

BY AUTHORITY

ORDINANCE NO. 20211310
SERIES OF 2021

COUNCIL BILL NO. CB21-1310
COMMITTEE OF REFERENCE:
Safety, Housing, Education, & Homelessness

A BILL

For an ordinance amending the Revised Municipal Code of the City and County of Denver to require energy performance and greenhouse gas emissions reductions in existing commercial and multifamily buildings and future electrification requirements for existing buildings.

WHEREAS, the City and County of Denver adopted a goal to reduce its greenhouse gas emissions to 1990 levels by 2020 and to reduce its greenhouse gas emissions to 100 percent below 2005 levels by 2040 for existing buildings in order to create a more sustainable future for the City and County of Denver; and

WHEREAS, the energy used in existing commercial and multifamily buildings constitutes the largest source of greenhouse gas emissions in the City and County of Denver; and

WHEREAS, in order to achieve its greenhouse gas emissions reduction goal, the City and County of Denver has set a target to reduce the greenhouse gas emissions of commercial and multifamily buildings to zero by the end of 2040; and

WHEREAS, increasing energy efficiency and building performance of existing buildings can also have significant benefits for the economy by reducing operating costs for building owners and tenants, increasing the value of buildings, and reducing the energy burden for under-resourced communities; and

WHEREAS, renewable heating and cooling (electrification) of existing buildings through the use of efficient heat pump technology protects Denver from climate change by reducing greenhouse gas emissions through renewably powered electric heat while improving building occupant health and safety by eliminating the potential for future carbon monoxide leaks from gas equipment and eliminating safety risks associated with gas combustion.

NOW, THEREFORE, BE IT ENACTED BY THE COUNCIL OF THE CITY AND COUNTY OF DENVER:

Section 1. Chapter 4, Section 2 of the Denver Revised Municipal Code, entitled "Definitions," shall be amended to delete the stricken words as follows:

"Sec. 4-2. Definitions.



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1 The following definitions shall apply in the interpretation and enforcement of this chapter and all rules
2 and regulations adopted hereunder:

3 (1) *Air contaminant or air pollutant*: Any fume, odor, smoke, particulate matter, vapor, gas or any
4 combination thereof, but not including water vapor or steam condensate.

5 (2) *Air contamination source*: Any source whatsoever at, from or by reason of which there is
6 emitted or discharged into the atmosphere any air contaminant.

7 (3) *Air pollution*: The presence in the outdoor atmosphere of one (1) or more air contaminants.

8 (4) *Air quality review*: A review of facilities to be performed by the department in accordance with
9 rules and regulations adopted by the board and promulgated by the manager pursuant to this
10 chapter.

11 (5) *Ambient air*: The surrounding or outside air.

12 (6) *Atmosphere*: The gaseous envelope that surrounds the earth.

13 ~~(7) *Benchmarking*: Measuring a covered building's energy performance using the ENERGY~~
14 ~~STAR Portfolio Manager tool.~~

15 ~~(7)(8) *Board*: The board of public health and environment of the city.~~

16 ~~(8)(9) *Clean-burning fuels*: Compressed natural gas, liquefied natural gas, liquefied petroleum gas~~
17 ~~or hydrogen; multifuels, such as diesel/compressed natural gas fumigations; fuels containing~~
18 ~~not less than eighty-five (85) percent ethanol or methanol; electricity or any other alternative~~
19 ~~fuel that the board determines to be clean-burning.~~

20 ~~(10) *Covered building*: Any individual building in the City and County of Denver with a gross floor~~
21 ~~area of twenty-five thousand (25,000) square feet or larger except the following:~~

22 ~~(a) A building that was not occupied and did not have a certificate of occupancy or~~
23 ~~temporary certificate of occupancy for all twelve (12) months of the calendar year for~~
24 ~~which benchmarking is required;~~

25 ~~(b) A building that was not occupied, due to renovation, for all twelve (12) months of the~~
26 ~~calendar year for which benchmarking is required;~~

27 ~~(c) A building for which a demolition permit for the entire building has been issued and for~~
28 ~~which demolition work has commenced on or before the date the benchmarking report~~
29 ~~is due;~~

30 ~~(d) A building that is presently experiencing qualifying financial distress, as defined by nay~~
31 ~~of the following:~~

32 ~~1. The building is the subject of a qualified tax lien sale or public auction due to~~
33 ~~property tax arrearages;~~

34 ~~2. The buildings is controlled by a court appointed receiver; or~~

3. ~~The building has been acquired by a deed in lieu of foreclosure;~~

~~(e) A building that had an average physical occupancy of less than sixty (60) percent throughout the calendar year for which benchmarking is required;~~

~~(f) A building that is used primarily for industrial or agricultural processes; and~~

~~(g) A building for which the owner can demonstrate that its energy performance is a confidential business practice that includes trade secrets, privileged, or confidential commercial information. In order to qualify for this exemption, the owner shall specifically identify the information it believes is confidential and provide a written statement describing the manner in which public disclosure would cause substantial harm to the owner's competitive position, inefficient energy usage alone will not be considered confidential commercial information.~~

~~(11) Covered municipal building: A covered building that is owned or operated by the City and County of Denver.~~

~~(9)(12) Criteria pollutants: Those pollutants for which national ambient air standards have been established pursuant to the federal Clean Air Act as amended, i.e., particulate matter, sulfur oxides, nitrogen dioxide, ozone, carbon monoxide and lead.~~

~~(10)(13) Department: The department of public health and environment of the city.~~

~~(11)(14) Device: Any machine, equipment, fabrication or contrivance the use of which causes the release of air contaminants, or that alters, contains, controls, prevents or removes air pollution from any air contamination source.~~

~~(12)(15) Emergency vehicle: Any surface or airborne vehicle used for the official business of the police and fire departments and any emergency medical vehicle as defined in chapter 17 of this Code.~~

~~(13)(16) Emission or emit: To discharge, release or to permit or cause the discharge or release of one (1) or more air contaminants into the atmosphere.~~

~~(14)(17) Emission offset: A net reduction in total emissions of a regulated air pollutant so that emissions of the regulated air pollutant are less than were emitted prior to instituting the offset. An offset can be accomplished by the installation of air pollution control devices or by the elimination of or changes in the method or process of manufacture in existing stationary or mobile sources or in any other way approved by the board.~~

~~(18) Energy efficiency program: The administrative program implemented by the department requiring the benchmarking and reporting of energy consumption in commercial and multifamily buildings that are twenty-five thousand (25,000) gross square feet or larger within the City and County of Denver.~~

- 1 ~~(19)~~ ~~*ENERGY STAR Portfolio Manager*~~: The online tool created by the U.S. Environmental
2 Protection Agency used to measure and track a building's energy use, water consumption,
3 and greenhouse gas emissions.
- 4 ~~(15)~~(20) *Engine*: Any internal combustion machine, such as found in motor vehicles, aircraft,
5 locomotives and stationary power units, that utilizes gas or liquid fuel for combustion energy.
- 6 ~~(16)~~(24) *Existing facilities*: Facilities for which application for all applicable permits and
7 approvals required from the city have been submitted prior to the effective date of this article.
- 8 ~~(17)~~(22) *Fireplace*: An opening made in a chimney and surrounded with brick, stone, metal or
9 like material to hold a fire, and that has no specific method for recirculating heat or reducing
10 emissions.
- 11 ~~(18)~~(23) *Fuel*: Any combustible substance or material or any combination of such.
- 12 ~~(19)~~(24) *Fuel-burning equipment*: Any furnace, boiler apparatus, stack or appurtenance thereto
13 used in the process of burning fuel for the primary purpose of producing heat or power by
14 indirect heat transfer.
- 15 ~~(20)~~(25) *Fugitive particulates*: Particulate matter that cannot be readily captured and routed
16 through a stack or air pollution control equipment that is entrained in the ambient air and is
17 caused by human or natural activities or both, including, without limitation, construction,
18 demolition, earth moving, grading, sandblasting, materials handling, vehicular traffic on
19 unpaved haul roads, and wind.
- 20 ~~(21)~~(26) *Fugitive particulate control plan*: The plan submitted for activities that could emit
21 particulate matter into the atmosphere beyond the lot line of the property on which the
22 emissions originate.
- 23 ~~(22)~~(27) *Gas*: An aeroform fluid having neither independent shape nor volume but tending to
24 expand indefinitely.
- 25 ~~(23)~~(28) *Gaseous fuel*: A fuel that exists as a gas at atmospheric temperature and pressure.
- 26 ~~(29)~~ ~~*Gross floor area*~~: The total property square footage, measured between the principal exterior
27 surfaces of the enclosing fixed walls of a building, as defined in the ~~ENERGY STAR Portfolio~~
28 ~~Manager definitions~~.
- 29 ~~(24)~~(30) *Hazardous air pollutant*: An air pollutant to which no national ambient air quality
30 standard is applicable and that, in the judgment of the Colorado Air Quality Control
31 Commission, causes or contributes to air pollution that may reasonably be anticipated to result
32 in an increase in mortality or an increase in serious, irreversible or incapacitating reversible
33 illness or injury; and any air pollutant listed by the state or federal government as a hazardous
34 air pollutant.

- 1 ~~(25)~~(31) *Health risk assessment*: An assessment, based on accepted scientific standards and
2 information from inventories, sampling, modeling and/or estimation techniques, of the
3 potential human health risk from exposure to specified levels of identified hazardous air
4 pollutants and criteria pollutants.
- 5 ~~(26)~~(32) *High-pollution day*: That period of time in which the Colorado Department of Public
6 Health and Environment anticipates levels of carbon monoxide or particulates exceeding
7 federal ambient air quality standards or when air pollution standards are exceeded for
8 particulates, carbon monoxide or visibility.
- 9 ~~(27)~~(33) *Incinerator*: A container, device or other appliance, designed, used or intended to be
10 used for the disposal or reduction of household, commercial or industrial waste material or
11 any commercial or industrial material by burning.
- 12 ~~(28)~~(34) *Manager*: The manager of the department of public health and environment of the city.
- 13 ~~(29)~~(35) *Masonry heater*: An appliance designed for or capable of burning wood, capable of
14 and intended for domestic space heating or domestic water heating, and has been approved
15 by the Colorado Department of Public Health and Environment by meeting all design criteria,
16 and emissions standards set forth by that agency.
- 17 ~~(30)~~(36) *New facilities*: Facilities and temporary facilities not exempted through regulation by
18 the board that have not applied for all applicable permits prior to the effective date of this
19 article.
- 20 ~~(31)~~(37) *Nuisance*: The doing of or the failure to do something that allows or permits air
21 contaminants to escape into the open air that are or tend to be detrimental to the health,
22 comfort, safety or welfare of the public or that causes or tends to cause injury or substantial
23 annoyance or inconvenience to persons exposed thereto or causes or tends to cause damage
24 to property.
- 25 ~~(32)~~(38) *Opacity*: The fraction of a beam of light that fails to pass through a plume of smoke or
26 air contaminants, expressed in percentage.
- 27 ~~(33)~~(39) *Open burning*: Fire or smoldering where any material is burned in the outdoor air or in
28 an open container, receptacle, pit, vessel, chimenea, or other device designed or used for
29 outdoor fires.
- 30 ~~(40)~~ *Owner*: ~~The person or entity having a legal or equitable interest in real property and its fixtures~~
31 ~~and appurtenances.~~
- 32 ~~(34)~~(41) *Particulate matter*: Any material, except water mist or spray, that exists in a finely
33 divided form as a liquid or solid.
- 34 ~~(35)~~(42) *Pellet stove*: A wood heater that meets the following criteria:

- 1 (a) The manufacturer makes no reference to burning cordwood in advertising or literature;
- 2 (b) The unit is safety listed for pellet fuel only;
- 3 (c) The unit's operating and other instruction manual states that the use of cordwood is
- 4 prohibited by federal law; and
- 5 (d) The unit must be manufactured and sold including a hopper and auger combination as
- 6 integral parts.

7 ~~(36)~~(43) *Person*: Any person, firm, association, organization, partnership, business, trust,

8 corporation, company, contractor, supplier, installer, user or owner and shall include any

9 municipal corporation, state or federal governmental agency, district or any officer or

10 employee thereof.

11 ~~(37)~~(44) *Phase II wood stove*: A wood-burning device that has been certified by the United

12 States Environmental Protection Agency or the Colorado Department of Public Health and

13 Environment.

14 ~~(38)~~(45) *Premises*: Any building, structure, land, utility or portion thereof, including all

15 appurtenances, and shall include yards, lots, courts and properties without buildings.

16 ~~(39)~~(46) *Process*: Any individual action, operation or treatment involving chemical, industrial or

17 manufacturing factors and all other methods or forms of manufacturing or processing that

18 may emit air contaminants.

19 ~~(40)~~(47) *Reduction*: Any process utilizing heat, including but not limited to burning, rendering,

20 drying, dehydrating, digesting, evaporating and protein concentrating that decreases the

21 volume of material being processed.

22 ~~(41)~~(48) *Regulated air pollutant*: A pollutant that is a criteria air pollutant or hazardous air

23 pollutant.

24 ~~(42)~~(49) *Smolder*: To burn and produce smoke without flame.

25 ~~(43)~~(50) *Solid-fuel-fired device*: A device designed for the combustion of solid fuels including

26 wood-burning devices, fireplaces, solid-fuel-fired stoves and combustion fuel furnaces that

27 burn solid fuel. Solid-fuel-fired devices do not include natural gas-fired devices, commercial

28 ovens or stoves used to prepare food for human consumption, public utility facilities

29 generating steam or electricity, or solid-fuel-fired barbecue devices. The board may adopt and

30 the manager may promulgate rules and regulations, as authorized in subsection 4-6(a), to

31 further define solid-fuel-fired devices including exclusions to the definition for fuels or classes

32 of technology where the board determines that the excluded fuel or technology is reliably

33 cleaner burning than a Phase II wood stove or where the board determines that no reasonable

34 alternative to the burning of solid fuel exists. In no case shall such definitions or exclusions

1 be inconsistent with the requirements of chapter 24 of the Denver Revised Municipal Code.

2 ~~(44)~~(51) *Solid waste*: Refuse consisting of paper, wood, yard wastes, food wastes, plastic,
3 leather, rubber and such other combustibles and noncombustible glass, rock, etc., that may
4 be generated from residential and commercial operations and from industrial sites.

5 ~~(45)~~(52) *Stationary source*: Any building, structure, facility, equipment or installation or any
6 combination thereof belonging to the same facility that emits or may emit any air pollutant
7 subject to regulation under the federal Clean Air Act, that is located on one (1) or more
8 contiguous or adjacent properties and that is owned or operated by the same person or by
9 persons under common control.

10 ~~(46)~~(53) *Traffic operations*: Activities necessary to direct traffic, to repair, install or maintain
11 traffic-control devices, to paint traffic-control lanes or to pave, maintain or repair streets and
12 sidewalks or to accomplish similar activities.”

13
14 **Section 2.** Article V of Chapter 4 of the Denver Revised Municipal Code, entitled “Energy
15 Efficiency in Multifamily and Commercial Buildings,” shall be repealed.

16
17 **Section 3.** That Article II, Chapter 10 of the Denver Revised Municipal Code is amended by the
18 addition of a new section 10-20 to read as follows:

19
20 **“Sec. 10-20. – Electrification requirements for existing buildings.**

21 **(a) Definitions.** The following words and phrases as used in this Sec. 10-20 have the following
22 meanings:

23 **(1) “Boiler”** shall have the same meaning as provided in the Denver Building and Fire
24 Code.

25 **(2) “Condensing unit”** shall have the same meaning as provided in the Denver Building
26 and Fire Code.

27 **(3) “Electrification retrofit feasibility report”** means a report submitted to the
28 Department of Community Planning and Development (CPD), in consultation with the
29 executive director of the office of climate action, sustainability, and resiliency, that
30 provides: an alternate schematic design for the proposed gas-fired equipment that
31 utilizes electric heat pump equipment and an analysis of the cost of the equipment, and
32 annual energy cost and social cost of carbon dioxide over the life of the equipment for
33 both the proposed gas-fired system and the alternate electric schematic design.

34 **(4) “Electrify” or “electrification”** means to replace a natural gas-powered space or water

1 heating system with an electrically powered space or water heating system.

2 (5) **“Instantaneous water heater”** means a product which utilizes oil, gas, or electricity to
3 heat potable water for use outside the heater upon demand that contains no more than
4 one gallon of water per 4,000 Btu per hour of input.

5 (6) **“Packaged terminal air conditioner”** means a wall sleeve and a separate unencased
6 combination of heating and cooling assemblies specified by the builder and intended
7 for mounting through the wall, which are limited to the following: a prime source of
8 refrigeration, separable outdoor louvers, forced ventilation, and heating availability
9 energy.

10 (7) **“Social cost of carbon dioxide”** means either \$79 per metric ton of carbon dioxide
11 with an annual escalation rate of 2.5% from January 1, 2022, or the social cost of
12 carbon dioxide as determined by the Public Utilities Commission of the State of
13 Colorado, whichever is greater.

14 (8) **“Storage water heater”** means a product which utilizes oil, gas, or electricity to heat
15 potable water for use outside the heater upon demand which heat and store water at
16 a thermostatically controlled temperature.

17 (9) **“Unitary air conditioner”** means a system that consists of heat exchangers, blowers,
18 filters, supply, exhaust and return ducts, and shall include any apparatus installed in
19 connection therewith, other than a packaged terminal air conditioner. A unitary air
20 conditioner may consist of: a single-package unit; an outdoor unit and one or more
21 indoor units; or an indoor unit only.

22 (10) **“Warm-air furnace”** means a completely self-contained heating unit that is designed
23 to supply heated air to spaces remote from or adjacent to the appliance location.

24 (b) No later than January 1, 2023, the Denver Building and Fire Code shall be amended to
25 implement the following electrification requirements:

26 (1) Replacement of natural gas-fired space and water heating equipment shall be
27 submitted to CPD for review prior to permitting.

28 (2) All storage electric water heaters installed in commercial and multifamily buildings must
29 be compatible at a minimum with ANSI/CTA-2045-B, level 1 demand response
30 protocol, or a similar protocol, with appropriate exceptions when demand response is
31 not appropriate based on the application.

32 (3) When an indoor gas-fired warm air furnace is proposed to be replaced with another
33 gas-fired warm-air furnace, the replacement is required to provide one of the following:
34 (i) low-nitrogen oxide emissions, of no more than 14 nanograms of nitrogen dioxide per

1 joule of useful heat delivered to the heated space; (ii) an Annual Fuel Utilization
2 Efficiency of not less than 90 percent; or (iii) evidence to the building official that an
3 equivalent system will be provided. The requirements of this subsection shall not apply
4 to an indoor gas-fired make-up air unit. Additionally, at least two of the following are
5 required:

- 6 i. Submitting an electrification retrofit feasibility report.
- 7 ii. Sizing the furnace equipment based on the current space conditioning needs of
8 the building with Denver Building and Fire Code requirements, and an analysis
9 prepared by a registered design professional of the existing building's envelope,
10 ventilation requirements, and load calculations based on ASHRAE/ACCA 183
11 or approved equivalent.
- 12 iii. Pressure testing of all natural gas piping.

13 **(4)** When a gas-fired storage water heater or instantaneous water heater is proposed to
14 be replaced with another gas-fired storage water heater or instantaneous water heater,
15 at least one of the following is required:

- 16 i. Submitting an electrification retrofit feasibility report.
- 17 ii. Pressure testing of all natural gas piping.

18 **(5)** Exemptions for emergency replacement and economic hardship shall be provided. The
19 building official shall consult with the executive director of the office of climate action,
20 sustainability, and resiliency in deciding whether or not to approve an economic
21 hardship exemption.

22 **(c)** No later than January 1, 2025, the Denver Building and Fire Code shall be amended to
23 implement the following electrification requirements:

24 **(1)** When a gas-fired warm air furnace located outside a building is proposed to be
25 replaced with a new gas-fired warm air furnace, the new gas-fired warm air furnace
26 may only provide supplementary heat, and the primary heating system shall be electric.

27 **(2)** When a unitary air conditioner or condensing unit serving a heated space is proposed
28 to be replaced, the unit shall include electric equipment capable of providing space
29 heating, and any other heating equipment serving the space shall be reconfigured to
30 provide only supplementary heat.

31 **(3)** When a storage water heater or instantaneous water heater is proposed to be replaced,
32 it shall be replaced with an electric water heater.

33 **(4)** The electrification requirements of subsections (c)(1) – (3) above may be met by a heat
34 pump or by electric resistance space or water heating equipment. If the electrification

1 requirements are met by electric resistance space or water heating equipment, then
2 the system shall be provided with an onsite renewable energy system sized to provide
3 not less than 100 percent of the annual energy use of the electric resistance space or
4 water heating equipment, with the following exceptions: an onsite renewable energy
5 system is not required where heat pumps are not available for that system type, or
6 where new electric resistance equipment is replacing existing electric resistance
7 equipment. An onsite renewable energy system used to comply with this section shall
8 not be used to meet any other regulatory requirement.

9 **(5)** When a gas-fired boiler used for space heating is replaced with another gas-fired boiler,
10 at least two of the following are required:

- 11 i. Submitting an electrification retrofit feasibility report.
- 12 ii. Sizing the equipment based on the current space conditioning needs of the
13 building with Denver Building and Fire Code requirements, and an analysis
14 prepared by a registered design professional of the existing building's envelope,
15 ventilation requirements, and load calculations based on ASHRAE/ACCA 183
16 or approved equivalent.
- 17 iii. Pressure testing of all natural gas piping.

18 **(6)** When a gas-fired boiler used for water heating is replaced with another gas-fired boiler,
19 at least one of the following is required:

- 20 i. Submitting an electrification retrofit feasibility report;
- 21 ii. Pressure testing of all natural gas piping.

22 **(7)** An electrification retrofit feasibility report looking at the feasibility of installing an electric
23 packaged terminal heat pump (PTHP) or single-package vertical heat pump (VTHP)
24 space system that provides both heating and cooling shall be submitted when an
25 electrically operated packaged terminal air conditioner (PTAC) or single-package
26 vertical air conditioner (VTAC) that serves a heated space is proposed to be replaced..

27 **(8)** Exemptions for emergency replacement and economic hardship shall be provided. An
28 economic hardship exemption will not be available for a system that can be replaced
29 with an electric heat pump at near cost parity, which will be defined as the cost of a
30 replacement of a natural gas space or water heating system to a partially electric heat
31 pump system, including all incentives, that is within 5-15% of a like-for-like natural gas
32 space or water heating system replacement, including the social cost of carbon dioxide
33 of the like-for-like gas system replacement over its lifetime. An economic hardship
34 exemption will not be available for a system where a heat pump is unavailable and

1 where the cost of an electric resistance system is at 'near cost parity' for that system
2 type, which will be defined as the cost of an electric resistance system, including all
3 incentives, that is within 5-15% of a like-for-like gas system replacement plus the social
4 cost of carbon of that like-for-like system over its lifetime. The building official shall
5 consult with the executive director of the office of climate action, sustainability, and
6 resiliency in deciding whether or not to approve an economic hardship exemption.

7 **(d)** No later than January 1, 2027, the Denver Building and Fire Code shall be amended to
8 implement the following electrification requirements:

9 **(1)** When a gas-fired boiler used for space heating is proposed to be replaced, the
10 replacement boiler shall meet no less than 50 percent of the annual space heating
11 needs of the building containing the gas-fired boiler. At least 50 percent of the annual
12 space heating needs of the building shall be met with electric space heating equipment.
13 When a replacement gas-fired boiler is installed to provide supplementary heat or due
14 to an approved exemption, at least two of the following are required:

- 15 i. Submitting an electrification retrofit feasibility report that includes a schematic
16 design for an electric space heating system that provides 100 percent of the
17 annual space heating needs of the building.
- 18 ii. Sizing the equipment based on the current space conditioning needs of the
19 building with Denver Building and Fire Code requirements, and an analysis
20 prepared by a registered design professional of the existing building's envelope,
21 ventilation requirements, and load calculations based on ASHRAE/ACCA 183
22 or approved equivalent.
- 23 iii. Pressure testing of all natural gas piping.

24 **(2)** When a gas-fired boiler used for water heating is proposed to be replaced, the
25 replacement boiler shall meet no less than 50 percent of the annual water heating
26 needs of the building containing the gas-fired boiler. At least 50 percent of the annual
27 space heating needs of the building shall be met with electric equipment. When a
28 replacement gas-fired boiler is installed, to provide supplementary heat or due to an
29 approved exemption, at least one of the following is required:

- 30 i. Submitting an electrification retrofit feasibility report that includes a schematic
31 design for an electric water heating system that provides 100 percent of the
32 annual water heating needs of the building.
- 33 ii. Pressure testing of all natural gas piping.

34 **(3)** When an electrically operated PTAC or single-package VTAC that serves a heated

1 space is proposed to be replaced, the air conditioner shall be replaced with electric
2 equipment that provides both heating and cooling. Any other space heating equipment
3 shall be configured to operate as supplementary heat.

- 4 **(4)** Exemptions for emergency replacement and economic hardship shall be provided as
5 previously included by the amendments listed in subsection (c)(8) above with the
6 potential for variations of calculation of economic hardship. The building official shall
7 consult with the executive director of the office of climate action, sustainability, and
8 resiliency in deciding whether or not to approve an economic hardship exemption.”

9
10 **Section 4.** A new Article XIV of Chapter 10 of the Denver Revised Municipal Code, entitled “High-
11 Performance Existing Buildings Program,” shall be created to read as follows:

12
13 **“Sec. 10-400. - Definitions.** The following words and phrases, as used in this article XIV, shall have
14 the following meanings:

15
16 **(a) *Benchmarking:*** Measuring a Covered Building’s energy performance using the ENERGY
17 STAR Portfolio Manager tool or other platforms as CASR may designate.

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

22 **(c) *CASR:*** The Office of Climate Action, Sustainability, and Resiliency.

23 **(d) *Covered Building:***

24 **(1)** For purposes of benchmarking, a covered building is any commercial or multifamily
25 individual building in the City and County of Denver except the following:

- 26 i. A building that was not occupied and did not have a certificate of occupancy or
27 temporary certificate of occupancy for all twelve (12) months of the calendar
28 year for which benchmarking is required;
- 29 ii. A building that was not occupied, due to renovation, for all twelve (12) months
30 of the calendar year for which benchmarking is required;
- 31 iii. A building for which a demolition permit for the entire building has been issued
32 and for which demolition work has commenced on or before the date the
33 benchmarking report is due;

- 1 iv. A building that is presently experiencing qualifying financial distress, as defined
2 by any of the following: (1) the building is the subject of a qualified tax lien sale
3 or public auction due to property tax arrearages; (2) the building is controlled by
4 a court appointed receiver; or (3) the building has been acquired by a deed in
5 lieu of foreclosure;
- 6 v. A building that is used primarily for manufacturing or agricultural processes; this
7 exclusion applies only if a facility where the majority of energy is consumed for
8 manufacturing, agriculture, or for other process loads. Process loads are energy
9 consumed for bona fide purposes other than heating, cooling, ventilation,
10 domestic hot water, cooking, lighting, appliances, office equipment, data
11 centers, or other plug loads.

12 **(2)** For purposes of existing building performance requirements, a covered building is any
13 commercial or multifamily individual building in the City and County of Denver except
14 the following:

- 15 i. A building for which a demolition permit for the entire building has been issued
16 and for which demolition work has commenced on or before the particular
17 compliance date.

18 **(e)** ***Covered Municipal Building:*** A Covered Building that is owned and/or operated by the City
19 and County of Denver.

20 **(f)** ***ENERGY STAR Portfolio Manager:*** The online tool created by the U.S. Environmental
21 Protection Agency used to measure and track a building's energy use, water consumption,
22 and greenhouse gas emissions.

23 **(g)** ***Executive Director:*** The executive director of the Office of Climate Action, Sustainability, and
24 Resiliency.

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

29 **(i)** ***Gross Floor Area:*** The total property square footage, measured between the principal
30 exterior surfaces of the enclosing fixed walls of a building, as defined in the ENERGY STAR
31 Portfolio Manager definitions.

32 **(j)** ***High-Performance Existing Buildings Program:*** The administrative program implemented
33 by CASR requiring the benchmarking, reporting, and existing building performance in
34 commercial and multifamily buildings that are located within the City and County of Denver.

1 **(k) Owner.** The person or entity having a legal or equitable interest in real property and its fixtures
2 and appurtenances, which shall explicitly include but not be limited to a homeowner's
3 association.

4 **(l) Site Energy Use Intensity or EUI:** A building's weather normalized site energy use
5 expressed as energy per squarefoot per year as a function of its size, normalized for weather
6 and other characteristics that are significant drivers of energy performance as feasible with
7 the reporting platform used. A building's EUI is calculated by dividing the total energy
8 consumed by the building in one year (measured in kBtu) by the total gross floor area of the
9 building.

10
11 **Sec. 10-401. - Purpose.**

12 The purpose of this article is first to establish a high-performance existing buildings program that
13 requires covered building owners to benchmark building energy performance, and to make such
14 energy performance information publicly available in order to raise awareness and drive action. The
15 article's purpose is also to require covered building owners to address existing building performance
16 through energy efficiency, renewables, and/or renewable heating and cooling (electrification) to
17 reduce greenhouse gas emissions from the built environment to further the City and County of
18 Denver's climate action goal of zero greenhouse gas emissions in existing buildings by 2040.

19
20 **Sec. 10-402. - Applicability.**

21 The High-Performance Existing Buildings Program shall apply to all commercial and multifamily
22 buildings equal to or greater than 5,000 square feet within the City and County of Denver.

23
24 **Sec. 10-403. - Benchmarking and Reporting.**

25 **(a)** Each owner of a covered building with a gross floor area equal to or greater than 25,000
26 square feet shall benchmark the building's energy usage annually using the ENERGY STAR
27 Portfolio Manager tool, or other platform as CASR may designate, and by June 1 each year,
28 accurately report energy performance information to CASR for the previous calendar year.

29 **(b)** The energy performance information that must be reported to CASR shall include, at a
30 minimum, a covered building's annual energy use intensity, ENERGY STAR Portfolio
31 Manager score if eligible for a score, greenhouse gas emissions, and any other data fields
32 needed to calculate the ENERGY STAR Portfolio Manager score for auditing and verification
33 purposes.

1 (c) Owners of covered buildings with a gross floor area equal to or greater than 25,000 square
2 feet shall keep records of monthly energy consumption for a minimum of twenty-four (24)
3 months. Such records shall be made available to CASR for inspection upon request.
4

5 **Sec. 10-404. – Existing Building Performance for Covered Buildings with a Gross Floor Area**
6 **Equal to or Greater than 25,000 Square Feet.**

7 (a) **In General.** Owners of covered buildings with a gross floor area equal to or greater than
8 25,000 square feet must meet energy performance targets in calendar years 2024, 2027 and
9 2030. The targets will be set for 2030 for every covered building type in Denver such that
10 30% total energy savings across all covered buildings is achieved. CASR shall establish the
11 rules by which every covered building will be assigned a building type. If a covered building's
12 type changes over time, then CASR shall update the established target to align to the new
13 building type. CASR will establish each covered building's required interim targets for 2024
14 and 2027 by drawing a straight line from that covered building's 2019 baseline EUI to the final
15 EUI target for that building type. Solar power generation on-site or off-site, as measured in
16 kWh delivered to the grid by the system, will be fully credited towards energy use, lowering
17 the EUI. After 2030, CASR is empowered set new EUI final targets for 2040, 2050, and
18 beyond through a rulemaking process with robust stakeholder input as CASR deems
19 necessary to reach the City's climate goals.

20 (b) **Establishing baseline EUI.**

21 (1) For existing covered buildings that reported for benchmarking in 2019, the baseline
22 shall be the EUI that was reported for the covered building that year.

23 (2) For existing covered buildings where no baseline data was received for 2019, CASR
24 will establish a reasonable baseline based on the building type and benchmarking data
25 from other years for that covered building if available.

26 (3) For new covered buildings, the baseline shall be the predicted EUI for that covered
27 building if one was submitted as part of energy code compliance. If no predicted EUI
28 is available, CASR will establish a reasonable baseline based on the building type.

29 (c) **Establishing interim targets.**

30 (1) For existing covered buildings that reported for benchmarking in 2019, CASR will set
31 required interim targets by May 1, 2022.

32 (2) For existing covered buildings where no baseline data was received for 2019, or if
33 CASR has determined that the building type needs to be reviewed and possibly

1 corrected for submission in the 2022 benchmarking report, CASR will set required
2 interim targets by September 1, 2022.

3 **(3)** For new covered buildings, CASR will set required interim targets within 6 months of
4 receiving the first benchmarking report for that building.

5 **(d) Existing building performance compliance demonstration.**

6 **(1)** Owners of covered buildings with a gross floor area equal or greater than twenty-five
7 thousand (25,000) square feet shall use the ENERGY STAR Portfolio Manager tool,
8 and report to CASR the following:

9 i. In the benchmarking report due on June 1, 2025, a demonstration that the
10 covered building has met the interim energy performance target for calendar
11 year 2024.

12 ii. In the benchmarking report due on June 1, 2028, a demonstration that the
13 covered building has met the interim energy performance target for calendar
14 year 2027.

15 iii. In the benchmarking report due on June 1, 2031, a demonstration that the
16 covered building has met the final energy performance target for calendar year
17 2030.

18 **(2)** Each owner of a covered building must maintain the interim targets each subsequent
19 year and must maintain the final energy performance target indefinitely.

20 **(3)** CASR shall create alternate compliance options by rule that add flexibility for covered
21 building owners while achieving the same end goal. Such options shall include, but are
22 not limited to, a process to adjust timing for meeting the above requirements, a process
23 to adjust the end goal due to a building use or inherent characteristic of the building,
24 prescriptive options for smaller buildings, and compliance options for buildings where
25 manufacturing and agricultural processes are the primary energy users.

26 **(e) Disclosure upon sale.** The owner of a covered building shall disclose the covered building's
27 compliance status, including all performance targets, any approved alternate compliance
28 pathways, and any penalties assessed, to a prospective buyer prior to the sale of the building.
29 The owner shall disclose to all prospective buyers the covered building's compliance status
30 in all documentation or advertising concerning the sale of the covered building including, but
31 not limited to, any listings, notices, advertisements of sale, term sheets, and contracts of sale.
32

33 **Sec. 10-405 – Existing Building Performance for Covered Buildings with a Gross Floor Area**
34 **of 5,000-24,999 Square Feet.**

1 Owners of covered buildings with a gross floor area of 5,000-24,999 square feet shall either certify
2 that they have installed all LED lights or that they have achieved an equivalent lighting power density
3 to what all LEDs would have resulted in. Alternatively, owners of covered buildings may install solar
4 panels or purchase off-site solar that generates enough electricity to meet 20% of the building's
5 annual energy usage. Owners of covered buildings will be required to comply by the following
6 schedule:

7 (a) December 31, 2025: buildings 15,001-24,999 square feet

8 (b) December 31, 2026: buildings 10,001-15,000 square feet

9 (c) December 31, 2027: buildings 5,000-10,000 square feet

10

11 **Sec. 10-406. – Authority to Adopt Rules and Regulations.**

12 The executive director is authorized to adopt rules and regulations the executive director may deem
13 proper to implement the provisions of this article XIV, the high-performance existing buildings
14 program.

15

16 **Sec. 10-407. - Enforcement.**

17 (a) It is unlawful for any person to violate any provision of this article XIV or any rules or
18 regulations adopted pursuant to this article XIV.

19 (b) The executive director, or the executive director's designee, is empowered to enforce the
20 provisions of this article XIV and any rules and regulations adopted pursuant to this article.

21 (c) This article applies to all agents, successors and assigns of an owner.

22 (d) The executive director, or the executive director's designee, may issue notices or orders for
23 violations of this article XIV. Any covered building owner who violates any provision of this
24 article XIV, including any rules or regulations adopted pursuant to this article, is subject to a
25 civil penalty amount of up to \$0.70 per year for each required kBtu reduction that the owner's
26 covered building fails to achieve in that year.

27 (e) If a covered building owner subject to the civil penalty above fails to pay the required amount
28 within one hundred eighty (180) days, the civil penalty will be considered a debt to the city
29 until paid in full. The debt is a perpetual lien on the property, and is superior and prior to all
30 other liens, regardless of their dates of recordation, except for liens for general taxes and prior
31 special assessments, until the civil penalty owed, delinquent interest, and recording fees have
32 been paid in full. In addition to the remedies set forth in this section, an action or other process
33 provided by law may be maintained by the city to recover or collect any amounts, including
34 interest, owing under this section. Interest is calculated in the same manner and same amount

1 as delinquent property taxes. The executive director must record the lien with the clerk and
2 recorder.”

3
4 COMMITTEE APPROVAL DATE: November 3, 2021

5 MAYOR-COUNCIL DATE: November 9, 2021

6 PASSED BY THE COUNCIL: November 22, 2021

7 *Stacy Jensen* - PRESIDENT

8 APPROVED: _____ - MAYOR *[Signature]* Nov 24, 2021

9 ATTEST: *Paul Jones* - CLERK AND RECORDER,
10 EX-OFFICIO CLERK OF THE
11 CITY AND COUNTY OF DENVER

12 NOTICE PUBLISHED IN THE DAILY JOURNAL: November 18, 2021 ; November 29, 2021

13 PREPARED BY: Lindsay Carder, Assistant City Attorney DATE: November 10, 2021

14 Pursuant to section 13-9, D.R.M.C., this proposed ordinance has been reviewed by the office of the
15 City Attorney. We find no irregularity as to form and have no legal objection to the proposed
16 ordinance. The proposed ordinance is not submitted to the City Council for approval pursuant to
17 § 3.2.6 of the Charter.

18 Kristin Bronson, City Attorney for the City and County of Denver

19 BY: *Jonathan Griffin*, Assistant City Attorney DATE: Nov 10, 2021

20
21

