



TOPIC: Equivalency Use Determination for Battery Energy Storage in the Non-Coastal Areas of Unincorporated Ventura County (Non-Coastal Zoning Ordinance)	ORIGINAL: November 29, 2023 REVISED: N/A	POLICIES AND INTERPRETATIONS POLICY NO. 2023-2 Dave Ward, AICP Planning Director
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TO: Planning Division Staff
FROM: Dave Ward, AICP, Planning Director

The County has received multiple inquiries regarding the development of battery energy storage facilities as a principal land use in the unincorporated areas of Ventura County. These inquiries catalyzed review of regulatory options to accommodate this type of renewable energy project. On September 26, 2023, the Board of Supervisors heard a Planning Division staff assessment regarding suitable lands and priority areas for the development of renewable energy generation and storage projects. The Board provided guidance and directed Planning Division staff to return with more research and options. As a result of the Board's guidance, and after conducting additional research and analysis of the County's zoning ordinances and land use rules, I have determined that an equivalency determination regarding the battery energy storage principal land use is warranted pursuant to Ventura County Non-Coastal Zoning Ordinance (NCZO) Section 8105-2 (Equivalent Uses Not Listed), which states:

"Where a proposed land use is not identified in this Article, the Planning Director shall review the proposed use when requested to do so by letter and, based upon the characteristics of the use, determine which of the uses listed in this Article, if any, is equivalent to that proposed."

As explained below, the battery energy storage principal land use is equivalent to the existing principal land uses of "energy production from renewable resources" and "warehousing and storage" as set forth in the NCZO. Consequently, as detailed below, and pursuant to NCZO Section 8105-2.1 and Section 8101-4.10 (Interpretation), the battery energy storage principal land use "shall be treated in the same manner as the listed use[s] in determining where it is allowed, what permits are required and what standards affect its development." Pursuant to NCZO Section 8105-2.2, the battery energy storage principal land use shall be considered for incorporation into the NCZO in the next scheduled ordinance amendment in a manner that is consistent with this equivalency determination.

Background

The State of California has issued multiple mandates to increase renewable energy and reduce greenhouse gas emissions (GHG). This effort started in 2006 when the State passed AB 32, the California Global Warming Solutions Act, which set a GHG emission reduction goal of 1990 levels

by 2020 — a reduction of approximately 15 percent below emissions expected under a “business as usual” scenario. The State achieved this goal in 2016.

The goals for AB 32 were furthered with adoption of SB 379 in 2015, which requires all local agencies with the responsibility for the protection of public health and safety to address climate adaptation and resiliency strategies within the next revision or update of the local hazard plan or General Plan Safety Element. The Ventura County 2040 General Plan is compliant with SB 379 and includes an evaluation of the potential for the unincorporated county to meet area-wide State GHG emissions reduction goals, and also included the following policies and programs that support renewable energy development:

- Policy COS-8.10: Battery Energy Storage Systems,
- Policy EV-4.4: Renewable Energy Facilities,
- Policy COS-10.1: Greenhouse Gas Reduction Strategy, and
- Program COS-O: Assessment of Land Near Electrical Transmission and Distribution Lines.

In 2018 the Legislature passed SB 100 which requires 100 percent of the State’s energy to be supplied by eligible renewable resources and zero-carbon resources by 2045. SB 100 recognizes that battery energy storage is necessary to fully integrate renewable energy production into the grid.

California’s electric grid is a complex system and the amount of energy provided by renewable resources is growing. As energy is delivered from inland solar and wind energy facilities the grid is increasingly reliant on transmission lines and battery energy storage. The growth of solar energy generation has affected the net energy supply and demand, creating a healthy supply of energy in the daylight hours and then limited energy in the evening hours. This has been termed a “duck curve” in which energy demand in the mid-afternoon is lower than the demand in the morning and increases rapidly in the evening. This system, in turn, has created a substantial (and growing) demand for energy storage to balance power supply during peak and off-peak periods. Battery energy storage is necessary to reduce fluctuations in the electrical supply to meet demand in the evening hours and provide resilience for the State grid.

Battery energy storage consists of banks of rechargeable batteries and appurtenant equipment. The modular design of these facilities allows for a wide range of small to large power and energy storage options. Battery energy storage is intended to receive, store, and transmit electric energy to and from the public utility provider’s electricity grid. Common applications for battery energy storage include storing energy that is transferred during times of high supply, providing energy to be used at night, and storing back-up power to be used during periods of grid outage. Equipment and buildings commonly used for these types of facilities include, but are not limited to, battery banks housed in buildings or containers for security purposes and to protect them from the elements, transformers, concrete building pads with or without riser structures, transmission lines, unstaffed relay and control cubicle assemblies (i.e., utility cabinet), fire suppression systems, and wireless communication antennas. Battery energy storage does not require water or sewer line connections, but access to pressurized water is preferable for fire suppression purposes. Operations are generally quiet and do not affect neighboring uses except for a few rare instances when fires have necessitated temporary evacuations that have occurred in other locations in California.

Analysis

NZCO Sections 8105-4 and 8105-5 do not currently contain a specific “battery energy storage” land use category. However, the following two existing principal land use categories set forth in NZCO Sections 8105-4 and 8105-5 are equivalent to the battery energy storage principal land use: “energy production from renewable resources” and “warehousing and storage.”

Energy Production from Renewable Resources

The first equivalent land use category is “energy production from renewable resources” which is allowed in the Open Space (“OS”), Agricultural Exclusive (“AE”), and Rural Agriculture (“RA”) zones with a Planning Commission-approved Conditional Use Permit (CUP), and in the Limited Industrial (“M2”) and General Industrial (“M3”) zones with a Planning Director-approved Conditional Use Permit. The term “energy production from renewable resources” is defined in Article 2 of the NCZO as “any facility or installation such as a windmill, hydroelectric unit or solar collecting or concentrating array, which is designed and intended to produce energy from natural forces such as wind, water, sunlight or geothermal heat, or from biomass, for off-site use.” This definition and use category were added to the NCZO in 1985, which was prior to the development of grid-scale battery energy storage facilities. Had grid-scale battery energy storage existed in 1985, it is reasonable to assume that the term “storage” would have been included in the definition and expressly allowed as part of this land use.

Today, the NCZO’s existing “energy production from renewable resources” land use includes and authorizes facilities that have a similar, but generally have a more extensive and intensive scale and development footprint, than battery energy storage facilities. Such renewable energy production facilities include but are not limited to:

- Geothermal plants require large cooling towers, wells, generators, and pipelines
- Solar concentration arrays include large central receiver towers, steam condensers, generators and turbines
- Biomass energy facilities include storage buildings, boilers, cooling towers, turbines, and burners

In comparison to these expansive energy generation facilities, battery energy storage facilities generally only consist of storage buildings and minor appurtenant equipment. Compared to the renewable energy production facilities identified above, battery energy storage facilities have a lower aesthetic profile, do not require on-site employees, and generally have a smaller development footprint. To illustrate this point, the following photographs show examples of three renewable energy generating facilities alongside a typical battery energy storage facility.

Examples of 50 MW Renewable Energy Facilities



A 50 MW Geothermal Power Plant



A 50 MW Solar Concentration Array



A 50 MW Biomass Power Plant



A 50 MW Battery Energy Storage Facility

Additionally, many types of renewable energy generation facilities, in particular solar facilities, also contain a battery energy storage component. Renewable energy generation facilities, battery energy storage, and connections to transmission lines are critical for a comprehensive approach to renewable energy production. The battery energy storage component allows energy generated during the day to be released into the grid during the late afternoon, evening, and night when electricity demand is higher but production is lower.

Warehousing and Storage

The second equivalent land use category is “warehousing and storage” which is allowed in the Industrial Park (M1), Limited Industrial (M2), General Industrial (M3), and Light Industrial (IND)¹ zoning districts with a Planning Director-approved Planned Development (PD) Permit. While the term “warehousing and storage” is not defined in Article 2 of the NCZO, Section 8105-5 identifies the following uses as being authorized under “warehousing and storage” land use: packing and shipping facilities, ministorage facilities, fertilizer and manure storage, hazardous materials storage, building materials storage, recreation vehicle storage, and automobile impound yards. These uses have similar, if not more intensive scale and development, than battery energy storage facilities which, as explained above, generally only consist of storage buildings and minor appurtenant equipment. In addition, at a conceptual level, the purpose of battery energy storage is the same as a warehouse: to store the product (in this case energy) in buildings and then to distribute the product (energy) as the market requires. Additionally, the development requirements

¹ The Light Industrial (IND) zone is only in the Saticoy Area Plan.

for battery energy storage facilities are similar to those associated with a warehouse use in that there is the need for large, flat, developable sites appropriate for industrial equipment.

Planning Director Determination

Based on the analysis provided above, grid-scale battery energy storage is determined an equivalent principal use to both the “energy production from renewable resources” use category in NCZO sections 8105-4 and 8105-5, and the “warehousing and storage” use category in NCZO section 8105-5. Until an amendment to the NCZO can be prepared and presented for adoption to expressly add battery energy storage to the NCZO as a principal land use, applications for the use shall be processed and authorized in the same manner as 1) an “energy production from renewable energy” project in the OS, AE, and RA zones with a Planning Commission-approved CUP, and 2) a “warehousing and storage” project in the M1, M2, M3, and IND zones with a Planning Director-approved PD permit.
