

City and County of Denver

Energize Denver
Benchmarking and Energy
Performance Requirements
for
Buildings 25,000 Square Feet and Larger

Technical Guidance

Version 3.0
April 1, 2025

Building Performance Help Desk
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1-844-536-4528
[Performance Requirements Lookup Tool](#)

Nothing in this Technical Guidance shall supersede any Denver ordinance or regulation.
[Denver Revised Municipal Code \(D.R.M.C.\), Chapter 10, Article XIV.](#)

If a change to the Technical Guidance would affect a compliance pathway, CASR shall substantially follow the notification and public hearing procedures of Section 2-94 of the D.R.M.C. to allow public comment and input on the proposed changes. Changes to the Technical Guidance would be adopted when the document is posted on CASR's website.

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ACRONYMS

ACCA – Air Conditioning Contractors of America
ACO – alternate compliance option
AEE – Association of Energy Engineers
AIA – American Institute of Architects
ANSI – American National Standards Institute
ASHRAE - American Society of Heating, Refrigerating and Air-Conditioning Engineers
CASR - Office of Climate Action, Sustainability, and Resiliency
CB ECS – Commercial Buildings Energy Consumption Survey
CCD – City and County of Denver
CMMS – computerized maintenance management system
CO – certificate of occupancy
CPD – Community Planning and Development
DLC – Design Lights Consortium
DOE – United States Department of Energy
DRMC – Denver Revised Municipal Code
DSCR – debt-service coverage ratio
EBITDA – earnings before interest, taxes, depreciation, and amortization
EEM – energy efficiency measure
EMA – Energy Management Association
EPA – United States Environmental Protection Agency
EPB – equity priority building
EPI – ENERGY STAR Plant Energy Performance Indicator
ESPM – ENERGY STAR Portfolio Manager
EUI – weather-normalized site energy use intensity
EV – electric vehicle
FF – fossil fuel
GFA – gross floor area
GHG – greenhouse gas
GHGi – greenhouse gas intensity
GWP - global warming potential
HOA – homeowner association
IEQ – indoor environmental quality
IES - Illuminating Engineering Society
ITE – information technology equipment
kBtu - kilo British thermal unit
kWh – kilowatt hour
LBNL – Lawrence Berkeley National Laboratory
LED – light emitting diode
MAI – Manufacturing/Agricultural/Industrial
NOI – net operating income
NREL – National Renewable Energy Laboratory
O&M – operations and maintenance
PE – Professional Engineer
PPE – Photosynthetic photon efficacy
PUE – power use effectiveness
RA – Registered Architect
REC - Renewable Energy Credit
RMI – Rocky Mountain Institute
ROI – return on investment
ULI – Urban Land Institute
 $\mu\text{Mol/J}$ – micromoles per joule

DEFINITIONS

Administrative Citation: a citation for a violation of the Code, the rules and regulations adopted by the Director and promulgated by the Manager, or noncompliance with an Order issued by the Manager by which a civil penalty for the violation or noncompliance is assessed.

Annual Site Energy Usage: the total energy consumed by the building in one year measured in kBtu, including all equipment and fixtures attached to the building energy meters

Benchmarking: measuring a covered building's energy performance using the ENERGY STAR® Portfolio Manager tool or other similar platforms as CASR may designate.

Benchmarking Submission: the data submitted each year via the ENERGY STAR Portfolio Manager tool, or other similar platforms as CASR may designate, using a template and submission link to be distributed and publicized by CASR. All information expressly denoted as mandatory by either ENERGY STAR Portfolio Manager or CASR shall be included in the submission.

Campus: a collection of two or more buildings, of any building type or size, that act as a single cohesive property with a single shared primary function and are owned and operated by the same party, such as higher education or hospital campuses.

Capitalization Rate: any rate used to convert income into value.

Climate vulnerable communities: These communities are populations that are disproportionately at risk from the adverse impacts of climate change than other communities. This is due to their heightened sensitivity, exposure, or lack of capacity to cope with climate-related hazards. These communities often face greater risks from extreme weather events, rising sea levels, heatwaves, and other climate-related disruptions. This can be due to a combination of factors like social, economic, geographic, and environmental factors.

Commercial and multifamily buildings: every building or structure that is regulated by the Denver Building and Fire code and that it not a detached one- or two-family dwelling or townhouse not more than three stories above grade plane height with a separate means of egress, and their accessory structures are not more than three stories above grade plane in height as defined in Section [A] 101.2 Scope section of the 2021 International Building Code.

Data Center: a room or series of rooms that share data center systems, whose primary function is to house equipment for the processing and storage of electronic data and that has a design total Information Technology Equipment (ITE) power density exceeding 20 watts per square foot (20 watts per 0.092 m²) of conditioned area and a total design ITE load greater than 10 kW. Class A is where 15% or more of the square footage of the building is a data center. Class B is where less than 15% of the square footage of the building is a data center.

Debt-service coverage ratio (DSCR): a metric calculated by dividing net operating income by debt service value, including principal and interest.

Decision: any CASR approval or denial of an Owner's application for a target adjustment, timeline extension, renewable credit submission, or alternate compliance option.

Deep-energy retrofit: a deep energy retrofit is a building-specific, whole-building analysis designed to identify points in the building lifecycle where investments in energy efficiency can achieve the highest return. A deep energy retrofit may occur over a few years and will require a more significant

financial commitment than conventional energy retrofits. The energy savings created with a deep energy retrofit are generally greater than 40%.

Energy audit: an evaluation of a building that identifies potential energy efficiency measures for building systems and operations in accordance with the American Society of Heating, Refrigerating and Air-Conditioning Engineers (ASHRAE) Standard 211-2018 Level 2

ENERGY STAR Portfolio Manager (ESPM): the online tool created by the US Environmental Protection Agency used to measure and track a building's energy use, water consumption, and greenhouse gas emissions

Equity Priority or Under-resourced building: These buildings serve and/or house climate-vulnerable communities with less access to resources. These communities may face more barriers adapting to a changing climate. They include multifamily affordable housing, affordable apartments, and income-qualified condominiums where most residents earn below 80% of the area median income. They also include nonprofit-owned buildings providing essential services like housing, healthcare, and food assistance, as well as limited-revenue commercial buildings. Additionally, buildings in areas with high energy burden, elevated asthma rates, low-income residents, and other social equity indicators.

Existing Building Performance: the energy efficiency and renewable energy of a covered building measured by site Energy Use Intensity (EUI), or EUI adjusted for renewable energy using data reported via the ENERGY STAR Portfolio Manager tool or other platforms as CASR may designate

Final Decision: for an appeal of a Decision, Notice, or Order means the Director's decision arrived at after review of the Recommended Decision or its decision after hearing the matter or review of written briefs in the first instance or a Recommended Decision for which Director review is not timely filed.

Financial Solvency Concerns: a vacancy rate for the Covered Building that reduces the New Operating Income so that the DSCR is less than 1.5; non-renewal of a tenant, costs to renew a tenant, or costs of finding a replacement tenant would reduce the DSCR to less than 1.5; or loan maturities, interest rate resets, capitalization rate movements, and insurance rate changes that reduce the DSCR to less than 1.5. This definition also includes if the Covered Building does not currently meet the definition of Qualifying Financial Distress and the requirements of D.R.M.C § 10-404, but Owner can demonstrate that the required upgrades would cause the Covered Building to go into qualifying financial distress.

Fossil Fuel: a hydrocarbon-containing form of energy consumed in a building, such as natural gas, fuel oil, propane, or coal/coke.

Green Power: Green Power is a generic term for renewable energy sources and specific clean energy technologies that emit fewer GHG emissions compared to other energy sources that supply the electric grid. Building owners and managers may use green power directly from an on-site renewable system or purchase green power from the local utility or independent green power supplier.

Greenhouse Gas (GHG): carbon dioxide (CO₂), methane (CH₄), nitrous oxide (N₂O), hydrofluorocarbons (HFCs), perfluorocarbons (PFCs), sulfur hexafluoride (SF₆), and nitrogen trifluoride (NF₃).

Gross Floor Area (GFA): the total building square footage, measured between the outside surface of the principal exterior fixed walls of a building. GFA should include lobbies, tenant areas, common

areas, meeting rooms, break rooms, atriums (base level only), restrooms, elevator shafts, stairwells, mechanical equipment areas, basements, storage rooms. GFA should not include exterior spaces, balconies, patios, exterior loading docks, driveways, covered walkways, outdoor play courts, parking, or crawl spaces.

Hearing Officer: the person the Director delegates pursuant to the Code to conduct a hearing or review a case that has been submitted for determination based on written argument and written statement of facts.

High Performance Existing Buildings Program: the administrative program implemented by CASR requiring the Benchmarking, reporting, and Existing Building Performance in commercial and multifamily buildings that are located within the City and County of Denver.

Lighting Power Density: the lighting power in watts per square foot.

Manufacturing/Agricultural/Industrial Building: a subset of the Covered Building definition, it means a facility where energy is consumed in process loads for manufacturing, agricultural, or industrial purposes, or for other process loads. Process loads are energy consumed for bona fide purposes other than heating, cooling, ventilation, domestic hot water, cooking, lighting, appliances, office equipment, small, or other plug loads. This classification also includes buildings with Class A data centers, food manufacturing, and ENERGY STAR Portfolio Manager building types Drinking Water Treatment & Distribution, Other – Utility, and Wastewater Treatment Plant. Multi-use buildings with at least one tenant that meets this definition may be classified as a Covered MAI Building.

Maintenance Penalty: a penalty assessed if the building met its interim or final targets and switches to a lower level of cost per kilo British thermal unit (kBtu) not achieved.

Net Operating Income (NOI): the actual or anticipated net income that remains after all operating expenses are deducted from effective gross income, but before mortgage debt service and book depreciation are deducted; may be calculated before or after deducting replacement reserves. Note: This definition mirrors the convention used in corporate finance and business valuation for EBITDA (earnings before interest, taxes, depreciation, and amortization).

New Covered Building: a building that received its certificate of occupancy after November 22, 2021 and meets the definition of a covered building.

New Covered MAI Building: a building that received its certificate of occupancy after November 22, 2021 and meets the definition of a covered MAI building.

Non-Emitting Thermal Resource: efficient thermal energy for heating, cooling or hot water, in which the energy does not require combustion of gas or other fossil fuel. This includes, but is not limited to, air-source heat pumps, ground-source heat pumps, heat pump water heaters, waste heat recovery, or sewer heat recovery.

Non-Emitting Thermal Energy Network: a system, that is operated, owned, used, or intended to be used for distribution of thermal energy to two or more buildings for heating, cooling, or hot water, where such energy is produced from Non-Emitting Thermal Resources.

Notice or Order: any notice or order, civil penalty assessment, or administrative citation issued pursuant to the Director's authority under the Code.

Off-site green power or renewables: green power purchases from the local utility or independent suppliers.

On-site green power or renewables: electric generation systems located at the property that produce Green Power.

Operations and maintenance (O&M): the functions, duties and labor associated with the daily operations and normal repairs, replacement of parts and structural components, and other activities needed to preserve an asset so that it continues to provide acceptable services and achieves its expected life

Operation and maintenance program: A plan meeting the specifications found in ASHRAE Standard 100-2018, Section 6, that addresses every applicable building system and element as outlined in Annex D and follows the implementation requirements laid out in Annex L that address the functions, duties and labor associated with the daily operations and normal repairs, replacement of parts and structural components, and other activities needed to preserve an asset so that it continues to provide acceptable services and achieves its expected life

Overall Capitalization Rate: an income rate for a total real property interest that reflects the relationship between a single year's net operating income expectancy and the total property price or value; used to convert net operating income into an indication of overall property value.

Owner: the person or entity having a legal or equitable interest in real property and its fixtures and appurtenances, which shall explicitly include but not be limited to a homeowner's association.

Percent Electricity: the percent of total site energy use attributed to electrical usage. Calculated in kBtu, it combines all site electrical consumption, including grid purchased electricity, on-site renewable energy, and district chilled water, and divides it by the total site energy used.

Performance period: the defined timeframe of benchmarking data that is used for evaluation of energy performance requirements for compliance

Process load: a process load is energy consumed for bona fide purposes other than heating, cooling, ventilation, domestic hot water, cooking, lighting, appliances, office equipment, or other plug loads.

Production Efficiency: the annual site energy usage in a Covered MAI building divided by a standard manufacturing or agricultural production unit(s), such as kBtu per widgets produced or kBtu per pounds of flower produced. Additional examples of production efficiency may include power use effectiveness (PUE; data centers), or some other metric for other industrial uses.

Production Efficiency Improvement: a reduction in energy use intensity from baseline where energy use intensity is calculated as the annual site energy usage divided by a standard manufacturing or agricultural production unit(s).

Power use effectiveness (PUE): a measure of Data Center infrastructure efficiency, representing the amount of energy that is needed per unit delivered to IT equipment. It is computed as the total annual source energy divided by the annual IT source energy.

Recommended Appeal Decision: a Hearing Officer's findings of fact, conclusions of law, and the decision he or she recommends to the Director following a hearing or review of written briefs.

Renewable Energy: useful electrical, thermal, or mechanical energy converted directly or indirectly from resources of continuous energy flow or that are perpetually replenished and whose utilization is sustainable indefinitely and can be measured in kWh. The term includes, if it can be measured in kWh provided, sunlight, the wind, geothermal energy, hydrodynamic forces, and organic matter

available on a renewable basis such as forest residues, agricultural crops and wastes, wood and wood wastes, animal wastes, livestock operation residue, aquatic plants, and municipal wastes.

Renewable Energy Certificate (REC): Renewable Energy Certificates (RECs) are the tradable, legal rights to the environmental benefits of green power. These rights can be sold separately from the actual electricity (kWh).

Residential Condominium: a common interest community in which portions of the real estate are designated for separate dwelling unit ownership and the remainder of which is designated for common ownership solely by the owners of the separate ownership portions. A common interest community is not a condominium unless the undivided interests in the common elements are vested in the unit owners.

Retro-commissioning: a process to improve the efficiency of an existing building's equipment and systems. It can often resolve problems that occurred during design or construction, or address problems that have developed throughout the building's life as equipment has aged, or as building usage has changed.

Qualifying Financial Distress: any of the following: (1) the building is the subject of a qualified tax lien sale or public auction due to property tax arrearages; (2) the building is controlled by a court appointed receiver; or (3) the building has been acquired by a deed in lieu of foreclosure.

Savings to investment ratio (SIR): the total lifetime cost savings of an energy efficiency measure (EEM) divided by the initial cost to implement the EEM

Return on investment (ROI): the total annual cost savings of an EEM divided by the initial cost to implement the EEM

Simple payback: estimated initial energy efficiency measure cost divided by the energy efficiency measure first-year calculated utility savings. Both savings and costs are in dollars (\$), and the simple payback is expressed in years.

Site Energy Use Intensity (EUI): a building's weather-normalized energy use expressed as energy per square foot per year as a function of its size, normalized for weather and other characteristics that are significant drivers of energy performance as feasible with the reporting platform used. A building's EUI is calculated by dividing the total energy consumed by the building in one year (measured in kBtu) by the total Gross Floor Area of the building.

Target Penalty: a penalty level assessed if the building did not reach the Interim Target or Final Target during the applicable performance period.

Tenant: a person or entity having a legal or equitable interest in the possession, occupancy, or the benefits of real property and its fixtures and appurtenances under a lease or similar legal instrument.

1. INTRODUCTION

The City and County of Denver has committed to eliminating greenhouse gas emissions by 2040. To reach this goal, the Energize Denver Building Performance Policy, approved by Denver City Council in 2021, sets energy efficiency targets based on building type for buildings 25,000 square feet and larger. These targets can be reached through implementing a variety of operational changes that reduce energy use, energy efficiency improvements, and installing or purchasing renewable energy generation. Improving building performance in Denver’s largest buildings is one of the most impact efforts underway to create cleaner air and city pollution in our city as these buildings are the largest source of carbon pollution in Denver. This policy expects to remove 11.8 million tons of cumulative emission reductions from the built environment to help the City and County of Denver achieve its 2040 climate action goal.

DENVER HAS COMMITTED TO ELIMINATING GREENHOUSE GAS EMISSIONS BY 2040. FOR BUILDINGS AND HOMES, THIS MEANS THE GOALS ARE:

- ALL NEW BUILDINGS AND HOMES “NET ZERO ENERGY” BY 2030
- ALL EXISTING BUILDINGS AND HOMES “NET ZERO ENERGY” BY 2040

Denver is one of the first cities in the United States to adopt a building performance policy which is expected to provide long-term cost savings for buildings and keep Denver’s economy competitive for decades to come. One of the city’s priorities is that compliance with Energize Denver should be manageable and achievable for building owners and facility managers. The city is committed to supporting efforts to improve each building’s performance and reduce its energy use to meet the Energize Denver targets. This will take time, planning and funding. The city’s goal is to work alongside Denver’s building owners, property managers, and service providers to make reducing energy use practical, more affordable, and better aligned with each unique building.

The boxes below outline the three sections of the Energize Denver Ordinance, implemented by both CASR and Community Planning and Development (CPD). This technical guidance manual covers policies and procedures for the Energize Denver benchmarking and performance requirements.

Benchmarking	Performance	Electrification
<ul style="list-style-type: none"> • IMPLEMENTED BY CASR • BUILDINGS 25K SQ.FT. OR LARGER MUST SUBMIT ENERGY BENCHMARKING DATA THROUGH ENERGY STAR PORTFOLIO MANAGER ON AN ANNUAL BASIS 	<ul style="list-style-type: none"> • IMPLEMENTED BY CASR • 2030 ENERGY EFFICIENCY REQUIREMENTS FOR BUILDINGS 25K SQ.FT. OR LARGER • PRESCRIPTIVE LIGHTING OR SOLAR REQUIREMENTS FOR BUILDINGS 5,000 TO 24,999 SQ.FT. • FOCUSED ON IMPROVING ENERGY EFFICIENCY FOR EXISTING BUILDINGS 	<ul style="list-style-type: none"> • EDUCATION AND INCENTIVES FROM CASR • BUILDING CODE UPDATES AND PERMITTING IMPLEMENTED BY CPD • BUILDING CODE TO BE UPDATED SO THAT ALL COMMERCIAL AND MULTIFAMILY BUILDINGS MUST PARTIALLY ELECTRIFY SPACE AND WATER HEAT EQUIPMENT UPON SYSTEM REPLACEMENT, WHEN COST EFFECTIVE

The State of Colorado also has benchmarking and performance requirements for buildings 50,000 square feet or larger that apply to about 1,700 of the commercial and multifamily buildings in the City and County of Denver. Those requirements are managed by the Colorado Energy Office at energyoffice.colorado.gov/bpc. At the time of this guide's publication, the Colorado Energy Office was proposing a legislative bill that would allow a building owner to comply only with a local jurisdiction's building performance policy if that jurisdiction's policy was equal to or more stringent than the state.

1.1 Rules and Regulations Update Summary as of April 1, 2025

Following extensive stakeholder engagement throughout 2024, the City has adjusted Energize Denver's compliance timeline and other options to make compliance more manageable and achievable for building owners, facility managers, and service providers.

1.1.1 Updated Target Deadlines and Additional Time Options

When submitting the building's benchmarking report in the 2025 reporting year, owners have an option to request and receive a timeline extension for any building experiencing compliance challenges. The submitter will "opt-in" to the timeline extension during the 2025 benchmarking report submission process. The timeline extension would not be approved until the benchmarking report or exemption request is complete with the "opt-in" selected, and the report or request is approved by CASR. Buildings with benchmarking reports unsubmitted or in "pending revisions" would not receive the timeline extension.

This timeline extension will shift the deadlines as follows:

- The 2024/2025/2026 interim target would be due in 2028
- The 2027 interim target would be eliminated
- The final target would be moved from 2030 to 2032
- The targets for Manufacturing, Agricultural, and Industrial (MAI) buildings under the MAI alternate compliance option would align with the updated timeline of 2028/2032
- Buildings requiring additional timeline extensions may utilize Section 7's alternate compliance procedures

Timeline Extensions: Options for buildings to extend deadlines beyond 2032 through developing a long-term plan for compliance. Reasons include:

- End of HVAC system service life
- Energy service capacity limitations
- Downtown steam loop system infrastructure planning
- Major renovations to building

Compliance Holds: New option for buildings to place a two-year hold on compliance requirements due to short-term circumstances.

- Financial Distress & Vacancy: Buildings facing financial hardship or high vacancy rates can receive a two-year compliance delay, with annual check-ins.
- Redevelopment Areas: Buildings within formally designated redevelopment zones may delay retrofits for up to two years if a redevelopment plan is in place.
- Lease Expirations: Buildings with major leases expiring near target deadlines can receive a hold until the new tenant moves in.

Tailored Adjustments for Condos & HOAs: Homeowners associations (HOAs) receive greater flexibility in compliance planning to align with fundraising and capital improvement schedules.

HVAC System Flexibility: Buildings are not required to replace HVAC systems before the end of their useful life. If HVAC equipment has exceeded 50% of its useful life, owners receive flexibility in replacement timing while still meeting efficiency targets.

1.1.2 Third-Party Data Verification Required with 2025 or 2026 Benchmarking

To confirm that buildings are benchmarking with sufficient detail to receive an accurate final target, CASR requires third-party data verification of one benchmarking submission by the end of the 2026 reporting year. Either:

- The 2024 calendar year benchmark report (submitted in 2025) must be verified OR
- The 2025 calendar year benchmark report (submitted in 2026) must be verified OR
- A building that has already performed third-party verification for a target adjustment has satisfied this requirement.

After completing this initial verification requirement, buildings would not be required to submit another third-party data verification until the calendar year their final target year performance is being evaluated.

1.1.3 Target & Incentives

Several adjustments were made to the energy efficiency targets and available incentives:

- Practical Energy Target Change: No building is required to reduce its energy usage by more than 42%, ensuring realistic and achievable targets.
- Custom Targets: Creating ability to adjust a building's energy efficiency target beyond standard target adjustments
- Incentivizing Reuse: For adaptive reuse projects, adjusting energy efficiency targets when converting buildings for new uses.
- New Incentive for Decarbonized Thermal Networks: Additional target incentive for buildings that connect to non-emitting thermal energy networks (e.g., district geothermal systems and other types).
- Expanded Renewable Credit Options: Off-site solar investments can now be located anywhere in Colorado (previously limited to Denver). On- or off-site renewables owned within Denver now count at a 1.5x credit multiplier instead of 1:1.
- Adjusted Energy Efficiency Floor Target for Manufacturing, Agriculture, and Industrial (MAI) Buildings: Increased from 30 kBtu/sqft/year to 52.9 kBtu/sqft/year, recognizing sector-specific energy needs.

1.1.4 Other Changes

- Penalty Rates Cut in Half for buildings 25,000 sq. ft. and larger in gross floor area: Financial penalties for non-compliance reduced by 50% to ease cost burdens on building owners. No penalties will be levied until late 2029 based on compliance.
- Electrification Feasibility Report Requirement Removed: Buildings are no longer required to submit an electrification feasibility report as part of a timeline extension request.

1.2 Support Services

The city is focused on helping buildings save money through expanded rebates, planning assistance, and a business hub with compliance dashboards and financial resources, so building owners can make informed decisions. The Energize Denver Building Performance Policy provides several options for buildings to make reducing energy use practical, more affordable, and better aligned with each unique building. CASR will work with building owners, managers, and service providers in setting accurate energy efficiency targets and developing compliance plans and realistic timelines for their buildings to reduce energy use.

Expanded support services include:

- Expanded Help Desk with 1:1 Coaching Services: Expanded support capacity and personalized consultations for building owners to develop tailored compliance strategies. Available Monday–Friday, 8 AM–5 PM (1-844-536-4528 or energizedenver@denvergov.org) assisting with:
 - Energy efficiency targets
 - Audit planning
 - Timeline extensions
 - Incentives and funding options
- Online Energy Management Tool: Features include:
 - Performance dashboards
 - Virtual energy assessments
 - Project planning tools
 - Resource library with compliance guides and best practices
- Resources for Buildings Portal: A one-stop shop for:
 - Guides and playbooks
 - Webinars and training materials
 - Incentives and financing options
 - Service provider directory
- New Rebates Available: Rebates for energy audits and building energy management training to promote cost savings and best practices in energy efficiency improvements. If a building's compliance plan includes replacing space or water heating and cooling equipment, check out Denver's [Commercial Building Equipment Rebates](#).
- Building Management Portal (Launching May 1): A centralized platform for managing compliance, tracking progress, and accessing resources.
- Enhanced Contractor & Service Provider Trainings: Expanded training programs for professionals supporting energy compliance efforts.
- Streamlined Communications: Improved clarity on compliance through upgrades to technical guidance and communications materials.
- New Compliance Resources for MAI Buildings: Tailored guidance and sector-specific resources to assist in meeting targets for manufacturing, agriculture and industrial buildings.

Important facts about the Energize Denver Building Performance Policy:

- As long as a building has submitted a compliance plan through the timeline extension process to make progress toward its target, penalties will not be levied. As of the publication date of this guide, no penalties have been levied on a building in the city under Energize Denver. Performance evaluations for the interim target won't begin until late 2029.
- Electrification is not a requirement to meet the energy efficiency targets. While transitioning to electric systems is not required, it can be a helpful strategy to stabilize long-term energy costs.
- We recognize that replacing entire HVAC systems is a significant investment. The city will not require buildings to replace existing gas systems before the end of their useful life, so building owners and managers have time to plan for major expenses and system transitions.
- Many buildings have determined that the information they submitted in their benchmarking reports was incorrect or not detailed enough, negatively impacting their energy efficiency targets that are measured in "energy use intensity (EUI or energy use over one year divided by gross floor area). The target adjustment process can help solve this issue.

1.3 Equity Priority Building (EPB) Compliance Assistance Program

CASR is committed to centering equity in all its work. For the Energize Denver requirements, this means providing technical assistance to building owners in this category, assisting them meet program goals while also benefiting from climate mitigation efforts. These benefits include lower

utility costs, improved safety, and enhanced indoor and outdoor air quality. Equity Priority Buildings may also have additional reasons available to justify a Timeline extension, such as limited access to capital due to restrictions on the financing of the building, or other similar reasons.

The determination of a building’s status as “under-resourced” or “equity priority” will be at CASR’s discretion and is outlined on the website. CASR’s evaluation of a building’s status as equity priority includes, but is not limited to, consideration of the following: presence of affordable housing and income-qualified condominiums where most residents earn below 80% of the area median income; presence of non-profits and human service providers; buildings of significance to climate vulnerable community members; buildings with limited-revenue; and buildings in areas with high energy burden, elevated asthma rates, low-income residents, and other social equity indicators.

The EPB Compliance Assistance Program is designed to support approved buildings through a personalized and structured journey that addresses their specific needs and challenges in achieving compliance with the Energize Denver requirements. The program addresses the unique challenges of EPBs, enhancing energy efficiency, and supporting long-term sustainability for all communities. The journey includes these phases:

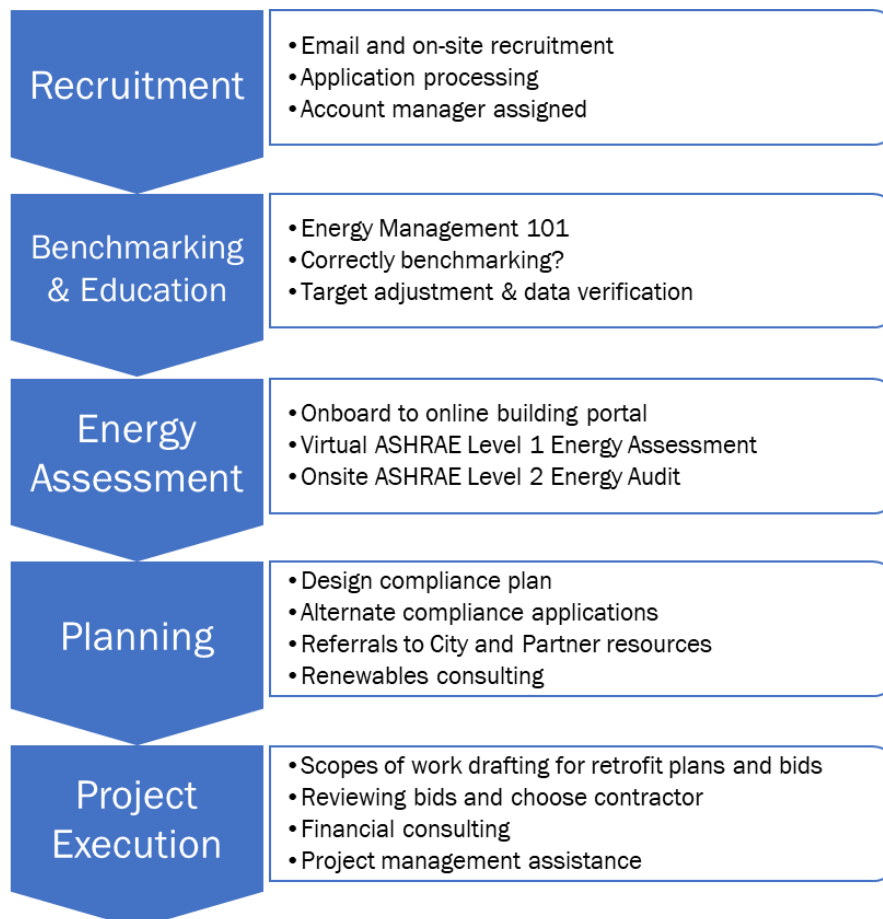


FIGURE 1: EQUITY PRIORITY BUILDING COMPLIANCE ASSISTANCE JOURNEY

Key Components of the Program:

- **Energy Performance Assessment:** a detailed evaluation to develop a customized compliance plan to reach the targets
- **Step-by-Step Compliance Guidance:** ongoing support through energy audits, technical upgrades, contractor engagement, and assistance with compliance processes and

applications.

- Project Implementation: assistance with onsite ASHRAE Level 2 audits, electrification feasibility reports, compliance planning, and project management
- Tenant Engagement: support in involving tenants in energy upgrades and data sharing
- Financial Coaching: help with accessing rebates, grants, and other incentives
- Ongoing Support: continuous resources and guidance to ensure compliance and maximize energy savings

1.3.1 Participant Expectations for the EPB Compliance Assistance Program

Participants in the EPB Compliance Assistance Program are eligible for the same timeline extension reasons as other buildings (Section 7.2). Other reasons specific to the challenges of an EPB will be considered on a case-by-case basis.

Expectations for EPB Participants:

- Participants should make progress on their final target and work with the CASR EPB team to adjust the timeline accordingly.
- Active Engagement: the building representatives must demonstrate continuous engagement with the Compliance Assistance Program team, including participation in required consultations, office hours, onsite visits, or support sessions on the assigned dates.
- Documentation of Compliance Plan and timeline for execution: the CASR EPB team will assist the building in documenting their compliance plan for their timeline extension, which details how the building will make progress on their targets over time.
- Unforeseen Circumstances: building representatives must submit documentation explaining unforeseen circumstances that impact their ability to meet targets by the deadline outlined in the timeline extension compliance plan. Documentation must be submitted within 60 days of the event causing the delay so that the compliance plan can be officially adjusted. Written updates must be submitted every 90 days during the event to demonstrate ongoing progress. This documentation could include:
 - Details on the specific challenges (e.g., supply chain delays, construction setbacks, financial constraints, etc.)
 - Efforts made to mitigate these issues (e.g., alternative solutions, pending management approvals, additional consultations, etc.)
 - A clear timeline for resolution, including expected completion dates for outstanding projects.

1.3.2 Non-Engagement Boundaries

EPBs that have been approved for the Compliance Assistance program and fail to engage with the program team on a regular basis or provide necessary documentation and/or communication within the specified timeframe could be removed from the program. All efforts will be made by the CASR EPB team to engage with the EPB representatives before removal from the program is instituted.

Non-engagement includes:

- Failure to Participate: Lack of participation in scheduled consultations or progress meetings, or failure to communicate delays and challenges. Missed participation in any scheduled meeting will result in a formal warning within 60 days.
- Inadequate Documentation: Failure to submit required reports/plans or submitting incomplete information. Documentation must be submitted within 60 days of the initial request, with updates every 90 days thereafter (if needed).
- Missed Deadlines: Failure to meet adjusted timelines for documentation submission, project initiation, or completion, without prior communication with the CASR EPB team.

Non-engagement will result in a final warning within 120 days and removal from the program within 150 days of non-engagement. The building will revert to being eligible for all the alternate compliance options that they would have been eligible for originally outside of the Compliance Assistance program.

1.4 The Business Case for High-Performing Buildings

We all want Denver to remain a vibrant and welcoming place to do business, especially in our downtown neighborhoods. Energize Denver is one way we're helping our community to thrive. The goal of the Energize Denver Building Performance Policy is to reduce energy use by buildings, make Denver more competitive, and cut carbon pollution. Cities and jurisdictions across the country are adopting similar measures. Denver believes that following this national trend will keep our economy competitive for decades to come, ensuring that we rise together, create a thriving future for all, and build a more resilient city with sustainable practices that benefit both our community and economy.

Compared to typical buildings, high-performing buildings save¹:

- \$0.60 per square foot on operations and maintenance expenses annually
- \$0.50 per square foot on janitorial expenses annually
- \$0.53 per square foot on utility expenses annually

Numerous studies show the premiums associated with energy-efficient buildings. Compared to typical buildings, energy-efficient buildings demonstrate²:

- Sale prices from 1% to 31% higher
- Rental premiums 3% to 16% higher
- Occupancy levels up to 10% higher

For a commercial office building, it's estimated that every dollar invested in upgrading a building to be more efficient can create 18X that amount in additional value for building tenants through enhanced employee retention, employee productivity and employee wellness³ (Figure 2).

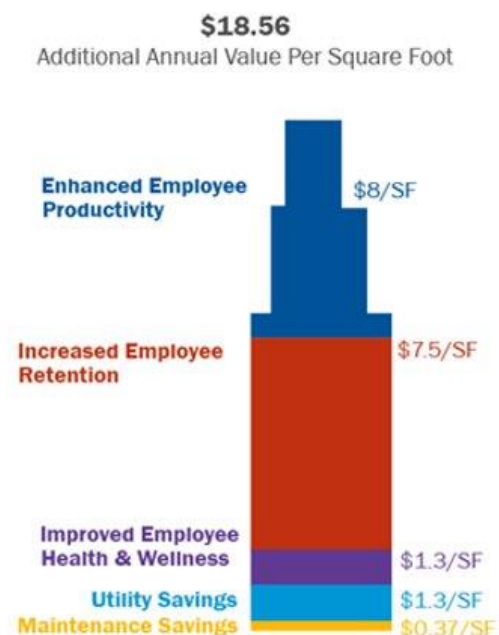


FIGURE 2: HIGH-PERFORMANCE BUILDING ESTIMATED SAVINGS

And companies can improve their efforts to attract a talented workforce⁴:

- 7 in 10 workers say they're more likely to stay with an employer that has a good reputation on environmental sustainability
- 3 in 5 workers who earn \$100,000 or more would accept a lower salary to work for these types of companies
- Firms with greater corporate responsibility can reduce annual quit rates 3 - 3.5%, saving replacement costs up to 90% - 200% of an employee's annual salary.

¹ [https://www.gsa.gov/system/files/GSA%20Impact%20of%20HPB%20Paper%20June%202018_508-2%20\(1\).pdf](https://www.gsa.gov/system/files/GSA%20Impact%20of%20HPB%20Paper%20June%202018_508-2%20(1).pdf)

² [https://www.gsa.gov/system/files/GSA%20Impact%20of%20HPB%20Paper%20June%202018_508-2%20\(1\).pdf](https://www.gsa.gov/system/files/GSA%20Impact%20of%20HPB%20Paper%20June%202018_508-2%20(1).pdf);

³ Attema, J.E., Fowell, S.J., Macko, M.J., & Neilson, W.C. (2018). The Financial Case For High-Performance Buildings. San Francisco: Stok.

⁴ The Comprehensive Business Case for Sustainability (hbr.org); Sustainability at a turning point - IBM A/NZ Blog

2. DISCLOSURE BEFORE AND UPON SALE

When a building 25,000 sq. ft. and larger in gross floor area is listed for sale, including any listings, notices, advertisements of sale, term sheets, and contracts of sale, the current owner is required to disclose the building's compliance status with the benchmarking and performance requirements, including all energy efficiency targets, any approved alternate compliance options documentation, and any penalties assessed, to a prospective buyer prior to the sale of the building. When the building's sale is finalized, the previous Owner is required to transfer the ENERGY STAR Portfolio Manager benchmarking account to the new owner.

To facilitate transparency and simplify transactions, CASR will provide a compliance status letter within 10 days of the request that contains information that CASR has on file on the building's compliance with the Energize Denver benchmarking and performance requirements, including:

- If the building is currently compliant with benchmarking requirements
- current EUI metric and future energy efficiency targets
- if target adjustments were applied or an alternate compliance option was approved
- if an alternate compliance plan was approved, a copy of the building's compliance plan on file

This letter and the transfer of the ENERGY STAR Portfolio Manager account to the new owner will satisfy compliance with the disclosure requirements.

- For quick access to a building's current targets and progress, go to the Energize Denver Performance Requirements Look Up Tool.
- To request the compliance status letter, submit the Energize Denver Compliance Status Letter Request form.

The building's compliance plan or outstanding penalties (if applicable) remain with the building in the transfer of the property. The new owner will have an opportunity to request an Interim Compliance Hold (Section 7.1) to give them time to update the compliance plan or decide to implement the plan as written. Once the building's compliance plan is validated by the new owner, outstanding penalties may be waived.

3. APPLICABILITY

3.1 Covered Buildings

For the benchmarking and performance requirements, a covered building means any commercial or multifamily building 25,000 square feet or larger in gross floor area in the City and County of Denver (CCD). Commercial or multifamily buildings are defined by the applicable scope of the current Denver Building & Fire Code and include commercial, multifamily, institutional, municipal, manufacturing, agricultural, and industrial buildings, or any building type listed in the Building Type Target list in Appendix A.

Buildings that are exempt from the requirements are:

- a stand-alone parking garage; or
- a building that is used for the generation of power produced and sold commercially to other parties and meets the definition of an ENERGY STAR Portfolio Manager Energy/Power Station building type.

The way a covered building is benchmarked or has performance requirements applied to it is also dependent on how the building receives its utilities and cross-over of those meters or energy using equipment between other buildings and/or tenants. The benchmarking and performance

requirements could be aggregated amongst multiple buildings as a campus, or the building could be permanently broken down into multiple buildings if none of the energy-using meters or equipment is shared by other buildings or tenants. For example, if a large-scale shopping center has a stand-alone tenant that does not share utility meters or energy-using equipment between other tenants, that stand-alone tenant could be broken out into a separate covered building. In the opposite situation, a “campus” means a collection of two or more buildings, of any building type or size, that act as a single cohesive property with a single shared primary function and are owned and operated by the same party (such as higher education or hospital campuses). In these situations, if utility meters are shared across buildings, those buildings’ energy use would most likely be aggregated as one campus or building within ENERGY STAR Portfolio Manager and receive one mixed-use target.

The City and County of Denver does not have jurisdiction over state-owned, federal-owned, or foreign consulate buildings. Applicability is based on the building ownership, not the tenants, so if a state or federal entity is a tenant in a privately-owned building, the performance requirements would apply to the entire building. In ground lease situations, the entity that builds the structure is the owner of the building, and therefore responsible for meeting the building’s performance requirements.

3.1.1 Manufacturing, Agricultural, and Industrial Building Definition

A Manufacturing/Agricultural/Industrial (MAI) Building is a subset of the covered building definition. A Covered MAI Building is a facility where energy is consumed in process loads for manufacturing, agricultural, or industrial purposes, or for other process loads. Process loads are energy consumed for bona fide purposes other than heating, cooling, ventilation, domestic hot water, cooking, lighting, appliances, office equipment, small, or other plug loads. This classification includes buildings with Class A data centers, food manufacturing, and ENERGY STAR Portfolio Manager building types Drinking Water Treatment & Distribution, Other – Utility, and Wastewater Treatment Plant.

Multi-use buildings with at least one tenant that meets this definition may be classified as an MAI Building. Distribution centers and warehouses do not qualify as MAI buildings unless a portion of the energy used in the building is consumed for MAI process loads.

3.2 Gross Floor Area

Gross floor area (GFA) means the total building square footage, measured between the outside surface of the principal exterior fixed walls of a building. GFA should include lobbies, tenant areas, common areas, meeting rooms, break rooms, atriums (base level only), restrooms, elevator shafts, stairwells, mechanical equipment areas, basements, storage rooms. GFA should not include exterior spaces, balconies, patios, exterior loading docks, driveways, covered walkways, outdoor play courts, parking, or crawl spaces. This definition aligns with the definition of GFA in the Environmental Protection Agency's (EPA) ENERGY STAR Portfolio Manager.

3.2.1 Measuring GFA for Applicability and EUI Performance

The GFA is the total property square footage, as measured between the exterior walls of the building(s). It is also acceptable to measure from the inside perimeter of the exterior walls if that is more readily available. This includes all areas inside the building(s) including supporting areas. GFA is not the same as rentable space, but rather includes all area inside the building(s). Rentable, or leasable, space is a sub-set of GFA. Table 1 lists areas to include and exclude in the calculation of GFA.

TABLE 1: GFA CALCULATION INCLUSION/EXCLUSION

Include in GFA	Exclude from GFA
Lobbies	Parking
All floors of a multi-story building	Exterior spaces
Tenant Areas	Balconies
Common Areas	Decks
Corridors	Patios
Clubhouses	Pavilions
Meeting Rooms	Outdoor pool decks
Break Rooms	Exterior Loading Docks
Atriums (count the base level only)	Driveways
Restrooms	Covered Walkways
Elevator Shafts, and other vertical penetrations	Outdoor Courts (Tennis, Basketball, etc.)
Stairwells	Crawl Spaces
Mechanical Equipment Areas	Attics
Basements	Garage Elevator Vestibules (unconditioned)
Storage Rooms	The interstitial plenum space between floors and ceiling (which house pipes and ventilation)
Laundry Rooms	
Garage Elevator Vestibules (if conditioned)	

The measurement boundary must be between the exterior walls of the building and conform with inclusions/exclusions as outlined in Table 1. Due to the different standards in building documentation, the owner or building representative may need to reference multiple documents to ensure that measurements are consistent with the requirements and not another common metric such as rentable, leasable, or taxable space. The following documents and methods may be used to calculate GFA:

- Architectural/engineering site drawings
- Building measurement report
- Building permit applications
- Measuring wheel

3.3 Tenant Responsibility

Rule 3.2.C.i obligates tenants to provide energy benchmarking data to the building owner for the purposes of the benchmarking and performance requirements. A building owner does not always need consent from a tenant to receive aggregated energy data from Xcel Energy. Consent is required from tenants if:

- there are three or fewer Xcel tenants in the building, or
- one tenant uses more than 50 percent of the building's total energy.

If the owner needs consent and a tenant is refusing to provide it, there are some options for the building owner:

- Provide more context. The building owner is legally required to benchmark annually. Xcel Energy will aggregate the energy use of all tenants in ESPM to protect privacy. No specific proprietary information is reported. Benchmarking is a widely implemented practice in the United States. It is a proven way to reduce overhead costs related to energy use as well as improve the air quality within a community.
- Share the Ordinance and Rules language that obligates the tenant to provide this data to the building owner.

- Leverage current lease agreement terms. Most leases contain basic language requiring tenants to abide by local, state, and federal regulations, which in this case, would require the tenant to work with the owner to meet the legal requirements of the building.
- If the tenant is responsible for all aspects of the building where energy use is considered or based on the lease agreement between the tenant and building owner, the building owner could determine if their lease allows a pass through of fines to the tenant. Additional smart leasing guidance is available in the Energize Denver Hub under Resources for Building Owners with suggested language for future leases.
- Update the current lease at the end of its term or establish “green leasing” agreements with tenants to set terms related to data sharing, data access, and or complying with local, state, or federal regulations.

3.3.1 Breaking up a Building for Compliance Purposes

As of March 2025, there is an option to break up a building into separate building IDs for ease of completing the compliance requirements. This is only allowed for commercial buildings with multiple tenants or multifamily buildings where there is a commercial tenant or owner, and the building owner and current tenant must agree to this change. The portion of the building to be separated must not share any energy-using systems or utilities with neighboring tenants and the only shared items are walls, foundations, and roofs. For energy-using systems, this means each tenant has their own space and water heating and cooling equipment and lighting. For utilities, this means each unit has its own utility meters for all uses – water, electricity, gas, or other fuels. Applicability of the Energize Denver rules still applies to the whole building’s gross floor area and each individual unit’s space must comply with the regulation for a building 25,000 sq. ft and larger and the building owner is still the entity responsible for compliance.

This would be a permanent change to the compliance structure for the building and requires effort on the building owner side to work with their tenant and the Help Desk to split the building with accurate square footage, detailed use types, and contact information for each space. The building owner will also have to work with each tenant to setup their ENERGY STAR Portfolio Manager account and change the auto-uploads of utility data from Xcel Energy. The only way a building owner could change the future compliance structure of the building in the future is if a major renovation, addition, or demolition of the space happened that permanently changed the square footage or use of an individual space. If a building owner chooses to explore this option, they must call the Help Desk to discuss the situation.

3.4 Demolition

For the performance requirements, the building owner has two options when it comes to the demolition of a whole building (not an interior space). An exemption should be requested if the demolition will be completed *before* the next performance period evaluation. If a building owner is planning to demolish a building within 1-2 years *after* performance requirements are due, then the owner can apply for an interim compliance hold. See Section 7.1 for more details on the submission process.

Scenarios in which a demolition benchmarking exemption would be approved are:

- A building for which a demolition permit for the entire building has been issued and for which demolition work has commenced on or before the Benchmarking report for the performance period is due.
- A building for which a demolition permit for a portion of the building has been issued in which the remaining building will be less than 25,000 sq. ft., which would shift the building to the small building performance requirements (5,000-24,999 sq. ft.).

4. ANNUAL BENCHMARKING REQUIREMENTS

Benchmarking the building accurately and with attention to detail is foundational to the Energize Denver Building Performance Policy. The building’s energy efficiency target is based on the amount of total energy used over one calendar year divided by the building’s gross floor area square footage, otherwise called “energy use intensity” or “EUI.” This section will cover the basics of benchmarking a building, but also offer tips on how detailed the benchmarking report needs to be to normalize the building’s energy efficiency target.

Building owners must benchmark the building’s calendar year energy usage using the U.S. EPA ENERGY STAR Portfolio Manager (ESPM) tool and submit it to CASR by June 1 the following year.⁵ Table 2 shows an example of the calendar year and when the benchmarking report is due to CASR.

TABLE 2: TARGET AND PERFORMANCE PERIOD SCHEDULE

Calendar Year	Reporting Deadline
January 1 to December 31, 2024	September 1, 2025
January 1 to December 31, 2025	June 1, 2026
January 1 to December 31, 2026	June 1, 2027
January 1 to December 31, 2027	June 1, 2028
January 1 to December 31, 20xx	June 1 following year

At a minimum, to be compliant with the annual benchmarking requirements, the benchmarking report must include:

- basic descriptive information, including the building address, gross floor area, use types per ESPM categories, and the name of the individual or entity making the submission
- annual and monthly energy usage information for all energy meters used by the building.
- energy use metrics calculated by ESPM, including, but not limited to, energy usage by individual fuel source, site EUI, source EUI, weather-normalized site EUI, weather-normalized source EUI, and total annual greenhouse gas emissions

When submitting the building’s benchmarking report in the 2025 reporting year, owners will have an option to request and receive a timeline extension for any building experiencing compliance challenges. The submitter will opt-in to the extension by checking a box during the benchmarking report submission process. The timeline extension would not be approved until the benchmarking submission is complete and approved by CASR. This timeline extension will shift the deadlines as follows:

- The 2024/2025/2026 interim target would be due in 2028
- The 2027 interim target would be eliminated
- The final target would be moved from 2030 to 2032
- The targets for Manufacturing, Agricultural, and Industrial (MAI) buildings under the MAI alternate compliance option would align with the updated timeline of 2028/2032
- Buildings requiring additional timeline extensions may utilize Section 7’s alternate compliance procedures

⁵ D.R.M.C. § 10-403

4.1 Benchmarking Exemptions

A building owner may request a one-year exemption from the annual benchmarking requirement provided they meet one of the following criteria:

- **Occupancy:** a building that was not occupied and/or did not have a certificate of occupancy or temporary certificate of occupancy for all twelve (12) months of the calendar year for which benchmarking is required
- **Renovation:** a building that was not occupied, due to renovation, for all twelve (12) months of the calendar year for which benchmarking is required
- **Demolition:** a building for which a demolition permit for the entire building has been issued and for which demolition work has commenced on or before the date the Benchmarking report is due
- **Financial Distress:** a building that is presently experiencing qualifying financial distress, as defined by any of the following: (1) the building is the subject of a qualified tax lien sale or public auction due to property tax arrearages; (2) the building is controlled by a court appointed receiver; or (3) the building has been acquired by a deed in lieu of foreclosure

Requesting an exemption:

- For Occupancy, Renovation, or Financial distress, the owner should fill out the [exemption request form](#) and provide documentation requested to substantiate the request. Any exemption approved by CASR will be limited to the Benchmarking report for which the request was made and will not extend to past or future submissions.
- For Demolition, the owner should fill out the [Demolition Exemption for Benchmarking and Performance Requirements form](#). Once approved, the building will be removed from both the benchmarking and performance requirement programs.

4.2 Basic Benchmarking Process

The benchmarking process involves several key components designed to ensure accurate energy reporting. First, users must complete a thorough review of their entries, double-checking all submitted data for accuracy and completeness. This verification process is crucial for maintaining reliable benchmarking records.

Supporting documentation is available through multiple channels to facilitate the submission process. Xcel Energy provides a comprehensive Benchmarking Services Guide specifically designed to assist owners in requesting automated energy data uploads. Additionally, the Energize Denver website serves as a central resource hub, featuring instructional videos and direct links to current year data requests.

To streamline the submission process, separate checklists are maintained for different scenarios: one tailored for previously benchmarked buildings and another specifically designed for first-time submissions. These resources work together to ensure a smooth reporting experience, regardless of whether you're submitting for the first time or updating existing records.

All necessary documentation and support materials, including detailed submission guidelines and current year requirements, can be accessed online through official channels. This centralized approach ensures that users have ready access to all required information throughout the benchmarking process. Xcel Energy also provides a Benchmarking Services Guide.

If benchmarking for the first time, see these [instructions](#) on how to set up an account in ESPM. Once the building is set up with basic information in ESPM, here's a step-by-step guide on how to benchmark the building properly. Figure 3 outlines the high-level process.

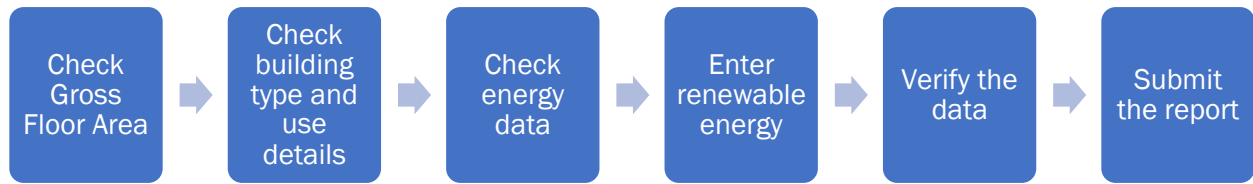


FIGURE 3: BENCHMARKING PROCESS

- 1) Check gross floor area
 - a) Check the numbers against the definition of gross floor area in Section 3.1. If it is a round number, like 150,000, it might not be reflective of the actual building gross floor area. Remember, the building's EUI score is dependent on the gross floor area square feet.
 - b) Parking – if parking is a part of the building, the square footage of the parking should be removed from the total gross floor area of the building inside ESPM, and also accounted for as a use type (see Step 2).
- 2) Check building type and use details
 - a) Building types:
 - i) Building types are defined by ESPM definitions of property types.
 - ii) Building owners can choose to benchmark their building as one property type following EPA guidance, OR they may break down all building types present to account for high-intensity property type square footage. ESPM has 80+ different property types, and some are more energy-intensive than others. Adding more detail on the specific uses of the building will help normalize the target. Using the Building Type Target table in Appendix A as a guide, any building type that has a higher EUI number than the base building type means it's a higher-intensity energy use. For example, an office has a target of 49.3 and a restaurant has a target of 194.1. If one does not break out the restaurant space, they are losing an opportunity to adjust the target for the higher intensity use. Campuses, particularly colleges and universities, should *always* break out their sub-types.
 - iii) If the building owner decided to break out high intensity types after the 2021 Benchmarking Report, they will need to follow the target adjustment process in Section 5.4 to have their 2032 target adjusted.
 - b) Parking:
 - i) Parking that is part of the building and the energy use is reflected in the building's meters should be accounted for as a use type and should include answering all of the questions in ESPM, such as what configuration it is: open, partially enclosed, and completely enclosed, or if it has heating.
 - c) Heated swimming pools:
 - i) Heated swimming pools should be listed as a property use type with detailed information on the approximate pool size, location of the pool, and months in use. See EPA's Technical Reference on Swimming Pools and the ENERGY STAR Score in the United States and Canada for more information on how to benchmark heated swimming pools.
 - d) Data Centers:
 - i) Data Centers have been split into two categories based on the square footage it occupies in the building:
 - (1) Class A: 15% or more of the square footage of the building – Buildings with Class A data centers should benchmark 100% as a data center and are part of the Manufacturing, Agricultural, or Industrial buildings category.

- (2) Class B: Less than 15% of the square footage of the building should benchmark the square footage of the data center as a use type according to the following definition:
 1. “A room or series of rooms that share data center systems, whose primary function is to house equipment for the processing and storage of electronic data and that has a design total Information Technology Equipment (ITE) power density exceeding 20 watts per square foot (20 watts per 0.092 m²) of conditioned area and a total design ITE load greater than 10 kW.”
 - e) Manufacturing, Agricultural, and Industrial (MAI) Buildings:
 - i) Buildings that meet the definition below should benchmark as a “Manufacturing/Industrial Plant” inside ESPM.
 - (1) The definition of an MAI building is a facility where a portion of energy is consumed in process loads for manufacturing, agricultural, or industrial purposes. Process loads are energy consumed for bona fide purposes other than comfort heating and cooling, ventilation, domestic hot water, cooking, lighting, appliances, office equipment, small, or other plug loads. This classification also includes buildings with Class A data centers, food manufacturing, and ESPM building types Drinking Water Treatment & Distribution, Other – Utility, and Wastewater Treatment Plant.
 - f) Campuses:
 - i) A “campus” is a collection of two or more buildings, any building type or size, that act as a single cohesive property with a single shared primary function and are owned and operated by the same party, such as higher education or hospital campuses.
 - ii) Buildings on a campus may benchmark differently based on how the individual buildings are metered by the utility company. If the campus shares multiple meters amongst the buildings, then they would benchmark all of the energy use and square footage as one building. If the campus has individual meters per building, they will benchmark each building as a “child” property of the “parent” campus property. For more information on how to benchmark as a campus, check out this resource and have a conversation with the Help Desk.
- 3) Check energy data
- a) Auto-upload from Xcel Energy:
 - i) We recommend that Xcel Energy automatically upload aggregated whole-building data for electricity and natural gas. In ESPM the account administrator will create only one ‘virtual’ electricity meter (units in kWh) and one ‘virtual’ natural gas meter (units in therms). Name these meters ‘whole building electricity’ and ‘whole building natural gas’. Then, follow the exact steps in Xcel Energy’s Benchmarking Services Guide to have Xcel auto-load the data.
 - ii) Auto-upload is required if benchmarking a multi-tenant building with tenant meters that need Xcel Energy to aggregate so whole building data is represented.
 - iii) Spend the time to double-check the energy data. If there have been problems with billing in the past year, it could reflect in the energy data and need to be adjusted.
 - b) Manual entry needed:
 - i) Natural gas purchased from transport providers will have to be manually entered. Check the units on the transport bill - they are often metric million British thermal units (MMbtu or Mbtu in ESPM).
 - ii) Xcel Energy’s Steam Loop
 - (1) Manual entry is required. When setting up the meters, steam units are per 1,000 pounds (kLbs).
 - iii) Xcel Energy’s Denver District Cooling Loop

- (1) Manual entry is required. When setting up the meters, chilled water units are ton hours.
 - (2) If it is a building that is currently on or is planning to join the Denver District Cooling Loop, please reach out to the Help Desk after the submission of the first benchmarking report with district chilled water usage. Being on this loop, CASR will apply a target adjustment to the 2032 target to account for the way Xcel Energy bills chilled water usage. Current Denver District Cooling Loop users automatically had a target adjustment applied in February 2024. This adjustment does not require an application.
- c) Opportunities to exclude energy use:
- i) For all these functions, if energy use is sub-metered, the energy use can be excluded from the benchmarking data. If it is not sub-metered, CASR offers standardized target adjustments (Section 5.4.1).
 - (1) Parking
 - (2) Heated swimming pools
 - (3) Data centers
 - (4) Electric vehicle (EV) charging stations or other transportation-related devices
 1. If the charging stations are metered:
 - (i) If the EV charging stations have their own utility meter and are separate from the main electricity meter, then leave out the energy use altogether and exclude the meter from the benchmarking.
 - (ii) If the EV charging station is on the main meter but sub-metered or receive reports on the kWh used, use negative entries. If the charging stations are provided under a third-party vendor, a building owner or manager could use the total kWh units that are listed in the monthly reports from the vendor.
 2. If the charging stations are not metered:
 - (i) Follow the ESPM directions to enter EV charging station information. In ESPM, it will affect the ENERGY STAR score, but it does not change source or site EUI. See Section 5.4.1 for the standard target adjustment process to normalize the final target for this situation.
 - (ii) Level 1 and 2 EV charging stations can be counted as the number of vehicles that can be simultaneously charged at that station. For example, if a building has a Level 2 station can charge two cars simultaneously, count that as two Level 2 EV charging stations in ESPM.
 3. If the building owner believes their charging stations are heavily used and would benefit more from the methodology to exclude metered energy use instead of using the target adjustment, they should consider installing meters on the charging stations and using the exclusion methodology described previously.
- d) Third-party loads
- i) Examples include antennas, cell towers, or billboards. If the load is used for the purpose of the business in the building, it is not considered third-party.
 - ii) This energy use must be sub-metered to exclude it from benchmarking data.
- e) Unique energy loads
- i) Examples include on-site commercial-capacity laundry systems and sidewalk or patio heating systems. Other items would be considered on a case-by-case basis.
 - ii) This energy use must be sub-metered to exclude it from benchmarking data.
- f) Emergency Generators
- i) Fuel used for emergency generator testing and maintenance purposes does not have to be reported as an energy use in ESPM. However, if the intention is to use the

generator to supplement or replace utility-supplied electricity for normal operations, then the fuel-use should be reported.

- g) MAI buildings using a “production efficiency metric”
 - i) MAI buildings using a production efficiency metric for their alternate compliance option must also benchmark a custom metric(s) relevant to the building’s operations. To learn how to enter the custom metric data into ESPM, review this guide.

4) Renewables

- a) Renewables generated on-site and used at the building are important to enter into ESPM because that energy can boost the building’s “percent electricity” calculation to receive the Electrification Incentive (Section X). The ESPM entry of renewable generation will not be used to calculate the Renewable Credit for performance evaluation (Section 6.4).

5) Verify the Data

- a) In the ‘Energy’ tab, verify that all energy data is entered for the calendar year (January 1 – December 31)
- b) In the ‘Summary’ tab, run Portfolio Manager’s Data Quality Checker
- c) In the “Property Notes” field, enter any contextual information about the building that should be publicly disclosed.

In 2025, Energize Denver transitioned to Web Services. Instead of having to find a new data request link each year, you will now complete a one-time setup to prepare and submit reports. After this initial setup, you can continue submitting reports through the Energize Denver Reporting Portal.

6) Prepare the Report

- a) Confirm or enter the Building’s Denver Building ID (DBID) into ESPM under the property details section. Add the building’s 4-digit unique DBID (found in the compliance notice or at energizedenver.org). If the person does not add the DBID to the building’s property details at this step, or has an incorrect DBID, CASR cannot see the report and the building will not be in compliance.
- b) (One time only) Connect with “EnergizeDenver” in ESPM.
- c) (One time per property, first time reporting) Share your Property with “EnergizeDenver” in ESPM.

7) Submit the Report

- a) Visit the Energize Denver Reporting Portal and log into the building’s account. First time users need to register to log in.
- b) (One time only, first time reporting) Use the ‘Claim Buildings’ page to search by Building ID or Address to claim the building.
- c) To Submit the prepared benchmarking report, click the Submit button next to the Claimed Building on the My Buildings page or Dashboard Overview tab.
- d) Receive confirmation of the report’s status and see if revisions are needed.
- e) Repeat the report submission process next year.

To reference the most accurate and tailored guidance, please visit www.denvergov.org/energizedenver to find detailed instructions for first time and returning reporters.

4.3 Accessing Whole-building Energy Use Data

Xcel Energy offers an energy benchmarking service that will automatically upload the building’s utility data into ESPM or aggregate tenant/resident data into one ESPM account. Xcel Energy offers a step-

by-step guide to work through the process. The process to set up the Xcel Energy auto upload involves these steps:

- Step 1: Create an account in Portfolio Manager®
- Step 2: Create a property in Portfolio Manager
- Step 3: Create meters in Portfolio Manager
- Step 4: Set up account in the Xcel Energy Benchmarking Portal
- Step 5: Back in Portfolio Manager, connect your account with Xcel Energy
- Step 6: Share your property and meters with Xcel Energy
- Step 7: Xcel Energy will confirm your relationship with the building owner
- Step 8: Xcel Energy will compile your tenant list
- Step 9: Tenant to meter matching
- Step 10: Work through consent process
- Step 11: Initial upload
- Step 12: Ongoing processing

Building representatives can ask for assistance with these processes by reaching out to the Xcel Energy benchmarking help desk at benchmarking@xcelenergy.com.

4.4 Data Use/Confidentiality

Basic energy benchmarking data from covered buildings is publicly available on the [Energize Denver Benchmarking Map](#) and [Open Data Catalog](#). No personally identifiable information is included in these data sets. CASR publishes basic building information and energy performance metrics annually for all buildings reporting that year, including, but not limited to, the following fields:

- Property name
- Address
- Property type
- Gross Floor Area
- Year Built
- Weather normalized site EUI
- Energy use by fuel source
- Total greenhouse gas emissions
- Energy efficiency targets by target year

Other fields may be included that are relevant for a specific building type. A full list of the fields that will be published can be found [here](#). Past scores are shown to illustrate energy performance improvements.

As of November 21, 2021, the previous benchmarking exemption for energy management practices being a confidential business practice that included trade secrets, privileged, or confidential commercial information is no longer a reason for exemption. If the building owner believes its property information should not be published and made publicly accessible because its energy performance is a confidential business practice that includes trade secrets, privileged, or confidential commercial information, the owner can submit a [Confidential Data Request](#) form.

CASR will review and determine whether the confidential request can be satisfied. If the confidential request is approved, all information collected, including compliance submissions, target adjustments, and alternate compliance documentation, will be utilized and maintained by CASR, and not publicly accessible through the benchmarking map or open data catalog. Inefficient energy usage alone will not be considered confidential commercial information. CASR's [Data Use/Confidentiality Statement](#) is available online.

4.5 Third-party Data Verification

4.5.1 When Third-Party Data Verification is Required

Third-party data verification of a benchmarking report is required twice: once before the end of the 2026 benchmarking reporting year and once for the measurement period of the final target (usually 2032 or another year if a timeline extension has been approved).

To confirm that buildings are benchmarking with sufficient detail to receive an accurate final target, CASR requires third-party data verification of one benchmarking submission by the end of the 2026 reporting year. Either:

- The 2024 calendar year benchmark report (submitted in 2025) must be verified OR
- The 2025 calendar year benchmark report (submitted in 2026) must be verified OR
- A building that has already performed third-party verification for a target adjustment has satisfied this requirement.

After completing this initial verification requirement, buildings will not be required to submit another third-party data verification until the calendar year benchmarking where the final target year measurement period occurs (ex. 2032 benchmarking data submitted in June 2033).

4.5.2 Definition of Third-Party Data Verifiers

The data verifier must be a third party with one of the following licenses, credentials, or certifications, and are in good standing with the authorizing organization:

- Professional Engineer (PE) issued within the United States
- Registered Architect (RA) issued within the United States
- Certified Energy Manager (CEM) from Association of Energy Engineers (AEE)
- Building Energy Assessment Professional (BEAP) from ASHRAE
- Energy Management Professional (EMP) from Energy Management Association (EMA)
- Any other additional data verifier license or training program credentials recognized by CASR and posted to its website

A data verifier can NOT be the building owner or an employee of the building owner.

4.5.3 Data Verification Process

Data verification will be completed by generating a Data Verification Checklist within ESPM, following the ESPM directions, and having a third-party data verifier confirm the information and sign the checklist. A sample Data Verification Checklist is available [here](#), and can be generated on the Reports tab within Portfolio Manager. A Data Verification Process Guide is available for data verifiers completing the process.

Important notes for verifiers:

- The benchmarking report submitted for the year being verified must match the data verification checklist submitted.
- Data verification does not require an on-site visit, but it is up to the verifier if they feel confident enough to sign the document without an on-site visit.
- For the Indoor Environmental Quality (IEQ) section in the Checklist, verifiers can write in "N/A." The IEQ section is not necessary.
- CASR does not define a percent accuracy of verified square footage that would trigger the building owner to submit a mandatory target adjustment. If the verifier is uncomfortable with the difference between what they think the square footage of the building is compared to what the building owner records in Portfolio Manager, the verifier is in their right to refuse verification of the building.

- If the building is already ENERGY STAR Certified for the calendar year requiring data verification, as long as the time frame overlaps by six months or more, then the data verification requirement could be fulfilled using the ENERGY STAR Certification application's verifier information.

A data verifier can perform third-party data verification whether they previously completed the benchmarking report or not. They can also assist the building owner with adjusting their benchmarking report, so it is normalized to receive the correct energy efficiency targets or to satisfy the need for data verification of a target adjustment application. If adjustments were needed, the data verifier would make these adjustments to the building's benchmarking report before signing off on the Data Verification Checklist.

4.5.4 Data Verification Submission

Once the data verification is complete, the building owner should keep the signed checklist on file. An electronic version of the checklist with the verifier's signature or stamp (PDF, JPEG, BMP type files acceptable) should be uploaded into the building management portal at the same time the benchmarking report submission process is completed.

In the years when third-party data verification is required, CASR reserves the right to audit a number of benchmarking reports and data verification checklists and inspect the buildings for accurate verification. A violation of inaccurate information includes, but is not limited to missed energy meters, misrepresentation of square footage or gross floor area, improper building type classifications or uses, or inaccurate energy data. A violation could also include the data verifier overseeing the verification not having a required credential or license. If a violation is identified, the enforcement steps in Section 9.3 will occur.

5. ENERGY EFFICIENCY TARGETS

5.1 Metrics

Denver uses weather-normalized site energy use intensity (EUI) as the main metric for energy efficiency targets and evaluation, which is calculated by ENERGY STAR Portfolio Manager. When "site EUI," "site energy use intensity," weather-normalized site EUI," or just "EUI" is used throughout the document, the reader should assume CASR means "weather-normalized site energy use intensity."

Site energy use intensity is the amount of all energy consumed by a building as reflected in utility bills over one calendar year, divided by the gross floor area of the building in square feet (Figure 4). Site energy may be delivered to a facility in one of two forms: as primary energy, that is the raw fuel burned to create heat and electricity, such as natural gas or fuel oil; or secondary energy, that is the energy product created from a raw fuel, such as electricity purchased from the grid or heat received from a district steam, geothermal, or wastewater heat recovery systems. A Site EUI metric combines units of primary energy and units of secondary energy consumed at the site, and therefore does not account for losses in generation and transmission/distribution of the secondary energy.

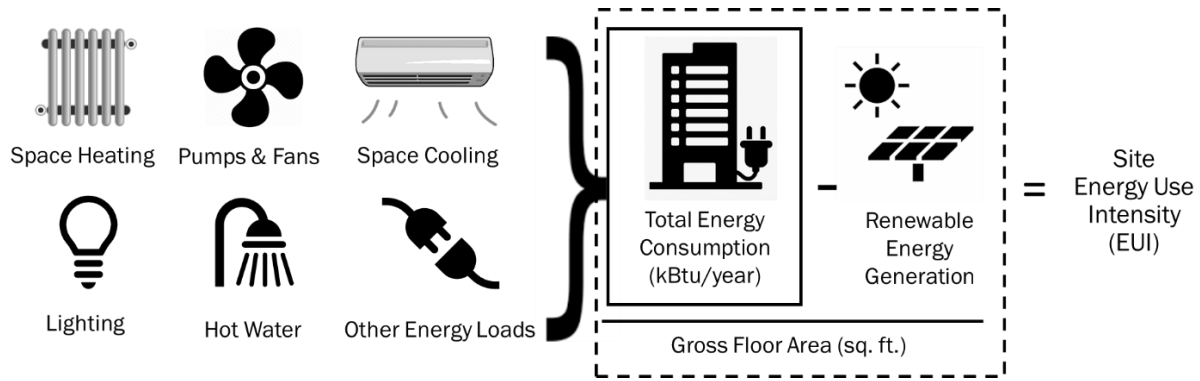


FIGURE 4: SITE ENERGY USE INTENSITY

5.2 Establishing Energy Efficiency Targets

The overarching goal for the Energize Denver Building Performance Policy is to achieve a 30% total reduction in normalized site energy use across all covered buildings by 2030. This does NOT mean each individual building has a 30% energy reduction target. For more information on the methodology used in 2022 to set the final targets, see the December 17, 2021, “Building Typology and EUI Targets” report and the “Percent Reduction Analysis” from March 1, 2024.

All covered buildings begin with a Building Type Target that is refined through detailed benchmarking information and the target adjustment process. Then if the building’s baseline is more than 42% away from the Building Type Target, a 42% maximum energy reduction cap is applied to the final target through the Percent Reduction Target Adjustment. After the building receives their final target, the Non-emitting Thermal Energy Network or Electrification Incentives would be applied, if applicable. In certain circumstances, customized target adjustment processes could also happen. Manufacturing, Agricultural, and Industrial (MAI) buildings that are eligible for MAI designation have targets set through the MAI Alternate compliance option with details in the MAI Technical Guidance.

This list of actions outlines the target adjustment process to normalize a building’s final target (covered in Sections 5.3 through 5.7). Not all target adjustments apply to all buildings.



1. Building receives Building Type Target based on benchmarking report (Section 5.3), including the correction if the building is on the Denver District Cooling Loop (Section 5.3.1). For most buildings, this target assignment process occurred in 2022.
2. If the building’s previous benchmarking reports have not been normalized for all energy uses, gross floor area, adaptive reuse, or other reasons, the building owner should go through Standard Target Adjustment process applicable for their building (Section 5.4).
3. If a Standard Target Adjustment is requested, and the final target is more than 42% away from the building’s baseline year, CASR will apply the Percent Reduction Target Adjustment. As part of this process, the building owner should check their baseline year to make sure it is reflective of normal operations (Section 5.5).
4. After a building has received an approved Standard Target Adjustment (Section 5.4-5.5), performed an energy audit, explored renewable energy options, and still cannot determine a viable way to reach the final target, there is a custom target process available (Section 5.6.2). Historical and Unique Buildings also have an opportunity for a customized target adjustment (Section 5.6.1).
5. After all target adjustments are processed, eligible buildings could have the Non-emitting Thermal Energy Network or Electrification Incentives applied (Section 5.7).

If you would like coaching on the target adjustment process, please schedule a call or email the Help Desk at energizedenver@denvergov.org.

5.2.1 New Construction

All new buildings eventually become “existing” buildings and will be subject to the Energize Denver Building Performance Policy. This occurs after the owner has received their certificate of occupancy (CO) and are in operation and consuming energy for 12 full calendar months. At that time, they are required to start reporting annual energy benchmarking data to CASR. CASR will set a Building Type Target for 2032 only (no interim target) within 6 months of receiving the first benchmarking report for that building. If the owner has benchmarked their building with all the detail needed to process the standard target adjustments in Section 5.4 (Ex: heated swimming pools, parking, data centers, etc.), then those adjustments will be included as part of the target setting process. For new construction that falls under the general “Unique Building” property types (Aquariums, Convention Centers, Ice/Curling Rinks, Museums, Zoos, etc.), targets could be set based on the energy modeling used at the time of building permit issuance in accordance with Denver Building Code.

For an example of a target setting process for a new building, if a building receives their CO in September 2024, then their first year of benchmarking would be January 2025 to December 2025, which is submitted to CASR by June 1, 2026. By December 2026, CASR would assign a final target and send a notice letter to the building owner.

If CASR does not receive a timely benchmarking report after the building was added to CCD’s Assessor’s Office database, targets will be established for the building based on information

provided by the Assessor's Office and median energy data for Denver building types. The new building owner will then have an opportunity to change that target through the Standard Target Adjustment process.

5.2.1.1 Newly Constructed MAI Buildings

For new construction that meet the definition of a Covered MAI building, the owner must apply for MAI designation and must choose a performance pathway and metric under the MAI alternate compliance option. To learn more about the compliance options available for newly constructed MAI buildings, see the MAI Technical Guidance document.

5.3 Building Type Target

Energy efficiency targets measured in EUI were established for more than 70 building types, listed in Appendix A. These Building Type targets were developed using 2019 benchmarking datasets and national Commercial Buildings Energy Consumption Survey data (CBECS). Benchmarking by building type means that each building is being compared to the other buildings in its classification.

To achieve the 30% overall reduction in energy use required by the ordinance, the targets were set at the 15th percentile, meaning Denver is shifting its existing buildings into the high-performance category where they perform better and are more efficient to operate than most buildings in the country. Several building types were assigned a 30% reduction goal from a 2019 baseline because the uses were too unique to assign a target (Ex: zoos, aquariums, museums, etc.). If additional building types are found, or new buildings of types without specific targets in Appendix A are built, then CASR will set targets for such buildings based on best available local and national data.

Mixed-use buildings originally had a blended target based on the percentage of GFA assigned to the largest three (3) building types in the 2019 benchmarking data. Since the targets were originally set in 2022, the EPA has changed their Portfolio Manager data interface in a way that allows for more details to come through the reporting portal. So, if the building has more than 3 property types that would affect their target, they must follow the Standard Target Adjustment process in Section 5.4 in order to receive a more appropriate Building Type target.

CASR used a trajectory model to establish each building's interim targets by establishing a baseline (typically 2019) for each building and drawing a straight line from the baseline EUI to the final EUI target. The city's decision to shift from having multiple interim targets (2024/2025 and 2027 interim target year measurement periods) to one 2028 interim target is outlined in Section 1.1. In this trajectory model scenario, baselines are only important to setting the slope of the line to the 2028 interim target (baselines do not affect the final target). In 2021, baselines were established as follows:

- For buildings that reported benchmarking data in 2019, the baseline is the EUI that was reported for that year.
- For buildings where no baseline data was received for 2019 (either by not submitting a report or the building was exempt), an alternate benchmarking report on file for 2018 or 2020 was used.
- For buildings where no benchmarking report was on file, CASR used the 2019 local median EUI for that building type for its baseline.

With the shift to one interim target in 2028, the "straight line" scenario is no longer applicable. CASR took the original 2024 target and shifted it back to be due in 2028. If a building has never benchmarked and needs to submit historical energy benchmarking data for a year earlier than the current submission year (Ex: submitting 2019 when 2021 is the current year being collected), the owner can submit the data by using the Historical Benchmarking Submission Form after speaking with someone at the Help Desk.

Figure 5 shows an example image to illustrate the trajectory model. The targets represent the minimum levels and deadlines that CASR regulates. Building owners can choose to move faster. A building must maintain the interim targets each subsequent year and must maintain the final energy efficiency target indefinitely. If the baseline for a covered building is already below the target for that building type, then the building must perform at or below the target each year and must maintain the final energy efficiency target indefinitely.

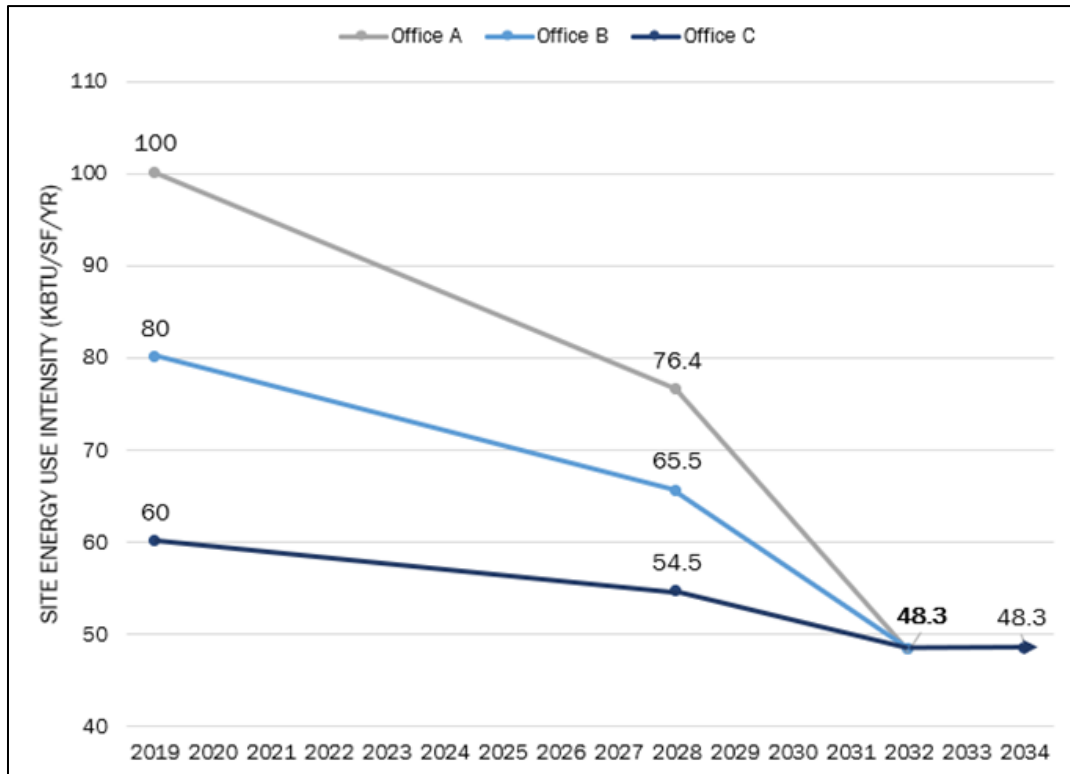


FIGURE 5: EXAMPLE OF BASELINE, INTERIM, FINAL TARGETS, AND MAINTENANCE

5.3.1 Denver District Cooling Loop Correction

Current Denver District Cooling Loop users automatically had a target correction applied in February 2024. This cooling loop adjustment corrects an issue with the way Xcel Energy bills energy usage on this loop. Xcel Energy bills the cooling loop usage as “source” energy, not “site” energy, which overinflates the site EUI for the building.

For buildings that are planning to join the Denver District Cooling Loop, please reach out to the Help Desk at energizedenver@denvergov.org after the submission of your first benchmarking report with district chilled water usage. CASR will apply the target adjustment to the Building Type target to account for the way Xcel Energy bills chilled water usage. This correction does not require an application.

5.4 Building Type Standard Target Adjustments

Because benchmarking reports from the baseline year of 2019 may not have been detailed enough to create a normalized target, there are energy uses that cannot be excluded from the benchmarking data, or the building is historical, unique, or has been adapted from its original use, the building owner may apply to adjust the building’s Building Type target:

- Longer average daily operating hours
- Certain energy uses that could not be excluded (heated swimming pools, parking, data

centers, etc.)

- Previous benchmarking submission were incorrect in building type, gross floor area, energy data, high-intensity spaces, baseline year, or other similar reasons.
- Building types or gross floor area changes due to alterations or new tenants
- Adaptive Reuse Buildings

For buildings that are adjusting historical benchmarking reports to normalize their final target, CASR has found that Xcel Energy only retains the past 36 months of utility bills in their system. This can create a challenge in adjusting the 2019 baseline energy data for aggregated account buildings (such as multifamily or multi-tenant). This only affects the setting of interim target. In this case, the building owner should work with the Help Desk to determine if a new baseline year should be set based on available data.

Buildings that have a new tenant or a major renovation that changes its building type need to notify CASR of the changes as soon as possible through the Target Adjustment process. This enables CASR to adjust the target in a timely manner, so penalties are not assessed. Because the baseline historical energy data may not be reflective of the new use, the interim target may be removed or adjusted when the final target is assigned. For example, if a new tenant moves in the building in early 2027 with a higher energy use intensity, processing a target adjustment means the 2028 target may be eliminated and an adjusted final target assigned. If the building owner needs other adjustments to the timeline due to this new tenant, a timeline extension application process should be followed (Section 7.2).

5.4.1 Standard Target Adjustments

The currently available standard target adjustments for operations/characteristics and their eligible building types are listed in Table 3. The standard target adjustment process will also be used when previous benchmarking submissions were incorrect for building type, gross floor area, energy data, high-intensity spaces, baseline year, or the building types or gross floor area change due to alterations or new tenants.

Targets will be adjusted using the values and order of operation listed in Appendix B. As the building industry establishes additional approaches for normalization for business or building characteristics, procedures and target adjustment values may be updated over time.

TABLE 3: AVAILABLE STANDARD TARGET ADJUSTMENTS

Adjustment Type	Eligible Building Types	Appendix
Operating Hours	Office, Retail Store, Worship Facility, Non-refrigerated Warehouse, Refrigerated Warehouse, Supermarket/Grocery Store	B.1
Indoor Heated Swimming Pool	All building types	B.2
Outdoor Heated Swimming Pool	All building types	B.2
Parking – open	All building types	B.3
Parking – partially enclosed	All building types	B.3
Parking – completely enclosed	All building types	B.3
Data Centers	All building types with Class B data centers	B.4
More than 3 property types	All building types	B.5
EV charging stations	All building types	B.6

Building owners can apply for more than one of the available adjustments if the situations exist in their buildings, including adjustments for incorrect benchmarking submissions. For example, let’s say an office building realized they didn’t benchmark their restaurant properly, is open 90 hours a week, has a fitness center on the lower floor with an indoor heated swimming pool, and has several basement floors of completely enclosed parking. The building owner could submit one application and request multiple adjustments.

5.4.1.1 Standard Target Adjustment Examples

Table 4 shows examples of approved standard target adjustments and the resulting change in their energy efficiency target.

TABLE 4: EXAMPLES OF APPROVED STANDARD TARGET ADJUSTMENTS

Original Building Type	Original Final Target	Target Adjustments Applied	Adjusted Final Target
Multifamily only	44.2	Completely enclosed parking, heated swimming pool, multifamily and retail store building types	57.6
Office only	48.3	Data center, office and medical office building types, square footage correction from 115,296 to 121,135	158.9
Office only	48.3	Completely enclosed parking, restaurant and office building types	62.5
Distribution Center only	26.9	Open parking, distribution center and office building types	32.1

5.4.2 Adaptive Reuse Target Adjustment

CASR prefers that buildings are renovated and repurposed, instead of demolished, due to the large savings in embodied carbon. As such, an adjustment to the final Building Type target is available for adaptive reuse renovation projects. This credit is also available retroactively to adaptive reuse projects that have happened in the past, such as a renovation of a K-12 school or warehouse building to a multifamily residential condominium. The adaptive reuse target adjustment is 17 points added to the building’s final Building Type target.

5.4.2.1 Eligibility

Eligibility for this adjustment is restricted to past, current, and future renovation projects that change between occupancy classification groups according to 2021 International Building Code Section 202 “change of occupancy” definition and Section 302.1 occupancy classifications (see Table 5 for occupancy classifications and their possible corresponding ENERGY STAR Portfolio Manager building type). For example, an office building in Group B that renovates to a multifamily dwelling in Group R would qualify for this credit. A building that shifts their occupancy within a Group (such as A-1 to A-3) does not qualify for this credit. Denver’s Department of Community Planning and Development makes the final call on which occupancy group the building falls in and whether it qualifies for this adjustment.

TABLE 5: OCCUPANCY CLASSIFICATIONS AND CORRESPONDING ESPM BUILDING TYPES

Section 302.1 Occupancy Classifications	ESPM Building Types**
Assembly: Groups A-1, A-2, A-3, A-4, and A-5	Aquarium, Bar/Nightclub, Bowling Alley, Convention Center, Courthouse, Fitness Center/Health Club/Gym, Ice/Curling Rink, Indoor Arena, Library, Lifestyle Center, Movie Theater, Museum, Performing Arts, Restaurant, Social/Meeting Hall, Stadium (closed), Stadium (open), Transportation Terminal/Station, Worship Facility, Zoo
Business: Group B	Adult Education, Bank Branch, Data Center, Financial Office, Laboratory, Lifestyle Center, Medical Office, Office, Outpatient Rehabilitation/Physical Therapy, Personal Services, Police Station, Vehicle Dealership, Veterinary Office,
Educational, Factory and Industrial: Groups F-1 and F-2: Group E	College/University, Food Service, K-12 School, Manufacturing/Agricultural/Industrial Plant, Preschool/Daycare, Repair Services, Vocational School
High Hazard: Groups H-1, H-2, H-3, H-4 and H-5	
Institutional: Groups I-1, I-2, I-3, and I-4	Hospital, Lifestyle Center, Police Station, Prison/Incarceration, Residential Care Facility, Senior Living Community, Urgent Care/Clinic/Other Outpatient, Daycare
Mercantile: Group M	Enclosed Mall, Food Sales, Retail Store, Supermarket/Grocery Store, Wholesale Club/Supercenter
Residential: Groups R-1, R-2, R-3 and R-4.	Fire Station, Hotel, Multifamily Housing, Residence Hall/Dormitory, Senior Living Community
Storage: Groups S-1 and S-2	Distribution Center, Fire Station, Non-refrigerated Warehouse, Refrigerated Warehouse, Self-storage Facility,
Utility and Miscellaneous: Group U	Drinking Water Treatment & Distribution, Energy/Power Station,

**Not all ESPM building types fit easily into occupancy classification groups and could vary per use and design. Changes to the building that shift the classification within occupancy classifications sub-groups will be considered on a case-by-case basis (Ex.: a hotel was adapted to multifamily but both subgroups are part of the “residential” classification).

5.4.2.2 Application and Process

The adaptive reuse target adjustment application process is different based on whether the project is already complete or is currently in the design phase. Adaptive reuse projects currently in the design phase will work with CASR to estimate what the future final target will be, but it will not be officially assigned until the project is complete and the building is in operation (Section 5.2.1).

5.4.2.2.1 Retroactive adjustment for existing buildings

For adaptive reuse projects that have already been completed, the building owner or representative should follow the Standard Target Adjustment directions in Section 5.4.3, mark the “adaptive reuse” reason in the application form, and upload supporting documentation that shows the building changed occupancy classifications in the past.

Supporting documentation could include zoning permits, occupancy permit, an affidavit of fact, or request a Zoning Compliance Letter to include the former uses of the property. Directions on how to request the letter can be found on CPD’s website.

5.4.2.2.2 Adaptive reuse projects currently in the design phase

The project or building representative will submit:

- Online application on CASR’s website
- A breakdown of the planned square footage, building types and uses, and any other information that could help CASR estimate what the future final target would be.
- Within the drawing set submitted to CPD for permitting, not the change of occupancy and percent reuse of existing structure and materials if the proposed demolition area exceeds 50% of the existing building gross building area.

A letter informing the project team that an adaptive reuse target adjustment has been approved will be sent to the building owner and project contact. As part of this process, CASR will apply an Interim Compliance Hold (Section 7.1) to the building and give the designers an estimated final target. The building owner or project team will need to keep CASR updated by email on an annual basis in accordance with the Interim Compliance Hold procedures so adjustments to the interim compliance hold can be made as needed.

5.4.3 Standard Target Adjustment Application

For all standardized target adjustment applications, the owner will submit the following:

- Online application
- Data Verification Checklist generated through ESPM and signed by the third-party data verifier
- A re-submitted Benchmarking Report through ESPM. The resubmission of the Benchmarking should match the year of Data Verification Checklist (Ex: resubmission of 2021 benchmarking with a data verification checklist for 2021).
- Supporting documentation as needed (Ex: blueprints to back up a square footage change)

5.4.3.1 Third-Party Data Verification Requirements

Because the target adjustment is dependent on accurate and complete benchmarking data, the building’s baseline or most recent benchmarking data must be third-party verified. Table 6 contains examples of which year should be third-party data verified for each type of adjustment. If multiple adjustments exist within one target adjustment, the verification should be of the most recent benchmarking report. If a building is not sure which benchmarking report year to verify, please call the Help Desk.

TABLE 6: TARGET ADJUSTMENT TYPE AND VERIFICATION YEAR

Adjustment Type	Verification Year
Operating Hours	Most recent benchmarking report
Parking	Most recent benchmarking report
Heated Swimming Pool	Most recent benchmarking report
Data Center	Most recent benchmarking report
Building Type Classification Changes	Most recent benchmarking report
Changes due to renovation or new tenants	Most recent benchmarking report
Building Added or demolished square footage	Most recent benchmarking report
Gross Floor Area or Square Footage	Baseline year
Inaccurate Energy Data that affects the baseline	Baseline year

Third-party data verification will be completed by generating a Data Verification Checklist within ENERGY STAR Portfolio Manager and having a third-party data verifier confirm the information (Section 4.5). The verifier will then sign the checklist and return it to the owner to be submitted with the application form. A sample Data Verification Checklist is available online and can be generated on the Reports tab within Portfolio Manager. A Data Verification Process Guide is available online.

5.4.3.2 Deadline for Submission

Standard Target Adjustment applications can be made at any time, but the building owner needs to be aware of the impact the adjustment could make, not only on the final targets, but also to the interim target. The earlier the application is submitted, the better for the building owner when it comes to performance evaluation.

CASR must receive the target adjustment application by the end of the calendar year that is being evaluated to make sure it is processed before performance evaluation begins. For example, if the building owner needs the target adjustment for the 2028 interim target, the deadline for submission is December 31, 2028.

5.5 Percent Reduction Target Adjustment

For all buildings that have Building Type targets listed in the table in Appendix A (except for the Manufacturing/Industrial Plant type), CASR has instituted a maximum weather-normalized energy reduction cap of 42% from the building’s baseline year. After the applicable target adjustments have been applied through the Standard Target Adjustment process (Section 5.4), and the difference between the building’s final target and baseline year is more than 42%, then the final target will be changed to reflect the 42% maximum energy reduction required. Figure 6 shows the buildings’ targets from the previous chart (Figure 5) altered to reflect Office A’s final target with the 42% maximum cap.

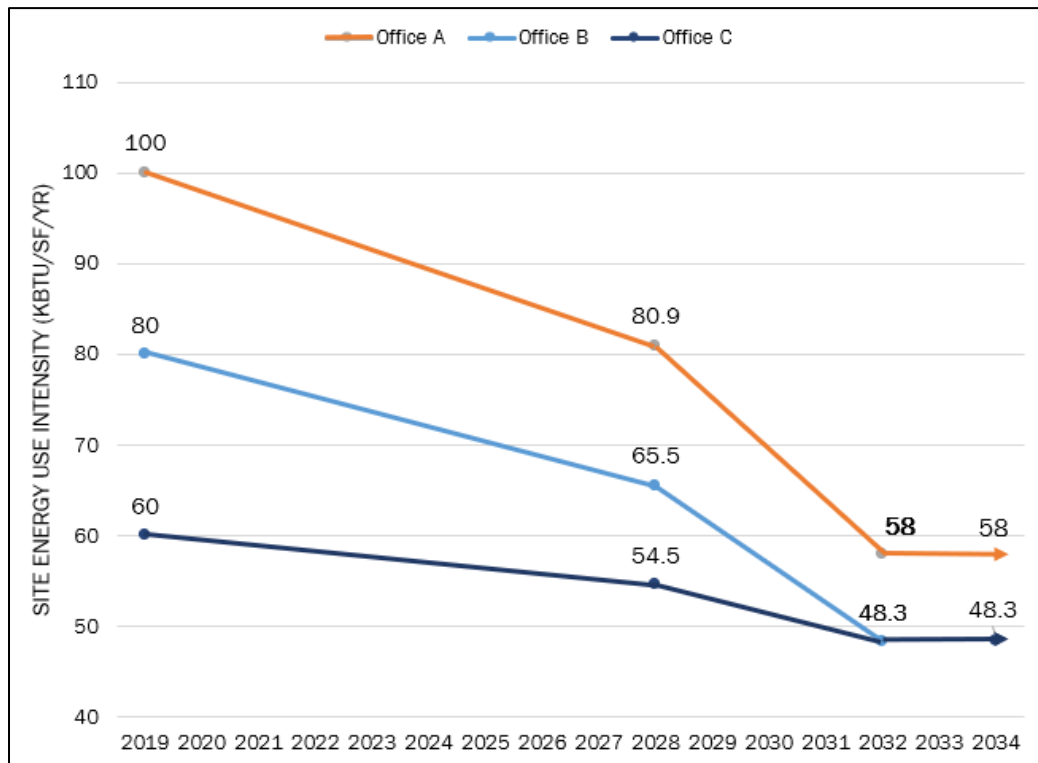


FIGURE 6: PERCENT REDUCTION TARGET ADJUSTMENT APPLIED TO OFFICE A

5.5.1 Adjustment Process

In order to receive the Percent Reduction Target with the 42% maximum energy reduction cap, a building must first apply for all applicable target adjustments in Section 5.4. After a building applies for a target adjustment with third-party data verification, and the Percent Reduction Target adjustment is applicable, the building's final target will be adjusted.

For buildings that have had a target adjustment processed before April 1, 2025, the Percent Reduction Target adjustment will be applied and reflected in the annual notice to comply letter mailed and emailed to the building in April 2025.

5.5.2 Process to Update Baseline

The baseline year is important for buildings that have the Percent Reduction Target Adjustment applied! After receiving the new notice letter, building owners should check their baseline year's benchmarking report to examine if that year's energy use is reflective of normal operations. The baseline year is typically 2019, but other years may have been used to set the Building Type Target because CASR did not receive a report for 2019 or there were other obvious errors in the benchmarking data. If the building owner is uncertain of the baseline year in CASR's system, the baseline year can be found in the Performance Lookup Tool. The earliest baseline year allowed will be 2018.

If the building owner needs to update benchmarking for the baseline year or request a different baseline year, they need to do the following:

- Follow the directions in Section 5.4.3 to apply for a target adjustment.
- If the request involves changing the baseline year used, supporting documentation must include a narrative as to why the existing baseline year is not reflective of normal operations.
- If a building owner has already submitted and received an approved target adjustment, a new Standard Target Adjustment application will need to be submitted to change the baseline, but CASR will use the documentation already on file to process the change. A new third-party data verification checklist will not need to be completed.

5.6 Customized Target Adjustments

Customized target adjustments are available in specific circumstances outlined in this section.

5.6.1 Historical and Unique Building Target Adjustment

Due to their unique building types and lack of national/local datasets to be able to set energy efficiency targets, certain building types received a 30% energy use reduction target. This section outlines a process for CASR to work with the building to determine the appropriate energy reduction goal. CASR recognizes that the building may have already made significant advancements in energy efficiency with a currently low EUI score and may not be able to meet the 30% reduction goal. For example, museums range from a 40 EUI to a 250 EUI. The museum that currently performs at a 40 EUI would not be expected to make a 30% reduction because of their current efficient performance.

5.6.1.1 Eligible building types

Eligible building types are:

- Aquarium
- Convention Center
- Ice/Curling Rink
- Indoor Arena
- Museum

- Other – Entertainment/Public Assembly
- Other – Technology/Science
- Transportation Terminal/Station
- Zoo

CASR will also use this process to adjust targets for historical buildings that are limited by the Landmark Preservation Board in what energy efficiency measures they can perform. To be eligible to apply for this target adjustment as a historical building, the building must be on Denver’s Historic Landmarks and Districts list on the Community Planning and Development Landmark Preservation website, or the National or Colorado State Register of Historic Places. Requests to adjust the target for these building types will be considered on a case-by-case basis.

5.6.1.2 Historical and Unique Building Target Adjustment Application Process

The submission for the Historical and Unique Building Target Adjustment must include:

- In the online application, answer additional questions with a summary narrative of why, after exploration of all the flexibility options, the building cannot meet the current final target, and the owner should propose a new final target.
- ASHRAE Level 2 or equivalent audit with a full HVAC equipment inventory no older than November 22, 2021.
- Other supporting documentation that would help CASR make a determination

CASR will review the application and the supporting documentation and compare the building’s benchmarking information to national medians and local site EUI data on buildings of the same property type. If the applicant is a historical building, checking if the building is on one of the city, state or national lists will be part of the process. CASR will schedule a meeting with the building owner to discuss opportunities presented in the energy audit in reference to a possible target adjustment and propose a new final target. The building owner has a right to appeal that decision with the process in Section 10.2.

5.6.2 Custom Target

After a building has received an approved Standard Target Adjustment (Section 5.4-5.5), performed an energy audit, explored renewable energy options, and still cannot determine a viable way to reach the final target, there is a custom target process available. This adjustment will be created by adding the EUI savings for a specific list of energy efficiency measures in the energy audit and subtracting those estimated savings from the building’s current site EUI to create the building’s final target.

5.6.2.1 Creating a Custom Target

The building owner or their representative will propose a custom target measured in EUI that needs to account for certain energy efficiency measures from their energy audit and subtracting the estimated savings from their current weather-normalized site EUI. This custom final target will be created using the estimated EUI savings from:

- energy efficiency measures identified in the audit with less than a 20-year simple payback,
- improving the leakage of the building’s envelope around windows and doors if this is identified in the energy audit,
- if replacing/upgrading equipment from the End of System Service Life Chart is needed to reach the original Building Type Target, and
- examining the role of viable renewable energy options.

For example, the building's current EUI is 95 and its final target is 48.3. The energy audit and renewable energy options memo state the following:

- Energy efficiency measures identified in the audit with less than a 20-year simple payback:
 - Lighting upgrade with sensor controls – reduces EUI score by 8
 - Thermostat upgrade – reduces EUI score by 3
 - Building automation system upgrade – reduces EUI score by 7
- Windows and doors air sealing – reduces EUI by 2
- Replacing/upgrading equipment:
 - Rooftop Unit at end of service life – reduces EUI score by 8
 - Replacing boiler at end of service life – reduces EUI score by 12
- Examining the role of viable renewable energy options
 - not a viable option – downtown building with small roof

Adding the estimated EUI savings together (40) and subtracting from the building's current EUI (95) means the custom final target for the building will be a 55 EUI.

5.6.2.2 Eligibility

1. The building must have examined their benchmarking reporting for normalization (Section 4.2), completed all applicable target adjustments in Sections 5.3-5.5, and received an approved Target Adjustment.
2. Must be an individual building; or a group of adjacent buildings that are covered by one Building ID and are benchmarked as one building in ESPM due to shared utility meters. The custom target would be applied as applicable to how the building(s) is benchmarked.

Campuses that encompass both individual buildings and/or multiple buildings benchmarked as one building in ESPM and would complete an energy audit in the fashion of a strategic energy management plan (described in Section 7.2.2.1.2) are not eligible for a custom target as a campus. To receive consideration for a custom target, each building on the campus would have to be benchmarked and audits as an individual building.

5.6.2.3 Minimum Requirements for Documentation

The custom target application process requires three items: submitting an online application outlining the reasons for requesting the custom target, completing an energy audit with the minimum requirements listed below, and creating a renewable energy options memo (Sections 5.6.2.2.1 and 5.6.2.2.2).

5.6.2.3.1 Energy Audit

Energy audits for individual buildings must follow ANSI/ASHRAE/ACCA Standard 211-2018 and have the following minimum requirements:

- Energy auditor must have one of the following:
 - Professional Engineer (licensed in the United States)
 - Certified Energy Auditor (Association of Energy Engineers)
 - Certified Energy Manager (Association of Energy Engineers)
 - Building Energy Assessment Professional (ASHRAE)
 - High-Performance Building Design Professional (ASHRAE)
 - Multifamily Building Analyst (Building Performance Institute)
 - Energy Management Professional (Energy Management Association)
- Energy auditor must be a third-party individual or company and not be employed by the organization that owns or operates the building.
- Energy audit must cover the building as benchmarked in ESPM: either as an individual building or a group of adjacent buildings that are covered by one Building ID and are benchmarked as one building in ESPM due to shared utility meters.
- Energy audit must be a minimum of an ASHRAE Level 2.

- Existing Equipment - Audit template tool will require inventory of all equipment
- Solutions – list all energy efficiency measures needed to reach the current final target and include these end uses if they are present in the building:
 - Envelope
 - Lighting
 - Cooling
 - Heating
 - Ventilation and exhaust systems
 - Air distribution systems
 - Heating, chilled, condenser, and domestic water systems
 - Refrigeration
 - Power generation equipment
 - People-moving systems
- Measurement of the energy use or energy modeling of the existing, pre-retrofit systems following ASHRAE 211-2018, Section 5.5.1
- Energy audit must be submitted through the online Denver Audit Template tool.
- Baseline identification:
 - Baseline should be calendar year 2019 or other approved baseline year
 - Baseline EUI should be in Weather-normalized Site EUI (or Site EUI if the building cannot receive a weather-normalized version)
- Timeframe of Audit
 - Audits completed since November 22, 2021, will be accepted.
- Investment analysis minimum requirements:
 - Individual measure cost and site EUI savings, including savings to investment ratio (SIR) and simple payback calculations
 - Total project cost and site EUI savings, including total SIR and simple payback
 - Life-Cycle Cost Analysis of each EEM following ASHRAE 211-2018, Section 5.5.3
 - At least two (2) contractor bids for each energy efficiency measure

Note: By completing an energy audit with these minimum requirements for a custom target, the energy audit would also satisfy the minimum requirements for a timeline extension. See Section 7.2 for more information on additional documentation that would be needed to apply for a Timeline Extension.

5.6.2.3.2 Renewable Energy Options Memo

With the custom target request, the building owner believe that renewable energy is not a viable option to fill in a gap between where the building's energy performance will be and the final target. The Renewable Energy Options memo should state what renewables were researched (on-site, off-site, or long-term subscriptions) and why the building owner believes these options are not available or viable for the building.

5.6.2.4 Custom Target Application Details

In addition to the documents required for the timeline extension application, the required documents must be submitted for a Custom Target to be considered:

- In the online application, answer additional questions with a summary narrative of why, after exploration of all the flexibility options, the building cannot meet the final target, and propose a maximum target measured in EUI based on the criteria in Section 5.6.2.1.
- The ASHRAE Level 2 energy audit meeting the minimum requirements of Section 5.6.2.2.1 should be uploaded into the Audit Template Tool, and a PDF of the full audit submitted with the application.
- A renewable energy options memo that meets the minimum requirements in Section 5.6.2.2.2.

5.6.2.4 Custom Target Application Evaluation

The following outlines the process to evaluation the custom target and timeline extension request:

1. The building owner turns in the timeline extension application with the required supporting documentation.
2. CASR reviews all documentation for minimum requirements and sends building owner verification from Help Desk that application is complete and is being reviewed.
3. CASR schedules an on-site visit to the building to verify information in the energy audit is accurate.
4. CASR notifies building owner if the energy audit is acceptable. If there are omissions or errors in the energy audit or submitted documents, the building owner will have an opportunity to correct the submissions.
5. CASR notifies whether it is agreed that the maximum target proposed is the new adjusted target for the building, issue a new compliance notice that contains the adjusted final target. If the custom target is completed at the same time as a timeline extension, the new compliance notice will also contain the timeline extension information.

5.6.2.5 Custom Target Performance Evaluation

At the end of the timeline extension period, when all the work to improve the energy efficiency of the building is complete, performance with the custom target will be evaluated after one calendar year of benchmarking is completed. Three scenarios are possible in evaluating if the custom target was appropriate:

- If the building's EUI performance is better than or at the custom target, the custom target stands as the EUI that the building needs to maintain indefinitely.
- If the building's EUI performance is worse than the custom target, but less than a 5% difference, the custom target will have the percent difference added to the EUI score, and the adjusted custom target will be the EUI that the building needs to maintain indefinitely.
- If the difference between the building's EUI performance is 5% or more worse than the custom target, the building will be assessed penalties in accordance with Section 9.2. As part of performance enforcement process, the building owner will have an opportunity to file a Validation Action Plan (Section 9.2.4.2), with a new ASHRAE Level 2 energy audit, that will contain a list of actions the building will explore or implement to bring the building into compliance through the process.

5.7 Target Incentives

After all standard target adjustments, the percent reduction target adjustment, or custom target have been applied, the building could be eligible for several incentive adjustments to the final target that account for the sources of the building energy to incentivize the use of non-emitting or renewable sources of energy.

5.7.1 Non-Emitting Thermal Energy Network Incentive

CASR encourages the use of non-emitting thermal energy networks to improve energy efficiency and reduce greenhouse gas emissions. A Non-emitting Thermal Energy Network is a system that is operated, owned, used, or intended to be used for distribution of a non-emitting thermal resource to two or more buildings for heating, cooling, or hot water. It includes, but is not limited to, a geothermal system or other system that uses a method of exchanging noncombustible fluids that are piped through the ground, through a wastewater treatment facility, or through other systems that circulate thermal energy to achieve a desired temperature.

To encourage building owners to consider joining a district thermal network, CASR provides an incentive added to the final target that is based on the building's historical energy usage of the energy that is moved to the district network and the efficiency of the new equipment attached to the

network. A building owner may still maintain connections to emitting systems, but the connection is meant for emergency backup purposes only.

5.7.1.1 Eligibility

To qualify for this incentive, building owners must submit documentation proving that their building receives energy from a non-emitting thermal energy network. The documentation must specify both the network's connection to the building and the exact percentage of the building's total energy usage that the network provides.

5.7.1.2 Application

5.7.1.2.1 Retroactive adjustment for existing buildings

Building owners that receive energy currently from non-emitting thermal energy networks can apply online. At least one of the following documents must be included with the application:

- Interconnection agreements with utilities.
- Construction permits
- Network operational records

5.7.1.2.3 Adaptive reuse projects currently in the design phase

Buildings considering joining an existing network or a future non-emitting thermal network project that is currently in the design phase can work with CASR to estimate what the future final target will be, but the incentive will not be officially applied until the project is complete and the network is in operation.

5.7.2 Electrification Incentive

CASR encourages the electrification of space and water heating and cooling equipment to reduce the greenhouse gas emission impact of building systems. To encourage building owners to move their building systems away from fossil fuels, CASR provides an electrification incentive for the final target. Buildings that achieve 80% or higher on the “percent electricity” metric will receive a 10% reduction in the final target after all applicable adjustments are completed, making the target easier to achieve. The percent electricity metric of the whole building’s energy use is measured by the percent of total site energy use that comes from electrical sources. Calculated using kBtu, it combines all electrical usage, including grid-purchased electricity and district chilled water site energy with renewable energy used at the building and divides it by the total energy used.

Percent electricity will also be evaluated during each building’s performance evaluation of the interim and final targets. During evaluation, if it is found that the most recent benchmarking report reflects 80% whole building electrification as measured by percent electricity, the 10% electrification incentive will be applied to the EUI target before evaluating Site EUI performance (Section 8.4).

MAI Buildings are not eligible for this Electrification Incentive. See the MAI Technical Guidance for the Fossil-Fuel Reduction Incentive for MAI Buildings.

6. RENEWABLE CREDIT

CASR encourages the building of renewables where capacity is being added to the electrical grid and contributing to Denver’s climate goals. “Renewable energy” means useful electrical, thermal, or mechanical energy converted directly or indirectly from resources of continuous energy flow or that are perpetually replenished and whose utilization is sustainable indefinitely and can be measured in kWh. The term includes, if it can be measured in kWh provided, sunlight, the wind, geothermal energy, hydrodynamic forces, and organic matter available on a renewable basis such as forest

residues, agricultural crops and wastes, wood and wood wastes, animal wastes, livestock operation residue, aquatic plants, and municipal wastes.

In Denver, a large percentage of renewables are built through Xcel Energy programs where Xcel retains the Renewable Energy Credits (REC) in exchange for incentives. CASR recognizes the significant impact that this locally built solar has on surrounding neighborhoods and the considerable effort that building owners make to install these projects. In Denver, renewable generation will be credited towards the building's performance whether or not the RECs were retained. If you have a building 50,000 square feet or larger that must meet both Denver and State of Colorado building performance requirements, check the state's limitations on renewable use at <https://energyoffice.colorado.gov/bpc>.

Renewable energy, on-site or off-site, will be credited to the building's total energy use on a 1:1 kWh basis before targets are evaluated, regardless of Renewable Energy Credit (REC) retainage. To incentivize renewable energy built locally, on-site and off-site renewable energy installations owned by the building owner and located within the City and County of Denver will earn a 1.5 value on each 1 kWh generated.

The Renewable Credit is available to all buildings and does not need pre-approval by CASR before submission. The credit will be calculated on an annual basis based on generation that occurred in the 12-month performance period being evaluated. For campuses that have renewable installations that are not physically connected to a particular building, or a building owner owns off-site renewables that could be credited to multiple buildings, a renewable credit submission must be submitted for each building with the exact kWh usage that should be applied to that building. Off-site renewables could also be renewable generation from one of the owner's buildings that is overproducing and has excess generation that could be applied to another building in their portfolio (the building owner must own both buildings).

Building owners can use the Building Performance Forecasting Calculator to estimate how much renewable credit would be applied per kWh generated.

6.1 Long-term Installations or Contracts

Renewable credits for long-term installations or contracts are not limited to the amount of electricity the building uses, because electrification of building systems will naturally increase over time. Long-term installations mean on-site installations, off-site installations, and subscriptions or contracts for shares in an off-site installation owned by a third-party.

- On-site installation: owner must provide proof that the solar or wind installation is installed, most likely in the form of a bill from the developer or other means of proof
- Off-site installation: owner must provide proof of interconnection (interconnection agreement and permission to operate notification) and the interconnection is within the State of Colorado or Public Service Company of Colorado territory
- Off-site owned by third party: owners must provide evidence of a subscription, lease, or purchase of a share in either a voluntary renewable energy program offered by Xcel Energy or a community project for which a dedicated renewable energy resource located in Public Service Company of Colorado territory or in the State of Colorado and is built for that customer program, and which has dedicated customer capacity or energy to fulfill that customer's subscription. The term of purchase must be at least five (5) years and must be renewed a minimum of every five (5) years for the life of the building for purposes of compliance with this rule.

6.2 Short-term Contracts or Subscriptions

Short-term contracts will be allowed on a declining scale to assist building owners with the interim target. Owners must provide evidence of a subscription, lease, or purchase of a share in either a voluntary renewable energy program offered by Xcel Energy or a community project for which a dedicated renewable energy resource located in Public Service Company of Colorado territory or in the State of Colorado and has dedicated customer capacity or energy to fulfill that customer's subscription.

The term of purchase must be at least 12 months to equal the performance period of the interim target and continue to be purchased annually for maintenance of the target through the next interim target deadline. If the building owner wishes to use renewable credits for the final target, the short-term contracts should be replaced with long-term contracts over time.

Short-term contracts renewable generation is allowed on the following scale:

- 2024, 2025, 2026, 2027, 2028, 2029, 2030, 2031: up to 20% of the building's electricity usage
- 2032 and beyond: short-term contracts not allowed

6.3 Renewable Contract Confidentiality

If an Owner can demonstrate that the building's renewable energy sources are a confidential business practice that includes trade secrets, privileged, or confidential commercial information, the Owner can submit a request for the renewable generation submission to be kept confidential and not subject to Colorado Open Records Act requests or included in open data disclosures. The owner can do that by using the [Energize Denver Confidentiality Request](#) on the Energize Denver Hub.

6.4 Reporting Renewable Generation

The Renewable Credit requires one submission that provides two types of information, the kWhs generated for the performance period and proof of ownership. The proof of ownership only needs to be submitted once for the lifetime of the installation or contract. If the building received renewable generation from more than one category (Ex: solar installed on building *and* purchased month-to-month subscription to fill a gap), the owner must fill out a renewable credit submission for each type.

In the submission form, the owner would:

- Enter total kWhs generated or purchased during the 12-month performance period
- Enter which type of installation or contract it is and whether or not the RECs were retained
- Enter in the maximum renewable capacity of the solar panels if an on-site installation
- Upload proof of ownership paperwork or contract
- Upload one month's example of a bill or report that shows the kWhs generated

The building owner should keep copies of the monthly kWh generation reports on file. CASR reserves the right to request that the owner submit the invoices/reports that back-up the kWh entries or re-submit proof of ownership. Table 7 gives examples of Denver-specific renewable installations and programs and their possible documentation for submission.

TABLE 7: DENVER RENEWABLE SCENARIOS AND DOCUMENTATION

Scenario	Contract	Possible Program	Documentation
Solar/Wind power generated capacity on-site	Long-term	Net Metering, Solar*Rewards	kWh generation entry, Interconnection agreement, Permission to Operate notification or letter
Solar/Wind power generated capacity off-site	Long-term	Off-site solar or wind	kWh generation entry, off-site renewable capacity contract, Interconnection agreement, Permission to Operate notification or letter
Multifamily building where tenants purchased solar through Community Solar Garden subscription	Long-term	Solar*Rewards Community	Building owner would have to collect tenants' contracts listing kWhs individually subscribed to provide as proof of ownership, collect monthly invoices to create kWh generation energy
Community Solar Garden Host (credit available if a portion of kWhs generated are distributed to building directly)	Long-term	Solar*Rewards Community	kWh generation entry, community solar garden host contract
Subscription for solar and/or wind power generation (5 years minimum contract)	Long-term	Renewable*Connect Legacy	kWh generation entry, subscription contract
Subscription for solar and/or wind generation (month-to-month or less than 5 years)	Short-term	Renewable*Connect Flex	kWh generation entry (see limitations in Section 6.2), subscription contract

7. ALTERNATE COMPLIANCE OPTIONS

A building owner may apply for one of the following alternate compliance options (ACO). CASR will review the application, and subject to CASR's discretion, approve the ACO. CASR offers several types to address a variety of different challenges in completing the requirements:

- Interim Compliance Hold
- Timeline Extension
- Residential Condominium ACO
- Manufacturing/Agricultural/Industrial Designation and ACO

This section outlines how each ACO works, the minimum requirements for the documentation submitted with the applications, and how to submit an application. The Interim Compliance Hold is a short-term pause on the performance requirements for a temporary situation. The Timeline Extension is for buildings needing more time to execute their compliance plans. The Residential Condominium ACO is a timeline extension that takes into account the different nature of condominium ownership structures and fundraising capabilities. The Manufacturing, Agricultural, and Industrial ACO is an option to choose a metric and pathway that works for MAI buildings' specialized energy loads.

Table 8 illustrates the differences in the reasons an Interim Compliance Hold or the Timeline Extension would be approved and illustrates its function. Other reasons than the ones listed in Table 7 would be considered on a case-by-case basis. Once a new reason was approved, the reason may be listed on CASR’s website for all buildings to use if needed.

TABLE 8: ACCEPTED REASONS FOR INTERIM COMPLIANCE HOLDS OR TIMELINE EXTENSIONS

Interim Compliance Hold Reasons	Timeline Extension Reasons
Qualifying financial distress	End of system service life
Financial solvency concerns	Energy service capacity
Vacancy rates that cause a financial solvency concern	District steam loop system
Lease terminations	Major renovations
Redevelopment	Innovative approaches
Demolition	
Adaptive Reuse project timing	
Change of building ownership	
Natural or man-made disasters	
Benchmarking exemption	
Landmark preservation commission review	

Once an alternate compliance option is approved, and the building owner fails to complete required actions by the deadlines outlined in the notice or does not ask for an extension or amendment to their compliance plan, CASR reserves the right to revoke the alternate compliance option and return the building to its original targets and deadlines with the penalty rate listed in the alternate compliance approval notice.

7.1 Interim Compliance Hold

The interim compliance hold is used for reasons that are for a temporary situation. Once the building owner submits the application with the required documentation, a two-year hold (24 months) on the performance requirements from the date of approval may be approved. Annual benchmarking still required while on an interim compliance hold. At the 12-month mark, the building owner will check in with CASR with their status in recovering from the situation. Figure 7 represents an example of a simple two-year interim compliance hold with the building returning to the timeline with the next target due in 2032.

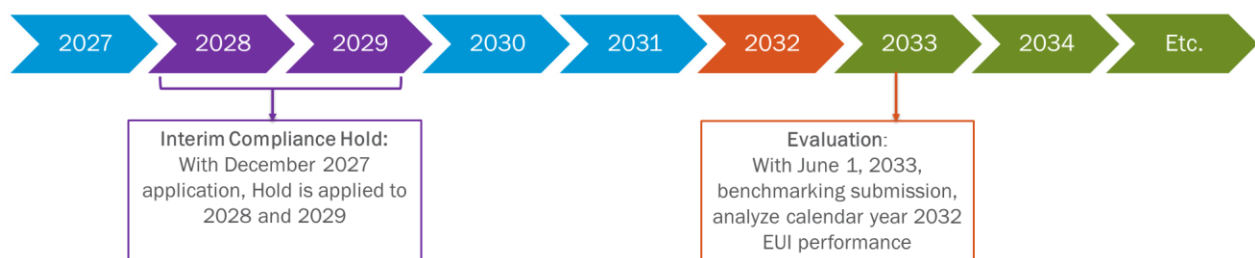


FIGURE 7: EXAMPLE INTERIM COMPLIANCE HOLD SCENARIO

At the end of the two years, there are several options depending on the need of the building owner. If the building can return to meeting its final target on time, no other paperwork is needed, and the hold is ended. If the situation still exists, the building owner can apply to extend the hold for 12 months at a time by submitting updated documentation that proves the situation still exists. If the building owner needs time to submit a Timeline Extension application, the building owner can request that the hold can be extended to allow the building owner time to complete the energy audit and create the compliance plan. Figure 8 shows an example of an interim compliance hold scenario with a Timeline Extension. This scenario is only an example and not reflective of every interim compliance hold situation.

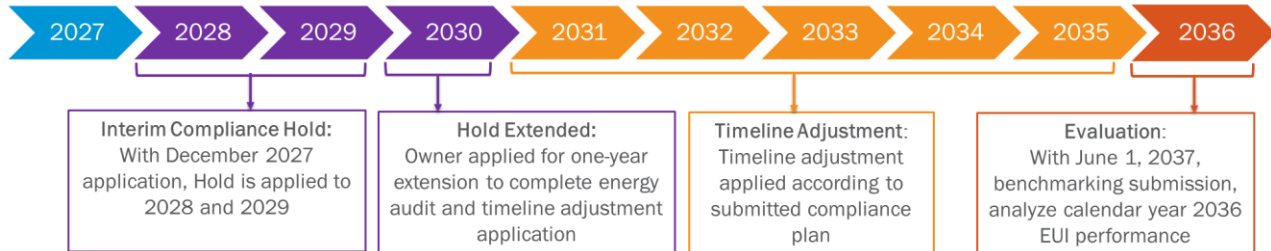


FIGURE 8: EXAMPLE INTERIM COMPLIANCE HOLD WITH TIMELINE EXTENSION SCENARIO

7.1.1 Eligible Reasons

- Qualifying financial distress - A building that is presently experiencing qualifying financial distress, as defined by any of the following: (1) the building is the subject of a qualified tax lien sale or public auction due to property tax arrearages; (2) the building is controlled by a court appointed receiver; or (3) the building has been acquired by a deed in lieu of foreclosure.
- Financial Solvency - the building meets the definition of Financial Solvency Concerns or does not currently meet the definition of qualifying financial distress and the requirements of D.R.M.C § 10-404, but Owner can demonstrate that the required upgrades would cause the Covered Building to go into qualifying financial distress. Other issues that create financial solvency concerns will be considered on a case-by-case basis.
- Vacancy Rate - the current vacancy rate in the building is creating a financial solvency/distress situation, the vacancy rate for the previous 12 months exceeded 20% in square footage or income received from that space, or a single non-renewing tenant controls 30% or more of the available space. Other vacancy scenarios that cause financial solvency issues will be considered.
- Lease Terminations – if a tenant of the building is either responsible for 30% or more of all energy-consuming equipment in the building or a new tenant with a different energy use intensity is moving in, and this event happens within 24 months before or after a performance evaluation period.
- Redevelopment or Demolition - building that has Landmark Demolition Approval from the Department of Community Planning and Development or a Total Demolition permit that will not be executed before a target deadline.
- Adaptive Reuse Projects – see Section 5.4.2
- Change of building ownership or tenant where the new building owner or tenant will have difficulty in complying on time (for example, new owner purchases or new tenant leases the building in 2027 and previous building/tenant owner did not make progress towards 2028 target) or the new owner needs time to update the compliance plan from the previous owner.
- Natural or man-made disasters that affect the building’s ability to meet a target deadline (such as fire, tornado, flood, etc.)

- Landmark Preservation Commission review process means the work won't be done in time for a target deadline.
- Benchmarking exemption (1-year) for the performance period of an interim or final target
- Other reasons will be considered by CASR on a case-by-case basis

7.1.2 Minimum Requirements for Documentation

The building owner must submit documentation that proves the circumstance existed in their building for the 12 months before the application date. Table 9 lists possible documentation that can be submitted with the Interim Compliance Hold application. Other types of documentation not listed will be considered.

TABLE 9: SUPPORTING DOCUMENTATION SUGGESTIONS

Circumstance	Documentation Suggestions
Qualifying financial distress or financial solvency concerns	For qualifying financial distress, paperwork that proves the status of any of the 3 reasons stated. For financial solvency concerns, letter of attestation that describes current situation and shows the building financial solvency calculations.
Vacancy or lease terminations	Rent roll and information showing the lease termination affects financial solvency in the short term, other documentation would be considered
Redevelopment or Demolition	Copy of Landmark Demolition Approval, Total Demolition Permit from CPD, or stamped drawings that clearly show extent of demolition that will render building incapable of supporting any occupancy or use
Adaptive Reuse projects	Copy of Approved Concept Submission and timeline for development or other similar documentation
Change of building ownership or tenant	Proof of sale of building or new tenant lease and narrative explaining the new building owner's/tenant's inability to comply on time.
Purchased a long-term renewable subscription in a community solar garden that has not been constructed by the time the performance evaluation period begins (being on a waitlist due to limited subscription capacity does not count).	Copy of contract and documentation from the installer that proves the delay.
Power Purchase contract agreement for renewables has been executed but installation will not be complete by the time the performance evaluation period begins (being on a waitlist due to limited subscription capacity does not count).	Copy of contract and documentation from the installer that proves the delay.
Natural or man-made disasters	Copy of disaster relief application or approval letter, insurance claim documentation, incident reports, repair or restoration timeline with

	contracts or estimates, proof of occupancy disruption, building inspection reports, etc.
Landmark Preservation Commission review process means the work won't be done in time for deadline	A detailed description of the unique limitations placed on the building and a letter from the Landmark Preservation Commission or CPD's Landmark staff endorsing the delay and restrictions placed on the building.
Benchmarking exemption	Approved benchmarking exemption

7.1.3 Interim Compliance Hold Application

Schedule a call with the help desk to discuss the situation before filling out an application. Applications for an Interim Compliance Hold will be accepted at any time. The application for a vacancy timeline extension requires:

- Online application form
- A narrative letter containing the request for the hold, the allowable reasons used, and why the compliance hold is needed. The letter must be signed by a member of the building owner's executive level leadership team.
- Documentation that supports the reason requested
- Building representative contact information for who will provide annual updates

7.1.4 Interim Compliance Hold Notice

After CASR has completed its review of the submission, it will issue an Interim Compliance Hold Notice that contains the required annual update process and penalties that would be assessed if the updates are not performed as agreed. The notice will be updated if needed to account for changes submitted in the annual updates.

7.1.5 Annual updates to CASR

On an annual basis, from the time of approval, the Owner of the Covered Building will provide CASR with updated documentation that proves the building's status.

- If the reason for the delay still exists, documentation is needed from Table 7 to prove the issue for the previous 12 months,
- If the owner has recovered from the issue, the building will shift to the timeline extension alternate compliance options and one year will be given if needed to complete the timeline extension application process (Section 7.2).

7.2 Timeline Extension

The building owner may apply to adjust the compliance timeline for a variety of reasons that could make achieving the interim or final targets on time difficult by submitting a long-term compliance plan. Owners can apply for a timeline extension that addresses just one target (such as 2028 only) or multiple target deadlines (such as 2028 and 2032) within one application. Figure 9 shows a basic timeline extension to complete all energy efficiency measures by the end of 2033 and target evaluation set for the 2034 calendar year.

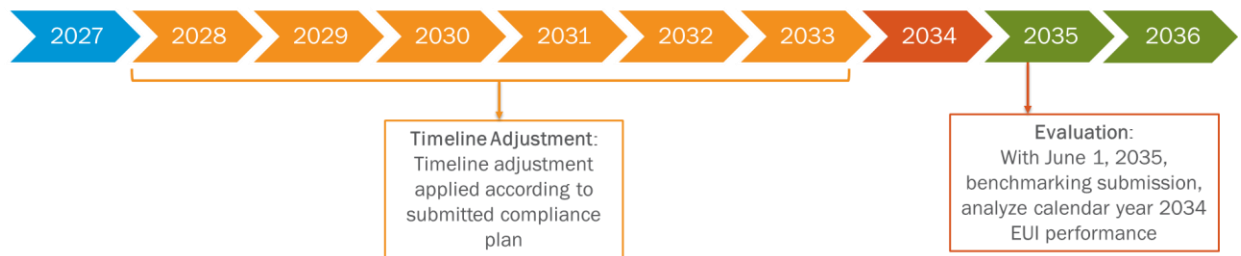


FIGURE 9: EXAMPLE TIMELINE EXTENSION

The timeline extension turns the building’s compliance trajectory into a combination of prescriptive and performance evaluations based on the information submitted in the compliance plan. For example, let’s say an owner has an approved compliance plan to replace HVAC equipment in 2033 and energy efficiency measures (EEMs) that will be completed in 2028. The EEM project completion will be proven by turning in invoicing or project completion documentation in 2029. Once HVAC equipment is replaced in 2033, the performance evaluation of the final target will begin again with the submission of the calendar year 2034 benchmarking data.

Note **CASR has approved a timeline extension for all buildings to shift the interim target to 2028 and the final target to 2032 if benchmarking is submitted in the 2025 reporting year.

7.2.1 Eligible Reasons

- Planning for end of system service life in space and water heating and cooling equipment – this would include delays for electrification of HVAC equipment.
- Energy service capacity constraints – to support building electrification of space and water heating equipment in microgrids where service capacity from the utility is constrained or upgrades to the building’s electrical capacity is needed. CASR is working with Xcel Energy to address capacity constraints at a system level.
- District steam loop system limitations – Xcel Energy is studying how to decarbonize the downtown steam loop and make plans for its long-term future. CASR encourages buildings on this steam loop to delay replacing expensive equipment on this system until long-term plans have been made at the system level.
- Planning for major renovation - aligning compliance efforts with capital planning schedules and roof replacement cycles.
- Innovative approach to energy efficiency to buildings pursuing innovative energy efficiency measures or strategies that have not been widely implemented by the local building industry, which result in implementation delays inherent to novel design (such as a longer design development process, extended product lead times, prolonged installation, or troubleshooting and commissioning.)
- Under-resourced or approved Equity Priority Buildings may qualify for additional reasons not listed (such as financing cycles for qualified affordable housing buildings) that would be considered on a case-by-case basis.
- Other reasons will be considered by CASR on a case-by-case basis. If CASR approves a new reason, it will be published on the website as a new approved reason for everyone to use.

7.2.2 Minimum Requirements for Documentation

The timeline extension application requires submission of an energy audit, a compliance plan, and an operations and maintenance program document. This section outlines the minimum requirements to create and submit each type of document.

CASR reserves the right to audit submissions, inspect the building to assess if the energy audit represents accurate information, and that the audit met minimum requirements. A violation of inaccurate information includes, but is not limited to inaccurate energy data, missed equipment, egregious inaccuracies in savings, and/or false information. A violation could also include the energy auditor signing off on the audit process not having the required credential or license. If a violation occurs, the enforcement steps in Section 9.3 will occur.

7.2.2.1 Energy Audit

CASR is using the [Audit Template Tool](#) provided by the Department of Energy (DOE) as a standardized method to collect the audit information from building owners. The minimum requirements to generate the audit report is to follow Denver's [Audit Template directions](#) to collect building data, enter the data manually into the online tool, and generate the PDF report. Data can also be uploaded into the tool through a Denver-specific import template spreadsheet.

7.2.2.1.1 Individual Buildings

Energy audits for individual buildings must follow ANSI/ASHRAE/ACCA Standard 211-2018 and have the following minimum requirements:

- Energy auditor must have one of the following:
 - Professional Engineer (licensed in the United States)
 - Certified Energy Auditor (Association of Energy Engineers)
 - Certified Energy Manager (Association of Energy Engineers)
 - Building Energy Assessment Professional (ASHRAE)
 - High-Performance Building Design Professional (ASHRAE)
 - Multifamily Building Analyst (Building Performance Institute)
 - Energy Management Professional (Energy Management Association)
- Energy auditor must be a third-party individual or company and not be employed by the organization that owns or operates the building.
- Energy audit must be a minimum of an ASHRAE Level 2.
 - Existing Equipment - Audit template tool will require inventory of all equipment
 - Solutions – list all energy efficiency measures needed to reach the final target and include these end uses if they are present in the building:
 - Envelope
 - Lighting
 - Cooling
 - Heating
 - Ventilation and exhaust systems
 - Air distribution systems
 - Heating, chilled, condenser, and domestic water systems
 - Refrigeration
 - Power generation equipment
 - People-moving systems
- **Energy audit must be submitted through the online Denver [Audit Template tool](#).**
- Baseline identification:
 - Baseline should be calendar year 2019 or other approved baseline year
 - Baseline EUI should be in Weather-normalized Site EUI (or Site EUI if the building cannot receive a weather-normalized version)
- Timeframe of Audit
 - Audits completed since January 1, 2020 will be accepted.
 - If the building owner wishes to use an audit completed 2018-2019, the building energy use information and associated savings calculations must be updated to accurately reflect a 2019 baseline and the building energy use at the time the compliance plan is submitted to CASR.

- Investment analysis minimum requirements:
 - Individual measure cost and site EUI savings, including savings to investment ratio (SIR) and simple payback calculations
 - Total project cost and site EUI savings, including total SIR and simple payback

7.2.2.1.2 Campuses

An Energy audit for a campus must follow ANSI/ASHRAE/ACCA Standard 211-2018 and have the following minimum requirements:

- Energy auditor must have one of the following:
 - Professional Engineer (licensed in the United States)
 - Certified Energy Auditor (Association of Energy Engineers)
 - Certified Energy Manager (Association of Energy Engineers)
 - Building Energy Assessment Professional (ASHRAE)
 - High-Performance Building Design Professional (ASHRAE)
 - Multifamily Building Analyst (Building Performance Institute)
- Energy Auditor must be a third-party individual or company and not be employed by the organization that owns or operates the building.
- Energy audit must be a minimum of an ASHRAE Level 2.
- Building Coverage: the energy audit does not have to contain detailed information on each individual building with gross floor area 25,000 square feet and larger, but compliance with targets will be evaluated on an individual building basis.
- Baseline identification:
 - Baseline should be calendar year 2019
 - Baseline EUI should be in Weather-normalized Site EUI (or Site EUI if the building cannot receive a weather-normalized version)
- Timeframe of Audit
 - Audits completed since January 1, 2020 will be accepted.
 - If the building owner wishes to use an audit completed 2017-2019, the building energy use information and associated savings calculations must be updated to accurately reflect a 2019 baseline and the building energy use at the time the compliance plan is submitted to CASR.
 - If the building owner wishes to use an audit completed before 2017, CASR will consider the request on a case-by-case basis.
- Investment analysis minimum requirements:
 - Individual measure cost and site EUI savings, including savings to investment ratio (SIR) and simple payback calculations
 - Total project cost and site EUI savings, including total SIR and simple payback

7.2.2.2 Compliance Plan

The purpose of the compliance plan is to demonstrate (in 5 pages or less) a clear path for the actions and timeline that will enable the building to hit its final target. A third-party service provider is not required for this plan. The building owner may choose to take the results of the energy audit and complete their compliance plan with internal staff.

The Compliance Plan must cover four things (template available in Appendix D):

- Overview of all energy efficiency measures, operations and maintenance improvements, and/or renewable plan necessary to reach the final target.
- If measures listed in the audit are not included in the overview, an explanation as to why they will not be performed needs to be included.

- Projected timeframe of implementation that will account for the reasoning of timeline extension
- Proposed milestone reporting plan for the prescriptive items that will be completed in lieu of the interim target. An example could be turning in invoices to prove the certain EEMs were installed by a certain date.

The compliance plan will not be considered complete unless it contains all of the details above and additional requirements if end of system service life, energy service capacity constraints, or district steam loop system reasons are chosen (Section 7.2.3). If the compliance plan is not complete, the help desk will inform the owner what is missing and coach the owner on additional information needed.

7.2.2.3 Operations and Maintenance Program

Proper operations and maintenance procedures are an important part of reaching and maintaining the energy efficiency target. Updating equipment and retro-commissioning existing systems will not matter if the staff are not trained to maintain and operate the equipment properly. CASR requires that to receive a timeline extension, operations and maintenance procedures are created and updated to encourage proper maintenance of the high-performing building.

The building owner must ensure the Operations and Maintenance (O&M) Program documentation follows ANSI/ASHRAE/IES Standard 100-2018 (ASHRAE 100), Chapter 6. A third-party service provider is not required to create this documentation. The building owner may choose to create this with internal staff.

Owners should refer to the list below when checking their O&M program for compliance or creating a memo containing the plan to create an O&M program. The O&M program document submitted with the timeline extension application should, at a minimum, include the following information:

- O&M Objectives as described in ASHRAE 100-2018, 6.2
- O&M Implementation in accordance with ASHRAE 100-2018, 6.4 and *Addendum a*, Annex L or as outlined in Chapter 5 of ASHRAE 180-2018
- O&M Tasks as described in ASHRAE 100, 6.4 and Annex D

For the O&M program documentation requirement for timeline extension applications:

- If the building has an existing O&M program document at the time of application:
 - If there's a digital version, upload that file into the application.
 - If there is not a digital version or it exists within a computerized maintenance management system (CMMS) or other software, the service provider or building owner should create a letter of attestation stating that an O&M program exists, in what form it exists (binders, type of software, etc.), and that it meets the ASHRAE standards listed above.
- If the building does not have an O&M program document at the time of application:
 - The service provider or building owner should create a letter of attestation that states the building does not have an ASHRAE standard O&M program document at that time and that part of the compliance plan activities is to create one with the building's facilities group.

7.2.2.4 Documentation for Reason Justification

Table 10 lists possible documentation that can be submitted with the application to justify the reason for the delay. Other types of documentation not listed will be considered.

TABLE 10: SUPPORTING DOCUMENTATION SUGGESTIONS

Circumstance	Documentation Suggestions
Planning for end of system service life or electrification	Energy Audit must detail the equipment, condition, and age of the systems, using information from the service life chart in Appendix C as the maximum lifetime allowed.
Energy Service Capacity Constraints at the building level or within the Xcel Energy micro-grid the building is located in	Energy Service Capacity Constraint questionnaire filled out by Xcel Energy
District steam loop system limitations while long-term decisions are made to decarbonize this system	The building must have district steam use benchmarked in its last annual report submission.
Planning for major renovation	Details from architect/engineer on how the major renovation will improve energy efficiency and reach the target. Energy audit, energy modeling, construction or design documents, scopes of work could also be submitted.
Purchased a long-term renewable subscription in a community solar garden or executing a power purchase agreement	Contract for community solar garden purchase (waitlisted for subscriptions does not count)
Innovative approach to energy efficiency	Narrative from architect/engineer detailing the benefits of the innovation, the novelty of the project, demonstrated that the EEM has not been widely implemented by the local building industry, and why delays are anticipated and/or cannot be avoided.

7.2.3 Additional Requirements to use End of System Service Life, Energy Service Capacity Constraints, or District Steam Loop System Limitations as Reasons for Timeline Extension

Planning for the end of equipment service life can be a tricky process: a building owner wants to maximize the life of the equipment but doesn't want to be in a costly emergency replacement situation. An emergency replacement could mean missing the opportunity to use planned capital investments to reach the energy efficiency target, resulting in the owner needing to make additional investments in energy efficiency, renewable energy, and/or capital improvements. Some buildings have seen capacity constraints, either in the building or within a local micro-grid, when planning for electrification. CASR is working with Xcel Energy and the Public Utilities Commission to plan long-term infrastructure improvements to address energy service capacity issues and decarbonize the downtown steam loop system.

The requirements in this section outline a process where short-term energy efficiency progress can be made while a timeline delay can be allowed to maximize the life of equipment or waiting for system-level infrastructure decisions to be made, with the owner creating a long-term compliance plan.

7.2.3.1 Guidance on “End of System Service Life”

For buildings that wish to use “end of system service life” as a reason for a timeline extension, the owner should use the End of System Service Life chart in Appendix C to determine the maximum lifetime CASR will allow for this timeline extension. This chart represents the average service life according to multiple data sources from ASHRAE plus 10%. Building owners may experience longer

or shorter service life depending on their maintenance practices.

Timeline extensions can be submitted for equipment that is 50% or longer into their service life according to Appendix C at the time of the application. Newer equipment will not be considered for a timeline extension. For example, a 5-yr old package absorption chiller would not get an adjustment of 30+ years. If the building has multiple pieces of equipment that need timeline consideration, the compliance plan should include a chart of the expected replacement time for each piece of equipment.

If a building has individual equipment per unit (such as multifamily) or multiple pieces of equipment with service lives past 2032 that need to be replaced to reach the target, the owner should take the newest piece of equipment that is past 50% of its service life to calculate how long their maximum timeline extension could be. For example, if three systems have an end of service life in 2031, 2035, and 2038 according to the End of System Service Life chart, then 2038 would be the longest timeline extension CASR would allow.

These time limits do not mean the building owner is required to replace the equipment at that time. At the end of the timeline extension period, the important thing is to meet the building's energy efficiency target. If the building owner chooses not to replace the equipment, they will need to explore other options to meet the building's target, such as improving operational practices, retro-commissioning the building's system, installing renewables, or purchasing a long-term renewable subscription.

If the equipment is still functional at the end of its service life according to Appendix C, CASR encourages the building owner to assess the efficiency, performance, and overall cost of ownership of the existing equipment compared to potential new, energy-efficient systems. Older equipment often suffers from degraded performance, leading to higher utility and maintenance costs and increased emissions. Modern solutions, such as heat pumps, are not only three times more efficient but also align with climate-resilient strategies and performance standards. Investing in efficient systems helps avoid "brown discounts," where properties may lose value due to non-compliance with performance standards or tenant expectations for sustainability. Research highlighted by a 2023 [Urban Land Institute \(ULI\)-Heitman](#) report demonstrates that retrofits incorporating sustainable technologies often result in higher tenant satisfaction, improved leasing prospects, and increased asset values. Additionally, such upgrades reduce exposure to possibility to rising insurance costs associated with high-emission assets.

Resources like the Retrofit Playbook for Large Buildings, the, and ENERGY STAR Buildings provide tools and case studies to support informed decision-making. ULI underscores that sustainability-driven retrofits not only improve operational efficiency but also future-proof assets against regulatory and market shifts, securing long-term value. Consulting resources like NREL's ComStock or Better Buildings Solution Center can further aid in evaluating upgrade scenarios. By leveraging these tools and exploring incentives, building owners can align investments with both financial and environmental goals.

7.2.3.2 Guidance on "Energy Service Capacity Constraints"

Denver regularly engages with builders, developers, and customers who are seeking electric service connection or upgraded service to support improvements to the building. Denver's goal is to work with Xcel Energy and the Public Utilities Commission to address capacity constraints so that our climate goals can be met. "Energy service capacity constraints" means where service capacity from the utility is constrained to the building or upgrades to the building's electrical capacity is needed to perform electrification of space and water heating and cooling equipment or other energy efficiency upgrades.

If the energy service capacity constraint exists on the distribution side, CASR has provided an email template in Appendix E building for owners, facility managers, and their engineering teams outlining standardized questions to use in conversations with Xcel Energy for the purpose of better understanding the constraints. A version of this email template and its answers should be included as a supporting document for the timeline extension application.

Timeline extensions for energy service capacity constraints will be for a minimum of five (5) years, through the end of 2030. For buildings with an approved timeline extension for energy service capacity constraints, extensions will be considered on a case-by-case basis.

7.2.3.3 Guidance on “District Steam Loop System Limitations”

CASR is working with Xcel Energy and the Public Utilities Commission to plan long-term infrastructure improvements to decarbonize the downtown district steam loop system. “District steam loop system limitations” applies to building 25,000 sq. ft. that receive heating service from Xcel Energy’s district steam loop in downtown Denver. CASR encourages buildings on this steam loop to delay replacing expensive equipment on this system until long-term plans have been made at the system level. To be eligible for this adjustment, steam use from the downtown loop must be included in the building’s annual benchmarking submission.

Timeline extensions for district steam loop system limitations will be for a minimum of through the end of 2032. CASR could extend this timeline extension across all buildings 25,000 sq. ft. and larger on the district steam loop system depending on the status of system level steam loop decisions.

7.2.3.4 Additional Requirements for the Compliance Plan

In the Compliance Plan, the building owner is presenting the package of EEMs that need to be completed to meet the building’s final target. If the energy audit shows less than a 10-year simple payback calculation for those EEMs, the owner will be required to implement those EEMs within three years of timeline extension approval. In the remainder of the compliance plan, the building owner outlines what additional EEMs need to happen to meet the final target and a timeline in which the measures will be completed by the end of the timeline extension period.

To use End of System Service Life, Energy Service Capacity Constraints, or District Steam Loop System Limitations as reasons for a timeline extension, The compliance plan must detail:

- the minimum requirements of a compliance plan in Section 7.2.2.2,
- how the building owner will complete the EEMs that are identified in the building owner’s plan to meet the final target that have less than a 10-year Simple Payback within three years (36 months) of the timeline extension approval notice, and
- a high-level plan and timeline for other EEMs and replacing the equipment at the end of its service life that will enable the building to reach its target.

Figure 10 shows a sample timeline for a building using HVAC end of system service life as a reason for a timeline extension. Timelines can vary from this example depending on eligible time approved from the End of System Service Life Chart.

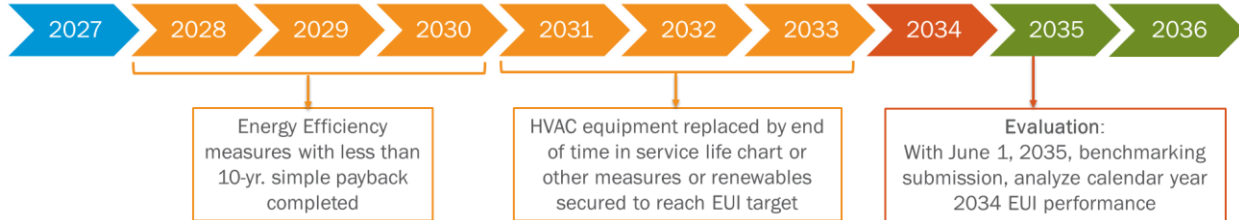


FIGURE 10: EXAMPLE TIMELINE EXTENSION FOR END OF SYSTEM SERVICE LIFE

While consultants do their best to estimate the costs of projects during the energy audit process, contractor bids may be different than what was estimated. After the timeline extension has been approved and the building owner receives bids to do the work, secures funding to complete the work, and finds the cost difference is enough to change the simple payback to more than 10 years, the owner will have an opportunity to turn in bid documentation and ask to shift those measures to later in the timeline if needed. Loan origination and carrying costs, if applicable, could be included in the simple payback calculation but would need to be allocated to the individual EEM by the percent of the total loan the EEM is.

7.2.4 Timeline Extension Application Details

To ensure the building owner has a comprehensive plan for reaching the final target, the timeline extension application has multiple required submissions to be uploaded within the application form. The form itself will ask questions about what reasons are present, more details on justification for the delay, and details on renewable plans. For each reason requested, supporting documentation should be attached to the application (suggestions listed in Table 5).

The application for a timeline extension for an individual building requires:

- Online application form
- Energy Audit that meets the minimum requirements (Section 7.2.2.1.1) and is submitted through the Audit Template Tool
- Compliance Plan (Word or PDF) document (Section 7.2.2.2)
- O&M Program document (Section 7.2.2.3)
- Other documentation that would support the request as suggested in Table 5

Note: If the owner wishes to submit the request for a custom target at the same time as the timeline extension application, the additional documentation (Section 5.6.2.2) can be submitted within the same form and processed at the same time as the timeline extension application.

For buildings that are part of a “campus” (see definition in Appendix G), the process is similar but the energy audit, compliance plan, and O&M documents can be created at a campus level. The campus application for a timeline extension requires:

- Online application form
- Campus Energy Audit that meets the minimum requirements (Section 7.2.2.1.2)
- Strategic Energy Management Plan that addresses the questions asked in the compliance plan template and includes electrification feasibility information (following the basic structure of the compliance plan template provided in Appendix D)
- Campus O&M Program document (Section 7.2.2.3)
- Other documentation that would support the request, suggested in Table 5

7.2.4.1 *Deadline for Application Submission*

Deadlines for submitting an application are dependent on the target year that needs adjustment and early action by the building owner. Timeline extension reviews may take some time and multiple conversations to come to an agreement, so CASR encourages building owners to not wait until the deadline to submit their application.

Timeline extension applications will be taken at any time, even after performance evaluation is assessed. But the possible penalty the building could incur, if the owner does not complete the plan as described, would increase if the application is submitted after the end of the benchmarking calendar year (December 31) for the target year measurement period that needs adjustment. If the building meets this deadline, the timeline extension results in the building only having one target year measurement period and the – possible penalty will be \$0.35/kBtu not achieved (same as if you did not have a timeline extension). If the application is submitted after the dates described above, the penalty will be \$0.45/kBtu not achieved (\$0.10/kBtu added to the penalty rate, Section 9.2).

Examples of application deadlines:

- If the building will not be able to meet the 2028 interim target on time, the application is due by December 31, 2028.
- If the building meets the interim target, and only needs a delay to the 2032 final target, the application is due by December 31, 2032.

7.2.5 *Timeline Extension Notice*

After CASR has completed its review of the submission, it will use the agreed-upon compliance plan to create a Timeline Extension Notice that will state the new performance timeline for the building.

The Notice will include:

- agreed-upon timeline
- prescriptive interim projects that need to be completed
- interim (if necessary) and final targets
- reporting requirements throughout the timeline
- penalties that would be assessed if the plan is not completed as agreed
- the version of the rules and regulations that would apply to enforcement

If the building owner supplied all of the required documentation with the application, and the submitted plan was denied after conversations with CASR, the building owner has the right to appeal the decision following the procedures in Section 10.2.

7.2.5.1 *Timeline Extension Compliance*

The timeline extension alternate compliance option turns the building's compliance trajectory into a combination of prescriptive and performance evaluations based on the information submitted in the compliance plan. For example, let's say an owner has an approved plan to replace HVAC equipment in 2033 and prescriptive items to be completed in 2028. For the prescriptive items, the owner will prove compliance by submitting invoicing or project completion documentation by the deadline described in the notice. Once HVAC equipment is replaced in 2033, performance evaluations with the final target will occur with the calendar year 2034 benchmarking data turned into CASR by June 1, 2035. If the building meets its final target early, it does not change the timeline in which the performance evaluations will happen as outlined in the timeline extension notice.

If an owner fails to comply with actions and deadlines outlined in the Timeline Extension Notice, two warning notices will be issued 30 days and 60 days after the deadline. If the owner fails to come into compliance at that time, the building's timeline extension will become void, and the building will revert to its original deadlines and targets.

7.2.6 Amendments to an Approved Timeline Extension

CASR understands that things happen, such as supply chain delays, workforce issues, and delays in project execution. We are open to amending existing approved timeline extensions with reasonable justification. So that the building does not get assessed penalties for not completing the plan as agreed, please call the Help Desk to discuss an amendment to the plan.

7.3 Residential Condominium Reserves ACO

Due to the varied structures of governing documents and limited financing opportunities within residential condominium buildings, these buildings' homeowner associations (HOA) may need a longer timeline to raise funds for energy efficiency improvements. Through the Residential Condominium Reserves alternate compliance option, an HOA may apply to adjust the compliance timeline for fundraising purposes. If the HOA needs a timeline extension for any other reason allowed under a regular Timeline Extension, such as end of system service life or major renovations, the HOA should apply for a Timeline Extension (Section 7.2). HOAs can apply for a timeline extension that addresses just one target (such as 2028 only) or multiple target deadlines (such as 2028 and 2032) within one application.

Residential condominiums where at least 2/3 of unit owners are a household where income is at or below 80% of Denver's area median income or they are enrolled in a public assistance program are encouraged to apply for the Equity Priority Building Compliance Assistance program to receive compliance assistance with all of these processes. See Section 1.3 for more information.

Eligibility for this ACO is limited to buildings that meet the definition of a residential condominium: "Residential Condominium" means a common interest community in which portions of the real estate are designated for separate dwelling unit ownership and the remainder of which is designated for common ownership solely by the owners of the separate ownership portions. A common interest community is not a condominium unless the undivided interests in the common elements are vested in the unit owners.

7.3.1 Eligible Reasons

- The balance of the building's capital reserves fund is less than 30% of what the reserve study recommends is needed for the work identified.
- Extra time is needed to raise funding for energy efficiency projects or major equipment replacement through dues or special assessments.
- Other financial limitations will be considered on a case-by-case basis.

Colorado's Common Interest Ownership Act (CCIOA) Section 38-33.3-209.5 (1)(b)(IX) requires that the HOA has a reserve study policy. The policy state when a reserve study is going to take place, whether there is a funding plan in place for the work recommended by the study, and whether the study is based on a physical or financial analysis. According to the CCIOA, reserve studies do not have to be conducted by a third-party.

Common industry practice suggests that HOAs should perform capital reserve studies every 3-5 years to assess if the HOA is generating enough reserve assessments to provide for major repairs and replacements. Because the reserve study calculates the expected life of all components of the building (i.e., air handlers, roof, pool, windows, etc.) and how much each item costs to repair or replace, some components that have energy savings capacity could be covered in a reserve study. Other items that affect the energy consumed through operations and maintenance practices would be covered through an energy audit.

As such, the HOA would need to combine the results of the reserve study with an energy audit to determine if the reserves on hand would be enough to meet compliance with the building’s target, or if special assessments or dues would need to increase. CASR will allow timeline extensions based on the existing assessment levels, what work needs to happen, and the time delay needed to raise the funds.

7.3.2 Requirements and Application Details

Planning for the long-term energy efficiency management of a building managed by a HOA is a complicated process: the individual condo owners want to maximize the life of the equipment and building, but it’s difficult to gain consensus. The requirements in this section outline a process where progress can be made on energy efficiency targets, timeline extensions can be made to allow for funding mechanisms to be put in place, and the HOA will have a long-term plan for compliance.

For the Residential Condominium Reserves ACO, the following is required in the application:

- **Energy Audit:** the energy audit must meet the minimum requirements in Section 7.2.2.2 and be uploaded through the Audit Template Tool
- **Compliance Plan Requirements (Appendix F):**
 - a package of energy efficiency measures (EEM), operations and maintenance improvements, and/or renewable plans that need to be completed to meet the building’s final target.
 - How the HOA will complete the common, HOA-controlled EEMs that are identified in the plan that have less than a 5-year Simple Payback within three years (36 months) of the ACO approval notice.
 - a plan and timeline for each individual homeowner to complete energy efficiency upgrades in their space and how that information will be collected and submitted to CASR. An individual homeowner could choose to purchase a long-term renewable subscription to cover their portion of energy use in lieu of replacing equipment or completing energy efficiency measures.
- **Operations and Maintenance program document:** the document submitted must meet the minimum requirements detailed in Section 7.2.2.2 or a plan to create an O&M plan.
- **Fundraising plan:** the plan must include details on why extra time is needed to raise the funds, what funding is needed, how the HOA will collect the funds, and the timeline needed. Supporting documentation could include a copy of the reserve study, current dues or assessments collected, and a financial analysis of the plan.

Figure 11 shows an example of a timeline adjusted under this alternate compliance option.

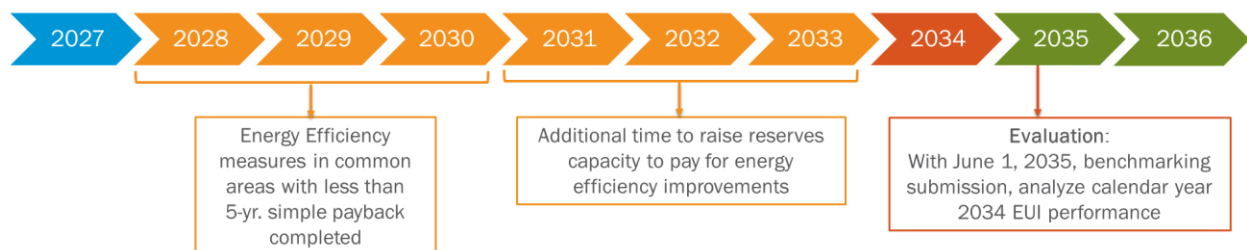


FIGURE 11: EXAMPLE RESIDENTIAL CONDOMINIUM ACO TIMELINE

7.3.3 Deadline for Application Submission

Deadlines for submitting an application are dependent on which target year the HOA is having difficulty meeting. Application reviews may take some time and multiple conversations to come to an agreement, so CASR encourages HOAs to not wait until the deadline to submit their application.

Residential Condominium ACO applications will be taken at any time, even after performance evaluation is assessed. But the possible penalty the HOA could incur, if the HOA does not complete the plan as described, would increase if the application is submitted after the end of the benchmarking calendar year (December 31) for the measurement period that needs adjustment. If the building meets this deadline, the timeline extension results in the building only having one measurement period and the possible penalty will be \$0.35/kBtu not achieved (same as if you did not have a timeline extension). If the application is submitted after the dates described above, the penalty will be \$0.45/kBtu not achieved (\$0.10/kBtu added to the penalty rate, Section 9.2.2).

Examples for application deadline:

- If the building will not be able to meet the 2028 ~~2025~~ interim target on time, the application is due by December 31, 2028.
- If the building meets the interim targets, and only needs a delay to the 2032 final target, the application is due by December 31, 2032.

7.3.4 Residential Condominium Reserves ACO Notice

After CASR has completed its review of the submission, it will use the agreed-upon compliance plan to create a Notice that will state the new performance timeline for the building. The Notice will include:

- agreed-upon timeline
- prescriptive interim projects that need to be completed
- interim (if necessary) and final targets
- reporting requirements throughout the timeline
- penalties that would be assessed if the plan is not completed as agreed
- the version of the rules and regulations that would apply to enforcement

If the HOA supplied all of the required documentation with the application, and after conversations with CASR the submitted plan was denied, the HOA has the right to appeal the decision following the procedures in Section 10.2.

7.3.5 Compliance Evaluation

The Residential Condominium Reserves ACO turns the building's compliance trajectory into a combination of prescriptive and performance evaluations based on the information submitted in the compliance plan. For example, let's say a HOA has an approved plan to complete the smaller prescriptive items in 2027, raise funds for the larger items from 2025 to 2032, and complete the larger upgrades in 2033. For the prescriptive items, the owner will prove compliance by submitting invoicing or project completion documentation in 2028. Once the funds are raised and the larger projects are completed in 2033, performance evaluations with the final target will occur with the calendar year 2034 benchmarking data turned into CASR by June 1, 2035. If the building meets its target early, it does not change the timeline in which the performance evaluations will happen as outlined in the timeline extension notice.

If a HOA fails to comply with actions and deadlines outlined in the Notice, two warning notices will be issued 30 days and 60 days after the deadline. If the HOA fails to come into compliance at that time, the building's timeline extension will become void, and the building will revert to its original deadlines and targets.

7.3.6 Amendments to an Approved Residential Condominium Reserves ACO

CASR understands that things happen, such as supply chain delays, workforce issues, and delays in project execution. We are open to amending existing approved timeline extensions with reasonable justification. So that the building does not get assessed penalties for not completing the plan as agreed, please call the Help Desk to discuss an amendment to the plan.

7.4 Manufacturing/Agricultural/Industrial (MAI) Designation and ACO

The Manufacturing, Agricultural, and Industrial buildings' alternate compliance option requirements have been broken out into its own technical guidance document. You can find the technical guidance on the [Energize Denver](#) website.

8. PERFORMANCE EVALUATION

At a base level, all a building owner must do to prove the building's compliance with an energy efficiency target is to turn in a third-party data verified annual benchmarking report of the target year measurement period in the following reporting year. Renewables and alternate compliance options are voluntary and only offered to tailor compliance to an individual building.

8.1 Demonstration of Compliance

Compliance with targets is demonstrated through the review of weather-normalized Site EUI in the annual Benchmarking report and the additional submission of renewable credit information (if applicable). If the building received an approved timeline extension or is on the MAI ACO, performance evaluation processes will be outlined in the approval notice. CASR will use the weather-normalized Site EUI and other information from the submissions to determine compliance. The schedule of performance targets and their submission deadlines is presented in Table 11.

TABLE 11: TARGET AND PERFORMANCE PERIOD SCHEDULE

Year	Activity	Measurement Period	Benchmarking & Renewable Credit Reporting Deadline
2024	Progress check	January 1 to December 31, 2024	September 1, 2025
2025	Progress check	January 1 to December 31, 2025	June 1, 2026
2026	Progress check	January 1 to December 31, 2026	June 1, 2027
2027	Progress check	January 1 to December 31, 2027	June 1, 2028
2028	Interim Target	January 1 to December 31, 2028	June 1, 2029
2029	Progress check	January 1 to December 31, 2029	June 1, 2030
2030	Progress check	January 1 to December 31, 2030	June 1, 2031
2031	Progress check	January 1 to December 31, 2031	June 1, 2032
2032	Final Target	January 1 to December 31, 2032	June 1, 2033
2033	Maintenance	January 1 to December 31, 2033	June 1, 2034
20XX	Maintenance	January 1, 20xx to December 31, 20xx	June 1 following year

If the building did not submit a Benchmarking Report for the target year's measurement period, the most recent approved Benchmarking Report will be used to evaluate compliance and assess possible penalties. If the building has never benchmarked or only has benchmarking reports on file for 2017 and/or 2018, then CASR will assess a penalty per square foot according to the square footage on file with the Office of the Assessor (Section 9.2.2).

If a building is exempt from Benchmarking in a given compliance year, then the building must comply through an alternate compliance option such as an interim compliance hold or a timeline extension.

A visual representation of the performance evaluation timeline is shown in Figure 12. As a reminder, timeline extensions are available to owners who are making efforts at compliance and need assistance with the target timelines.

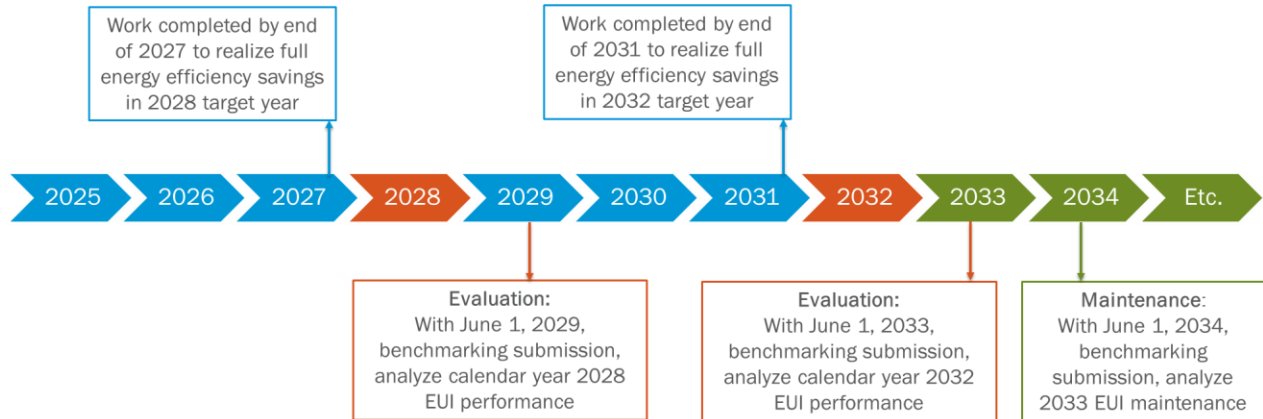


FIGURE 12: STANDARD PERFORMANCE EVALUATION SCHEDULE

8.2 Electrification Incentive Evaluation

Percent electricity will be evaluated during each building’s performance evaluation of the interim and final targets. During the evaluation, if it is found that a building reached 80% whole building electrification as measured by percent electricity, the 10% electrification incentive will be applied to the EUI before assessing renewable credits and then evaluating Site EUI performance.

8.3 Renewable Credit Evaluation

The kWh of renewable generation will be converted to kBtu and subtracted from the kBtu performance of the building as a part of performance evaluation. For example, if a 150,000 square foot building submitted 305,000 kWhs of renewable energy generation, the performance evaluation result is in Table 12.

TABLE 12: RENEWABLE CREDIT EVALUATION EXAMPLE

2028 Interim Target	69 EUI	kBtu allowed	10,350,000
2028 Performance	72 EUI	kBtu performance	10,800,000
Renewable Credit	305,000 kWh	kBtu value	1,040,660
Adjusted kBtu performance			9,759,340
Divided by gross floor area to create EUI score			150,000
Adjusted EUI score is more efficient than 2028 Interim Target			65.1

8.4 Performance Evaluation Process

CASR will begin the performance evaluation process on June 1 each year, after most of the buildings’ benchmarking reports have been submitted. The process, shown in Figure 13, includes:

1. Confirming the benchmarking submission is complete and third-party data verification is complete (if applicable)
2. Checking if the owner has an approved alternative compliance option that changes the date

- of the performance evaluation.
3. Assessing the building’s percent electricity metric and applying Electrification Incentive, if applicable
 4. Checking if the owner submitted a renewable credit submission
 5. Evaluating if the building’s weather-normalized site EUI score meets the target due that year.

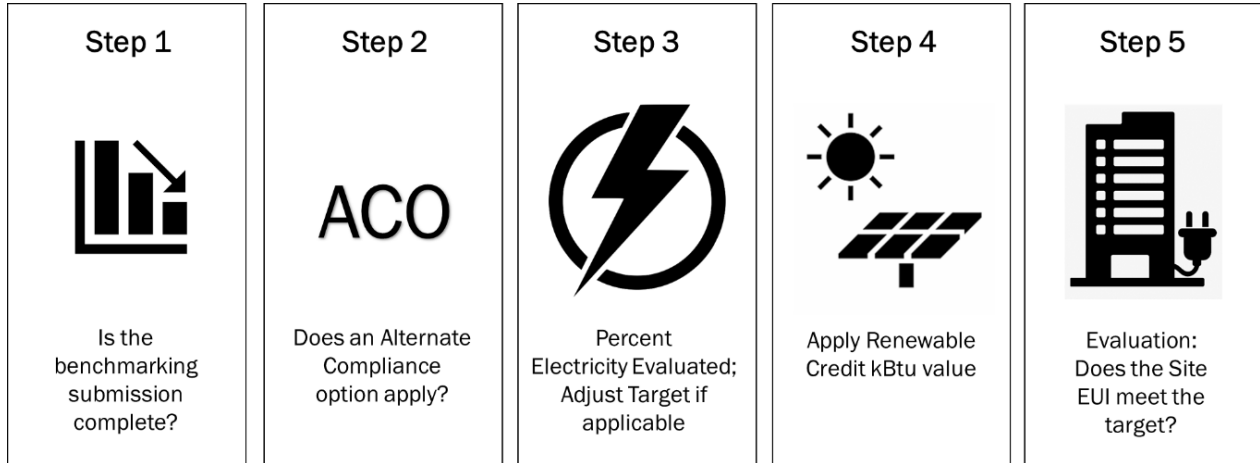


FIGURE 13: PERFORMANCE EVALUATION PROCESS

When evaluating performance, CASR is examining the difference between the weather-normalized site EUI achieved during the performance period (minus the renewable credit and electrification incentive, if applicable) with the EUI Target required. Determination of whether a building met its performance requirements:

- If the kBtu difference is a positive number, the building used more kBtu than the target allowed, resulting in a “kBtu not achieved” value. This means the building did not meet their target for the performance period.
- If the kBtu difference is a negative number, the building used less kBtu than the target allowed, meaning the building met their target and is in compliance for the performance period.

An example office building (150,000 square feet) is shown meeting the targets in both 2028 and 2032 in Table 13. In Table 14, the same office building is shown meeting the 2028 target, but not meeting the 2032 target.

TABLE 13: PERFORMANCE EVALUATION EXAMPLE – MEETS TARGET

Year	Target	EUI Actual	kBtu Performance	kBtu Target	kBtu not achieved
2028	69	67	10,050,000	10,350,000	-
2032	48.3	47.2	7,080,000	7,245,000	-

TABLE 14: PERFORMANCE EVALUATION EXAMPLE – DOES NOT MEET TARGET

Year	Target	EUI Actual	kBtu Performance	kBtu Target	kBtu not achieved
2028	69	67	10,050,000	10,350,000	-
2032	48.3	52	7,800,000	7,245,000	555,000

Building owners will be notified of the building’s compliance status by an email to the contacts on file following the timeline in Section 9.2.3. If CASR does not have a building contact email, a letter will be mailed to the building’s main address.

9. ENFORCEMENT AND PENALTIES

CASR prefers that building owners invest in their buildings to reach the energy efficiency targets instead of paying penalties to the city and is committed to supporting building owners with their efforts and exploring the flexibility that alternate compliance options can afford. As recommended by the Task Force, CASR will “focus its efforts on doing everything it can to support those out of compliance in quickly putting a plan in place and implementing upgrades as soon as possible, rather than simply fining those who missed their first target.” The team is also committed to assisting under-resourced buildings with designing and implementing compliance plans so that penalties are not imposed.

9.1 Benchmarking Penalties

A benchmarking fine of \$2,000 may be assessed if a complete and accurate Benchmarking Report was not submitted by the annual deadline.

9.1.1 Enforcement Process

Owners of covered buildings will be subject to a civil penalty if the building’s benchmarking report is not submitted by the annual deadline. The following is an outline of the steps for benchmarking penalty assessments, shown as a timeline in Figure 14:

1. **Warning Notice:** Once the deadline has passed, CASR will send a warning notice by email. The building owner will have a 30–60-day grace period from the benchmarking deadline to submit the benchmarking report or correct data issues in a “pending” submission. The length of the grace period will be determined by CASR on an annual basis.
2. **Civil Penalty - Administrative Citation:** If the building owner is not in compliance, including buildings with a “pending revisions” status, by the end of the grace period, an administrative citation of \$2,000 is issued. The building owner has 30 days to either submit the benchmarking report (which nullifies the citation) or file an appeal (Section 10.1).
3. **Payment:** If the building owner does not file an appeal or submit the benchmarking report, the owner has one hundred eighty (180) days from the date of the citation to pay the penalty amount with the manager of finance.
4. **Property Lien:** If a building owner fails to pay the required amount within one hundred eighty (180) days, the civil penalty will be considered a debt to the city until paid in full. The debt is a perpetual lien on the property, and is superior and prior to all other liens, regardless of their dates of recordation, except for liens for general taxes and prior special assessments, until the civil penalty owed, delinquent interest, and recording fees have been paid in full.

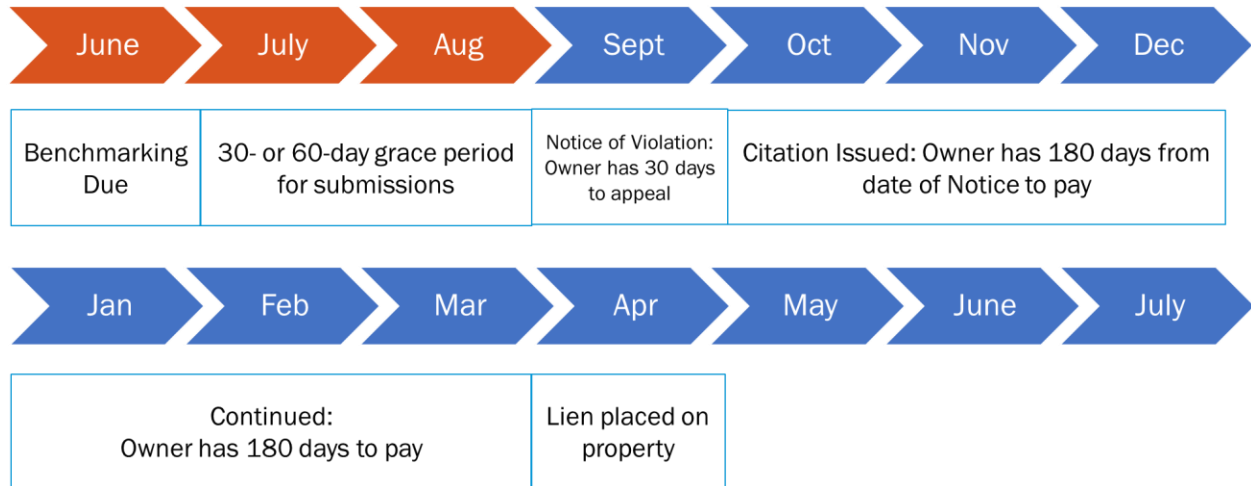


FIGURE 14: BENCHMARKING REQUIREMENTS ENFORCEMENT TIMELINE

9.2 Performance Penalties

For the performance requirements, there are two main types of penalties: a *performance target penalty*, and a *performance maintenance penalty*.

- Performance Target Penalty – A *target penalty* is assessed if the building did not reach the interim or final target by their deadline. If the building has not met the final target by the deadline, it will stay at the target penalty level annually assessed until the target is met. Performance target penalties are also assessed if the building owner does not satisfy the requirements of a Timeline Extension notice.
- Performance Maintenance Penalty - Once the building reaches its final target, it would be switched over to a *maintenance penalty* that could be assessed on an annual basis for not maintaining the final target.

9.2.1 Penalty Assessment

For the performance requirements, penalties are assessed by taking the “kBtu not achieved” as calculated in the Performance Evaluation section (Section 8), then multiplying it by the penalty per kBtu to calculate the penalty amount.

$$\text{“kBtu not achieved”} * \text{Penalty/kBtu} = \$ \text{ penalty rate}$$

For buildings that have received an approved benchmarking exemption and alternate compliance option for the performance evaluation year, penalties would be assessed according to the ACO notice. If the building did not submit a Benchmarking Report for the year of performance evaluation, the most recent approved Benchmarking Report will be used to evaluate compliance and assess possible penalties. If the previous benchmarking report is used, the assumption will be that no improvements have been made and performance is at the same level. If the building has never benchmarked or only has benchmarking reports on file for 2017 and/or 2018, then CASR will assess a penalty per square foot according to the square footage on file with the Office of the Assessor (Section 9.2.2).

9.2.2 Performance Penalty Rates

In 2022, CASR structured penalties to be slightly higher than the average cost of compliance to assist project and facility managers with getting approvals on projects with good returns from energy savings. This included energy efficiency measure costs such as lighting upgrades, improvements to lighting controls, building automation systems upgrades, retro-commissioning measures, HVAC

replacements, envelope upgrades, and solar installations. In early 2025, CASR reassessed the penalty structure and removed larger capital replacement costs from the cost analysis, such as HVAC and envelope upgrades, and solar installations. This reassessment effectively reduced the minimum penalty rates by 50%, reflected in Table 15.

The performance target penalties for commercial and multifamily buildings were originally calculated across three target year measurement periods (two interim targets and one final target). With the update to the rules and regulations in early 2025, the maximum number of compliance periods is two target year measurement periods, or if the building is new or a timeline extension is approved, the number of compliance periods is reduced to one. Table 15 reflects the performance penalty rate depending on how many measurement periods the building has, or if the building has not submitted a benchmarking report for evaluation.

TABLE 15: PERFORMANCE PENALTY RATES

Type	Penalty Rate	Assessment Period
Performance Target Penalty if the building has three target year measurement periods; or if the building had met the target previously and is out of maintenance more than 5%; or if they are a newly constructed building	\$0.15/kBtu	2024, 2027, 2030, then annually if the building has not met the 2030 target, or in 2032 or after
Performance Target Penalty if the building has two target year measurement periods	\$0.23/kBtu	2026/2030 or 2028/2032, then annually if the building has not met the final target
Performance Target Penalty if the building has one target year measurement period due to a timeline extension	\$0.35/kBtu	2030 or 2032, then annually if the building has not met the final target
Performance Target penalty for timeline extensions submitted after the end of the target year measurement period that needed adjustment	\$0.10/kBtu added to the penalty rate	According to target year measurement period determined in the timeline extension
Performance Target Penalty for existing buildings that have never benchmarked, or the last benchmarking report was before the 2019 baseline (2017 or 2018)	\$10.00/square foot listed by the Office of the Assessor	2026/2030, then annually if the building has not met the final target

9.2.3 Enforcement Process

Building owners will be subject to a civil penalty, in accordance with Table 15, if targets have not been achieved or maintained on the approved timeline. The following is an outline of the steps for penalty assessments, shown as a timeline in Figure 15:

1. **Warning Notice:** Once the performance evaluation has been completed for a covered building, CASR will send a warning notice. The building owner will have ninety (90) days from the date of the warning notice to submit an application for a timeline extension if a long-term plan is needed (Section 7.2) or a corrective action plan if the difference is small and minor adjustments to operations and maintenance are needed (Section 9.2.4).
2. **Notice of Violation:** If the building owner has not applied for a timeline extension or corrective action plan the end of the 90 days, CASR will issue a notice of violation. The building owner will have thirty (30) days to file an appeal of the notice of violation (see Section 10.3).

3. Civil Penalty – Administrative Citation: If the building owner has not filed an appeal, an administrative citation is issued that assesses the penalty amount. The building owner has one hundred eighty (180) days to pay the penalty with the manager of finance.
4. Property Lien: If a building owner fails to pay the required amount within one hundred eighty (180) days of the administrative citation date, the civil penalty will be considered a debt to the city until paid in full. The debt is a perpetual lien on the property, and is superior and prior to all other liens, regardless of their dates of recordation, except for liens for general taxes and prior special assessments, until the civil penalty owed, delinquent interest, and recording fees have been paid in full.

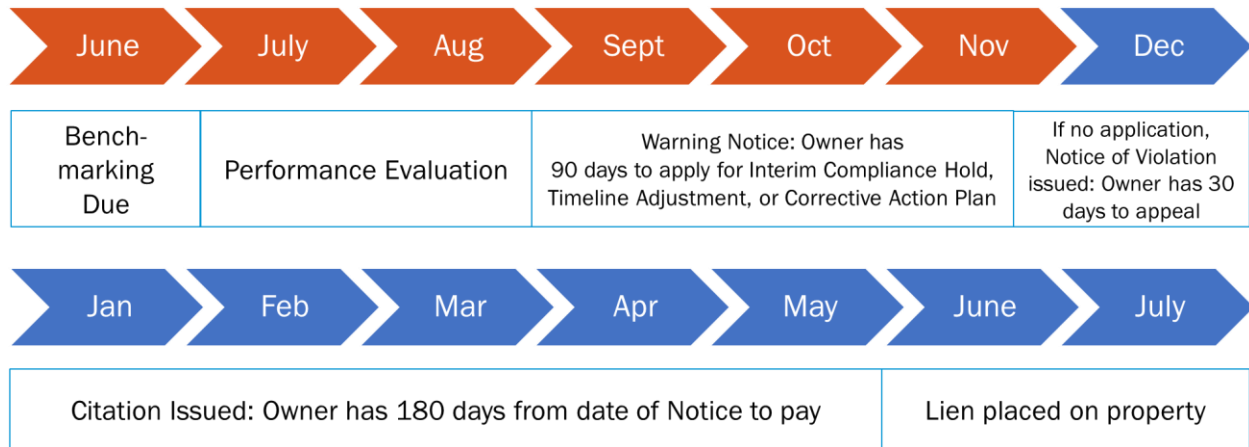


FIGURE 15: PERFORMANCE REQUIREMENTS ENFORCEMENT TIMELINE

9.2.4 Corrective Action Plan

Energy efficiency savings identified during audits represent estimated values that may vary from actual realized savings. Several factors can influence the final outcomes, including the specific equipment selected during the bidding process, installation quality, proper commissioning procedures, ongoing operation and maintenance practices, and occupant behavior patterns.

To address potential discrepancies between projected and actual savings, CASR implements a structured evaluation process. When performance evaluations reveal that a building's actual savings fall within 5% of the target value, building owners are afforded the opportunity to submit a Corrective Action Plan, allowing them to rectify any deviations without penalty. However, if the actual savings deviate by 6% or more from the target, a more comprehensive response is required, involving both an energy audit and compliance plan submission through the Timeline Extension process, as outlined in Section 7.2.

9.2.4.1 Corrective Action Plan for Buildings with Building Type Targets or in the MAI Alternate Compliance Option

This process would apply to the performance evaluation of the final target, or several years down the road if a building falls out of maintenance of a final target and needs to perform corrective actions before being assessed a penalty (Section 9.2.3). If a building repeats the corrective action process more than two (2) times, an ASHRAE Level 2 energy audit may be required in the next Corrective Action plan.

The Corrective Action Plan process is as follows:

1. The building owner submits a corrective action plan by the end of the 90-day warning notice period that includes a statement of how far away they were from the target and a list of actions the building will implement to bring the building into compliance with the target. An

- extension of the 90-day period could be allowed if the owner can show they are making progress towards the creation of a corrective action plan.
2. Once the corrective action plan is approved by CASR, the building owner will then have 12 months to implement the actions.
 3. With the following calendar year's benchmarking report, the building's compliance with the target will be re-assessed.

Figure 16 shows this corrective action timeline with example dates listed for a 2032 target performance evaluation. If the building's final target performance evaluation is later than 2032 the dates in the figure would be replaced accordingly.

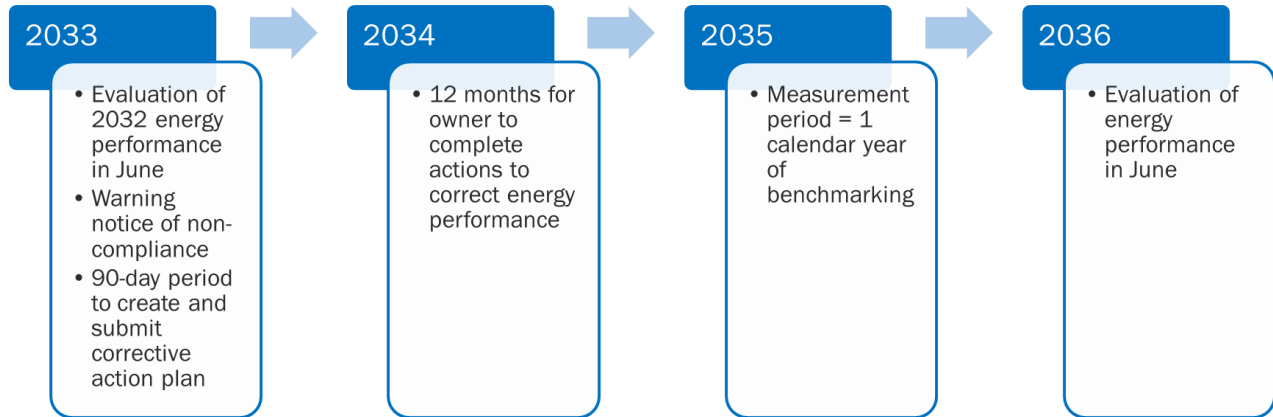


FIGURE 16: EXAMPLE CORRECTIVE ACTION TIMELINE

9.2.4.2 Validation Action Plan for Buildings with a Customized Target

This process would apply to buildings that had a customized target adjustment applied and during performance evaluation were 5% or more worse than the target.

The Validation Action Plan process is as follows:

1. The building owner completes a new energy audit with the minimum requirements listed in Section 7.2.2.1.1. If the building owner plans to request a review of the original custom target, the energy audit must meet the minimum requirements in Section 7.2.4.2.1.
2. The building owner submits a validation action plan by the end of the 90-day warning notice period that includes a statement of how far away they were from the target, a list of actions the building could implement to bring the building closer to the target, and a copy of the new energy audit. If the building owner requests a new customized target, the new target requested must be listed in the statement.
3. Once the validation action plan is approved by CASR, the building owner will have 12 months to implement the actions.
4. With the following calendar year's benchmarking report, the building's compliance with the target will be re-assessed.

9.2.5 Maintenance Penalty Assessment Process

If the building has reached its final target, the following annual performance evaluations would be completed to evaluate if the building is maintaining that EUI performance. If the building is not maintaining the required EUI score, maintenance penalties will be assessed with the following process:

- If the building's site EUI is less than 5% away from the final target, a warning notice and performance maintenance penalty would be assessed. The penalty would be waived if a corrective action plan is filed within 90 days of the warning notice.

- If the building’s site EUI is 5% or more than the final target, the building would switch back to the target penalty level until the target has been achieved again. The penalty would be waived if a corrective action plan is filed within 90 days of the warning notice.

9.2.6 Example Compliance Scenarios for Commercial and Multifamily Buildings

This section contains several examples of combining different compliance strategies and resulting penalties assessed for commercial and multifamily buildings. Penalties are cumulative because the interim targets are designed to help the building be on track to meet the final target, so early action is encouraged. In all of these examples, the minimum level for target penalties were assessed in an Office building that is 150,000 sq. ft. in gross floor area. Example compliance scenarios for MAI buildings are available in the MAI Technical Guidance.

9.2.6.1 Example # 1 – No energy reductions

This example shows a building that did nothing to improve their EUI (Table 16).

Scenario:

- Did not receive the electrification incentive
- Did not purchase or install renewables
- Did not apply for a timeline extension ACO
- Building achieved *no reduction* from a 2019 baseline of 80 EUI

TABLE 16: EXAMPLE 1 - NO REDUCTIONS

Year	Targets in EUI	EUI Actual	kBtu Performance	Target in kBtu	kBtu not achieved	Penalty Level	Penalty
2028	69	80	12,000,000	10,350,000	1,650,000	\$0.23/kBtu	\$379,500
2032	48.3	80	12,000,000	7,245,000	4,755,000	\$0.23/kBtu	\$1,093,650
Cumulative Penalties							1,473,150

9.2.6.2 Example # 2 – Some energy reductions

This example shows a building that did make some progress on their final target but did not take advantage of the renewables credit to fill in the gap (Table 17).

Scenario:

- Did not receive the electrification incentive
- Did not purchase or install renewables to use the renewable credit (RC)
- Did not apply for a timeline extension ACO
- Building achieved *some reduction in EUI*

TABLE 17: EXAMPLE 2 - SOME EUI REDUCTIONS

Year	Targets in EUI	EUI Actual	kBtu Performance	Target in kBtu	kBtu not achieved	Penalty Level	Penalty
2028	69	67	10,050,000	10,350,000	-	\$0.23/kBtu	\$0
2032	48.3	52	7,800,000	7,245,000	555,000	\$0.23/kBtu	\$166,500
Cumulative Penalties							\$166,500

9.2.6.3 Example # 3 – Some energy reduction and Renewable Credit

This example shows a building that knew they were going to miss the 2028 interim target but purchased renewables instead of submitting a timeline extension application. The building did make some progress on their final target but used renewables again in 2032 to fill in the gap (Table 18).

Scenario:

- Did not receive the electrification incentive
- Purchased long-term off-site renewables contract
- Did not apply for a timeline extension ACO
- Building achieved *their 2032 final target with EUI reductions and Renewables Credit (RC)*

TABLE 18: EXAMPLE 3 - EUI REDUCTION AND RENEWABLE CREDIT

Year	Targets in EUI	EUI Actual	kBtu Performance	Target in kBtu	kBtu not achieved	Penalty Level	Penalty
2028	69	72+RC	10,300,000	10,350,000	-	\$0.23/kBtu	\$0
2032	48.3	52+RC	7,100,000	7,245,000	-	\$0.23/kBtu	\$0
Cumulative Penalties							\$0

9.2.6.4 Example # 4 – Timeline extension

This example shows a building that was planning to complete a major renovation in 2033 with energy efficiency measures and replacing existing space and water heating and cooling equipment with heat pumps was part of the capital plan (Table 19).

Scenario:

- Received the electrification incentive
- Did not install or purchase renewable energy to receive the renewable credit (RC)
- Timeline extension shifted the final target to 2034
- Building achieved their 2034 final target with energy use reductions

TABLE 19: EXAMPLE 4 - TIMELINE EXTENSION

Year	Target in EUI	EUI Actual	kBtu Performance	Target in kBtu	kBtu not achieved	Penalty Level	Penalty
2034	53.1	42	6,300,000	7,965,000	-	\$0.35/kBtu	\$0
Cumulative Penalties							\$0

9.2.6.5 Example # 5 – HVAC End of System Service Life Timeline Extension

This example shows a building that was planning to replace HVAC equipment at end of service life in 2034, with the required energy efficiency measures occurring in 2027, and installing a solar array on-site, so they submitted a timeline extension application in 2025. Through the timeline notice approval, prescriptive items were due within 36 months of approval (by 2028 in this instance) and the final target was set for 2035 (Table 20).

Scenario:

- Did not receive the electrification incentive
- Installed renewable energy to receive the renewable credit (RC)
- Timeline extension shifted the final target to 2035
- Prescriptive items were completed in 2027 and paperwork turned in
- Building achieved *their final target with EUI reductions and Renewables Credit (RC)*

TABLE 20: EXAMPLE 5 - TIMELINE EXTENSION AND RENEWABLE CREDIT

Year	Target in EUI	EUI Actual	kBtu Performance	Target in kBtu	kBtu not achieved	Penalty Level	Penalty
2035	48.3	42+RC	5,800,000	7,245,000	-	\$0.35/kBtu	\$0
Cumulative Penalties							\$0

9.2.6.5 Example # 5

This example shows a building that reached their 2032 target and was shifted to maintenance penalty levels (Table 21). This example would also be applicable to MAI buildings in addition to commercial and multifamily buildings. For 2033, the building maintained their EUI target and even performed a little better in 2034. In 2035, the building's energy performance worsened, resulting in a small penalty at the \$0.05/kBtu level. In 2036, the building's performance continued to worsen, more than 5% away from their EUI target, so the penalty was switched back to the target penalty of \$0.30/kBtu. In 2037, the building corrected their energy performance within 5% of the EUI target, they would be switched back to the smaller maintenance penalty level, or even better, no penalties if performance is better than the target.

Scenario:

- Building met their 2032 target and switched to maintenance penalties
- Maintained target for two years but went above 5% threshold in 2036, so target penalty level assessed (5% threshold = 50.7 EUI or 7,605,000 kBtu)

TABLE 21: EXAMPLE 5 - MAINTENANCE PENALTIES

Year	kBtu Performance	Maintenance Target in kBtu	kBtu not achieved	Penalty Level	Penalty
2033	7,245,000	7,245,000	0	\$0.05/kBtu	\$0
2034	7,200,000	7,245,000	0	\$0.05/kBtu	\$0
2035	7,295,000	7,245,000	50,000	\$0.05/kBtu	\$2,500
2036	8,000,000	7,245,000	755,000	\$0.15/kBtu	\$113,250
2037	7,200,000	7,245,000	0	\$0.05/kBtu	\$0

9.2.6.6 Example # 6

This example shows a building that has never submitted a benchmarking report, so CASR does not have the data to complete a typical performance evaluation with the process in Section 8, so a dollar per square foot penalty level was assessed (Table 22).

TABLE 22: EXAMPLE 6 - NEVER BENCHMARKED TARGET PENALTIES

Year	Targets in EUI	EUI Actual	Square Feet	Penalty Level	Penalty
2028	69	NA	150,000	\$10.00 per sq. ft.	\$1,500,000
2032	48.3	NA	150,000	\$10.00 per sq. ft.	\$1,500,000
Cumulative Penalties					\$3,000,000

9.3 Other Possible Fines

A \$2,000 fine may be assessed if: there are inaccuracies in data the Owner has submitted to CASR; the inaccurate data or deliberating withholding information resulted in erroneous energy audits or third-party data verification; or the building's current compliance status is not disclosed to a potential buyer.

CASR reserves the right to audit benchmarking reports, third-party data verifications, or energy audits and inspect the buildings for accurate representation. A violation of inaccurate or missing information includes, but is not limited to, inaccurate energy data, missed energy meters, missed equipment in an energy audit, or the energy auditor signing off on the audit or third-party data verifier not having a required credential or license.

9.3.1 Enforcement Process

If a violation occurs, the following enforcement steps will occur:

1. The building owner and third-party consultant will be issued a warning that requires the corrected information to be submitted within 60 days of the warning notice. If the inaccurate information affects the building's compliance plan, a new compliance plan must also be submitted.
2. If the corrected information is not submitted within 60 days or an extension of that time is not requested, the building owner will be issued a \$2,000 fine in accordance with the penalty schedule in Section 9.3.
3. For every additional 30 days that the information is not corrected, a \$2,000 fine will be assessed.
4. If the violation happens with the benchmarking report used for performance evaluation, the \$2,000 fine will be assessed up to 180 days after the 60-day warning notice period has expired. After that, the building will be assessed a performance target penalty of \$10.00 per square foot based on the Office of the Assessor's gross floor area in square feet on record.

For the third-party verifier or energy auditor, if their verifications or energy audits have received 3 official warnings, their name will be placed on a non-acceptance list and their work will no longer be accepted for compliance purposes. If a company that employs the energy auditor has received 10 official warnings, their company, and any employees that work for that company, will be placed on that non-acceptance list.

9.4 Penalty Schedule

Energize Denver's Task Force recommended that "fines should be somewhat more than the cost of compliance and should be heftier for buildings with an alternate compliance timeline. The compliance obligation and status of the building must be tied to the building with disclosure requirements, an attachment to the deed or a development agreement that attaches to the parcel." The Energize Denver Ordinance enables CASR to assess a civil penalty of "up to \$0.70 for each required kBtu reduction per year that the owner's covered building fails to achieve in that year." *CASR will assess penalties at the minimum level provided in Table 23 so building owners can focus on achieving the final target without maintenance penalties along the way. CASR reserves the right to enforce penalties up to the maximum level.*

TABLE 23: MINIMUM PENALTY SCHEDULE

Type	Penalty Level	Assessment Period
Benchmarking	\$2,000	annually
Failure to correct errors, withholding information, providing inaccurate data, or nondisclosure upon sale	\$2,000	Per violation and may be assessed every 30 days the information is not corrected
Performance Target Penalty if the building has three target year measurement periods; or if the building had met the target previously and is out of maintenance more than 5%; or if they are a newly constructed building	\$0.15/kBtu	2024/2027/2030, then annually if the building has not met the 2030 target; or in 2032 or after
Performance Target Penalty if the building has two target year measurement periods	\$0.23/kBtu	2026/2030 or 2028/2032 then annually if the building has not met the final target
Performance Target Penalty if the building has one target year measurement period due to a timeline extension	\$0.35/kBtu	2030 or 2032, then annually if the building has not met the final target
Performance Target Penalty for existing buildings that have never benchmarked, or the last benchmarking report was before the 2019 baseline (2017 or 2018)	\$10.00/square foot listed by the Office of the Assessor	2026/2030, then annually if the building has not met the final target
Performance Target penalty for timeline extensions submitted after the end of the target year measurement period that needed adjustment	\$0.10/kBtu added to the penalty rate	According to target year measurement period determined in the timeline extension
Maintenance Penalty	\$0.05/kBtu	If the 2032 target has been met, then 2033, then annually assessed if applicable

The full penalty schedule with minimum and maximum levels is in Table 24. To reiterate, Table 24 reflects the maximum penalties, but CASR plans to assess penalties as outlined in Table 23.

TABLE 24: MINIMUM AND MAXIMUM PENALTY SCHEDULE

Type	Minimum Penalty Level	Maximum Penalty Level
Benchmarking	\$2,000	\$2,000
Failure to correct errors, withholding information, inaccurate data, or nondisclosure upon sale	\$2,000	\$2,000
Performance Target Penalty	\$0.15/kBtu	\$0.70/kBtu
Performance Target Penalty – Existing buildings never benchmarked, or the last benchmarking report was before the 2019 baseline (2017 or 2018)	\$10.00/sq. ft.	\$10.00/sq. ft.
Maintenance Penalty	\$0.05/kBtu	\$0.10/kBtu

10. APPEALS

A building owner has the right to appeal a Decision or an Administrative Citation (a Notice or Order). There are several different appeals a building owner could file:

- an appeal of a benchmarking citation,
- an appeal of a performance requirement decision (denial of a target adjustment or alternate compliance option decision), or
- an appeal of a performance requirement administrative citation (notice of violation).

All three processes are outlined in this section. The appeals process for a benchmarking citation or performance requirements decision is simpler and the first step for any building wanting to appeal a benchmarking citation or a CASR decision (such as a denial of a timeline extension). The more robust appeals process that involves preparing and holding a hearing with a hearing officer (Section 10.3) should be used for a building that has already gone through the processes in Section 10.1 or 10.2, or the building wants to appeal a notice of violation where a penalty has been assessed. CASR hopes to work with building owners through all of the flexibility options and processes in Section 5, 6, 7, and 9 before an appeals hearing is needed.

10.1 Benchmarking Citation Appeal

A benchmarking citation can only be appealed if the building has turned in the noncompliant or missing benchmarking report. The building owner should work with the Help Desk to file this past due report and then fill out the online Benchmarking Citation Appeal form with the following information:

1. Petitioner's name, mailing address, telephone number, email address, relationship to building and company name
2. Denver Building ID (DBID) and complete address
3. Copy of the Notice they wish to appeal
4. Provide a detailed reason why the Notice is factually or legally contrary to the ordinance or the city, or the policies or regulations of the office
5. Provide desired outcome or relief requested with specific details
6. Provide any supporting documentation

When a business submits an appeal application, it receives an initial status of "submitted." Within ten business days of submission, City staff conducts an initial review to verify completeness and assess whether the application meets minimum criteria. Applications meeting all requirements are assigned a "pending review" status, while incomplete submissions are marked as "rejected-incomplete." Accepted applications in "Pending Review" status undergo final review within an additional ten business days, culminating in a final designation.

10.2 Performance Requirement Decision Appeal

The building owner has a right to appeal a performance requirement decision, which could include, but is not limited to, a denial of a target adjustment or alternate compliance option decision.

The building representative should fill out the online Performance Requirements Decision Appeal form with the following information:

1. Petitioner's name, mailing address, telephone number, email address, relationship to building and company name
2. Denver Building ID (DBID) and complete address
3. Copy of the Decision they wish to appeal
4. Provide a detailed reason why the decision is factually or legally contrary to the ordinance or the city, or the policies or regulations of the office

5. Provide desired outcome or relief requested with specific details
6. Provide any supporting documentation

The application for appeal will be reviewed by city staff to determine if it is complete.

10.3 Request for Review of a Notice or Order

The building owner has a right to appeal a notice of violation or administrative citation (Section 9.2), a benchmarking citation appeal, or a performance requirement appeal decision (Section 10.2). This section outlines the process that the building owner must follow.

10.3.1 Initiating an Appeal

An appeal is initiated by filing a Petition for Review of a Notice or Order. The Petition, together with a nonrefundable filing fee, must be filed within thirty (30) days from the date of service of the Notice or Order being appealed, or within a time period outlined in the Notice or Order. The filing fee for an appeal is \$25.00. Payments by check must be payable to the Manager of Finance. All documents to be filed with the Director must be submitted through the correct online form or mailed to Office of Climate Action, Sustainability, and Resiliency, Attn: Energize Denver team, 201 W. Colfax Avenue, Dept 704, Denver, CO 80202, or other address as directed on its website. Timely filing of the Petition and payment of the filing fee are jurisdictional prerequisites to an appeal.

10.3.1.1 *Petition for Review*

All petitions, briefs, and other papers must be written or typed, and if any of these papers are illegible, the Manager may refuse to accept the filing. No particular form of petition is required, provided the petition includes:

1. Petitioner's name, mailing address, and telephone number.
2. If Petitioner has legal representation, the name, mailing address, and telephone number of that representative.
3. The Code provision(s) and, if any, the rule and regulation at issue; the dollar amount in controversy; and the time during which the matter at issue accrued or occurred.
4. A copy of the Notice or Order under appeal.
5. The reason(s) Petitioner believes the Notice or Order is factually or legally contrary to the ordinances of the city, or the policies and regulations of the department.
6. A statement of the relief requested (i.e., outcome desired).
7. If appropriate, any exhibits (including any drawings, floor plans, or pictures) supporting Petitioner's position.
8. The signature of the Petitioner or Petitioner's legal representative.

If a legible petition is timely filed with the filing fee and substantially includes the information listed in this section, the hearing clerk must accept the petition. If the petition is illegible or does not substantially comply, the hearing clerk may refuse to accept the filing, but must provide written notice to the petitioner describing the deficiency.

10.3.2 Representation

A natural person may represent himself or herself or be represented by an attorney admitted to practice in any of the United States. If the Petitioner is not a natural person or sole proprietor, it must be represented by an attorney admitted to practice in any of the United States unless the Director allows a shareholder, member, partner, board member, or officer to represent the business entity. In this case, the representative of the business entity must submit a properly executed power of attorney at or before the hearing.

10.3.3 Responsibilities of the Director and/or Hearing Officer

- Determination of Each Appeal - The Director and/or Hearing Officer will conduct a hearing on each accepted Petition, including those submitted for determination based on written argument and written statement of facts.
- Assignment of Hearing Officer - the Director, at their sole discretion, may delegate the conduct of the hearing or the review of a matter submitted for determination based on written argument and written statement of facts to a Hearing Officer.
- Duties and functions - the Hearing Office and/or Manager will perform the duties and functions necessary and incidental to determining the matter, hearing all evidence, examining all documents, ruling on evidentiary questions, and generally conducting a quasi-judicial proceeding in conformance with the Code, these Rules, and other applicable rules and regulations.
- Subpoenas. Upon request by any party, the Director and/or Hearing Officer may issue a subpoena. The party requesting the subpoena must serve it upon the person whose attendance is required and provide notice to all other parties and interested persons in accordance with Rule 45 of the Colorado Rules of Civil Procedure. All costs related to the subpoena, including witness and mileage fees, must be paid by the requesting party in accordance with Rule 45.

10.3.4 The Hearing

10.3.4.1 *Scheduling the Hearing Date*

- Generally, hearings will be scheduled in the order petitions are filed but may be scheduled out of order as the hearing clerk finds appropriate. If requested, the hearing clerk may grant each party one rescheduling request. At the request of either party, the Director may grant continuances for good cause shown.
- No later than ten (10) days before the hearing, the hearing clerk must provide written notice of the date, time, and place of all hearings to the parties. Written notice must be sent to the Petitioner via first class mail at the address specified in the Petition and to the Manager of the appropriate division.

10.3.4.2 *Prehearing Activities*

- Ex Parte Communications. All oral and written communications between any party with the Director or the Hearing Officer that are not on the record, concern the subject matter of the appeal, and are made without the other party present or copied on written correspondence are prohibited.
- CASR Response. CASR may file a response to the Petition and provide other information to the Hearing Officer that it believes will assist in deciding the matter. The response is due within 14 days of the Office's receipt of the Petition.
- Petitioner's Appearance/Failure to Appear. Any Petitioner who fails to appear at a scheduled hearing waives the right to a hearing and adjudication of issues related to the hearing, provided that notice of the hearing was mailed in the time and manner set forth in Rule 7.5(E)(v). Failure to appear at a hearing that is noticed in accordance with those requirements, may result in dismissal of the Petition and affirmation of the Notice or Order.
- Prehearing Statement. At the request of any member or upon a motion from a party, the Director may require the parties to file a prehearing statement. The purpose of a prehearing statement is to define the issues to be presented; identify the witnesses and exhibits to be presented, the time required for the hearing; and disclose generally the nature of the testimony to be presented to allow a fair hearing of the issues. The prehearing statement must be filed at least five (5) business days before the hearing date, or as otherwise ordered by the Hearing Officer. The prehearing statement must present the issues raised by the Petition, agreed and disputed facts, copies of exhibits not included with the Petition, names

of witnesses with a brief statement summarizing their testimony, and if either party expects that more than 15 minutes will be needed to present their case, a request for a specific amount of time. Petitioner's exhibits must be numbered and the Office's exhibits must be lettered. If a prehearing statement is required and a party fails to list witnesses or to provide copies of exhibits to the prejudice of the other party or the Hearing Officer's consideration of the issues, the Hearing Officer may disallow testimony by unlisted witnesses and may refuse to admit unlisted exhibits into evidence, except for purposes of rebuttal.

10.3.4.3 *Burden of Proof*

- Notices of Violation by the Manager are presumed to be correct. The Notice serves as prima facie evidence of the existence of the violation.
- The Petitioner has the burden of persuasion and must prove by a preponderance of the evidence (presented at the hearing or submitted by written brief and supporting material) that the Notice or Order is legally contrary to the applicable ordinances, rules, and regulations or that the facts presented do not show a violation of the applicable ordinance or rules and regulations.
- For procedural efficiency, the order of proceedings may be altered to require the Office to present its case in support of the Notice or Order first. The burden of persuasion, however, remains with the Petitioner to show the correctness of its position by a preponderance of the evidence.
- Expert Witnesses. A witness intending to give opinion testimony must first be qualified as an expert.
- Recordings and Transcripts. All hearings must be recorded or transcribed. A copy of the recording or transcript of a recording will be provided at the expense of the party who requests it.

10.3.4.4 *Hearing Order of Proceedings*

- Docket call by the Hearing Officer.
- Administration of Oath: All oral testimony must be given under oath administered by the Hearing Officer in substantially the following form: "Do you solemnly swear or affirm that the testimony you are about to give is the truth, the whole truth, and nothing but the truth?" with a required affirmative response.
- Opening statement by a representative of the Office, unless waived or reserved until the opening of CASR's case
- Opening statement by Petitioner, unless waived
- Presentation of testimony and other evidence by Petitioner, allowing cross-examination by CASR (exhibits must be lettered for identification)
- Presentation of testimony and other evidence by CASR with cross-examination by Petitioner (exhibits must be numbered for identification)
- Rebuttal testimony and evidence, if any
- Sur-rebuttal testimony and evidence, if the Hearing Officer chooses
- Argument, if is desired by the Hearing Officer
- Closing argument by Petitioner summarizing the evidence, legal basis, and argument in support of its position. If the Petitioner chooses not to present a closing argument, none will be allowed by CASR.
- Closing argument by CASR summarizing the evidence, legal basis, and argument in support of its position.
- Instead of or in addition to argument, the Hearing Officer may request the submission of written briefs.

10.3.4.5 *Presentation of Case at Hearing*

- Time Allowed. The Petitioner and the Department will each have fifteen minutes to present their respective cases (opening statement, presentation of evidence, rebuttal evidence, and

closing statement) to the Hearing Officer unless one of the parties has requested more time to present its case. Cross-examination time is not included in the fifteen-minute time limit. A request for additional time must be made in the prehearing statement if one is required. Otherwise, the request must be made in writing at least seven days before the hearing. In determining whether and how much additional time to allow, the Hearing Officer will consider the complexity of the case, the needs of due process, and fairness to the Parties. This Rule is intended to afford a full and fair hearing of each Petition in an orderly and expeditious manner that will allow for prompt hearing of Petitions.

- Copies. Copies made by printers and by duplicating and facsimile machines may be admitted into evidence or substituted in evidence in place of original documents.
- Electronic Documents. An electronic document, a paper copy of an electronic document, or a paper copy of a document bearing an electronic signature may be admitted into evidence or substituted in evidence in place of original documents.

10.3.4.6 *Submission on Written Briefs*

A petitioner may choose to submit the case on written briefs, supporting data, affidavits, or stipulated facts rather than through oral testimony at a hearing. If the Petitioner chooses to submit a case on written briefs:

- He or she must provide written notice of this election to the Manager at least seven (7) days before the hearing;
- CASR is limited to submitting its position in writing.
- The Hearing Officer will establish a briefing schedule and provide written notice of it to the parties.

10.3.5 *Recommended Appeal Decision*

The Hearing Officer will make a written Recommended Appeal Decision, which must be sent to Petitioner by first class mail, postage prepaid and provided to CASR within 30 days of the date of the hearing.

Possible outcomes:

- If Petitioner did not carry its burden of persuasion, the Hearing Officer may: uphold the Notice or Order; uphold, suspend, or reduce the civil penalty; and require payment of any outstanding assessed civil penalties and costs by a specified date.
- If Petitioner carried its burden of persuasion, the Hearing Officer may dismiss the Notice or Order and overturn the assessment of civil penalties.

Unless a party timely requests the Director to review a Hearing Officer's Recommended Appeal Decision, the Recommended Appeal Decision becomes the Decision of the Director on the date it is served upon Petitioner by personal service, or if served via U.S. Postal Service, ten days after it is sent first class mail, postage prepaid.

10.3.6 *Petition for Director Review of Recommended Appeal Decision*

Any party may file a Petition for Director Review of the Hearing Officer's Recommended Appeal Decision. The Petition must be filed with the Director within ten (10) days of mailing of the decision. For the purpose of this filing requirement, for a Petition sent via first class mail, postage prepaid, or via overnight delivery service, the date of filing will be the date postmarked or delivered to the City, respectively.

No particular form of Petition for Director Review of the Hearing Officer's Recommended Appeal Decision is required, provided that the following information is set forth in writing:

- The case number;

- A summary of the party's objections to the Hearing Officer's findings of fact, conclusions of law, and Recommended Appeal Decision;
- A statement of the relief requested;
- The name, address and telephone number of the party seeking Director review of the Recommended Appeal Decision, and the name, address, and telephone number of that party's legal representative, if any, authorized to present them in the matter; and,
- The signature of the party seeking Director review of the Recommended Appeal Decision or of that party's legal representative.

The Director is not bound by a Hearing Officer's Recommended Appeal Decision; the Director's review of Recommended Appeal Decisions, however, is limited to the administrative record established at the underlying hearing before the Hearing Officer.

The administrative record includes all filings and documents provided to the Hearing Officer before and during the hearing. If the matter was submitted for determination on written briefs, the administrative record includes the Recommended Appeal Decision, filings and documents submitted. An index of the administrative record will be provided to the parties at the time the record is provided to the Director. The administrative record should be provided to the Director at least seven days before the meeting at which it is scheduled for Director review.

10.3.7 Final Decision; Compliance

When the Director issues a decision either after hearing or determining an appeal in the first instance or after the Director reviews a Recommended Appeal Decision, its decision becomes the Final Decision that is subject to review under Rule 106(a)(4), C.R.C.P. If a Petition for Director review of a Recommended Appeal Decision is not filed within ten (10) days, the Recommended Appeal Decision becomes the Final Decision. All Final Decisions must be complied with. If a Final Decision includes a conditional waiver of any civil penalty, in whole or in part, and Petitioner does not fully comply with the conditions, the civil penalty is automatically reinstated in its entirety without further Director action.

Appendix A – Building Type Targets

These Building Type Targets were developed using 2019 Benchmarking and national CBECS data. Building types with insufficient local benchmarking or CBECS data have a final target that is a 30% energy reduction from their baseline EUI. If additional building types are found, or new buildings of types without specific final targets in Table 25 are built, then CASR will set targets for such buildings based on best available local and national data.

TABLE 25: BUILDING TYPE TARGETS

ENERGY STAR Portfolio Manager Building Type	Final Target measured in EUI (kBtu/sf/yr)
Adult Education	37.2
Ambulatory Surgical Center	60.7
Aquarium	30% EUI Reduction
Automobile (Vehicle) Dealership	42.8
Bank Branch	63.6
Bar/Nightclub	86.6
Barracks	46.3
Bowling Alley	50.5
College/University	60.6
Convention Center	30% EUI Reduction
Courthouse	51.2
Distribution Center	25.4
Enclosed Mall	45.6
Fast Food Restaurant	311.3
Financial Office	48.3
Fire Station	45.6
Fitness Center/Health Club/Gym	50.5
Food Sales	144.3
Food Service	76.9
Hospital (General Medical & Surgical)	165.2
Hotel	61.1
Ice/Curling Rink	30% EUI Reduction
Indoor Arena	30% EUI Reduction
K-12 School	48.0
Laboratory	153.9
Library	52.9
Lifestyle Center	66.6
Mailing Center/Post Office	46.5
Manufacturing/Industrial Plant	52.9
Medical Office	69.0
Movie Theater	53.2
Multifamily Housing	44.2
Museum	30% EUI Reduction

Non-Refrigerated Warehouse	27.2
Office	48.3
Other	49.2
Other - Education	37.2
Other - Entertainment/Public Assembly	30% EUI Reduction
Other - Lodging/Residential	51.3
Other - Mall	60.3
Other - Public Services	49.2
Other - Recreation	50.5
Other - Restaurant/Bar	194.1
Other - Services (Shoe, Locksmith, Etc.)	34.6
Other - Specialty Hospital	165.2
Other - Technology/Science	30% EUI Reduction
Outpatient Rehabilitation/Physical Therapy	60.7
Performing Arts	53.2
Personal Services (Health/Beauty, Dry Cleaning, etc.)	34.6
Police Station	45.6
Pre-school/Daycare	38.9
Prison/Incarceration	83.0
Refrigerated Warehouse	63.9
Residence Hall/Dormitory	46.3
Residential Care Facility	63.3
Restaurant	194.1
Retail Store	43.5
Roller Rink	50.5
Self-Storage Facility	7.7
Senior Care Community	63.3
Senior Living Community	63.3
Social/Meeting Hall	33.0
Stadium (Closed)	75.3
Stadium (Open)	75.3
Strip Mall	66.6
Supermarket/Grocery Store	164.4
Transportation Terminal/Station	30% EUI Reduction
Urgent Care/Clinic/Other Outpatient	60.7
Vehicle Repair Services	34.6
Veterinary Office	60.7
Vocational School	37.2
Wholesale Club/Supercenter	43.5
Worship Facility	42.1
Zoo	30% EUI Reduction

Appendix B – Target Adjustment Order of Operations and Values

Target adjustments are based on benchmarking and normalization methods from EPA’s ENERGY STAR Score. The adjustments consider variations of operations or characteristics that the site EUI value does not register, such as 24-hour call operations or indoor heated swimming pools. At the time of publication, there is no industry-wide standardized approach for normalizing site energy for business characteristics. EPA relies on source energy to enable “apples-to-apples” comparisons of the efficiency of buildings that use different fuel mixes and has not explored this type of normalization for site energy. The EPA plans on releasing additional technical guidance on normalization methods for jurisdictions implementing building performance standards, which would increase the number of target adjustments CASR may allow in the future.

Utilizing EPA’s Technical reference for swimming pools, parking, and guidance on operating hour binning, targets will be adjusted according to the charts below. The Electrification Adjustment does not follow EPA guidance, but instead is a credit to reward a building for electrifying their building.

General order of operations for calculating target adjustments and incentives are:

1. Standard Target Adjustments
 - a. Square footage correction
 - b. Building type classification change
 - c. Mixed-use targets based on multiple building types
 - d. Operating hours
 - e. Parking
 - f. EV Charging Station
 - g. Heated swimming pool
 - h. Data Center
2. Adaptive Reuse Adjustment
3. Percent Reduction Target Adjustment
4. Non-emitting Thermal Energy Network Incentive
5. Electrification Incentive

If the building is eligible for a customized target adjustment (Historical and Unique Building Target Adjustment or the Custom Target), the Non-emitting Thermal Energy Network or Electrification Incentives will be accounted for as part of the adjustment.

B.1 OPERATING HOURS

Operating hour adjustments are currently available for only the building types listed in Table 26-31. As Denver benchmarking data was examined using [EPA methodology](#), the eligible building types these tables were the only ones where operating hours showed a statistically significant effect on site energy use intensity.

TABLE 26: OFFICE

Operating Hours	Final Target in EUI
0-60	48.3 (normal target)
61-80	51.4
81-100	57.3
101+	60.4

TABLE 27: RETAIL STORE

Operating Hours	Final Target in EUI
0-80	43.5 (normal target)
81-95	48.0
96-105	55.9
105+	58.6

TABLE 28: WORSHIP FACILITY

Operating Hours	Final Target in EUI
0-50	42.1 (normal target)
51-60	44.1
61-90	51.2
91+	56.7

TABLE 29: NON-REFRIGERATED WAREHOUSE

Operating Hours	Final Target in EUI
0-65	27.2 (normal target)
66-75	27.9
76-95	29.7
95+	30.9

TABLE 30: REFRIGERATED WAREHOUSE

Operating Hours	Final Target in EUI
0-65	63.9 (normal target)
66-75	64.4
76-95	65.6
95+	66.4

TABLE 31: SUPERMARKET/GROCERY STORE

Operating Hours	Final Target in EUI
0-100	164.4 (normal target)
101-120	170.4
121-145	183.3

B.2 HEATED SWIMMING POOLS

The adjustments in Tables 32-33 are taken from the ENERGY STAR Score technical reference for swimming pools and adjusted to Site EUI metrics. The School property type in this chart includes K-12 School, College/University, and Fitness Center/Health Club/Gym property types.

Calculation:

- Step 1: (Final Target x Gross Sq. Ft.) + (Pool kBtu) = Adjusted Target kBtu
- Step 2: Adjusted Target kBtu/Gross Sq. Ft. = Adjusted Final Target

TABLE 32: INDOOR HEATED SWIMMING POOL ADJUSTMENTS

Property Type	Recreational (20 yds x 15 yds)	Short Course (25 yds x 20 yds)	Olympic (50 m x 25 m)
School	1,160,077 kBtu/yr.	1,933,462 kBtu/yr.	5,781,480 kBtu/yr.
Hotel	925,231 kBtu/yr.	1,542,051 kBtu/yr.	4,611,075 kBtu/yr.
Other	775,964 kBtu/yr.	1,293,273 kBtu/yr.	3,867,174 kBtu/yr.

TABLE 33: OUTDOOR HEATED SWIMMING POOL ADJUSTMENTS

Property Type	Recreational (20 yds x 15 yds)	Short Course (25 yds x 20 yds)	Olympic (50 m x 25 m)
All	68,124 kBtu/yr.	113,540 kBtu/yr.	339,513 kBtu/yr.

*[Technical Reference: Swimming Pools and the ENERGY STAR Score in the U.S. and Canada](#)

B.3 PARKING

Calculation:

- Step 1: Gross Sq. Ft. of Parking Area x Parking Area Site Energy = Parking kBtu Adjustment
- Step 2: (Final Target x Gross Sq. Ft.) + (Parking kBtu Adjustment) = Adjusted Target kBtu
- Step 3: Adjusted Target kBtu/Gross Sq. Ft. = Adjusted Final Target

TABLE 34: PARKING ADJUSTMENTS

Parking Type	End Use	Parking Area Site Energy
Open Parking	Lighting	2.989 kBtu/ft ² /yr.
Partially Enclosed (No Walls)	Lighting	8.967 kBtu/ft ² /yr.
Completely Enclosed Parking (Walls)	Lighting	8.967 kBtu/ft ² /yr.
	Ventilation	2.39 kBtu/ft ² /yr.
	Heating (if present)	10.374 kBtu/ft ² /yr. (including HDD _{Base40F})
	If more than one end use is present	Add the kBtu/ft ² /yr. adjustments together

*[Technical Reference: Parking and the ENERGY STAR Score in the U.S. and Canada](#)

B.4 CLASS B DATA CENTERS

Building with Class B data centers, meaning data center square footage is less than 15% of the gross floor area of the building, are eligible for a kBtu adjustment to their final target based on the square footage of the data center. When determining the square footage of the data center, building owners should use the definition in the glossary. The value of the adjustment is 2,000 kBtu/ft²/yr.

*[Technical Reference: Data Center and ENERGY STAR Score](#)

B.5 BUILDINGS WITH MORE THAN 3 PROPERTY TYPES

ESPM is designed so that only the largest three property type's square footage information is transmitted to the city in the Benchmarking Report. To calculate the appropriate mixed-use target for buildings with more than three property types, additional information must be submitted. The target adjustment does not have a specific value, but uses weighted calculations based on each building type square footage.

B.6 ELECTRIC VEHICLE (EV) CHARGING STATIONS

If the EV charging station is on the main meter and NOT sub-metered, the following target adjustment (Table 35) accounts for average use in three different types of charging stations. Level 1 and 2 charging stations that can be counted as the number of vehicles which can be simultaneously charged at that station. For example, if the building has a Level 2 charging station can charge two cars simultaneously, the benchmarker will count that as two Level 2 charging stations in ESPM and in the target adjustment.

TABLE 35: EV CHARGING ADJUSTMENTS

Charging Station Type	EV Charging Site Energy Usage (U.S.)
Level 1	8,663 kBtu/station/yr.
Level 2	8,663 kBtu/station/yr.
DC Fast	25,549 kBtu/station/yr.

[*Technical Reference: Electric Vehicle Charging](#)

Appendix C – End of System Service Life

This chart presents the system service life that CASR would consider for a particular piece of equipment to extend a building’s compliance timeline (Table 36). This does not mean the building owner is required to replace the equipment at the time listed in the chart. Building owners may experience longer or shorter service life depending on their maintenance practices. The chart was created by consulting multiple ASHRAE data sources, calculating an average lifespan per equipment, and adding additional time. If there is a specific type of equipment missing from the chart, then the average service life for that equipment’s category should be used.

TABLE 36: SERVICE LIFE CHART FOR TIMELINE EXTENSIONS

Equipment Item	Full Service Life in Years	50% Thresh-hold	Equipment Item	Full Service Life in Years	50% Thresh-hold
Air Conditioners	16	8	Fans	22	11
Window unit	11	5	Centrifugal	28	14
Residential single or Split package	17	8	Axial	22	11
Commercial through the wall	17	8	Propeller	17	8
Water-cooled package	17	8	Ventilating roof-mounted	22	11
Heat Pumps	17	8	Coils	20	10
Residential/Commercial air-to-air	17	8	DX, water, or steam	22	11
Commercial water-to-air	17	8	Electric	17	8
Rooftop Air Conditioners	20	10	Heat Exchangers	26	13
Single-zone	20	10	Reciprocating Compressors	22	11
Multi-zone	20	10	Packaged Chillers	34	17
Boilers, Hot Water	24	12	Reciprocating or centrifugal	25	12
Gas fired	24	12	Absorption	43	21
Oil fired	22	10	Cooling Towers	28	14
Electric	31	15	Galvanized metal	22	11
Burners	23	11	Wood	26	13
Furnaces gas or oil fired	20	10	Ceramic	37	18
Unit Heaters	18	9	Stainless Steel	26	13
Gas or electric	14	6	Air-cooled Condensers	22	11
Hot water or steam	22	11	Evaporative Condensers	22	11
Domestic Water Heater	10	5	Insulation	22	11
Radiant Heaters	27	13	Molded	20	10
Electric	24	12	Blanket	24	12
Hot water or steam	30	15	Pumps	18	9
Air Terminals	27	13	Base-mounted	22	11
Diffusers, Grilles, and Registers	30	15	Pipe-mounted	12	6
Induction and fan coil units	30	15	Sump and well	12	6
VAV and double-duct boxes	22	11	Condensate	17	8
Air Washers	19	9	Close-coupled, end-suction	21	10
Ductwork	30	15	Frame-mounted, end-suction	21	10
Dampers	22	11	Split-case, multistage pump	21	10
Packaged DX	19	9	Split-case, single stage	32	16
Air-cooled	17	8	Vertical in-line	21	10
Rooftop	20	10	Air Handling Units	27	13
Water-cooled	19	9	Constant volume	30	15
Packaged Terminal	30	15	Dual duct	40	20
Air conditioner or heat pump	30	15	Multi-zone	26	13
Steam Turbines	33	16	Single-zone	20	10
Electric Motors	20	10	Variable air volume	22	11
Motor Starters	19	9	Variable volume, variable temp	23	11
Electric Transformers	33	16	Reciprocating Engines	22	11

Appendix D – Timeline Extension Compliance Plan Template

Copy this template language into a word document to complete. Submission of this compliance plan in the application form should be in Word or PDF format. This compliance plan is intended to give CASR a summary look into what energy efficiency measures, operations and maintenance improvements and renewable plans are going to be completed to meet the final target and the implementation timeline. The compliance plan should be a maximum of 5 pages.

The Compliance Plan (Word or PDF document for submission) must cover four things:

- Overview of all energy efficiency measures, operations and maintenance improvements, and/or renewable plan necessary to reach the final target
 - If measures listed in the audit are not included in the overview, an explanation as to why they will not be performed needs to be included.
 - Projected timeframe of implementation that will account for the reasoning of timeline extension
 - Proposed milestone reporting plan for the prescriptive items (Simple Payback of less than 10 years) that will be completed in lieu of the interim target. An example could be turning in invoices to prove the certain EEMs were installed by a certain date.
1. Overview of all energy efficiency measures, operations and maintenance improvements, and/or renewable plans necessary to reach the final target
 - a. Operations and Maintenance
 - i. Explanation of what actions you will take in operations and maintenance to maximize building performance
 - ii. Explain prior work/monitoring and how you plan to adjust O&M in the future once upgrades are performed
 - iii. Examples: retro-commissioning, addressing reactive/proactive/predictive maintenance, continuous improvement models, staff training, green leasing practices, improving building automation systems
 - b. Energy efficiency measures with a simple payback of less than 10 years
 - c. Measures with a simple payback of more than 10 years
 - d. Energy Efficiency Measures listed in Energy Audit but not included in upgrade list
 - i. Include an explanation of why these items are not being included in the proposed upgrades
 2. Projected implementation year of simple payback (less than 10 years) energy efficiency measures (EEM) implementation
 - a. Create a timeline and list each item and its proposed time
 - b. Explanation of why items cannot be upgraded prior to target measurement periods
 - c. Reference any O&M improvements
 - d. Outline simple payback measures less than 10 years and planned implementation year
 3. Projected implementation year of timeline extension reasoning
 4. Proposed Milestone Reporting Plan
 - a. Based on the proposed timeline, provide interim target measurement periods or points in time to turn in progress documentation for evaluation and updates on progress with supporting documentation requirements. These progress reports are an opportunity for a building owner to communicate challenges and work with CASR to adjust the plan accordingly to achieve the energy efficiency target.

CASR encourages using tables when demonstrating energy efficiency measures, implementation timeframes and energy savings. Sample Table:

Energy Efficiency Measure	Simple Payback	Estimated EUI Reduction	Implementation year	Reason for Extension

Appendix E – Energy Service Capacity Constraints Email Template

If Xcel Energy has informed you that it does not have capacity to serve your project, the City recommends that you request that Xcel Energy provide answers to the questions below. Collecting this information and providing it to City staff enables Denver to track capacity constraints which will allow us to better inform future policy recommendations.

Template

Hello <Xcel Energy Representative>,

Thank you for your time reviewing our project, and we appreciate the initial information that you have provided. We are, however, concerned to hear that there is insufficient capacity to serve our project. Would you be able to provide the additional information below related to this issue? This additional information will help us understand the constraint and the requirements for advancing our project. Thank you in advance.

1. What equipment is projected to experience the capacity constraint? (e.g., service-level transformer, main feeder, substation-level transformer, etc.)
2. For each piece of equipment expected to experience a capacity constraint, what is the maximum rated capacity (i.e., MW, MVA, kW, or kVA)? (e.g., “The transformer is rated at 150 kVA.”)
3. What does Xcel Energy consider to be the peak demand addition associated with this project? (e.g., “The addition is 50 kW.”)
4. Please identify the amount of load (i.e., kW or MW) that will exceed the maximum rated capacity of any equipment due to this project. (e.g., “This project exceeds available capacity on the transformer by 25 kW.”)
5. Please state the recommended equipment or grid upgrade needed to alleviate the constraint. (e.g., “The transformer must be replaced with one with a higher capacity rating.”)
6. What is the estimated cost of each recommended addition or upgrade, and who is liable for the cost? (e.g., “The estimated cost to replace the transformer is \$75,000. The customer is required to pay x% of the cost, while Xcel Energy will pay y%.”)
7. What is Xcel Energy’s estimate for when it will be able to complete the necessary additions or upgrades? (e.g., “Xcel Energy will need 12 months to complete the upgrades.”)

Appendix F – Residential Condominium Reserves Compliance Plan Template

Note: If a condominium needs a timeline extension for any other reason than funding limitations, this HOA should use the Timeline Extension pathway. If the HOA needs more than one reason, then should consult the help desk on how to combine the two alternate compliance options.

Copy this template language into a word document to complete. Submission of this compliance plan in the application form should be in Word or PDF format. This compliance plan is intended to give CASR a summary look into funding constraints, energy efficiency measures, operations and maintenance improvements and renewable plans are going to be completed to meet the final target and the implementation timeline. The compliance plan should be a maximum of 5 pages.

The Residential Condominium Reserves Compliance Plan (Word or PDF document for submission) must cover four things:

- Overview of financial limitations and fundraising plan to overcome limitations
 - Overview of all energy efficiency measures, operations and maintenance improvements, and/or renewable plan necessary to reach the final target
 - Proposed milestone reporting of common area, HOA -controlled EEMs with less than a 5-year Simple Payback
 - Individual homeowner energy efficiency upgrade plan
1. Overview of financial limitations (or Fundraising Plan)
 - a. Explanation on why extra time is needed to raise the funds, what funding is needed, how the HOA will collect the funds, and the timeline needed. Supporting documentation could include a copy of the reserve study, current dues or assessments collected, and a financial analysis of the plan.
 2. Overview of all energy efficiency measures, operations and maintenance improvements, and/or renewable plans necessary to reach the final target
 - a. Operations and Maintenance
 - i. Explanation of what actions you will take in operations and maintenance to maximize building performance
 - ii. Explain prior work/monitoring and how you plan to adjust O&M in the future once upgrades are performed
 - iii. Examples: retro-commissioning, addressing reactive/proactive/predictive maintenance, continuous improvement models, staff training, green leasing practices, improving building automation systems
 - b. Energy efficiency measures with a Simple Payback of less than 5 years
 - c. Measures with a Simple Payback of more than 5 years
 - d. Energy Efficiency Measures listed in Energy Audit but not included in upgrade list
 - i. Include an explanation of why these items are not being included in the proposed upgrades
 3. Proposed milestone reporting of common area, HOA-controlled EEMs with less than a 5-year Simple Payback
 - a. Create a timeline with each item and its proposed upgrade year, must be within 36 months of the approved plan
 - b. Reference any O&M improvements
 4. Individual homeowner energy efficiency upgrade plan A timeline for each individual homeowner to complete energy efficiency upgrades in their space, how that information will be collected, and submitted to CASR. A homeowner may also present their plan to purchase a long-term renewable subscription in lieu of replacing equipment or completing energy efficiency measures.

CASR encourages using tables to demonstrate energy efficiency measures, implementation timeframes and energy savings. Sample Table:

Energy Efficiency Measure	Simple Payback	Estimated EUI Reduction	Implementation year	Reason for Extension

Appendix G – Best Practices

- AIA [Guide to Building Lifecycle Assessment in Practice](#)
- ASHRAE [Standard 100-2018](#) with [addendum a](#)
- ASHRAE [Standard 211-2018](#)
- California Commissioning Collaborative [Commissioning Guide: Existing Buildings](#)
- [Database of State Incentives for Renewables & Efficiency](#) (DSIRE)
- Enterprise [Green Communities Program](#)
- IMT [Green Lease Leaders Library](#)
- LBNL [Integrated System Packages and Energy Analytics](#)
- New Buildings Institute [Zero Energy Performance Targets for New Construction](#)
- NREL [Handbook for Planning and Conducting Charrettes for High-Performance Projects](#)
- NREL [Strategies for 50% Energy Savings in Large Office Buildings](#)
- NREL [ComStock](#)
- RMI, BEEEX, ULI, NYSERDA - [Retrofit Playbook](#)
- RMI [Deep Energy Retrofits Using Energy Savings Performance Contracts: Success Stories](#)
- RMI [The Retrofit Depot](#)
- Urban Land Institute-Heitman Report: [“Change is Coming: Climate-risk Disclosures and the Future of Real Estate Investment Decision-making”](#)
- US DOE [Better Buildings Solution Center](#)
- US DOE [Engaging Tenants in Energy Efficiency Resources](#)
- US EPA [ENERGY STAR® Portfolio Manager®](#)
- US DOE [Federal Energy Management Program Tools](#)
- US EPA [ENERGY STAR Buildings](#)
- WBDG [Comprehensive Facility Operations & Maintenance Manual](#)
- WBDG [Planning and Conducting Integrated Design Charettes](#)
- WBDG [Project Delivery Teams](#)

Appendix H – Document Links

Energize Denver Help Desk Resources

- [Energize Denver Hub](#)
- 1-844-536-4528
- Email: energizedenver@denvergov.org
- Energize Denver [Performance Requirements Look Up Tool](#) - lookup.energizedenver.org

Colorado Building Performance

- Website: energyoffice.colorado.gov/bpc

Legal Documents

- Denver Revised Municipal Code, Chapter 10, Article XIV

Forms Links

- [Find a Form](#)
- [Demolition Exemption for Benchmarking and Performance Requirements form](#)
- [Confidential Data Request Form](#)
- *All forms to be added in final version*

Guides & Resources Links

- Resources for Building Owners and Managers
- [Benchmarking Requirements](#)
- [Benchmarking User Guide – Xcel Energy](#)
- [Benchmarking EV Charging Stations – Portfolio Manager](#)
- [EV Charging – Portfolio Manager](#)
- [Swimming Pool – Portfolio Manager](#)
- [Parking – Portfolio Manager](#)
- [What constitutes a campus? – Portfolio Manager](#)
- MAI Benchmarking Custom Metric
- [Energize Denver Benchmarking Map](#)
- [Energize Denver Performance Lookup Tool](#)
- [Building Performance Forecasting Calculator](#)
- [Open Data Catalog](#)
- [Energize Denver Benchmarking Fields](#)
- [Confidentiality Statement](#)
- [Third Party Data Verification Guide](#)
- [Sample Data Verification Checklist](#)
- [Percent Reduction Analysis](#)
- [Creating Compliance Pathway](#)
- [Community Planning and Development](#)
- [Historic Landmarks and Districts list](#)
- [National or Colorado State Register of Historic Places](#)
- [Audit Requirements](#)
- [Audit Template tool](#)

- [Audit Template directions](#)
- [Audit Template Import Spreadsheet](#)
- [Responding to Capacity Constraints](#)

Financial Resources

- [Denver Commercial Building Heat Pump Rebates](#)
- [Database of State Incentives for Renewables & Efficiency \(DSIRE\)](#)