

ORDINANCE NO. _____

AN ORDINANCE OF THE CITY OF GLENDALE, CALIFORNIA, AMENDING THE GLENDALE BUILDING AND SAFETY CODE VOLUME IX TO ADOPT LOCAL AMENDMENTS TO THE 2022 EDITION OF THE CALIFORNIA BUILDING AND ENERGY CODE PERTAINING TO BUILDING ELECTRIFICATION, SOLAR PHOTOVOLTAIC AND ELECTRIC VEHICLE CHARGING INSTALLATIONS

WHEREAS, this ordinance amends the 2023 Glendale Building and Safety Code to add reach codes that require building electrification, installation of photovoltaic systems and electric vehicle charging systems for new residential and nonresidential buildings; and

WHEREAS, adoption of the reach codes supports the City Council's recent authorization to prepare a Climate Action and Adaptation Plan (CAAP) which will aim to reduce communitywide greenhouse gas emissions; and

WHEREAS, various state orders and statutes are targeted to reduction of greenhouse gas emissions including Executive Order N-79-20 and the Advanced Clean Cars II program which prohibits the sale of internal combustion passenger vehicles beyond 2035, and the California Green Building Standards Code which contains mandatory green building provisions, as well as a range of voluntary measures, known as CALGreen Voluntary Tier 1 and Tier 2, relating to energy efficiency and renewable energy; and

WHEREAS, California Health and Safety Code section 17958 requires cities adopt building regulations that are substantially the same as those adopted by the California Building Standards Commission and contained in the California Building Standards; and

WHEREAS, additionally, the California Energy Code is a part of the California Building Standards which implements minimum energy efficiency standards in buildings through mandatory requirements, prescriptive standards, and performances standards; and

WHEREAS, California Health and Safety Code Sections 17958.5, 17958.7 and 18941.5 allow the City to make changes or modifications to the building standards contained in the California Building Standards based upon express findings that such changes or modifications are reasonably necessary because of local climactic, geological or topographical conditions; and

WHEREAS, California Green Building Standards Code Section 101.7.1 provides that local climactic, geological or topographical conditions include environmental conditions established by a city, county, or city and county through findings; and

WHEREAS, the City Council of the City of Glendale finds that each of the amendments, additions and deletions to the California Green Building Standards Code and California Energy Code contained in this ordinance are reasonably necessary because of local climactic, geological or topographical conditions described in Attachment “A” to this ordinance; and

WHEREAS, Public Resources Code Section 25402.1(h)2 and Section 10-106. of the Building Energy Efficiency Standards (Standards) establish a process which allows local adoption of energy standards that are more stringent than the statewide Standards, provided that such local standards are cost effective, and that the California Energy Commission finds that the local standards will require buildings to be designed to consume no more energy than permitted by the California Energy Code; and

WHEREAS, cost effectiveness studies prepared by the California Statewide Investor Owned Utilities Codes and Standards Program in conjunction with the City’s consultant demonstrate that the local amendments are cost-effective and do not result in buildings consuming more energy than is permitted by the 2022 California Energy Code; and

WHEREAS, local amendments to the 2022 California Energy Code were the subject of three public meetings conducted on August 25th, September 8th and September 12, 2022 (City Council) pursuant to which direction was given to bring this ordinance forward for introduction; and

WHEREAS, following adoption of this ordinance the local amendments to the 2022 California Energy Code as adopted into the 2022 Glendale Building and Safety Code will, in accordance with Public Resources Code Section 25402.1(h)(2) and Section 10-106 of the 2022 California Administrative Code (Title 24, Part 1), be submitted to the California Building Standards Commission for filing and will be submitted to the California Energy Commission for approval.

BE IT ORDAINED BY THE COUNCIL OF THE CITY OF GLENDALE:

SECTION 1. RECITALS

The City Council finds the foregoing recitals to be true and correct and hereby incorporates those recitals into this Ordinance.

SECTION 2. PURPOSE AND INTENT

It is the purpose and intent of this Ordinance to adopt the local amendments to the 2022 California Energy Code (Title 24, Part 6 and Part 11) that provide local, cost effective standards for new residential, non-residential, and hotel and motel buildings that exceed the minimum standards of the 2022 California Energy Code and 2022 California Green Building Standards Code to achieve energy savings, reduce local pollution, reduce greenhouse gas emissions, and address unique local climactic, geological, and topographical conditions. The requirements of this chapter shall not affect any other

state or local requirements related to the delivery of affordable housing, including but not limited to state and local density bonus requirements under Government Code Section 65915 et seq. and G.M.C Chapter 4.11, Chapter 30.35 and Chapter 30.36. Furthermore, nothing in this local amendment negates the requirement of new construction to comply with State code minimums.

SECTION 3. LOCAL AMENDMENTS TO ENERGY CODE

Volume IX (Green Building Standards) of the 2023 Glendale Building and Safety Code, is hereby amended as follows (underlined for additions and strike through for deletions):

A. SECTION IX-5 Local Amendments to the California Green Building and Energy Codes. Notwithstanding any provisions of the 2022 California Energy Code, 2022 California Green Building Standards Code, or other codes adopted by any Chapter in the Glendale Municipal Code to the contrary, the local amendments to the Energy Code and Green Building Code set forth in this Section shall apply and are hereby amended as follows:

1. California Energy Code Subchapter 1, section 100.1(b) (Definitions) is hereby amended as follows:

AFFORDABLE HOUSING. Units owned or operated by any government agency or whose rent is subsidized by any government agency, including, but not limited to, subsidies under the federal government’s Housing Choice Voucher Program (Section 8); rental units that require intake, case management or counseling as part of the occupation, and an occupancy agreement; or rental units subject to a covenant or agreement, such as a density bonus housing agreement, inclusionary housing agreement or an affordable housing agreement, with a government agency, including the city, the housing authority, the state of California, or the federal government, restricting the rental rate that may be charged for that unit.

ALL-ELECTRIC BUILDING. A building that contains no combustion equipment or plumbing for combustion equipment, including but not limited to, serving space heating (including fireplaces), water heating (including pools and spas), cooking appliances (including barbeques), and clothes drying, within the building or building property lines, and instead uses electric heating appliances for service.

COOKING EQUIPMENT. Means equipment intended for commercial use, including ovens, ranges, and cooking appliances for use in a Commercial Kitchen, restaurant, or other business establishment where food is dispensed.

COMBUSTION EQUIPMENT. Any equipment or appliance that uses fuel gas, including but not limited to, any equipment or appliance used for space heating, water heating, cooking, clothes drying and/or lighting that uses fuel gas.

COMMERCIAL KITCHEN. Is a facility devoted to the commercial preparation, production, and cooking of food and beverages.

ECONOMIC INFEASIBILITY. Means the inability of a development project to meet the requirements of the local amendment to the building code due to a substantial increase in upfront or operational costs so that the development project is no longer economically viable.

ELECTRIC HEATING APPLIANCE. A device that produces heat energy to create a warm environment by the application of electric power to resistance elements, refrigerant compressors, or dissimilar material junctions, as defined in the California Mechanical Code.

ELECTRIC VEHICLE CHARGING STATION (EVCS). A parking space that includes installation of electric vehicle charging equipment (EVSE) at an EV Ready Space. An EVCS space may be used to satisfy EV Ready Space requirements. EVSE shall be installed in accordance with the California Electrical Code, Article 625.

FUEL GAS. A gas that is natural, manufactured, liquefied petroleum, or a mixture of these that is used as fuel.

LEVEL 2 EV CAPABLE SPACE. A parking space provided with electrical infrastructure that meets the following requirements:

- A. Conduit that links a listed electrical panel with sufficient capacity to a junction box or receptacle located within three (3) feet of the parking space.
- B. The conduit shall be designed to accommodate at least 8.3 kVa (208/240 volt, 40-ampere) per parking space. Conduit shall have a minimum nominal trade size of 1 inch inside diameter and may be sized for multiple circuits as allowed by the California Electrical Code. Conduit shall be installed at a minimum in spaces that will be inaccessible after construction, either trenched underground or where penetrations to walls, floors, or other partitions would otherwise be required for future installation of branch circuits, and such additional elements deemed necessary by the Building Official. Construction documents shall indicate future completion of conduit from the panel to the parking space, via the installed inaccessible conduit.
- C. The electrical panel shall reserve a space for a 40-ampere overcurrent protective device space(s) for EV charging, labeled in the panel directory as "EV CAPABLE."
- D. Electrical load calculations shall demonstrate that the electrical panel service capacity and electrical system, including any on-site distribution transformer(s), have sufficient capacity to simultaneously charge all EVs at all required EV spaces at a minimum of 40 amperes.
- E. The parking space shall contain signage with at least a 12-inch font

adjacent to the parking space indicating the space is EV Capable.

LEVEL 2 EV READY SPACE. A parking space that is served by a complete electric circuit with the following requirements:

- A. A minimum of 8.3 kVa (208/240 volt, 40-ampere) capacity wiring.
- B. A receptacle labeled “Electric Vehicle Outlet” or electric vehicle supply equipment located within three (3) feet of the parking space. If EVSE is provided the minimum capacity of the EVSE shall be 30-ampere.

SOLAR ELECTRIC GENERATION SYSTEM or PHOTOVOLTAIC SYSTEM (PV)

Is the complete set of all components for converting sunlight into electricity through the photovoltaic process, including the array of panels, inverter(s) and the balance of system components required to enable the system to effectively deliver power to reduce a building's consumption of electricity from the utility grid.

TECHNICAL INFEASIBILITY. Is the inability of a development project to meet the requirements of local amendments to the Glendale Building and Safety Code due to a lack of commercially available equipment, specific technologies, or unique site characteristics.

AUTOMATIC LOAD MANAGEMENT SYSTEM (ALMS). A control system designed to manage load across one or more electric vehicle supply equipment (EVSE), circuits, panels and to share electrical capacity and/or automatically manage power at each connection point. ALMS systems shall be designed to deliver no less than 3.3 kVa (208/240 volt, 16-ampere) to each electric vehicle (EV) Capable, EV Ready or EVCS space served by the ALMS, and meet the requirements of California Electrical Code Article 625. The connected amperage to the building site for the EV charging infrastructure shall not be lower than the required connected amperage per California Green Building Standards Code, Title 24 Part 11.

2. Title 24, Part 6, Subchapter 3 – Nonresidential, Hotel/Motel Occupancies, and Covered Processes – New Mandatory Local Requirements.

Section 120.11 is added to the California Energy Code as Follows:

Section 120.11 Non-residential photovoltaic required system size. All new nonresidential, high-rise residential, and hotel/motel buildings shall comply with the requirements of Section 120.11(a) or Section 120.11(b). The required installation of a photovoltaic (PV) system shall be sized according to one of the following methods:

- a. Install a PV system that offsets 100% of building electricity use based on energy models conducted for the building, the solar PV system should offset 100% of average annual building electricity demand.

- b. Install a PV system that covers 50% of gross roof space based on gross roof area, the solar PV system should cover a square footage equal to 50% of the total roof area.

Section 120.12 Technical Infeasibility Waiver Process. Building permit applicants may request a waiver from the requirements of section 120.11 by submitting an technical infeasibility waiver application to the Building Official. Technical infeasibility waiver applications must demonstrate that circumstances exist that make installation of non-residential photovoltaic systems is technologically infeasible. The Building Official shall make a determination whether a technical infeasibility waiver applicant has demonstrated with substantial evidence that there exist sufficient practical challenges to make compliance with the provisions of section 120.11 technologically infeasible. As part of any application for a technical infeasibility waiver an applicant shall also demonstrate the maximum feasible level of compliance. Circumstances that constitute technical infeasibility include, but are not limited to, the location of a building, limited rooftop availability, shading from nearby structures, topographic constraints, or existing vegetation. The applicant is responsible for demonstrating technical infeasibility when applying for exemption. If the Building Official determines that it is technically infeasible for the applicant to fully meet the requirements of section 120.11, the Building Official shall also determine the maximum feasible threshold of compliance reasonably achievable for the project. The Building Official shall notify the applicant in writing of his or her determination. Any modifications to a project based on the approval or denial of a technical infeasibility wavier application shall be completed prior to further review of any pending planning or building permit application.

Section 120.13 Appeal Procedure. A decision of the Building Official shall become final fifteen (15) days following the date of the decision letter unless an appeal to the Building and Fire Board of Appeals is filed pursuant to Chapter 2.56 of the Glendale Municipal Code.

3. Title 24, Part 6, Subchapter 10 – Multifamily Buildings– New Mandatory Local Requirements.

Section 160.10 is added to the California Energy Code as Follows:

160.10 Nonresidential Photovoltaic Required System Size. All new multifamily buildings shall comply with the requirements of Section 160.10(a) or Section 160.10(b). The required installation of a photovoltaic (PV) system shall be sized according to one of the following methods:

- a. Install a PV system that offsets 100% of building electricity use. Based on energy models conducted for the building, the solar PV system should offset 100% of average annual building electricity demand.

- b. Install a PV system that covers 50% of gross roof space. Based on gross roof area, the solar PV system should cover a square footage equal to 50% of the total roof area.

Section 160.11 Technical Infeasibility Waiver Process. Building permit applicants may request a waiver from the requirements of section 160.10 by submitting a technical infeasibility waiver application to the Building Official. Technical infeasibility waiver applications must demonstrate that circumstances exist that make installation of non-residential photovoltaic systems is technologically infeasible. The Building Official shall make a determination whether a technical infeasibility waiver applicant had demonstrated with substantial evidence that there exist sufficient practical challenges to make compliance with the provisions of section 160.10 technologically infeasible. As part of any application for a technical infeasibility waiver an applicant shall also demonstrate the maximum feasible level of compliance. Circumstances that constitute technical infeasibility include, but are not limited to, the location of a building, limited rooftop availability, shading from nearby structures, topographic constraints, or existing vegetation. The applicant is responsible for demonstrating technical infeasibility when applying for exemption. If the Building Official determines that it is technically infeasible for the applicant to fully meet the requirements of section 160.10, the Building Official shall also determine the maximum feasible threshold of compliance reasonably achievable for the project. The Building Official shall notify the applicant in writing of his or her determination. Any modifications to a project based on the approval or denial of a technical infeasibility waiver application shall be completed prior to further review of any pending planning or building permit application.

Section 160.12 Appeal Procedure. A decision of the Building Official shall become final fifteen (15) days following the date of the decision letter unless an appeal to the Building and Fire Board of Appeals is filed pursuant to Chapter 2.56 of the Glendale Municipal Code.

4. California Green Building Standards Code, Title 24, Part 11

4.1 Chapter 4 – Residential Mandatory measures

Section 4.1(a) subsection 4.106.4 of the California Energy Code is amended as follows:

4.106.4 Electric vehicle (EV) charging for new construction. New construction shall comply with California Energy Code Sections 4.106.4.1 or 4.106.4.2, and 4.106.4.3, to facilitate future installation and use of EV chargers. Electric vehicle supply equipment (EVSE) shall be installed in accordance with the California Electrical Code, Article 625. For EVCS signs, refer to Caltrans Traffic Operations Policy Directive 13-01 (Zero Emission Vehicle Signs and Pavement Markings) or its successor(s). New

construction projects with site specific electricity capacity limitations shall where technically feasible install ALMS and/or electricity infrastructure to comply with this section.

4.106.4.1 Exceptions:

The city may determine, on a case-by-case basis, that EV charging and infrastructure installations are not required where:

- A. Accessory Dwelling Units (ADU) and Junior Accessory Dwelling Units (JADU) do not have additional parking facilities and do not have an electrical panel upgrade or new panel installation. Provided, however, ADUs and JADUs without additional parking but the development of which include electrical panel upgrades or installation of new panels must have reserved breakers and electrical capacity according to the requirements of California Energy Code section 4.106.4.1.

4.106.4.2 New one- and two-family dwellings and town-houses with attached private garages.

4.106.4.2.1 New Construction. For each dwelling unit, one of the required parking spaces shall be a Level 2 EV Ready space. If a second parking space is provided, it shall be a Level 1 EV Ready space.

4.106.4.3 New multifamily dwellings new residential parking facilities.

4.106.4.3.1 New Construction with Less Than 20 Dwelling Units. Fifty percent (50%) of dwelling units with parking spaces shall be Level 2 EV Ready. ALMS shall be permitted to reduce load when multiple vehicles are charging. An additional five percent (5%) of dwelling units with parking spaces shall be a Level 2 Electric Vehicle Charging Spaces. An additional 20% of dwelling units with parking spaces shall be Level 2 EV Capable. EV Ready Spaces, EV Capable Spaces, and EVCS in multifamily developments shall comply with California Building Code, Chapter 11A, Section 1109A. EVCS shall comply with the accessibility provisions for EV chargers in the California Building Code, Chapter 11B.

4.106.4.3.2 New Construction with 20 Dwelling Units or More. Fifty percent (50%) of dwelling units with parking spaces shall be Level 2 EV Ready. ALMS shall be permitted to reduce load when multiple vehicles are charging. An additional fifteen percent (15%) of dwelling units with parking spaces shall be a Level 2 Electric Vehicle Charging Spaces. An additional 10% of dwelling units with parking spaces shall be Level 2 EV Capable. EV Ready Spaces, EV Capable Spaces, and EVCS in multifamily developments shall comply with California Building Code, Chapter 11A, Section 1109A. EVCS shall comply with the accessibility provisions for EV chargers in the California Building Code, Chapter 11B.

Section 4.1(b) subsection 4.106.5 is added to the California Energy Code as Follows:

4.106.5. All-electric buildings. New construction buildings shall comply with California Energy Code Section 4.106.5.1 or 4.106.5.2 so that they either do not use combustion equipment, or are ready to accommodate installation of electric heating appliances.

4.106.5.1. New construction. All newly constructed buildings shall be all-electric buildings.

4.106.5.2. Technical Infeasibility Waiver Process. Building permit applicants may request a waiver from the requirements of subsection 4.106.5.1 by submitting a technical infeasibility waiver application to the Building Official. Technical infeasibility waiver applications must demonstrate that circumstances exist that make installation of all-electric appliances is technologically infeasible. The Building Official shall make a determination whether a technical infeasibility waiver applicant had demonstrated with substantial evidence that there exist sufficient practical challenges to make compliance with the provisions of subsection 4.106.5.1 technologically infeasible. As part of any application for a technical infeasibility waiver, an applicant shall also demonstrate the maximum feasible level of compliance. Circumstances that constitute technical infeasibility include, but are not limited to, lack of commercially available materials and or technologies. If the Building Official determines that it is technically infeasible for the applicant to fully meet the requirements of this Chapter, the Building Official shall also determine the maximum feasible threshold of compliance reasonably achievable for the project. The Building Official shall notify the applicant in writing of his or her determination. Any modifications to a project based on the approval or denial of an infeasibility waiver application shall be completed prior to further review of any pending planning or building permit application.

4.106.5.3. Appeal Procedure. A decision of the Building Official shall become final fifteen (15) days following the date of the decision letter unless an appeal to the Building and Fire Board of Appeals is filed pursuant to Chapter 2.56 of the Glendale Municipal Code.

4.2 Chapter 5 – New Non-Residential Local Mandatory Measures

Section 5.106.5.3 of the California Energy Code is deleted in its entirety and replaced with the following:

5.106.5.3 Electric vehicle (EV) charging.

Electric vehicle (EV) charging for new non-residential and hotel construction is adopted as mandatory at the Tier 2 level.

Section 5.106.13 is added to the California Energy Code as follows:

5.106.13 All-electric buildings. New construction buildings shall comply with Section 5.106.13.1 or 5.106.13.2 so that they do not use combustion equipment or are ready to accommodate installation of electric heating appliances.

5.106.13.1. New construction. All newly constructed buildings shall be all-electric buildings.

5.106.13.2 Technical Infeasibility Waiver Process. Building permit applicants may request a waiver from the requirements of subsection 5.106.13.1 by submitting a technical infeasibility waiver application to the Building Official. Technical infeasibility waiver applications must demonstrate that circumstances exist that make installation of all-electric appliances is either entirely or partially infeasible. The Building Official shall make a determination whether a technical infeasibility waiver applicant had demonstrated with substantial evidence that there exist sufficient practical challenges to make compliance with the provisions of subsection 5.106.13.1 infeasible. As part of any application for a technical infeasibility waiver, an applicant shall also demonstrate the maximum feasible level of compliance. Circumstances that constitute technical infeasibility include, but are not limited to, lack of commercially available materials and or technologies. If the Building Official determines that it is technically infeasible for the applicant to fully meet the requirements of subsection 5.106.13.1, the Building Official shall also determine the maximum feasible threshold of compliance reasonably achievable for the project. The Building Official shall notify the applicant in writing of his or her determination. Any modifications to a project based on the approval or denial of an infeasibility waiver application shall be completed prior to further review of any pending planning or building permit application.

5.106.13.3 Appeal Procedure. A decision of the Building Official shall become final fifteen (15) days following the date of the decision letter unless an appeal to the Building and Fire Board of Appeals is filed pursuant to Chapter 2.56 of the Glendale Municipal Code.

5.106.13.4 Economic Infeasibility Provisions Applicable to Commercial Kitchens. On or before December 31, 2023 a non-residential building containing a Commercial Kitchen may request an infeasibility waiver based on economic infeasibility. If an economic infeasibility waiver is granted to a Commercial Kitchen, that Commercial Kitchen will be permitted to contain non-electric cooking appliances in the building area designated for use of cooking equipment, subject to the requirements of subsection 5.106.13.5.

5.106.13.5 Use of Natural Gas Appliances. If natural gas appliances are used under an infeasibility waiver, each natural gas appliance location must be electrically pre-wired for future electric appliance installation in the following manner:

- A. A dedicated circuit, phased appropriately, for each appliance. Each such circuit shall have a minimum amperage requirement for a comparable electric appliance (based on the manufacturer's recommendations), an electrical receptacle or junction box that is connected to the electric panel, conductors of adequate capacity within 3 feet of the appliance. Each such circuit shall be accessible with no obstructions;

- B. Both ends of the unused conductor or conduit shall be labeled with the words "For Future Electric Appliance" and be electrically isolated;
- C. A reserved circuit breaker space shall be installed in the electrical panel adjacent to the circuit breaker for the branch circuit and labeled for each circuit, an example is as follows: "For Future Electric Range"; and iv. All electrical components, including conductors, receptacles, junction boxes, or blank covers, related to this section shall be installed in accordance with the California Electrical Code.

SECTION 4. Severability.

This Ordinance's provisions are severable. If any portion of this Ordinance or its application to any person or circumstance is held invalid or unconstitutional, that decision does not affect the validity of the Ordinance's remaining portions and the Ordinance's application to other persons and circumstances. The City Council declares that it would have passed the remainder of this Ordinance without the invalid or unconstitutional provision.

SECTION 4. Effective Date.

This Ordinance shall take effect and be in force thirty (30) days after the date of its passage.

SECTION 5. Certification.

The City Clerk is directed to certify the passage and adoption of this Ordinance; cause it to be entered into the City's book of original ordinances; make a note of the passage and adoption in the records of this meeting; and within fifteen (15) days after the passage and adoption of this Ordinance, cause it to be published or posted in accordance with California law.

Adopted by the Council of the City of Glendale on the ___ day of _____, 2022.

Mayor

ATTEST:

City Clerk

STATE OF CALIFORNIA)
) SS.
COUNTY OF LOS ANGELES)

I, Dr. Suzie Abajian, City Clerk of the City of Glendale, hereby certify that the foregoing Ordinance was adopted by the Council of the City of Glendale, California, at a regular meeting held on the _____ day of _____, 2022, and that the same was adopted by the following vote:

Ayes:

Noes:

Absent:

Abstain:

City Clerk

Attachment A:

Local climactic, geological or topographical conditions

1. All Electric Buildings

Finding No. 1: Climactic:

The burning of fossil fuels used to heat structures, heat water for cooking, and for other uses is a significant contributor to greenhouse gas emissions and climate change. Combustion of natural gas and petroleum products for heating and cooking emit carbon dioxide, methane, and nitrous oxide. Emissions from natural gas consumption represented 46% of total annual U.S. energy-related CO₂ emissions in 2021¹. Scientists attribute the global warming trend observed since the mid-20th century to the human expansion of the ‘greenhouse effect’ warming that results when the atmosphere traps heat radiating from Earth towards space. Long lived gasses such as carbon dioxide can persist in the atmosphere for more than 100 years, even with efforts to reduce emissions today. Nitrous oxide, carbon dioxide, and methane are gases that contribute to the greenhouse gas effect².

Global climate change imposes substantial local impacts and risks on the Los Angeles Area, and thus the City of Glendale, including rising temperatures, changing precipitation patterns and amounts, sea level rise, flooding, drought, and wildfire. A general summary of climate risks facing the Los Angeles Area and City of Glendale are as follows:

- **Increased temperatures and extreme heat events.** The Los Angeles region is expected to experience an increase in average maximum temperatures of 4-5 degrees Fahrenheit by mid-century, and 5-8 degrees Fahrenheit by late-century, with the duration and intensity of extreme heat events increasing as well.
- **Changes in Rainfall Intensity.** By mid-century, more precipitation is projected to occur in winter in the form of less frequent but larger events. Most climate models predict drying trends across the State by 2100.
- **Increased Risk of Large Wildfires.** A hotter, drier climate is projected to increase wildfires across southern California, though there remains some uncertainty in quantifying future changes of burned area in the region.
- **Exacerbation of Air Quality Problems.** If temperatures rise to the medium warming range, there could be 75% to 85% more days with weather conducive to ozone formation, relative to today’s conditions. This is more than twice the

¹ U.S. Energy Information Administration, Where Greenhouse Gases Come From, 2021.

<https://www.eia.gov/energyexplained/energy-and-the-environment/where-greenhouse-gases-come-from.php#:~:text=In%202021%2C%20petroleum%20accounted%20for,energy%2Drelated%20CO2%20emissions.>

² NASA, Causes of Climate Change, as of November 25, 2020, <https://climate.nasa.gov/causes/>. 4 NASA, Causes of Climate Change, as of November 25, 2020, <https://climate.nasa.gov/causes/>.

increase expected if rising temperatures remain in the lower warming range. This increase in air quality problems could result in an increase in asthma and other health-related problems.

- **Sea Level Rise.** 1-2 feet of sea level rise is projected by the mid-century, and most extreme projections lead to 8-10 feet by the end of the century, especially affecting LA County as a whole³.

All-electric construction has a significant positive effect on energy resource efficiency, waste and pollution generation, and the health of building occupants over the life of the building. As a result of the high temperatures, which are expected to rise in the future due to the effects of climate change, average load demand and peak load demand of energy used in Glendale are important factors impacting public safety and creating the potential for adverse economic impacts due to power outages or power reductions (i.e. “brownouts”). Reduction of total and peak energy use because of incremental conservation measures required by this ordinance will have local benefits in the additional available system energy capacity. Furthermore, the reduction of greenhouse gas emissions from all-electric buildings will help mitigate climate change and its negative effects such as extreme heat, droughts, intense storms, and flooding, thus making these amendments reasonably necessary because of local climactic reasons.

Finding No. 2: Geologic

- The Los Angeles area is densely populated and located in an area of high seismic activities. Concern for fire-life safety associated with gas appliances and associated piping located in the ground and in buildings increases with the risk of explosion or fire if there is a structural failure due to a seismic event considering the increasing number of buildings in the region.
- The risk of natural gas infrastructure and pipeline explosions and fires are magnified in cases of major earthquakes, for example, the 2010 San Bruno pipeline explosion.
 - Severe seismic events could disrupt communications, damage gas mains, and place increased demands on the dispersed resources of the Fire Department necessary for the life safety needs of the community
- Eliminating gas infrastructure in future construction will also reduce the risks of fires and explosions, particularly after seismic events, which will further save the City money by reducing disaster response and recovery costs

The elimination of gas infrastructure in future construction will reduce risk of geologic risk via natural gas infrastructure, making these amendments necessary because of local geologic/ seismic reasons.

³ California’s Fourth Climate Change Assessment, Los Angeles Regional Report, 2018.
https://www.energy.ca.gov/sites/default/files/2019-11/Reg%20Report-%20SUM-CCCA4-2018-007%20LosAngeles_ADA.pdf.

2. Solar Photo Voltaic

Finding No. 1: Climactic:

The burning of fossil fuels (gasoline, diesel) to produce electric power is a significant contributor to greenhouse gas emissions and climate change, as well as air pollution. Emissions from the power sector contributed 43% to Glendale's total greenhouse gas emissions in 2015 (15% came from natural gas, and 28% came from electricity)⁴. Scientists attribute the global warming trend observed since the mid-20th century to the human expansion of the 'greenhouse effect' warming that results when the atmosphere traps heat radiating from Earth towards space. Long lived gasses such as carbon dioxide can persist in the atmosphere for more than 100 years, even with efforts to reduce emissions today. Automobiles produce carbon dioxide, methane, and nitrous oxide when they run, in addition to air pollutants like nitrogen oxide, carbon monoxide, and particle emissions⁵. Nitrous oxide, carbon dioxide, and methane are gases that contribute to the greenhouse gas effect⁶.

The expansion of local renewable power generation through solar power has a significant positive effect on energy resource efficiency, electric grid stability, waste and pollution generation, and the health and productivity of building occupants over the life of the building. As a result of the high temperatures, which are expected to rise in the future due to the effects of climate change, average load demand and peak load demand of energy used in Glendale are important factors impacting public safety and creating the potential for adverse economic impacts due to power outages or power reductions (i.e. "brownouts"). Brownouts can negatively impact the health of building occupants through increased exposure to extreme heat, when air conditioning cannot function during a heatwave-induced brownout. Reduction of total and peak energy use because of the expansion of local renewable power generation required by this ordinance will have local benefits in the addition of available system energy capacity to Glendale's electric grid. Furthermore, the reduction of greenhouse gas emissions from buildings via reduced electric demand from reduced local energy production will help mitigate climate change and its negative effects such as extreme heat events, droughts, intense storms, and flooding, thus making these amendments reasonably necessary because of local climactic reasons.

Global climate change imposes substantial and local impacts and risks on the Los Angeles Area, and thus the City of Glendale, including rising temperatures, changing precipitation patterns and amounts, sea level rise, flooding, drought, and wildfire. A

⁴ City of Glendale Greenhouse Gas Inventory, 2015.

⁵ EPA, Transportation, Air Pollution, and Climate Change: <https://www.epa.gov/greenvehicles/greenhouse-gas-emissions-typical-passenger-vehicle>

⁶ NASA, Causes of Climate Change, as of November 25, 2020, <https://climate.nasa.gov/causes/>. 4 NASA, Causes of Climate Change, as of November 25, 2020, <https://climate.nasa.gov/causes/>.

general summary of climate risks facing the Los Angeles Area and City of Glendale are as follows:

- **Increased temperatures and extreme heat events.** The LA region is expected to experience an increase in average maximum temperatures of 4-5 degrees Fahrenheit by mid-century, and 5-8 degrees Fahrenheit by late-century, with the duration and intensity of extreme heat events increasing as well.
- **Changes in Rainfall Intensity.** By mid-century, more precipitation is projected to occur in winter in the form of less frequent but larger events. Most climate models predict drying trends across the State by 2100.
- **Increased Risk of Large Wildfires.** A hotter, drier climate is projected to increase wildfires across southern California, though there remains some uncertainty in quantifying future changes of burned area in the region.
- **Exacerbation of Air Quality Problems.** If temperatures rise to the medium warming range, there could be 75% to 85% more days with weather conducive to ozone formation, relative to today's conditions. This is more than twice the increase expected if rising temperatures remain in the lower warming range. This increase in air quality problems could result in an increase in asthma and other health-related problems.
- **Sea Level Rise.** 1-2 feet of sea level rise is projected by the mid-century, and most extreme projections lead to 8-10 feet by the end of the century, especially affecting LA County as a whole⁷.

The reduction of greenhouse gas emissions from the increased generation of solar photovoltaics will reduce emissions from the energy sector, and thus will help mitigate climate change and its negative effects such as extreme heat events, droughts, intense storms, and flooding, making these amendments reasonably necessary because of local climactic reasons. Increased local solar generation will also help mitigate brownouts and other energy constraints imposed by increased air conditioning use being driven by higher temperatures and extreme heat events.

3. EV Charging:

Finding No. 1: Climactic:

The burning of fossil fuels (gasoline, diesel) to power passenger vehicles is a significant contributor to greenhouse gas emissions and climate change, as well as air pollution. Emissions from transportation, mainly gas consumption by single-occupancy vehicles represented 47% of greenhouse gas emissions in the City of Glendale in 2015⁸.

⁷ California's Fourth Climate Change Assessment, Los Angeles Regional Report, 2018.
https://www.energy.ca.gov/sites/default/files/2019-11/Reg%20Report-%20SUM-CCCA4-2018-007%20LosAngeles_ADA.pdf.

⁸ Glendale 2015 Greenhouse Gas Inventory.

Scientists attribute the global warming trend observed since the mid-20th century to the human expansion of the ‘greenhouse effect’ warming that results when the atmosphere traps heat radiating from Earth towards space. Long lived gasses such as carbon dioxide can persist in the atmosphere for more than 100 years, even with efforts to reduce emissions today. Automobiles produce carbon dioxide, methane, and nitrous oxide when they run, in addition to air pollutants like nitrogen oxide, carbon monoxide, and particle emissions⁹. Nitrous oxide, carbon dioxide, and methane are gases that contribute to the greenhouse gas effect¹⁰.

Global climate change imposes substantial and local impacts and risks on the Los Angeles Area, and thus the City of Glendale, including rising temperatures, changing precipitation patterns and amounts, sea level rise, flooding, drought, and wildfire. A general summary of climate risks facing the Los Angeles Area and City of Glendale are as follows:

- **Increased temperatures and extreme heat events.** The LA region is expected to experience an increase in average maximum temperatures of 4-5 degrees Fahrenheit by mid-century, and 5-8 degrees Fahrenheit by late-century, with the duration and intensity of extreme heat events increasing as well.
- **Changes in Rainfall Intensity.** By mid-century, more precipitation is projected to occur in winter in the form of less frequent but larger events. Most climate models predict drying trends across the State by 2100.
- **Increased Risk of Large Wildfires.** A hotter, drier climate is projected to increase wildfires across southern California, though there remains some uncertainty in quantifying future changes of burned area in the region.
- **Exacerbation of Air Quality Problems.** If temperatures rise to the medium warming range, there could be 75% to 85% more days with weather conducive to ozone formation, relative to today’s conditions. This is more than twice the increase expected if rising temperatures remain in the lower warming range. This increase in air quality problems could result in an increase in asthma and other health-related problems.
- **Sea Level Rise.** 1-2 feet of sea level rise is projected by the mid-century, and most extreme projections lead to 8-10 feet by the end of the century, especially affecting LA County as a whole¹¹.

The reduction of greenhouse gas emissions from the increased use of EVs, supported by critical charging infrastructure in new construction will reduce

⁹ EPA, Transportation, Air Pollution, and Climate Change: <https://www.epa.gov/greenvehicles/greenhouse-gas-emissions-typical-passenger-vehicle>

¹⁰ NASA, Causes of Climate Change, as of November 25, 2020, <https://climate.nasa.gov/causes/>. 4 NASA, Causes of Climate Change, as of November 25, 2020, <https://climate.nasa.gov/causes/>.

¹¹ California’s Fourth Climate Change Assessment, Los Angeles Regional Report, 2018. https://www.energy.ca.gov/sites/default/files/2019-11/Reg%20Report-%20SUM-CCCA4-2018-007%20LosAngeles_ADA.pdf.

emissions from gas-powered passenger vehicles, and thus will help mitigate climate change and its negative effects such as extreme heat events, droughts, intense storms, and flooding, thus making these amendments reasonably necessary because of local climactic reasons.