



CITY OF GLENDALE, CALIFORNIA REPORT TO THE CITY COUNCIL

AGENDA ITEM

Report: Introduction of 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.

1. Introduction of an Ordinance Amending the Glendale Building and Safety Code, Volume IX, to Adopt Local Amendments to the 2022 Edition of the California Building and Energy Code.

COUNCIL ACTION

Item Type: Action Item

Approved for November 1, 2022 **calendar**

EXECUTIVE SUMMARY

The City of Glendale hired Rincon Consultants to develop building electrification, photovoltaic (PV), and electric vehicle (EV) charging reach codes to be adopted through a local amendment to the 2022 California Building and Energy Code.

The proposed reach codes will require the following:

1. **Building Electrification:** Require all new construction (including standalone accessory dwelling units (ADUs) to be all-electric with limited exemptions and subject to an infeasibility waiver.
2. **PV Infrastructure:** Require non-residential and multifamily PV systems to be installed on all new buildings to offset 100 percent of projected electricity use or cover at least 50 percent of rooftop space, and include an infeasibility waiver for

projects unable to meet the requirement due to shading or other technical constraints.

3. **EV Charging Infrastructure:** Require EV charging infrastructure for new single and multi-family dwellings, townhouses with attached private garages, new construction multifamily dwellings with residential parking facilities, and new non-residential construction, with limited exceptions and subject to an infeasibility waiver.

COUNCIL PRIORITIES

Environmental Stewardship: Implementation of building electrification, PV and EV charging are cornerstones of modern climate action planning and can lay the foundation for significant GHG reduction across the building and transportation sectors.

Infrastructure: Electrifying our homes has major health benefits. Burning gas releases nitrogen oxides and particulates, which can have serious health consequences.

RECOMMENDATION

That the City Council introduce an ordinance amending the Glendale Building and Safety Code, Volume IX, to include local reach code amendments to the 2022 Edition of the California Building and Energy Code.

BACKGROUND

The City of Glendale is considering three new reach codes, which would be adopted through local amendments to the 2022 California Building and Energy Code. These reach codes would go beyond the State’s minimum requirements for buildings required by California Building and Energy Code to emphasize even more significant energy savings and GHG reductions. The proposed reach codes will focus:

1. Electrifying new construction;
2. Expanding local solar generation; and
3. Increasing EV charging capacity.

At the September 22, 2020, City Council meeting, staff presented a report asking for direction on requiring commercial development in Glendale to provide rooftop solar photovoltaic systems. In the report, staff concluded in part; *“Should City Council decide to pursue adoption of a Reach Code requirement for commercial photovoltaic, further study would need to be conducted toward that aim. In addition to a Glendale-specific cost-effectiveness study for commercial photovoltaics, City Council may desire to include other provisions within the Reach Code, which would require further study.”*

City Council directed staff to explore hiring a consultant team to determine the feasibility of adopting a commercial PV requirement. In addition, City Council asked that any reach code study include information on building electrification and EV charging.

On March 22, 2022 the City Council approved the hiring Rincon Consultants, Inc., an experienced environmental science, planning and engineering firm to provide technical assistance and support development of local reach codes for building electrification, PV infrastructure, and EV charging for the City.

ANALYSIS

A goal of adopting reach codes is to continue on the pathway to decarbonize the City's built and transportation sectors. To that end, and based on analysis of building electrification, PV and EV reach codes across California, review of best practices, examination of Glendale's built environment and existing PV and EV infrastructure, and based on 2022 cost-effectiveness studies, Rincon has recommended Glendale consider adopting the following reach codes:

- 1. Building Electrification:** Require all new construction (including standalone accessory dwelling units (ADUs)) be all-electric with limited exemptions and subject to an infeasibility waiver. This approach advances the most substantial climate benefit by requiring developers to provide proof of technical infeasibility of building electrification instead of categorizing entire building types as electrification-exempt.
- 2. PV Infrastructure:** Require non-residential and multifamily PV systems be installed on all new buildings, in order to offset 100 percent of projected electricity use or to cover at least 50 percent of rooftop space. The PV infrastructure codes would include an infeasibility waiver for projects unable to meet the requirement due to shading or other constraints. This approach allows for PV installation sizes that produce a more ambitious GHG reduction for lower-density buildings while allowing flexible implementation in Glendale's urban environment, where buildings with a large energy footprint may have a small available amount of rooftop space.
- 3. EV Charging Infrastructure:**
 - a. Require new one and two-family dwellings and townhouses with attached private garages to install EV charging infrastructure consisting of one Level 2 EV Ready parking space for each dwelling unit. And, if a second parking space is provided, require that space to be Level 1 EV Ready.

- b. Require new construction of multifamily dwellings with residential parking facilities to install EV charging infrastructure as follows:
 - i. New construction with less than 20 dwelling units would be required to install EVCS with Level 2 EV Ready parking spaces where 50% of dwelling units have parking spaces. Required an additional 5% of dwelling units with parking spaces shall be Level 2 Electric Vehicle Charging Spaces. In addition, a further 20% of dwelling units with parking spaces shall be Level 2 EV Capable. ALMS shall be permitted to reduce load when multiple vehicles are charging.
 - ii. New construction with 20 dwelling units or more shall be required to provide EVCS with Level 2 EV Ready for 50% of dwelling units with parking spaces. ALMS shall be permitted to reduce load when multiple vehicles are charging. An additional 15% of dwelling units with parking spaces shall be Level 2 Electric Vehicle Charging Spaces. An additional 10% of dwelling units with parking spaces shall be Level II 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.
- c. Electric vehicle (EV) charging for new non-residential and hotel construction will be required to provide Tier 2 level charging capability.

A. GENERAL REQUIREMENTS APPLICABLE TO ALL PROPOSED REACH CODES

- 1. Existing Building Requirements:** The proposed ordinance **does not** require electrification of existing buildings.
- 2. Commercial Kitchens:** The proposed ordinance, based on cost effectiveness study for full service and quick services restaurants provides a limited exemption for a newly constructed food service establishments and would only apply to the area of its building with cooking equipment or a commercial kitchen. It is proposed that the exemption for commercial kitchens not-extend beyond December 31, 2023.
- 3. Affordable Housing:** The requirements of the proposed ordinance 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 GMC Chapter 4.11, Chapter 30.35 and Chapter 30.36.

4. Infeasibility Waivers Process Generally: There are certain facility types with specialized operations that may not be able to immediately to adopt all-electric options. Based on these circumstances staff proposes allowing permit applicants to apply for infeasibility waivers whereby applicants may show circumstances that make it technically infeasible to meet the requirements of the proposed reach code. Applicant's will have the obligation to provide proof of infeasibility, subject to the review and approval of the City's Building Official and/or GWP General Manager or their respective designee(s). Applicants for infeasibility waivers would still be required to make the facility electrification-ready to the greatest possible extent so that a future transition from natural gas to electric equipment will be easier.

- a. **Infeasibility.** Infeasibility is defined as the inability of a project to meet the requirements of the local amendments to the building code due to a lack of commercially available equipment, lack of specific technologies, or unique site characteristics that make it technically impossible to install and or implement the code required all-electric systems.
- b. **Applications for Infeasibility Waivers.** Building permit applicants seeking an infeasibility waiver will be required to apply for a waiver following an application process (to be developed). The waiver application will require the applicant to show the maximum threshold of compliance they believe is feasible for the project and demonstrate the circumstances that make further compliance infeasible.

5. Building Electrification Infeasibility Waiver Process: If an applicant for a building permit believes there are circumstances that make it technically infeasible to meet the ordinance's requirements for building electrification, the applicant may be able to justify installing natural gas appliances so long as the building is pre-wired for future electric appliance installation. Each natural gas appliance installed pursuant to an infeasibility waiver would be required to provide the following:

- a. A dedicated circuit, phased appropriately, for each appliance. Each circuit having 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, and 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.

6. Solar PV System Infeasibility Waiver Process: Applicants may request an infeasibility waiver from the PV System installation requirements from the Building Official. The Building Official may grant the waiver if the Building Official determines that PV system installation and implementation is technically infeasible. Technical infeasibility may include practical challenges such as building site constraints, limited rooftop availability, shading from nearby structures, topography, or vegetation.

7. EV System Infeasibility Waiver Process: Applicants may request an infeasibility waiver from EV system installation requirements from the Public Works Director, and or the General Manager of Glendale Water and Power. Public Works and/or GWP, depending on the applicant, may determine that EV charging and infrastructure are not feasible where there is no local utility power supply, or the local utility cannot supply adequate power, or where parking is not required. For example, Accessory Dwelling Units (ADUs) and Junior Accessory Dwelling Units (JADUs) are not required to supply additional parking facilities, electrical panel upgrades, or new panel installation. However, ADUs and JADUs without additional parking but with electrical panel upgrades or new panels will be required to provide reserved breakers and electrical capacity.

B. STAFFING RESOURCES.

Implementing the proposed reach codes and the 2022 California Building Code may require additional staffing resources in the Community Development Department and in Glendale Water & Power.

1. Community Development

As a consequence of changes brought about by state mandates regarding Solar/Photovoltaic, Electric Vehicle Charging Stations, and the adoption of new state laws granting greater flexibility to develop ADUs/JADUs, among other housing laws, the City has experienced a substantial increase in permit applications. Over the last four years, City staff has so far been able to offset increase in applications by implementing streamlining practices, using third-party vendors and hourly employees, and authorizing overtime. However, these short term fixes are not sustainable as a long-term work load solution.

Staff anticipates that work load will increase in connection with the 2022 State Building Code and Reach Code implementation. The increased work will principally be experienced in the processing of planning applications, plan checks, and inspections. These are areas already impacted by understaffing. Staff recommends adding a dedicated plan check engineer (Building Code Specialist III) and an inspector (Inspector II) with skills necessary to review photovoltaic systems by engineering analysis, evaluation of energy efficiency, and solar projects involving residential, commercial, or industrial customers. The dedicated inspector will apply knowledge of structural energy requirements, fire life safety, solar technology, and proper system installation.

Fiscal Impact:

- Building Code Specialist III - \$132,282 (FTE - fully burdened)
- Inspector II \$103,543 (FTE - fully burdened)

Planning and permitting fees are statutorily permitted to be set at levels that will cover the cost of these services.

2. Glendale Water and Power

The proposed reach codes and the 2022 California Building Code are geared towards further electrifying the built environment in California. The proposed reach codes focus on delivering an all-electric buildings starting January 2023. The 2022 California Building Code encourages the construction of all-electric buildings and requires that new buildings be electric-ready, meaning that the all-electric infrastructure needs to be in place, even if it will not be immediately capable of being used.

It is GWP's obligation to ensure the City has sufficient utility infrastructure to handle electrical loads from panels installed by the customers regardless of whether or not these panels are used. This includes the electrical distribution, sub-transmission/substations, generation infrastructure, and most importantly, the required

decommissioning/replacement/upgrade of existing aging utility infrastructure based on South Coast Air Quality District permitting, contractual and statutory reliability requirements – all of which has been discussed in the context of the Grayson Repowering Project, GWP’s Integrated Resource Plan, among other plans and reports.

The added demand on existing electrical infrastructure is real and is important to understand. For example, reach codes and Cal Green standards (100% electric) will increase electrical loads from multi-family buildings where EV charging will be required. If the increase load exceeds the existing 5MW feeder threshold, new feeders may need to be installed to connect the substation to serve the added electrical demand to these sites. The estimated cost to install a new feeder system is \$5 to \$7 million, and is chargeable to the project applicant. This new utility infrastructure may be a combination of overhead (OH)/underground(UG) – 12 KV feeder and substation equipment such as High Voltage Transformers/Circuit Breakers and associated hardware /protection systems.

New electrical infrastructure for single family homes development and major renovations of existing homes/ multi-unit apartments could cost in the range of \$1K for a simple OH service to \$3K to include a new pole, or \$25K to \$50K for a new UG service conduit/cable. A new second primary service typically costs from \$100K to \$200K – including new UG Conduits/Cables/Vault/ Transformer.

GWP will need to study, plan for, fund and develop infrastructure. These tasks require personnel to support administrative services such as plan development and checking new electrical installations. GWP is in the process of analyzing the impact of the proposed reach code and the 2022 California Building Code on staffing and infrastructure and will be submitting a staffing budget request in the near future, however, in the near term GWP anticipates it will need up to twenty (20) full time employees, including:

- **Field Personnel** - these positions are to Install/Construct/Maintain – New Reach Code Infrastructure/Feeders.
- **Customer Service Planning/ Inspector Series** - to locate electrical panels and assist customer in the design/location/inspection of new panels and increased service sizes to serve loads add EV chargers and electrify homes.
- **Engineering Personnel** - to plan and design GWP system/utility infrastructure upgrades and growth. As the GWP system grows and aging infrastructure is modernized and/or replaced, GWP will need additional staffing and resources to respond to 100% electrification of Glendale’s buildings and the transportation sector.

STAKEHOLDERS/OUTREACH

Staff has engaged in stakeholder outreach to obtain professional and community feedback on the proposed reach codes. The following groups were invited to attend the webinar and workshops:

- Glendale Chamber of Commerce
- American Institute of Architects, Los Angeles Chapter (AIA|LA)
- Sustainability Commission
- Sierra Club of the Foothills
- MPI Construction
- Architects
- EBE Associates
- UpDevelopment
- SEC Development
- NextGen Vision
- Sturgill Associates
- ArcSTEM
- Arch N Tech
- Structural AF
- Domus Design
- Franco Noravian and Associates
- Orange Green ARC
- Haks Design
- USGBC Los Angeles
- Glendale Environmental Coalition
- American Institute of Architects - Pasadena and Foothill Chapter
- Building Electrification Working Group
- USGBC Los Angeles
- City of Glendale Affordable Housing Team

The stakeholder outreach program included:

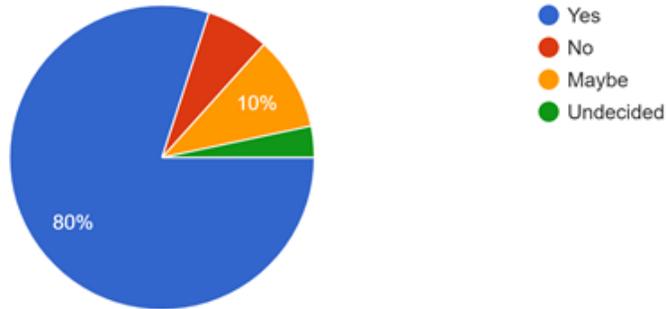
1. Introduction Webinar explaining reach codes and the types of reach codes the City of Glendale proposes.
2. A website describing the proposed City of Glendale reach codes, webinar presentations, a survey, and a FAQ corner.
<https://www.glendaleca.gov/government/departments/office-of-the-city-manager/new-building-electrification-ordinance>
3. Workshops: The City hosted two workshops, one for the professional community and one for the general community. The workshop sessions provided an in-depth look at the reach codes and allowed participants to ask detailed questions about the scope and scale of the proposed reach codes.

- Rincon provided a detailed presentation and recommendations on the reach codes to the Sustainability Commission.

Survey Results

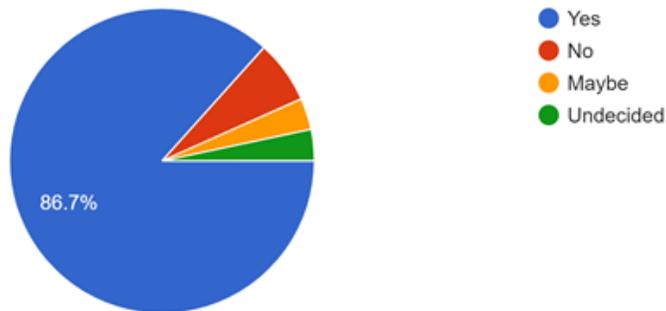
1: All-Electric New Construction: Will the proposed ordinance for all-electric new construction benefit Glendale (example: residents/ tenants, com...alth, City climate commitments, sustainability)?

30 responses



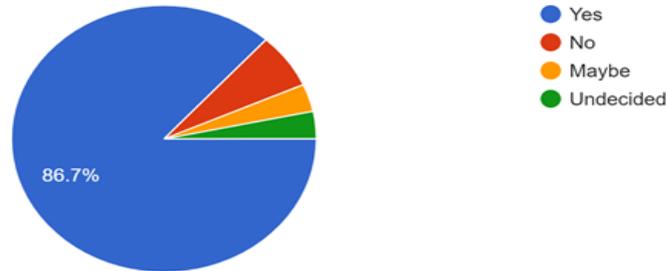
2: Expand Solar Photovoltaics (PV): Will the proposed ordinance for photovoltaics expansion (50% of energy use offset or 50% of rooftop space) benefit Glendale?

30 responses



3: Increase Electric Vehicle (EV) Charging: Will the proposed ordinance for EV charging expansion (adoption of CALGreen Tier 2 Voluntary Standards) benefit Glendale?

30 responses



Next Steps

If the City Council introduces the ordinance amending the Glendale Building and Safety Code Volume IX to Adopt Local Amendments to the 2022 Edition of the California Building and Energy Code, the following actions will occur:

1. After the ordinance is adopted, staff will prepare the required documentation to be submitted to the California Energy Commission to be agendaized for consideration of the proposed PV reach code on the first available monthly CEC meeting docket.
2. Staff will prepare the required documentation to be submitted to the California Building and Standards Commission.
3. Upon adoption of the ordinance, staff will file a CEQA notice of exemption with the Los Angeles County Clerk and with the Office of Planning and Research (OPR) at the state.

If the ordinance is introduced, adoption will be scheduled for the November 15, 2022 City Council meeting, and will become effective January 1, 2023. The PV reach code will become effective upon CEC approval.

FISCAL IMPACT

The implementation of the reach codes and the 2022 California Building Code will require additional staffing resources in the Community Development Department and/or Glendale Water and Power as detailed in this report.

ENVIRONMENTAL REVIEW (CEQA/NEPA)

The City Council finds and determines that this Ordinance is exempt from review under

the California Environmental Quality Act (California Public Resources Code §§15000, et seq., "CEQA"), and the regulations promulgated thereunder (14 California Code of Regulations §§15000, et seq., the "CEQA Guidelines") because it consists of revisions and clarifications to an existing code of construction-related regulations and specification of procedures related thereto being taken for enhanced protection of the environment and while there may be added infrastructure resulting from the implementation of the Reach Codes, it does not have the potential to cause significant effects on the environment; to the contrary, the transition from fossil fuel sources is part of the State of California's overall plan to decrease GHG emissions from stationary and transportation sources. Adoption of the Ordinance is categorically exempt in accordance with CEQA Guidelines §15305 as a minor alteration in land use limitations which do not result in any changes in land use or density and is exempt under CEQA Guidelines §15308 as an action taken by a regulatory agency as authorized by California law to assure maintenance or protection of the environment.

CAMPAIGN DISCLOSURE

This item is exempt from campaign disclosure requirements.

ALTERNATIVES

Alternative 1: Introduce an ordinance requiring all electric new construction, installing PV and EV infrastructure thus amending the Glendale Building and Safety Code to adopt Local Amendments to the 2022 Edition of the California Building and Energy Code.

Alternative 2: Introduce an ordinance requiring all electric new construction starting January 1, 2023, and to phase in PV and EV reach codes.

Alternative 3: City Council may consider any other alternative not proposed by staff.

ADMINISTRATIVE ACTION

Prepared by:

David Jones, Sustainability Officer

Approved by:

Roubik R. Golanian, P.E., City Manager

EXHIBITS/ATTACHMENTS

1. 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.
2. 2022 Code Cycle Custom Cost Effectiveness Analysis: City of Glendale - Nonresidential