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| --- | --- | --- | --- | --- |
| State | Utility Programs | Regulatory Actions Taken | State Government Proposals | Notes/Reports |
| Alabama |  |  |  |  |
| Alaska |  |  |  |  |
| Arizona | [Southwest Gas](https://www.spglobal.com/marketintelligence/en/news-insights/latest-news-headlines/southwest-gas-prepares-for-hydrogen-future-with-projects-in-arizona-nevada-66251797): partnering with AZ State University to launch hydrogen blending pilot project. SW Gas will use the pilot project to determine the optimal blend of hydrogen and natural gas for safety and the environment, including the physical impacts of hydrogen on distribution system infrastructure and common gas appliances. The company will also study the economics of hydrogen and its effects on heating times when blended with natural gas. Southwest Gas intends to study hydrogen blends of up to 20% in closed gas systems at its training facility in Tempe. The projects are slated to get underway in the fourth quarter of 2021. The first phase will last several months and help determine the scope and duration of future phases. While the company will initially use pre-purchased, bottled hydrogen for the pilots, the goal is to tap solar power to operate an electrolyzer and produce hydrogen for injection into its distribution system.  **Announced August 2021**. |  | [**SB 1396**](https://www.azleg.gov/legtext/55leg/2R/bills/SB1396P.htm): would establish a hydrogen study committee within the legislature to investigate the role of hydrogen in Arizona’s economy.  Introduced January 25, 2022. |  |
| Arkansas |  |  | [SB 136](https://s3.amazonaws.com/fn-document-service/file-by-sha384/12b030bce62fc5b4ed9d42d6bbd6226eff2a909bb8d870e219fd45d11c640a05d53ede4ea591fd49721598799da7d853): Amends state law related to gas rates allowing the PSC to consider utility purchase of natural gas or natural gas alternatives, such as RNG and hydrogen, as an operating expense if the purchase is in the public interest.  **Signed into law March 2021.** |  |
| California | [**SoCal Gas**](https://www.prnewswire.com/news-releases/socalgas-launches-first-power-to-gas-project-in-us-300064534.html)**:** launched joint demonstration project in Golden, Colorado with NREL and National Fuel Cell Research Center to test the first power-to-gas system in the US.  **Announced April 13, 2015**.  [**SoCal Gas**](https://energy.utexas.edu/news/h2scale-project-launched-texas)**:** Partner in DOE’s H2@Scale program demonstrating commercial hydrogen, production, distribution, storage, and consumption.  **Launched in September 2020.**  [**Sempra**](https://www.sempra.com/socalgas-and-sdge-announce-groundbreaking-hydrogen-blending-demonstration-program-help-reduce)**:** SDG&E and SoCal Gas joint commitment to develop hydrogen blending demonstration program. They are planning multiple hydrogen blending projects throughout their respective service territories. The first proposed project will blend hydrogen into an isolated section of primarily PE plastic distribution system in SoCalGas' service territory. The initial hydrogen blend level is planned at 1% and may increase to as much as an industry-leading 20%.  **Announced November 23, 2020**.  [**San Diego Gas and Electric**](https://sdgenews.com/article/sdge-pledges-reach-net-zero-ghg-emissions-2045?utm_source=SDG%26E+Social&utm_medium=social&utm_term=&utm_content=&utm_campaign=): SDG&E will begin construction this year on two hydrogen demonstration projects that will test half a dozen use cases and anticipates putting them into service in 2022. The Borrego Springs Green Hydrogen Project will demonstrate hydrogen’s use as long-duration energy storage; a microgrid asset; and a resource for dispatch by the California Independent System Operator (CAISO) to support grid reliability. The Palomar Green Hydrogen Systems Project will demonstrate the blending of hydrogen with natural gas as fuel for an electric generator, as well as onsite production of green hydrogen for use as a cooling gas.  **Announced April 19th, 2021.**  [**SoCalGas**](https://www.newswise.com/doescience/on-site-hydrogen-production-technology-accelerates-to-market/?article_id=751969): Received exclusive license to use new technology that uses natural gas and RNG to generate hydrogen. The design technology minimizes the energy required to produce hydrogen while increasing durability and safety. Because the STARS technology can generate hydrogen anywhere natural gas is available, developers say this technology can greatly reduce the need for hauling hydrogen in special high-pressure tube-trailers.  **Announced May 26th, 2021.**  [**SoCalGas**](https://newsroom.socalgas.com/press-release/socalgas-aims-to-advance-transformative-hydrogen-technologies-via-us-department-of)**:** announced submission of several projects to DOE Earthshot initiative. HyDeal LA is an initiative to architect the green hydrogen ecosystem to achieve at-scale procurement of green hydrogen at $1.50/kg in the Los Angeles basin by 2030. Also proposing A project at the University of California, Irvine that will be designed to use hydrogen made from solar and wind energy to create a zero-emissions energy system on the UCI campus. Proposing a direct solar methane conversion technology developed at UCLA that uses solar energy to separate the carbon and hydrogen atoms in natural gas with zero or negative emissions, creating hydrogen and capturing carbon in solid form.  **Announced July 26, 2021.**  [**SoCalGas**](https://newsroom.socalgas.com/press-release/socalgas-among-first-in-the-nation-to-test-hydrogen-blending-in-real-world)**:** announced that it is blending hydrogen to fuel a household system and appliances at its Engineering Analysis Center and Centralized Training Facility. Preliminary results of testing that began in summer 2021 and show the household natural gas appliances are compatible with up to a 20% hydrogen blend.  **Announced September 30, 2021**.  SoCal Gas: Partnering with Bloom Energy to generate and then blend hydrogen into a university customer's existing natural gas network to demonstrate how the natural gas infrastructure can be decarbonized. Will deploy Bloom’s high-heat solid oxide electrolyzer to produce hydrogen at the California Institute of Technology. The resulting 10 percent hydrogen blend will be converted into electricity without combustion through existing Bloom Energy fuel cells downstream of the SoCalGas meter, producing electricity for a portion of the university.  **Announced December 14, 2021**.  [SoCalGas](https://www.socalgas.com/sustainability/hydrogen/angeles-link): proposing to develop what would be the nation's largest green hydrogen energy infrastructure system, the *Angeles Link*, to deliver clean, reliable energy to the Los Angeles region. As proposed, the *Angeles Link* would support the integration of more renewable electricity resources like solar and wind and would significantly reduce greenhouse gas emissions from electric generation, industrial processes, heavy-duty trucks, and other hard-to-electrify sectors of the Southern California economy.  **Announced February 2022**.  [**PG&E**](https://www.pge.com/en_US/about-pge/media-newsroom/news-details.page?pageID=66b8ed99-3175-48da-95d6-1a1fde0a4f18&ts=1651546270622): launched a comprehensive end-to-end hydrogen study and demonstration facility. Hydrogen to Infinity 130-acre study lab to test hydrogen injection, storage, and combustion in different end uses.  **Announced May 2, 2022**.  [**SoCalGas**](https://newsroom.socalgas.com/press-release/gkn-hydrogen-socalgas-and-the-national-renewable-energy-laboratory-agree-to): Partnering with NREL and GKN Hydrogen on long duration green hydrogen storage without the need for compression. Two HY2MEGA hydrogen storage subsystems will connect to an electrolyzer and fuel cell at the ARIES facility on NREL’s Flatirons Campus near Boulder, Colorado. The project will add an additional 500 kgs of hydrogen storage on site. The three-year project is set to launch at the end of this year.  **Announced June 29, 2022**. | [**A.** 22-09-006](https://www.socalgas.com/regulatory/Hydrogen-Blending-Demonstration-Application): Filed Joint IOU hydrogen blending application with SDG&E, SoCalGas, & Southwest Gas. Seeking approval to carry out two pilot programs and create balancing accounts to track and recover associated costs. Among the first proposed to blend hydrogen at high concentrations up to 20% by volume. SoCalGas and SDG&E estimated their project costs at almost $12.9 million and $12.2 million, respectively, while Southwest Gas' would cost a projected $10.2 million. If approved, the pilots could begin in 2024, and each would last about 18 months.  **Filed September 8, 2022**.  [Application 22-02-007](https://www.socalgas.com/regulatory/angeleslink): SoCal Gas seeking authority to establish a memorandum account for the Angeles Link Project. company will record initial feasibility study costs for its proposed Angeles Link project. SoCalGas will have to seek permission to recover those costs in the future. SoCalGas allowed to record up to $26 million in the memorandum account, with an option to increase the cap by 15% if additional funds are needed to complete the first phase of feasibility studies.  **Approved December 15, 2022**.  [Rulemaking 13-02-008](https://docs.cpuc.ca.gov/PublishedDocs/Published/G000/M499/K892/499892531.PDF): establishes guidelines for hydrogen blending pilot projects, directing utilities to submit applications within two years. Will inform CPUC efforts to develop hydrogen injection standard. Projects should initially evaluate low-volume blends of 0.1%-5% and advance toward testing blends of 5%-20%. The order also established an interim definition for clean renewable hydrogen essentially requiring green hydrogen.  **Issued December 15, 2022**. | [SB 1122](https://leginfo.legislature.ca.gov/faces/billStatusClient.xhtml?bill_id=201920200SB1122): Requires PUC to consider green electrolytic hydrogen as a zero-carbon resource; requires CARB to prepare strategic plan to accelerate green electrolytic hydrogen.  **Introduced February 2020.**  [**SB 18**](https://leginfo.legislature.ca.gov/faces/billTextClient.xhtml?bill_id=202120220SB18)**:** Directs CARB to prepare report with CEC and CPUC that includes information on development, deployment, and use of hydrogen in CA. Must include recommendations for definitions on types of hydrogen, potential end uses, and potential programs.  **Introduced Dec. 2020. Passed Assembly May 2021**.  [21-22 Budget](http://www.ebudget.ca.gov/FullBudgetSummary.pdf): In Gov. Newsom’s latest budget proposal seeking $110 million for green hydrogen production. According to the budget document, investment in green hydrogen is aimed at accelerating the transition away from using fossil fuels to produce hydrogen and to displace the use of gas at power plants.  **Announced May 17th, 2021**  [**AB 324**](https://leginfo.legislature.ca.gov/faces/billTextClient.xhtml?bill_id=202320240AB324)**:** Directs CPUC to examine potential for establishing renewable hydrogen procurement targets for gas utilities.  **Introduced January 30, 2023.** |  |
| Colorado | [**Xcel Energy**](https://wp-cpr.s3.amazonaws.com/uploads/2023/07/Xcel-PUC-Proposal.pdf): Hydrogen blending project proposed in unincorporated Adams County to blend 2% hydrogen by December 2023 and up to 10% during the two-year pilot project serving 236 customers. The total cost of the project is estimated to be $5 million.  **Filed May 2023**. |  | [SB 20-013](http://leg.colorado.gov/sites/default/files/documents/2020A/bills/2020a_1070_01.pdf): Establishes innovative tech program approved by PUC where utilities may seek approval of projects relating to technologies such as RNG, hydrogen, and CCS. Allows utility to fully recover costs of project and capital investments.  **Passed Senate, left on table 2019.**  [SB 21-264](https://leg.colorado.gov/bills/sb21-264): Clean heat legislation requires utilities to develop emissions reduction plans - includes green hydrogen in clean heat plans.  **Signed into law on June 24th, 2021.**  [**HB 23-1281**](http://leg.colorado.gov/bills/hb23-1281)**:** directs PUC to establish stand-alone application, review, and approval process for utility projects producing clean hydrogen. Authorizes utilities to sell hydrogen under a tariff.,  **Introduced April 3, 2023**. | [Colorado Energy Office: Opportunities for Low-Carbon Hydrogen in Colorado: A Roadmap (**October 2021**)](https://energyoffice.colorado.gov/press-releases/colorado-energy-office-releases-opportunities-for-low-carbon-hydrogen-in-colorado-a) |
| Connecticut | [AVANGRID](https://www.businesswire.com/news/home/20210708005220/en/AVANGRID-Poised-to-Build-Green-Hydrogen-Future): Recently submitted five different proposals to DOE’s Energy Earthshot Initiative including a 20 MW electrolyzer and hydrogen storage complex for Avangrid’s gas and electric utilities. The project could produce roughly 2.9 million kg of hydrogen per year, yielding an annual emissions reduction of approximately 25,000 tons of CO2.  **Announced July 8, 2021**. |  |  |  |
| Delaware |  |  |  |  |
| District of Columbia | [**WGL**](https://washingtongasdcclimatebusinessplan.com/): Climate Business Plan includes robust role for hydrogen to meet the District’s emissions reduction goals.  **Issued March 2020.** |  |  |  |
| Florida | [**Chesapeake**](https://www.spglobal.com/marketintelligence/en/news-insights/latest-news-headlines/chesapeake-utilities-branches-into-hydrogen-on-heels-of-renewable-gas-push-62878216): executed a letter of support with Solar Turbines to develop project at CHP plant near Jacksonville which will explore using a blend of RNG and 4% green hydrogen to fuel the plant. Will be used as a test case for hydrogen blending and its potential. CPK is also entertaining the prospect of engaging in small-scale green hydrogen production at solar power facilities.  **Announced on Feb. 23, 2021 earnings call**. |  | [**HB 1163**](https://www.myfloridahouse.gov/Sections/Bills/billsdetail.aspx?BillId=75968): sales tax exemption for the purchase of machinery and equipment primarily used in the production, storage, transportation, compression, or blending of green hydrogen.  **Introduced January 4, 2021**. |  |
| Georgia | [Southern](https://southerncompanygas.com/2021/02/11/southern-company-takes-foundational-leadership-role-in-hydrogen-rd-effort-to-achieve-net-zero-goals/): Partnering with DOE in its HyBlend initiative to address the technical barriers to blending hydrogen in natural gas infrastructure and study life-cycle emissions of hydrogen blends.  **Announced February 11, 2021**.  [Southern](https://www.prnewswire.com/news-releases/southern-company-gas-electro-active-technologies-and-t2m-global-announce-collaborative-project-to-accelerate-progress-in-clean-hydrogen-301347097.html): Received $1 million as part of DOE EarthShot Initiative for project that targets distributed generation of hydrogen from food waste, diverting the waste from landfills and minimizing greenhouse gas emissions from the food value chain and the transportation sector. The solution will offer waste generators an advanced option to divert large volumes of food waste from landfills and comply with local regulations.  **Announced August 3, 2021**. |  |  |  |
| Hawaii | **Hawaii Gas**: participating in DOE’s HyBlend program. |  | [SB 289](https://www.capitol.hawaii.gov/measure_indiv.aspx?billtype=SB&billnumber=289&year=2021): The bill requires gas RPS. Following renewable portfolio requirements: 25 percent of sales by 2025; 40 percent of sales by 2030; 70 percent of sales by 2040; and 100 percent of sales by 2050. Allows for cost recovery through an automatic rate adjustment clause.  **Introduced January 22, 2021**.  [SB 2283/ HB 1937](https://www.capitol.hawaii.gov/measure_indiv.aspx?billtype=SB&billnumber=2283&year=2022): directs the Hawaii Energy Institute to conduct a study to examine the State's ability to advance hydrogen production from local renewable energy resources. The study will then be used to develop a strategic plan including a long-term plan out to 2050.  **Introduced January 21, 2022**. |  |
| Idaho |  |  |  |  |
| Illinois |  |  | [HB 3115](https://ilga.gov/legislation/102/HB/PDF/10200HB3115lv.pdf)/SB 530: Natural gas utilities may seek authorization from the ICC to engage in RNG and hydrogen-related activities such as facility investment, gas supply contracts, pipeline expansion to interconnect with RNG, and providing customers with the option to directly purchase RNG. Includes portfolio goals of 2% of the utility's supply portfolio by January 1, 2030 and not less than 3% by 2035.  **Introduced February 2021**.  [**SB 3613**](https://ilga.gov/legislation/BillStatus.asp?GA=102&SessionID=110&DocTypeID=SB&DocNum=3613): would establish a Hydrogen Economy Task Force. The task force is directed to establish a plan to create, support, develop, or partner with a Hydrogen Hub in the State, and determine how to maximize federal financial incentives to support Hub development.  **Introduced January 19, 2022**. |  |
| Indiana |  |  |  |  |
| Iowa |  |  |  |  |
| Kansas |  |  |  |  |
| Kentucky |  |  |  |  |
| Louisiana |  |  |  |  |
| Maine | [AVANGRID](https://www.businesswire.com/news/home/20210708005220/en/AVANGRID-Poised-to-Build-Green-Hydrogen-Future): begun exploring how to collaboratively help advance green hydrogen consumption in existing manufacturing processes, for enhanced renewable natural gas production, and in transportation applications such as trucking and aviation.  **Announced July 8, 2021**. |  | [LD-2017](https://legiscan.com/ME/text/LD2017/2019): Requires the PUC to develop and oversee a pilot project for the conversion of excess renewable energy into methane gas and hydrogen and the storage of the converted gas. Up to 3 energy-to-gas facilities, each up to 10 megawatts in production capacity, may be established. The commission is required to establish the pilot project no later than January 1, 2021; the pilot project expires December 31, 2026.  Introduced 2020. Carried over into 2021, due to emergency adjournment.  [**LD 9**](http://legislature.maine.gov/LawMakerWeb/summary.asp?paper=SP0016&SessionID=14): The bill would require the PUC to establish and oversee a power-to fuel pilot program. The commission is required to approve up to two power-to-fuel projects between January 1, 2022 and December 31, 2027, each up to 10 megawatts in production capacity, that convert renewable energy to hydrogen gas, methane gas or other fuel.  **Introduced January 11, 2021** |  |
| Maryland |  |  |  |  |
| Massachusetts |  | [DPU 20-80](https://fileservice.eea.comacloud.net/FileService.Api/file/FileRoom/12873333): Issued order opening an investigation into role of gas LDCs in meeting MA emissions limits, “Future of Heat Proceeding.” In the proceeding National Grid has proposed a hydrogen production and blending project that would take place in a campus setting with a customer-owned energy system, such as a university or industrial park.  **Filed November 2020**. | [H 3887](https://malegislature.gov/Bills/192/H3887): seeks study on the opportunities for sustainable and cost-effective market deployment of RNG, hydrogen, and low-carbon fuels to reduce emissions associated with the supply of natural gas for heating.  **Filed February 15, 2021**. | “[The Viability of Implementing Hydrogen in Massachusetts](https://futureofhydrogen.org/wp-content/uploads/2021/11/Hydrogen-Executive-Summary-Final-Draft.pdf)” UMass Lowell (2021) |
| Michigan | [**WEC Energy Group**](https://www.uppermichiganssource.com/2022/01/25/wec-energy-group-announces-hydrogen-power-pilot-program/)**:** announced hydrogen blending pilot project in Upper Peninsula.Will blend 25/75 mix of hydrogen and natural gas into power generating unit.  **Announced January 25, 2022.** |  |  |  |
| Minnesota | [CenterPoint](https://www.prnewswire.com/news-releases/centerpoint-energy-launches-green-hydrogen-project-in-minnesota-301560709.html): Pilot project to produce green hydrogen and blend into the existing gas system at concentrations of less than 5% by volume. Expected to avoid 1,200 tons of CO2 emissions annually, equal to the annual energy use of nearly 140 homes. 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.  **Went online March 2022**. | [**Docket G-008/GR-21-435**](https://efiling.web.commerce.state.mn.us/edockets/searchDocuments.do?method=showPoup&documentId=%7b101A8D82-0000-C413-91FF-72F03D8DBA98%7d&documentTitle=20228-188285-01)**:** Settlement authorizes CenterPoint to include investments in its first renewable hydrogen pilot project in rate base.  **Approved August 18, 2022**. | [SF No. 3013](https://www.revisor.mn.gov/bills/text.php?number=SF3013&version=latest&session=ls91&session_year=2020&session_number=0&format=pdf): The bill would establish a state regulatory policy allowing a utility to add RNG and hydrogen to its distribution system. Must submit plan to MPUC, the cost of the alternative resource plan must be no more than five percent of the utility’s total annual revenue requirement. Also calls for statewide inventory of Minnesota’s potential renewable natural gas resources.  **Passed Senate before session adjourned sine die.**  [HF 239](https://www.revisor.mn.gov/bills/text.php?number=HF239&type=bill&version=0&session=ls92&session_year=2021&session_number=0)/ SF 421: allows gas utilities to propose innovative resource plans. Innovative resource is defined to include biogas, RNG, and power-to-hydrogen among others.  **Introduced January 21, 2021**.  [Natural Gas Innovation Act](https://www.revisor.mn.gov/bills/bill.php?b=Senate&f=SF0421&ssn=0&y=2021) establishes a regulatory framework for natural gas utilities to contribute to meeting Minnesota’s greenhouse gas reduction and renewable energy goals through the development of “innovation plans” using “innovative resources.” Innovative resources include biogas, renewable natural gas, and power-to-hydrogen among others.  **Signed into Law on June 26th, 2021** |  |
| Mississippi |  |  |  |  |
| Missouri |  |  | [HB 734](https://www.house.mo.gov/Bill.aspx?bill=HB734&year=2021&code=R): requires PSC to adopt rules for RNG program for utilities. Includes hydrogen in definition of RNG. Directs PSC to establish reporting requirements and a process for utilities to fully recover prudently incurred costs associated with a renewable natural gas program.  **Passed May 2021.** |  |
| Montana |  |  | [HB 170](http://laws.leg.mt.gov/legprd/LAW0210W%24BSIV.ActionQuery?P_BILL_NO1=170&P_BLTP_BILL_TYP_CD=HB&Z_ACTION=Find&P_SESS=20211): creates a new tax classification for green hydrogen and provides tax incentives; exempts green hydrogen from the major facility siting act; revises the state energy policy to include green hydrogen; and revises the use of energy development and demonstration grants for green hydrogen.  **Enacted April 29, 2021**. |  |
| Nebraska |  |  | [LB 1099](https://nebraskalegislature.gov/bills/view_bill.php?DocumentID=47726): directs the Department of Economic Development to establish a Hydrogen Hub Industry Work Group to develop and draft a competitive proposal for submission to DOE.  **Introduced January 19, 2022**. |  |
| Nevada | [Southwest Gas](https://www.spglobal.com/marketintelligence/en/news-insights/latest-news-headlines/southwest-gas-prepares-for-hydrogen-future-with-projects-in-arizona-nevada-66251797): partnering with University of Nevada Las Vegas to launch hydrogen blending pilot project. SW Gas will use the pilot project to determine the optimal blend of hydrogen and natural gas for safety and the environment, including the physical impacts of hydrogen on distribution system infrastructure and common gas appliances. The company will also study the economics of hydrogen and its effects on heating times when blended with natural gas. Southwest Gas intends to study hydrogen blends of up to 20% in closed gas systems at its training facility in Henderson. The projects are slated to get underway in the fourth quarter of 2021. The first phase will last several months and help determine the scope and duration of future phases. While the company will initially use pre-purchased, bottled hydrogen for the pilots, the goal is to tap solar power to operate an electrolyzer and produce hydrogen for injection into its distribution system.  **Announced August 2021**. |  | [**SB 451**](https://www.leg.state.nv.us/App/NELIS/REL/82nd2023/Bill/10489/Text): Requires several cabinet agencies to promote the production, processing, delivery, storage, and use of clean hydrogen in the state and identify barriers to the deployment of hydrogen.  **Introduced April 17, 2023**. |  |
| New Hampshire |  |  |  |  |
| New Jersey | **New Jersey Natural:** participating in DOE’s HyBlend program.  **New Jersey Natural**: seeking BPU approval to rate base Howell Power-to-Gas injection project. The project will allow NJR to utilize a less than 1% hydrogen blend across its system. The 175-kw electrolyzer produces 65 kilograms per day of hydrogen, which NJR injects into an 8-inch, 60-pounds-per-square-inch distribution line.  **Began operation October 2021.**  [**South Jersey Industries**](https://www.sjindustries.com/investors/news-events/newsroom/south-jersey-industries/2020/sji-announces-green-hydrogen-partnership-with-atla): SJI announced plans to launch a green hydrogen pilot project with Atlantic Shores Offshore Wind LLC, which has bid to build a wind farm off the southern New Jersey coast. | [BPU Docket No. GR21030679](https://nam04.safelinks.protection.outlook.com/?url=https%3A%2F%2Fwww.njng.com%2Fregulatory%2Fpdf%2FNJNG-2021-Base-Rate-Case-Filing-GR21030679.pdf&data=04%7C01%7Cbrian.fields%40centerpointenergy.com%7C5bf38b53d15947253a4508d9454bb4ce%7C88cc5fd7fd7844b6ad75b6915088974f%7C0%7C0%7C637617017038576449%7CUnknown%7CTWFpbGZsb3d8eyJWIjoiMC4wLjAwMDAiLCJQIjoiV2luMzIiLCJBTiI6Ik1haWwiLCJXVCI6Mn0%3D%7C1000&sdata=2hRzF2Gp1HKx1WjWZTlSXu3uAJtzIEYcqOU7xJKJtPk%3D&reserved=0): Hydrogen Project aka Howell Power-to-Gas Injection Project, located in Howell, NJ. NJNG is seeking full recovery of the project, estimated to cost $6.0 million, in their recently filed rate case. If approved by the NJ Board of Public Utilities, NJ BPU, this would be the first rate based hydrogen generation facility on the U.S. east coast.  **Filed March 30, 2021**.  [**Docket GR23030102**](https://publicaccess.bpu.state.nj.us/CaseSummary.aspx?case_id=2111751)**:** PSEG proposing to invest $30 millionin a hydrogen blending demonstration project which will include a 1 MW power to gas facility to create a 2% hydrogen blend. | [**NJ S 3526**](https://www.njleg.state.nj.us/2020/Bills/S4000/3526_I1.HTM)**/ A 5655:** directs the BPU to establish a program to encourage the procurement of RNG/hydrogen and investment in RNG/hydrogen infrastructure by a gas utility. The bill establishes portfolio targets starting at 5% by 2024 the bill sets targets increasing by five percent every five years ending in 30 percent RNG by 2050. Allows utility to annually invest up to 5% of total revenue requirement.  **Introduced March 9, 2021** |  |
| New Mexico | [New Mexico Gas](https://www.prnewswire.com/news-releases/bayotech-and-new-mexico-gas-company-partner-to-build-states-largest-clean-hydrogen-production-hub-301436903.html): Partnering with BayoTech to develop hydrogen production facility. The hydrogen will be used by NMG in a pilot project to demonstrate blending into the NMG system. Anticipated operational by mid-2022 and will produce up to 1,000 kg per day of high-purity hydrogen.  **Announced December 2021**. |  | [Hydrogen Hub Act](https://capitalandmain.com/wp-content/uploads/2021/11/2021-11-12-Hydrogen-Hub-Act-Discussion-Draft.pdf): Income tax credits equal to 5 percent of eligible costs related to hydrogen electric generation and production, as well as gross receipts tax deductions related to hydrogen production, distribution, equipment, and refueling stations. Tax incentives are only available for hydrogen produced below the carbon intensity levels within the Act, starting at 9 kg CO2e per kg of H2, and the intensity limit decreases every two years. Authorizes natural gas utilities to use available tools, including, without limitation, hydrogen to achieve greenhouse gas emission reductions, cost-effectiveness, and equity.  **Circulated November 2021**.  [**HB 4**](https://www.nmlegis.gov/Legislation/Legislation?chamber=H&legType=B&legNo=4&year=22): would establish a Hydrogen Hub Development Board. The board shall have the power to approve applications for grants for hydrogen hub projects. The bill also establishes a hydrogen hub project fund for studying the costs and benefits of potential projects as well as providing grants and loans for projects. Also establishes a series of corporate and income tax credits.  **Announced January 24, 2022**. |  |
| New York | **National Grid:** Partner in DOE’s HyBlend program researching blending hydrogen into gas distribution systems.  [**National Grid**](https://news.stonybrook.edu/newsroom/new-collaboration-to-accelerate-clean-energy-research-at-stony-brook/): partnership with NYSERDA and Stony Brook University on a hydrogen blending demonstration project that will produce zero- or negative-carbon hydrogen.  **Announced May 8, 2019**.  [**National Grid**](https://www.nationalgridus.com/News/2021/03/National-Grid-and-Standard-Hydrogen-Corporation-Announce-Plans-for-Innovative-Hydrogen-Energy-Station/): Plan to demonstrate a green hydrogen storage and delivery system capable of catering to several sectors keen on utilizing the zero-carbon fuel. The companies intend to deploy the first Energy Transfer System, or ETS, a combined hydrogen production, storage and distribution facility developed by Albany, N.Y.-based Standard Hydrogen. Pending regulatory approval, the partners intend to install the system in the Capital Region with completion slated for late 2022.  The partners plan to purchase renewable electric power to operate the ETS's on-site electrolyzer, which splits water into oxygen and hydrogen. The system then stores and distributes the so-called green hydrogen.  **Announced March 11, 2021**.  [Rochester Gas & Electric (AVANGRID)](https://www.businesswire.com/news/home/20210708005220/en/AVANGRID-Poised-to-Build-Green-Hydrogen-Future): assessing opportunities to construct a multi-use hydrogen production and distribution facility, which could support a range of hydrogen uses, including transportation applications to meet zero-emissions fleet goals.  **Announced July 8, 2021**.  [National Grid](https://www.prnewswire.com/news-releases/national-grid-and-town-of-hempstead-to-develop-one-of-the-first-green-hydrogen-blending-projects-in-the-country-301445771.html): Partnership with the Town of Hempstead to build HyGrid Project blending green hydrogen into existing distribution system to heat approximately 800 homes and fuel 10 municipal vehicles.  **Announced December 2021**.  [National Grid, Liberty, & Con Ed](https://www.governor.ny.gov/news/governor-hochul-announces-multi-state-agreement-signed-major-hydrogen-ecosystem-partners): Members in NY-led consortium to establish Northeastern regional clean hydrogen hub.  **Announced March 25, 2022**. |  | [S 3281/ A 3788](https://assembly.state.ny.us/leg/?default_fld=&leg_video=&bn=S3281&term=2021&Summary=Y&Actions=Y&Committee%26nbspVotes=Y&Floor%26nbspVotes=Y&Memo=Y&Text=Y): establishes a renewable hydrogen incentive and financing program to engage stakeholders to design and implement a competitive program for renewable hydrogen production for the purpose of meeting the state's clean energy and greenhouse emissions reductions targets.  **Introduced January 2021. Carried over Jan. 2022.**  [NYSERDA](https://www.governor.ny.gov/news/governor-cuomo-announces-new-york-will-explore-potential-role-green-hydrogen-part): will spend $8.5 million on a green hydrogen demonstration project at NYPA's Brentwood power plant on Long Island. The project will evaluate green hydrogen's potential role in displacing fossil fuels from power generation. The project will start with a five percent blend and will seek to blend up to 30% green hydrogen beginning in fall 2021 lasting six to eight weeks. The agency is also setting aside $12.5 million for demonstration projects and project development in the field of long-duration energy storage including green hydrogen.  **Announced July 8, 2021**. |  |
| North Carolina | **Dominion**: seeking PUC approval to recover costs testing hydrogen blending up to 5% at training facility to validate current research and gain operational experience. | [Docket No. G-5, Sub 632](https://starw1.ncuc.net/NCUC/ViewFile.aspx?Id=e1be3af8-1a92-48de-81f4-3b46a3291402): Dominion filed an application in April 2021 seeking a $215,000 capital investment in a proposed pilot to blend 5% hydrogen gas with natural gas. Since this project is R&D, the Company proposes to account for this capital investment as experimental gas plant unclassified (FERC Account GL 103). The proposal would run the pilot in a closed loop at Dominion's natural gas headquarters in Gastonia.  **Filed April 1, 2021**. |  |  |
| North Dakota |  |  |  |  |
| Ohio | [Dominion](https://news.dominionenergy.com/news?item=137989): 5% hydrogen blending project launched in Boston Heights at utility’s technical training center. The pilot project will help Dominion Energy Ohio achieve its goal of preparing its entire distribution system to be ready to blend by 2030.  **Announced May 19, 2023**. |  |  | Cleveland State University, [Developing a Hydrogen Economy in Ohio: Challenges and Opportunities](https://engagedscholarship.csuohio.edu/cgi/viewcontent.cgi?article=2756&context=urban_facpub) (March 2022) |
| Oklahoma | [**ONE Gas**](https://energy.utexas.edu/news/h2scale-project-launched-texas)**:** Partner in DOE’s H2@Scale program demonstrating commercial hydrogen, production, distribution, storage, and consumption.  **Launched in September 2020.**  **ONE Gas:** participating in DOE’s HyBlend program. |  | [**HB 3970**](https://s3.amazonaws.com/fn-document-service/file-by-sha384/9fcdfc5e3d3e8377e2fc4f7a0d0ac543741a2994913421d189b7befa0de141c4c70b5769a61a20fcaaa3e8c110e5aa12): Requires OCC to issue a report by Dec. 2020 on recommendations regarding the ability and appropriateness of natural gas utilities to procure, transport and deliver renewable natural gas and hydrogen to customers.  **Introduced January 2020.**  [**HB 1815**](http://www.oklegislature.gov/BillInfo.aspx?Bill=HB1815&session=2100)**:** Directs OCC, by December 1, 2021, to issue a report and recommendations to the legislature on the ability of utilities to procure RNG and hydrogen for customers. The report must also discuss the methods for recovery of associated costs from ratepayers, such as transport infrastructure and commodity costs.  **Enacted April 2021.**  [**SB 1021:**](http://www.oklegislature.gov/BillInfo.aspx?Bill=sb1021)Established hydrogen pipeline taskforce to investigate the viability of utilizing the existing pipeline infrastructure to move hydrogen gas and the existing and potential needs of the pipeline industry to integrate hydrogen gas.  **Enacted April 2021.**  [**SB 1853**](http://www.oklegislature.gov/BillInfo.aspx?Bill=SB1853&session=2200)**:** would set a hydrogen fuel production standard that will serve as an annual goal to be reached each year through 2028. Such hydrogen fuel production standard shall be to produce Two Mmt of hydrogen fuel using a low or zero carbon source of energy annually by 2028.  **Introduced January 20, 2022.**  [**SB 1854**](http://www.oklegislature.gov/BillInfo.aspx?Bill=SB1854&session=2200)**:** directs DEQ to establish a streamlined permitting process for hydrogen fuel production in cooperation with any other applicable agency. | [Sec of Energy Hydrogen Taskforce Report](https://oklahoma.gov/content/dam/ok/en/governor/documents/Hydrogen%20Production%20Task%20Force%20Report.pdf) (Dec 2021) |
| Oregon | [NW Natural](https://www.nwnatural.com/about-us/the-company/newsroom/2020-renewable-hydrogen-eugene): developing a project in Eugene to produce green hydrogen and pair locally produced supplies with carbon dioxide to create synthetic natural gas. Partners include the Eugene Water & Electric Board and the Bonneville Environmental Foundation. 1 MW P2G facility with a 5% hydrogen blend to serve 2,500 customers in western Eugene. Estimated to cost $7-$9.8 million.  **Announced October 8, 2020**. **Began outreach & prelim filings in July 2022.** **Operational by early 2024.**  [**NW Natural**](https://www.nwnatural.com/about-us/environment/renewable-natural-gas#tab-3-focus): Issued RFP seeking RNG resources and/or associated environmental benefits from feedstocks including renewable hydrogen resources.  **Issued July 8, 2021**.  **NW Natural**: Successful tests blending 5% hydrogen at its Sherwood operations and training center with a goal to increase our blending and increments up to 15%.  [**NW Natural**](https://ir.nwnaturalholdings.com/news/news-details/2022/NW-Natural-to-Partner-with-Modern-Electron-on-Exciting-Pilot-Project-to-Turn-Methane-into-Clean-Hydrogen-and-Solid-Carbon/default.aspx): Announced pilot project with Modern Electron turning natural gas into hydrogen and solid carbon without requiring electricity, water, or consumable catalyst. Planned for pilot at NW Natural’s Central Portland facility.  **Pilot will go live in early 2023**.  **NW Natural**: Announced plans to increase hydrogen blending tests from 5% to 10% of gas volume in coming weeks, aim to test 15% blend at Sherwood test facility by year-end.  **Announced November 8, 2022**. | The regulations pursuant to SB 98 are being established in Docket No. [AR 632](https://apps.puc.state.or.us/edockets/docket.asp?DocketID=22060).  [Order No. 20-227](https://apps.puc.state.or.us/orders/2020ords/20-227.pdf): Pursuant to SB 98, rules under which utilities may procure RNG for customers with voluntary volumetric goals set by SB 98. Allows utilities to invest in and own the cleaning and conditioning equipment required to bring raw biogas and landfill gas up to pipeline quality, as well as the facilities to connect to the local gas distribution system. Sets on incremental costs to acquire RNG and application of cost-effectiveness calculation.  **Issued March 27, 2020,** [**draft rules**](https://edocs.puc.state.or.us/efdocs/HAH/ar632hah13125.pdf) **issued 7/8, Issued 7/16**  [**UM 2251**](https://apps.puc.state.or.us/edockets/edocs.asp?FileType=HAA&FileName=um2251haa16641.pdf&DocketID=23440&numSequence=3)**:** NW Natural petition for construction of Eugene Hydrogen Pilot Project. Seeking to recover project costs for 1 MW power-to-gas project that will produce hydrogen that NW Natural will use to serve its customers in the west Eugene area. NW Natural will deliver an initial blend of five percent hydrogen gas to 95 percent natural gas by volume to west Eugene customers. The Project will have the capacity to increase the hydrogen blend in this area to 10 percent. The Project is estimated to reduce emissions by approximately 194MTCO2(e) each year. The estimated price of hydrogen gas from this Project is $30-40/MMBtu, including capital costs over a 20-year life. Project estimated initial annual revenue requirement is $1.75 million.  **Filed August 12, 2022. Withdrawn Nov. 1, 2022.** | [**SB 98:**](https://olis.oregonlegislature.gov/liz/2019R1/Measures/Overview/SB98)Requires the PUC to adopt by rule renewable natural gas program for natural gas utilities to recover prudently incurred qualified investments in meeting certain targets for including renewable natural gas in gas purchases for distribution to retail natural gas customers. Law supports RNG targets of 15% by 2030, 20% by 2035 and 30% by 2050. Requires commission to adopt rules no later than December 31, 2019. Bill definition of RNG includes hydrogen.  **Became law in 2019.**  [**HB 2535**](https://olis.oregonlegislature.gov/liz/2021r1/Measures/Overview/HB2535)**:** Exempts from ad valorem property taxation property constituting hydrogen system used to produce hydrogen by electrolysis or from renewable natural gas. Sunsets on January 2, 2027.  **Introduced January 2021.**  [**SB 314**](https://olis.oregonlegislature.gov/liz/2021R1/Measures/Overview/SB314)**:** Authorizes PUC to allow gas utilities to recover costs from retail customers for prudent investments in infrastructure measures that support adoption and service of alternative forms of transportation vehicles such as RNG and hydrogen.  **Introduced January 2021. Passed Senate 3/21.**  [**SB 333**](https://olis.oregonlegislature.gov/liz/2021r1/Measures/Analysis/SB333)**:** Directs the Dep’t of Energy to conduct a study on the benefits of and barriers to renewable hydrogen production and use in Oregon.  **Enacted June 11, 2021**. | HB 2535 |
| Pennsylvania | [**Peoples Gas**](https://news.engineering.pitt.edu/peoples-gas-and-the-university-of-pittsburgh-partnering-on-pilot-program-to-evaluate-the-transport-of-hydrogen-in-natural-gas-systems/)**:** partnering with University of Pittsburgh to studythe potential of distributing hydrogen through the existing gas system and then collaborate on a pilot project.  **Announced September 21, 2022.** |  | [HB 1215](https://www.legis.state.pa.us/cfdocs/billinfo/bill_history.cfm?syear=2023&sind=0&body=H&type=B&bn=1215): Establishes tax credit for qualifying clean hydrogen uses.  **Introduced May 22, 2023**. |  |
| Rhode Island |  |  |  |  |
| South Carolina | [**Duke Energy**](https://news.duke-energy.com/releases/siemens-energy-teams-up-with-duke-energy-clemson-university-to-study-hydrogen-use)**:** Partnering with Clemson to study various forms of hydrogen production, including green hydrogen. It will also examine Hydrogen's potential to store larger quantities of energy more efficiently and for longer durations than current lithium-ion battery technology.  **Announced December 2020.** |  |  |  |
| South Dakota |  |  |  |  |
| Tennessee |  |  | [**SB 1959**](https://wapp.capitol.tn.gov/apps/BillInfo/default.aspx?BillNumber=SB1959&ga=112): authorizes utility to seek cost recovery on innovative resources, including RNG and hydrogen. Incremental rate adjustment cannot exceed 2% of annual revenue requirement. Third party procurements cannot exceed 3% of annual total cost of gas.  **Introduced January 27, 2022**. **Enacted March 18, 2022**. |  |
| Texas |  |  |  |  |
| Utah | [Dominion](https://pscdocs.utah.gov/gas/21docs/2105701/318746TechConfPres5-18-2021.pdf): testing hydrogen blending up to 5% at training facility to validate current research and gain operational experience. Utility has a goal to reach a 5% blend into the system by 2030.  **Started April 2020, Testing from May – July 2021**.  [**Dominion**](https://www.prnewswire.com/news-releases/dominion-energy-utah-starts-hydrogen-blending-301788625.html): Launched hydrogen blending on system in Delta, UT as next step of ThermH2 project. Up to 5% blend will be introduced to 1,800 customers as part of goal for entire system to be blend ready by 2030.  **Announced April 3, 2023**. |  | [HB 223](https://le.utah.gov/~2021/bills/static/HB0223.html): Establishes refundable corporate and individual income tax credits for systems that  produce hydrogen from renewable and nonrenewable sources.  **Enacted March 22, 2021**.  [**HB 52**](https://le.utah.gov/~2022/bills/static/HB0052.html): Modifies definitions for qualification for a high cost infrastructure development tax credit to include a renewable hydrogen fuel production or distribution project.  **Introduced December 2021**. |  |
| Vermont | [**VGS**](https://www.vermontgas.com/vermont-partnership-advances-use-of-green-hydrogen-as-clean-fuel-of-the-future/)**:** Green hydrogen pilot project with University of Vermont and Global Foundries. Will produce green hydrogen via on-site electrolyzer to blend into gas system for space heating.  **Announced January 2022.**  [VGS](https://www.governor.ny.gov/news/governor-hochul-announces-multi-state-agreement-signed-major-hydrogen-ecosystem-partners): Members in NY-led consortium to establish Northeastern regional clean hydrogen hub.  **Announced March 25, 2022**. |  |  |  |
| Virginia |  |  | [**HB 558**](https://lis.virginia.gov/cgi-bin/legp604.exe?221+sum+HB558): Authorize VCC to approve utility application to incorporate RNG, hydrogen, and low-emission gas into supply portfolio.  **Introduced January 12, 2022**. |  |
| Washington | [Puget Sound Energy](https://www.pse.com/en/press-release/details/Puget-Sound-Energy-Partners-with-Mitsubishi-Power-to-Develop-Renewable-Energy-Storage-Solutions): signed a joint development agreement with Mitsubishi Power Americas, Inc. to collaborate on project development and technology solutions in line with PSE’s goal to become a “Beyond Net Zero Carbon” energy company by 2045. Agreement will focus on developing green hydrogen production, storage, and transportation facilities as well as utility scale battery storage systems and developing hydrogen gas turbine combined cycle facilities.  **Announced May 6, 2021**.  **Puget Sound Energy**: Phase 1 Hydrogen Pilot project in Seattle to test 15% blend in closed pipe system on typical residential appliances. Phase 2 pilot to observe gas components in short term test environment when exposed to 15% blend under typical distribution pressures. Plan to build small scale H2 injection facility on PSE system to inject 2-15% blends.  **Phase 1 completed 2021, phase 2 Q2 2022, Phase 3 ongoing.**  **Turquoise H2 Project:** Plan to install methane pyrolysis demonstration unit at a PSE or customer facility to produce up to 25 kg per day of H2 using only natural gas and air as inputs. Expecting to produce solid carbon that could be used for tires, asphalt etc. Grant application filed with DOE.  **Operational in 2024.** |  | [**HB 1569**](https://app.leg.wa.gov/billsummary?BillNumber=1569&Year=2021&Chamber=House#documentSection)**:** exempts green electrolytic hydrogen from the state use tax and authorizes public utility districts to produce and sell green electrolytic hydrogen.  **Introduced April 3, 2021**.  [**SB 5910**](https://app.leg.wa.gov/billsummary?BillNumber=5910&Year=2021&Chamber=Senate): would establish an Office of Renewable Fuels. Directs the WUTC by December 1, 2024 submit a report to the legislature addressing advancement of the production and use of hydrogen fuel in the state.  **Introduced January 19, 2022**.  [**SB 1792**](https://app.leg.wa.gov/billsummary?BillNumber=1792&Year=2021&Chamber=House): Adds the production of green electrolytic hydrogen to a number of existing tax exemptions that apply to the production of renewable hydrogen.  **Introduced January 5, 2022**. |  |
| West Virginia |  |  |  |  |
| Wisconsin |  |  |  |  |
| Wyoming | [Black Hills Energy](https://www.wyoenergy.org/news/awardees-for-the-hydrogen-pilot-project/): Received almost $500,00 from state for a feasibility study for a natural gas-fed blue hydrogen gas generator with carbon capture; a green hydrogen gas generator fed with renewable energy and water; and a conceptual engineering assessment of equipment modifications combustion turbines to accommodate blended fuel mix of hydrogen and methane.  **Announced July 2021**. |  |  |  |
| Regional Measures |  |  |  | “[Appliance and Equipment Performance with Hydrogen-Enriched Natural Gases](https://www.csagroup.org/wp-content/uploads/CSA-Group-Research-Appliance-and-Equipment-Performance-with-Hydrogen-Enriched-Natural-Gases.pdf)” CSA Group, AGA, & AHRI (May 2021) |
| Canada | [**Enbridge**](https://www.enbridge.com/stories/2020/november/enbridge-gas-and-hydrogenics-groundbreaking-hydrogen-blending-project-ontario): Announced first of its kind in North America $5.2-million pilot project that will blend renewable hydrogen gas into a segregated loop of the existing Enbridge Gas natural gas distribution network. Enbridge Gas will use the project to study the use of hydrogen to decarbonize natural gas and thereby reduce greenhouse gas emissions.  **Announced November 20, 2020**.  [**Fortis BC**](https://www.newswire.ca/news-releases/fortisbc-takes-significant-step-towards-implementing-hydrogen-in-the-natural-gas-system-820738965.html)**:** investing $500,000 to study how the utility can further reduce emissions from its natural gas supply by delivering hydrogen through its extensive distribution network. The School of Engineering with the University of British Columbia's Okanagan campus (UBCO) will use these funds to study how to blend hydrogen, safely and reliably, with natural gas within FortisBC's existing system.  **Announced November 23, 2020**.  [ATCO](https://www.atco.com/en-ca/about-us/news/2020/122900-atco-to-build-alberta-s-first-hydrogen-blending-project-with-era.html): announced its plan to build Canada's largest hydrogen blending facility, near Fort Saskatchewan, using hydrogen derived from domestically produced natural gas. This facility is expected to inject up to 5% hydrogen, by volume, into a section of Fort Saskatchewan's residential natural gas distribution network, lowering the carbon intensity of the natural gas stream for its customers. In addition, ATCO intends to eventually employ Alberta's existing carbon capture and sequestration infrastructure to store emissions associated with the production process.  **Announced July 2020**.  [**Gazifère**](https://www.newswire.ca/news-releases/evolugen-and-gazifere-announce-one-of-canada-s-largest-green-hydrogen-injection-projects-to-be-located-in-quebec-826261149.html): announced plans to build and operate an approximately 20 MW water electrolysis hydrogen production plant. The plant will be built in the Masson sector of the City of Gatineau, adjacent to Evolugen's hydroelectric facilities, which will power the electrolyzer. An estimated capacity of approximately 425,000 GJ of green hydrogen will be produced for injection into Gazifère's natural gas distribution network, making this the first project of its kind in Canada. The project will remove approximately 15,000 metric tons in GHG emissions per year, in addition to generating significant local economic benefits, including new jobs and additional property tax revenue.  **Announced February 25, 2021**.  [**Enbridge**](https://www.newswire.ca/news-releases/enbridge-gas-announces-the-launch-of-the-first-of-its-kind-hydrogen-blending-project-in-north-america-816538111.html): First large scale green hydrogen blending facility located in Markham, Ontario was commissioned, adding up to 2% hydrogen by volume into the gas stream for 3,600 customers. This project has the potential to contribute to the avoidance of up to 117 tCO2e annually, and could pave the way for blending into the entire Ontario gas distribution system.  **Commissioned October 1, 2021**. **Fully Operational January 2022**.  [**Fortis BC**](https://biv.com/article/2022/07/fortisbc-pilot-low-carbon-hydrogen-production-plant): Announced hydrogen-production plant which at full commercial scale will produce 2,500 T of hydrogen annually, roughly equivalent to the natural gas used to heat 3,300 homes in B.C. FortisBC and its partners expect the engineering, permitting and design work to build a prototype methane pyrolysis reactor to be complete by the end of 2023.  **Announced July 2022**. |  | [**Alberta**](https://open.alberta.ca/dataset/988ed6c1-1f17-40b4-ac15-ce5460ba19e2/resource/a7846ac0-a43b-465a-99a5-a5db172286ae/download/energy-getting-alberta-back-to-work-natural-gas-vision-and-strategy-2020.pdf): The province issued its Natural Gas Vision which includes a robust role for hydrogen in the transportation and home heating sectors, as well as incorporating it as fuel for electricity generation and other industrial processes.  **October 2020**  [**British Columbia**](https://news.gov.bc.ca/releases/2021EMLI0046-001286): The Province has amended the Greenhouse Gas Reduction (Clean Energy) Regulation to enable natural gas utilities to increase the amount of RNG, green and waste hydrogen, and other renewable energy they can acquire and make available to their customers by: increasing the amount of RNG utilities can acquire and supply from 5% to 15% of their total annual supply of natural gas; broadening the methods by which utilities can obtain hydrogen, RNG and other renewable gases to include producing it or upgrading it themselves for injection into the pipeline, paying a third party to produce it or upgrade it for pipeline injection, or purchasing hydrogen, synthesis gas or lignin to displace the use of natural gas at customers’ facilities; allowing the current price cap of $30 per gigajoule that utilities can pay to acquire any of these fuels to increase with inflation; and enabling utilities to acquire and supply green and waste hydrogen, synthesis gas and lignin.  **Announced July 2021**.  [Ontario Low-Carbon Hydrogen Strategy](https://www.ontario.ca/page/ontarios-low-carbon-hydrogen-strategy): Province released strategy setting out a path where eight concrete and immediate actions are expected to lead to an eight-fold increase in the province's production capacity of low-carbon hydrogen.  **Released April 7, 2022**. | “[Enabling Higher-Hydrogen Blending in Natural Gas Distribution Systems](https://www.cga.ca/wp-content/uploads/2022/10/CGA-Hydrogen-Blending-Greater-than-5.pdf)” Canadian Gas Association (Oct. 2022) |

For a full list of hydrogen research and development projects [see here from Hydrogen Forward](https://www.hydrogenfwd.org/united-states-of-hydrogen/).

[NREL Review of Hydrogen Blending](https://www.nrel.gov/docs/fy23osti/81704.pdf) (Oct. 2022)

**Regional Hydrogen Hub Proposals**

* [Northeast Hydrogen Hub](https://www.nyserda.ny.gov/About/Newsroom/2022-Announcements/2022-08-25-Governor-Hochul-Announces-Maine-and-Rhode-Island-Join-Multi-State-Agreement): Partners include Avangrid, ConEd, Eversource, Liberty Utilities, National Grid, National Fuel, Summit Utilities, & Vermont Gas Systems
* [HALO Hydrogen Hub](https://gov.louisiana.gov/index.cfm/newsroom/detail/3587): Includes Louisiana, Arkansas, & Oklahoma
* [HyVelocity Hub](https://www.hyvelocityhub.us/): Focused on Texas, Southwest Louisiana, and the U.S. Gulf Coast with partners including Sempra Infrastructure and Avangrid.
* [Arizona Hydrogen Hub](https://www.aztechcouncil.org/arizona-universities-energy-providers-unite-for-planned-regional-hydrogen-hub/): Partners include Southwest Gas
* [California Hydrogen Hub](https://business.ca.gov/california-formally-announces-intention-to-create-a-renewable-hydrogen-hub/): Would likely include the [HyBuild Initiative](https://www.ghcoalition.org/hybuild-la) funded in part by SoCalGas
* [Southeast Hydrogen Hub](https://news.duke-energy.com/releases/major-southeast-utilities-establish-hydrogen-hub-coalition): Partners include Dominion Energy, Duke Energy, Louisville Gas & Electric Company and Kentucky Utilities Company (LG&E and KU), and Southern Company
* [Midwest Hydrogen Coalition](https://governor.ky.gov/attachments/MidwesternHydrogenCoalitionMOU.pdf): Includes Illinois, Indiana, Kentucky, Michigan, Minnesota, Ohio, & Wisconsin
* [Midwest Alliance for Clean Hydrogen](https://machh2.com/machh2-bid-to-create-regional-hydrogen-hub/): Alliance includes Exelon, GTI Energy, Nicor Gas, & NiSource
* [Appalachian Regional Clean Hydrogen Hub](https://www.businesswire.com/news/home/20220928005758/en/State-of-West-Virginia-Brings-Together-Major-Energy-Companies-and-Leading-Energy-Technology-Firms-to-Develop-a-Clean-Hydrogen-Hub-in-the-Region): Partners include BHE GT&S, Dominion Energy, EQT, GTI Energy, Hope Gas, National Fuel, Peoples Natural Gas, & TC Energy
* [Mississippi Clean Hydrogen Hub](https://www.spglobal.com/marketintelligence/en/news-insights/latest-news-headlines/miss-governor-regulators-back-upstart-s-envisioned-3b-green-hydrogen-hub-67158266): Project being led by Hy Stor Energy LP
* [Heartland Hydrogen Hub](https://www.governor.nd.gov/news/burgum-nd-joins-mn-mt-and-wi-develop-multistate-hydrogen-hub-eerc-lead-development): Includes Minnesota, Montana, North Dakota, and Wisconsin
* [Pacific Northwest Hydrogen Hub](https://pnwh2.com/our-board): Includes Oregon and Washington
* [Western Inter-States Hydrogen Hub](https://energyoffice.colorado.gov/climate-energy/western-inter-states-hydrogen-hub): Includes Colorado, New Mexico, Utah, & Wyoming
* [Alaska Hydrogen Hub](https://www.reuters.com/business/energy/alaska-state-company-proposes-hydrogen-hub-eyeing-federal-funds-2022-11-07/): Led by state-owned Alaska Gasline Development Corp.