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STAFF REPORT
CITY OF SOLANA BEACH

TO: Honorable Mayor and City Councilmembers
FROM: Gregory Wade, City Manager
MEETING DATE: November 10, 2021
ORIGINATING DEPT: City Manager's Department
SUBJECT: **Introduction (1st Reading) of Ordinance No. 518 Adopting Additions to and Amending Title 15 of the Solana Beach Municipal Code to Adopt Amendments to the 2019 California Building Code and California Green Building Code to Implement Solar Energy, Building Decarbonization and Electric Vehicle Infrastructure Requirements**

BACKGROUND:

State law establishes a process that allows local adoption of energy standards that are more stringent than the statewide standards permitted by Title 24 of the California Code of Regulations (CCR), which is commonly referred to as "the Building Code." These local amendments to energy standards are called "Reach Codes" because they are reaching beyond the minimum requirements with the goal of decreasing greenhouse gas (GHG) emissions.

On June 23, 2021, the City Council (Council) directed Staff to bring forward potential Reach Code recommendations that would apply to new construction and major remodels. Council also directed that the Reach Code recommendations should be specific to the electrification of air heating systems, water heating systems and clothing dryers; the requirement to install photovoltaic systems on new commercial construction; and the addition of Electric Vehicle (EV) infrastructure during new construction.

On August 25, 2021, Council discussed Reach Code recommendations brought forth by Staff in coordination with two representatives of the Building Decarbonization Coalition. Based on the Council discussion, the recommendations have been refined into a draft Ordinance (Attachment 1) for Council consideration. In addition to the measures discussed at the August meeting, Staff recommends that Council consider an additional Reach Code requirement to include pre-wiring a structure for future battery storage.

CITY COUNCIL ACTION:

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AGENDA ITEM #

This recommendation stems from a new plan presented by the Department of Energy at the Federal level to decarbonize the grid, including the greater use of batteries to store solar energy.

The Ordinance establishes definitions for both residential and commercial remodel projects that are extensive enough to be classified as "new construction." Any remodeling project classified as "new construction" would be subject to the applicable Reach Code requirements if they are adopted.

This item is before the City Council to consider introducing Ordinance 518 amending Title 15 of the Solana Beach Municipal Code (SBMC) to adopt amendments to the 2019 California Building Code and California Green Building Code to implement Solar Energy, Building Decarbonization and Electric Vehicle Infrastructure requirements.

DISCUSSION:

The State set ambitious renewable energy targets for new construction to achieve zero-net-energy (ZNE). One of the State's policy mechanisms is to include energy efficiency and renewable energy requirements in the Energy Code, which is part of the State Building Code and must be adopted and enforced by local agencies every three years.

While the requirements of the 2019 version of the Energy Code (effective on January 1, 2020) move in the direction of ZNE performance, there are opportunities to achieve greater energy savings and accelerate decarbonization by improving energy efficiency and renewable standards. Such opportunities can be incorporated into the Building Code following the Reach Code adoption process.

Higher energy standards are critical to decarbonization. High-efficiency equipment and design will lower energy requirements and reduce demand for fossil fuels and on-site renewables. Likewise, all-electric buildings are one of the key strategies to decarbonizing the State's building stock. The State's electric system is rapidly becoming cleaner, driven by escalating renewable portfolio standards and cleaner product offerings by the utilities and community choice aggregators (CCAs). In addition, while it is theoretically possible to power buildings with renewable natural gas, there currently is no plan for large-scale conversion to renewable natural gas.

Energy Code Amendments – Chapter 15.22 of SBMC

The proposed Ordinance for Council consideration includes Reach Code provisions that would amend the energy requirements in the City's local Building Code as follows:

- All newly constructed commercial properties must install photovoltaic (PV) systems in accordance with sizing requirements based on square footage or Time Dependent Valuation (TDV) factors.
- In new residential and commercial construction, all space conditioning, water heating and clothes dryer systems will be electric only.

Photovoltaics on Commercial Construction

The current Building Code already requires PV systems on new low-rise residential buildings including single-family homes, low-rise multifamily buildings (defined as three stories or less) and detached Accessory Dwelling Units (ADUs). The purpose of the non-residential solar PV provision in the proposed Ordinance is to increase the amount of locally generated renewable energy by addressing construction in the commercial sector as well. This is accomplished through the inclusion of cost-effective solar PV systems in new construction and would apply to all new non-residential, residential of four or more stories, hotel and motel buildings.

The Ordinance as proposed would allow builders to size systems based on square footage thresholds or based upon TDV factors. This second method uses calculations approved by the Building Official to scale systems to offset 80% of a building's TDV energy on an annual basis. The Ordinance allows for certain exceptions to the commercial PV installation requirement. Some exceptions include situations in which there are practical challenges to installing solar; exceptions if alternative on-site zero carbon, renewable generation systems are used; exceptions if ground-mounted solar PV systems are installed instead; and greenhouse structures are exempted.

- **Cost implications:** Solar photovoltaic systems on new commercial construction are cost effective across modeled non-residential scenarios including retail buildings, office buildings and hotel buildings. Scale of solar requirements depends on electrification requirements. The more systems that are electrified, the more cost-effective solar becomes.
- **Greenhouse gas impacts:** The amount of GHG savings varies by the size of the characteristics of the building and the size of the solar system.

Electric only space conditioning, water heating and clothes dryer systems

Advances in electric heat pumps and other electrical equipment are yielding much higher overall efficiencies as compared to their natural gas counterparts. Electric heat pumps, unlike traditional electric resistance heaters, do not generate heat, but concentrate and transfer it for end uses such as space conditioning and water heating. This process uses less primary energy and emits much less carbon, particularly when it is powered by renewable energy.

All-electric buildings are often cheaper to build due to the elimination of installing expensive gas plumbing to the building. The California Codes and Standards website includes reports that suggest if one invests the savings from the gas infrastructure in additional PV capacity to offset more of the electricity load, in many cases the building is cost-effective for the owner and society from day one, meaning the building is both less expensive to build and cheaper to operate. However, by allowing for the use of gas cooking appliances in the proposed Ordinance before Council, the choice whether to incur extra costs to install gas lines for cooking purposes only or not will shift to the builder and/or property owner.

- **Cost implications:** Based on studies conducted by the statewide Codes and Standards Team, electrifying the above listed building systems and appliances is cost-effective. The largest cost savings opportunity identified in the study was that of avoided gas infrastructure. Cost savings would be less if gas infrastructure is still installed to accommodate cooking and grills.
- **Greenhouse gas impacts:** According to the 2018 RMI report, The Economics of Electrifying Buildings, 87% of building end use emissions come from space and water heating. Please note: this number does not account for the methane leakage from gas infrastructure.

Green Building Code Amendments – Chapter 15.23 of the SBMC

If a City creates a local amendment to the State Green Building Code, this action does not require California Energy Commission (CEC) approval. The proposed Ordinance for Council consideration includes Reach Code provisions that would amend the Green Building Code, therefore, they do not require CEC approval. These provisions are as follows:

- All new residential construction must be pre-wired for battery storage that would accommodate backup loads for a minimum of 5 kWh. As noted above and as further discussed below, this is an additional requirement for Council consideration in addition to the ones initially directed by Council.
- All new residential and non-residential construction must install sufficient electrical capacity for future electrification of all non-electric appliances.
- All new residential and non-residential construction must install EV infrastructure in accordance with the provisions summarized in the "EV infrastructure requirement" section below.

Pre-wired battery storage

Many forms of renewable energy are not dispatchable, that is, they cannot be ramped up to match demand on a real-time basis. However, energy storage and load shifting technologies, combined with dynamic electricity pricing structures are helping overcome these limitations. Batteries, smart buildings and financial incentives enable alignment of the consumer demand and supply from intermittent renewable sources such as solar and wind.

As a new recommendation for Council's consideration, the proposed Ordinance would not require the installation of batteries but would require electrical capacity and wiring to be installed so that owners can add battery storage at any time without having to incur significant conversion costs at the time of installation.

- **Cost implications:** This measure does have a relatively small upfront cost implication and potentially significant future retrofit cost avoidance. No energy savings comes directly from this measure so there are no operational cost impacts.

- **Greenhouse gas impacts**: There are no direct greenhouse gas emission reductions associated with this measure.

Electric ready buildings

The all-electric readiness requirements are designed to enable buildings initially equipped with natural gas appliances to be replaced with electric appliances at a later time without having to make electrical capacity upgrades or make other changes to the building. The all-electric readiness requirements are based on findings that all-electric buildings cause fewer GHG emissions. There are no cost-effectiveness findings for these provisions since, by themselves, they do not reduce energy. Including these is prudent as they are relatively inexpensive at the time of initial construction while enabling buildings to avoid much higher conversion costs in the future. All-electric readiness requirements are expected to be part of the adopted 2022 Building Code.

- **Cost implications:** This measure does have a relatively small upfront cost implication and potentially significant future retrofit cost avoidance. No energy savings comes directly from this measure so there are no operational cost impacts.
- **Greenhouse gas impacts**: There are no direct greenhouse gas emission reductions associated with this measure.

EV Infrastructure requirements

The intent of this provision is in line with the City's Climate Action Plan (CAP) Measure T-1: Increase EV and alternative fuel vehicles (AFV's) vehicle miles traveled (VMT) to 30 percent of total VMT. Increasing EV infrastructure in the City directly supports this measure.

There are three levels of EV infrastructure requirements referred to in the Building Code:

1. EV Capable Space: means a parking space that has installed electrical panel capacity with a dedicated branch circuit and a continuous raceway/conduit from the panel to the future EV parking spot.
2. Level 2 EV Ready Space: means a parking space that has installed electrical panel capacity, raceway/conduit and wiring to terminate in a junction box or 240-volt charging outlet such that Electrical Vehicle Charging Equipment (EVSE) can be directly plugged into it without additional work
3. Electric Vehicle Charging Station (EVSE)-means a parking space that includes the installation of a Level 2 EV charging station.

The proposed Ordinance includes the following EV infrastructure requirements for new construction:

- Single Family Residential: designated EVSE-Ready parking space pre-wired and ready for 240V (level 2) EVSE installation. Exception: no charger required for an ADU with no parking space.
- Multifamily Residential and Hotels: At least 25% of parking spaces will be equipped with functional 240V (level 2) EVSE-Charging Stations. Regardless of the number of parking spaces at least 1 EVSE-Charging Station is required. Raceways and electric panel capacity shall be provided to make 100% of the remaining parking spaces EV–Capable.
- All Other Non-Residential: At least 20% of parking spaces will be equipped with functional 240V (level 2) EVSE-Charging Station. Regardless of the number of parking spaces at least 1 EVSE-Charging Station is required. Raceways and electric panel capacity shall be provided to make an additional 15% of parking spaces EVSE-Capable.
    - **Cost implications:** Initial costs vary based on the selected technology, location and whether or not the parking infrastructure is new or existing. However, installing all of the panels and underground work at the time of initial construction is the least expensive option compared to future retrofit costs.
    - **Greenhouse gas impacts:** On a per parking space basis, as part of the 2019 CALGreen EV code development, the California Air Resources Board estimated between 8 and 17 metric tons in avoided greenhouse gas emissions annually per EV ready multifamily space in 2025.

Substantial Remodels as New Construction

Because Solana Beach is a relatively built-out community, much of the construction activity in the City consists of remodels to existing homes and buildings rather than entirely new construction. Remodels can vary in scope and degree from minor alterations to significant construction work such that many jurisdictions in California categorize and/or explicitly define projects which undergo remodeling work that is so extensive as "New Construction." If a majority of major structural components of a building are being altered, such that most of the structure is essentially new, then certain California Building Code requirements would apply to the project including applicable Reach Codes if adopted as well as the current California Building Code requirement to install photovoltaic (PV) systems on new single-family and low-rise multi-family residential construction.

There are various ways in which substantial remodels can be classified as "New Construction." Some jurisdictions rely on valuations of a certain dollar amount, or on the square footage of a structure being altered, or upon both measures. By selecting a more expansive definition, jurisdictions have greater opportunity to apply an adopted reach code thereby lowering GHG emissions since they can require more households to install photovoltaic systems and/or other electrification requirements. However, if the definition is too broad, then remodeling costs and requirements could become too burdensome to homeowners who might otherwise consider a home improvement project.

Staff proposes the following definition and any projects that meet these thresholds would have to comply with the requirements in Ordinance 518 if adopted.

"Newly Constructed" (or "New Construction") means a building that is new, previously unoccupied or substantially changed as defined herein. For the purpose of enforcing the amendments to the California Energy Code and California Building Code, any work, addition to, remodel, repair, renovation, or alteration of any building(s) or structure(s) shall be defined as "New Construction" when:

a. Any Non-Residential or mixed-use remodel project has a permit valuation of $750,000 or more; or alters 50% or more of major structural components including exterior walls, interior walls, floor area, roof structure, or foundation, or has an increase of 50% or more of floor area.
b. Any residential remodel project alters 50% or more of major structural components including exterior walls, interior walls, floor area, roof structure, or foundation, or has an addition of 700 square feet or more of floor area.

The Community Development Department uses a database called TRAKiT to manage permitting and building processes in the City. Within this database, the valuation amounts for all permits are readily accessible. However, it is difficult from the data available in TRAKiT to determine how many of these projects met the square footage threshold. This is because the Community Development Department does not currently collect and record in TRAKiT the existing square footage information for all projects nor how much of the existing square footage was being remodeled to the degree that would be relevant for this Ordinance.

The same is true for commercial projects of which there was only 1 permitted project in the past three years exceeding the $750,000 valuation threshold. There is not an efficient way to determine how many of the 74 commercial projects total in the last 3 years might have met the square footage threshold designations.

The intent of the definitions Staff proposes is to ensure that only projects that essentially reconstruct more than half the structure will be subject to meeting the "New Construction" requirements proposed in the reach codes. This is important because the cost-effectiveness studies being referenced in support of the new reach codes apply to "new construction" scenarios. Thus, only those remodel projects that are extensive enough that most of the structure is essentially new, should be considered for the purposes of the proposed ordinance.

Staff recommends two possible options for Council's consideration. The first is to introduce the proposed ordinance without the remodeling thresholds defined. If adopted, Staff can begin to collect relevant square footage data for all projects moving forward to use as a basis for future threshold definitions. The second option is to introduce the proposed ordinance with the remodeling thresholds as defined in Attachment 1. Staff

will begin to collect relevant square footage data, which could be used at a later date to determine whether it would be prudent to adjust the threshold levels or not.

Either way, if Council adopts a reach code ordinance with remodeling thresholds defined or not, the City will have to follow the reach code adoption process once again as early as August or September of 2022 if Council would like the new requirements to remain in place for the next triennial adoption of the revised California Building Codes. These 2022 Building Codes will be adopted by the State January 1, 2022 and go into effect on January 1, 2023.

Climate Action Commission Input

On March 3, 2021, the Climate Action Commission (CAC) worked with Staff to coordinate a community workshop to educate the public and solicit input on potential electrification reach code measures. The CAC also analyzed and provided input on which measures to include in an ordinance during Council discussion of potential measures at a Council meeting on June 23, 2021. At the last regularly scheduled CAC meeting on October 20, 2021, the full commission authorized the CAC Decarbonization Strategies Subcommittee to meet and provide input on behalf of the CAC if Council formally introduced a building electrification reach code ordinance draft before the next regularly scheduled CAC meeting on November 17, 2021. The subcommittee met on Tuesday, November 2nd and drafted a memo summarizing the provisions that they recommend Council include in the reach code ordinance draft. Staff has not had sufficient time to completely review the Subcommittee's proposed provisions and revisions for consistency with Draft Ordinance 518, but they are included in this Staff Report as Attachment 2.

Next Steps

If approved by City Council, Staff will submit the Ordinance and cost-effectiveness studies to the CEC to be filed with the California Building Standards Commission (CBSC) prior to implementation, as required by Public Resources Code Section 25402.1(h)2.

CEQA COMPLIANCE STATEMENT:

The proposed Ordinance is exempt from the provisions of the California Environmental Quality Act ("CEQA") pursuant to Sections 15307 and 15308 of the CEQA Guidelines (14 CCR 15307 and 15308) because it is an activity undertaken to assure the maintenance, restoration, enhancement and protection of the environment and pursuant to Section 15061(b)(3) because there is no possibility that the activity in question may have a significant effect on the environment.

FISCAL IMPACT:

The Reach Code amendments parallel the structure and terms of the State Building Code and as such, any incremental plan check and inspection time should be minimal. The provisions will require plan checkers and inspectors to develop and apply additional

checklists but are not expected to require significant additional Staff time. Any incremental costs of administering these requirements will be covered through existing permit fees.

WORK PLAN:

This item is included in the Environmental Sustainability section of the FY 2021/2022 Work Plan.

OPTIONS:

- Introduce Ordinance 518 amending Title 15 of the Solana Beach Municipal Code to adopt amendments to the 2019 California Building Code and California Green Building Code to implement Solar Energy, Building Decarbonization and Electric Vehicle Infrastructure requirements for new construction.
- Do not introduce Ordinance 518 and provide direction.

DEPARTMENT RECOMMENDATION:

Staff recommends the City Council consider the introduction of Ordinance 518 amending Title 15 of the Solana Beach Municipal Code to adopt amendments to the 2019 California Building Code and California Green Building Code to implement Solar Energy, Building Decarbonization and Electric Vehicle Infrastructure requirements for new construction.

CITY MANAGER'S RECOMMENDATION:

Approve Department Recommendation.

Gregory Wade, City Manager

Attachments:

1. Ordinance 518
2. CAC Decarbonization Strategies Subcommittee Memo

ORDINANCE 518

AN ORDINANCE OF THE CITY COUNCIL OF SOLANA BEACH, CALIFORNIA, ADOPTING ADDITIONS TO CHAPTER 15.22 (ENERGY CODE) AND CHAPTER 15.23 (GREEN BUILDING CODE) OF TITLE 15 (BUILDING AND CONSTRUCTION) OF THE SOLANA BEACH MUNICIPAL CODE TO ADOPT THE 2019 CALIFORNIA BUILDING CODE AND CALIFORNIA GREEN BUILDING CODE WITH CERTAIN AMENDMENTS, ADDITIONS, AND DELETIONS RELATED TO CLIMATE ACTION THROUGH ENERGY EFFICIENCY, SOLAR ENERGY, BUILDING ELECTRIFICATION, AND ELECTRIC VEHICLE INFRASTRUCTURE

WHEREAS, consensus exists among the world's leading climate scientists that climate change caused by greenhouse gas (GHG) emissions from human activities is among the most significant problems facing the world today; and

WHEREAS, the City of Solana Beach declared a Climate Emergency in 2020; and

WHEREAS, the City of Solana Beach adopted a Climate Action Plan (CAP) that directs the City in reducing approximately 70,000 metric tons of GHG emissions annually by the year 2035 to meet reduction goals consistent with California's GHG targets; and

WHEREAS, measures in the CAP aim to curb the use of fossil fuels, a primary contributor to GHG emissions, in buildings and transportation; and

WHEREAS, reach codes that extend beyond the California building code are being adopted by cities state-wide to accelerate GHG reductions from new construction by limiting the use of natural gas, increasing local solar production, and installing electric vehicle (EV) infrastructure to charge a greater number of EV's beyond state code requirements; and

WHEREAS, fifty-one cities and counties in California have passed ordinances restricting or disincentivizing the use of natural gas in residential, commercial and multi-family buildings; and

WHEREAS, cost effectiveness is demonstrated by the statewide studies (included by reference) "2019 Costeffectiveness Study: Low-Rise Residential New Construction", prepared by Frontier Energy, Inc. and Misti Bruceri & Associates, LLC, dated July 17, 2019, and "2019 Nonresidential New Construction Reach Code Cost Effectiveness Study", prepared by TRC and EnergySoft, dated July 15, 2019; and

WHEREAS, the assumptions for climate zones, building types, cost effectiveness, and the provisions of the model reach code are applicable to the City of Solana Beach; and

WHEREAS, the City of Solana Beach wishes to adopt the reach code ordinance ~~with modifications~~ to enhance building electrification, on-site solar electricity generation, and EV infrastructure within the City as part of Title 15 of the Municipal Code.

NOW THEREFORE, the City Council of the City of Solana Beach, California, does ordain as follows:

SECTION ONE. FINDINGS.

The City Council finds and determines the foregoing recitals are true and correct and are hereby incorporated herein as findings and determinations of the City Council. The recitals constitute findings in this matter and, together with the staff report, other written reports, public testimony and other information contained in the record, are an adequate and appropriate evidentiary basis for the actions taken in this Ordinance.

SECTION TWO. ENVIRONMENTAL REVIEW.

This Ordinance is exempt from the provisions of the California Environmental Quality Act ("CEQA") pursuant to Sections 15307 and 15308 of the CEQA Guidelines (14 CCR 15307 and 15308) because it is an activity undertaken to assure the maintenance, restoration, enhancement and protection of the environment and pursuant to Section 15061(b)(3) because there is no possibility that the activity in question may have a significant effect on the environment.

SECTION THREE. ADDITION OF SECTIONS 15.22.020 THROUGH 15.22.050 AND 15.23.020 THROUGH 15.23.060 TO THE SOLANA BEACH MUNICIPAL CODE. Sections 15.22.020 through 15.22.050 and 15.23.020 through 15.23.060 of the Solana Beach Municipal Code are hereby added to amend the 2019 California Building Code, California Code of Regulations, Title 24, Part 6 and Part 11 and shall read as follows:

CHAPTER 15.22 ENERGY CODE

15.22.020 Applicability

A. The requirements of this Chapter shall apply at the time of building permit application for all Newly Constructed buildings, as defined in Section 15.22.030.
B. The requirements of this Chapter shall not apply to the use of portable propane appliances for use outside of the building envelope, such as outdoor cooking and outdoor heating appliances.

15.22.030 Definitions

For purposes of this Chapter and Chapter 15.23, the following definitions shall apply:

"Mixed-Fuel building" means a building that is plumbed for the use of natural gas or propane as fuel for any system~~s~~.

"New Construction" (or **"Newly Constructed"**) means a building that is new construction, previously unoccupied or substantially Remodeled (as defined herein). Any construction work, alteration, remodel, replacement, repair, or renovation of any building(s) or structure(s) (collectively **"Remodel"**) shall ~~constitute~~ be considered "New Construction" when:

A. Residential Remodel.

1. Any construction that Remodels more than fifty percent (50%) of any of the following major structural components:

(i) exterior walls (measured by linear feet);

(ii) interior walls (measured by linear feet), except where the building or structure is less than 1200 square feet;

(iii) roof (measured by ~~multiplying the length by width~~square footage);

(iv) floor and/or foundation (measured by ~~multiplying the length by width~~square footage); or

2. The addition of seven hundred (700) or more square feet of floor area.

B. Non-Residential Remodel.

1. Any construction that Remodels more than fifty percent (50%) of any of the following major structural components:

(i) exterior walls (measured by linear feet);

(ii) interior walls (measured by linear feet);

(iii) roof (measured by ~~multiplying the length by width~~square footage);

(iv) floor and/or foundation (measured by ~~multiplying the length by width~~square footage); or

2. The addition of fifty percent (50%) or more of floor area to the building (measured by square footage); or

3. The Remodel project has a permit valuation of four hundred thousand dollars ($400,000) or more.

"Non-Residential" means buildings with the following occupancies: non-residential; residential of four (4) or more stories; hotel and motel; and commercial (e.g., retail, restaurant, office, and industrial).

"Low-Rise Residential" means all single-family residential and low-rise multifamily buildings of three (3) stories or fewer.

15.22.040 Non-Residential Photovoltaic System Required

A. All New Construction of Non-Residential buildings shall be required to install a minimum five (5) kilowatt direct current (kWdc) on-site photovoltaic system, except as provided in 15.22.040(C) through (G), inclusive, below.

The required photovoltaic system shall be sized based on gross floor area of the building (or gross floor area of the leased premises if the applicant is a tenant in a multi-tenant building or owner of a condominium in a building consisting of two or more condominiums). If the gross floor area of the building (or premises in a multi-tenant or condominium building) is more than two thousand (2,000) square feet, then for each square foot of the gross floor area that exceeds two thousand (2,000) square feet the size of the photovoltaic system shall be increased by three (3) watts per square foot.

Note to Section 15.22.040(A): When a Remodel of a Non-Residential multi-tenant building (whether to a tenant's leased premises within the building or to the common area of the building or project) qualifies as New Construction, compliance with the requirements herein concerning the size of the photovoltaic system shall be based on the gross floor area controlled by the applicant.

(i) Where there is construction to a leased premises that only concerns the leased premises, the size of the photovoltaic system will be based on the gross floor area of the leased premises being Remodeled controlled by the applicant. (For example, for a tenant improvement that only affects the tenant's portion of a building's total gross floor area.)

(ii) Where there is construction to the common area of a building or project, the size of the photovoltaic system will be based on the gross floor area of the common area of the building or project that is owned or controlled by the property owner consisting of interior lobbies, hallways, bathrooms, and mailrooms located inside the building and the exterior walls of the building (excluding exterior walkways, parking areas, and other common areas on the exterior of the building). (For example, a Remodel of a building that only affects common area of the building or project.)

B. The building official may reduce (by the minimum extent necessary) or waive the requirements of this Section 15.22.040(A) if the official determines that (i) there are sufficient "practical challenges" to make compliance with the requirements infeasible or (ii) that the size of the photovoltaic system required herein exceeds the reasonable average annual electricity demand for the proposed use of the building or premises. "Practical challenges" may be a result of the building site location, limited rooftop availability, or shading from nearby structures, topography, or vegetation. The applicant is responsible for submitting written documentation which demonstrates (i) the infeasibility of the requirement or (ii) that the electrical demand for the building (or leased premises) based on the proposed use of the building (or leased premises) is lower than the electricity production from the required system size. The applicant's request for modification or exemption from this requirement shall include a written report from a certified energy analyst and other qualified consultants as may be required by the building official which demonstrate the infeasibility of the requirement or that the electrical demand for the building based on the proposed use of the building. The City's certified energy analyst and/or other consultants shall confirm the report and analysis provided by the applicant.

~~D.~~C. The building official may waive or reduce, by the extent necessary, the provisions of this section 15.22.040(A) above if the official determines that the building has satisfied the purpose and intent of this provision through the use of alternate on-site zero carbon, renewable generation systems such as wind energy systems.

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~~E.~~D. In lieu of Sections 15.22.040(A) ~~or (B)~~, all Newly Constructed Non-Residential buildings may install a solar PV system based on Time Dependent Valuation (TDV) such that the installed system will offset 80% of the building's TDV energy on an annual basis. The system sizing requirement shall be based upon total building TDV energy use including both conditioned and unconditioned space and calculated using modeling software or other methods approved by the building official.

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Note to Section 15.22.040(E): Where appropriate and when approved by the Community Development Director or his or her designee, TDV may be based on the scope of the application where the system size reflects only the load controlled by the applicant, such as a tenant improvement that only affects a tenant's portion of a building or a general renovation of a nonresidential building by a property owner that only affects common areas. Applicant specific TDV shall be the minimum requirement unless an applicant can demonstrate to the Community Development Director or ~~their~~ his or her designee that serving common area load is infeasible per Section 15.22.040(C).

~~F.~~E. Greenhouse structures used for commercial cultivation, educational purposes, or the conservancy of plants or animals are exempted from the requirements of this Section 15.22.040. The Community Development Director or his or her designee may exempt other greenhouse structure uses on a case- by-case basis.

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~~G.~~F. An applicant may install a ground-mounted solar PV system that meets the requirements of Section 15.22.040(A) ~~or (B)~~ as a voluntary alternative to installing rooftop solar PV. The ground-mounted solar photovoltaic system shall comply with all existing health and safety requirements and limitations in the City.

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15.22.050 Required Electric End Uses

A. All Newly Constructed buildings shall use electricity as the source of energy for its space heating, water heating (including pools and spas), and clothes drying appliances, except as provided in 15.22.050(B) below.

B. Solar thermal pool and spa heating are exempt from section 15.22.050(A) above.

CHAPTER 15.23 GREEN BUILDING CODE

15.23.020 Applicability

A. The requirements of this Chapter shall apply at the time of building permit application for all Newly Constructed buildings, as defined in Section 15.22.030.
B. The requirements of this Chapter shall not apply to the use of portable propane appliances for use outside of the building envelope, such as outdoor cooking and outdoor heating appliances.

15.23.030 Definitions

For purposes of this Chapter, the following definitions shall apply:

"EV Capable Space" means a parking space linked to a listed electrical panel with sufficient capacity to provide at least 220/240 volts and 40 amperes to the parking space. Raceways must be at least 1" in diameter and may be sized for multiple circuits as allowed by the California Electrical Code. The panel circuit directory shall identify the overcurrent protective device space(s) reserved for EV charging as "EV CAPABLE." Construction documents shall indicate future completion of raceway from the panel to the parking space, via the installed raceways.

"Level 2 EV Ready Space" means a parking space served by a complete electric circuit with 208/240 volt, 40-ampere capacity including electrical panel capacity, overprotection device, a minimum 1" diameter raceway that may include multiple circuits as allowed by the California Electrical Code, wiring, and either a) a receptacle labeled "Electric Vehicle Outlet" with at least a ½" font adjacent to the parking space, or b) electric vehicle supply equipment (EVSE) with a minimum capacity of 30 amperes.

"Electric Vehicle Charging Station" or "EVSE" means a parking space (or spaces in the event of multiple spaces for which a single charging station with a dedicated charging port for each space) that includes installation of electric vehicle supply equipment (EVSE) with a minimum capacity of 30 amperes connected to a circuit serving a Level 2 EV Ready Space. EVSE installation may be used to satisfy a Level 2 EV Ready Space requirement.

"Mixed-Fuel building" has the same meaning as in Section 15.22.030.

"Newly Constructed" or "New Construction" has the same meaning as in Section 15.22.030.

"Low-Rise Residential" has the same meaning as in Section 15.22.030.

15.23.040 Electric-Readiness

A. In Newly Constructed Mixed-Fuel buildings, where natural gas- or propane-plumbed systems and appliances are installed, raceways and electrical capacity shall be installed for future electrification of each system or appliances. Electric ready measures include panel capacity and raceways (or conductors) from the electrical panel(s) to the location of each gas outlet sufficiently sized to meet future electric power requirements at the time of construction so that wall penetrations and demolition work is avoided at or minimized when the systems and appliances are

converted to electric-powered systems. The locations of specific gas appliances shall be made electric-ready as follows:

1) Combined Cooktop and Oven or Stand Alone Cooktop. Buildings plumbed for natural gas or propane equipment shall include the following components for each gas terminal or stub out:
   a) A dedicated 240 volt, 40 amp or greater circuit and 50 amp or greater electrical receptacle located within three (3) feet of the equipment and accessible with no obstructions;
   b) The electrical receptacle shall be labeled with the words "For Future Electric Range" and be electrically isolated; and
   c) A double pole circuit breaker in the electrical panel labeled with the words "For Future Electric Range".
2) Stand Alone Cooking Oven. Buildings plumbed for natural gas or propane equipment shall include the following components for each gas terminal or stub out:
   a) A dedicated 240 volt, 20 amp or greater receptacle within three (3) feet of the appliance and accessible with no obstructions;
   b) The electrical receptacle shall be labeled with the words "For Future Electric Oven" and be electrically isolated; and
   c) A double pole circuit breaker in the electrical panel labeled with the words "For Future Electric Oven".
3) Service Capacity
   a) All newly installed electrical panels and subpanels serving common loads in a Mixed-Fuel Building shall have both space for overcurrent protective devices as well as bus bars of adequate capacity to meet all of the building's potential future electrical requirements as specified in California Electric Code, Title 24, Part 3, Article 220 Sections 220.50.1 and 220.50.2.
   b) All newly installed raceways in a Mixed-Fuel Building between the main electric panel and any subpanels, and the point at which the conductors serving the building connect to the common conductors of the utility distribution system, shall be sized for conductors adequate to serve all of the building's potential future electrical requirements as specified in California Electric Code, Title 24, Part 3, Article 220 Sections 220.50.1 and 220.50.2.
   c) The service capacity requirements of this section shall be determined in accordance with California Electric Code, Title 24, Part 3, Article 220 Section 220.50.4.
4) Conductor, Raceway and Subpanel Sizing.
   a) Raceway and subpanel capacity shall be sized to be large enough to meet the requirements at the service voltage.
   b) The electrical capacity requirements may be adjusted for demand factors in accordance with the California Electric Code, Title 24, Part 3, Article 220.

c) For purposes of gas pipe equivalence, gas pipe capacity shall be determined in accordance with the California Plumbing Code, Title 24, Part 5, Section 1208.4.

B. If the design includes bus bar capacity, raceway or conductor capacity, and space necessary for the installation of electrical equipment that can serve the intended function of the gas equipment, as calculated and documented by a licensed design professional associated with the project, it shall be exempt from the requirements of Section 15.23.040(A)(3).

15.23.050 Energy Storage Pre-Wiring

All New Construction shall be prewired for the installation of battery storage. The pre-wiring shall be in accordance with California Building, Residential, and Electrical Codes and be adequately sized by a licensed professional to accommodate the backup loads installed in the critical load panel with a minimum of five (5) kwh.

15.23.060 Electric Vehicle Charging

A. California Green Building Code, Title 24, Part 11, Residential Mandatory Measures, Section 4.106.4 is amended as follows (~~strikeouts~~ indicated deletions and underscores indicate additions):

4.106.4.1 New one and two-family dwellings and townhouses with attached private garages. For each dwelling unit with one parking space, one Level 2 EV Ready Space shall be installed. For each dwelling unit with two or more parking spaces, at least one Level 2 EV Ready Space and one EV Capable Space shall be installed.

4.106.4.1.1 Identification. ~~The service panel or subpanel circuit directory shall identify the overcurrent protective device space (s) reserved for future EV charging as "Level 2 EV CAPABLE."~~ The raceway termination location shall be permanently and visibly marked as ~~"EV CAPABLE"~~ "EV READY" or "EV CAPABLE", as the case may be.

4.106.4.2 New multifamily dwellings. If residential parking is provided, ~~ten (10)~~ at least twenty five percent (25%) of the total number of parking spaces on a building site, ~~provided for all types of parking facilities~~but in no case less than one, shall have an EVSE installed, with the remaining parking ~~facilities~~ spaces being ~~be~~ electric vehicle charging spaces (EV Capable Spaces) capable of supporting future EVSE. Calculations for the required number of EVSE spaces shall be rounded up to the nearest whole number.

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4.106.4.3 New hotels and motels. At least twenty-five percent (25%) of the total number of parking spaces ~~in~~ on a building site for Newly Constructed hotels and motels ~~provided for all types of parking facilities~~, but in no case less than one, ~~-~~shall be equipped with functional 240V (Level 2) EVSE. All other parking spaces in Newly Constructed hotels and motels shall provide EV Capable Spaces capable of supporting future installation of EVSE. The construction documents shall identify the location of the EV Capable Spaces.

4.106.4.3.1 Number of required EV spaces. ~~The number of required EV spaces shall be based on the total number of parking spaces provided for all types of parking facilities in accordance with Table 4.106.4.3.1~~. Calculations for the required number of EVSE spaces shall be rounded up to the nearest whole number.

B. California Green Building Code,Title 24, Part 11, Nonresidential Mandatory Measures, Section 5.106.5.3.3 is amended as follows:

5.106.5.3.3 EV charging space calculation. Where parking is included in the project scope, at least twenty percent (20%) of the total number of parking spaces on a building site ~~, provided for all types of parking facilities,~~ shall have an EVSE installed with an additional twenty percent (20%) of parking ~~facilities~~ spaces being electric vehicle charging spaces (EV Capable Spaces) capable of supporting future EVSE. Calculations for the required number of EV spaces shall be rounded up to the nearest whole number. ~~[N] Table 5.106.5.3.3 shall be used to determine if single or multiple charging space requirements apply for the future installation of EVSE.~~

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SECTION FOUR. SEVERABILITY.

If any section, subsection, paragraph, sentence, clause, phrase or term (each a "Provision") in this Ordinance, or any Provision's application to any person or circumstance, is held illegal, invalid or unconstitutional by a court of competent jurisdiction, all other Provisions not held illegal, invalid or unconstitutional, or such Provision's application to other persons or circumstances, shall not be affected. The City Council declares that it would have passed this Ordinance, and each Provision therein, whether any one or more Provisions be declared illegal, invalid or unconstitutional.

SECTION FIVE. PUBLICATION AND EFFECTIVE DATE. Within fifteen (15) days after its adoption, the City Clerk of the City of Solana Beach shall cause this Ordinance to be published pursuant to the provisions of Government Code Section 36933. This Ordinance shall become effective 30 days after its adoption and shall be in full force and effect following submission to and approval by the California Energy Commission pursuant to applicable law.

INTRODUCED AND FIRST READ at a regular meeting of the City Council of the City of Solana Beach, California held on the 10th day of November 2021, and thereafter,

PASSED, APPROVED AND ADOPTED at a regular meeting of the City Council of the City of Solana Beach, California, on the 8th day of December 2021, by the following vote:

AYES: Councilmembers –
NOES: Councilmembers –
ABSTAIN: Councilmembers –
ABSENT: Councilmembers –

_____
LESA HEEBNER, Mayor

APPROVED AS TO FORM:

_____
JOHANNA N. CANLAS, City Attorney

ATTEST:

_____
ANGELA IVEY, City Clerk