



Meeting Minutes¹

Tuesday, January 10th, 2022
10:00 a.m. – 12:00 p.m.

The final meeting of the Hydrogen Power Study Task Force was held on January 10th, 2022.

This meeting was held virtually via Microsoft Teams.

Task Force Members Present:

Katherine Ayers (Nel Hydrogen), Enrique Bosch Naval (Avangrid), Nikki Bruno (Eversource), Chris Capuano (Nel Hydrogen – Designee), Julia Dumaine (Designee – PURA), Samantha Dynowski (Sierra Club), Bryan Garcia (CT Green Bank), Barbara Fernandez (Designee – UCONN), Sara Harari (CT Green Bank), Sridhar Kanuri (HyAxiom), Shannon Laun (Conservation Law Foundation), Tony Leo (FuelCell Energy), Radenka Maric (UCONN), Taren O'Connor (Designee – PURA), Ugur Pasogullari (Designee – UCONN), Joel Rinebold (CCAT), Lidia Ruppert (Designee – DEEP), William Smith (Infinity Fuel)

Task Force Members Absent:

Keith Brothers (AFL-CIO), Digaunto Chatterjee (Eversource Energy), Commissioner Katie Dykes (DEEP), Chair Marissa Gillett (PURA), Sebastian Libonatti (Designee – Avangrid), Mary Nuara (Dominion), Frank Reynolds (Avangrid), Adolfo Rivera (Avangrid), Jennifer Schilling (Dominion)

Other Attendees:

Tyler Anderson, Eliasid Animas, Paul Aresta, Lily Backer, George Bradner, Sophia Browning, Erin Childs, Donald Conley, Aziz Dehkan, James Desantos, David Giordano, Joe Goodenbery, Jennifer Gorman, Alex Judd, Ahmet Kusoglu, Andrea Lubawy, Carmen Molina-Rios, Richard Mullins, Allie Mulrooney, Santh Sathys, Sarah Wall

1. Call to Order

- Mr. Garcia, Chair of the Task Force called the meeting to order at 10:04 a.m.
- Ms. Harari facilitated a roll call of the Task Force and Ex Officio members.

2. Approval of Meeting Minutes of December 13th, 2022

- Mr. Pasogullari moved to approve the meeting minutes of December 13th, 2022. This motion was seconded by Mr. Smith.
- The Task Force members moved to approve the motion.

3. Legislative Report Process and Next Steps

¹ For access to the meeting recording – <https://www.ctgreenbank.com/hydrogentaskforce/>

- Mr. Farnen provided an overview of the legislative process. He noted that the Connecticut General Assembly convened the 2023 Legislative Session on January 4th, 2023 and will adjourn on June 7th, 2023.
- Mr. Farnen explained that the Committee of Cognizance for the Task Force is the Energy and Technology Committee which is currently chaired by Senator Norm Needleman and Representative Jonathan Steinberg. The Task Force was initiated by the former Energy and Technology Committee co-chair, David Arconti.
- Mr. Farnen noted that Special Act 22-8 requires the Task Force to submit a report to the Energy and Technology Committee by January 15th, 2023. Mr. Farnen explained that the Task Force report would be widely distributed to the Task Force Appointees and Ex Officio members once it had been submitted to the Legislature.
- Mr. Farnen explained that the Green Bank would subsequently work with the Energy and Technology Committee co-chairs to have a concept committee bill introduced to be a legislative vehicle for the Task Force recommendations. Mr. Farnen also noted that the Task Force has proposed that an Informational Forum would be held and sponsored by the Energy and Technology Committee membership with presentations from Strategen, the Connecticut Green Bank, and the Working Group co-chairs.

4. Review and Discuss Task Force Resolution

- Mr. Garcia noted that this six month process has resulted in a robust and first of its kind 130-page report for the Legislature. Mr. Garcia explained that the findings and recommendations in this report are going to provide a model for other states to follow and continue Connecticut's leadership in the hydrogen and fuel cell space.
- Mr. Garcia noted that following an overview of the Task Force Resolution, each Task Force member would be requested to provide a reflection on their contribution to the Task Force process as well as the findings and recommendations in the final report.
- Mr. Garcia provided an overview of the Task Force Resolution, as follows:
 - Whereas, on a nearly unanimous bipartisan basis the Connecticut General Assembly passed and Governor Lamont signed on May 23, 2022 Special Act 22-8 "An Act Establishing a Task Force to Study Hydrogen Power" ("the Act");
 - Whereas, the Act requires appointments of sixteen members and five ex officio designations to the Task Force within 30 days of its signing, of which all appointments and ex officio designations were eventually filled except two appointees;
 - Whereas, the Act designates the President of the Connecticut Green Bank ("Green Bank") as the Chairperson, and requires the Chairperson to schedule and hold the first meeting of the Task Force within 60 days of its signing, which took place on July 12, 2022;
 - Whereas, the Act requires the Task Force to submit a report to the Energy and Technology Committee by January 15, 2023 to study hydrogen-fueled energy in the state's economy and energy infrastructure, including its findings and recommendations in the following seven areas:
 - A review of regulations and legislation needed to guide the development and achievement of economies of scale for the hydrogen ecosystem in the state;
 - An examination of how to position the state to take advantage of competitive incentives and programs created by the federal Infrastructure Investment and Jobs Act;
 - Recommendations for workforce initiatives to prepare the state's workforce for hydrogen fueled energy-related jobs;

- An examination of the sources of potential clean hydrogen, including, but not limited to, wind, solar, biogas and nuclear;
 - Recommendations for funding and tax preferences for building hydrogen-fueled energy facilities at brownfield sites through the Targeted Brownfield Development Loan Program;
 - Recommendations regarding funding sources for developing hydrogen fueled energy programs and infrastructure; and
 - Recommendations for potential end uses of hydrogen-fueled energy.
- Whereas, in addition to the areas identified within the Act, the Task Force also included infrastructure (i.e., transportation and storage), as well as environmental justice and just transition within its areas of study;
- Whereas, to support the Task Force, the Green Bank issued a competitive Request for Proposals to identify a facilitator and technical assistance provider resulting in the contracting of Strategen Consulting (“Strategen”);
- Whereas, to support the Task Force, in its efforts to delve further into the specific areas of analysis, five Working Groups were established and co-chaired by industry experts, as follows:
 - Policy and Workforce Development – co-chaired by the Department of Energy and Environmental Protection (“DEEP”) and Public Utilities Regulatory Authority (“PURA”).
 - Funding – co-chaired by DEEP and the Department of Economic and Community Development (“DECD”).
 - Hydrogen Sources – co-chaired by University of Connecticut and Nel Hydrogen.
 - Hydrogen Infrastructure – co-chaired by Avangrid and Nel Hydrogen.
 - Hydrogen Uses – co-chaired by the Connecticut Center for Advanced Technology, Avangrid, and Eversource Energy.
- Whereas, to support the open and transparent process of the Task Force, the Green Bank and Strategen established a regular meeting schedule of the Task Force and Working Groups, including, but not limited to, listing meeting agendas on the Secretary of State Public Meeting Calendar, Green Bank dedicated hydrogen webpage², recording and posting meetings with CT-N (“Connecticut Network”), posting meeting minutes and materials (including Spanish translation of certain materials), promoting meetings through various channels for public engagement, and hosting a public listening session and providing an opportunity for written public comments.
- Whereas, with the objective to engage the Task Force, Working Groups, and other stakeholders, the Green Bank and Strategen hosted seven (7) Task Force and twenty (20) Working Group meetings open to the public online as well as in-person at various hydrogen and fuel cell locations around the state, including the University of Connecticut’s Innovation Partnership Building in Storrs, Nel Hydrogen’s electrolysis manufacturing plant in Wallingford, Fuel Cell Energy’s stationary fuel cell manufacturing plant in Torrington, HyAxiom’s stationary fuel cell manufacturing plant in South Windsor, and Dominion Energy’s Millstone Nuclear Power Station in Waterford.
- Whereas, with the objective to educate the Task Force, Working Groups, and other stakeholders, the Green Bank and Strategen included hydrogen and fuel cell experts from the Lawrence Berkeley National Laboratory and Sandia National Laboratory, and environmental justice and just transition professionals

² Access here - www.ctgreenbank.com/hydrogentaskforce

from the Greater Bridgeport Community Enterprises and Connecticut Roundtable on Climate and Jobs within the process.

- Mr. Garcia noted that the Task Force members would be voting on the following sections of the Resolution:
 - Resolved, that the Task Force on January 10, 2023, approves the final study reasonably reflects the findings as identified, analyzed, and deliberated within the process and the diversity of stakeholder perspectives on the findings;
 - Resolved, that the Task Force on January 10, 2023, approves the final study reasonably reflects the recommendations as identified, analyzed, and provided by the Working Groups and deliberated by the Task Force within the process and the diversity of stakeholder perspectives on the findings;
 - Resolved, that the Green Bank shall submit the final study to the Energy and Technology Committee on January 15, 2023, whereby the Task Force shall simultaneously terminate its duties per the Act;
 - Resolved, that the Green Bank, in its role as Chairperson of the Task Force, respectfully requests that the Energy and Technology Committee Introduce a Committee Bill for debate called “Hydrogen Fueled Energy in Connecticut’s Economy and Energy Infrastructure” within the 2023 legislative session to address the Legislative recommendations included in the Task Force report submitted by the Green Bank;
 - Resolved, that members of the Task Force and Strategen, will make themselves available, as appropriate, for hearings of the Energy and Technology Committee with respect to the proposed Committee Bill within the 2023 legislative session and request to make a formal presentation to the Energy and Technology Committee led by Strategen and supported by the Green Bank regarding the findings and recommendations of the Task Force.

5. Reflection on the Task Force Process to Date

- Mr. Garcia provided an opportunity for Task Force members to reflect on their contributions to this process.
 - Mr. Leo noted that there was a diversity of voices included in the Task Force process and reflected in the final report. Mr. Leo complimented the technical nature of the Task Force findings regarding supply and demand included in the report. Mr. Leo highlighted that the Task Force was just the beginning of the efforts needed in Connecticut to develop a hydrogen economy.
 - Ms. Ruppert seconded Mr. Leo’s statement that the Task Force process is just the start of the state’s hydrogen efforts. Ms. Ruppert noted her thanks for the inclusion of DEEP in the Task Force and explained that the Task Force efforts have provided a great complement to DEEP’s hydrogen policy process which will define clean hydrogen and will provide multiple public engagement opportunities.
 - President Maric noted her thanks for the participation of Ms. Fernandez and Mr. Pasogullari on her behalf. She also expressed her thanks for the leadership of Mr. Garcia. President Maric noted that hydrogen is an international, cross border economic opportunity and Connecticut has the opportunity to participate in the new energy order that will be driven by hydrogen. President Maric emphasized that climate change is a global and generational issue. President Maric emphasized the importance of sustainable, high quality jobs and public education for Connecticut citizens.
 - Ms. Ayers noted that there was a diversity of voices included in the Task Force process. She noted her appreciation for the inclusion of Connecticut manufacturers in the Task Force process and noted that the inclusion of

company callouts in the report is an important inclusion. Ms. Ayers emphasized that time is of the essence for hydrogen market development and hydrogen related legislative actions.

- Mr. Bosch Naval noted his thanks for the leadership of the Connecticut Green Bank. He further emphasized the opinion that the efforts of the Task Force are just the start of the efforts needed in Connecticut to develop a hydrogen economy. He noted that rapid action needed to establish Connecticut's place in the emergent hydrogen economy.
- Mr. Kanuri noted his appreciation for the in person tours that were organized for the Task Force to understand the hydrogen capabilities within the state. Mr. Kanuri also noted the importance of the focus on workforce development within the Task Force.
- Ms. Dynowski noted that the Task Force process was rapid but provided thanks to Strategen for developing a well-planned process. She noted that the Task Force legislation was largely centered around the economics related to hydrogen but noted key questions related to emissions goals, defining clean hydrogen, and community impacts that she still had. Ms. Dynowski noted her appreciation for DEEP's ongoing Comprehensive Energy Strategy process which will be addressing these topics moving forward. Ms. Dynowski also noted her appreciation for the inclusion of diverse stakeholder perspectives within the final report.
- Mr. Smith explained that he was impressed by the overall Task Force process and the leadership of the Connecticut Green Bank and Strategen. He noted that over his 26 years of participating in hydrogen studies and hydrogen advocacy, this process had been the best of those he had participated in. Mr. Smith emphasized that the hydrogen economy is on the precipice due to the lowered cost of low carbon feedstocks.
- Ms. Laun noted that she joined this process as an environmental advocate with the priority to focus on clean hydrogen to decarbonize hard to abate end uses. She explained that the decarbonization of the electric sector will require significant renewable energy capacity. Ms. Laun also highlighted her appreciation for the focus of the Task Force on environmental justice. Further, Ms. Laun cautioned about the potential to increase emissions and explained the need to consider both hydrogen and electrification for decarbonization. She highlighted the need for education related to hydrogen. Ms. Laun noted initial concerns regarding public outreach but noted her appreciation of Strategen and the Green Bank's significant efforts to increase public outreach and transparency. Ms. Laun agreed that the final report is reasonably balanced. She highlighted the need for further processes related to hydrogen in Connecticut.
- Ms. Bruno noted that market forces will be a critical component of the hydrogen economy. She explained the importance of education and innovation to provide customers with several options to decarbonize in a cost effective, safe, and reliable manner. Ms. Bruno encouraged open mindedness and collaboration as hydrogen policy processes continue in Connecticut.
- Ms. Dumaine provided her thanks to Strategen and the Connecticut Green Bank for coordination of the Task Force. She noted that the Task Force report provides an excellent example of Connecticut's tightly knit energy community and industry and highlights the power of thoughtful and methodical work and collaboration. She explained that the rapid pace of the Task Force meant that not all questions related to hydrogen could be answered, but these efforts provide a great foundation for the emergent hydrogen industry in Connecticut.

- Ms. Childs noted her appreciation for the participation of the Task Force members and additional participation. She noted that these efforts and the collaboration of the Task Force attendees would set the foundation for hydrogen opportunities in Connecticut. Ms. Childs thanked the Connecticut Green Bank for its efforts to focus the Task Force on a just and equitable transition and climate integrity. Ms. Childs thanked stakeholders for providing a diversity of perspectives. She also emphasized that while there would be more work to come related to hydrogen, the Task Force had made monumental progress in the last few months.

6. Task Force Vote on Final Report

- Ms. Dumaine moved to approve the Task Force Resolution. This motion was seconded by Mr. Smith.
- The Task Force members moved to approve the motion.

7. Public Comments

- Ms. Laun inquired whether the report would be publicly posted.
 - Mr. Garcia noted that the draft report text would be posted following the meeting on the Connecticut Green Bank website alongside the meeting minutes. Mr. Garcia noted that a final copy of the report would be available after January 15th.
- Mr. Sathys provided comments regarding the commercial availability of hydrogen for the aviation sector. He noted that he believed that this would become cost effective prior to 2050.

8. Adjourn

- Mr. Garcia noted that technology innovation and diffusion is needed to confront climate change. He noted that the Green Bank has a room named after Colonel Albert Pope who was an entrepreneur who owned bicycle patents. Mr. Garcia noted that Colonel Pope manufactured bicycles in Hartford, Connecticut and utilized his fortune to manufacture the first 500 electric vehicles in the late 1800 while using local Connecticut labor. He explained that similarly, this moment in time could be a defining moment for hydrogen in Connecticut.
- The Hydrogen Study Task Force meeting was adjourned by Mr. Garcia at 11:29 a.m. The motion to adjourn the Task Force was seconded by Ms. Ruppert.