

2016 COMPREHENSIVE ENERGY STRATEGY QUESTIONS FOR PUBLIC ENGAGEMENT

Under Section 16a-3d of the Connecticut General Statutes (General Statutes), the Department of Energy and Environmental Protection (DEEP) is required to prepare a Comprehensive Energy Strategy (CES) for the state every three years. Connecticut's CES examines future energy needs in the state and identifies opportunities to reduce costs for ratepayers, ensure reliable power availability, and mitigate public health and environmental impacts of Connecticut's energy use, such as greenhouse gas emissions. In planning for the total future energy demand in the state, including electricity, heating, cooling, and transportation, the CES provides recommendations for legislative and administrative actions that will aid in the achievement of interrelated economic, security, reliability, and environmental policy goals.

DEEP has initiated a proceeding under Section 16a-3d of the Connecticut General Statutes to prepare the second CES in accordance with the requirements of said section of the General Statutes. DEEP looks forward to engaging with stakeholders throughout the process of developing the Strategy.

As part of the public engagement process, DEEP held a meeting to deliver a presentation and receive stakeholder comments on the scope of 2016 CES on Tuesday, May 24, 2016, at DEEP's New Britain Office. The scoping meeting provided an overview of, and sought public input on, the expected structure, schedule, and topics for the CES, as well as key research questions that will be a focus of the CES analysis. The major topics reviewed in the CES presentation include securing cheaper, cleaner, more reliable energy options in the following sectors:

- Buildings and Industrial Processes
- Electricity Supply
- Transportation

DEEP welcomes public comment on any aspect of CES that will help guide our analysis and recommendations for future legislative and administrative actions related to energy policy in Connecticut. In addition, beginning on page 3 of this document DEEP is providing the specific research questions discussed in the May 24, 2016 meeting that DEEP plans to focus on in drafting the 2016 CES. For the research questions in each of the three sectors that the 2016 CES will cover, DEEP is seeking public feedback on the following:

1. Are we using the right guiding principles for the 2016 CES?
2. Are we focusing on the right topics?

3. Are there key issues that we have left out, under- or over-emphasized?
4. Are there data sets we should be aware of? Examples from other jurisdictions we should be considering?

Written comments may be filed electronically on [DEEP's website \(http://www.ct.gov/deep/cwp/view.asp?a=4405&q=493990&deepNav_GID=2121\)](http://www.ct.gov/deep/cwp/view.asp?a=4405&q=493990&deepNav_GID=2121) or may be submitted directly to DEEP at DEEP.EnergyBureau@ct.gov on or before **June 14, 2016, by 4:00 p.m. EDT**. All materials submitted by stakeholders in this proceeding will be posted on the DEEP website. Any questions may be directed to Debra Morrell at (860) 827-2688 and/or via electronic mail at DEEP.EnergyBureau@ct.gov.

SPECIFIC 2016 COMPREHENSIVE ENERGY STRATEGY RESEARCH QUESTIONS:

Electric Sector:

1. What policies and mechanisms are need to scale deployment of new clean energy resources?
 - a. How much incremental clean energy is needed to stay on track to meet Connecticut's 2050 GWSA carbon reduction target? What types of clean energy resources should be relied upon or prioritized to meet the GWSA target (e.g., low- or zero-carbon renewables; conservation; demand response; large-scale hydropower; combined heat and power; etc.)?
 - b. How well are existing programs achieving incremental clean energy deployment? What are the relative costs and benefits (to participants, ratepayers, and society) of these existing programs? What are the barriers to equitable participation for these different programs?
 - c. What new policies and mechanisms are needed to scale deployment of new clean energy resources, minimizing costs and rate impacts while maximizing participant, ratepayer, and societal benefits? Topics include:
 - i. Reliable integration of clean energy into the transmission and/or distribution system, including investments in interconnection and balancing of intermittent resources?
 - ii. Should policy mechanisms prioritize (ie., potentially allow for cost premium for) in-state vs. regional deployment; equitable participation among customers; societal and economic development benefits?
 - iii. What policy mechanisms should the state enact to encourage sustainable siting of clean energy?
2. What are the challenges and opportunities for achieving Connecticut's state public policy goals in a deregulated electricity market?
 - a. Are new policies and mechanisms needed to retain existing clean energy resources (e.g., existing nuclear, waste-to-energy, combined heat & power, and others) to stay on track to meet Connecticut's 2050 GWSA carbon reduction target, and/or other state public policy goals (e.g. Comprehensive Materials Management Plan)?
 - b. If yes, what are the best policies and mechanisms to retain existing resources while minimizing risk and cost to electric ratepayers?

- c. What are the barriers and opportunities for achieving new clean energy resource deployment in a deregulated electricity market? What policies should Connecticut consider to address those barriers and opportunities?
3. What strategies should be put in place to reduce electric costs for Connecticut families and businesses?
 - a. How well is the competitive supplier market performing in providing lower cost and/or more diverse electricity options for Connecticut customers?
 - b. What strategies should be put in place to provide opportunities for customers to control their consumption, e.g. through conservation, demand resource, rate design (volumetric vs. fixed charges), time of use rates?
4. What strategies are needed to ensure electric reliability?
 - a. What are the major threats to the reliability of electric service at the transmission and distribution level? How have these threats evolved since the 2013 CES and 2014 Integrated Resource Plan?
 - b. Examples may include:
 - i. Cybersecurity
 - ii. Climate change threats to both distribution and transmission systems
 - iii. Inadequate gas pipeline capacity during winter peak demand
 - iv. Maintaining diversity of fuel sources for generation
 - v. Reliable integration of intermittent and distributed clean generation
 - c. How well are existing policies and mechanisms addressing these threats, and what additional policies and mechanisms should be considered to address these threats in the future? Should the state prioritize distributed solutions to address reliability challenges?
5. What policies and regulatory changes are needed to modernize the electric grid and integrate distributed energy resources (DER)?
 - a. What are the major drivers of distribution system investment over the CES planning horizon, and in what ways can those investments be effectively aligned with DER deployment? What changes should be made to improve

the transparency and efficiency of distribution system planning and investment, to maximize the benefits and minimize the costs associated with integration of DERs?

- b. What policies and mechanisms should be put in place to encourage optimal DER deployment (from a society, system, and participant perspective), such as through “bundled” deployment of different types of DERs, valuation of locational benefits, time of use rates, etc.?
- c. What are the potential costs and benefits of energy storage and how can it best be deployed on the grid to maximize system and/or customer benefits?

Buildings and Processes Sector:

- 1. What policies and mechanisms can be used to achieve scale and animate markets for energy conservation?
 - a. To what extent are building codes, appliance standards, and other regulatory requirements contributing to energy savings in buildings?
 - b. What are the relative costs and benefits (to participants, ratepayers, and society) of existing energy efficiency programs?
 - c. What are the key barriers for specific customer segments to reduce their energy usage, and how should they be addressed?
 - d. What, if any, new opportunities for measurement and verification should be used to achieve greater value for residents and facilitate scalability?
 - e. How should we optimize the use of grants and financing to achieve the greatest savings at the least cost to ratepayers?
- 2. What policies and mechanisms can be used to fully capture the value for active energy efficiency and management measures [demand response; onsite generation/storage; smart appliances; grid modernization]?
 - a. What are the barriers to scaling distribution of these technologies?
 - b. How do we increase consumer awareness of the total benefits that active energy efficiency provides?
 - c. What are the costs (installation, operation) to consumers for active conservation, and, if they are barriers, what funding mechanisms do we have available?

- d. What are the roles end-use consumers play in catalyzing grid modernization?
3. What strategies should be put in place to reduce heating and cooling costs for Connecticut families and businesses and further decarbonize the energy used for heating?
 - a. What are the relative costs and benefits for customers from heating and cooling with different types of fuels (heat pumps, electric resistance, oil, gas, propane), including both the installed costs of equipment and operating/fuel costs? How well is the Natural Gas Expansion Plan performing in providing access to natural gas for customers who want to switch to that fuel?
 - b. What are the opportunities to increase thermal efficiency in buildings?
 - c. What are the potential barriers to deployment of low-carbon thermal options, and what incentives might be appropriate?
 - d. How do we more effectively reach specific segments (Low-Income, Multi-family, small business etc.) and what kind of funding mechanisms can we utilize?
4. What strategies should be put in place to decarbonize and reduce costs of industrial processes in Connecticut?
 - a. How can industrial processes be made more efficient?
 - b. How can we integrate solutions for other public policy challenges with energy solutions?
 - c. How can we recover energy waste in water, wastewater, and waste infrastructure through better policy choices?
 - d. What are the opportunities for waste heat recovery, including combined heat and power generation, and how can we promote these technologies?
 - e. How do we enable different industry segments to utilize the optimal fuel, recognizing that different processes have different fuel requirements?

Transportation Sector:

1. What strategies should the CES prioritize to enhance and increase alternative modes of travel (bike, walk, bus, train, carpool, telecommute)?

2. How should the CES support smart growth and transit-oriented development in urban areas? In transportation corridors and not in transportation corridors?
3. What strategies should the CES prioritize to facilitate a shift to alternative fuels for transportation?
4. How should the CES address the need for the balance between alternative fuel infrastructure with cost-related risks, rapidly evolving technology, accessibility, and consumer protection? What should the role of utilities be in deploying such infrastructure?
5. How can the CES best support reducing environmental impacts while increasing the efficiency of Connecticut's freight, rails, and ports?
6. How should the state work to ensure the sustainability of its transportation infrastructure with the increased frequency and severity of weather events?
7. How do we achieve environmentally sustainable transportation solutions that ensure a fair and equitable distribution of benefits for everyone?