March 6, 2023

# Commercial New Construction:

## Supporting Electrification and Ultra Low EUIs with Enhanced Incentives

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# We look forward to hearing from you

Please put all your questions into the questions section with this icon.

Q&A

# Agenda

1 **POLICY CONTEXT**
Legislative, regulatory & policy updates that have impacted our programs

2 **OUR MAIN FOCUS**
Heat Pumps and EUI

3 **PATHWAY DETAILS**
Whole Building vs Prescriptive Incentives

4 **TIMELINES**
When to Engage

# Legislative/Regulatory/Policy Context

## New Building Codes

2022 Connecticut State Building Code

## Local Ordinances/Policies

West Hartford HeatSmart Program

Bridgeport participating in *Communities LEAP Program*

## State Legislation

Public Act 22-5: Zero-carbon electric grid by 2040

Senate Bill 979 (under consideration) allow Municipal stretch codes

## Federal Policy

INFLATION REDUCTION ACT OF 2022

Biden's Goal: Net zero emissions economy by no later than 2050

# EnergizeCT Commercial New Construction & Major Renovation Program Overview

**Building Electrification/Decarbonization** (Heat pumps)

**Low Energy Use Intensity (EUI) and Net Zero**

**Four paths to accommodate all project types and customers**

## Heat Pump Support Levels are Significant

| Heat Pump Incentives for Commercial New Construction/Major Renovation Projects | |
|---|---|
| Air source heat pumps: | $640/ton |
| Variable refrigerant flow (VRF): | $1,000/ton |
| Ground source heat pumps: | $4,000/ton |

## Zero Net Energy Building

**Buildings that produce as much energy as they consume over a year**

Heat pumps, LED lighting, improved insulation – lead to lower building energy needs that can be offset by solar energy production

## EUI

**(Energy Use Intensity)**

**A measure of a building's total annual energy use divided by its square footage (Annual kBtu/sf)**

Similar to a miles per gallon metric, but for buildings

# Definitions

# Understanding Zero Net Energy Buildings:
## Finding the Right Balance & Optimization

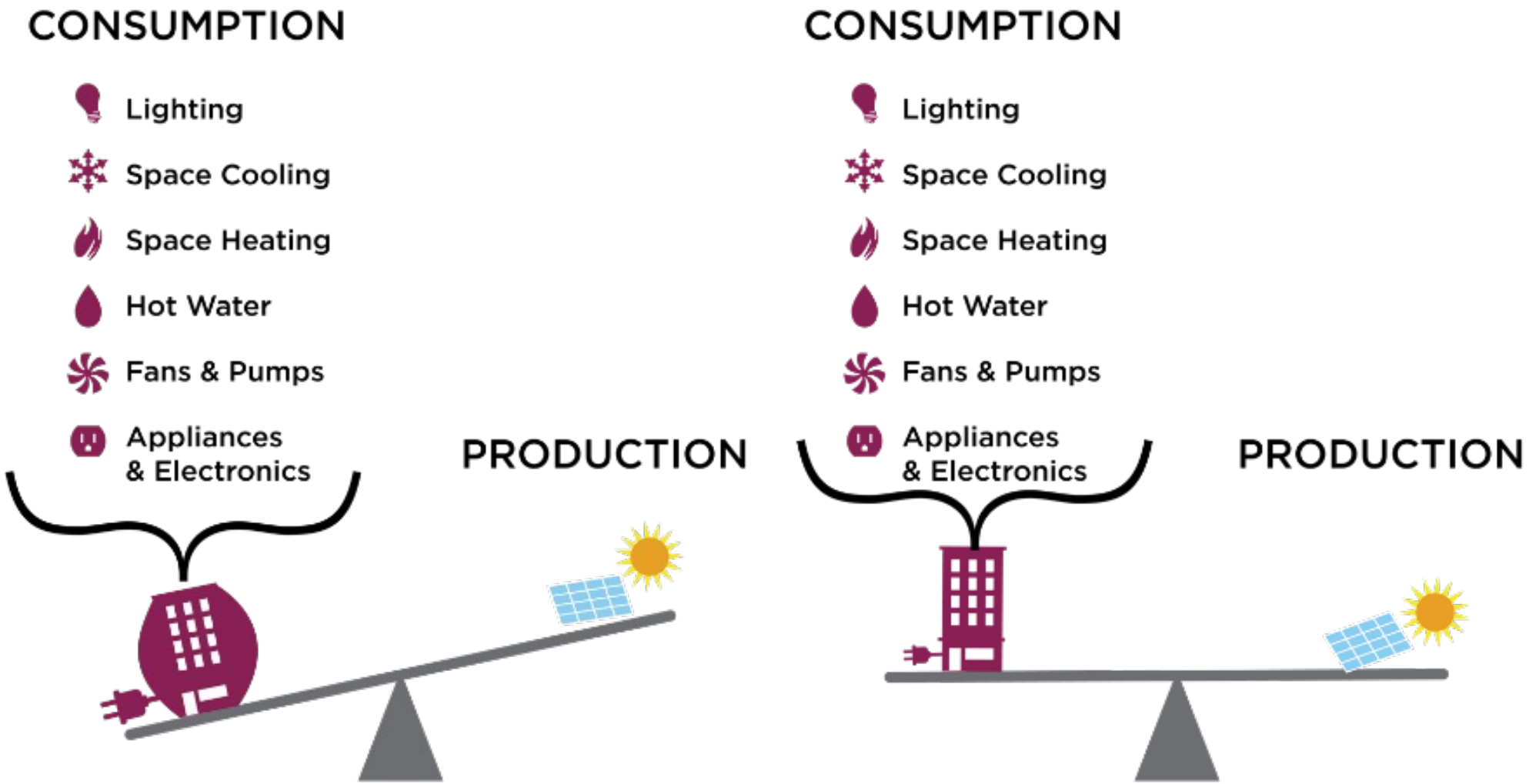



*Photo Credit: P. Torcellini, NREL*

# Value of Setting Early EUI Target

1. Centers team on a clear goal
2. Serves as a touchstone for decision making throughout design
3. Encourages thought about building operations considerations
4. Prevents value engineering of energy-saving equipment and systems
5. Allows owner to check performance against the target over time (and relative to other buildings)

**PATH 1**

Zero Net Energy /Deep Energy Savings

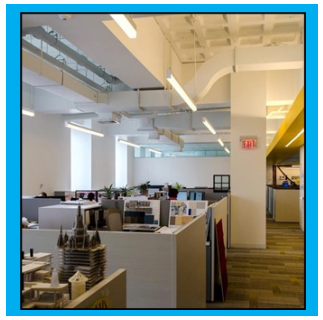
**PATH 2**

Whole Building EUI Reduction

Low EUI Pathways

**PATH 3**

High Performance Buildings



**PATH 4**

Systems

# New Construction/Major Renovation Participation Pathways

# Path 1: Net Zero & Low EUI Buildings

## INTENT: For buildings 10,000 sf and greater

Drive projects toward net zero, low carbon and low EUI in operation - focus on performance

## KEY PROGRAM DRIVER:

- Achieve a target site EUI in design, construction and operation
- Electrified systems

## NET ZERO TECHNICAL SUPPORT:

- Net zero design support
- EnergizeCT Sponsors will pay 50% up to $10,000
- EnergizeCT Sponsors will pay for optional Verification Incentive - 50% of fee up to $10,000

**BUCKLEY ELEMENTARY SCHOOL**
Opened Fall 2022 | All electric

# Path 1: EUI Targets

| Building Type | Net Zero Level EUI Targets |
|---|---|
| Hotel | Tier 1: ≤35 |
| | Tier 2: 36-40 |
| K-12 | Tier 1: ≤25 |
| | Tier 2: 26-29 (high schools only) |
| Library | Tier 1: ≤30 |
| | Tier 2: 31-35 |
| Office | Tier 1: ≤30 |
| | Tier 2: 31-35 |
| Fire/Police Station | Tier 1: ≤35 |
| | Tier 2: 36-40 |
| Other | 25 or site specific |

# Path 1 Incentives

| Site Specific | Site EUI | Incentives | | | | |
|---|---|---|---|---|---|---|
| | | Payable at end of construction | | Payable after 1-year post-occupancy | | |
| | | Construction Incentive ($/sf) | Heat Pump Adder | Post Occupancy Incentive ($/sf) | Adder for performance better than target | Certification Incentive |
| Tier 1 – Net Zero Level | 25 or less (or site-specific target) | $2.50 | Air Source Heat Pumps: $640/ton capped at $100,000<br><br>Variable Refrigerant Flow (VRF): $1,000/ton capped at $150,000<br><br>Ground Source Heat Pumps: $4,000/ton capped at $200,000 | $1.50 | $0.05/EUI point reduction/sf | $3,000 |

**Construction incentive drops to $2 for projects only meeting Tier 2 EUIs

# Path 2: Whole Building EUI Reduction

## INTENT: For buildings 30,000 sf and greater

Large or complex projects, interested in setting an EUI reduction target, but not good candidates for Path 1

## KEY PROGRAM DRIVER:

- Lowest possible site EUI
- Building electrification

## TECHNICAL ASSISTANCE

- Provide energy savings and decarbonization advice
- Sponsors of EnergizeCT will pay for 75% of the energy modeling, charrette support, and mid design review - up to $20,000/Customer pays 25%
- Sponsors of EnergizeCT will pay for optional Verification Incentive - 50% of fee up to $10,000


**ANNA REYNOLDS ELEMENTARY SCHOOL**
Newington, Connecticut

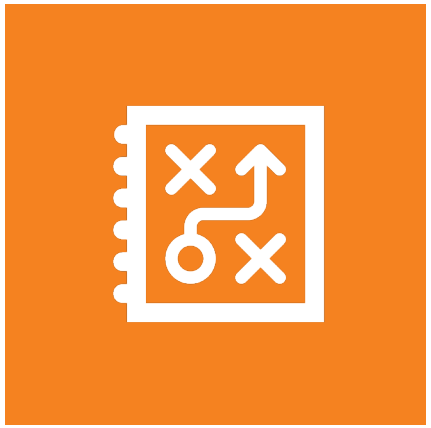
**Note:** This design-focused pathway does not have a post occupancy performance component, which is the hallmark of Path 1

# Path 2 Incentives

| Path 2: EUI Reduction Incentive Tiers | | | |
|---|---|---|---|
| | Percent EUI Reduction | Incentive Rate | Heat Pump Adder (All Tiers) |
| Tier 4 | 10-15% | $0.75/sf | Air Source Heat Pumps: $640/ton capped at $100,000<br><br>Variable Refrigerant Flow (VRF): $1,000/ton capped at $150,000<br><br>Ground Source Heat Pumps: $4,000/ton capped at $200,000 |
| Tier 3 | 15-20% | $1.25/sf | |
| Tier 2 | 20-25% | $1.75/sf | |
| Tier 1 | 25% and above | $2.25/sf | |

# Verification Incentive

Multiple trend data reviews at post occupancy



Review control strategies at end of design

Multiple EUI data pulls at post occupancy

**Sponsors of Energize Connecticut offer 50% cost share up to $10,000 to cover this scope**

## Available for Path 1 & 2 Projects

# Path 3: High Performance Buildings

## INTENT: For buildings 20,000 sf and greater

Reduce whole building energy and decarbonize – measure by measure approach versus an EUI-based approach

## TECHNICAL ASSISTANCE:

Expert support in identifying energy conservation and decarbonization strategies

## TYPICAL PROJECTS

Fast paced projects where customers do not wish to set and pursue an EUI target

Projects where heavy process loads are the major energy savings focus (e.g., cannabis, industrial).

Projects where customers have interest in discrete measures only

Projects engaging too late in design to participate in Path 1

# Path 4: Systems

## INTENT:

Reduce building energy and decarbonize – measure by measure approach versus an EUI-based approach

## TYPICAL PROJECTS:

For customers with small and fast paced projects where customers do not wish to set and pursue an EUI target

Projects that are not a whole buildings (e.g. tenant fit outs or open-air parking garages)

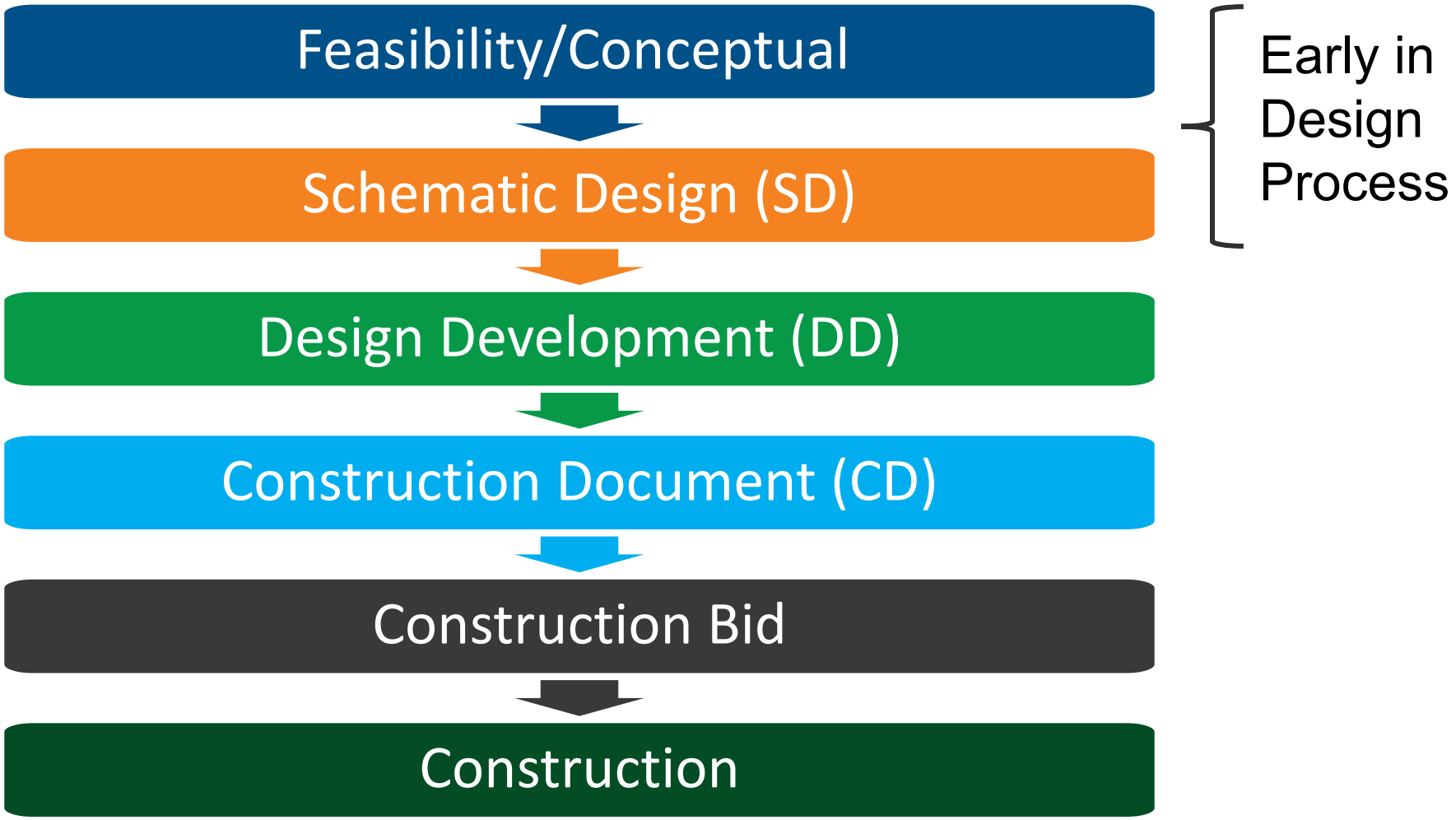
Projects where customers have interest in discrete measures only

Projects engaging too late in design to participate in other pathways

# Path 3 & 4 Incentives

| Table 1 - Summary of Customer Incentives | | |
|---|---|---|
| **Incentive** | **Energy Conservation Measure (ECM) Examples** | **Rate** |
| **Custom Incentives** | Building Envelope | Electric incentives are the greater of $0.40/kWh or $1,000/summer peak kW and gas incentives are $6.00/ccf. All incentives are capped at 95% of incremental cost with per-fixture caps for lighting incentives |
| | Lighting & Networked Lighting Controls | |
| | Energy Recovery | |
| | Demand Control Ventilation | |
| | High Efficiency Chillers | |
| | Air Compressors | |
| | Water Source Heat Pumps (non geothermal) | |
| | Other | |
| Prescriptive Incentives including packaged and Split DX equipment, variable frequency drives (VFDs), natural gas hot water heaters, heat pump water heaters, boilers, furnaces, and kitchen equipment | | See Path 3 and 4 Incentive rate sheet on EnergizeCT.com |
| **Multi-End Use** | Project must include a minimum of 3 end uses (defined as Gas or Electric, impacting Heating; Cooling; Lighting; Process; Domestic Water Heating; Refrigeration; Motors and Drives) | Calculated at $0.10 / kWh and/or $1.00/ccf (capped at $20,000) |

# When Should Customers/Design Teams Reach Out?



# Key Takeaways

- Trend is moving to decarbonization
- Engage early in design
- Program main focuses:
  - Heat pumps (decarbonization)
  - Reducing building EUI
  - Operational not just design energy performance
- We want to work with you (our Business Partners) to provide added technical assistance and incentives for our customers

# Questions

# Thank you

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