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BY AUTHORITY

ORDINANCE NO. _____

COUNCIL BILL NO. CB21-XXXX

SERIES OF 2021

COMMITTEE OF REFERENCE:

Safety and Well-being

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 add the underlined words and delete the stricken words as follows:

1 **“Sec. 4-2. Definitions.**

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

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

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

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

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

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

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

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

16 ~~(7)(8) *Board:* The board of public health and environment of the city.~~

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

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

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

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

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

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

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

1 property tax arrearages;

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

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

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

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

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

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

16 ~~(9)(42) Criteria pollutants: Those pollutants for which national ambient air standards have~~
17 ~~been established pursuant to the federal Clean Air Act as amended, i.e., particulate matter,~~
18 ~~sulfur oxides, nitrogen dioxide, ozone, carbon monoxide and lead.~~

19 ~~(10)(43) Department: The department of public health and environment of the city.~~

20 ~~(11)(44) Device: Any machine, equipment, fabrication or contrivance the use of which causes~~
21 ~~the release of air contaminants, or that alters, contains, controls, prevents or removes air~~
22 ~~pollution from any air contamination source.~~

23 ~~(12)(45) Emergency vehicle: Any surface or airborne vehicle used for the official business of~~
24 ~~the police and fire departments and any emergency medical vehicle as defined in chapter 17~~
25 ~~of this Code.~~

26 ~~(13)(46) Emission or emit: To discharge, release or to permit or cause the discharge or release~~
27 ~~of one (1) or more air contaminants into the atmosphere.~~

28 ~~(14)(47) Emission offset: A net reduction in total emissions of a regulated air pollutant so that~~
29 ~~emissions of the regulated air pollutant are less than were emitted prior to instituting the offset.~~
30 ~~An offset can be accomplished by the installation of air pollution control devices or by the~~
31 ~~elimination of or changes in the method or process of manufacture in existing stationary or~~
32 ~~mobile sources or in any other way approved by the board.~~

33 ~~(18) Energy efficiency program: The administrative program implemented by the department~~

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1 requiring the benchmarking and reporting of energy consumption in commercial and
2 multifamily buildings that are twenty-five thousand (25,000) gross square feet or larger within
3 the City and County of Denver.

4 ~~(19) ENERGY STAR Portfolio Manager: The online tool created by the U.S. Environmental~~
5 ~~Protection Agency used to measure and track a building's energy use, water consumption,~~
6 ~~and greenhouse gas emissions.~~

7 ~~(15)(20) Engine: Any internal combustion machine, such as found in motor vehicles, aircraft,~~
8 ~~locomotives and stationary power units, that utilizes gas or liquid fuel for combustion energy.~~

9 ~~(16)(24) Existing facilities: Facilities for which application for all applicable permits and~~
10 ~~approvals required from the city have been submitted prior to the effective date of this article.~~

11 ~~(17)(22) Fireplace: An opening made in a chimney and surrounded with brick, stone, metal or~~
12 ~~like material to hold a fire, and that has no specific method for recirculating heat or reducing~~
13 ~~emissions.~~

14 ~~(18)(23) Fuel: Any combustible substance or material or any combination of such.~~

15 ~~(19)(24) Fuel-burning equipment: Any furnace, boiler apparatus, stack or appurtenance thereto~~
16 ~~used in the process of burning fuel for the primary purpose of producing heat or power by~~
17 ~~indirect heat transfer.~~

18 ~~(20)(25) Fugitive particulates: Particulate matter that cannot be readily captured and routed~~
19 ~~through a stack or air pollution control equipment that is entrained in the ambient air and is~~
20 ~~caused by human or natural activities or both, including, without limitation, construction,~~
21 ~~demolition, earth moving, grading, sandblasting, materials handling, vehicular traffic on~~
22 ~~unpaved haul roads, and wind.~~

23 ~~(21)(26) Fugitive particulate control plan: The plan submitted for activities that could emit~~
24 ~~particulate matter into the atmosphere beyond the lot line of the property on which the~~
25 ~~emissions originate.~~

26 ~~(22)(27) Gas: An aeriform fluid having neither independent shape nor volume but tending to~~
27 ~~expand indefinitely.~~

28 ~~(23)(28) Gaseous fuel: A fuel that exists as a gas at atmospheric temperature and pressure.~~

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

32 ~~(24)(30) Hazardous air pollutant: An air pollutant to which no national ambient air quality~~
33 ~~standard is applicable and that, in the judgment of the Colorado Air Quality Control~~

1 Commission, causes or contributes to air pollution that may reasonably be anticipated to result
2 in an increase in mortality or an increase in serious, irreversible or incapacitating reversible
3 illness or injury; and any air pollutant listed by the state or federal government as a hazardous
4 air pollutant.

5 ~~(25)~~(31) *Health risk assessment*: An assessment, based on accepted scientific standards and
6 information from inventories, sampling, modeling and/or estimation techniques, of the
7 potential human health risk from exposure to specified levels of identified hazardous air
8 pollutants and criteria pollutants.

9 ~~(26)~~(32) *High-pollution day*: That period of time in which the Colorado Department of Public
10 Health and Environment anticipates levels of carbon monoxide or particulates exceeding
11 federal ambient air quality standards or when air pollution standards are exceeded for
12 particulates, carbon monoxide or visibility.

13 ~~(27)~~(33) *Incinerator*: A container, device or other appliance, designed, used or intended to be
14 used for the disposal or reduction of household, commercial or industrial waste material or
15 any commercial or industrial material by burning.

16 ~~(28)~~(34) *Manager*: The manager of the department of public health and environment of the city.

17 ~~(29)~~(35) *Masonry heater*: An appliance designed for or capable of burning wood, capable of
18 and intended for domestic space heating or domestic water heating, and has been approved
19 by the Colorado Department of Public Health and Environment by meeting all design criteria,
20 and emissions standards set forth by that agency.

21 ~~(30)~~(36) *New facilities*: Facilities and temporary facilities not exempted through regulation by
22 the board that have not applied for all applicable permits prior to the effective date of this
23 article.

24 ~~(31)~~(37) *Nuisance*: The doing of or the failure to do something that allows or permits air
25 contaminants to escape into the open air that are or tend to be detrimental to the health,
26 comfort, safety or welfare of the public or that causes or tends to cause injury or substantial
27 annoyance or inconvenience to persons exposed thereto or causes or tends to cause damage
28 to property.

29 ~~(32)~~(38) *Opacity*: The fraction of a beam of light that fails to pass through a plume of smoke or
30 air contaminants, expressed in percentage.

31 ~~(33)~~(39) *Open burning*: Fire or smoldering where any material is burned in the outdoor air or in
32 an open container, receptacle, pit, vessel, chimenea, or other device designed or used for
33 outdoor fires.

- 1 ~~(40)~~ *Owner*: The person or entity having a legal or equitable interest in real property and its fixtures
2 and appurtenances.
- 3 ~~(34)~~(41) *Particulate matter*: Any material, except water mist or spray, that exists in a finely
4 divided form as a liquid or solid.
- 5 ~~(35)~~(42) *Pellet stove*: A wood heater that meets the following criteria:
6 (a) The manufacturer makes no reference to burning cordwood in advertising or literature;
7 (b) The unit is safety listed for pellet fuel only;
8 (c) The unit's operating and other instruction manual states that the use of cordwood is
9 prohibited by federal law; and
10 (d) The unit must be manufactured and sold including a hopper and auger combination as
11 integral parts.
- 12 ~~(36)~~(43) *Person*: Any person, firm, association, organization, partnership, business, trust,
13 corporation, company, contractor, supplier, installer, user or owner and shall include any
14 municipal corporation, state or federal governmental agency, district or any officer or
15 employee thereof.
- 16 ~~(37)~~(44) *Phase II wood stove*: A wood-burning device that has been certified by the United
17 States Environmental Protection Agency or the Colorado Department of Public Health and
18 Environment.
- 19 ~~(38)~~(45) *Premises*: Any building, structure, land, utility or portion thereof, including all
20 appurtenances, and shall include yards, lots, courts and properties without buildings.
- 21 ~~(39)~~(46) *Process*: Any individual action, operation or treatment involving chemical, industrial or
22 manufacturing factors and all other methods or forms of manufacturing or processing that
23 may emit air contaminants.
- 24 ~~(40)~~(47) *Reduction*: Any process utilizing heat, including but not limited to burning, rendering,
25 drying, dehydrating, digesting, evaporating and protein concentrating that decreases the
26 volume of material being processed.
- 27 ~~(41)~~(48) *Regulated air pollutant*: A pollutant that is a criteria air pollutant or hazardous air
28 pollutant.
- 29 ~~(42)~~(49) *Smolder*: To burn and produce smoke without flame.
- 30 ~~(43)~~(50) *Solid-fuel-fired device*: A device designed for the combustion of solid fuels including
31 wood-burning devices, fireplaces, solid-fuel-fired stoves and combustion fuel furnaces that
32 burn solid fuel. Solid-fuel-fired devices do not include natural gas-fired devices, commercial
33 ovens or stoves used to prepare food for human consumption, public utility facilities

1 generating steam or electricity, or solid-fuel-fired barbecue devices. The board may adopt and
2 the manager may promulgate rules and regulations, as authorized in subsection 4-6(a), to
3 further define solid-fuel-fired devices including exclusions to the definition for fuels or classes
4 of technology where the board determines that the excluded fuel or technology is reliably
5 cleaner burning than a Phase II wood stove or where the board determines that no reasonable
6 alternative to the burning of solid fuel exists. In no case shall such definitions or exclusions
7 be inconsistent with the requirements of chapter 24 of the Denver Revised Municipal Code.

8 ~~(44)~~(51) *Solid waste:* Refuse consisting of paper, wood, yard wastes, food wastes, plastic,
9 leather, rubber and such other combustibles and noncombustible glass, rock, etc., that may
10 be generated from residential and commercial operations and from industrial sites.

11 ~~(45)~~(52) *Stationary source:* Any building, structure, facility, equipment or installation or any
12 combination thereof belonging to the same facility that emits or may emit any air pollutant
13 subject to regulation under the federal Clean Air Act, that is located on one (1) or more
14 contiguous or adjacent properties and that is owned or operated by the same person or by
15 persons under common control.

16 ~~(46)~~(53) *Traffic operations:* Activities necessary to direct traffic, to repair, install or maintain
17 traffic-control devices, to paint traffic-control lanes or to pave, maintain or repair streets and
18 sidewalks or to accomplish similar activities.”
19

20 **Section 2.** Article V of Chapter 4 of the Denver Revised Municipal Code, entitled “Energy Efficiency
21 in Multifamily and Commercial Buildings,” shall be repealed.
22

23 **Section 3.** That Article II, Chapter 10 of the Denver Revised Municipal Code is amended by the
24 addition of a new section 10-20 to read as follows:
25

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

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

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

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

- 1 **(3)** “**Electrification retrofit feasibility report**” means a report submitted to the
2 Department of Community Planning and Development (CPD), in consultation with the
3 executive director of the office of climate action, sustainability, and resiliency, that
4 provides: an alternate schematic design for the proposed gas-fired equipment that
5 utilizes electric heat pump equipment and an analysis of the cost of the equipment, and
6 annual energy cost and social cost of carbon dioxide over the life of the equipment for
7 both the proposed gas-fired system and the alternate electric schematic design.
- 8 **(4)** “**Electrify**” or “**electrification**” means to replace a natural gas-powered space or water
9 heating system with an electrically powered space or water heating system.
- 10 **(5)** “**Instantaneous water heater**” means a product which utilizes oil, gas, or electricity to
11 heat potable water for use outside the heater upon demand that contains no more than
12 one gallon of water per 4,000 Btu per hour of input.
- 13 **(6)** “**Packaged terminal air conditioner**” means a wall sleeve and a separate unencased
14 combination of heating and cooling assemblies specified by the builder and intended
15 for mounting through the wall, which are limited to the following: a prime source of
16 refrigeration, separable outdoor louvers, forced ventilation, and heating availability
17 energy.
- 18 **(7)** “**Social cost of carbon dioxide**” means either \$79 per metric ton of carbon dioxide
19 with an annual escalation rate of 2.5% from January 1, 2022, or the social cost of
20 carbon dioxide as determined by the Public Utilities Commission of the State of
21 Colorado, whichever is greater.
- 22 **(8)** “**Storage water heater**” means a product which utilizes oil, gas, or electricity to heat
23 potable water for use outside the heater upon demand which heat and store water at
24 a thermostatically controlled temperature.
- 25 **(9)** “**Unitary air conditioner**” means a system that consists of heat exchangers, blowers,
26 filters, supply, exhaust and return ducts, and shall include any apparatus installed in
27 connection therewith, other than a packaged terminal air conditioner. A unitary air
28 conditioner may consist of: a single-package unit; an outdoor unit and one or more
29 indoor units; or an indoor unit only.
- 30 **(10)** “**Warm-air furnace**” means a completely self-contained heating unit that is designed
31 to supply heated air to spaces remote from or adjacent to the appliance location.

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

- 1 **(1)** Replacement of natural gas-fired space and water heating equipment shall be
2 submitted to CPD for review prior to permitting.
- 3 **(2)** All storage electric water heaters installed in commercial and multifamily buildings must
4 be compatible at a minimum with ANSI/CTA-2045-B, level 1 demand response
5 protocol, or a similar protocol, with appropriate exceptions when demand response is
6 not appropriate based on the application.
- 7 **(3)** When an indoor gas-fired warm air furnace is proposed to be replaced with another
8 gas-fired warm-air furnace, the replacement is required to provide one of the following:
9 (i) low-nitrogen oxide emissions, of no more than 14 nanograms of nitrogen dioxide per
10 joule of useful heat delivered to the heated space; (ii) an Annual Fuel Utilization
11 Efficiency of not less than 90 percent; or (iii) evidence to the building official that an
12 equivalent system will be provided. The requirements of this subsection shall not apply
13 to an indoor gas-fired make-up air unit. Additionally, at least two of the following are
14 required:
- 15 i. Submitting an electrification retrofit feasibility report.
- 16 ii. Sizing the furnace equipment based on the current space conditioning needs of
17 the building with Denver Building and Fire Code requirements, and an analysis
18 prepared by a registered design professional of the existing building's envelope,
19 ventilation requirements, and load calculations based on ASHRAE/ACCA 183
20 or approved equivalent.
- 21 iii. Pressure testing of all natural gas piping.
- 22 **(4)** When a gas-fired storage water heater or instantaneous water heater is proposed to
23 be replaced with another gas-fired storage water heater or instantaneous water heater,
24 at least one of the following is required:
- 25 i. Submitting an electrification retrofit feasibility report.
- 26 ii. Pressure testing of all natural gas piping.
- 27 **(5)** Exemptions for emergency replacement and economic hardship shall be provided. The
28 building official shall consult with the executive director of the office of climate action,
29 sustainability, and resiliency in deciding whether or not to approve an economic
30 hardship exemption.
- 31 **(c)** No later than January 1, 2025, the Denver Building and Fire Code shall be amended to
32 implement the following electrification requirements:
- 33 **(1)** When a gas-fired warm air furnace located outside a building is proposed to be

1 replaced with a new gas-fired warm air furnace, the new gas-fired warm air furnace
2 may only provide supplementary heat, and the primary heating system shall be electric.

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

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

9 **(4)** The electrification requirements of subsections (c)(1) – (3) above may be met by a heat
10 pump or by electric resistance space or water heating equipment. If the electrification
11 requirements are met by electric resistance space or water heating equipment, then
12 the system shall be provided with an onsite renewable energy system sized to provide
13 not less than 100 percent of the annual energy use of the electric resistance space or
14 water heating equipment, with the following exceptions: an onsite renewable energy
15 system is not required where heat pumps are not available for that system type, or
16 where new electric resistance equipment is replacing existing electric resistance
17 equipment. An onsite renewable energy system used to comply with this section shall
18 not be used to meet any other regulatory requirement.

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

21 i. Submitting an electrification retrofit feasibility report.

22 ii. Sizing the equipment based on the current space conditioning needs of the
23 building with Denver Building and Fire Code requirements, and an analysis
24 prepared by a registered design professional of the existing building's envelope,
25 ventilation requirements, and load calculations based on ASHRAE/ACCA 183
26 or approved equivalent.

27 iii. Pressure testing of all natural gas piping.

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

30 i. Submitting an electrification retrofit feasibility report;

31 ii. Pressure testing of all natural gas piping.

32 **(7)** An electrification retrofit feasibility report looking at the feasibility of installing an electric
33 packaged terminal heat pump (PTHP) or single-package vertical heat pump (VTHP)

1 space system that provides both heating and cooling shall be submitted when an
2 electrically operated packaged terminal air conditioner (PTAC) or single-package
3 vertical air conditioner (VTAC) that serves a heated space is proposed to be replaced..

4 **(8)** Exemptions for emergency replacement and economic hardship shall be provided. An
5 economic hardship exemption will not be available for a system that can be replaced
6 with an electric heat pump at near cost parity, which will be defined as the cost of a
7 replacement of a natural gas space or water heating system to a partially electric heat
8 pump system, including all incentives, that is within 5-15% of a like-for-like natural gas
9 space or water heating system replacement, including the social cost of carbon dioxide
10 of the like-for-like gas system replacement over its lifetime. An economic hardship
11 exemption will not be available for a system where a heat pump is unavailable and
12 where the cost of an electric resistance system is at 'near cost parity' for that system
13 type, which will be defined as the cost of an electric resistance system, including all
14 incentives, that is within 5-15% of a like-for-like gas system replacement plus the social
15 cost of carbon of that like-for-like system over its lifetime. The building official shall
16 consult with the executive director of the office of climate action, sustainability, and
17 resiliency in deciding whether or not to approve an economic hardship exemption.

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

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

- 26 i. Submitting an electrification retrofit feasibility report that includes a schematic
27 design for an electric space heating system that provides 100 percent of the
28 annual space heating needs of the building.
- 29 ii. Sizing the equipment based on the current space conditioning needs of the
30 building with Denver Building and Fire Code requirements, and an analysis
31 prepared by a registered design professional of the existing building's envelope,
32 ventilation requirements, and load calculations based on ASHRAE/ACCA 183
33 or approved equivalent.

1 iii. Pressure testing of all natural gas piping.

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

8 i. Submitting an electrification retrofit feasibility report that includes a schematic
9 design for an electric water heating system that provides 100 percent of the
10 annual water heating needs of the building.

11 ii. Pressure testing of all natural gas piping.

12 **(3)** When an electrically operated PTAC or single-package VTAC that serves a heated
13 space is proposed to be replaced, the air conditioner shall be replaced with electric
14 equipment that provides both heating and cooling. Any other space heating equipment
15 shall be configured to operate as supplementary heat.

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

21
22 **Section 4.** A new Article XIV of Chapter 10 of the Denver Revised Municipal Code, entitled “High-
23 Performance Existing Building Program,” shall be created to read as follows:

24
25 **“Section 10-400. - Definitions.** The following words and phrases, as used in this article XIV, shall
26 have the following meanings:

27
28 **(a) *Benchmarking:*** Measuring a Covered Building’s energy performance using the ENERGY
29 STAR Portfolio Manager tool or other platforms as CASR may designate.

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

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

2 (d) **Covered Building:**

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

5 i. A building that was not occupied and did not have a certificate of occupancy or
6 temporary certificate of occupancy for all twelve (12) months of the calendar
7 year for which benchmarking is required;

8 ii. A building that was not occupied, due to renovation, for all twelve (12) months
9 of the calendar year for which benchmarking is required;

10 iii. A building for which a demolition permit for the entire building has been issued
11 and for which demolition work has commenced on or before the date the
12 benchmarking report is due;

13 iv. A building that is presently experiencing qualifying financial distress, as defined
14 by any of the following: (1) the building is the subject of a qualified tax lien sale
15 or public auction due to property tax arrearages; (2) the building is controlled by
16 a court appointed receiver; or (3) the building has been acquired by a deed in
17 lieu of foreclosure;

18 v. A building that is used primarily for manufacturing or agricultural processes; this
19 exclusion applies only if a facility where the majority of energy is consumed for
20 manufacturing, agriculture, or for other process loads. Process loads are energy
21 consumed for bona fide purposes other than heating, cooling, ventilation,
22 domestic hot water, cooking, lighting, appliances, office equipment, data
23 centers, or other plug loads.

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

27 i. A building for which a demolition permit for the entire building has been issued
28 and for which demolition work has commenced on or before the particular
29 compliance date.

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

- 1 (f) **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 (g) **Executive Director:** The executive director of the Office of Climate Action, Sustainability, and
5 Resiliency.
- 6 (h) **Existing Building Performance:** The energy efficiency and renewable energy of a covered
7 building measured by site Energy Use Intensity (EUI), or EUI adjusted for renewable energy
8 using data reported via the ENERGY STAR Portfolio Manager tool or other platforms as
9 CASR may designate.
- 10 (i) **Gross Floor Area:** The total property square footage, measured between the principal
11 exterior surfaces of the enclosing fixed walls of a building, as defined in the ENERGY STAR
12 Portfolio Manager definitions.
- 13 (j) **High Performance Existing Buildings Program:** The administrative program implemented
14 by CASR requiring the benchmarking, reporting, and existing building performance in
15 commercial and multifamily buildings that are located within the City and County of Denver.
- 16 (k) **Owner:** The person or entity having a legal or equitable interest in real property and its fixtures
17 and appurtenances, which shall explicitly include but not be limited to a homeowner's
18 association.
- 19 (l) **Site Energy Use Intensity or EUI:** A building's weather normalized site energy use
20 expressed as energy per squarefoot per year as a function of its size, normalized for weather
21 and other characteristics that are significant drivers of energy performance as feasible with
22 the reporting platform used. A building's EUI is calculated by dividing the total energy
23 consumed by the building in one year (measured in kBtu) by the total gross floor area of the
24 building.

25
26 **Section 10-401. - Purpose.**

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

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Section 10-402. - Applicability.

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

Section 10-403. - Benchmarking and Reporting.

- (a) Each owner of a covered building with a gross floor area equal to or greater than 25,000 square feet shall benchmark the building's energy usage annually using the ENERGY STAR Portfolio Manager tool, or other platform as CASR may designate, and by June 1 each year, accurately report energy performance information to CASR for the previous calendar year.
- (b) The energy performance information that must be reported to CASR shall include, at a minimum, a covered building's annual energy use intensity, ENERGY STAR Portfolio Manager score if eligible for a score, greenhouse gas emissions, and any other data fields needed to calculate the ENERGY STAR Portfolio Manager score for auditing and verification purposes.
- (c) Owners of covered buildings with a gross floor area equal to or greater than 25,000 square feet shall keep records of monthly energy consumption for a minimum of twenty-four (24) months. Such records shall be made available to CASR for inspection upon request.

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

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

1 through a rulemaking process with robust stakeholder input as CASR deems necessary to
2 reach the City's climate goals.

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

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

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

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

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

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

15 **(2)** For existing covered buildings where no baseline data was received for 2019, or if
16 CASR has determined that the building type needs to be reviewed and possibly
17 corrected for submission in the 2022 benchmarking report, CASR will set required
18 interim targets by September 1, 2022.

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

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

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

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

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

31 iii. In the benchmarking report due on June 1, 2031, a demonstration that the
32 covered building has met the final energy performance target for calendar year
33 2030.

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

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

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

15
16 **Section 10-405 – Existing Building Performance for Covered Buildings with a Gross Floor**
17 **Area of 5,000-24,999 Square Feet.**

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

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

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

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

27
28 **Section 10-406. – Authority to Adopt Rules and Regulations.**

29 The executive director is authorized to adopt rules and regulations the executive director may deem
30 proper to implement the provisions of this article XIV, the high-performance existing building
31 program.

1 **Section 10-407. - Enforcement.**

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

4 **(b)** The executive director, or the executive director’s designee, is empowered to enforce the
5 provisions of this article XIV and any rules and regulations adopted pursuant to this article.

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

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

12 **(e)** If a covered building owner subject to the civil penalty above fails to pay the required amount
13 within one hundred eighty (180) days, the civil penalty will be considered a debt to the city
14 until paid in full. The debt is a perpetual lien on the property, and is superior and prior to all
15 other liens, regardless of their dates of recordation, except for liens for general taxes and prior
16 special assessments, until the civil penalty owed, delinquent interest, and recording fees have
17 been paid in full. In addition to the remedies set forth in this section, an action or other process
18 provided by law may be maintained by the city to recover or collect any amounts, including
19 interest, owing under this section. Interest is calculated in the same manner and same amount
20 as delinquent property taxes. The executive director must record the lien with the clerk and
21 recorder.

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28 COMMITTEE APPROVAL DATE: _____, 2021

29 MAYOR-COUNCIL DATE: _____, 2021

30 PASSED BY THE COUNCIL: _____, 2021

31 _____ - PRESIDENT

32 APPROVED: _____ - MAYOR _____, 2021

33 ATTEST: _____ - CLERK AND RECORDER,

DRAFT

EX-OFFICIO CLERK OF THE
CITY AND COUNTY OF DENVER

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3 NOTICE PUBLISHED IN THE DAILY JOURNAL: _____, 2021; _____, 2021

4 PREPARED BY: Lindsay Carder, Assistant City Attorney DATE: _____, 2021

5 Pursuant to section 13-12, D.R.M.C., this proposed ordinance has been reviewed by the office of
6 the City Attorney. We find no irregularity as to form, and have no legal objection to the proposed
7 ordinance. The proposed ordinance is not submitted to the City Council for approval pursuant to
8 § 3.2.6 of the Charter.

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

10 BY: _____, Assistant City Attorney DATE: _____, 2021

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DRAFT