

AVILA RANCH ENERGY GUIDELINES

PHASE 3 R-4 MULTI-FAMILY RESIDENTIAL

The Avila Ranch Energy Guidelines promote sustainability, affordability, and a healthy home environment for our tenants. The approved Avila Ranch Development Plan contains some inconsistencies with current codes updates; for instance, the 2019 code update did not adopt a ZERO NET ENERGY threshold (section 13 pg. 66 of DP). The California Energy Commission (CEC) did not deem ZERO NET ENERGY to be a cost-effective solution for homebuyers and instead focused on Green House Gases (GHG). In conjunction with California's focus, the City has implemented the Clean Energy Choice Program which focuses on ALL ELECTRIC BUILDINGS and a reduction in GHG's versus ZERO NET ENERGY. Below is a description of the Avila Ranch's compliance with the intent of the Development Agreement and Development Plan (DP).

DP Section 13

- This section references the 2019 Energy codes to be a ZERO NET ENERGY. While not promulgated, the CEC focused on the reduction of Green House Gases.
 - Avila Ranch Multi-Family is an All-Electric Apartment Complex in compliance with the City's Clean Energy Choice Program.
- The overall intent of the recommendations, standards and guidelines of the DP is to improve the energy conservation measures by 10% over the 2016 code requirements or meet the 2019 code.
 - While it is not possible to compare the same building using the 2016 software to current 2022 software, current code and City-wide policies are meeting the intent of the Development Plan and Development Agreement goals and, ultimately, providing better energy efficiency and reductions in GHG.

DP Section 13 Guidelines

- **A- Advanced Framing Techniques**
 - The project design will use a combination of insulated corners and pre-cut framing packages to reduce waste and minimizing lumber use while still meeting any structural requirements.
- **B- Quality Insulation Installation (QII)**
 - QII will be implemented on the project, and it will be detailed in the Title 24 energy calculation and be submitted on the final compliance forms.

- **C- Compact Plumbing Strategies**
 - Unlike most apartment buildings that use a central boiler room, the project will use highly efficient heat pump water heaters located in each unit. Additionally, the size of the units are small enough that the total runs from heater to fixture is minimal and will use less water.
- **D - Water Use**
 - All plumbing fixtures are WATER SENSE labeled products and comply with CalGreen Standards.
- **E - Rain/Stormwater Management**
 - Project will comply with approved Post Construction Stormwater Regulations and utilize best management practices, accordingly.
- **F - Passive Solar**
 - The glazing on this project is designed to maximize the windows/doors insulating properties while allowing the sun's energy to provide solar heat gain if desired.
- **G - City Infrastructure**
 - Project is complying with the Clean Energy Choice Program.
 - On-site and off-site improvement plans have been approved and in many cases constructed.
- **H – Electric Landscape Maintenance & Exterior Outlets.**
 - All irrigation controls are tied to the project's electric meters.
 - Patios and balconies will be equipped with exterior outlets.
- **I- Bike Storage**
 - See below for an outline of the on-site bike storage.
- **J – Electric Appliances**
 - Energy Star Rated Appliances
 - Rheem Hybrid Heat Pump Water Heater
 - Up to 4x efficient as a std electric tanked heater, meaning, it uses 75% less energy.
 - Can save on average up to \$4,90 per year in energy costs per unit.
 - Most efficient water heater on the market with up to a 4.07 UEF
 - High Performance Heat Pumps
 - Ducted and non ducted heat pumps.
 - Up to 25 SEER
 - Up to 12 HSPF
- **K – Electric Vehicles**
 - Project complies with updated green building codes which has increased electric vehicle charging requirements. Project will have EV Ready, EV Capable and EV Level 2 Charging Stations throughout. See below for outline of EV parking program.

DP Section 3 Standard 3.8

- Based upon the acoustical analysis (Avila Ranch EIR – Appendix O – *Sound Level Assessment for Avila Ranch*, 45dB.com, 2017), existing noise levels at the northwest property line, adjacent to the Industrial zoned properties, range from 51- 53 dBA, with projected noise levels for the year 2035 expected to be 54 dBA. In compliance with the Development Plan, the R-4 buildings are

setback eighty-five (85) feet from the northern property line. While there are bedrooms and balconies on the north side of the buildings, the existing and anticipated noise levels are below the noise ordinance threshold levels. It is noteworthy that the noise measurements in the EIR were taken at the property line. Based upon noise transmission, each time a distance is doubled, intensity is decreased by a factor of four, therefore, each time intensity is cut in half, the sound level decreases 3 dB and that the doubling of distance reduces the sound level by 6 dB.

- Given the existing and anticipated noise levels and the distance from the northern property, there is no apparent need for implementation of noise level reduction methodologies in either the R-4 or R-4A structures to mitigate exterior noise. Additionally, the project will comply with the CA Building Code, the CA Green Building Code, and the City's requirement for interior noise levels, via utilization of a robust package of building related sound transmission class (STC) rated materials.
- The available surrounding space around the exterior parking lots will be planted with trees which will also help provide screening from the north and west.

13.2 Onsite Energy Production

- The solar requirements in the DP and DA reflect the expectation that the new energy codes in 2019 would have been ZERONET ENERGY and provide requirements for increased electrical offsets. As noted, the CEC changed their stance on ZERONET ENERGY to focus on a reduction in GHG. Avila Ranch Phase 3 Multi Family is an ALL ELECTRIC COMMUNITY and is intending to meet the solar demands required in the 2022 code update.
- Systems are above code minimums.
- System sizes are currently designed and submitted to PGE, we have increased them as much as possible. A change in size would require us to RESUBMIT to PGE and would kick this project out of NEM 2.0. Changing from NEM 2.0 to NEM 3.0 would result in higher utility costs for all occupants in this project.

Development Plans Section 7.07. Energy

(a) Avila Ranch, in coordination with City staff, has committed to comply with the City's policies on energy efficiency and has, in each phase, complied with the CLEAN ENERGY CHOICE PROGRAM, and has made a commitment to be an ALL-ELECTRIC COMMUNITY. ZERONET ENERGY was never adopted and, therefore, the language in the DA regarding 100% electrical offsets is not applicable since this is an all electric design and not mixed fuels. The project meets the current code requirements, which meets the intent of the DA and DP. We also wanted to see how much the electrical offset would have been if we did in fact build a mixed fuel project, see below.

(b) Below you will see both Anacapa and Sendero PV/Electric Offset with ALL ELECTRIC and MIXED FUEL DESIGNS scenarios.

a. Anacapa All Electric

- i. Solar Size: 146KW
- ii. Solar Production: 251,630 KWh
- iii. Avg. Production by Unit/Month: 246.7KWh
- iv. Avg. Estimated Usage by Unit/Month: 320KWh
- v. **Potential Offset by Unit: 77%**

- b. Anacapa With Mixed Fuel Design
 - i. Roughly 60,000 KWh Export Per Year, Per Building
 - ii. Total KWh export: 120,000 KWh
 - iii. **Potential Offset with Mixed Fuel Design: 210%**
- c. Sendero All Electric
 - i. Solar System Size: 70 KW
 - ii. Solar Production: 120,644 KWH
 - iii. Avg Production by Unit: 167 KWh
 - iv. Avg Estimated Usage by Unit: 377 kWh
 - v. **Potential offset: 45%**
- d. Sendero Mixed Fuel Design
 - i. Roughly 99,000 kWh of export per year
 - ii. Current PV Design PV Production: 120,644 kWh
 - iii. **Potential Offset: 121%**

Avila Ranch Multi Family Phase 3 is following standards set in section 13 (listed above). While the code update cycle is now well beyond 2019, the project will comply with the new updated 2022 energy code. Avila Ranch has also implemented the City-wide Clean Energy Choice Program, including the provision of PV solar, electric vehicle charging, as well as an E-Bike sharing program. **ADDITIONAL INFORMATION ON BUILDING AND SITE DESIGNS**

- **Building Systems**
 - High Efficiency Heat Pump Water Heaters
 - Electric Heat Pumps/Mini Splits
 - LED Lighting
- **ELECTRIC VEHICLE PARKING FEATURES**
 - **ANACAPA SITE**
 - 6 stalls provided with Level 2 EVSE charging equipment
 - 22 stalls will be EV capable (Conduit from panel to parking space)
 - 29 stalls will be EV ready (Fully Wired And Ready for use 240/volt plug)
 - **SENDERO SITE**
 - 5 stalls provided with Level 2 EVSE charging equipment
 - 15 stalls will be EV capable (Conduit from panel to parking space)
 - 21 stalls will be EV ready (Fully Wired And Ready for use 240/volt plug)
- **ELECTRIC BIKE AND REGULAR BIKE SHARING PROGRAMS**
 - Anacapa site has 9 E-Bikes along the front of the community center, while Sendero offers 9 regular bikes provided for community sharing.
- **BICYCLE STORAGE AREAS**
 - **ANACAPA**
 - 180 long term bike parking spaces available on site

- 2 detached bike barns conveniently located around both buildings for easy access and safe storage.
- An additional bike storage room is located at the community center.
- **SENDERO**
 - 105 long- and short-term parking spots provided in bike barn and internal storage facility.