrolyzer, supplied by Avalence Connecticut. The Hydrofiller 15 produces high-pressure hydrogen without the need for a compressor.

Three Independence 1000 fuel cell units were ordered from ReliOn, of Washington. Each unit can make one kW of electricity, and there are six 200 W cartridges in each unit.
Funding Costs:
$250,000 total funding costs. Primary grant: Maine Technology Inst tute “C Enhancement Grant” ($80,000). Secondary grant: Maine Renewable Resources Matching Fund ($40,000)
Sources for Information:
https://www1.eere.energy.gov/hydrogenandfuelcells/education/pdfs/education_presentation_faulstich.pdf , https://www.hydrogenenergycenter.org/chewonki-backup-power

Name:

SAF facility

Description:

An Aviation Fuel Plant which is the largest green biofuel project in the state of Maine

City, State:
Limestone, Maine
Lead Partner:
DG Fuels
Feedstock:
Wood waste and biomass
End Use:
To create clean aviation fuel
Corporate Partners:
LDA and Green 4 Maine, and Maine’s Department of Economic and Community Development
Academic Partners:
N/A
Production Capacity:
175 million gallon per year
Funding Costs:
$4.1B
Sources for Information:
https://dgfuels.com/2023/09/07/the-largest-green-biofuels-project-in-the-state-of-maine-is-making-great-strides/
https://www.constructionequipmentguide.com/dg-fuels-plans-to-build-41b-aviation-fuel-plant-at-maines-former-loring-afb/66584#:~:text=DG%20Fuels%20plans%20to%20build%20sustainable%20aviation%20fuel%20plant%20at,production%20to%20start%20in%202030.

# Maryland

Name:
MCDOT Hydrogen Powered Buses
Description:
The Montgomery County Department of Transportation will receive a grant of almost $15 million to purchase 13 hydrogen fuel cell buses and construct a green hydrogen fueling station.
City, State:
Gaithersburg, Maryland
Lead Partner:
Montgomery County Department of Transportation
Feedstock:
Fuel Cells, Green Hydrogen
End Use:
N/A
Corporate Partners:
N/A
Academic Partners:
N/A
Production Capacity:
N/A
Funding Costs:
$15 million grant, $28.6 million cost
Sources for Information:
https://www.hydrogenfwd.org/united-states-of-hydrogen/,
https://www.mymcmedia.org/county-receives-15-million-grant-for-hydrogen-electric-buses/

Name:
EMTOC microgrid project
Description:
Alphastruxure and Montgomery Country jointly announced an integrated microgrid infrastructure project featuring electric bus charging and on-site green hydrogen production powered by solar and

battery energy storage, for Montgomery County, Maryland's Equipment Maintenance and Transit Operation Center (EMTOC).

City, State:
Montgomery County, Maryland
Lead Partner:
AlphaStruxure
Feedstock:
Solar
End Use:
Green hydrogen, hydrogen fuel
Corporate Partners:
Pepco, Schneider Electric
Academic Partners:
N/A
Production Capacity:
5.65 MWDC of rooftop and canopy solar generation, 2MW/6.88MWh battery energy storage,, up to 2.25 MW of charging capacity, 1MW hydrogen electrolyzer
Funding Costs: T
he project was awarded $1.6 million from the Maryland Energy Administration (MEA). The Alphastruxure provides Energy as a Service model with no upfront costs to the county.
Sources for Information:
https://alphastruxure.com/news-press-release/emtoc-microgrid/#:~:text=and%20Press%20Release-,AlphaStruxure%2C%20Montgomery%20County%2C%20MD%20Announce%20Nation's%20Largest%20Renewable%20Energy%20Powered,On%2DSite%20Green%20Hydrogen%20Production&text=Project%20and%20County%20leadership%20applauded,indefinitely%20in%20%E2%80%9Cisland%20mode.%E2%80%9D;
https://www2.montgomerycountymd.gov/mcgportalapps/Press_Detail.aspx?Item_ID=45460&Dept=50#:~:text=Both%20are%20fundamental%20to%20a,of%20Maryland%2C%20which%20is%20transportation.

Name:
Clean Hydrogen Fuel Research Project
Description:
University of Maryland received a $10 million grant from the U.S. Department of Energy to advance clean hydrogen fuel technology, specifically focusing on developing a modular, standardized hydrogen

refueling station to address the insufficient hydrogen refueling infrastructure issue for the growing fuel cell electric vehicles.

City, State:
N/A
Lead Partner:
Department of Energy
Feedstock:
N/A
End Use:
Fueling station
Corporate Partners:
Plug Power
Academic Partners:
University of Maryland (UMD)
Production Capacity:
N/A
Funding Costs:
$10 million
Sources for Information:
https://today.umd.edu/10m-doe-grant-to-umd-partners-aims-to-advance-clean-hydrogen-fuel-technology

Name:
OneH2 project
Description:
Utilizing 2 PowerTap Generators and 3 Compressors, OneH2 supplies hydrogen gas at an hourly rate of 4.2 kg from production, compression and storage assets for the United States Postal Service.
City, State:
Capitol Heights, MD
Lead Partner:
OneH2
Feedstock:
N/A

End Use:
Hydrogen distribution, Hydrogen generation
Corporate Partners:
N/A
Academic Partners:
N/A
Production Capacity:
100kg daily
Funding Costs:
N/A
Sources for Information:
https://oneh2.com/projects/capitol-heights-md/

## Massachusetts

Name:
Electric Hydrogen
Description:
Electric Hydrogen was awarded a $18.3M transferable tax credit from the Department of Energy, Department of Treasury, and the Internal Revenue Service under the Qualifying Advanced Energy Project 48C initiative, funded by the Inflation Reduction Act, for electrolyzer manufacturing at its gigafactory in Devens, MA.
City, State:
Devens, MA.
Lead Partner:
U.S. Department of Energy
Feedstock:
Electrolyzers
End Use:
N/A
Corporate Partners:
Fortescue, Fifth Wall and Energy Impact Partners, BP Ventures, Oman Investment Authority, Temasek, Microsoft's Climate Innovation Fund, the United Airlines Sustainable Flight Fund, New

Legacy, Kajima Ventures and Fatima Holdings USA. Amazon's Climate Pledge Fund, Equinor Ventures, Mitsubishi Heavy Industries, Rio Tinto, Breakthrough Energy Ventures, Capricorn Partners, Prelude Ventures, and S2G Ventures.

Academic Partners:

N/A

Production Capacity:

According to Electric Hydrogen: The gigafactory will use innovative manufacturing technology coupled with proven practices from high-volume industries like solar and automotive to produce reliable, high-quality electrolyzers in large volumes to meet growing demand. Once fully ramped to its 1.2 GW per year capacity, the gigafactory's stacks will generate enough green hydrogen to eliminate up to 2.4 million metric tons of carbon dioxide emissions per year.

Funding Costs:

$18.3M transferable tax credit from the Department of Energy, Department of Treasury, and the Internal Revenue Service; $380 million from Series C financing.

Sources for Information:

https://eh2.com/electric-hydrogen-receives-18-3m-transferable-doe-tax-credit-for-its-gigafactory-in-massachusetts-bringing-total-department-of-energy-support-to-65m/
https://eh2.com/electric-hydrogen-raises-380-million-to-transform-the-economics-of-green-hydrogen-production/#:~:text=Existing%20strategic%20investors%20Amazon's%20Climate,Prelude%20Ventures%2C%20and%20S2G%20Ventures.

## Michigan

Name:

FusionOne Project

Description:

FusionOne has instructed the fabrication facility to begin the production of its HydroPlas continuous cycle reactor, the center of its efficient Hydrogen producing system as well as the supporting proprietary technologies to be delivered in Q3 2021.

City, State:

Detroit, Michigan

Lead Partner:

FusionOne

Feedstock:
Plastic Waste
End Use:
N/A
Corporate Partners:
N/A
Academic Partners:
N/A
Production Capacity:
N/A
Funding Costs:
N/A
Sources for Information:
https://www.hydrogenfwd.org/united-states-of-hydrogen/ ,
https://www.globenewswire.com/news-release/2021/05/05/2223579/0/en/Clean-Power-Capital-Provides-Update-on-Its-Investment-in-FusionOne-S-Waste-to-Electricity-and-Hydrogen-Technology.html

## Minnesota

Name:
CenterPoint green hydrogen project
Description:
The project uses renewable electricity to safely split hydrogen from water, and the zero-carbon hydrogen is then blended at low concentrations with natural gas in the utility's local distribution system. The project's one-megawatt electrolyzer is powered by renewable electricity and can produce up to 60 Dekatherms (432 kilograms) of hydrogen gas per day, using approximately two gallons of water per minute. The water is sourced from the municipal water supply and highly purified before it enters the hydrogen production system.
City, State:
Minneapolis, Minnesota
Lead Partner:
CenterPointe Energy
Feedstock:
The project's one-megawatt electrolyzer is powered by renewable electricity.

End Use:
The primary goal of the pilot project is to gain operational experience with the technology for making green hydrogen and how it can be integrated most effectively into the local natural gas distribution system to lower the carbon content of delivered energy.
Corporate Partners:
N/A
Academic Partners:
N/A
Production Capacity:
(432 kilograms) of hydrogen gas per day
Funding Costs:
N/A
Sources for Information:
https://www.thehydrogenmap.com/?country=463 ,
https://investors.centerpointenergy.com/news-releases/news-release-details/centerpoint-energy-launches-green-hydrogen-project-minnesota

Name:
Prairie Island demonstration project
Description:
This demonstration project will install a 240-kW electrolyzer at Xcel Energy's Prairie Island nuclear plant to produce emissions-free hydrogen..
City, State:
Welch, Minnesota
Lead Partner:
Bloom Energy
Feedstock:
The project's one-megawatt electrolyzer is powered by renewable electricity.
End Use: The primary goal of the pilot project is to gain operational experience with the technology for making green hydrogen and how it can be integrated most effectively into the local natural gas distribution system to lower the carbon content of delivered energy.
Corporate Partners:
XCel Energy
Academic Partners:
N/A

Production Capacity:
240-kW electrolyzer
Funding Costs:
N/A
Sources for Information:
https://www.thehydrogenmap.com/?country=463 ,
https://www.utilitydive.com/news/bloom-energy-hydrogen-xcel-nuclear-prairie-island/632148/

Name:
Pilot hydrogen production (Xcel Energy nuclear power plant)
Description:
Demonstrate high-temperature steam electrolysis using heat and electricity from one of Xcel Energy's nuclear plants (potentially Prarie Island). Funding provided by the Department of Energy.
City, State:
Welch, Minnesota
Lead Partner:
Xcel Energy
Feedstock:
N/A
End Use:
Minneapolis-based Xcel Energy will work with Idaho National Laboratory to demonstrate a system that uses a nuclear plant's steam and electricity to split water. The resulting hydrogen will initially be used at the power plant, but it could eventually be sold to other industries.
Corporate Partners:
Idaho National Laboratory, U.S. Department of Energy
Academic Partners:
N/A
Production Capacity:
N/A
Funding Costs:
$10 million from Federal Funding
Sources for Information:
https://www.thehydrogenmap.com/?country=463 ,
https://inl.gov/integrated-energy/xcel-energy-inl-hydrogen-production/

# Mississippi

Name:
Hy Stor Energy Providing Clean Hydrogen to Mississippi Port
Description:
Hy Stor Energy LP (Hy Stor Energy), a company pioneering renewably produced green hydrogen and energy storage at scale in Mississippi, announced today a strategic partnership with the Hancock County Port and Harbor Commission (HCPHC) to provide zero-carbon, zero-methane hydrogen to Port Bienville Industrial Park and Stennis International Airport, accelerating the decarbonization of land, air, sea, and space.
City, State:
Hancock County, Mississippi
Lead Partner:
Hy Stor Energy
Feedstock:
Renewable hydrogen
End Use:
Heavy duty transportation, power for a data center, aviation (drones), and long-duration energy storage for peaking power
Corporate Partners:
Hancock County Port and Harbor Commission
Academic Partners:
N/A
Production Capacity:
350 tons/day (320,000 kg/day) of renewable hydrogen and store more than 71,000 tons (69 million kg) of hydrogen in underground salt caverns.
Funding Costs:
N/A
Sources for Information:
https://www.businesswire.com/news/home/20220629005311/en/Hy-Stor-Energy-Strategic-Partnership-with-Key-Gulf-Coast-Port-Becomes-First-to-Deliver-Renewable-Hydrogen-Access-for-Manufacturing-Industrial-Applications-Port-Operations-and-Long-Duration-Energy-Storage

## Missouri

Name:
BayoTech Hydrogen Plant
Description:
Hydrogen is now being produced by US-based hydrogen transport and storage player BayoTech at its BayoGaaS™ Hydrogen Hub in Wentzville, Missouri.
City, State:
Wentzville, Missouri
Lead Partner:
BayoTech
Feedstock:
N/A
End Use:
Clients operating zero-emission fuel cell equipment and hydrogen-intensive industrial processes
Corporate Partners:
N/A
Academic Partners:
Ranken Technical College
Production Capacity:
350 tons of hydrogen each year
Funding Costs:
N/A
Sources for Information:
https://www.hydrogenfwd.org/united-states-of-hydrogen/,
https://www.mystandardnews.com/stories/first-hydrogen-production-plant-in-missouri-is-open,57548

## Montana

Name:
Hydrogen Production Plant Project

Description:
This node, led by St. Regis Solar LLC, plans to implement hydrogen production via proton exchange membrane (PEM) electrolysis to develop a hydrogen refueling station for heavy duty transportation—a critical piece of clean hydrogen infrastructure for transportation along the I-90 corridor. Other potential end uses could include power for a data center, aviation (drones), and long-duration energy storage for peaking power intended throughout the region surrounding St. Regis, MT.
City, State:
St. Regis, MT
Lead Partner:
St. Regis Solar LLC
Feedstock:
Proton exchange membrane (PEM) electrolysis
End Use:
Heavy duty transportation, power for a data center, aviation (drones), and long-duration energy storage for peaking power
Academic Partners:
N/A
Production Capacity:
N/A
Funding Costs:
N/A
Sources for Information:
https://pnwh2.com/projects/ ,
https://www.energy.gov/sites/default/files/2024-08/H2Hubs%20PNW%20Booklet_Factsheet_8.30.24.pdf

## Nebraska

Name:
Monolith Loan for Hydrogen Project
Description:
Chemical and energy company Monolith received conditional approval for a $1bn loan from the US DOE to create a clean hydrogen and carbon black production facility

City, State:
Hallam, NE
Lead Partner:
Monolith
Feedstock:
N/A
End Use:
The hydrogen created by this process at OC1 and OC2 will be used to create sustainably made ammonia, a critical fertilizer for agriculture.
Corporate Partners:
N/A
Academic Partners:
N/A
Production Capacity:
N/A
Funding Costs:
$1.04 billion loan from the U.S. Department of Energy
Sources for Information: https://monolith-corp.com/nebraska-story , https://www.prnewswire.com/news-releases/monolith-receives-conditional-approval-for-a-one-billion-dollar-us-department-of-energy-loan-301450496.html

MACH2 Hydrogen Hubs

## Nevada

Name:
Liquid hydrogen production plant
Description:
The French industrial gas giant Air Liquide SA's factory near Las Vegas converts methane from landfills into hydrogen to power emission-free cars and trucks. The $250 million facility will have capacity to produce up to 30 tons of liquid hydrogen per day.
City, State:
Las Vegas, Nevada
Lead Partner:
Air Liquide

Feedstock:
Steam methane reformer (SMR) process coupled with a hydrogen liquifier
End Use:
Will be utilized by various customers, notably by those in the growing clean mobility market on the West Coast, especially California.
Corporate Partners:
N/A
Academic Partners:
N/A
Production Capacity:
30 tonnes of liquid hydrogen per day
Funding Costs:
$250 million
Sources for Information:
https://www.thehydrogenmap.com/?country=463 ,
https://usa.airliquide.com/air-liquide-inaugurates-us-its-largest-liquid-hydrogen-production-facility-world ,
https://usa.airliquide.com/sites/al_us/files/2022-07/nlv_facility_one-pager-bracewell_final_5_24_22.pdf

Name:
RTC Hydrogen Buses
Description:
The Regional Transportation Commission of Southern Nevada (RTC) has added two hydrogen fuel cell electric buses to its fleet.
City, State:
Las Vegas, Nevada
Lead Partner:
RTC
Feedstock:
Hydrogen fuel cell technology
End Use:
Will be utilized by RTC for public transportation
Corporate Partners:
N/A

Academic Partners:
N/A
Production Capacity:
N/A
Funding Costs:
N/A
Sources for Information:
https://www.rtcsnv.com/ways-to-travel/ridezero/ ,
https://thenevadaindependent.com/article/overshadowed-by-electrification-push-hydrogen-gains-steam-in-nevada-public-transportation ,
https://bus-news.com/rtc-launches-nevadas-first-hydrogen-fuel-cell-buses/

Name:
Southwest Gas and University of Nevada, Las Vegas Project
Description:
Southwest Gas is teaming up with the University of Nevada, Las Vegas (UNLV) to study how hydrogen-blended natural gas can further reduce carbon emissions while still providing clean and reliable energy.
City, State:
Las Vegas, Nevada
Lead Partner:
Southwest Gas
Feedstock:
Electrolyzer
End Use:
The hydrogen-blended gas will be tested on natural gas appliances as well as monitored for leak detection to determine any differences needed in procedures to ensure the continued safety of the local communities.
Partners:
N/A
Academic Partners:
University of Nevada, Las Vegas
Production Capacity:
N/A

Funding Costs:
N/A
Sources for Information:
https://www.swgas.com/en/news/swgas-announces-groundbreaking-hydrogen-blending-pilot-program

## New Hampshire

Name:
Q Hydrogen
Description:
This Utah-based company is redeveloping a former paper mill in Groveton into a power plant by converting water into renewable hydrogen for energy and electricity production using new turbine technology,
City, State:
Groveton,New Hampshire
Lead Partner:
Q Hydrogen
Feedstock:
Fossil Fuels
End Use:
N/A
Corporate Partners:
Q Hydrogen
Academic Partners:
N/A
Production Capacity:
It has not been built yet but it is stated that by using water from the Upper Ammonoosuc River, the plant could start producing fuel for around 10 megawatts of energy each day, with the possibility of growing to 100 megawatts.
Funding Costs:
N/A
Sources for Information:
https://newhampshirebulletin.com/2023/05/01/an-interview-with-q-hydrogen-creating-a-worlds-first-in-new-hampshires-north-country/

# New Jersey

Name:
NJNG Howell Facility Green Hydrogen Project
Description:
It is the first green hydrogen production project on the East Coast to blend existing zero carbon hydrogen directly into an existing gas distribution system directly powering homes and businesses. This project began commercial operation in October 2021.
City, State:
Howell,NJ
Lead Partner:
N/A
Feedstock:
Carbon Free hydrogen production through wind and solar
End Use:
Energy transition to Solar,Wind Power,Electrolyzer
Corporate Partners:
N/A
Academic Partners:
N/A
Production Capacity:
The system offsets 180 tons CO2 per year(per New Jersey Natural Gas)
Funding Costs:
N/A
Sources for Information:
https://www.njrsustainability.com/environmental/NJR_HydrogenProject_Factsheet_01d1.pdf

Name:
Bayonne Energy Center project
Description:
Ohmium International Inc. is providing Proton Exchange Membrane (PEM) electrolyzers that will provide 120 MW of green hydrogen capacity for one or two of the the Bayonne Energy Center plant's 10 turbines that will undergo conversion by 2025.

City, State:
Bayonne, New Jersey
Lead Partner:
NovoHydrogen, TigerGenco LLC
Feedstock:
Proton Exchange Membrane (PEM) electrolyzers
End Use:
Will provide 120 MW of green hydrogen capacity for one or two of the the Bayonne Energy Center plant's 10 turbines
Corporate Partners:
Ohmium International Inc
Academic Partners:
N/A
Production Capacity:
120 MW of green hydrogen
Funding Costs:
N/A
Sources for Information:
https://www.thehydrogenmap.com/?country=463 ,
https://www.tapinto.net/towns/bayonne/sections/green/articles/bayonne-energy-center-going-green

Name:
JERA Americas Hydrogen Blending Project
Description:
JERA Americas has announced plans to blend hydrogen at its Linden Cogeneration plant in Linden, New Jersey. Linden Cogen will take Bayway Refinery produced hydrogen-containing fuel gas and blend it with natural gas used to fuel the 172MW Linden Cogen unit 6 gas turbines. The modification will enable using a fuel gas blend containing up to 40% hydrogen. Most current NOx emissions technology can only effectively control NOx emissions in a 30% hydrogen blend, a concern that was not addressed in the proposal.
City, State:
Linden, New Jersey
Lead Partner:
JERA Americas

Feedstock:
N/A
End Use:
Produced hydrogen-containing fuel gas and blend it with natural gas used to fuel the 172MW Linden Cogen unit 6 gas turbines.
Corporate Partners:
EGCO Group
Academic Partners:
N/A
Production Capacity:
172MW
Funding Costs:
N/A
Sources for Information:
https://www.cleanegroup.org/initiatives/hydrogen/projects-in-the-us/ , https://energy.media/industry-hubs/new-jerseys-linden-cogeneration-facility-focuses-on-hydrogen-blending/ , https://www.egco.com/en/news-update/2023/linden-h2-blending

## New Mexico

Name:
Escalante H2 Power (EH2) Conversion Project
Description:
Escalante H2 Power (EH2), wants to convert the Escalante Generating Station into a hydrogen-fueled plant. EH2 plans to produce hydrogen at the Escalante site through reformation of methane from natural gas. 97% or more of the CO2 produced in the process would be captured and stored, resulting in so-called blue hydrogen. The CO2 will not be used for enhanced oil recovery. Escalante is expected to provide about 265 MW of dispatchable power from hydrogen
City, State:
New Mexico
Lead Partner:
Escalante H2 Power (EH2)
Feedstock:
Methane from natural gas, CO2

End Use:
N/A
Corporate Partners:
N/A
Academic Partners:
N/A
Production Capacity:
265 MW
Funding Costs:
N/A
Sources for Information:
https://www.hydrogenfwd.org/united-states-of-hydrogen/

Name:
Kit Carson Electric Cooperative's Green Hydrogen Facility
Description:
This initiative combines solar powered electrolysis and repurposed wastewater to create power and long-duration storage for the local grid.
City, State:
Questa, New Mexico
Lead Partner:
Kit Carson Electric Cooperative
Feedstock:
Solar + wastewater electrolysis
End Use:
Long term energy storage and decarbonization of utilities
Corporate Partners:
Guzman Energy
Academic Partners:
N/A
Production Capacity:
105MW
Funding Costs:
Grant of $231 million

Sources for Information:
https://kitcarson.com/electric/electric-info/green-hydrogen-energy-production-in-questa/, https://fuelcellsworks.com/2025/01/15/hydrogen-economy/kit-carson-electric-cooperative-awarded-231-million-for-construction-of-104-mw-of-renewable-energy-generation-from-hydrogen-and-solar-facilities-with-battery-energy-storage-systems-in-northern-new-mexico, https://www.energy.gov/sites/default/files/2025-01/CX-032254.pdf

Name:

New Mexico Gas Company's Hydrogen Blending Project

Description:

Blending up to 10% hydrogen into natural gas pipelines. Tests for appliance compatibility, safety, emissions reductions.

City, State:
Albuquerque, New Mexico
Lead Partner:
New Mexico Gas Company
Feedstock:
Hydrogen + Natural Gas
End Use:
Residential and commercial appliance fuel
Corporate Partners:
BayoTech
Academic Partners:
N/A
Production Capacity:
Up to 10% hydrogen blend
Funding Costs:
N/A
Sources for Information:
https://www.nmgco.com/en/hydrogen_blending, https://bayotech.us/bayotech-and-new-mexico-gas-company-partner-to-build-states-largest-clean-hydrogen-production-hub/

Name:

Western Inter-State Hydrogen Hub (WISHH)

Description:

A regional initiative linking New Mexico, Colorado, Utah, and Wyoming. Projects include hydrogen production for power, agricultural use.

City, State:

San Juan, New Mexico

Lead Partner:

WISHH coalition

Feedstock:

Biomass, renewable power

End Use:

Agricultural energy, transportation and energy plant solutions

Corporate Partners:

Avangrid, Libertad Power, Tallgrass, NAPI, Dominion Energy Utah, others

Academic Partners:

N/A

Production Capacity:

~1000 tons/ day hub wide

Funding Costs:

DOE grant for $1.25 billion

Sources for Information:

https://energyoffice.colorado.gov/climate-energy/western-inter-states-hydrogen-hub, https://www.env.nm.gov/wp-content/uploads/2023/04/2023-04-10-COMMS-Western-Interstate-Hydrogen-Hub-Submits-Application-for-U.S.-Department-of-Energy-Funding-Grant-Final.pdf

Name:

BayoGaaS Hydrogen Hub

Description:

“Gas-as-a-service” plant producing low-carbon hydrogen using steam reforming natural gas. This supports pipelines, vehicle refueling, and backup power.

City, State:

Albuquerque, New Mexico

Lead Partner:

BayoTech

Feedstock:

Natural gas and steam methane reforming

End Use:
Pipeline blending, backup power, refueling for fleets
Corporate Partners:
NMGC
Academic Partners:
N/A
Production Capacity:
1000 kg/ day
Funding Costs:
N/A
Sources for Information:
https://bayotech.us/bayotech-and-new-mexico-gas-company-partner-to-build-states-largest-clean-hydrogen-production-hub/,
https://fuelcellsworks.com/news/bayotech-and-new-mexico-gas-company-partner-to-build-states-largest-clean-hydrogen-production-hub

## New York

Name:
Nine Mile Point Nuclear Station
Description:
This project is part of a $14.5 million cost shared project between the U.S. Department of Energy (DOE) and Constellation to demonstrate how nuclear power plants can help lower the cost and scale up the production of clean hydrogen. DOE supported the construction and installation of a low-temperature electrolysis system at the Nine Mile Point nuclear power plant that leverages the facility's existing hydrogen storage system.
City, State:
Oswego, New York
Lead Partner:
U.S. Department of Energy, Constellation
Feedstock:
DOE supported the construction and installation of a low-temperature electrolysis system at the Nine Mile Point nuclear power plant that leverages the facility's existing hydrogen storage system.

Constellation's new Hydrogen Generation System produces hydrogen without emissions by using electricity generated at the plant to split water into hydrogen and oxygen.

End Use:

It will also help set the stage for possible large-scale deployments at other clean energy centers in Constellation's fleet that would couple clean hydrogen production with storage and other on-site uses.

Corporate Partners:

Nel Hydrogen, Argonne National Laboratory, Idaho National Laboratory, National Renewable Energy Laboratory

Academic Partners:

N/A

Production Capacity:

560 kilograms of clean hydrogen per day

Funding Costs:

$14.5 million

Sources for Information:

https://www.thehydrogenmap.com/?country=463 ,
https://www.energy.gov/ne/articles/nine-mile-point-begins-clean-hydrogen-production ,
https://www.constellationenergy.com/newsroom/2021/exelon-generation-receives-doe-grant-to-support-hydrogen-production-project-at-nine-mile-point.html ,
https://www.constellationenergy.com/newsroom/2023/Constellation-Starts-Production-at-Nations-First-One-Megawatt-Demonstration-Scale-Nuclear-Powered-Clean-Hydrogen-Facility.html

Name:

Pilot hydrogen production (Exelon nuclear power plant)

Description:

Exelon Corp., the largest nuclear plant operator in the United States, will host a 1-MW electrolyzer to demonstrate hydrogen production at one of its boiling water reactor plant sites. Funding provided by the Department of Energy.

City, State:

Scriba, New York

Lead Partner:

Exelon Corp.

Feedstock:

1-MW electrolyzer

End Use:
Demonstrate hydrogen production at one of its boiling water reactor plant sites
Corporate Partners:
Department of Energy
Academic Partners:
N/A
Production Capacity:
N/A
Funding Costs:
N/A
Sources for Information:
https://www.thehydrogenmap.com/?country=463

## North Carolina

Name:
Longview Hydrogen Terminal
Description:
The Longview hydrogen terminal acts as a central hub for the production and distribution of hydrogen fuel. Equipped with 2x H300 Hydrogen Generators and an H400.A Hydrogen Generator Platform, the terminal supplies hydrogen to transportation, air mobility, commercial materials manufacturing, and greentech industries.
City, State:
Longview, NC
Lead Partner:
OneH2
Feedstock:
N/A
End Use:
Hydrogen Distribution, R&D, Material Handling
Corporate Partners:

Academic Partners:

Production Capacity:
700kg per day
Funding Costs:
N/A
Sources for Information:
https://oneh2.com/projects/longview-hydrogen-terminal/

Name:
Southeast Hydrogen Hub
Description:
North Carolina will be part of the Southeast Hydrogen Hub coalition, with proposed nodes at Charlotte and Wilmington. The regional partnership aim at pushing forward hydrogen as a cleaner power source and bringing jobs and development in the region. The coalition consists of a bipartisan group of U.S. senators and major utility companies such as Duke Energy, Dominion Energy, Louisville Gas and Electric Company and Kentucky Utilities Company, Southern Company and the Tennessee Valley Authority.
City, State:
Charlotte; Wilmington
Lead Partner:
N/A
Feedstock:
N/A
End Use:
N/A
Corporate Partners:
Duke Energy, Dominion Energy, Louisville Gas and Electric Company and Kentucky Utilities Company, Southern Company and the Tennessee Valley Authority
Academic Partners:
N/A
Production Capacity:
N/A

Funding Costs:
From bipartisan infrastructure law
Sources for Information:
https://news.duke-energy.com/releases/southeast-hydrogen-hub-coalition-submits-formal-application-for-funding-to-the-u-s-department-of-energy#:~:text=About%20the%20Southeast%20Hydrogen%20Hub,energy%20for%20customers%20and%20communities.
https://mediahub.unc.edu/this-is-a-major-evolution-coalition-seeks-to-make-hydrogen-energy-cleaner

## North Dakota

Name:
Heartland Hydrogen Hub
Description:
A regional clean hydrogen hub for North Dakota, South Dakota, Minnesota, Montana, Wisconsin, and Colorado. It aims to produce low-emissions hydrogen in order to decarbonize agriculture and manufacturing.
City, State:
Regional
Lead Partner:
University of North Dakota Energy & Environmental Research Center
Feedstock:
Renewable energy,  carbon capture of natural gas
End Use:
Fertilizer production and decarbonizing industrial processes
Corporate Partners:
Atlas Agro, Xcel Energy,
Academic Partners:
University of North Dakota
Production Capacity:
1000 tons/ day hub wide
Funding Costs:
$925 million
Sources for Information:
https://www.energy.gov/oced/heartland-hydrogen-hub,

https://www.energytech.com/energy-efficiency/news/55262500/doe-clean-energy-demonstrations-office-awards-final-two-regional-green-hydrogen-hubs

Name:

Great Plains Synfuels Plant

Description:

Commercial coal-to-synthetic-natural-gas facility. Produces synthetic natural gas (SNG) using lignite coal. The plant has been in operation for over 25 years.

City, State:

Beulah, North Dakota

Lead Partner:

Dakota Gasification Company

Feedstock:

Lignite coal

End Use:

Pipelines, fertilizer, oil recovery

Corporate Partners:

Basin Electric, Northern Border Pipeline

Academic Partners:

N/A

Production Capacity:

150 million cubic feet/ day of synthetic natural gas, 16k tons of coal/ day

Funding Costs:

$2 billion

Sources for Information:

https://www.netl.doe.gov/research/Coal/energy-systems/gasification/gasifipedia/great-plains, https://ammoniaenergy.org/articles/decarbonising-the-great-plains-synfuel-plant/

Name:

NextEra Energy Resources Fertilizer Plant

Description:

Green ammonia fertilizer plant using hydrogen produced through electrolysis and powered by onsite wind sources

City, State:

Spiritwood, ND

Lead Partner:
NextEra Energy Resources Development, LLC
Feedstock:
Renewable electricity, wind energy, water, CO2 from nearby plants
End Use:
Production of ammonia+ agricultural fertilizer
Corporate Partners:
N/A
Academic Partners:
N/A
Production Capacity:
100,000 metric tons of ammonia// year
Funding Costs:
1.3 billion estimate, $125 million forgivable loan
Sources for Information:
https://www.jamestownsun.com/news/local/nextera-pulls-effort-to-develop-fertilizer-plant-in-spiritwood-nd-area,
https://northdakotamonitor.com/2024/03/04/nextera-fertilizer-plant-to-move-forward-second-plant-withdraws/

Name:
North Dakota Renewable Energy Program
Description:
State-run grants supporting renewable energy + commercialization
City, State:
Statewide ND
Lead Partner:
North Dakota Industrial Commission
Feedstock:
Renewable hydrogen, biofuels, biomass, solar,
End Use:
Variety: electricity generation, transportation, agriculture, carbon capture, etc.
Corporate Partners:
NextEra Energy, Franklin Energy, Minnkota Power, Xcel Energy, EERC

Academic Partners: UND's Energy & Environmental Research Center, other North Dakota universities
Production Capacity:
~$300,000 to $6.3 million per cycle
Funding Costs:
Grants range up to ~$6 million
Sources for Information:
https://www.ndic.nd.gov/research-grant-programs/renewable-energy-program, https://www.commerce.nd.gov/economic-development-finance/energy-and-natural-resources/renewable-energy-north-dakota

## Ohio

Name:
Pilot hydrogen production (Davis-Besse nuclear power plant)
Description:
1- to 3-MW low-temperature electrolysis unit to produce commercial quantities of hydrogen at the Davis-Besse nuclear plant. Funding provided by the Department of Energy.
City, State:
Oak Harbor, Ohio
Lead Partner:
Energy Harbor, Idaho National Laboratory.
Feedstock:
1- to 3-MWe low-temperature electrolysis unit
End Use:
To produce commercial quantities of hydrogen at the Davis-Besse nuclear plant.
Corporate Partners:
N/A
Academic Partners:
N/A
Production Capacity:
N/A
Funding Costs:
N/A

Sources for Information:
https://www.thehydrogenmap.com/?country=463 ,
https://inl.gov/integrated-energy/xcel-energy-inl-hydrogen-production/

Name:

Dominion Energy Ohio

Description:

New clean energy hydrogen blending pilot project near Cleveland and Akron tests emissions-reducing technology. Pilot harnesses the world's most abundant element for clean, renewable energy. DEO prepares a distribution system to be ready to blend hydrogen by 2030.

City, State:

Boston Heights, Ohio

Lead Partner:

Dominion Energy Ohio

Feedstock:

Blending hydrogen in a closed loop system

End Use:

A 5% hydrogen blend will be tested throughout the year to determine if hydrogen use is safe, compatible with current residential appliances and helpful in reducing emissions from appliances using already clean-burning natural gas.

Corporate Partners:

N/A

Academic Partners:

N/A

Production Capacity:

N/A

Funding Costs:

N/A

Sources for Information:

https://www.energy.gov/sites/default/files/2023-10/H2Hubs_Appalachian_Community_Briefing.pdf , https://news.dominionenergy.com/news?item=137989 , https://www.ideastream.org/environment-energy/2023-05-22/dominion-energy-ohio-pilot-program-tests-hydrogen-as-clean-energy-source

Name:

IndependencenOhio Hydrogen facility

Description:

H2 production facility using industrial off-gas as feedstock in Ashtabula, Ohio to provide clean hydrogen for material handling equipment at distribution centers.

City, State:

Ashtabula, Ohio

Lead Partner:

Independence Gas

Feedstock:

Industrial off-gas

End Use:

N/A

Corporate Partners:

N/A

Academic Partners:

N/A

Production Capacity:

N/A

Funding Costs:

N/A

Sources for Information:

https://www.energy.gov/sites/default/files/2023-10/H2Hubs_Appalachian_Community_Briefing.pdf

## Oklahoma

Name:

Green ammonia project

Description:

The project aims to produce approximately 30,000 metric tons of zero-carbon or “green” ammonia per year. The project will be constructed in two phases: first with Bloom supplying a 10 megawatt (MW)

solid oxide electrolyzer, followed by the installation of an additional 20MW alkaline electrolyzer unit, which will be sourced from a leading manufacturer.

City, State:
Pryor, Oklahoma
Lead Partner:
LSB Industries; Bloom Energy; thyssenkrupp Uhde
Feedstock:
10 megawatt (MW) solid oxide electrolyzer, followed by the installation of an additional 20MW alkaline electrolyzer unit
End Use:
Commercial Grade ammonia for industrial applications
Corporate Partners:
N/A
Academic Partners:
N/A
Production Capacity: produce approximately 30,000 metric tons of zero-carbon or "green" ammonia per year.
Funding Costs:
N/A
Sources for Information:
https://www.thehydrogenmap.com/?country=463 , https://investors.lsbindustries.com/news-releases/news-release-details/lsb-industries-launches-green-ammonia-project , https://lsbindustries.com/pryor-ok/

## Oregon

Name:
Hydrogen Project
Description:
This node, led by MHI Hydrogen Infrastructure LLC, in partnership with Williams Field Services Group LLC and Portland General Electric company, plans to develop hydrogen for clean electricity generation and to provide hydrogen to Node 3 of the Hub for heavy duty transportation. It features hydrogen production via electrolysis and combined cycle power generation capable of running on

100% hydrogen. Key infrastructure at the intended Boardman, OR site includes long duration energy storage capabilities and a hydrogen pipeline.

City, State:
Boardman, OR
Lead Partner:
MHI Hydrogen Infrastructure LLC
Feedstock:
N/A
End Use:
Clean Electricity Generation
Corporate Partners:
Williams Field Services Group LLC, Portland General Electric
Academic Partners:
Pacific Northwest Hydrogen Hub (PNWH2)
Production Capacity:
N/A
Funding Costs:
N/A
Sources for Information:
https://pnwh2.com/projects/ ,
https://www.energy.gov/sites/default/files/2024-08/H2Hubs%20PNW%20Booklet_Factsheet_8.30.24.pdf

Name:
Hydrogen Project
Description:
This node, led by Air Liquide in partnership with NW Seaport Alliance and PACCAR, plans to serve as a key link in the supply chain, receiving hydrogen from a pipeline for liquefaction and delivery to market for heavy-duty transportation end users along the I-5, I-90, and I-84 corridors proposed in Port of Morrow, OR. Key technologies at this node include hydrogen liquefaction, liquid hydrogen storage, hydrogen delivery trailers, heavy-duty hydrogen trucks, hydrogen refueling stations, and cargo handling equipment for ports.
City, State:
Port of Morrow, OR

Lead Partner:
Air Liquide
Feedstock:
N/A
End Use:
Heavy-Duty Transportation
Corporate Partners:
NW Seaport Alliance, PACCAR
Academic Partners:
Pacific Northwest Hydrogen Hub (PNWH2)
Production Capacity:
N/A
Funding Costs:
N/A
Sources for Information:
https://pnwh2.com/projects/ ,
https://www.energy.gov/sites/default/files/2024-08/H2Hubs%20PNW%20Booklet_Factsheet_8.30.24.pdf

Name:
Hydrogen Project
Description:
This node, led by Express Ranch Hydrogen LLC, plans to produce clean hydrogen for transportation including mining and other heavy-duty trucks, as well as oxygen for cement production. New dedicated pipelines, above ground storage, and hydrogen refueling stations for public and private use are key components of node infrastructure proposed in Durkee, OR.
City, State:
Durkee, OR
Lead Partner:
Express Ranch Hydrogen LLC
Feedstock:
“Green” hydrogen by using electricity produced by wind turbines and solar panels
End Use:
Heavy-Duty Transportation

Corporate Partners:
N/A
Academic Partners:
Pacific Northwest Hydrogen Hub (PNWH2)
Production Capacity:
N/A
Funding Costs:
N/A
Sources for Information:
https://pnwh2.com/projects/ ,
https://www.energy.gov/sites/default/files/2024-08/H2Hubs%20PNW%20Booklet_Factsheet_8.30.24.pdf ,
https://fuelcellsworks.com/2024/09/26/h2/ash-grove-cement-s-durkee-plant-proposed-site-for-producing-hydrogen-as-vehicle-fuel

Name:
Clean Hydrogen Production, Carbon Capture Project
Description:
Equipment designed by Modern Hydrogen and installed at NW Natural's Central Resource Center in southeast Portland uses a process called methane pyrolysis. Solid carbon being captured from this process is collected and incorporated into Modern Hydrogen's proprietary, performance-enhancing asphalt products. These are used in applications such as paving and road repair projects—including a section of asphalt surrounding the equipment installation at NW Natural's facility. Hydrogen generated on site is blended with natural gas and delivered via existing energy infrastructure.
City, State:
Portland, OR
Lead Partner:
NW Natural, Modern Hydrogen
Feedstock:
Innovative methane pyrolysis technology
End Use:
Hydrogen generated on site is blended with natural gas and delivered via existing energy infrastructure.
Corporate Partners:
N/A
Academic Partners:
N/A

Production Capacity:
N/A
Funding Costs:
N/A
Sources for Information:
https://ir.nwnaturalholdings.com/news/news-details/2024/NW-Natural-and-Modern-Hydrogen-Unveil-Clean-Hydrogen-Production-Carbon-Capture-Project-in-Portland/default.aspx

## Pennsylvania

Name:
Blue Hydrogen Project
Description:
Low-carbon NG and renewable natural gas (RNG) (as required) to produce low-carbon aviation fuel.
City, State:
Pennsylvania
Lead Partner:
EQT-GTL
Feedstock:
N/A
End Use:
Low-carbon aviation fuel
Corporate Partners:
N/A
Academic Partners:
N/A
Production Capacity:
N/A
Funding Costs:
N/A
Sources for Information:
https://www.energy.gov/sites/default/files/2023-10/H2Hubs_Appalachian_Community_Briefing.pdf

Name:

Blue Hydrogen Project

Description:

Liquified H2 facility in southwest PA to serve as an offtake for EQT's excess hydrogen to be used in the mobility sector.

City, State:

Pennsylvania

Lead Partner:

Air Liquide

Feedstock:

N/A

End Use:

Used in the mobility sector

Corporate Partners:

N/A

Academic Partners:

N/A

Production Capacity:

N/A

Funding Costs: N/A

Sources for Information:

https://www.energy.gov/sites/default/files/2023-10/H2Hubs_Appalachian_Community_Briefing.pdf

Name:

Blue Hydrogen Project

Description:

H2 production plus other products (NH3, urea/diesel exhaust fluid (DEF))

City, State:

Pennsylvania

Lead Partner:

KeyState

Feedstock:

N/A

End Use:

N/A
Corporate Partners:
N/A
Academic Partners:
N/A
Production Capacity:
N/A
Funding Costs:
N/A
Sources for Information:
https://www.energy.gov/sites/default/files/2023-10/H2Hubs_Appalachian_Community_Briefing.pdf

Name:
PMF Industries Hydrogen Storage projet
Description:
The project will help the company to construct a 16,000 square foot addition to its existing manufacturing in Williamsport that allows the company to produce metallic liners to store hydrogen and create and retrain jobs.
City, State:
Williamsport, PA
Lead Partner:
PMF Industries, the Department of Community and Economic Development
Feedstock:
N/A
End Use:
N/A
Corporate Partners:
PMF Indsutries
Academic Partners:
N/A
Production Capacity:
N/A

Funding Costs:
$4.5 million Pennsylvania Industrial Development Authority (PIDA) loan, $138,000 Pennsylvania First grant, and $11,000 WEDnetPA grant to help train employees.
Sources for Information:
https://dced.pa.gov/newsroom/creating-jobs-in-lycoming-county-shapiro-administration-investing-4-6-million-to-help-pmf-industries-expand-into-the-clean-hydrogen-market-grow-pennsylvanias-clean-energy-industry/

Name:
Aviation Hydrogen Fuel Hub
Description:
KeyState Energy, CNX Resources Corp and Pittsburgh International Airport plan to build an integrated facility to produce hydrogen or sustainable aviation fuel.
City, State:
Williamsport, PA
Lead Partner:
PMF Industries, the Department of Community and Economic Development
Feedstock:
N/A
End Use:
Hydrogen fuel
Corporate Partners:
KeyState Energy, CNX Resources Corp and Pittsburgh International Airport
Academic Partners:
N/A
Production Capacity:
Estimated 68,000 tons annually
Funding Costs: N/A
Sources for Information: https://investors.cnx.com/news-releases/2024/05-15-2024-114532918

## Rhode Island

N/A

## South Carolina

Name:
Fuel Cell Production
Description:
Bosch Group is investing over $200 million to produce fuel cell stacks at its Anderson, SC facility, for use in the fuel-cell power modules for Nikola Corp.'s hydrogen trucks
City, State:
Anderson, SC
Lead Partner:
Bosch Group
Feedstock:
N/A
End Use:
Use in the fuel-cell power modules for Nikola Corp.'s hydrogen trucks
Corporate Partners:
Nikola Corp.
Academic Partners:
N/A
Production Capacity:
N/A
Funding Costs:
$200 million
Sources for Information:
https://www.reuters.com/technology/bosch-invest-200-mln-make-fuel-cell-stacks-south-carolina-2022-08-31/

## South Dakota

Name:
Accelera by Cummins partners with Gevo and Zero6 Energy for first sustainable aviation project
Description:
Accelera™ by Cummins is supplying Gevo and Zero6 Energy with the electrolyzer technology for a

20-megawatt (MW) hydrogen production facility. The Accelera electrolyzer system will provide zero-emissions hydrogen for an adjacent bio-refinery. This project will help Gevo in their path to decarbonizing their liquid transportation fuels and their long-term goal of developing zero emissions fuel and chemical products.

City, State:
Lake Preston, South Dakota
Lead Partner:
Cummins
End Use:
20MW electrolyzer system comprised of four HyLYZER®-1000 proton exchange membrane (PEM) electrolyzers
Corporate Partners:
Gevo and Zero6 Energy
Academic Partners:
N/A
Production Capacity:
20MW
Funding Costs:
N/A
Sources for Information:
https://www.accelerazero.com/news/accelera-partners-gevo-zero6-energy-first-sustainable-aviation-project

## Tennessee

Name:
Plug Power Activates Liquid Hydrogen Plant
Description:
Plug Power Inc., has re-started operation of its hydrogen plant in Charleston, Tennessee, adding about ten tons per day (TPD) of liquid hydrogen supply back onto the U.S. market. Plug also implemented design improvements to enhance overall plant efficiency.
City, State:
Charleston, Tennessee

Lead Partner:
Plug Power Inc.
Feedstock:
Green liquid hydrogen
End Use:
Material handling operations, fuel cell electric vehicle fleets, and stationary power applications
Corporate Partners:
N/A
Academic Partners:
N/A
Production Capacity:
Ten tons per day
Funding Costs:
N/A
Sources for Information:
https://www.ir.plugpower.com/press-releases/news-details/2024/Plug-Power-Starts-Production-of-Liquid-Hydrogen-at-its-Existing-Tennessee-Plant/default.aspx

## Texas

Name:
HIF E-Fuel Facility
Description:
This facility spans 300 acres across the Texas coastline on the Gulf of Mexico.
City, State:
Matagorda County, Texas
Lead Partner:
HIF Global
End Use:
eMethanol shipping fuel
Corporate Partners:
HIF Global
Academic Partners:

Production Capacity:
300 metric tons of hydrogen per year
Funding Costs:
$6.1 Billion
Sources for Information:
https://www.ciphernews.com/articles/everything-is-bigger-in-texas-including-the-hydrogen/

Name:

Texas

Description:

Create hydrogen from natural gas using carbon capture and storage

City, State:
Houston, Texas
Lead Partner:
ExxonMobil
End Use:
Hydrogen production
Corporate Partners:

Academic Partners:

Production Capacity:

Funding Costs:
$6.6 Billion
Sources for Information:
https://www.ciphernews.com/articles/everything-is-bigger-in-texas-including-the-hydrogen/

Name:

Hydrogen City project

Description:

Centered around a hydrogen storage facility in the Piedras Pintas Salt Dome, this integrated green hydrogen production, storage and transport hub will be powered by 60GW of behind the meter solar

and wind power with additional renewable energy drawn from the ERCOT grid during periods of low prices.

City, State:
Texas
Lead Partner:
Green Hydrogen International, Energy Estate
Feedstock:
2.2GW electrolyzer production plant, powered by 3.75GW of behind the meter solar and wind power with additional renewable energy drawn from the ERCOT grid during periods of low prices.
End Use:
75 mile pipeline from Hydrogen City to Corpus Christi, supplying a 1 Million Tonne Per Annum (MTPA) ammonia production facility and local off-takers
Corporate Partners:
N/A
Academic Partners:
N/A
Production Capacity:
280,000 tonnes of green hydrogen per year
Funding Costs:
N/A
Sources for Information:
https://www.thehydrogenmap.com/?country=463 ,
https://www.ghi-corp.com/projects/hydrogen-city
https://www.prnewswire.com/news-releases/green-hydrogen-international-announces-hydrogen-city-texas--the-worlds-largest-green-hydrogen-production-and-storage-hub-301494988.html

Name:
E-fuels facility
Description:
Part of what is intended to be the largest e-fuels facility in the world (producing approximately 200 million gallons per year), the facility will require about 1.8GW of electrolysers. (HIF has already selected Siemens Energy to provide that amount of Silyzer300 PEM machines.)
City, State:
Matagorda County, Texas

Lead Partner:
HIF Global; Siemens
Feedstock:
1.8GW of electrolysers
End Use:
N/A
Corporate Partners:
Bechtel Energy, Topsoe Technologies
Academic Partners:
N/A
Production Capacity:
300,000 tons of green hydrogen per year
Funding Costs:
$6 billion
Sources for Information:
https://www.thehydrogenmap.com/?country=463 ,
https://www.hydrogeninsight.com/innovation/hif-global-gets-green-light-to-build-worlds-largest-e-fuels-facility-in-texas-with-1-8gw-of-green-hydrogen-production/2-1-1440684 ,
https://www.blackridgeresearch.com/blog/latest-list-of-upcoming-green-hydrogen-h2-projects-plants-in-united-states-of-america-us

Name:
Mega-scale green hydrogen production facility
Description:
This mega-scale renewable power-to-hydrogen project includes approximately 1.4 gigawatts (GW) of wind and solar power generation, along with electrolyzer capacity capable of producing over 200 metric tons per day (MT/D) of green hydrogen.
City, State:
Wilbarger County, Texas
Lead Partner:
Air Products; The AES Corporation
Feedstock:
1.4 gigawatts (GW) of wind and solar power generation, along with electrolyzer capacity capable of producing over 200 metric tons per day (MT/D) of green hydrogen.

End Use:
The facility, which is targeted to begin commercial operations in 2027, will serve growing demand for zero-carbon intensity fuels for the mobility market as well as other industrial markets.
Corporate Partners:
N/A
Academic Partners:
N/A
Production Capacity:
Over 200 metric tons per day (MT/D) of green hydrogen
Funding Costs:
$4 billion
Sources for Information:
https://www.thehydrogenmap.com/?country=463 ,
https://www.aes.com/press-release/air-products-and-aes-announce-plans-invest-approximately-4-billion-build-first-mega

Name:
HIF E-Fuel Facility
Description:
This facility spans 300 acres across the Texas coastline on the Gulf of Mexico.
City, State:
Matagorda County, Texas
Lead Partner:
HIF Global
End Use:
eMethanol shipping fuel
Corporate Partners:
HIF Global
Academic Partners:

Production Capacity:
300 metric tons of hydrogen per year
Funding Costs: $6.1 Billion
Sources for Information:

# Utah

Name:

Intermountain

Description:

Mitsubishi Hitachi Power Systems was awarded a contract to convert a coal-fired power generation plant in Utah into a renewable hydrogen-fired plant. The utility-scale project will initially generate electricity from a mix of hydrogen (30%) and gas (70%) fuel. This mix will cut carbon emissions by over 75% compared with the retiring coal-fired technology. The project's development will run from 2025 until 2045, when power is planned to be generated from 100% renewable hydrogen.

City, State:

Delta, Utah

Lead Partner:

Intermountain Power Agency (IPA)

Feedstock:

IPP will use renewable energy-powered electrolysis to split water into oxygen and hydrogen, storing the latter in underground salt caverns for use as fuel to drive electricity-generating turbines

End Use:

It will provide 840 MW of reliable energy to the IPA purchasers it serves, including Los Angeles and municipalities in other parts of California and Utah.

Corporate Partners:

Mitsubishi Hitachi Power Systems (MHPS), Los Angeles Department of Water and Power (LADWP)

Academic Partners:

N/A

Production Capacity:

840 MW

Funding Costs:

N/A

Sources for Information:

https://www.thehydrogenmap.com/?country=463 , https://www.ipautah.com/ipp-renewed/ , https://power.mhi.com/regions/amer/news/200310.html

## Vermont

Name:
Vermont Green Hydrogen Partnership
Description:
Vermont Gas Systems (VGS) and GlobalFoundries (GF) are working on a pilot project at GF's Essex Junction semiconductor manufacturing facility to use green hydrogen in natural gas lines. The project will include a hydrogen generation and storage facility, a hydrogen distribution system, and a system to blend hydrogen and natural gas. The project's goals are to reduce carbon emissions, demonstrate the value of renewable fuel in manufacturing, and contribute to Vermont's climate goals.
City, State:
Essex Junction, Vermont
Lead Partner:
Vermont Gas Systems (VGS) and GlobalFoundries (GF)
End Use:
Reduction of Carbon Emissions
Corporate Partners:
Vermont Gas Systems (VGS) and GlobalFoundries (GF)
Academic Partners:
University of Vermont
Production Capacity:
N/A
Funding Costs:
As of 2024: 19,670,687
Sources for Information:
https://vgsvt.com/vermont-partnership-advances-use-of-green-hydrogen-as-clean-fuel-of-the-future/
https://vgsvt.com/wp-content/uploads/2024/02/VGS-2024-Integrated-Resource-Plan.pdf

## Virginia

Name:
Topsoe Electrolyzer Factory

Description:

Topsoe, a global leader in carbon emission reduction technologies, announced plans to build a cutting-edge factory in Chesterfield, Virginia. The factory will manufacture advanced, energy efficient Solid Oxide Electrolyzer Cells (SOEC) that are essential to the efficient production of clean hydrogen and derivatives like eAmmonia and eMethanol. The decision by Topsoe to announce its plan for its largest investment in the US to date comes after the company received an allocation for nearly $136 million in federal Section 48C tax credits from the Inflation Reduction Act.

City, State:

Chesterfield, Virginia

Lead Partner:

Topsoe

Feedstock:

N/A

End Use:

The factory will manufacture advanced, energy efficient Solid Oxide Electrolyzer Cells (SOEC) that are essential to the efficient production of clean hydrogen and derivatives like eAmmonia and eMethanol.

Corporate Partners:

N/A

Academic Partners:

N/A

Production Capacity:

N/A

Funding Costs:

$136 million in federal Section 48C tax credits from the Inflation Reduction Act

Sources for Information:

https://www.topsoe.com/press-releases/topsoe-announces-plans-for-new-state-of-the-art-us-electrolyzer-factory-for-clean-hydrogen

Name:

Mitsubishi Power Projects

Description:

Mitsubishi Power's standard packages cut through the complexity power generators and grid operators encounter when integrating renewable power, gas turbines, green hydrogen and other energy storage technologies. In addition to two previously announced hydrogen projects, Mitsubishi Power has been

selected as the green hydrogen storage integrator for three projects, totaling more than $3 billion, using its new standard packages. The second project is being developed by Balico, LLC in Virginia. Balico's CEO Irfan K. Ali said, "Balico's fully permitted 1,600 megawatt Chickahominy Power Project is poised to deliver the critical Dominion Zone PJM market and Virginia the most efficient and reliable gas turbine technology in the world. We are excited at the prospect of even further environmental improvement by incorporating Mitsubishi Power's innovative renewable hydrogen based technologies."

City, State:
Virginia
Lead Partner:
Mitsubishi Power
Feedstock:
N/A
End Use:
Incorporate green hydrogen into gas turbines
Corporate Partners:
Balico, LLC
Academic Partners:
N/A
Production Capacity:
1,600 megawatt
Funding Costs:
N/A
Sources for Information:
https://power.mhi.com/regions/amer/news/20200902.html/?utm_source=amerweb&utm_medium=release&utm_campaign=Bakken

Name:
Southwest Virginia Hydrogen Hub
Description:
The Virginia Department of Energy is launching a program to encourage hydrogen production by inviting proposals from industry. The objective is to mobilize transition to clean energy while promoting economic development.

City, State:
Southwest Virginia
Lead Partner:
Virginia Department of Energy
Feedstock:
N/A
End Use:
N/A
Corporate Partners:
N/A
Academic Partners:
N/A
Production Capacity:
N/A
Funding Costs:
$1,000,000 with subawards up to $250,000
Sources for Information:
https://energy.virginia.gov/renewable-energy/Hydrogen_Hub.shtml

Name:
Newport News Green Hydrogen Lab
Description:
The Corporate Research Center, a subsidiary of the Virginia Tech Foundation, oversee Tech Center Research Park in Newport News where $1.6 million in GO Virginia funds will be used to develop a 5000- to 10,000- square-foot demonstration lab for green hydrogen production, leveraging Dominion Energy's Offshore wind project.
City, State:
Newport News, Virginia
Lead Partner:
Virginia Tech, Dominion Energy
Feedstock:
Offshore wind
End Use:
Green hydrogen, hydrogen fuel

Corporate Partners:
ITA International, Genplant, W.M. Jordan Co.
Academic Partners:
Virginia Tech
Production Capacity:
N/A
Funding Costs:
$1.6 million from GO Virginia fund (under the Virginia Department of Housing and Community Development) + $5 million from the private sector
Sources for Information:
https://news.vt.edu/articles/2023/04/outreach-newport-news-hydrogen.html#:~:text=The%20Corporate%20Research%20Center%2C%20a,Center%20and%20nearby%20Jefferson%20Lab.;
https://vtcrc.com/tcrp-green-hydrogen/

Name:
Turquoise Hydrogen Research
Description:
Virginia Tech has received a $1.3 million grant from the Appalachian Regional Commission to lead natural gas conversion research in Southwest Virginia by establishing a hydrogen innovation hub to turn natural gas into clean and economically viable products.
City, State:
Appalachian, Virginia
Lead Partner:
Virginia Tech
Feedstock:
Natural gas
End Use:
N/A
Corporate Partners:
Shepherd Chemical Company
Academic Partners:
Asbury University
Production Capacity:
N/A

Funding Costs:
N/A
Sources for Information:
https://fuelcellsworks.com/2025/04/18/h2/virginia-tech-receives-1-3-million-grant-to-revolutionize-energy-industries-in-appalachia

## Washington

Name:
Douglas County Public Utility District (PUD) project
Description:
This new renewable hydrogen facility will feature a 5 MW proton exchange membrane (PEM) electrolyzer and allow the Douglas County PUD to manufacture commercial hydrogen using electrolysis to harvest hydrogen from water from Wells Dam on the Columbia River.
City, State:
Douglas County, Washington
Lead Partner:
Douglas PUD, RH2 Engineering
Feedstock:
5 MW proton exchange membrane (PEM) electrolyzer
End Use:
Refueling
Corporate Partners:
N/A
Academic Partners:
N/A
Production Capacity:
80MW
Funding Costs:
$25 million
Sources for Information:
https://www.thehydrogenmap.com/?country=463,
https://fuelcellsworks.com/news/douglas-county-pud-to-acquire-409-acres-for-hydrogen-facility-wells-

dam-project, https://douglaspud.org/about-us/hydrogen-facility/, https://kpq.com/douglas-pud-takes-another-stride-toward-hydrogen-plant/

Name:

Smart Manufacturing Facility to Produce nuGen™ Haulage Solutions

Description:

Today, carbon reduction company First Mode announced construction of its first manufacturing facility in Seattle, Washington, USA. The factory will produce zero-emission powerplants and associated ground infrastructure for First Mode's nuGen™ haulage solutions, which replace diesel engines in mining haul trucks and locomotives by retrofitting customer's existing fleets with battery and hydrogen fuel cell solutions.

City, State:

Seattle, Washington

Lead Partner:

First Mode

Feedstock:

N/A

End Use:

The manufacturing facility will produce components to retrofit 36 vehicles with nuGen™ systems annually

Corporate Partners:

N/A

Academic Partners:

Washington State Department of Commerce

Production Capacity:

N/A

Funding Costs:

N/A

Sources for Information:

https://firstmode.com/updates/announcement-smart-manufacturing-facility/#:~:text=The%20factory%20will%20produce%20zero%2Demission%20powerplants%20and,with%20battery%20and%20hydrogen%20fuel%20cell%20solutions.&text=The%20first%20factory%2Dbuilt%20nuGen%E2%84%A2%20engines%20will%20be,Grounds%20in%20Centralia%2C%20Washington%2C%20USA%2C%20in%202024.

Name:

AltaGas Project

Description:

This node, led by ALA Renewable Energy LLC in partnership with HTEC Hydrogen Technology & Energy Corporation, plans to produce hydrogen for heavy-duty transportation, refineries, and power generation anticipated in Ferndale, WA. Key technologies will include an electrolysis-based hydrogen production plant, hydrogen liquefaction plant, and liquid hydrogen cryogenic storage tanks producing clean hydrogen for end-uses including peaking power, refinery, transit buses, port equipment, and up to 10 heavy-duty truck refueling stations.

City, State:

Ferndale, WA

Lead Partner:

AltaGas Ltd

Feedstock:

N/A

End Use:

Heavy-Duty Transportation, Refining & Power Generation

Corporate Partners:

N/A

Academic Partners:

Pacific Northwest Hydrogen Hub (PNWH2)

Production Capacity:

100 metric tons of hydrogen produced

Funding Costs:

$850 million to $1 billion

Sources for Information:

https://pnwh2.com/projects/ , https://www.energy.gov/sites/default/files/2024-08/H2Hubs%20PNW%20Booklet_Factsheet_8.30.24.pdf , https://www.bellinghamherald.com/news/local/article288420143.html

Name:

Atlas Agro Pacific Green Fertilizer (PGF) facility

Description:

This node, led by Atlas Agro, plans to develop clean hydrogen for calcium ammonium nitrate fertilizer

production for an expected end use by local farmers in Richland, WA. An alkaline exchange membrane electrolysis hydrogen production plant is planned to provide hydrogen for the production of green fertilizer for use throughout the region.

City, State:
Richmond, WA
Lead Partner:
Atlas Agro
Feedstock:
Green hydrogen ammonia fertilizer
End Use:
Agriculture
Corporate Partners:
N/A
Academic Partners:
Pacific Northwest Hydrogen Hub (PNWH2)
Production Capacity:
700,000 tons annually
Funding Costs:
~$1.5B USD
Sources for Information:
https://pnwh2.com/projects/ , https://www.energy.gov/sites/default/files/2024-08/H2Hubs%20PNW%20Booklet_Factsheet_8.30.24.pdf , https://www.atlasagro.ag/projects/pacific-green-fertilizer/ , https://www.atlasagro.ag/wp-content/uploads/2024/07/FONSI.pdf

Name:
Lewis Public Transportation Benefit Area
Description:
This node, led by Lewis Public Transportation Benefit Area, plans to leverage hydrogen production plants to support clean public transit infrastructure. Planned in Chehalis, WA, this node is to be central to hydrogen refueling stations for fuel cell electric vehicle buses and heavy- and medium-duty trucks along the I-5 corridor.
City, State:
Chehalis, WA

Lead Partner:
Lewis County Transit
Feedstock:
900 kW PEM electrolyzer system
End Use:
Public Transit
Corporate Partners:
Ohmium International
Academic Partners:
Pacific Northwest Hydrogen Hub (PNWH2)
Production Capacity:
400 kg of green hydrogen per day
Funding Costs:
N/A
Sources for Information:
https://pnwh2.com/projects/ ,
https://www.energy.gov/sites/default/files/2024-08/H2Hubs%20PNW%20Booklet_Factsheet_8.30.24.pdf ,
https://www.ohmium.com/news/ohmium-partners-with-lewis-county-transit-to-launch-washington-states-first-zero-emission-transportation-network ,
https://hydrogen-central.com/electrolyzer-ohmium-partners-with-county-transit-to-launch-washington-states-first-zero-emission-transportation-network/

## West Virginia

Name:
Adams Fork Energy Project
Description:
The Adams Fork Energy project, jointly developed by TransGas and the Flandreau Santee Sioux Tribe, will commence operations by 2027, and when fully built out, will consist of 6 plants, each producing 6,000 tons per day, totaling 36,000 tons per day of ammonia. This total of 13 million tons per year of ammonia equates to 2.2 million tons per year of hydrogen and will make West Virginia the global leader of the hydrogen economy. This output represents a significant contribution, accounting for 20%

of the US Department of Energy's goal of producing 10 million tons per year of clean hydrogen by 2030.

City, State:
Mingo County, West Virginia
Lead Partner:
GasTrans, Flandreau Santee Sioux Tribe
Feedstock:
N/A
End Use:
Low-CI ammonia production
Corporate Partners:
N/A
Academic Partners:
Appalachian Regional Clean Hydrogen Hub's, US DOE
Production Capacity:
2.2 million tons per year of hydrogen
Funding Costs:
$25 million
Sources for Information:
https://acrobat.adobe.com/link/track?uri=urn%3Aaaid%3Ascds%3AUS%3Ac4fb8b5f-d831-37ad-b13c-ffedad3e9e2c&viewer%21megaVerb=group-discover , https://adamsforkenergy.com/ , https://investors.cnx.com/news-releases/2023/04-03-2023-114519172 , https://www.energy.gov/sites/default/files/2023-10/H2Hubs_Appalachian_Community_Briefing.pdf

Name:
Clean Hydrogen Facility
Description:
The Chemours Company ("Chemours") (NYSE: CC), a global chemistry company, and TC Energy, a leader in the responsible development and reliable operation of North American energy infrastructure, have executed a memorandum of understanding (MOU) for the potential development of two electrolysis-based hydrogen production facilities at or near Chemours' Washington Works and Belle manufacturing sites in West Virginia. The MOU supports the companies' participation in and goals of the Appalachian Regional Clean Hydrogen Hub (ARCH2) in West Virginia.

City, State:
Belle, West Virginia
Lead Partner:
Chemours Company and TC Energy
Feedstock:
Proton exchange membrane (PEM) electrolysers
End Use:
Under the terms of the MOU, a non-binding off-take agreement for hydrogen produced by the project would be executed, supporting the facility demands of Chemours. Additionally, hydrogen produced in excess of the off-take agreement would be stored and available for loading and shipment to nearby merchant users.
Corporate Partners:
N/A
Academic Partners:
Appalachian Regional Clean Hydrogen Hub's, US DOE
Production Capacity:
N/A
Funding Costs:
N/A
Sources for Information:
https://acrobat.adobe.com/link/track?uri=urn%3Aaaid%3Ascds%3AUS%3Ac4fb8b5f-d831-37ad-b13c-ffedad3e9e2c&viewer%21megaVerb=group-discover,https://www.hartenergy.com/exclusives/tc-energy-chemours-partner-clean-hydrogen-facilities-204803,https://www.chemours.com/en/news-media-center/all-news/press-releases/2023/chemours-and-tc-energy-collaborate-on-the-development-of-two-clean-hydrogen-production-facilities-in,https://www.energy.gov/sites/default/files/2023-10/H2Hubs_Appalachian_Community_Briefing.pdf

Name:
Fidelis / Mountaineer GigaSystem
Description:
The Mountaineer GigaSystem™ is a lifecycle carbon neutral clean hydrogen facility and renewable microgrid designed to produce over 640 metric tons per day (“MTPD”), per train in Mason County, West Virginia utilizing Fidelis’ patented FidelisH2® technologies combined with carbon capture utilization and sequestration (“CCUS”) for carbon neutral hyperscale data centers and greenhouses that lowers the cost and environmental impact of food production.

City, State:
Mason County, West Virginia
Lead Partner:
Fidelis
Feedstock:
NG + biomass to produce Low CI H2 for datacenters, other off-takers.
End Use:
This net-zero carbon hydrogen will be used for a variety of purposes including carbon-neutral hyperscale datacenters, greenhouses, transportation, and steel production.
Corporate Partners:
Monarch Cloud Campus, Topsoe, Babcock & Wilcox, West Virginia DNR
Academic Partners:
Appalachian Regional Clean Hydrogen Hub's, US DOE, State of West Virginia, Mason County Development Authority, West Virginia University,
Production Capacity:
Producing over 500 metric tons per day (MTPD) of net-zero carbon hydrogen
Funding Costs:
$2 billion
Sources for Information:
https://www.energy.gov/sites/default/files/2023-10/H2Hubs_Appalachian_Community_Briefing.pdf , https://fidelisinfra.com/project/mountaineer-gigasystem/# , https://governor.wv.gov/News/press-releases/2023/Pages/Gov.-Justice-announces-Fidelis-New-Energy-to-build-hydrogen-project-and-data-center-campus-in-Mason-County.aspx

Name:
HLA
Description:
As part of ARCH2's ambitious plans, Clean Fuel Services LLC (CFS), an affiliate of Hog Lick Aggregates LLC (HLA), will construct hydrogen storage and fueling infrastructure. This infrastructure will support hydrogen-fueled heavy- and medium-duty vehicles, providing transportation services for the HLA quarry and other clients. The CFS Depot, located in Fairmont, West Virginia, will purchase hydrogen from producers within ARCH2 and feature a vehicle maintenance facility offering both diesel and hydrogen services.
City, State:
Fairmont, West Virginia

Lead Partner:
Clean Fuel Services LLC (CFS), Hog Lick Aggregates LLC (HLA)
Feedstock:
N/A
End Use:
This infrastructure will support hydrogen-fueled heavy- and medium-duty vehicles, providing transportation services for the HLA quarry and other clients.
Corporate Partners:
N/A
Academic Partners:
Appalachian Regional Clean Hydrogen Hub's, US DOE
Production Capacity:
Producing over 500 metric tons per day (MTPD) of net-zero carbon hydrogen
Funding Costs:
N/A
Sources for Information:
https://www.energy.gov/sites/default/files/2023-10/H2Hubs_Appalachian_Community_Briefing.pdf , https://hlaggregates.com/hog-lick-aggregates-to-begin-work-as-part-of-arch2/

Name:
Hope Gas/ WATT Fuel Cell Corp / EQT
Description:
WATT Fuel Cell ("WATT") announced that it will supply 500 residential Imperium® Solid Oxide Fuel Cells ("SOFC") to Hope Gas, Inc., a West Virginia-based natural gas utility. The natural gas-powered fuel cells, which operate in parallel with the commercial power grid, are sized to provide a typical home with quiet, pollution-free electric power. The new fuel cells will be offered to residential customers of Hope Gas, which serves more than 112,000 customers in 35 West Virginia counties.
City, State:
West Virginia
Lead Partner:
Hope Gas/ WATT Fuel Cell Corp / EQT
Feedstock:
Natural gas-powered fuel cells

End Use:
The new fuel cells will be offered to residential customers of Hope Gas, which serves more than 112,000 customers in 35 West Virginia counties.
Corporate Partners:
N/A
Academic Partners:
Appalachian Regional Clean Hydrogen Hub's, US DOE
Production Capacity:

Funding Costs:
N/A
Sources for Information:
https://www.energy.gov/sites/default/files/2023-10/H2Hubs_Appalachian_Community_Briefing.pdf ,
https://wattfuelcell.com/news/innovative-natural-gas-powered-fuel-cells-to-provide-clean-reliable-power-for-500-wv-homes/ ,
https://wattfuelcell.com/wp-content/uploads/WATT-and-Hope-Gas-Case-Study.pdf

Name:
Empire Diversified Energy
Description:
*Empire Diversified Energy, Inc. announced its Anaerobic Digester project in Follansbee, Brooke County, West Virginia will receive funding via Empire's inclusion in the Appalachian Regional Clean Hydrogen Hub (ARCH2).*
City, State:
Follansbee, West Virginia
Lead Partner:
Empire Diversified Energy, Heartland Water Technology
Feedstock:
Anaerobic Digester
End Use:
Develop a state-of-the-art facility that will convert food waste into renewable hydrogen and carbon
Corporate Partners:
N/A

Academic Partners:
Appalachian Regional Clean Hydrogen Hub's, US DOE
Production Capacity:
N/A
Funding Costs:
N/A
Sources for Information:
https://www.energy.gov/sites/default/files/2023-10/H2Hubs_Appalachian_Community_Briefing.pdf , https://empirediversifiedenergy.com/ , https://empirediversifiedenergy.com/heartland-water-technology-to-collaborate-with-empire-diversified-energy-to-produce-sustainable-hydrogen-at-the-port-of-west-virginia/ , https://www.heartlandtech.com/news/2024/5/19/heartland-water-technology-to-collaborate-with-empire-diversified-energy-to-produce-sustainable-hydrogen-at-the-port-of-west-virginia

## Wisconsin

Name:
Plug and Uline Expand Partnership to Supply Hydrogen and Fuel Cells at Four Additional Sites
Description:
Plug Power Inc. (NASDAQ: PLUG), a global leader in comprehensive hydrogen solutions for the green hydrogen economy, and Uline, the leading distributor of shipping, industrial and packaging materials to businesses throughout North America, announced their expanded partnership to deploy Plug's hydrogen infrastructure and fuel cell solutions at Uline's new campus in Kenosha, Wisconsin.
City, State:
Kenosha, Wisconsin
Lead Partner:
Plug Power
Feedstock:
N/A
End Use:
Plug's hydrogen infrastructure to support the entire campus is set to be commissioned and fully operational within the next ten months, with the first new distribution center in the campus slated to be completed this year. Uline plans to construct three more buildings over the next several years as part of the strategic campus build out.Plug's hydrogen infrastructure to support the entire campus is set to

be commissioned and fully operational within the next ten months, with the first new distribution center in the campus slated to be completed this year. Uline plans to construct three more buildings over the next several years as part of the strategic campus build out.

Corporate Partners:
Uline
Academic Partners:
N/A
Production Capacity:
N/A
Funding Costs:
$20,000,000
Sources for Information:
https://www.ir.plugpower.com/press-releases/news-details/2024/Plug-and-Uline-Expand-Partnership-to-Supply-Hydrogen-and-Fuel-Cells-at-Four-Additional-Sites/default.aspx

## Wyoming

Name:
Blue Bison Project
Description:
Tallgrass has been awarded DOE funding (~$5 million) for its Blue Bison project to carry out a front-end engineering design (FEED) study on the integration of autothermal reforming technology with carbon capture and storage to produce decarbonized hydrogen. Tallgrass is also developing its Eastern Wyoming Sequestration Hub in partnership with the State of Wyoming.
City, State:
Southern Wyoming
Lead Partner:
TallGrass
Feedstock:
Integration of autothermal reforming technology with carbon capture and storage
End Use:
N/A
Corporate Partners:
N/A

Academic Partners:
Appalachian Regional Clean Hydrogen Hub's, US DOE
Production Capacity:
N/A
Funding Costs:
$5 million in DOE funding
Sources for Information:
https://energyoffice.colorado.gov/sites/energyoffice/files/documents/Control%20Number%202779-1540_WIH2_Concept%20Paper%20redact%20V5.pdf ,
https://wyoenergy.org/wih2-application-submitted/