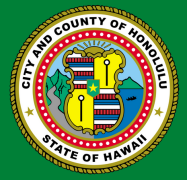


GET YOUR BUILDING READY FOR ELECTRIC VEHICLES

Ordinance 20-10 Compliance Guide

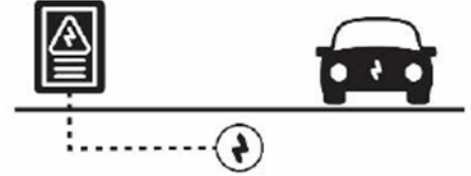


June 2021

Ordinance 20-10 (Bill 25 (2019)), adopted in June 2020, adopts the State Energy Conservation Code (2017) as the updated energy code for the City and County of Honolulu. It includes several local amendments to expand access to energy efficiency improvements, solar power and electric vehicles (EV) for O'ahu residents. Amendments include new requirements to **ensure a percentage of new parking stalls built for new residential and commercial construction are EV "ready" or EV-charger-ready.**

What is EV-Charger-Ready?

For construction of new parking stalls at new residential or commercial buildings to be compliant with Ordinance 20-10, the development should be designed and constructed to include **adequate electrical panel capacity and dedicated conduit for a future Level 2 EV-charger at a certain percentage of parking stalls.**



There are two ways you can comply with Ordinance 20-10: 1) **Baseline Compliance Path** or 2) **Alternative Points System.**

1. Baseline Compliance Path

Requirements for Different Building Types

| Building Type | EV-Charger-Ready Requirement | Charge Method |
|---|---|-----------------------------------|
| Single Family, Duplex, Multi-Family (three stories or less) | Each enclosed attached garage needs a dedicated receptacle for an EV to charge at Level 2 | 208/240VAC/20-100A Minimum 16A |
| Commercial (with 12 or more new parking stalls) | 25% or more of newly added parking stalls must be EV-ready | 208/240VAC/40-100A Minimum 32A |
| Multi-Unit Residential (with 8 or more new parking stalls) | 25% or more of newly added parking stalls must be EV-ready | 208/240VAC/40-100A Minimum 32A |

EV-Ready Requirement Exemptions for Certain Building Types

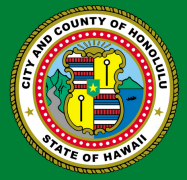
| Building Type | EV-Charger-Ready Requirement | Charge Method |
|--|--|-----------------------------------|
| Retail (with 12 or more new parking stalls) | 20% or more of newly added parking stalls must be EV-ready | 208/240VAC/40-100A Minimum 32A |
| Affordable Housing, 100% to 140% AMI (with 8 or more new parking stalls) | 20% or more of newly added parking stalls must be EV-ready | 208/240VAC/40-100A Minimum 32A |
| Affordable Housing, 100% AMI and below* | Full exemption, no EV-ready parking stalls required | N/A |

***Hawaii Energy offers rebates to offset costs to install electric vehicle chargers in new and existing projects for residents 100% AMI or below through June 30, 2021 or until funds last.**

Visit <https://hawaiienergy.com/for-business/rebates/electric-vehicle-charging-stations> for details.

GET YOUR BUILDING READY FOR ELECTRIC VEHICLES

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2. Alternative Points System

Builders of new commercial or multi-unit residential developments also have the option to meet EV-Ready requirements by using an alternative points system to offer flexibility for unique project sites to provide EV-ready access, as well as balance EV access needs for residents or customers today and tomorrow. The points system gives flexibility to install fewer EV-ready parking stalls if the EV-ready stalls built are in common area parking or if an EV charger (EVSE) is installed for customers or residents to use.

How many points do I need?

Ordinance 20-10 requires **1 point for every 4 new parking stalls provided** for residential multi-unit, commercial, retail, and affordable housing developments (100-140% AMI) based on the EV-charger-ready options and values listed in Table C406.8.2.

For residential multi-unit and commercial buildings: Compliance Points needed = # of new parking stalls ÷ 4

For retail and affordable housing at 100-140% AMI: Compliance Points needed = (# of new parking stalls ÷ 4) x 0.8

When computation of the # of required EV-ready stalls results in a fraction of 0.5 or greater, the number of required EV-ready stalls will be the next highest whole number.

What type of chargers can I install?

| Building Type | EV-Charger-Ready Options | | | | | Additional Options via Points System | |
|---|--------------------------|----------------------|------------------|-----------|---------------------------|--------------------------------------|-------------------------------------|
| | Level 2, Minimum 16A | Level 2, Minimum 32A | Level 2, 64A-80A | DCFC 50kW | Dedicated EV Ready Stalls | Common Area EV Ready Stalls | Common Area Stall w/ EVSE Installed |
| Single Family, Duplex, Multi-Family (less than three stories) | ✓ | | | | ✓ | | |
| Commercial and Multi-Unit Residential | | ✓ | ✓ | ✓ | ✓ | ✓ | ✓ |
| Retail | | ✓ | ✓ | ✓ | ✓ | | ✓ |

How do I earn points?

| EV Charger Capacity Level | Table C406.8.2 Compliance Points | | |
|---------------------------|----------------------------------|-----------------------------|--|
| | Dedicated EV Ready Stalls | Common Area EV Ready Stalls | Common Area Stall w/ EV Charging Equipment Installed |
| Level 2, Minimum 16A | 1 (in enclosed attached garage) | N/A | N/A |
| Level 2, Minimum 32A | 1 | 4 | 7 |
| Level 2, 64A to 80A | 1 | 7 | 14 |
| DCFC 50 kW | 1 | 25 | 50 |

You can also aggregate points over multiple projects, provided that for each individual project, no less than 10% of newly added parking stalls are EV-ready or there is a minimum of one EV-ready parking space per project, whichever is **greater**. For example, a developer with multiple projects could decided to allocate the 35 required points across four projects, while meeting minimums for individual projects, as follows:

| Building Name | Building Type | # of Parking Stalls | EV-ready Requirement | Charge Method | Points Required Under Baseline Compliance | Type of Project Minimum Used | Points Developer Deploys Under Points System |
|-----------------|-----------------------------|---------------------|----------------------|---------------|---|------------------------------|--|
| Building A | Multi-Family | 10 | 25% | 16A Minimum | 2.5 | 10% | 1 |
| Building B | Commercial | 50 | 25% | 32A Minimum | 12.5 | 10% | 5 |
| Building C | Retail | 50 | 20% | 32A Minimum | 10 | 10% | 5 |
| Building D | Affordable Housing 140% AMI | 50 | 20% | 32A Minimum | 10 | (1) EV-charger Ready Stall | 24 |
| Subtotal | | | | | 35 | | 35 |

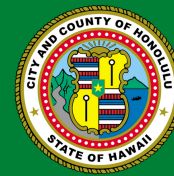
While the overall intent is to **provide flexibility for project designs** to meet the needs of the building users, there may be **additional design considerations** when choosing the Alternative Points System compliance path, particularly when EV-ready or EVSE stalls are placed in common areas for more points. Additionally, Ordinance 20-41 requires that that equipment mounted on pedestals, lighting posts, bollards, or other devices at electric vehicle charging stations must be designed and located so as **not to impeded pedestrian, bicycle, or wheelchair movement, or create safety hazards**.

Please see [Ordinance 20-10](#) for complete requirements.

For questions, contact the Department of Planning and Permitting at (808) 768-8259 or info@honoluluodpp.org.

For more information, contact the Office of Climate Change, Sustainability and Resiliency at (808) 768-2277 or ResilientOahu@honolulu.gov.

EV-Ready Requirements in Ordinance 20-10



Frequently Asked Questions

June 2021

Ordinance 20-10 (Bill 25 (2019)), adopted in June 2020, adopts the State Energy Conservation Code (2017) as the updated energy code for the City and County of Honolulu. It includes several local amendments to expand access to energy efficiency improvements, solar power and electric vehicles (EV) for O'ahu residents. Amendments include new requirements to **ensure a percentage of new parking stalls built for new residential and commercial construction are EV "ready" or EV-charger-ready.**

General

1. What is an electric vehicle (EV)?

An electric vehicle is a car with an electric motor and battery, powered only by electricity. They do not use any type of liquid fossil fuel and emit no harmful tailpipe emissions. The Nissan Leaf, Chevy Bolt, and Tesla Model S are current examples of EVs.

2. What is a plug-in hybrid electric vehicle (PHEV)?

A plug-in electric vehicle is a vehicle with both a gasoline engine and electric motor(s). It runs on battery power until the battery charge is depleted, and then switches over to its internal combustion engine. The Chevy Volt and Ford C-MAX Energi are current examples of PHEV.

3. How far can EVs go?

It depends on the type of EV you operate. Most electric vehicles are currently capable of about 100 to 330 miles of driving before they need to be recharged. Plug-in hybrids have an electric range of 10-50 miles using only electricity before they start using gasoline. All-electric vehicles have large battery packs that provide a longer electric range.

4. What is an Electric Vehicle Service Equipment (EVSE)?

Electric Vehicle Service Equipment supplies electricity to recharge all-electric vehicles or plug-in hybrid electric vehicles. They are EV charging stations, electric recharging points or just charging points.

5. What is EV-ready and EVSE-installed?

EV-ready is a parking space served by sufficient wire, conduit, electrical panel capacity, overcurrent protection devices, and suitable termination points to connect to a future EV charging station. EVSE-installed is a parking space that includes the full installation of electric vehicle service equipment (a charger) with the minimum output required by law.

6. What is the state of EVs in Hawai'i?

While still only around 1% of all vehicles on the island, demand for EVs is strong and growing. In 2018, the Honolulu market area had the eighth highest and growing EV market share in the country [1]. Operating and maintaining an EV is already cheaper than gas cars, with EV owners in Hawai'i saving an average of \$507 in fuel costs [2] and an estimated \$330 in maintenance costs annually [3]. Electric vehicles are projected to be cheaper to purchase than gas cars by 2025 and some models as soon as 2024 [4].

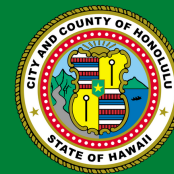
[1] <https://www.driveelectric.hi.com/news/honolulu-among-top-10-electric-vehicle-markets-in-america/>

[2] Ulupono Initiative. 2019. The Extra Mile: Why Electric Vehicles Make Sense for Hawai'i's Economy, Environment and Communities.

[3] <https://newsroom.aaa.com/2020/01/aaa-owning-an-electric-vehicle-is-the-cure-for-most-consumer-concerns/>

[4] <https://www.bloomberg.com/news/articles/2018-03-22/electric-cars-may-be-cheaper-than-gas-guzzlers-in-seven-years>

EV-Ready Requirements in Ordinance 20-10



Frequently Asked Questions

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EV-Ready on O'ahu

7. What is the recently passed Honolulu EV-readiness requirement?

Ordinance 20-10 requires that a percentage of all newly-constructed parking stalls, depending on building type, meaning development must be designed and constructed to include electrical panel capacity with a fully-wired conduit for a future EV charging station.

8. Outside of Ordinance 20-10, are there other EV-related policies projects should follow?

Hawai'i Revised Statutes (HRS) §291-71 requires places of public accommodation with at least one hundred parking spaces available for general public use to have at least one parking space equipped with an electric vehicle charging system. Act 075 signed by Governor Ige in June 2021 updates HRS §291-71 to further require that any EV charging station installed pursuant to this section must be Level 2 and network-capable. Additionally, Ordinance 20-41, adopted December 23, 2020 and related to off-street parking and loading, requires:

- (a) Equipment mounted on pedestals, lighting posts, bollards, or other devices at electric vehicle charging stations must be designed and located so as to not impede pedestrian, bicycle, or wheelchair movement, or create safety hazards; and
- (b) Existing standard-sized parking spaces constructed prior to the effective date of this ordinance may be reduced in size to that of a compact space, if necessary, to accommodate electric vehicle charging equipment.

9. What are the key benefits of the EV-ready components of Ordinance 20-10?

EV-readiness for new construction directly supports the City's commitment to transform all ground transportation to renewable fuels by 2045. Requiring a percentage of parking stalls in newly-constructed developments to be EV-charger-ready incentivizes residents to purchase and drive electric, reducing harmful air pollution from exhaust emissions. In addition, the cost of retrofitting parking spaces to make them EV-ready is four to eight or more times more expensive than at time of construction, and reduces access to electric vehicles. As such, it is prudent for new buildings on O'ahu, which will be around for decades, to accommodate this growing market in their design.

10. What kinds of buildings are covered under this new requirement?

Single family, multi-family (three stories or less), duplex, multi-unit residential and commercial.

11. How can I construct my building to be in compliance with the EV-readiness requirements?

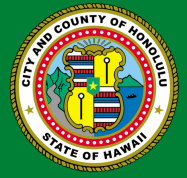
For commercial and multi-unit residential buildings, there are two ways you can comply with the newly-added parking requirements in Ordinance 20-10: (a) Baseline Compliance Path or (b) Alternative Points System.

12. What are the requirements to satisfy EV-readiness requirements in Ordinance 20-10?

To meet the baseline compliance pathway requirements, for single family homes, duplexes and multi-family homes (three stories or less), a dedicated receptacle must be provided for each enclosed attached garage to support AC Level 2 charging. Twenty-five percent or more of the parking stalls must be EV-ready for multi-unit residential projects that add 8 or more newly-added parking stalls, and new commercial buildings that add 12 or more newly-added parking stalls, to support minimum AC Level 2 charging.

EV-Ready Requirements in Ordinance 20-10

Frequently Asked Questions



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13. What are the exemptions for the EV-readiness requirement?

Certain types of buildings have slightly lower EV-ready requirements or are exempt from requirements. These include retail establishments, which are required to provide at least 20% of the total number of newly-added parking stalls as EV-ready (if adding 8 or more parking stalls). For housing provided for sale or rent to households earning between 100-140% area median income for Honolulu, 20% of the total number of newly-added parking stalls are required to be EV-ready (if adding 12 or more parking stalls).

Affordable housing provided for sale or rent to households earning 100% or below area median income are exempt from EV-ready requirements. However, many developments may choose to provide some minimum EV-readiness, for which Hawai'i Energy offers rebates to offset costs to install EV chargers in new and existing projects for residents 100% AMI or below through June 30, 2021 or until funds last. Visit <https://hawaiienergy.com/for-businesses/incentives/electric-vehicle-charging-stations> for details.

14. What is the Alternative Points System?

It is an alternative compliance pathway for builders and developers to have the flexibility to customize the electric vehicle infrastructure at their site to the unique conditions of the site and customers' needs. It allows installation of fewer EV-ready parking stalls by installing common area EV-ready parking stalls or EVSE-installed common area parking stalls. The points you earn vary by the electric vehicle charger capacity level and the type of stall (dedicated or common area).

15. I'm a developer of retail spaces, what are the requirements for EV-readiness?

Retail establishments are required to have 20% or more of newly added constructed parking stalls to be EV-charger-ready at minimum AC Level 2 (208/240V-32A minimum). Retail developments can also use the alternative points system to comply with Ordinance 20-10 and install fewer EV-ready stalls if they actually install an EV-charger.

16. How are the points for the EV-readiness requirement calculated?

In general, if your project is using the alternative points system, Ordinance 20-10 requires one point for every four newly-added parking stalls (1:4 ratio) based on the EV-ready requirements by building type.

For Multi-Unit Residential and Commercial Buildings, Compliance Points Required = (# of newly-added parking stalls) divided by (4)

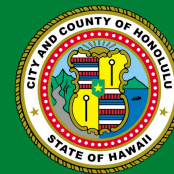
$$\text{Compliance Points Req.} = \frac{\text{Number of New Parking Stalls}}{4}$$

For Affordable Housing (100 to 140% AMI) and Retail Developments, Compliance Points Required = [# of newly added-parking stalls divided by (4)] multiplied by 0.8

$$\text{Compliance Points Req.} = \frac{\text{Number of New Parking Stalls}}{4} * 0.8$$

EV-Ready Requirements in Ordinance 20-10

Frequently Asked Questions



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17. I read we can accumulate points across developments, how is that calculated?

There is the option to aggregate points over multiple projects provided that each individual project achieves no less than 10% EV-ready stalls or adds a minimum of one EV-charger-ready parking stall per project - whichever is greater.

Meaning, you will calculate the points required by each building type including if the building is eligible for a discount. Once the total number of points required is calculated for your entire project, you can choose how many points you wish to designate to each individual project (building)--keeping in mind that each building parking lot is required to meet 10% compliance or 1 EV-charger ready stall.

18. Are there specific design requirements for where my EV-ready stall(s) must be placed?

The overall intent of the EV-ready requirement is to provide flexibility for project designs to meet the needs of the building users. However, should you choose to follow the alternative points system compliance path, you may decide to place an EV-ready or EVSE stall in a certain location (common area stall) so that it earns you more points, therefore reducing the overall EV-ready requirement for your new parking. Additionally, Ordinance 20-41 (off-street parking requirements) requires that equipment mounted on pedestals, lighting posts, bollards, or other devices at electric vehicle charging stations must be designed and located so as not to impeded pedestrian, bicycle, or wheelchair movement, or create safety hazards.

19. Why shouldn't we just wait until our residents or customers request an EV charger?

Buildings built today will continue to serve our community for 50 years or more, and retrofitting an already-constructed development is estimated to be four to eight times more expensive than at time of construction. By getting homes and businesses EV-ready today, those living in buildings can choose to install chargers when appropriate, helping to expand access to the savings and benefits of EVs for O'ahu residents. Owners, renters and lessees of electric vehicles have the advantage of much lower running and maintenance costs without the expensive systems, motors, radiators, etc., that aren't needed in an EV. For the broader community, expanding access to EVs by investing in a minimum level of EV-readiness will keep O'ahu on the path to a 100% clean energy future and reduce harmful air pollution from exhaust emissions. It is critical that some minimal level of EV charging infrastructure is incorporated at the cheapest time—at construction—and that we start today to expand access to EVs for more residents on O'ahu. As such, it is prudent for new buildings on O'ahu, which will be around for decades, to accommodate some EV-readiness for this growing market in their design.

20. Who should I contact for more information?

Please see Ordinance 20-10 for complete details on relevant requirements.

<http://www4.honolulu.gov/docushare/dsweb/Get/Document-264403/ORD20-010.pdf>

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