

MEETING NOTICE/AGENDA
LEGISLATIVE COUNCIL
ENVIRONMENT & CONSERVATION COMMITTEE MEETING

July 12, 2021

7:15 PM

REMOTE MEETING

LEGISLATIVE COUNCIL CHAMBERS AT MEMORIAL TOWN HALL WILL BE CLOSED AND THE COUNCIL COMMITTEE WILL BE CONDUCTING THE MEETING SOLEY USING ELECTRONIC EQUIPMENT

Public Comments on these agenda items will be heard at the opening of this committee

You can speak to any committee agenda item by joining the meeting, or send your comment/s in to LCpublicinput@hamden.com by 3:00 PM of this agenda date

For remote attendance:

To participate in public input live you must:

- 1. Have your name displayed on your screen**
- 2. Raise your hand to speak when the public input session is opened
(You will be called upon in the order that your hand is raised)**

The Chair will call your name and unmute you. You have 3 minutes to speak and will be warned when you have 30 seconds remaining and muted at the completion of 3 minutes

Please click the link below to join the webinar:

<https://zoom.us/j/96032210583>

Password: Dragons

Webinar ID: 960-3221-0583

If you experience any issue with the link above go to Zoom.com and click "join a meeting" and put in the following meeting ID and password - Meeting ID: 960-3221-0583 Password: Dragons

OR

Join by telephone. (For higher quality, dial a number based on your current location)

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International numbers available: <https://zoom.us/u/aH73IUF9D>

For additional sign-in support for any device or browser you can use the following link:

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Note: Any member of the public may request, in writing, a physical location and “any electronic equipment necessary” to attend the meeting in real time. Said request shall be made to KRenta@Hamden.com and mmcgarry@hamden.com not less than twenty-four (24) hours prior to the meeting. Said individual shall have the “same opportunities to provide comment or otherwise participate” in the meeting as would be afforded if the meeting was held in person with the following exception: Under law, the Legislative Council is not required to adjourn or postpone a meeting if such person loses the ability to participate because of an interruption, failure or degradation of such person’s connection to the meeting by electronic equipment. Since the meeting is remote, participation by a quorum of members of any Committee of the Legislative Council is expressly prohibited and will not be present at the physical location.

AGENDA:

Public Input:

1. Resolution endorsing a 2021 Hamden Municipal Energy Planning Guide

ZOOM sign in info:

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TOWN OF HAMDEN

OFFICE OF THE MAYOR

Hamden Government Center
2750 Dixwell Avenue
Hamden, Connecticut 06518
Tel: (203) 287-7100
Fax: (203) 287-7101

Curt Balzano Leng
Mayor

June 29, 2021

Legislative Council
Hamden Government Center
Hamden, CT 06518

Re: RESOLUTION ENDORSING A 2021 HAMDEN MUNICIPAL ENERGY PLANNING GUIDE

Honorable Members:

Enclosed please find a resolution for the Town of Hamden on behalf of the Energy Use and Climate Change Commission (EUCC) to endorse the 2021 Municipal Energy Planning Guide. The Municipal Energy Planning Guide is developed to guide the Town in the process of tracking and managing energy, as well as tracking clean energy goals and benchmarking energy use. The guide will be linked in the Plan of Conservation and Development and will satisfy the requirements for Sustainable CT Action 7.5 Develop a Municipal Energy Plan toward Hamden's 2021 certification application with Sustainable CT.

For more information please see attached correspondence from Town Attorney Sue Gruen and the EUCC.

By copy of this letter, Chairman Laurence Rosenthal and Vice Chair Brendan Smith of the EUCC are asked to attend your meeting to answer any questions you may have.

Your approval of this order is respectfully requested.

Sincerely,

Curt Balzano Leng, Mayor

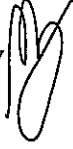
CBL/rr

Enclosures

cc: Town Attorney Sue Gruen, EUCC Chairman Laurence Rosenthal, EUCC Vice Chairman Brendan Smith, Energy Efficiency Coordinator Kathleen Schomaker, FD Scott Jackson, DFD Rick Galarza, COS Adam Sendroff, DCOS Patrick Donnelly, Mayor's Office File

Town Attorney's Office

MEMO

To: Mayor Curt Leng
From: Sue Gruen, Town Attorney 
Cc: Adam Sendroff, COS
Patrick Donnelly, DCOS
Kathleen Schomaker, Energy Coordinator
Date: June 30, 2021
Re: Resolution Endorsing a 2021 Hamden Municipal Energy Planning Guide

The Energy Use and Climate Commission has prepared a Municipal Energy Planning Guide to guide the Town's process of benchmarking energy use, increasing efficiency, transitioning to renewables and accessing peak demand management reduction programs. The Municipal Energy Planning Guide will be linked in the Plan of Conservation and Development and will satisfy the requirements for Sustainable CT Action 7.5 Develop a Municipal Energy Plan toward Hamden's 2021 certification application with Sustainable CT.

The purpose of this Resolution is to endorse the 2021 Municipal Energy Planning Guide prepared by the Energy Use and Climate Control Commission on behalf of the Town of Hamden and, subject to the approval of the Mayor or their designee, permit the Energy Use and Climate Commission on behalf of the Town of Hamden to apply for grant applications for state and federal programs.

Please forward this to the Legislative Council for approval.

**TOWN OF HAMDEN
LEGISLATIVE COUNCIL**

**RESOLUTION ENDORSING A 2021 HAMDEN MUNICIPAL ENERGY
PLANNING GUIDE**

Presented By: _____

Whereas, the Town of Hamden through its Energy Use and Climate Commission has prepared a Municipal Energy Planning Guide to guide the Town's process of benchmarking energy use, increasing efficiency, transitioning to renewables and accessing peak demand management reduction programs; and

Whereas, the Municipal Energy Planning Guide will be linked in the Plan of Conservation and Development and will satisfy the requirements for Sustainable CT Action 7.5 Develop a Municipal Energy Plan toward Hamden's 2021 certification application with Sustainable CT.; and

Whereas, the objective of the Plan is the management of the energy goals through operational efficiency, cost savings, CO2 emission reduction, resiliency and sustainability; and

Now Therefore Be It Resolved, that the Legislative Council hereby endorses the 2021 Municipal Energy Planning Guide prepared by the Energy Use and Climate Control Commission on behalf of the Town of Hamden.

Be It Further Resolved that subject to the approval of the Mayor or their designee, the Energy Use and Climate Commission on behalf of the Town of Hamden may apply for grant applications for state and federal programs.

Adopted by the Legislative Council at its meeting on _____, 2021.

APPROVED AS TO FORM

Susan Gruen
Town Attorney

Michael McGarry, President
Legislative Council

Curt Balzano Leng
Mayor

Kim Renta, Clerk
Legislative Council

DATE: _____



TOWN OF HAMDEN
OFFICE OF THE MAYOR
Energy Use and Climate Change Commission

Hamden Government Center
2750 Dixwell Avenue
Hamden, Connecticut 06518

June 29, 2021

Dear Mayor Leng,

Attached please find our *2021 Hamden Municipal Energy Planning Guide*.

We request this item be sent to Legislative Council for adoption. This process supports our Hamden application for certification with Sustainable CT under **Action 7.5.1 Develop a Municipal Energy Plan** which requires the following steps:

- a) Develop a document to guide energy tracking and management, energy reduction goals and actions, clean energy goals and actions, and demand reduction.
- b) Formally adopt the Municipal Energy Plan through a municipal process.

We were pleased to present this to Council as an information item on June 22, 2021.

We are providing a framework which, with your approval, provides the requisite basis to support grant applications for state and federal programs going forward.

Thank you for your consideration of this request and for all you do to serve Hamden.

Lawrence Rosenthal
Chair, EUCC Commission

Brendan Smith
Vice-Chair, EUCC Commission

Cc: Kathleen Schomaker, Energy Efficiency Coordinator
Adam Sendroff, Chief of Staff



2021 Hamden Municipal Energy Planning Guide

Presented to:

Hamden Legislative Council, JUNE 22, 2021

Sustainable CT

Submitted by:

Energy Use & Climate Change Commission – Town of Hamden

INTRODUCTION

The Mayor of Hamden, the Town's Legislative Body, its various commissions and physical plant personnel, along with retail and manufacturing business operations and neighborhood associations must play a vital role in monitoring, managing and controlling the energy usage of town buildings and vehicle fleet operations. Additionally, energy consumption is the single largest variable expenditure that residents of Hamden must contain and reduce if we are to reign in spiraling energy costs. We recognize that energy is the lifeblood of life in the town. As one of the largest expenditures of any budget, energy is used to heat and cool our homes and businesses, run our appliances and to travel to and from work.

As a municipality of more than 62,000 people, Hamden needs to focus on promoting energy efficiency and renewable energy in town buildings, all commercial businesses and single and multi-family homes. The EUCC has prepared this Municipal Energy Planning Guide to guide our town-wide processes of *benchmarking energy use, increasing efficiency, transitioning to renewables, and accessing peak demand management reduction programs*. These processes will yield many benefits including:

- **Savings and avoided costs:** We estimate that the town can reduce its energy expenditures significantly. And we can keep more of the money we spend right here in town.
- **Improvements in Human Health:** reducing reliance on fossil fuels in the transportation sector, reduces air pollutants contributing to respiratory diseases.
- **Internal Environmental Comfort:** "Smart Buildings" have HVAC systems to minimize infectious aerosols and mold/mildew susceptibility; as well as superior lighting –managed by controls.
- **Resiliency:** Through greater reliance on local energy generation and a more modern electric grid, Hamden can better manage the effects of power outages on access to food, fuel and medical care.

By accessing incentive programs, these upgrades become accessible to households, businesses and non-profit entities in our community. The 2021 Municipal Energy Planning Guide will be linked in the Plan of Conservation and Development (POCD) and will satisfy the requirements for **Sustainable CT Action 7.5 Develop a Municipal Energy Plan** toward Hamden's 2021 certification application with Sustainable CT.

CRITICAL ASPECTS OF ENERGY PLANNING

Energy Tracking and Management

Hamden Departments of Finance, Economic Development and Public Schools collaborate on **Portfolio Manager**, to track energy consumption at all Hamden buildings. **Portfolio Manager** was developed by the US-EPA Energy Star program and disseminated nationally as open source software to the public sector. Hamden now has on file multiple years of data tracking energy consumption in each building (municipal and schools) by natural gas (therms), oil (btu), electricity (kWh), and fuel cells (methane or hydrogen btu), as well as solar energy production (kWh).

United Illuminating/Avangrid auto-uploads monthly consumption of electricity and natural gas for all municipal accounts. We rely UConn Department of Engineering consulting services in uploading fuel oil and solar energy updates to Portfolio Manager. **Sustainable CT Action 6.1: Benchmark and Track**

Energy Use interfaces with Portfolio Manager for ease of submitting reports for credit toward certification.

Energy Reductions

With Celtic Energy serving as Owner's Representative through the RFP process, Hamden is poised to embark on **Energy Performance Contracting services with NORESKO** to effect dramatic energy reductions in buildings between 2021 and 2023. Smart building technologies to maintain optimum performance efficiencies in internal temperature control, computer-controlled LED lighting, thermal and infrared occupancy lighting, replacement of roof top air handlers with VAV's and VFD's, installation of new high efficiency boilers, chillers and cooling towers, programmable dashboard controls with central energy monitoring and building envelope improvements amenable to inclusion in this program.

Clean Energy

We can be proud of our track record in adopting roof-top solar energy in Hamden. **Homeowners have participated in multiple solar campaigns** including a very successful program designed to serve low-and moderate-income homeowners; **local businesses have accessed Commercial Property Assessed Clean Energy incentives** thanks to our enrollment the national C-PACE program. And our Hamden Middle School project included our first new building construction project to include roof-top solar. Subsequently, we installed solar on the roof of our Public Works building on Shepard Avenue.

There is much more to do. Each building that is energy efficient is ready for a right-sized solar installation, if the location is solar feasible. Incentives for both efficiency and solar become available annually, we need to be poised to access those incentive programs.

Peak Demand Reduction

Peak demand on an electrical grid is simply the highest electrical power demand that occurs over a specified time period. Think of the regional aggregate electricity demand for air conditioning in all buildings on a summer weekday during an oppressive heat wave. As buildings and equipment demand more energy, peak demand is the largest daily demand on a grid system that must be managed by that grid's operators; it is a higher than average demand. The actual point of peak demand is a single half-hour or hourly period which represents the highest point of customer consumption of electricity. Utilities often charge customers based on their individual peak demand; energy efficiency and local renewables can reduce peak demand on the grid. The renewable energy transition will include considerations for peak demand.

When large customers are able to reduce their energy consumption on demand during peaks, they are compensated for that practice with a financial incentive from their public utility. This compensation arises from the fact that the utility can forego construction of additional infrastructure, and expense that exceeds customer compensation. Any large energy customer can enroll with a plan to shut down buildings, suspend operations, or otherwise temporarily reduce energy use during the peak demand period.

THE PLAN

OBJECTIVE:

The objective of the plan is the management of the energy goals through operational efficiency, cost savings, CO2 emissions reduction, resiliency and sustainability. NOTE: The MEP is a roadmap that should be reviewed and updated regularly. The core of the plan is centered on a:

Energy Efficient Buildings Pledge: *

Hamden will, by percentage, reduce its energy consumption in accordance with the following schedule;

- Year 2019 – Baseline Year
- Year 2025 – reduction by 15%
- Year 2030 – reduction by 30%
- Year 2040 – reduction by 50%
- Year 2050 – achieve 100% renewable energy

*This pledge requires the monitoring, management and measured trending of all municipal and school energy consumption. The plan to fulfill our energy reduction goals includes planning for 25% to 50% energy reduction in all of Hamden's municipal buildings and school facilities

Strategies that use best practices for this purpose include:

- Adopting guidelines for municipal buildings and schools as described by LEED Platinum, Energy Star and CHPs (schools) as produced by experienced Architects/Engineers
- Working with an independent consultant to plan the sequence of municipal building for performing Investment Grade Audits by RFP-selected NORESKO.
- Entering into an Energy Savings Performance Contract (ESPC) with NORESKO to guarantee energy reductions and specific savings over term of contract.
- Participating in Demand Response and Peak Load Shedding, both of which provide an economic return to Hamden, and which can be folded into the ESPC design engineering.
- Upgrading existing high-pressure sodium streetlights with LED lamps and heads.

Energy Efficient Transportation Strategies:

Decreasing transportation-generated emissions in a community such as Hamden can have an immediate effect on local air quality in a way that other sustainability activities may not. Encouraging people-powered transportation (bikes, walkways), increasing public transportation access, and supporting non-fossil fuel transportation options (electric cars) are all ways to move toward this goal.

In 2020 Hamden participated in the 12 week EV READINESS program hosted by LiveGreenCT (livegreenct.com) as a municipal peer educational program on multiple dimensions of the EV transition and how CT municipalities need to prepare for effective participation. Our Hamden team completed all 12 modules and, as of Summer 2021, we are poised to take steps on several fronts including EVSE site planning, parking and zoning regulations, and fleet inventory analysis.

Transition to Renewable Energy (From 2019 to 2050)

Steps to transitioning by maximizing 'green energy' alternatives

- 2019 Baseline year – Hamden will issue a pledge to become fully carbon neutral by 2050. Our Town Pledge and Resolution will be approved by the Mayor's Office, the Legislative Council, the Economic Development Office and all other principle stake holders.
- 2021 – **Conduct Town fleet inventories to create timeline for transition to Electric Vehicles (EV's);** create and implement first-round plan for Electric Vehicle Service Equipment (EVSE) installations on municipal properties through no-cost, long-term vendor contract.
- 2021 – Implement ESPC with NORESKO in first-round town-wide building capital upgrades with efficiency program focused on Least Efficient buildings as identified in Portfolio Manager.
- 2025 – Deployment of Microgrid technology along Dixwell Ave as part of Resiliency program. . Completion of EV charging stations throughout town.
- 2030 – Installation of ground-mounted solar arrays and wind turbines on brownfields, reservoir areas and vacant open space. Initiate construction of a central 'green energy' monitoring control center for participation in ISO-New England's Demand Response and Peak Load Shedding programs. This energy production will serve as back-up kWh energy supply for the business and municipal sectors. A second Microgrid or mini-microgrid shall be completed. Work with the 'Green Bank' and C-PACE on innovative programs.
- 2050 – Achieve 'carbon neutral' for the Municipal, Residential and Commercial sectors. Elimination of carbon fuels, including natural gas, oil, methane and kWh (using carbon fuels) shall be complete. This is a pathway to achieving 100% renewable status.
- Helps the state meet its renewable energy and greenhouse gas emission goals

Strengthening Hamden's Supply of kWh Power through Micro-grids – Resiliency and Sustainability

Hamden, like all other communities throughout CT must rely on the electric grid to provide electricity to homes, businesses and town facilities. Our current grid performs exceptionally well but was built and designed before the advent of solar panels, allowing individual houses and businesses to generate their own electricity, and batteries, allowing them to store it. Moreover, it is vulnerable to blackouts during major storms and attacks.

As our goal is to continue to encourage more renewable energy and greater resiliency, this guide includes re-thinking the grid. A key building block of our future grid will be microgrids, consisting of smaller subsets of power sources, users, wires and controls. Microgrids are capable of operating while connected to the wider grid, or they can 'island' or operate separately in the event of a grid outage.

An example of a microgrid could be a collection of key town facilities, a solar array, battery, fuel cells, co-generation fuel cell (heat & kWh), and backup generators. This microgrid could be designed to provide full operating power for Hamden High School, the Ice Rink, the retail shopping centers, restaurants, gas stations, banks, emergency care facilities, the Middle School, Town Center, Miller Library and Hamden Town Hall (including Fire and Police Headquarters). Depending on the size of the microgrid, the system can provide both back-up power and primary production of kWh, thus enabling the Microgrid area to operate "off grid" as it deems necessary.

Micro-grid Benefits

- Can enable near total renewable energy through integration of battery storage and smart controls. Electricity can flow in multiple directions allowing for lower kWh operating costs, peak load shedding, avoidance of 'Brown Outs' and Demand Distribution.
- Greater resiliency, allowing the microgrid or key town facilities (i.e. emergency shelters, Town Center, Town Hall, Police Headquarters and Fire Headquarters) to operate even when the broader grid is down.
- As prices of solar and storage batteries decline, microgrids offer substantial cost reductions in the production of kWh.
- It is security, pure and simple, enabling the buildings within the Microgrid area to always have power.
- A Microgrid can be programmed (1 hour, 4 hour or 24 hour notification) to shed from 5% to 15% energy load when called upon from UI or ISO New England. This is a contractual program providing economic benefit to the Town.
- Peak shaving can be either 'on demand' or scheduled at various times throughout the year.
- Microgrids can be funded through third parties where the kWh user pays only for the power needed.

Sustainable CT participation

Participation in the statewide municipal certification program **Sustainable CT (sustainable CT.org)** offers Hamden a pathway to community-wide resiliency through the 'three-legged stool' approach to sustainability:

- Focus on people: social equity, community gatherings, public arts, historic/notable sites, civic engagement, community recreation, public and non-profit volunteer opportunities, sidewalks for outdoor neighborly encounters;
- Focus on nature: stewardship of waterways, lands, urban trees and forests, farms and gardens, accessible outdoor recreational parks and gardens in easy reach of all neighborhoods, education on challenges related to weather changes, vegetative changes, impacts on air, water, soils and plants;
- Focus on economy: support for local businesses and neighborhood business development; local transportation options – walking, bicycling, mini-transit systems, alongside EV use- to foster local flows of capital and sustain local jobs; redevelop underutilized areas for re-use and co-located residential and commercial.