



Meeting Minutes¹

Tuesday, September 27th, 2022
Noon – 1:00 p.m.

The first meeting of the Sources Working Group was held on September 27, 2022.

All participants joined via the Teams conference call

Task Force Members Present: Kathy Ayers (Nel), Enrique Bosch (Avangrid), Samantha Dynowski (Sierra Club), Mary Nuara (Dominion), Ugur Pasaogullari (Designee – UCONN), Lidia Ruppert (Designee – DEEP)

Attendees Present: Tyler Anderson, Eliasid Animas (Strategen), Paul Aresta (DEEP), Erin Childs (Strategen), Nathan Frohling (Nature Conservatory), Kaiqi Hu (Strategen), Ahmet Kusoglu (LBNL), Bernie Pelletier (People’s Action for Clean Energy), Collin Smith (Strategen)

1. Call to Order

- Collin Smith, a Senior Consultant at Strategen providing technical support for the Sources Working Group, called the meeting to order at 12:02 p.m.

2. Welcome and Introductions

- Mr. Smith provided an overview of the meeting agenda including attendee introductions, a review of the Working Group Charter, an overview of the work plan and upcoming milestones, and a discussion of the analytical methodology and initial findings.
- Each participant introduced their name and organization and provided a brief overview regarding their involvement and interest in the Working Group.

3. Review of Working Group Charter and Working Group Schedule

- Mr. Smith discussed the Working Group charter approved at the September Task Force meeting. The Sources Working Group deliverables include: 1) development of a proposed definition of clean hydrogen (in collaboration with the Policy and Workforce Development Working Group); 2) calculation of total production potential of clean hydrogen within Connecticut, developed across at least 3 scenarios (e.g. High, Medium, Low); 3) identification of the impact on local manufacturing potential and industry in each of the hydrogen production scenarios identified above (in collaboration with the Policy and Workforce Development Working Group); and 4) if not addressed by other state agencies, a comparison of Connecticut’s hydrogen production potential to other Northeast states in the Regional Clean Hydrogen Hub.

¹ For access to the meeting recording – <https://www.youtube.com/watch?v=I7sPOFdS9Ws&feature=youtu.be>

- Mr. Smith reviewed the guiding research questions in the Sources Working Group charter which cover topics including hydrogen production potential, equipment manufacturing potential, regional integration, siting, and safety.
- Mr. Smith provided a brief overview of the Working Group timeline. He shared that in October and November the Working Group will develop and present draft recommendations to the Task Force with final recommendations presented in December. A final report will be submitted to the legislature in January.

4. Review and Discussion of Analytical Methodology and Initial Findings

- Mr. Smith explained the methodology that will be used to determine hydrogen production potential. This methodology will account for the opportunity to use both dedicated and excess renewable energy.
 - Mr. Smith explained that unallocated capacity, which will be calculated by subtracting base renewable energy demands for basic decarbonization needs from the total capacity that could be built out for a given resource, would be multiplied by an average capacity factor to determine renewable generation potential. Renewable generation potential will then be added to expected renewable curtailment to determine the total energy available for hydrogen.
 - Mr. Smith provided an overview of DEEP's Decarbonization IRP and flagged that the "Base Balanced Blend" resource portfolio scenario, which deploys least cost resources to meet the 100% zero carbon target and assumes Millstone retires, would be the primary scenario analyzed with three additional potential scenarios that include a Millstone contract extension and high electrification.
 - In addition to hydrogen production from curtailed renewable energy, Mr. Smith highlighted the potential to produce hydrogen from dedicated solar, specifically in areas of high potential in Southeast Connecticut.
 - Mr. Smith noted that hydrogen production from onshore wind is limited by resource constraints and onshore wind resources are already fully committed across most decarbonization scenarios.
 - Mr. Smith shared that unlike onshore wind, offshore wind potential may be significant, but is potentially limited by the number and location of lease areas and opportunities for direct connection to Connecticut-based hydrogen production.
 - Mr. Smith noted that potential offtaker locations match well with existing gas infrastructure, but not necessarily renewable energy production zones.
- Mr. Smith presented a series of discussion questions for stakeholders to seek feedback on the methodology he presented.
 - Bernie Pelletier asked about the methodology to determine curtailment factors. He inquired about the time scale, for example, day to day or season to season. He also asked about the level of granularity at which these numbers could be calculated.
 - Mr. Smith responded that the curtailing factors were taken from the DEEP IRP. He explained that these are annual regional curtailment factors that estimate the renewable energy that would be curtailed across the entire New England system. He shared that based on the relatively short timeline for this analysis and data availability it would be challenging to get more granular in this respect.

- Mr. Pelletier noted that in his view of renewable energy curtailment, it is highest in the two-shoulder season.
- Mary Nuara asked whether the incremental solar capacity potential in 2040 was only relevant for Connecticut or applicable for the New England region. She also asked whether the Base Balanced Blend resource addition values were only relevant for Connecticut or applicable for the New England region.
 - Mr. Smith confirmed that these values are specific to Connecticut.
- Samantha Dynowski shared that she believes the best use of solar will be for electricity generation for transportation and buildings, with the excess being left to aid in hydrogen production.
 - This comment was seconded by Mr. Smith and Nathan Frohling.
- Mr. Frohling inquired whether Mr. Smith had a sense of what renewable resources would be most useful in terms of hydrogen production in Connecticut.
 - Mr. Smith explained that based on preliminary analysis, solar is the most promising resource. He added that offshore wind could also provide significant potential once barriers regarding siting are addressed.
- Erin Childs highlighted the ability to leverage neighboring resources and offtake within a hydrogen hub. Ms. Childs suggested that it would be useful for the Sources Working Group to consider these interactions.
 - Mr. Smith agreed that Connecticut will play a critical role in the regional hub development with its neighboring states.
- Ms. Nuara provided support for inclusion of the Millstone extension production scenarios. She explained that the nuclear plant has power purchase agreements through 2029, covering 9 million MW hours of energy each year. She noted that these contracts that are performing well for the State.

5. Adjourn

- Mr. Smith adjourned the meeting at 1:00 p.m.