Energize Denver

Benchmarking & Performance Requirements

Steam Loop Buildings – January 2024

Agenda

- Basics of Energize Denver
- Steam Loop & Energy Service Capacity
- Specific flexibility options for steam loop buildings
- New Resources
- Next Steps

Energize Denver Ordinance Sections

Electrification

- Implemented by CPD
- All Commercial and Multifamily Buildings
- Partial Electrification of Space and Water Heat upon System Replacement, when Cost Effective

Benchmarking

- Implemented by CASR
- Buildings 25K+ sq. ft. submit energy data annually

Performance

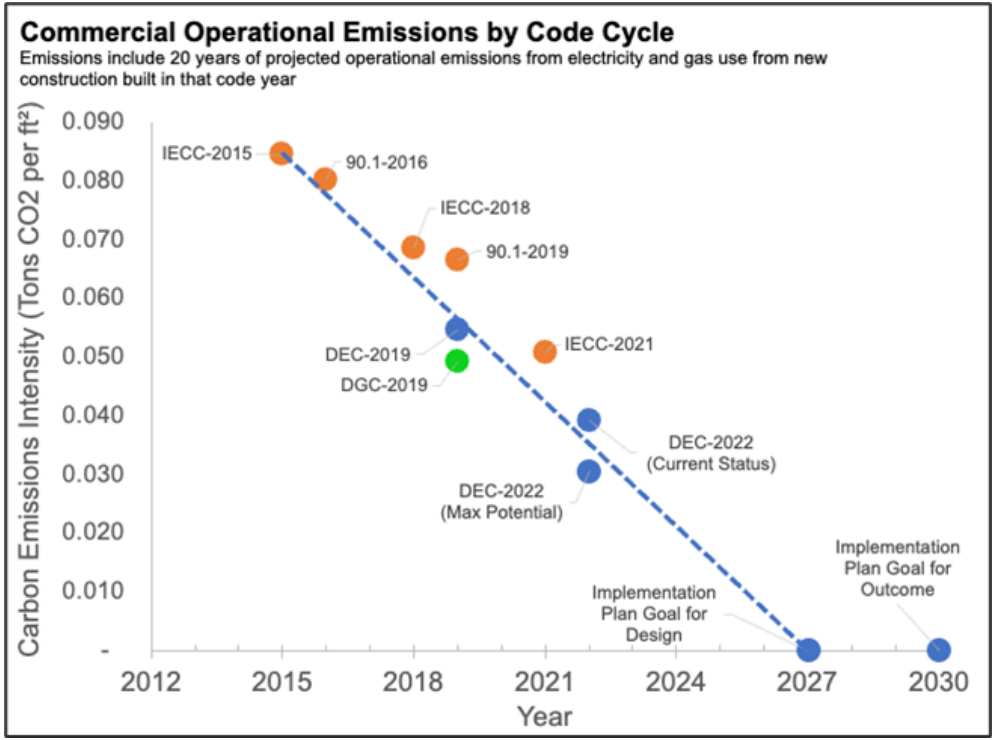
- Implemented by CASR
- Minimum energy efficiency requirements for buildings 25K+ sq. ft, and buildings 5,000 to under 25K sq. ft.
- Improvements to energy efficiency and increase renewables

Electrification Updates to Code

Applies to all buildings under the International Building Code (not International Residential Code)

New Building Electrification Requirements in Code

- January 1, 2024: no gas-fired or electric resistance furnaces and hot water heaters in **new** commercial and multifamily construction
- Some exceptions exist
- For more information about new building requirements denvergov.org/buildingcode (Sections C403.2.4 & C404.10)



Existing Building Electrification Requirements

*Partial **electrification** of Space and Water Heat required in Building Code upon System Replacement, when Cost Effective*

Amending Denver Building and Fire Code	2023	2025	2027
Permit process: Changes to near parity in permitting between unitary AC/condensing units serving a heated space, gas furnaces, gas hot water heaters and heat pumps.	X		
Equipment replacement: Heat pumps required upon replacement of unitary AC/condensing units serving a heated space, gas furnaces, gas hot water heaters when cost-effective.		X	
Permit process: Changes to near parity in permitting between PTACs, boilers, central hot water systems and heat pumps.		X	
Equipment replacement: Heat pumps required upon replacement of PTACs, boilers, central hot water systems when cost-effective.			X

Steam buildings have heat exchangers on-site (not boilers, etc.), so they won't trigger the electrification requirements because there is no gas system to replace.

Benchmarking & Performance Requirements

Commercial, Multifamily, Institutional, Municipal, Manufacturing, Agricultural, and Industrial
25,000 square feet and larger

Performance Requirements by Building Size

Buildings 5,000 – 24,999 SF

- One-time prescriptive requirement
- Upgrade lighting to 90% LED or install renewables that covers 20% of annual energy use

Buildings 25,000 SF and Larger

- 2030 Performance goal with maintenance requirement; annual benchmarking
- 2030 Site EUI targets set by property type

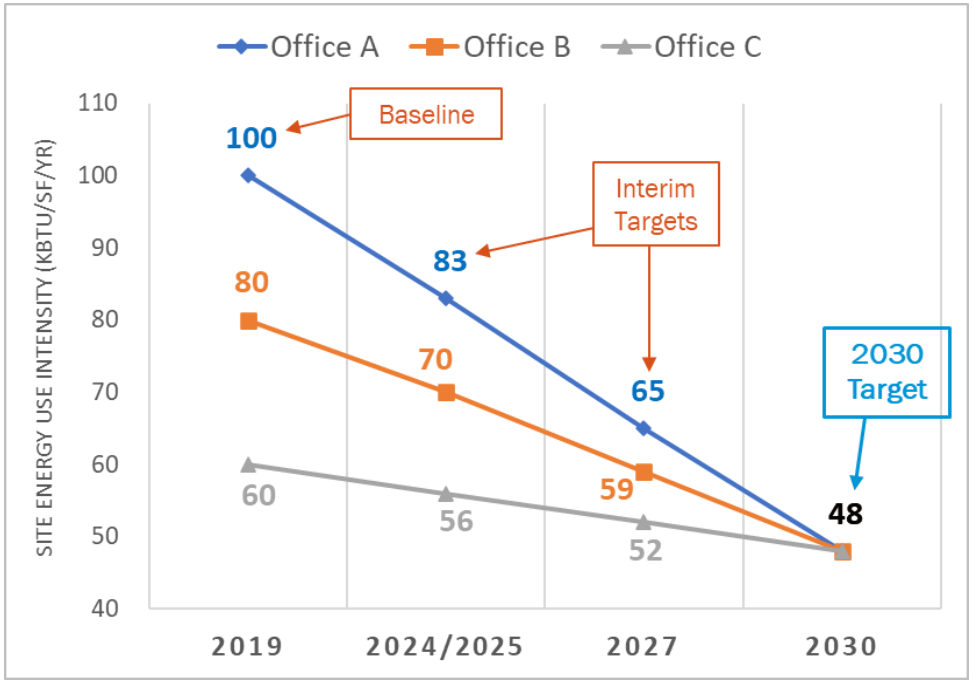
2030 Energy Use Intensity Targets

- Based on annual submission of energy benchmarking
- Applies to all buildings 25,000 sq. ft. and larger
- Targets set at the 85th percent for all covered buildings in Denver using 2019 baseline (i.e., 85% of covered buildings will have to take action)
- Mixed-use buildings will have a blended target based on weighted % of all building types

**Targets set for 70+ different property types*

ESPM Building Type	2030 EUI Target
Office	48.3
Hotel	61.1
Multifamily Housing	44.2
Performing Arts Center	53.2
Distribution Center	25.4
Restaurant	194.1
Medical Office	69.0

Trajectory Model



- Target Setting:
  - Baseline = 2019
  - Interim targets for 2024/2025 and 2027
  - Final 2030 target
- Maintenance: all covered buildings must maintain 2030 target indefinitely
- The targets are the minimums that CASR regulates during performance evaluation. Building owners can move faster if they choose.

Steam Loop Buildings

- 15% of our steam loop buildings currently meet their 2030 EUI targets
- Xcel Energy is studying how to decarbonize the steam loop and make plans for its long-term future
- Electrical capacity is strained in the downtown grid. CASR is working with Xcel Energy on long-term infrastructure capacity plans
- CASR has built in flexibility options in the performance requirements specifically for steam loop buildings to allow for the timing of Xcel Energy decarbonization efforts

While we encourage electrification of space and water heating equipment, we don't want buildings jumping off the steam loop immediately because it creates an untenable situation for the buildings that can't immediately leave.

Switching to natural gas boilers now locks in fossil fuel carbon emissions for decades.

Energy Service Capacity Issues

Denver regularly engages with builders, developers, and customers who are seeking electric service connection or upgraded service to support electrification. Unfortunately, the City regularly hears that these projects are delayed or prevented due to distribution- and/or service-level equipment having insufficient capacity.

- For the building performance requirements, energy service capacity constraints are a valid reason for a timeline adjustment.
- If Xcel Energy has informed you or your team that it does not have capacity to serve your project, the City recommends that you request from the person you had contact with at Xcel Energy to provide answers to the questions in this email template.
- We also encourage you to make a public comment on Proceeding No. 23M-0464EG to the PUC at puc.colorado.gov by clicking on the "Contact Consumer Affairs or File a Complaint" link, so they are well-informed of building owner constraints as they make future policy decisions.

Flexibility in Compliance

At a basic level, for compliance, all you have to do is meet the EUI target by its due date and turn in benchmarking to prove it!

Do I qualify for a target adjustment?	~~Am I 80% electrified?~~	Do I have renewables I can use for the credit?	Do I qualify for a timeline adjustment?	Specialized Alternate Compliance
Adjusts the 2030 Target	~~Adjusts the 2030 target with 10% bonus~~	Credits renewable energy towards performance at evaluation	Adjusts the timeline of interim and/or final target(s)	30% Reduction target, Electrification, Historical Bldgs., MAI Bldgs.

Benchmarking for Normalized Performance Targets

- ✓ Double-check your square footage and energy data coming in from your utility's auto-upload
- ✓ Breaking out building types:
  - Building can benchmark as one building type following ENERGY STAR guidelines
    –OR–
  - High-intensity building types could be broken out by square footage

Items that can be excluded from benchmarking (or entered as negative entries) if sub-metered:

- Swimming pools energy
- Parking area energy use
- Electric vehicle charging stations
- Third-party loads (ex. cell tower antennas or billboards)

Benchmarking for Proper Mixed-Use Targets

Strip Mall Example

- 10 units
- benchmarked following ESPM guidelines as 100% “Strip Mall” property type

2030 target = 66.6

- 10 units
- 20% restaurants
- 60% grocery store
- 20% retail store

2030 target = 146.2

- 10 units
- 50% restaurants
- 10% bar/nightclub
- 10% fast food
- 30% retail store

2030 target = 149.9

Target Adjustments

*Adjust the final 2030 energy performance target of a building

*Uses 2019 baseline benchmarking data to make changes to interim targets

Third-party Data Verification of 2019 (or most recent year) benchmarking submission is required for target adjustments!

- Available target adjustments: data center, operating hours for certain building types, swimming pools, parking
- Previous benchmarking submission were incorrect
  - building type classification
  - square footage corrections
  - inaccurate energy data that affects the baseline
  - a high-intensity space (such as a restaurant) was not accounted for in the largest three building types.
- Building alterations
  - Building type has changed due to a renovation
  - Building has added or demolished square footage with a different or high-intensity property type

Timeline Adjustment

Apply for a timeline for a variety of reasons that could make achieving the interim or 2030 targets on time difficult.

Can apply to delay multiple target deadlines in one application

- Planning for end of major equipment system life
- Planning for major renovation
- Landmark Preservation Commission review process delays
- Financial distress
- Electrification of space and water heating equipment or the entire building
- Benchmarking exemption (1-year) during an evaluation year
- Steam loop district system limitations
- Innovative approach to energy efficiency
- Change of building ownership
- Equity-priority buildings may qualify for additional reasons not listed
- Other reasons on a case-by-case basis

Timeline Adjustment Application

- Application form - questions about what reasons are present, justification for the delay, and details on renewable plans
- Attachments:
  - Required - Energy Audit that meets the minimum requirements
  - Required - Retrofit Plan (Word or PDF) document (Appendix E)
  - ~~Electrification Feasibility Report, if applicable~~
  - Required - O&M Program document
  - Optional - Supporting documentation that would support the request (see technical guidance for suggestions)

If the retrofit plan includes replacing steam system equipment with something else an EFR is required.

Retrofit Plan Details – Appendix E

The retrofit plan is intended to give CASR a summary look into what it going to be retrofitted and the implementation timeline. The plan should be a maximum of 5 pages.

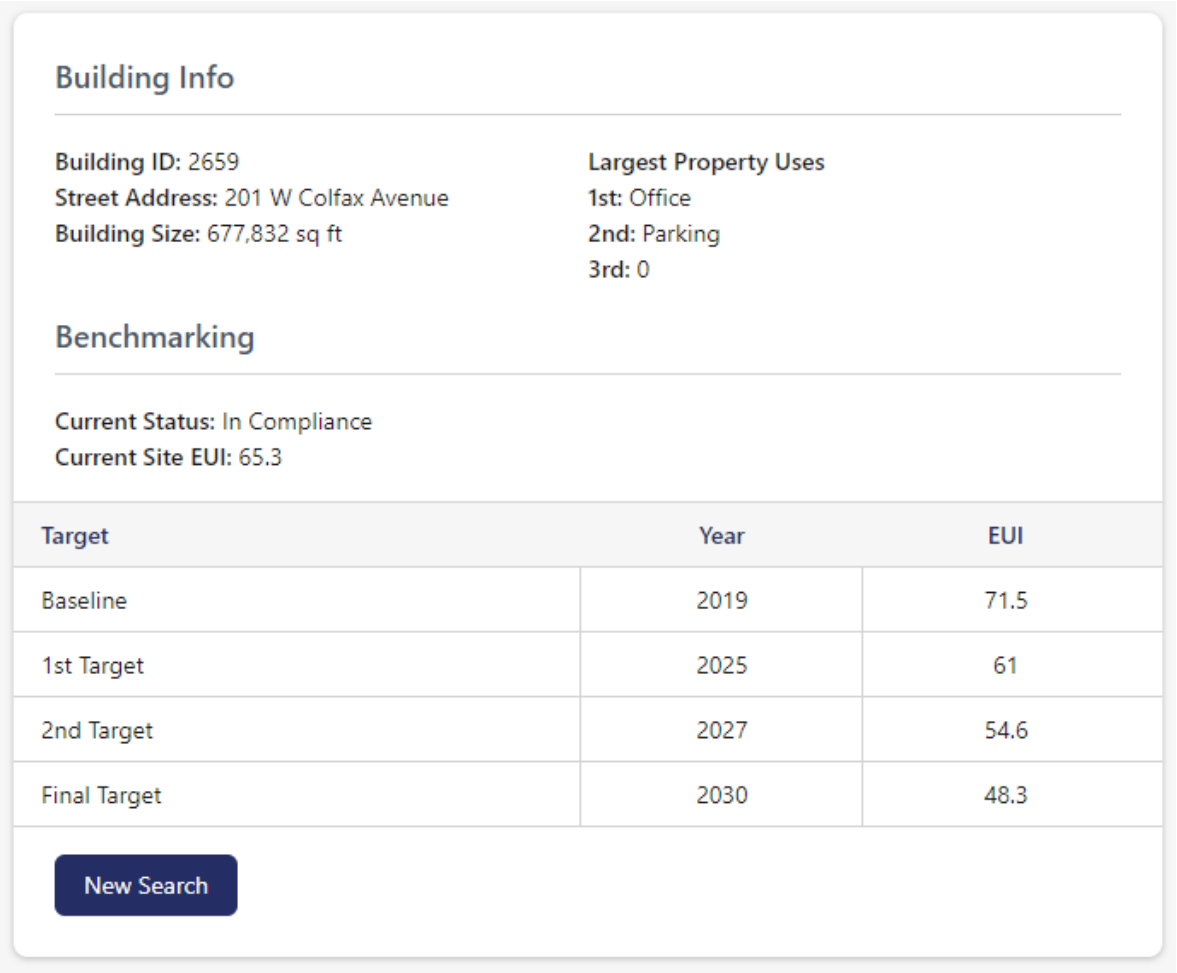
The Retrofit Plan must cover four things:

1. What improvements and upgrades are you going to perform to achieve the 2030 target?
2. When are you going to perform the improvements or upgrades?
3. How do those actions enable the building to meet the 2030 target?
4. A proposal for performance evaluation timeline targets and reporting progress

Resources

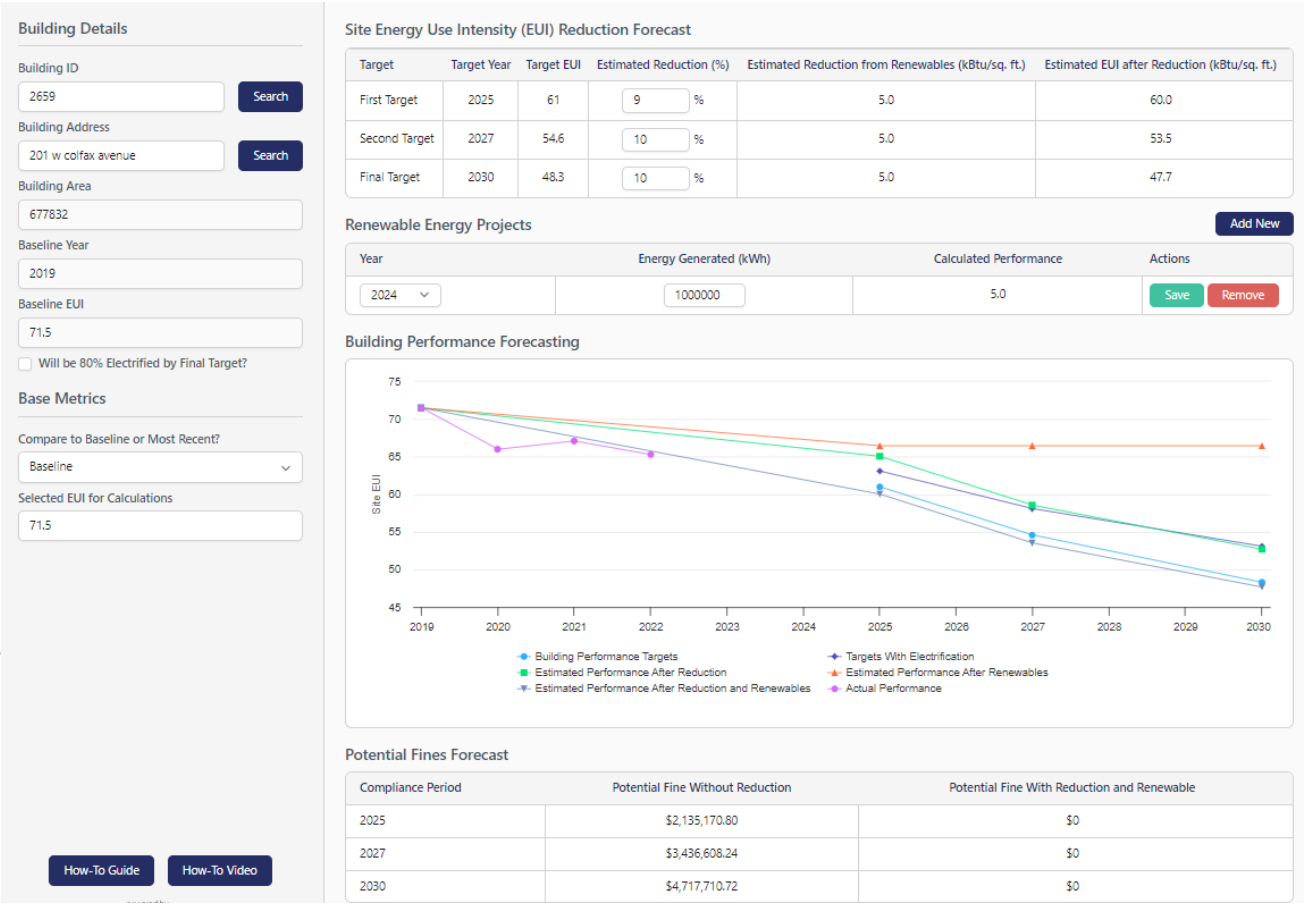
- New Step-by-Step Compliance Guide
- New "Resources for Building Owners" page: guides, playbooks, webinars, training library, rebates, incentives, financing, smart leasing, find a form, trained service provider directory
- Energize Denver Training and Vendor List: Training on benchmarking, performance requirements and MAI option for large buildings and training for small building requirements. Completing a quiz correctly will get you listed on our trained vendor list!

New: Performance Requirements Lookup Tool



https://lookup.energizedenver.org/

New: Building Performance Forecasting Calculator



https://calculator.energizedenver.org/

Next Steps

- See if you qualify for a target adjustment to normalize your target. You might meet or be closer your 2030 target once it's adjusted.
- Get an energy audit that meets our minimum requirements to see what else you can improve in your building to lower your energy use and meet your target.
- If these steps haven't enabled you to reach your 2030 target, check out the timeline adjustment process.

Upcoming Webinars

- Chilled Water Loop buildings
  - February 6 – 12:00pm
  - https://denvergov-org.zoom.us/webinar/register/WN_vYasKQgSSqu14IAcMCmSJQ

- C-PACE financing – focus on small-medium size buildings
  - January 31 – 12:30pm
  - https://denvergov-org.zoom.us/webinar/register/WN_1MCE38mYSnypm6PWrr_WIw

State Building Performance Policy

COLORADO
Energy Office
Building Performance Colorado

https://energyoffice.colorado.gov/bpc

- Draft Technical Guidance available – comments due by February 1
- Upcoming CEO webinars and office hours in January and February

Questions?

Building Performance Help Desk
Hours: 8am-5pm, M-F
Phone: 844-536-4528
Schedule a phone appointment

- Buildings 25,000 SF and larger: email energizedenver@denvergov.org
- Buildings 5,000-24,999 SF: email energizesmallbuildings@denvergov.org

Asistencia en espanol disponible