March 4, 2022

Victoria Hackett, Deputy Commissioner
Bureau of Energy and Technology Policy
Department of Energy and Environmental Protection
10 Franklin Square
New Britain, CT 06051

Sent via email to: DEEP.EnergyBureau@ct.gov

Re: Comments of the Connecticut Energy Efficiency Board on the Scoping of the Comprehensive Energy Strategy (2022)

Dear Ms. Hackett,

The Connecticut Energy Efficiency Board (EEB or Board) is grateful for this opportunity to comment on the scoping of the 2022 Comprehensive Energy Strategy (CES) that the Department of Energy and Environmental Protection (DEEP) will develop over the coming months. We believe that the overall proposed approach and topic areas to be covered by the CES are consistent with state policy, including the Governor's recent Executive Order 21-3. The outcomes and specific strategies arising from the CES will be critical in informing the program design and implementation approaches embodied in subsequent updates of the Conservation and Load Management (C&LM) Plan.

Provided below are specific comments on the most of the eight major topic areas that DEEP requested feedback on; however, these comments are not comprehensive and the EEB plans to contribute throughout the process. Many of our comments are focused on ensuring that the appropriate level of granularity is pursued in the CES's underlying analyses and resultant strategies. This will ensure that the CES is best positioned to inform the objectives and direction of the C&LM programs.

We also recognize that Board engagement through the planned Technical Hearings and the review of draft CES materials will also be an important means for the Board to provide ongoing input to the CES's development. We expect that many of the CES details of interest to the Board will be addressed in those forums.

The Five Lenses through which the CES will be developed.

Before commenting on the CES's major topics, the Board notes and concurs with the perspective through which the CES will be developed. DEEP has proposed applying five overlapping lenses to develop the CES:

- Climate
- Equity
- Affordability
- Economic Development
- Resilience

The Board notes that the first three of these lenses very closely align with the three Priorities of the 2022-2024 Three-Year C&LM Plan:

- Equity
- Decarbonization
- Energy Affordability

Board Comments on the eight major topics listed in the January 6 Notice of Proceeding and Scoping Meeting.

Below are the Board's comments on most of the eight major topics contained in the January 6 Notice. Note that the Board has not commented on all the topics and/or their subparts as some of those fall outside of the Board's and the C&LM Plan's purview.

1. *Equitable approaches to the decarbonization of buildings and resilience*

Consistent with the C&LM Plan's Equity Priority, it will be important for the CES to consider how best to ensure that both residential and C&I underserved populations can both participate and benefit from decarbonization efforts. There will be significant upfront capital costs to deploy many, if not most, of the technologies that are likely to emerge from the CES. How will these costs be addressed to ensure equitable participation by resourced constrained homeowners, renters, and businesses?

Further, the CES should consider that as customers potentially exit the gas distribution system over time, will this result in a disproportionate number of lower resourced customers being left to bear an ever-increasing share of fixed distribution costs? If so, how can this potential inequity be best addressed and ameliorated?

2. *Rely on published quantitative modeling studies from other states, where appropriate. Identify specific modeling studies the agency should rely on.*

Please see Attachment 1 for a list of possibly relevant studies for DEEP to consider in developing the CES. In addition to studies from other jurisdictions, DEEP should consider the heat pump analyses presented at the EEB Residential and C&I Committee meetings in

December and February, respectively. If of benefit, the EEB can make the underlying workbooks available to DEEP and provide some level of assistance to DEEP staff in the use of this analysis tool. Additionally, there are ongoing heat pump evaluation studies that are underway as part of the C&LM Plan, including field monitoring studies, that when completed could inform the CES.

3. *Key issues, policies, and measures to consider regarding thermal decarbonization and energy affordability of buildings*

There were a number of subparts to this topic including affordable housing, decarbonization of buildings using delivered fuels, workforce development, etc. To these, the Board notes:

- Energy efficiency should continue to be a prominent and key component of any Connecticut decarbonization strategy.
- DEEP's assessment of building decarbonization should include all available approaches including, but not limited to, biofuels including renewable natural gas (RNG), biomass, heat pumps and heat pump water heaters, and solar thermal and hot water.
- To the above, what are best projections of available biomass and biofuel resources, including RNG, in Connecticut, and at what prices?
- Identify new and emerging decarbonization technologies and practices and assess whether and how these technologies and practices can be piloted in Connecticut and what might be the role of the C&LM Programs to undertake and/or participate in these pilots.
- DEEP's analyses and, to the extent warranted, recommendations and strategies, should recognize the differing underlying customer and utility economics of deploying different decarbonization technologies and displacing various fossil fuels.
- Similarly, the analyses should consider the different costs, savings, and cost effectiveness of addressing decarbonization as a retrofit activity, during time of equipment replacement, and as part of new construction and major building renovations and additions.
- The CES should also consider the benefits, and challenges, of comprehensively and jointly addressing both efficiency and fuel switching, i.e., decarbonization, opportunities. To what extent should efficiency efforts be prioritized or even required prior to fuel switching?
- How to ensure that newly constructed buildings and major renovations pursue full decarbonization to the extent possible and practical and what is the role of the C&LM Programs to support this outcome? Failing to do so will require revisiting

these buildings and achieving greenhouse gas reductions at a much higher cost than if addressed during the initial construction activity.

4. *Decarbonization of industrial thermal processes*

As noted by the Kimberly Clark representative during the February 17th Scoping meeting, not all industrial processes lend themselves to electrification. For Connecticut's most common, critical, and energy intensive industrial processes, what are the best paths to decarbonation? What role might one expect biomass and biofuels to play in these efforts?

5. *Greenhouse gas accounting for biofuels*

As evidenced by the different comments from stakeholders at the February 17th meeting, the greenhouse gas (GHG) impacts of biofuels appear to be an area of disagreement. It will be a critical component of the CES to accurately assess the near and long-term net impacts of the increased use of biofuels on Connecticut's GHG emissions.

The Board also notes that if refrigerant-based technologies such as heat pumps are deployed in much greater numbers, does any consideration need to be given to the GHG impacts of leaked refrigerant?

6. Resilience and reliability in a decarbonized economy

While Connecticut and the Independent System Operator New England (ISO-NE) region are projected to remain summer peaking for at least the near-term, what longer term implications will decarbonization have on system requirements, particularly winter peak resources?

Further, as we electrify both buildings and transportation, the need for traditional and behavioral demand response will only continue to grow in terms of storage, direct load control, and building/vehicle integration. The C&LM Programs have played a key role in developing and deploying Connecticut's demand response efforts and their continued role in this area should be considered within the CES.

Sincerely,

Neil Beup, Chair
Energy Efficiency Board

Attachment 1: Studies for DEEP's Consideration in Developing the 2022 CES

NYSERDA Heat Pumps Potential for Energy Savings in New York State - Final Report - July 2014
https://www.nyserda.ny.gov/-/media/Files/EDPPP/Energy-Prices/Current-Outlook/Presentations/Heat-Pumps-Potential.ashx

NYSERDA Energy Efficiency and Renewable Energy Potential Study of New York State – April 2014
https://www.nyserda.ny.gov/about/publications/ea-reports-and-studies/eere-potential-studies

NREL Electrification of Industry 2018 https://www.nrel.gov/docs/fy18osti/72311.pdf

ACEEE Beneficial Electrification in Industry – July 2020
https://www.aceee.org/sites/default/files/pdfs/ie2002.pdf

McKinsey & Company article on the Industrial Electrification Potential – May 2020
https://www.mckinsey.com/industries/electric-power-and-natural-gas/our-insights/plugging-in-what-electrification-can-do-for-industry

Vermont Pathways Analysis Report - November 2021
https://outside.vermont.gov/agency/anr/climatecouncil/Shared%20Documents/Vermont%20Pathways%20Analysis%20Report.pdf

Massachusetts Decarbonization Roadmap website
https://www.mass.gov/info-details/ma-decarbonization-roadmap

American Gas Foundation Renewable Sources of Natural Gas – December 2019
Renewable Sources of Natural Gas - American Gas Foundation

Acadia Center Clean Heating Pathways
https://362kp444oe5xj84kkwjq322g-wpengine.netdna-ssl.com/wp-content/uploads/2020/12/Acadia-Center-Clean-Heating-Pathways.pdf

Heating Sector Transformation in Rhode Island – April 2020
Heating Sector Transformation in Rhode Island: Pathways to Decarbonization by 2050 (ri.gov)

Rhode Island Strategic Electrification Report - December 2020
http://rieermc.ri.gov/wp-content/uploads/2021/01/rhode-island-strategic-electrification-study-final-report-2020.pdf

Vermont Biomass Renewable Energy Standards website
Biomass Renewable Energy Standard | Department of Forests - Parks and Recreation (vermont.gov)

Biomass Energy Development Working Group Final Report – Vermont Legislative Council – January 2012
http://www.leg.state.vt.us/REPORTS/2012LegislativeReports/272678.pdf

Biomass Sustainability and Carbon Policy Study - Manomet Center for Conservation Sciences – June 2010
Manomet_Biomass_Report_Full_June2010.pdf

Vermont Biofuels Initiative – May 2009
953749 (osti.gov)

Biomass Energy Resource Center – Community-Scale Wood Heating Database
Biomass Energy Resource Center Launches Update (vermontbioenergy.com)

Massachusetts Residential Fuel Displacement Study Report, 2021
https://ma-eeac.org/wp-content/uploads/MA20R24-B-EOEval_Fuel-Displacement-Report_2021-10-13_Final.pdf

Massachusetts Heat Pump Water Heater Study Report, 2021
https://ma-eeac.org/wp-content/uploads/MA21R39-E-HPWHQH_Task-3-Findings-Memo_15Oct2021-1.pdf

Massachusetts Minisplit Integrated Controls Qualitative Market Effects Study, 2020
https://ma-eeac.org/wp-content/uploads/MA-19X09-B-INTCTRME_Evidence-for-MEs-from-DMSHP-ICs-Report_Final_2020.4.15.pdf

Massachusetts Ground Source Heat Pump Impact Report, 2021
https://ma-eeac.org/wp-content/uploads/MA20C15-B-GSHP_GroundSourceHeatPump_final.pdf