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## Hydrogen Task Force: Hydrogen Uses Working Group Charter

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### **Objective**

The objective of the Hydrogen Uses Working Group is to provide “recommendations for potential end uses of hydrogen-fueled energy” to promote achievement of Connecticut’s decarbonization goals. This will include a cross-sectoral assessment of the areas where clean hydrogen use will be most viable in the future, coupled with analysis on the potential demand from the identified end uses. This includes (but is not limited to) potential hydrogen use in long-term energy storage, industrial feedstocks, long-haul transit, and shipping ports. In addition to a forecast for overall hydrogen demand, this Working Group will also consider the geographic location of end users and their proximity to potential sources of hydrogen production. However, it will address questions related to the specific production of hydrogen, or the infrastructure requirements to transport that hydrogen to demand centers; these questions will be addressed by the Sources and Infrastructure Working Groups, respectively.

### **Statutory Responsibilities**

Provide "recommendations for potential end uses of hydrogen-fueled energy" to the Connecticut Hydrogen Task Force.

### **Guiding Research Questions**

1. What is the potential demand for hydrogen from relevant end uses? End use can include (but are not limited to):
  - a) Repowering fossil fuel power plants to use hydrogen
  - b) Industrial, commercial, and residential heating
  - c) Transportation (e.g. light duty, medium duty, heavy duty, maritime shipping, aviation)
  - d) Logistics vehicles and other equipment (e.g. warehouse forklifts, port vehicles and material handling equipment)
  - e) Reliability and resiliency applications
  - f) Industrial applications specific to New England
  - g) Agricultural applications specific to New England
2. What framework can be used to assess the feasibility and relative importance of different hydrogen end uses in Connecticut's decarbonization strategy? Factors to consider include:
  - a) Impact on decarbonization (i.e. quantified reduction in GHG emissions)
  - b) Timeline of demand (i.e. near term, medium term, long term)
  - c) Technological maturity of hydrogen-based equipment
  - d) Competitiveness of hydrogen technology compared to other decarbonization solutions (e.g. electrification)
  - e) Cost of hydrogen technology compared to fossil fuel alternative, based on both current and future price forecasts
3. What are the expected locations for clean hydrogen offtake? What would be the impact on communities in those locations?
4. How can environmental justice concerns be addressed as hydrogen demand scales up?
5. What are major factors that would influence the trajectory of hydrogen demand in the state?
6. What is the scale of hydrogen demand in Connecticut relative to other states in the proposed northeast hydrogen hub?
7. What near-term steps can be taken to leverage existing R&D to advance the development of a clean hydrogen market in Connecticut?
8. Are there any steps needed to ensure the safe deployment of hydrogen as demand scales?
9. How might the hydrogen supply chain impact deployment timing or feasibility?

### **Proposed Deliverables**

1. Structured framework to prioritize hydrogen end use applications relevant for Connecticut.
2. Total demand size of priority hydrogen end uses identified through the framework, developed across at least 3 scenarios (e.g. High, Medium, Low).
3. Scenario-based demand curves for each hydrogen end use, identifying:
  - Price points at which hydrogen would become competitive for different end uses
  - Expected demand at those price points

4. As appropriate, coordination with DEEP's efforts to develop project concepts for clean hydrogen use in a Regional Clean Hydrogen Hub that would be accepted by stakeholders as a regional proposal.

### **Preliminary Timeline**

- September: Present a final Hydrogen Uses Working Group Charter to the Task Force.
- October: Present preliminary findings to the Task Force and provide a status update and the timing of subsequent analysis.
- November: Present draft final findings and recommendations to the Task Force for feedback.
- December: Present final findings and recommendations to the Task Force.
- January: Submit report to the legislature.

### **Logistics**

- The Strategen team will handle meeting logistics, including scheduling and recording meeting minutes.
- The Strategen team will coordinate with Working Group Co-Chairs to develop meeting agendas which will be provided to participants a week before Working Group meetings.
- The Strategen team will provide technical assistance (including research), where appropriate, for the Working Group.
- It is expected that this working group will meet on a monthly cadence, with interim working sessions by the co-chairs. Meeting recordings and meeting minutes will be publicly available.