



## **CITY OF GLENDALE, CALIFORNIA REPORT TO THE SUSTAINABILITY COMMISSION**

### **AGENDA ITEM**

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Report: Reach Codes - Building Electrification, Photovoltaic (PV) and Electric Vehicles (EV)

1. Motion that Sustainability Commission provide recommendations to City Council on options to be included in a reach code for Building Electrification, Photovoltaic (PV) and Electric Vehicle (EV) Charging to amend Title 24 of the California Building Code or adopt an amendment to the Glendale Municipal Code.

### **COMMISSION/COMMITTEE ACTION**

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**Item Type:** Action Item

**Approved for** September 1, 2022 **calendar**

### **ADMINISTRATIVE ACTION**

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**Submitted by:**

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**Prepared by:**

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## **RECOMMENDATION**

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The Sustainability Commission provide recommendations to City Council on options to be included in a reach code for Building Electrification, Photovoltaic (PV) and Electric Vehicle (EV) Charging to amend Title 24 of the California Building Code or adopt an amendment to the Glendale Municipal Code.

## **BACKGROUND/ANALYSIS**

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### **Background:**

The City of Glendale is considering three new reach codes which would be adopted through the 2023 California Building Code Title 24 code cycle. These codes are being proposed to help Glendale mitigate greenhouse gas emissions and health and safety concerns while taking advantage of cost savings and avoiding future retrofits. These reach codes would go beyond the State's minimum requirements for buildings required by California Title 24 Building Code to emphasize even more significant energy savings and GHG reductions through the following new codes:

- Electrifying new construction,
- Expanding local solar generation and
- Increasing electric vehicle (EV) charging capacity

At the September 2, 2020, City Council meeting staff presented a report asking for direction 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 photovoltaic requirement. In addition, City Council also asked that any reach code study include information on building electrification, EV charging, battery storage and, cool roof requirements.

Due to the complexity of this issue, at the November 4, 2021, City Council meeting staff, on the recommendation of the Sustainability Commission, recommended that a consultant be hired to provide technical assistance and support to staff to assist in the development of a potential reach code and associated ordinances for the City of Glendale.

Based on direction from City Council Rincon was hired to provide technical services and

support to the City of Glendale for the development of building electrification, photovoltaic (PV) infrastructure, and electric vehicle (EV) charging ordinances.

As part of this work scope Rincon will:

- Draft a memorandum with ordinance options and best practices from other jurisdictions
- Develop draft ordinances for building electrification, photovoltaics, and EV infrastructure
- Support the outreach and engagement process to refine the ordinances
- Support City staff on the reach code development and adoption process

This staff report outlines the recommendations from the Draft Memorandum developed by Rincon Exhibit 1.

### **Analysis:**

The Rocky Mountain Institute (RMI), an independent, non-partisan, nonprofit organization, has identified building electrification as a critical strategy for combatting climate change and reducing greenhouse gas emissions. RMI outlines the benefits of building electrification including:

1. Building Electrification Creates Healthy Homes and Living Environments
2. Building All-Electric Homes Is Less Expensive Than Building Homes with Fossil Fuel Appliances
3. Building Electrification Can Be a Transformative, Positive Force for Low-Income Residents and Communities of Color
4. Gas Infrastructure Costs Are Soaring

All-electric construction is already the standard in many US states. Nearly 60 percent of new homes nationwide are built all-electric, and more new homes use heat pumps than any other technology.

Implementation of building electrification, PV, and EV charging is currently the cornerstone of modern climate action planning. It can lay the foundation for significant greenhouse gas (GHG) reduction across the building and transportation sectors. According to the California Energy Codes & Standards *Cost-Effectiveness Study* (2019), all-electric low-rise residential buildings are less expensive to build and operate than mixed-fuel buildings in most of Glendale (in Climate Zone 9). The results also show that including a PV system increases the cost-effectiveness of all electric buildings. While EV charging ordinances can provide for consistent design, reduce installation costs, mitigate

GHG emissions that fuel climate change and, bring more equity to underserved communities.

### How does Glendale benefit from All-Electric New Construction?

- **Natural gas use in buildings is a significant contributor to climate change.** Nationwide, the majority of emissions from businesses and homes come from the combustion of fossil fuels (like natural gas) for heat. Reducing these emissions through electrification as the California grid goes carbon-neutral by 2045 will be a crucial strategy in City-level climate action planning.
- **Cleaner indoor air equals increased community health.** All-electric induction stoves and appliances do not emit air pollutants in indoor spaces, providing healthier indoor air quality. Natural gas-powered appliances, especially gas stoves, can spike emissions of carbon monoxide and nitrogen dioxide emissions.
- **All-electric homes and businesses can save consumers money.** Natural gas prices are expected to increase over time, as infrastructure to transport natural gas stays the same, but the number of customers decreases as homes and businesses electrify. Electrifying new buildings now will save home and business owners future costs of retrofits and shield them from rising natural gas prices. Furthermore, with the new code, building all-electric saves money up front and, when paired with expanded solar, can also save residents money on their bills.

### Local Solar:

- **Solar + electrification = cost savings.** California Energy Codes and Standards' analysis shows cost savings for the community through improved grid reliability, decreased emissions, and on-bill savings.
- **Local solar generation can increase grid resiliency.** When paired with increased storage system updates, local power generation through solar can contribute to electrical grid demand reduction. This increases grid resiliency on days when there is high-electric demand (ex. a hot summer day when there is an increased use of air conditioning).

### EV Charging:

- **Decrease emissions from one of the biggest GHG emitting sources.** Transportation accounts for around 50% of California's greenhouse gas emissions, most of which comes from gasoline combustion in passenger vehicles. As the California grid goes carbon-free by 2045, EVs will be key in reducing these sources of fossil fuel combustion emissions.

- **Increase Glendale’s preparedness for future EV Demand.** California State policy has aggressive targets for adopting zero-emissions vehicles and charging infrastructure, with a target of 100% in-state sales of passenger cars and light duty trucks by 2035 (Executive Order N-79-20).
- Increasing charging infrastructure for this uptick in electric vehicle usage will be critical to keeping up with statewide trends. Building in EV charging in the design phase will also save home and business owners future costs of installing EV chargers.

## Reach Code Recommendations Summary

The Memorandum developed by Rincon (Exhibit 1) outlines current best practices for reach code development and adoption in California. Based on an analysis of several criteria, including effectiveness in reducing GHGs, the feasibility of implementation, and cost-effectiveness, the following ordinance modifications have been identified as best practices for the City of Glendale in the effort to mitigate GHG and work towards achieving the State of California’s carbon neutrality target of 2045.

Findings provided by Rincon in the Memorandum are outlined below. The Memorandum offers comprehensive justification for developing a reach.

## Ordinance Adoption Pathways

There are two primary pathways for ordinance adoption, a local building code amendment of Title 24 or a municipal zoning or health and safety amendment. Both pathways have been taken by other jurisdictions and are feasible for Glendale. A summary of the pros and cons of each approach are summarized in Table 1

Policy Type	Pros	Cons	Notes
1. Building Code- Local Amendment to Title 24 (Reach Code)	<ul style="list-style-type: none"> <li>▪ Can be adopted as part of building code update already underway</li> <li>▪ Majority of cities have taken this approach</li> <li>▪ May cover buildings that are already entitled (but have not had building permits issued)</li> </ul>	<ul style="list-style-type: none"> <li>▪ Requires CEC approval and cost-effectiveness study (except for electric vehicles)</li> <li>▪ Climate zone 16 could be challenging to prove cost-effectiveness (pending 2022 cost-effectiveness numbers)</li> </ul>	Local amendments to Title 24 are common and encouraged by the CEC and Local Codes and Standards team. Cost-effectiveness studies are readily available.

2. Municipal Zoning or Health and Safety Code Amendment (Municipal Ordinance)	<ul style="list-style-type: none"> <li>▪ Can proceed without CEC approval or cost-effectiveness study</li> <li>▪ Not required to renew every code cycle</li> </ul>	<ul style="list-style-type: none"> <li>▪ May not cover buildings which have already been entitled</li> <li>▪ Uncertainty on existing or potential legal challenges</li> <li>▪ Less common (although several examples are available)</li> </ul>	Although less common, pursuing a municipal zoning or health and safety code ordinance provides some benefits such as removing the need for a CEC approval or cost-effectiveness study. No need to update every 3 years which could be a pro or con depending on perspective.
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CEC = California Energy Commission

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Staff recommends that the Building Code-Local Amendment to Title 24 (Reach Code) is the most appropriate approach for the City of Glendale. This would require Staff to review the California Building Code at the tri-annual update and to determine if any amendments of the Reach Code Ordinance would be necessary.

## Building Electrification Infrastructure

Building electrification reach codes have taken several forms, including electrification of some but not all appliances, electric preferred, all-electric ready, and full natural gas bans. Exemptions for specific end uses (such as stoves) mean no decrease in natural gas infrastructure development. However, an infeasibility waiver process should be outlined in the ordinance to allow for specific process loads which cannot currently be all electric to have a path forward. An infeasibility waiver process places the burden on the project applicant or developer to prove that construction of the new building entirely without gas is not feasible, reducing the burden on City staff and removing the need to make whole categories of buildings exempt.

For these reasons, building electrification of all new buildings with no exemptions presents the strongest future climate and cost benefit to the City of Glendale. All new construction (including standalone additional dwelling units, [ADU]) must be all-electric with no exemptions except for an infeasibility waiver.

- This approach advances the strongest climate benefit by requiring developers to prove the infeasibility of building electrification, instead of categorizing entire building types as electrification exempt.
- This structure maximizes long-term cost savings by keeping new gas infrastructure from being deployed, as most, if not all, new buildings in the City will be electrified (Gridworks 2020).

## Building Electrification Summary:

- *What types of buildings will be included?*

- All residential and non-residential buildings, as well as detached ADUs.
- *What does electrification cover?*
  - New construction will require the installation of electric appliances like heat pumps and induction stovetops. Gas lines will not be installed in new buildings where feasible.
- *What is an infeasibility waiver, and when does it apply?*
  - An infeasibility waiver can be applied for by the building developer if the technology for an all-electric proposed building is impossible to acquire/use.
  - Infeasibility waivers will only cover the specific end use that is not deemed feasible such as specific process loads.

## Photovoltaic Infrastructure

Glendale's existing building stock is urban and has a significant number of high-density buildings with limited roof space. This presents two challenges to installing PV infrastructure in Glendale. First, tall buildings may not be able to fit large arrays on their limited roof space. Second, large buildings with high-energy demand (ex. industrial buildings, refrigerated warehouses) may not be able to generate enough energy to offset a high percentage of their energy spend even if they used their entire roof space for PV.

Due to physical limitations associated with PV sizing on different building types, a variety of strategies have been developed that are intended to encourage the installation of PVs across a wide breadth of building types.

Table 2 summarizes the options for PV ordinances, as well as the pros and cons of each approach.

Policy Type	Pros	Cons	Rincon Recommendation
1. PV system that establishes a minimum % of rooftop space (50%) if an array sized to offset 50% of the building's energy spend is not feasible.	<ul style="list-style-type: none"> <li>▪ PV, particularly large arrays, end up being long-term cost effective</li> <li>▪ Greater savings when combined with energy efficiency</li> <li>▪ Can produce greater GHG reduction over building life</li> </ul>	<ul style="list-style-type: none"> <li>▪ Can be a large incremental cost</li> <li>▪ Variable investment requirements distributed across different project types/developers</li> <li>▪ Physical constraints on rooftop</li> </ul>	Maximum Climate Benefit, Adapted to Glendale's urban environment with potentially variable rooftop space. <i>Note that this recommendation blends together two policy approaches (% offset energy spend and % rooftop installation)</i>

2. Small minimum PV size requirement based off building square footage	<ul style="list-style-type: none"> <li>Greater savings when combined with energy efficiency</li> <li>Small minimum system size allows project sizing flexibility</li> <li>Cost-effective under most major project scenarios</li> </ul>	<ul style="list-style-type: none"> <li>Requires external documents and/or calculations</li> <li>If install minimum only, offsets small percentage of total usage</li> </ul>	Medium Climate Benefit; High Feasibility (largest # of adopters) Cost-Effective
3. PV system requiring some percentage of offset projected annual electricity usage	<ul style="list-style-type: none"> <li>Greater savings when combined with energy efficiency</li> <li>Cost effective under most major project scenarios</li> <li>Can produce more ambitious GHG reduction over the life of the building</li> </ul>	<ul style="list-style-type: none"> <li>Can be a considerable incremental cost</li> <li>Variable investment requirements</li> <li>Physical constraints on rooftop</li> <li>Sizing may not be feasible for different project sizes</li> </ul>	Not Recommended without adaptation for urban rooftop space (%) as does not include considerations for roof size, Less Feasible, Climate-Ambitious

PV = photovoltaic

A recommendation is to require non-residential and multifamily PV systems to offset 50 percent of projected electricity use if roof space is sufficient, or cover at least 50 percent of rooftop space for buildings where a 50 percent offset of building electricity usage by a PV array is not possible. Exclude any specific exemptions.

Reasoning: This ordinance presents a hybrid-model between mandated percentages for roof size and energy spend, allowing for flexibility while maximizing GHG reduction and local renewable energy production.

Ordinance aspect: Physical infeasibility waiver (e.g., shading, vegetation, other structures). The burden falls on the project applicant to prove infeasibility.

## Photovoltaic Summary

- *What types of buildings will be included?*
  - Residential: Single family and low-rise multifamily buildings
  - Non-residential & high rise multifamily. Single family homes are not included in this requirement.
- *What is an infeasibility waiver, and when does it apply?*
  - An infeasibility waiver can be applied for by the building developer if the project is physically unable to meet the requirement due to shading or other constraints.



## Electric Vehicle Charging Infrastructure

New EV charging infrastructure will play an essential role in supporting the growing EV fleet in California, as installing charging infrastructure in new buildings is significantly less expensive than retrofitting existing buildings.

EV charging infrastructure requirements are subject to CALGreen regulatory standards set forth in Title 24 of the California Code of Regulations. The CALGreen standards include required standards for new developments and two sets of voluntary standards, Tier 1 and Tier 2, that are more ambitious.

### Benefits of Adopting at Least CALGreen Code Tier 2 Voluntary Standards Avoid Retrofit Costs

According to the California Air Resources Board (CARB), installing EV charging infrastructure in a new building can save an estimated \$7,000 to \$8,000 per parking space compared with retrofitting it later (CARB 2019).

### Increase Equity

Providing access to more Level 2 chargers in the workplace and public locations allows residents of multifamily households with ZEVs to charge more easily, especially if they do not have access to parking at home (BAAQMD 2022).

### Maximize GHG-Emission Reductions

Adopting the suggested code changes for a 10 percent EV-Capable requirement for EV charging infrastructure would lead to an estimated total 690,000 to 820,000 metric tons of carbon dioxide equivalent reduction over a 4-year time frame (CARB 2019).

### EV Charging Infrastructure Outline

To develop an ordinance that will best support EV adoption, minimize cost impacts, and avoid inequities, it is necessary to understand the different EV charging options. There are three standardized levels of EV charging facilities that provide charging at different rates. These include Level 1, Level 2, and Level 3 chargers, summarized in [Table 3](#).

Type of Charger	Voltage Required (Volts)	Average Power (Kilowatts) – Each EV Charger	Estimated Time for Full Charge (Hours)	Typical Land Use Type
Level 1	120 (source) AC Circuit	2* (2000 Watts)	14-16	Residential
Level 2	208-240 (source) AC Circuit	6-8**/** (6000-8000 Watts)	6-10*****	Residential, Commercial
Level 3, DC Fast Chargers	480 (source) 200-600-800 V DC out	150, 250, 350, 500 & up**** (150,000 to 500,000 Watts)	0.33-0.5	Commercial (e.g., offices)

*\*Note 1: Level 1 uses just a normal 120 Volts AC (15 to 20 Amp) household outlet, above 20 Amps the*

circuit trips

**\*\*Note 2:** Level 2 is at least 6000 Watts or 6 KW. Most households will opt to install two Level 2 chargers because they will have more than one EV (Car/Truck or SUV)

**\*\*\*Note 3:** Also, regarding Level 2 EV chargers, 6 KW may not seem to be a lot, but in reality here is what happens

- In Glendale, Single Family Homes Typical Loads 6KW to 7 KW with HVAC system – Adding a Level 2 Charger is like adding a single family home to the grid.
- Hence, adding one to two Level 2 EV chargers (adds 12KW) will increase a Single Family Home loads by a factor of 2x or 3x
- In Glendale, Apartment Home's typical Loads is about 2KW to 4KW
- Therefore, adding one to two Level 2 EV chargers will increase an Apartment Home's loads by a factor of 3x or 4x, since most apartments will have one or two parking spots

**\*\*\*\*Note 4:** Original Level 3 chargers were 50KW ... in an effort to charge electric vehicles from 20 % to 80% in 30 minutes or less.

- Today, Level 3 Chargers are 150KW+ (especially for buses or trucks or fleet/commercial)
- Today, (8/2022) Tesla installs Level 3 Chargers (Super Chargers) that are rated 250KW each
- To surpass Tesla, European Automakers and others are installing Level 3 Chargers at 350 KW to 500KW + each

**\*\*\*\*\*Note 5:** Charging times vary due to size of the Battery in the EV (Car/Truck/SUV) and State of Charge of the battery when plugged into the charger.

- Currently EVs (Car/Truck/SUV) have batteries rated at 60 KWH to 120+ KWH, Hybrid Plug-ins have batteries that range from single digit size to 20 KWH.
- The level 2 chargers are assumed to be between 24 Amps and 32 Amps AC, at 240 volts which translates roughly into 6 – 8 kW of charging power. For an 80 kW battery going from 15% to 90% is 75% capacity or 60 kW; it will require 8-10 hours to accomplish.

All of the above mentioned chargers place an unprecedented strain on the Electric Power System and GWP's opinion is that EV Charges will (2X) double the load of the Utility especially from 4 PM to 5 AM daily, as residents and fleets plug in EV vehicles for the night and PV Solar diminishes and disappears for the night. Most home energy storage "power walls" will help for 2 to 4 hours and then may also become a load to recharge to provide back-up power for the homes (they recharge later in the night or wait till morning). **Adding a Level 2 Charger is equivalent to adding a single family home to the grid. Level 3 (Fast DC chargers) will draw from GWP's Grid from 150KW to 500KW each.**

EV charging infrastructure requirements are generally described in three terms of completeness, as seen below in [Table 4](#).

Type of Space	Infrastructure Included	Infrastructure Not Included	Unique Attributes	Typical Land Use Type
EV-Capable	Parking stall, underground conduit	Charger hardware, wiring, charging plug, charging station	Can be easily converted to charging space, avoids costly future retrofits	Residential
EV-Ready	Parking stall, underground conduit, wiring, wire outlet	Charging plug, charging station	Baseline "Plug and Play" charging station	Residential, Commercial

EV-Installed <sup>5</sup>	Parking stall, underground conduit, wiring, wire outlet, charging plug, charging station	N/A	Most advanced and least prevalent space available	Commercial, (e.g., offices and mixed-use lots)
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The City should consider developing EV reach codes specific to varying land use types.

- New One-and Two-Family Homes and Townhomes with Attached Private Garages
- New Multifamily, Hotels, and Motels
- New Non-Residential

It is well documented that limited access to EV charging infrastructure can limit EV adoption and slow progress on GHG reduction. While it may be tempting to require EV infrastructure in some form at every parking location, it is important to other impacts, such as grid capacity and future technology changes, to maximize efficiency while incentivizing EV adoption.

Propose adopting CALGreen Tier 2 Voluntary standards for the EV reach code, taking into account grid considerations.

### **EV Charging: CALGreen Tier 2 Voluntary Standards**

- *What types of buildings will be included?*
  - One or Two-Family homes/ Low-rise Multifamily:
    - One *Level 2* (40- to 100-amp breaker on a 208- or 240-volt alternating current (AC Circuit)) EV-Ready space per unit and Level 1 Circuitry ('slow charging').
  - Multifamily, Hotels & Motels:
    - <20 Spaces: 40% of parking spaces must be EV Ready
    - >20 Spaces: 15% of total parking spaces to have Level 2 EVSE (Electric vehicle supply equipment)
  - Other non-residential:
    - Adopt an additional 10% Level 2 EV Charging requirement and 15% Level 2 capable spaces requirement for new non-residential buildings with 10 > spaces
  - CALGreen Tier 2 Voluntary Standards:
    - *1-2 Family Homes + Low-Rise Multifamily: One Level 2 EV-Ready Space/ Unit + Level 1 Circuitry*
    - *Multifamily; Hotels & Motels: 40% of Parking spaces EV ready; >20 units; 15% of total spaces dedicated to EV*

## **Existing Building Requirements**

Although staff recommends that reach codes for existing buildings be addressed in the City reach code at the next tri-annual California Green Building Code update in 2026, the benefits and drawbacks of including existing buildings in a reach code need consideration. While new construction represents the most straightforward and cost-effective way to ensure buildings electrify, the City of Glendale is mostly built out. A significant portion of emissions come from existing building stock. Therefore, extending PV, energy efficiency, EV, and electrification requirements to retrofits represents an opportunity for the City to further its climate goals. Furthermore, targeting existing buildings already undergoing significant renovations is the most cost-effective time for this work, allowing easy access to building systems and financing, which can significantly increase the project's cost-effectiveness.

The Rincon Draft Memorandum summarizes the EV, PV, and electrification ordinances that have been adopted in California. Rincon has included an approach that utilizes a scorecard that cities like Piedmont and Carlsbad have adopted to provide a performance-based approach for existing building retrofits.

### **Retrofit Thresholds**

Many reach codes use the term “substantial” remodel or retrofit as a threshold for when a reach code would take effect. A substantial retrofit could be defined in several ways, including the percentage value of the work compared to the building market value or percent of floor area addressed. For example, substantial may be defined as a project affecting over 50% of floor area or using a dollar amount to target retrofits. Currently, no cities that specifically require electrification at the time of retrofit could be identified.

### **EVs**

The City of Carlsbad adopted an EV charging requirement for major renovations (see definition above) that requires major renovations to comply with the new construction requirements of their EV ordinance for any new parking that is built as part of the project.

### **Solar PV**

Several cities, including Carlsbad, Piedmont, and Santa Monica, require solar PV installation for major additions.

### **Existing Building Retrofit Performance Pathway**

In addition to the prescriptive approaches for Building Electrification, EVs, and PV listed above, cities have begun adopting performance requirements for existing building retrofits. Due to the many variables associated with existing buildings, it can be

challenging to identify specific actions that are cost effective and impactful in all scenarios. A performance pathway solves this issue by providing multiple options for each project to review and choose the best approaches that suit their project. The Local Energy Codes team has recently developed a tool for jurisdictions to create their own performance pathway which, establishes a target score and a menu of individual measures with points weighted by site energy savings.

## **Concerns**

Rincon Consultants have engaged City staff representing Glendale Water and Power, Community Development Building & Safety Division throughout the reach code development process. These tier one stakeholders have provided extensive feedback to the consultants in three critical areas; Staffing and budgets, existing buildings and the electrical infrastructure required to support the building electrification reach code.

Staff has observed an increase in PV and EV submittals before any reach codes adoption. The proposed building electrification reach code is focused on new construction and thus should not increase the number of new projects vis-à-vis non-adoption of a reach code. However, if staff do observe a further increase in submittals due to the adoption of reach codes, an analysis of additional full-time equivalents (FTE) for GWP and Community Development Building & Safety will be necessary to fulfill the needs of the reach code compliance implementation and administration.

For reference, in 2021-2022 new permits issues for new residential and commercial units were as follows:

- Residential 12
- ADUs 164
- Multi-Family 6
- Commercial 2

Rincon Consultants met with GWP to discuss the proposed reach codes and respond to any specific questions regarding the impact on the City's electrical transmission and distribution infrastructure. As the momentum toward electrifying transportation and the built environment grows, the Electric Utilities will become the "Refineries, the Gas Stations, and the Gas Companies". Although the proposed reach code is focused on new construction, GWP has to ensure the energy infrastructure is in place to support the electrification transition. It is anticipated that electrification will eventually double GWP's load in the next 10-20 years. And, compared to peers (utilities) GWP does not have internal generation resources to feed future loads.

## Grid Considerations

As EVs and charging technologies advance, charging times are decreasing. Faster charging times mean more electricity is entering the car's battery in a shorter time, meaning more strain on the grid and potentially the need for new grid infrastructure when high levels of charging occur simultaneously. Furthermore, having more EVs and faster chargers means more vehicles can cycle through fewer charging stations and exhibit more strain on the electrical grid. New demands placed on existing electrical infrastructure should be carefully reviewed and incorporated into community planning efforts. In addition, because of these new demands placed on the grid, additional considerations should be made to increase electrical infrastructure in certain parts of the City, where applicable.

Other considerations for the proposed reach code to consider are:

1. Most California Cities that passed electrification codes are independent of the (IOU) Utilities, hence they are not affected by reach codes being associated with the Utility. Municipal Utilities will be associated with the reach codes and expectations for assistance/services. Customers may expect assistance such as subsidizing all or portions of the ordinance requirements.
2. The expectation that GWP/City Staff will assist the Public in all planning and permitting aspects of the electrification process.
3. As the momentum toward electrification of transportation and buildings gathers pace the utility infrastructure will require investment to meet this demand.

The Sustainability Office, in partnership with Rincon, has embarked on a stakeholder outreach program. This program has focused on internal stakeholders and external stakeholders as described below:

**Internal stakeholders:** An internal working group was established to provide feedback to Rincon Consultants, Inc. on the proposed Reach Code ordinance. The internal group consists of representatives from Glendale Water and Power, Community Development, and the Sustainability Office. The meeting consists of a Bimonthly check-in with Rincon. A special meeting with Rincon and GWP was held to discuss matters specific to GWP.

**External Stakeholders:** The Sustainability office has been holding Bi-monthly meetings with the Glendale Building Electrification Working Group (GBWEG). The GBWEG is interested in advancing building electrification in local Communities.

On August 25, 2022, Rincon and the City of Glendale held an open webinar to review the City's approach to the reach codes and to discuss potential concerns and issues.

During the week of September 5-10 staff will host two Roundtables. One will be focused

on building professionals, and one will be focused on community groups. These roundtables will provide an opportunity to have a more in-depth discussion with interested parties.

## **FISCAL IMPACT**

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There is no fiscal impact associated with this report.

## **ALTERNATIVES**

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Alternative 1: Sustainability Commission recommend to City Council the options to be included in a reach code for 1. Building Electrification – all electric new construction and infeasibility waiver, 2. Photovoltaic (PV) 50% energy offset OR roof area PV array and to amend Title 24 of the California Building Code or adopt an amendment to the Glendale Municipal Code and defer adopting the Electric Vehicle (EV) Reach Code

Alternative 2: Sustainability Commission recommend to City Council the options to be included in a reach code for 1. Building Electrification – all electric new construction and infeasibility waiver, 2. Photovoltaic (PV) 50% energy offset OR roof area PV array and 3. CalGreen Tier 2 Standards for Electric Vehicle (EV) Charging to amend Title 24 of the California Building Code or adopt an amendment to the Glendale Municipal Code.

Alternative 3: The Sustainability Commission may recommend City Council not to adopt a reach code to amend title 24 of the California Building Code and defer to the 2022 Energy Code.

Alternative 4: The Sustainability Commission may consider any other alternate not proposed by staff.

## **EXHIBITS**

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1. Rincon Consultants, Inc. Building Electrification, Photovoltaic Infrastructure, and Electric Vehicle Charger Building Code Information & Recommendation for the City of Glendale Memorandum.