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Chapter 202

IBC: **AUTOMOBILE PARKING SPACE.** A space within a *building* or private or public parking lot, exclusive of driveways, ramps, columns, office and work areas, for the parking of an automobile.

NEC: Not Included

Rationale: *aligns with definition in 2024 IECC Appendix RE (Electric Vehicle Charging Infrastructure).*

IBC: **AUTOMATIC LOAD MANAGEMENT SYSTEM (ALMS).** A system designed to manage electrical load across ~~one or more EV charging stations and EV Ready parking spaces~~ *EVSE spaces*.

NEC: Not Included

IBC: **ELECTRIC VEHICLE (EV).** An automotive-type vehicle for on-road use, such as passenger automobiles, buses, trucks, vans, neighborhood electric vehicles and electric motorcycles, primarily powered by an electric motor that draws current from a building electrical service, *electric vehicle supply equipment* (EVSE), a rechargeable storage battery, a fuel cell, a photovoltaic array, or another source of electric current.

NEC: Electric Vehicle (EV). An automotive-type vehicle for on-road use, such as passenger automobiles, buses, trucks, vans, neighborhood electric vehicles, and electric motorcycles, primarily powered by an electric motor that draws current from a rechargeable storage battery, fuel cell, photovoltaic array, or other source of electric current. Plug-in hybrid electric vehicles (PHEV) are electric vehicles having a second source of motive power. (CMP-12)

Informational Note: Off-road, self-propelled electric mobile machines, such as industrial trucks, hoists, lifts, transports, golf carts, airline ground support equipment,

Rationale: *aligns with definition in 2024 IECC Appendix RE (Electric Vehicle Charging Infrastructure).*

IBC: **ELECTRIC VEHICLE ~~(EV)~~ CAPABLE ~~PARKING~~ SPACE (EV CAPABLE SPACE).** A designated *automobile parking space* ~~parking space~~ that is provided with a *raceway* and electrical distribution equipment space ~~conduit, electrical panel and load capacity to support~~ *necessary for the* future installation of an *EVSE* ~~EV charging equipment~~.

NEC: Not Included

Rationale: *aligns with definition in 2024 IECC Appendix RE (Electric Vehicle Charging Infrastructure).*

~~**ELECTRIC VEHICLE (EV) CHARGER.** Off-board charging equipment used to charge electric vehicles.~~

Rationale: *replaced by EVSE definition.*

~~**ELECTRIC VEHICLE (EV) CHARGING STATION.** EV Ready parking space with installed EV charger.~~

Rationale: *replaced by EVSE space definition.*

IBC: **ELECTRIC VEHICLE ~~(EV)~~ READY ~~PARKING~~ SPACE (EV READY SPACE).** An *automobile parking space* ~~parking space~~ that is provided with ~~a receptacle outlet allowing charging of electric vehicles~~ a branch circuit and an outlet, junction box, or receptacle that will support an installed *EVSE*.

NEC: Not Included

Rationale: *aligns with definition in 2024 IECC Appendix RE (Electric Vehicle Charging Infrastructure).*

IBC: **ELECTRIC VEHICLE SUPPLY EQUIPMENT (EVSE).** Equipment for plug-in power transfer ~~The conductors~~, including the ungrounded, grounded, and equipment grounding conductors~~, and the~~; electric vehicle connectors~~,~~; attachment plugs~~,~~; any personal ~~personnel~~ protection system~~,~~; and all other fittings, devices, power outlets, or apparatus installed specifically for the purpose of transferring energy between the premises wiring and the ~~electric vehicle~~ *electric vehicle*.

NEC: Electric Vehicle Supply Equipment (EVSE). Equipment for plug-in charging, including the ungrounded, grounded, and equipment grounding conductors, and the electric vehicle connectors, attachment plugs, personnel protection system, and all other fittings, devices, power outlets, or apparatus installed specifically for the purpose of transferring energy between the premises wiring and the electric vehicle.

Informational Note: Electric vehicle power export equipment and electric vehicle supply equipment or wireless power transfer equipment (WPTE) are sometimes contained in one piece of equipment, sometimes referred to as a bidirectional EVSE or bidirectional WPTE.

Rationale: *aligns with definition in 2024 IECC Appendix RE (Electric Vehicle Charging Infrastructure).*

IBC: **ELECTRIC VEHICLE SUPPLY EQUIPMENT INSTALLED SPACE (EVSE SPACE).** An *automobile parking space* that is provided with a dedicated *EVSE* connection.

NEC: Not Included

Rationale: *aligns with definition in 2024 IECC Appendix RE (Electric Vehicle Charging Infrastructure).*

IBC: **RACEWAY.** An enclosed channel of metal or nonmetallic materials designed expressly for holding wires, cables, or busbars, with additional functions as permitted in this Code.

NEC: Raceway. An enclosed channel designed expressly for holding wires, cables, or busbars, with additional functions as permitted in this Code.

Rationale: *aligns with referenced standard 2023 NEC, Article 100.*

Section 429—Electric vehicle charging infrastructure.

429.1 General. The provisions of this section shall apply to the construction of new ~~buildings~~ *buildings* and accessory structures, including parking lots and parking garages.

~~Electric vehicle supply equipment (EVSE)~~ *Electric vehicle supply equipment (EVSE)* shall be installed in accordance with applicable requirements of chapter **19.28** RCW and the National Electrical Code, Article 625.

EXCEPTION: ~~Electric vehicle~~ *Electric vehicle* charging infrastructure is not required if any of the following conditions are met:

1. There is no public utility or commercial power supply.
2. ~~Dwelling units~~ *Dwelling units* without garages or other on-site parking.

429.2 Electric vehicle (EV) charging infrastructure. ~~Buildings~~ *Buildings* and accessory structures shall be provided with ~~EV charging stations~~ *EVSE spaces*, ~~EV-Ready parking spaces~~ *EV ready spaces*, and ~~EV-capable parking spaces~~ *EV capable spaces* in accordance with Table 429.2. Calculations shall be rounded up to the nearest whole number. Where a ~~building~~ *building* contains more than one occupancy, the ~~electric vehicle~~ *electric vehicle* charging infrastructure percentages of Table 429.2 shall be applied to the number of spaces required for each occupancy.

EXCEPTIONS: 1. Except for Group A, Group E, and Group M occupancies, on-site parking with less than 10 parking spaces shall not be required to comply with Section 429.2.

2. Group A, Group E, and Group M occupancies shall comply with one of the following, whichever is greater:

2.1. The provisions of Section 429.2 shall apply only to designated employee parking spaces.

2.2. One of each 200 parking spaces or fraction thereof shall be ~~EV Ready~~ an *EV ready space*. One of each 200 parking spaces or fraction thereof shall be an ~~EV Charging Station~~ *EVSE space*.

Table 429.2

Electric Vehicle Charging Infrastructure

Occupancy	Number of EVSE ~~Charging Stations~~ Spaces	Number of EV-Ready ~~Parking~~ Spaces	Number of EV-Capable ~~Parking~~ Spaces

Group A, B, E, F, H, I, M, and S occupancies	10% of total ~~parking~~ spaces	10% of total ~~parking~~ spaces	10% of total ~~parking~~ spaces
Group R occupancies			
Buildings that do not contain more than two dwelling units	Not required	One for each ~~dwelling unit~~ *dwelling unit*	Not required
Dwelling units with private garages	Not required	One for each ~~dwelling unit~~ *dwelling unit*	Not required
All other Group R occupancies	10% of total ~~parking~~ spaces	10%~~25%~~ of total ~~parking~~ spaces	40%~~10%~~ of total ~~parking~~ spaces

429.2.1 EVSE spaces ~~charging stations~~ and EV~~-~~Ready parking ready spaces. A minimum of 40-ampere dedicated 208/240-volt branch circuit shall be installed for each ~~EV Ready parking space and each EV Charging Station~~ *EVSE space* and each *EV ready space*. The branch circuits shall terminate at a receptacle outlet or ~~EV charger~~ *EVSE* in close proximity to the proposed location of the ~~EV Ready parking space or the EV Charging Station~~ *EVSE space* or *EV ready space*.

429.2.2 EV~~-C~~capable ~~parking~~ spaces. A listed ~~raceway~~ *raceway* capable of accommodating a minimum of 40-ampere dedicated 208/240-volt branch circuit shall be installed for each ~~EV-Capable parking space~~ *EV capable space*. A continuous ~~raceway~~ *raceway* shall be installed between an enclosure, end cap, or outlet located within close proximity of the ~~*electric vehicle (EV) capable parking space*~~ *EV capable space* and future or existing panelboard or switchboard location(s). ~~The raceway shall terminate into a cabinet, box or other enclosure in close proximity to the proposed location of the EV-Capable parking space. Raceways~~ *Raceways* and related components that are planned to be installed underground, and in enclosed, inaccessible or concealed areas and spaces, shall be installed at the time of original construction.

429.3 Electrical room(s) and equipment. Electrical room(s) ~~and/~~or areas for dedicated electrical equipment shall be sized to accommodate the requirements of Section 429.2.1 through 429.2.2.

The electrical service and the electrical system, including any on-site distribution transformer(s), shall have sufficient capacity to simultaneously charge all ~~EVs~~*EVs* at all required ~~EV Charging Stations,~~ *EVSE spaces,* and ~~EV Ready parking spaces~~ *EV ready spaces*~~, and EV-Capable parking spaces~~ at a minimum of 40~~-~~ amperes each.

EXCEPTION: ~~Automatic Load Management System (ALMS)~~ *Automatic Load Management System (ALMS)* may be used to adjust the maximum electrical capacity required for the ~~EV Charging stations~~ *EVSE spaces* and *EV ready spaces* ~~EV-Ready and EV-Capable parking spaces~~. The ~~ALMS~~ *ALMS* must be designed to allocate charging capacity among multiple future ~~EV Charging Stations~~ *EVSE spaces* at a minimum of 16 amperes per ~~EV charger~~ *EVSE*.

429.4 Electric vehicle charging infrastructure for accessible parking spaces. Ten percent of the accessible parking spaces, rounded to the next whole number, shall be ~~EV Charging Stations~~ *EVSE spaces*. An a~~A~~dditional 10 percent of the accessible parking spaces, rounded to the next whole number, shall be ~~EV Ready~~ *EV ready spaces*. Not fewer than one for each type of ~~EV charging~~ *EVSE* system shall be accessible.

The ~~electric vehicle~~ *electric vehicle* charging infrastructure may also serve adjacent parking spaces not designated as accessible parking. A maximum of 10 percent of the accessible parking spaces, rounded to the next whole number, are allowed to be included in the total number of ~~electric vehicle~~ *electric vehicle* parking spaces required under Section 429.2.

Section 1106—Parking and passenger loading facilities.

1106.7 Location. Accessible parking spaces shall be located on the shortest accessible route of travel from adjacent parking to an accessible building entrance. In parking facilities that do not serve a particular building, accessible parking spaces shall be located on the shortest route to an accessible pedestrian entrance to the parking facility. Where buildings have multiple accessible entrances with adjacent parking, accessible parking spaces shall be dispersed and located near the accessible entrances. Wherever practical, the accessible route shall not cross lanes of vehicular traffic. Where crossing traffic lanes is necessary, the route shall be designated and marked as a crosswalk.

EXCEPTION: 1. In multilevel parking structures, van accessible parking spaces are permitted on one level.

2. Accessible parking spaces shall be permitted to be located in different parking facilities if substantially equivalent or greater accessibility is provided in terms of distance from an accessible entrance or entrances, parking fee and user convenience.

This revision references the NWPCC Power Plan data to align the current and 'anticipated' levels of EV stock. With this approach, Table 429.2 has a specific reference that gets updated every 5 years to align immediate (5% current, set by statute at minimum of 10%), near-term (current code cycle = 5 year = 19.4% = 10+10%), and long-term (20 year = 57.1% = 10+10+40%).

Electrification

For this case, sales of electric vehicles in the LDV category are modeled to increase along a much steeper trajectory than the Reference Case, especially for the states of Oregon and Washington which may be influenced by state policy regarding electric vehicles. The following tables display the percent of sales and stock that are electric for the case.

Market Share of Electric Vehicle Sales in LDV Category - High Electric Case

Region	Market Share	2020	2025	2030	2035	2040	2045
ID	% Sales Electric	1.3	6.9	30.0	71.8	94.0	99.7
MT	% Sales Electric	2.0	10.6	40.7	80.4	96.0	99.5
OR	% Sales Electric	5.8	37.3	86.2	99.7	99.7	99.7
WA	% Sales Electric	6.4	39.6	99.7	99.7	99.7	99.7
Total	% Sales Electric	5.3	33.0	83.4	94.5	98.6	99.6

Percent of Electric Vehicle Stock in LDV Category - High Electric Case

Region	Market Share	2020	2025	2030	2035	2040	2045
ID	% Stock Electric	0.2	0.9	4.5	14.9	29.8	43.6
MT	% Stock Electric	0.2	1.1	5.6	16.4	29.7	41.7
OR	% Stock Electric	0.9	4.8	17.1	32.0	44.5	54.5
WA	% Stock Electric	0.9	5.1	19.4	35.0	47.3	57.1
Total	% Stock Electric	0.8	4.3	15.9	30.4	43.1	53.7

10% EVSE-installed + 10% EV-ready = 20% also exceeds the RCW 19.27.540 requirements for electrical room size. EV-capable parking spaces are considered in the required electrical room size, but not installed electrical service and electrical system requirements.

PDF **RCW 19.27.540**

Electric vehicle infrastructure requirements—Rules.

(1) The building code council shall adopt rules for electric vehicle infrastructure requirements. Rules adopted by the state building code council must consider applicable national and international standards and be consistent with rules adopted under RCW **19.28.281**.

(2)(a) Except as provided in (b) of this subsection, the rules adopted under this section must require electric vehicle charging capability at all new buildings that provide on-site parking. Where parking is provided, the greater of one parking space or ten percent of parking spaces, rounded to the next whole number, must be provided with wiring or raceway sized to accommodate 208/240 V 40-amp or equivalent electric vehicle charging. Electrical rooms serving buildings with on-site parking must be sized to accommodate the potential for electrical equipment and distribution required to serve a minimum of twenty percent of the total parking spaces with 208/240 V 40-amp or equivalent electric vehicle charging. Load management infrastructure may be used to adjust the size and capacity of the required building electric service equipment and circuits on the customer facilities, as well as electric utility-owned infrastructure, as allowed by applicable local and national electrical code. For accessible parking spaces, the greater of one parking space or ten percent of accessible parking spaces, rounded to the next whole number, must be provided with electric vehicle charging infrastructure that may also serve adjacent parking spaces not designated as accessible parking.

(b) For occupancies classified as assembly, education, or mercantile, the requirements of this section apply only to employee parking spaces. The requirements of this section do not apply to occupancies classified as utility or miscellaneous.

(c) Except for rules related to residential R-3, the required rules required under this subsection must be implemented by July 1, 2021. The rules required under this subsection for occupancies classified as residential R-3 must be implemented by July 1, 2024.

(3)(a) The rules adopted under this section must exceed the specific minimum requirements established under subsection (2) of this section for all types of residential and commercial buildings to the extent necessary to support the anticipated levels of zero emissions vehicle use that result from the zero emissions vehicle program requirements in chapter **70A.30** RCW and that result in emissions reductions consistent with RCW **70A.45.020**.

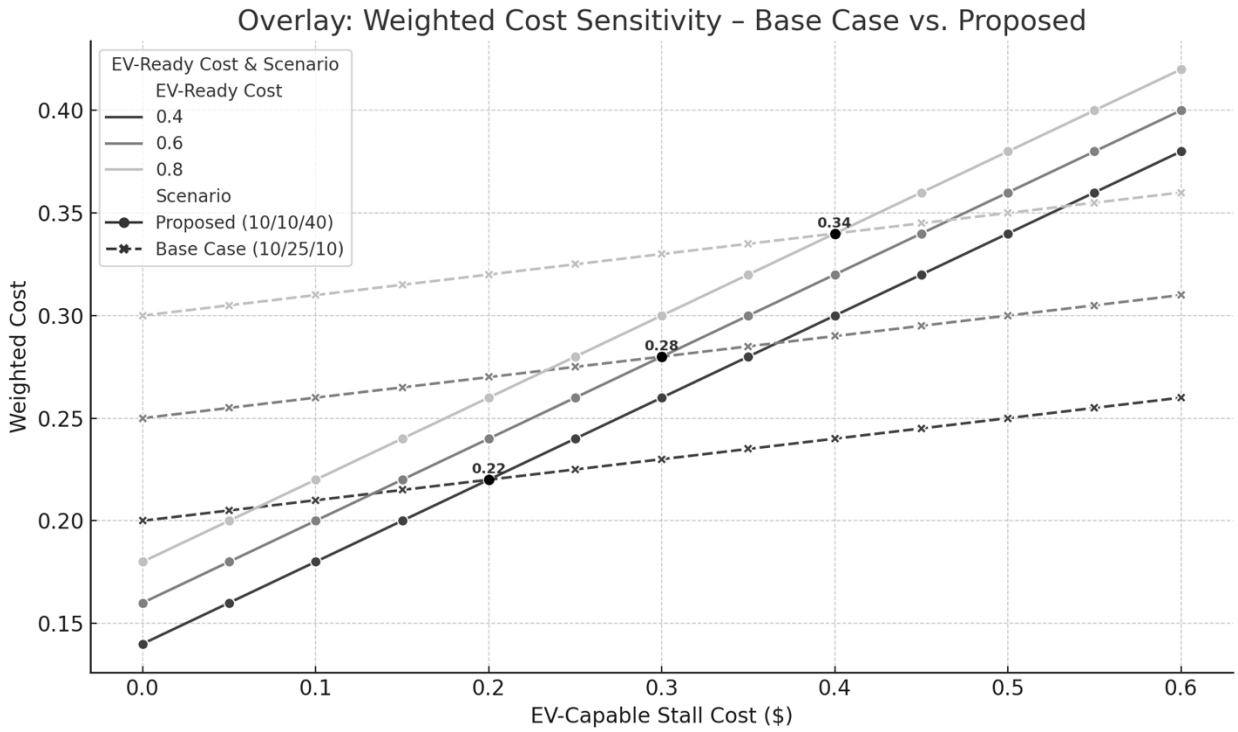
(b) The rules required under this subsection must be implemented by July 1, 2024, and may be periodically updated thereafter.

[**2021 c 300 s 4**; **2019 c 285 s 18**; **2009 c 459 s 16**.]

These amendments argue a 2025 / 2030 / 2045 mix for EV / EV-ready / EV-capable of:

10% / 10% / 40% from current 10% / 25% / 10%.

The sensitivity chart below visualizes the base case vs. proposed case (EV-required vs. EV-ready vs. EV-capable). Actual costs can be applied to this simple model for first-cost comparisons.



For example:

EV-required = $1.00 cost (normalized)

EV-ready = $0.80, $0.60, or $0.40 cost (relative)

EV-capable = $0.00 to $0.60 cost (relative)

The intersections are the 'break even' costs to the existing base case (10/25/10). Real cost data should be requested from developers to populate the model.