



JULY 8, 2021
Albany, NY

Governor Cuomo Announces New York Will Explore Potential Role of Green Hydrogen as Part of Comprehensive Decarbonization Strategy

State Collaborating with National Renewable Energy Laboratory and Additional Partners to Study Possible Applications for Green Hydrogen, Making \$12.5 Million Available for Long Duration Energy Storage Solutions

Industry-Leading Demonstration Project to Evaluate Green Hydrogen's Potential Role in Displacing Fossil Fuels from Power Generation and Reducing Greenhouse Gas Emissions

Announcement Supports Governor Cuomo's Goal to Reduce Emissions 85 Percent by 2050 as Outlined in the Climate Leadership and Community Protection Act

Governor Andrew M. Cuomo today announced that New York plans to explore the potential role of green hydrogen as part of the State's comprehensive decarbonization strategy. To support this effort to study green hydrogen and its possible applications, the state is collaborating with the National Renewable Energy Laboratory, joining two hydrogen-focused organizations to inform State decision-making and making \$12.5 million in funding available for long duration energy storage technologies and demonstration projects that may include green hydrogen. Additionally, the New York Power Authority, collaborating with the Electric Power Research Institute, General Electric and hydrogen supplier Airgas, will undertake an industry-leading green hydrogen demonstration project at NYPA's natural gas plant on Long Island to evaluate the resource's potential role in displacing fossil fuels from power generation. At the close of this short-term project, peer-reviewed results will be shared with the industry and public so that key learnings can inform decarbonization efforts. This announcement supports Governor Cuomo's goal to reduce emissions 85 percent by 2050, as outlined in the Climate Leadership and Community Protection Act.

"New York is leading the way forward on protecting the environment and combating climate change," **Governor**

Cuomo said. "Part of our ongoing efforts is setting an example for other states and nations to follow. As we transition to a clean energy economy, we are exploring every resource available as a potential tool to address climate change and documenting what we find to share as part of broader national and global conversations so we can build a brighter, greener future for all."

"New York's nation-leading efforts to transition to a cleaner, greener economy include examining all available renewable energy options," **said Lieutenant Governor Kathy Hochul.** "This initiative will help New York lead the way to study green hydrogen and its applications as part of our decarbonization strategy and efforts to reduce emissions and create a more sustainable future for all."

Green hydrogen, hydrogen produced using renewable energy, including wind, solar, and hydroelectricity, has the potential to decarbonize challenging sectors of the economy. As part of the State's efforts to assess green hydrogen's potential role in economy-wide decarbonization efforts, the New York State Energy Research and Development Authority is leading a comprehensive stakeholder engagement effort to gain and share knowledge and understanding of the support this resource could provide for meeting the Climate Leadership and Community Protection Act goals across multiple sectors. The stakeholder engagement began in December 2020 at a "Deep Decarbonization Workshop" co-hosted by NYSERDA and the New York State Department of Environmental Conservation.

A more comprehensive and ongoing approach will begin with an additional workshop and listening session being planned for this fall. The session will be used to help NYSERDA understand how to expand stakeholder engagement to ensure that additional assessment of the pathways, opportunities, and challenges of generating and utilizing green hydrogen across all sectors includes consideration of all stakeholder perspectives, including environmental justice organizations and communities.

The State's multi-pronged, comprehensive approach to understanding and exploring the potential role green hydrogen can play in achieving the Climate Act goals include:

New York Hydrogen Strategy Study

NYSERDA will commence a hydrogen strategy study in conjunction with the National Renewable Energy Laboratory, to compile the foundational, base-line information and data that will enable New York to have robust discussions and dialogue around the role green hydrogen could play in New York's decarbonization plans. This strategy study will place a particular focus on opportunities surrounding green hydrogen to align the State's hydrogen strategy with the existing mandates for 70 percent renewable electricity by 2030 and 100 percent zero-emission electricity by 2040. Building on relationships with NREL and the United States Department of Energy, NYSERDA will benefit from local, regional, national, and global insights on the evolution of green hydrogen to help guide State direction and decision making.

NYPA Green Hydrogen Demonstration Project

A NYPA-led, first-of-its-kind demonstration project will investigate the potential of substituting renewable hydrogen for a portion of the natural gas used to generate power at NYPA's Brentwood Power Station on Long Island. The project team will evaluate different concentrations of hydrogen blended with natural gas at regular intervals and will assess the blend's effect on reducing greenhouse gas emissions and its overall system and environmental impacts, including nitrogen oxide emissions. The project will begin in fall 2021 and is expected to last six to eight weeks.

The plant, which consists of a GE LM-6000 combustion turbine currently fueled by natural gas, was commissioned in the summer of 2001 to increase local power generation capacity for Long Island and New York City in anticipation of potential summer power shortages. GE has more than 6 million operating hours and more than 30 years of experience using hydrogen and other similar low-BTU fuels.

NYPA will lead the project with collaboration from partners including EPRI, GE, Sargent & Lundy, Airgas, and Fresh Meadow Power. EPRI will assist with the project design and technical evaluation. As the gas turbine original equipment manufacturer, GE will supply a state-of-the art hydrogen/natural gas blending system and support the project's planning and execution. Sargent & Lundy, acting as the engineer of record for the project, will provide overall engineering and safety reviews. Airgas is the supplier of renewable hydrogen and Fresh Meadow Power will provide piping system design, material procurement and installation services for the project.

Participation in National and Global Hydrogen-Focused Groups

.Joining the Center for Hydrogen Safety:

Joining the Center for Hydrogen Safety:

To ensure New York State is at the forefront of hydrogen safety, NYSERDA has joined the Center for Hydrogen Safety, a global community of more than 75 government, industry and national lab participants supporting and promoting hydrogen safety and best practices worldwide across industrial and consumer applications in the energy transition. As a member, NYSERDA will have direct access to global safety best practices on hydrogen, training courses and materials, and a safety panel of experts available for specific demonstration project safety reviews.

Joining the HyBlend Collaborative Research Partnership:

NYSERDA has also joined the HyBlend Collaborative Research Partnership which is comprised of six national labs and fifteen university/industry partners co-led by NREL and Stony Brook University. This national partnership will generate a database to allow New York to assess the use of existing infrastructure for hydrogen and to develop general principles of operation of blended hydrogen/natural gas delivery systems.

Long Duration Energy Storage Program

Finally, NYSERDA will encourage product development and demonstration projects in energy storage that is six-plus hours in duration, otherwise known as LDES, by making up to \$12.5 million in funding available through its Renewable Optimization and Energy Storage Innovation Program. Project submissions should advance, develop, or field-test hydrogen, electric, chemical, mechanical, or thermal-electric storage technologies that will address cost, performance, and renewable integration challenges in New York State. Submissions must only include innovative long duration energy storage technologies which are yet to be commercialized. Awards will be made for the following project categories: early studies, product development, multi-stage, demonstration projects and federal cost-share.

Proposals will be accepted in three rounds through June 2022. Additional details for this solicitation are available on [NYSERDA's website](#), including proposal submission requirements.

NYSERDA President and CEO Doreen M. Harris said, "We are actively exploring all technologies and options in meeting the State's climate targets under the CLCPA and are excited to expand our knowledge of hydrogen applications specifically. Supporting innovation and studying new technologies is important to remain on the cutting edge of evolving solutions that will complement our existing decarbonization efforts and the Climate Action Council's work to ensure that New York has a reliable and cost-effective energy system."

NYPA President and CEO Gil C. Quiniones said, "NYPA will be the nation's first state utility to perform a demonstration project aimed at assessing the technical feasibility of operating an existing power generation facility with a hydrogen and natural gas blend. Hydrogen may have the potential to be one of the tools we use to help New York State achieve its aggressive climate leadership goals for a carbon-free electric system. This project will help us evaluate green hydrogen's viability in decarbonizing electricity production."

New York State Department of Environmental Conservation Commissioner Basil Seggos said, "Today, New York State is announcing a nation-leading project to study green hydrogen and its potential to advance low-carbon technologies for energy generation. Industry experts are developing cutting-edge, science-based solutions to reduce greenhouse gas emissions. DEC is proud of our role in advancing New York's ambitious climate agenda. We look forward to continuing the remarkable progress New York has made in combating climate change by letting science drive decisions and policy."

Senator Kevin Parker, Energy and Telecommunications Committee Chair, said, "Exploration of green hydrogen as a potential part of a multi-pronged approach to decarbonization is a smart pursuit. For New York to be successful in transitioning to a cleaner, sustainable energy economy, we must investigate potential new energy resources. Today's announcement signifies that New York is committed to looking at innovative ways to achieve the ambitious goals set forth by the Climate Act. These initiatives together represent the creativity we need to meet our aggressive climate leadership goals."

Assembly Member Michael Cusick, Assembly Energy Committee Chair, said, "Today's announcement is a major step in the process of decarbonizing New York State. In pursuit of achieving our ambitious clean energy goals, it is crucial that we examine all possibilities and explore the potential of all forms of alternative energy. Green Hydrogen is a relatively untapped resource with the potential to provide ample green energy and reduce emissions significantly. As a state we are taking a responsible and practical approach by commencing a formal study of the potential and launching a pilot program which will be analyzed to ensure the most efficient integration of green Hydrogen into our energy grid."

NREL Laboratory Director Martin Keller said, "NREL looks forward to collaboration with NYSERDA on this

NREL Laboratory Director Martin Keller said, "NREL looks forward to collaborating with NYSEG on this important study in support of New York's decarbonization goals. Renewable hydrogen has the potential to play an important role in our energy future and this research will provide a critical foundation to inform and enable that future."

EPRI President and CEO Arshad Mansoor said, "EPRI is committed to helping communities worldwide realize bold carbon reduction goals affordably and reliably. Partnerships like NYPA's flagship project are essential to advancing hydrogen technologies and driving more clean energy solutions, from New York to Tokyo."

Scott Strazik, CEO of GE Power said, "GE is proud to partner with NYPA, EPRI and other project participants to advance the deployment of lower-carbon gas power generation technology through a green hydrogen demonstration project. By utilizing pre-combustion hydrogen fuels to reduce carbon emissions, we will advance a decade of action to decarbonize the power generation industry and combat climate change. We look forward to utilizing our 80+ years of gas turbine development experience—including six million operating hours using alternative low heating value fuels including hydrogen—to accelerate a reliable, affordable, and sustainable energy future."

Michael J. Graff, Chairman & CEO, American Air Liquide Holdings, Inc., Executive Vice President, Air Liquide Group and Chairman of the Board of Airgas said, "Airgas, an Air Liquide company, and our more than 400 Airgas and Air Liquide employees in New York State, are proud to support the state's goal of reaching net zero emissions by 2050. As part of our sustainability objectives, we share a similar commitment of achieving carbon neutrality by 2050, an objective largely supported by our over 50 years of experience mastering the entire hydrogen value chain. Leveraging this experience, alongside our U.S. and global leadership in hydrogen energy insight, innovation, and investment, we are proud to offer our customers sustainable solutions, like renewable hydrogen, to meet their own climate objectives and together develop a cleaner, safer, more reliable energy system. We believe hydrogen is a strong driver of the energy transition and are looking forward to continued collaboration in reaching New York State's goal."

Sargent & Lundy Senior Vice President Paul Eiden said, "Sargent & Lundy is excited to support NYPA and EPRI in the nation's first full-scale demonstration project transforming an existing power generation facility to operate on hydrogen-blended fuels. With over 130 years of power experience, we've been involved in many industry firsts. This transition to hydrogen is another technological leap for the industry. Hydrogen-based fuels will allow existing stations to return to the forefront in the industry while reducing greenhouse gas emissions. Our work to integrate contributions from the partner organizations on this project has been a great fit for Sargent & Lundy's hydrogen team."

John Valvo, Vice President of Fresh Meadow Power, LLC said, "Fresh Meadow Power is proud to be an integral partner with New York Power Authority, as well as the other team members, on this innovative feasibility project for blending natural gas with green hydrogen for power generation. A full-service contractor, FMP specializes in both new construction and maintenance/outage services on conventional and cogeneration power plants and all types of heavy industrial operations. We provide construction, maintenance and related services for all mechanical energy systems. Our working knowledge of NYPA's South East New York facilities allows FMP to provide quick response, local Union craft knowledge, and enhanced logistics of people, tools and equipment."

New York State AFL-CIO President Mario Cilento said, "It's critical that New York State invest in clean sources of energy to protect the environment and create a better world for our children, and green hydrogen is rich in untapped potential. Building off emission reduction goals earlier this year with nation-leading workforce standards, including prevailing wage, Buy American and labor peace, green hydrogen has the potential to create thousands of good union jobs across the construction, service, energy and transportation sectors. I applaud Governor Cuomo's foresight in exploring the role green hydrogen can play in the future for New York State."

United Association of Plumbers, Pipefitters and Sprinklerfitters International Representative John J. Murphy said, "New York is leading the way forward using clean, renewable sources of energy to save the environment and protect the planet, and green hydrogen is a potential next step in that ongoing effort. The State is taking important action with this announcement to consider green hydrogen as part of its decarbonization strategy, and in doing so can provide a just transition for tens of thousands of men and women in NY that build power generating facilities. Its multi-pronged approach will ensure we're able to get the biggest bang for our buck. I thank Governor Cuomo for his leadership on this critical issue and look forward to seeing the ways green hydrogen can improve our state for the better."

New York State's Nation-Leading Climate Plan

NEW YORK STATE'S NATION-LEADING CLIMATE PLAN

Governor Cuomo's nation-leading climate agenda is the most aggressive climate and clean energy initiative in the nation, calling for an orderly and just transition to clean energy that creates jobs and continues fostering a green economy as New York State recovers from the COVID-19 pandemic. Enshrined into law through the Climate Leadership and Community Protection Act, New York is on a path to achieve its mandated goal of a zero-emission electricity sector by 2040, including 70 percent renewable energy generation by 2030, and to reach economy wide carbon neutrality. It builds on New York's unprecedented investments to ramp-up clean energy including over \$21 billion in 91 large-scale renewable projects across the state, \$6.8 billion to reduce buildings emissions, \$1.8 billion to scale up solar, more than \$1 billion for clean transportation initiatives, and over \$1.2 billion in NY Green Bank commitments. Combined, these investments are supporting more than 150,000 jobs in New York's clean energy sector in 2019, a 2,100 percent growth in the distributed solar sector since 2011 and a commitment to develop 9,000 megawatts of offshore wind by 2035. Under Governor Cuomo's leadership, New York will build on this progress and reduce greenhouse gas emissions by 85 percent from 1990 levels by 2050, while ensuring that at least 35 percent with a goal of 40 percent of the benefits of clean energy investments are directed to disadvantaged communities, and advance progress towards the state's 2025 energy efficiency target of reducing on-site energy consumption by 185 trillion BTUs of end-use energy savings.

About NYSERDA

NYSERDA, a public benefit corporation, offers objective information and analysis, innovative programs, technical expertise, and funding to help New Yorkers increase energy efficiency, save money, use renewable energy, and reduce reliance on fossil fuels. NYSERDA professionals work to protect the environment and create clean-energy jobs. NYSERDA has been developing partnerships to advance innovative energy solutions in New York State since 1975. To learn more about NYSERDA's programs and funding opportunities, visit nyserda.ny.gov or follow us on [Twitter](#), [Facebook](#), [YouTube](#), or [Instagram](#).

About NYPA

NYPA is the largest state public power organization in the nation, operating 16 generating facilities and more than 1,400 circuit-miles of transmission lines. More than 80 percent of the electricity NYPA produces is clean renewable hydropower. NYPA uses no tax money or state credit. It finances its operations through the sale of bonds and revenues earned in large part through sales of electricity. For more information visit www.nypa.gov and follow us on [Twitter](#) @NYPAenergy, [Facebook](#), [Instagram](#), [Tumblr](#) and [LinkedIn](#).

Contact the Governor's Press Office

Contact us by phone:

Albany: (518) 474 - 8418
New York City: (212) 681 - 4640

Contact us by email:

Press.Office@exec.ny.gov