

3.6 ENERGY

This section was prepared pursuant to Section 15126 and Appendix G of the State CEQA Guidelines, which require that EIRs include a discussion of the potential energy impacts of projects. The analysis considers whether adoption and implementation of the proposed CLUO, including issuance of subsequent Cannabis Use Permits pursuant to the adopted CLUO would result in inefficient, wasteful, and unnecessary consumption of energy. The capacity of infrastructure to serve projects implemented under the CLUO is evaluated in Section 3.15, "Utilities and Service Systems."

No comment letters regarding energy were received in response to the NOP (see Appendix A).

3.6.1 Environmental Setting

ENERGY FACILITIES AND SERVICES IN THE COUNTY

Electric and natural gas services in Yolo County is provided by the Pacific Gas and Electric Company (PG&E). PG&E operates electricity and natural gas infrastructure in the County and throughout northern California, including power lines, power plants, pipelines, and substations. Private companies provide service for some of the unincorporated areas of the County not covered by PG&E. As of 2017, PG&E procured 33 percent of its electricity from renewable sources (CEC 2018a). Additionally, PG&E customers in unincorporated Yolo County can opt into Valley Clean Energy (VCE), a community choice aggregator that offers electricity at higher renewable rates than PG&E. VCE offers two levels of electricity service: Standard Green, which procures 42 percent of its electricity from renewables; and UltraGreen, which offers 100 percent renewable electricity (Valley Clean Energy n.d.).

ALTERNATIVE FUELS

A variety of alternative fuels are used to reduce demand for petroleum-based fuel. The use of these fuels is encouraged through various statewide regulations and plans (e.g., Low Carbon Fuel Standard, California Air Resources Board Scoping Plan). Conventional gasoline and diesel may be replaced (depending on the capability of the vehicle) with many transportation fuels, including:

- biodiesel,
- electricity,
- ethanol (E-10 and E-85),
- hydrogen,
- natural gas (methane in the form of compressed and liquefied natural gas),
- propane,
- renewable diesel (including biomass-to-liquid),
- synthetic fuels, and
- gas-to-liquid and coal-to-liquid fuels.

California has a growing number of alternative fuel vehicles through the joint efforts of the California Energy Commission (CEC), California Air Resources Board (CARB), local air districts, federal government, transit agencies, utilities, and other public and private entities. As of June 2018, Yolo County contained nearly 175 alternative fueling stations (AFDC 2018).

ENERGY USE FOR TRANSPORTATION

On-road vehicles use about 90 percent of the petroleum consumed in California. The California Department of Transportation projected 153 million gallons of gasoline and diesel were consumed in Yolo County in 2015, an increase of approximately 17 million gallons of fuel from 2010 levels (Caltrans 2008).

3.6.2 Regulatory Setting

Energy conservation is embodied in many federal, state, and local statutes and policies. At the federal level, energy standards apply to numerous products (e.g., the U.S. Environmental Protection Agency's [EPA's] EnergyStar™ program) and transportation (e.g., fuel efficiency standards). At the state level, 24 CCR sets forth energy standards for buildings. Further, the state provides rebates/tax credits for installation of renewable energy systems and to promote energy conservation through various incentive programs.

FEDERAL

Energy Policy and Conservation Act, and CAFE Standards

The Energy Policy and Conservation Act of 1975 established nationwide fuel economy standards to conserve oil. Pursuant to this Act, the National Highway Traffic and Safety Administration, part of the U.S. Department of Transportation, is responsible for revising existing fuel economy standards and establishing new vehicle economy standards.

The Corporate Average Fuel Economy (CAFE) program was established to determine vehicle manufacturer compliance with the government's fuel economy standards. Compliance with CAFE standards is determined based on each manufacturer's average fuel economy for the portion of their vehicles produced for sale in the EPA calculates a CAFE value for each manufacturer based on the city and highway fuel economy test results and vehicle sales. The CAFE values are a weighted harmonic average of the EPA city and highway fuel economy test results. Based on information generated under the CAFE program, the U.S. Department of Transportation is authorized to assess penalties for noncompliance. Under the Energy Independence and Security Act of 2007 (described below), the CAFE standards were revised for the first time in 30 years.

Energy Policy Act (1992 and 2005) and Energy Independence and Security Act of 2007

The Energy Policy Act of 1992 was passed to reduce the country's dependence on foreign petroleum and improve air quality. It includes several parts intended to build an inventory of alternative fuel vehicles in large, centrally fueled fleets in metropolitan areas. The Energy Policy Act of 2005 provides renewed and expanded tax credits for electricity generated by qualified energy sources, such as landfill gas; provides bond financing, tax incentives, grants, and loan guarantees for clean and renewable energy and rural community electrification; and establishes a federal purchase requirement for renewable energy.

The Energy Independence and Security Act of 2007 is designed to improve vehicle fuel economy and help reduce U.S. dependence on oil. It increased the supply of alternative fuel sources by setting a mandatory Renewable Fuel Standard requiring fuel producers to use at least 36 billion gallons of biofuel in 2022, which represents a nearly fivefold increase over 2009 levels; and reduces U.S. demand for oil by setting a national fuel economy standard of 35 miles per gallon by 2020—an increase in fuel economy standards of 40 percent. By addressing renewable fuels and CAFE standards, the Energy Independence and Security Act of 2007 built on progress made by the Energy Policy Act of 2005 in setting out a comprehensive national energy strategy for the 21st century.

On August 2, 2018, the U.S. Department of Transportation (DOT) and EPA proposed the Safer Affordable Fuel-Efficient Vehicles Rule (SAFE Rule), which would amend existing CAFE standards for passenger cars and light trucks, and retaining the current model year 2020 standards through model year 2026, establish new standards covering model years 2021 through 2026. Vehicles operating in the County would be subject to

the CAFE standards. However, at the time of writing this Draft EIR, the SAFE Rule has not been formally adopted by EPA, and 17 states—including California—have filed a lawsuit against EPA. The timing for ultimate approval of the SAFE Rule and the outcome of any pending or potential lawsuits (and how such could delay or affect its implementation) are unknown at this time. The SAFE Rule's impact on future motor vehicle emissions is also unknown.

STATE

State of California Energy Action Plan

CEC, California Public Utilities Commission, and the Consumer Power and Conservation Financing Authority approved the Energy Action Plan in 2003, which was followed by the adoption of the Energy Action Plan Update (EAP II) in 2008. The EAP II identifies actions needed to meet California's future energy needs while continuing the commitment of cooperation among state agencies. The overarching goal of the EAP II is for California's energy to be reliable, affordable, technologically advanced, and environmentally-sound. The plan relies on specific action areas including energy efficiency; demand response; renewables; electricity adequacy, reliability, and infrastructure; electricity market structure; natural gas; transportation fuels; research and development; and climate change.

Reducing Dependence on Petroleum Report

Pursuant to AB 2076 (Chapter 936, Statutes of 2000), CEC and CARB prepared and adopted a joint agency report in 2003, Reducing California's Petroleum Dependence. Included in this report are recommendations to increase the use of alternative fuels to 20 percent of on-road transportation fuel use by 2020 and 30 percent by 2030, significantly increase the efficiency of motor vehicles, and reduce per capita vehicle miles traveled (VMT) (CEC and CARB 2003). California is currently anticipated to meet and exceed these goals with up to a 55 percent reduction in petroleum use by 2030 (CARB n.d.). Further, in response to the CEC's 2003 and 2005 Integrated Energy Policy Reports (IEPRs), CEC was directed to take the lead in developing a long-term plan to increase alternative fuel use.

A performance-based goal of the report is to reduce petroleum demand to 15 percent below 2003 demand by 2030.

Integrated Energy Policy Report

SB 1389 (Chapter 568, Statutes of 2002) required CEC to "conduct assessments and forecasts of all aspects of energy industry supply, production, transportation, delivery and distribution, demand, and prices. The CEC shall use these assessments and forecasts to develop energy policies that conserve resources, protect the environment, ensure energy reliability, enhance the state's economy, and protect public health and safety" (PRC Section 25301[a]). This work culminated in the IEPR.

CEC adopts an IEPR every 2 years and an update every other year. The 2017 IEPR, the most recent IEPR, was adopted March 16, 2018. The 2017 IEPR provides a summary of priority energy issues currently facing the state, outlining strategies and recommendations to further the state's goal of ensuring reliable, affordable, and environmentally-responsible energy sources. Energy topics covered in the report include progress toward statewide renewable energy targets and issues facing future renewable development; efforts to increase energy efficiency in existing and new buildings; progress by utilities in achieving energy efficiency targets and potential; improving coordination among the state's energy agencies; streamlining power plant licensing processes; results of preliminary forecasts of electricity, natural gas, and transportation fuel supply and demand; future energy infrastructure needs; the need for research and development efforts to statewide energy policies; and issues facing California's nuclear power plants.

Electricity Generation

The state has passed legislation requiring the increasing use of renewables to produce electricity for consumers. California utilities are required to generate 33 percent of their electricity from renewables by 2020 (SB X1-2 of 2011); 52 percent by 2027 (SB 100 of 2018); 60 percent by 2030 (also SB 100 of 2018);

and 100 percent by 2045 (also SB 100 of 2018). More detail about these regulations is provided in Section 3.8, “Greenhouse Gas Emissions and Climate Change.”

Clean Energy and Pollution Reduction Act of 2015

The Clean Energy and Pollution Reduction Act of 2015 (SB 350) requires the doubling of the energy efficiency savings in electricity and natural gas for retail customers through energy efficiency and conservation by December 31, 2030.

State Alternative Fuels Plan

AB 1007 (Chapter 371, Statutes of 2005) required CEC to prepare a state plan to increase the use of alternative fuels in California. CEC prepared the State Alternative Fuels Plan (SAF Plan) in partnership with CARB and in consultation with other state, federal, and local agencies. The SAF Plan presents strategies and actions California must take to increase the use of alternative nonpetroleum fuels in a manner that minimizes the costs to California and maximizes the economic benefits of in-state production. The SAF Plan assessed various alternative fuels and developed fuel portfolios to meet California’s goals to reduce petroleum consumption, increase alternative fuel use, reduce greenhouse gas (GHG) emissions, and increase in-state production of biofuels without causing a significant degradation of public health and environmental quality.

Greenhouse Gas Reduction Regulations

The state has passed legislation intended to result in reductions in GHG emissions. This legislation has an added benefit of reducing energy consumption. SB 32 of 2016 (Section 38566 of the Health and Safety Code) requires a statewide GHG emission reduction of at least 40 percent below 1990 levels by no later than December 31, 2030. Executive Order B-30-15 sets a long-term target of reducing statewide GHG emissions by 80 percent below 1990 levels by 2050.

SB 375 of 2008 (Sections 65080 through 65588, 14522.1, and 14522.2 of the Government Code and Chapter 4.2 and Sections 21061.3 and 21159.28 of the Public Resources Code) aligns regional transportation planning efforts, regional GHG emission reduction targets, and land use and housing allocation. The Advanced Clean Cars program, approved by CARB, combines the control of GHG emissions and criteria air pollutants and the increase in the number of zero-emission vehicles into a single package of standards. The program’s zero-emission vehicle regulation requires battery, fuel cell, and/or plug-in hybrid electric vehicles to account for up to 15 percent of California’s new vehicle sales by 2025.

Implementation of the state’s legislation associated with GHG reduction will have the co-benefit of reducing California’s dependency of fossil fuel and making land use development and transportation systems more energy efficient.

More details about legislation associated with GHG reduction are provided in the “Regulatory Setting” section in Section 3.8, “Greenhouse Gas Emissions and Climate Change.”

California Code of Regulations

California Building Energy Efficiency Standards (Title 24, Part 6)

The energy consumption of new residential and nonresidential buildings in California is regulated by the state’s Title 24, Part 6, Building Energy Efficiency Standards (California Energy Code). The California Energy Code was established by CEC in 1978 in response to a legislative mandate to create uniform building codes to reduce California’s energy consumption and provide energy efficiency standards for residential and nonresidential buildings. CEC updates the California Energy Code every 3 years with more stringent design requirements for reduced energy consumption, which results in the generation of fewer GHG emissions.

The 2019 California Energy Code was adopted by the CEC on May 9, 2018 and will apply to projects constructed after January 1, 2020. The 2019 California Energy Code is designed to move the state closer to its zero-net energy goals for new residential development, as stated in its *New Residential Zero Net Action*

Plan 2015-2020 (CEC and CPUC 2015). It does so by requiring all new residences to install enough renewable energy to offset all the site electricity needs of each residential unit (CCR, Title 24, Part 6, Section 150.1[c]14). CEC estimates that the combination of mandatory on-site renewable energy and prescriptively-required energy efficiency features will result in new residential construction that uses 53 percent less energy than the 2016 standards. Nonresidential buildings are anticipated to reduce energy consumption by 30 percent compared to the 2016 standards primarily through prescriptive requirements for high-efficacy lighting (CEC 2018b). The building efficiency standards are enforced through the local plan check and building permit process. Local government agencies may adopt and enforce additional energy standards for new buildings as reasonably necessary in response to local climatologic, geologic, or topographic conditions, provided that these standards exceed those in the California Energy Code.

Regulations Pertaining to Cannabis

The following energy-related requirements are included in the CalCannabis regulation, CCR, Title 3, Division 8, Chapter 1 and pertain to cultivation sites.

- **Section 8203. Renewal of License. Section G.** Beginning January 1, 2022, an application for renewal of a license shall include the following record for each power source indicated on the application for licensure for the previous annual licensed period:
 1. Total electricity supplied by local utility provider, name of local utility provider, and greenhouse gas emission intensity per kilowatt hour reported by the utility provider under Section 398.4(c) of the Public Utilities Code for the most recent calendar year available at time of submission;
 2. Total electricity supplied by a zero net energy renewable source, as set forth in Section 398.4(h)(5) of the Public Utilities Code, that is not part of a net metering or other utility benefit;
 3. Total electricity supplied from other unspecified sources, as defined in 398.2(e) of the Public Utilities Code, and other on-site sources of generation not reported to the local utility provider (e.g., generators, fuel cells) and the greenhouse gas emission intensity;
 4. Average weighted greenhouse gas emission intensity considering all electricity use in Subsection (1), (2), and (3).
- **Section 8305: Renewable Energy Requirements.** Beginning January 1, 2023, all indoor, tier 2 mixed-light license types of all sizes, and nurseries using indoor or tier 2 mixed-light techniques, shall ensure that electrical power used for commercial cannabis activity meets the average electricity greenhouse gas emissions intensity required of their local utility provider pursuant to the California Renewables Portfolio Standard Program, division 1, part 1, chapter 2.3, article 16 (commencing with Section 399.11) of the Public Utilities Code. As evidence of meeting the standard, licensees shall comply with the following:
 - (a) If a licensee's average weighted greenhouse gas emission intensity as provided in Section 8203(g)(4) is greater than the local utility provider's greenhouse gas emission intensity, the licensee shall provide evidence of carbon offsets from any of the following sources to cover the excess in carbon emissions from the previous annual licensed period:
 - (1) Voluntary greenhouse gas offset credits purchased from any of the following recognized and reputable voluntary carbon registries:
 - (A) American Carbon Registry;
 - (B) Climate Action Reserve;
 - (C) Verified Carbon Standard.

(2) Offsets purchased from any other source are subject to verification and approval by the Department.

(b) New licensees, without a record of weighted greenhouse gas emissions intensity from the previous calendar year, shall report the average weighted greenhouse gas emissions intensity, as provided in Section 8203(g)(4), used during their licensed period at the time of license renewal. If a licensee's average weighted greenhouse gas emissions intensity is greater than the local utility provider's greenhouse gas emissions intensity for the most recent calendar year, the licensee shall provide evidence of carbon offsets or allowances to cover the excess in carbon emissions from any of the other sources provided in Subsection (a).

- **Section 8306. Generator Requirements.**

(a) For the purposes of this section, "generator" is defined as a stationary or portable compression ignition engine pursuant to Title 17, Division 3, Chapter 1, Subchapter 7.5, Section 93115.4 of the California Code of Regulations.

(b) Licensees using generators rated at 50 horsepower and greater shall demonstrate compliance with either, as applicable, the Airborne Toxic Control Measure for stationary engines pursuant to Title 17, Division 3, Chapter 1, Subchapter 7.5, Sections 9315 through 93115.15 of the California Code of Regulations, or the Airborne Toxic Control Measure for portable engines pursuant to Title 17, Division 3, Chapter 1, Subchapter 7.5, Sections 93116 through 93116.5 of the California Code of Regulations. Compliance shall be demonstrated by providing a copy of one of the following to the department upon request:

(1) For portable engines, a Portable Equipment Registration Certificate provided by the California Air Resources Board; or

(2) For portable or stationary engines, a Permit to Operate, or other proof of engine registration, obtained from the Local Air District with jurisdiction over the licensed premises.

(c) Licensees using generators rated below 50 horsepower shall comply with the following by 2023:

(1) Either (A) or (B):

(A) Meet the "emergency definition for portable engines in Title 17, Division 3, Chapter 1, Subchapter 7.5, Sections 93116.2(a)(12) of the California Code of Regulations, or the "emergency use" definition for stationary engines in Title 17, Division 3, Chapter 1, Subchapter 93115.4(a)(30); or

(B) Operation 80 hours or less in a calendar year; and

(2) Either (A) or (B):

(A) Meet Tier 3 with Level 3 diesel particulate requirements pursuant to Title 13, Division 3, Chapter 14, Sections 2700 through 2711 of the California Code of Regulations;

(B) Meet Tier 4, or current engines requirements if more stringent, pursuant to Title 40, Chapter 1, Subchapter U, Part 1039, Subpart B, Section 1039.101 of the Code of Federal Regulations.

(d) All generators shall be equipped with non-resettable hour-meters. If a generator does not come equipped with a non-resettable hour-meter shall be installed.

LOCAL

Yolo County

Yolo County 2030 Countywide General Plan

The Yolo County 2030 Countywide General Plan (General Plan) includes the following policies related to energy (Yolo County 2009):

- **Policy CC-4.1:** Reduce dependence upon fossil fuels, extracted underground metals, minerals and other non-renewable resources by:
 - Requiring projects to take advantage of shade, prevailing winds, landscaping and sun screens to reduce energy use.
 - Encouraging projects to use regenerative energy heating and cooling source alternatives to fossil fuels.
 - Encouraging projects to select building materials that require less energy-intensive production methods and long-distance transport, in compliance with Leadership in Energy and Environmental Design (LEED) or equivalent standards.
- **Policy CC-4.4:** Encourage all new construction to be zero net energy by combining building energy efficiency design features with on-site clean distributed generation so as to result in no net purchases from the electricity or gas grid.
- **Policy CC-4.5:** Encourage individual and community-based wind and solar energy systems (micro-grids).
- **Policy CC-4.6:** Encourage all new residences to exceed Title 24 energy standards by at least 15 percent, and encourage all new commercial buildings to exceed Title 24 by at least 20 percent.
- **Policy CC-4.7:** Require energy efficiency design for all buildings.
- **Policy CC-4.8:** Require measures to minimize “heat islands” by requiring light-colored and reflective roofing materials and paint; “green” roofs; light colored roads and parking lots; extensive numbers of shade trees in parking lots; and shade trees and/or overhangs on the south and west sides of new or renovated buildings.
- **Policy CC-4.12:** Require “green” design, construction and operation including
 - A. Site planning sensitive to the natural environment.
 - B. Efficiency in resource use (including energy, water, raw materials and land).
 - C. Building reuse and adaptive reuse.
 - D. Selection of materials and products based on their life-cycle environmental impacts.
 - E. Use of materials and products with recycled content.
 - F. Use of materials provided from within the region.
 - G. Recycling of construction and demolition waste.

- H. Reduction in the use of toxic and harmful substances in the manufacturing of materials and during construction.
 - I. Use of passive and active solar strategies and efficient heating and cooling technologies.
 - K. Reduction in water use for buildings and landscaping.
 - L. Light pollution reduction to protect “dark skies.”
 - M. Improvements to interior and exterior environments leading to increased health, comfort and productivity.
 - N. Facility maintenance and operational practices that reduce or eliminate harmful effects on people and the natural environment during occupancy.
 - O. Water reuse systems.
 - P. Other systems to capture energy sources that would otherwise be wasted.
- **Policy CI-1.3:** Reduce the total vehicle miles traveled per household by making efficient use of existing transportation facilities and by providing for more direct routes for pedestrians and bicyclists through the implementation of “smart growth” and sustainable planning principles.
 - **Policy CI-3.3:** CEQA review for subsequent projects will analyze project traffic and circulation impacts using both the Yolo County General Plan policies and Caltrans policies as applicable.
 - **Policy CI-5.1:** Work with local and regional agencies to implement a regional bikeway and/or alternative energy vehicle system that connect the cities, larger unincorporated communities and scenic areas.
 - **Policy CI-5.2:** Create a complete bikeway and sidewalk system within each community, including the completion of existing systems. Create walkways and bikeways that connect existing paths where feasible, and that connect to grocery stores, parks, and other community features.
 - **Policy CI-5.5:** Integrate bicycle, pedestrian and transit facilities into new developments.
 - **Policy CI-5.12:** Support development of facilities that link bicyclists and pedestrians with other modes of transportation.
 - **Policy CO-7.1:** Encourage conservation of natural gas, oil and electricity, and management of peak loads in existing land uses.
 - **Policy CO-7.2:** Support efforts to improve energy efficiency in existing irrigation systems.
 - **Policy CO-7.3:** Require all projects to incorporate energy-conserving design, construction, and operation techniques and features into all aspects of the project including buildings, roofs, pavement, and landscaping.
 - **Policy CO-7.4:** Require the use of Energy Star certified appliances, such as water heaters, swimming pool heaters, cooking equipment, refrigerators, furnaces and boiler units, where feasible.
 - **Policy CO-7.5:** Require all new parking lots to significantly increase shading to relieve the potential for “heat islands.”

- **Policy CO-7.6:** Encourage the use of building materials and methods that increase energy efficiency by a minimum of 15 percent beyond State Title 24 standards for residential buildings and 20 percent beyond State Title 24 standards for commercial buildings.
- **Policy CO-7.7:** Support farmers and landowners in their efforts to maximize the efficiency of agricultural end uses.
- **Policy CO-7.8:** Increase energy efficiency and alternative energy utilization in existing buildings where feasible.
- **Policy CO-7.9:** Require that new site and structure designs maximize energy efficiency.
- **Policy CO-7.11:** Strongly encourage LEED certification or equivalent for all public, private and existing buildings and strongly encourage LEED-Neighborhood Design certification or equivalent for other applicable projects, particularly within the Specific Plan areas.
- **Policy CO-8.2:** Use the development review process to achieve measurable reductions in greenhouse gas emissions.

Yolo County Climate Action Plan

Yolo County adopted its Climate Action Plan (CAP) on March 15, 2011. The Countywide GHG Emissions inventory for 2016 was updated in October of 2018 (Ascent 2018). The CAP commits the County to reducing GHG emissions to 1990 levels by 2020, 27 percent below 1990 levels by 2030, 53 percent below 1990 levels by 2040, and 80 percent below 1990 levels by 2050. The 2011 CAP satisfied the requirements of General Plan, Action CO-A117, which called for the County to create a GHG Emissions Reduction Plan and/or CAP. There are several GHG reduction measures in the CAP that are relevant to the project. The following measures apply to cannabis uses:

- **Measure A-1:** Reduce nitrogen fertilizer application rates.
- **Measure A-2:** Reduce fossil fuel consumption in field equipment.
- **Measure A-3:** Reduce energy use in agricultural irrigation pumping.
- **Measure A-6:** Sequester carbon in agricultural landscapes.
- **Supporting Measures for Agriculture:** Increase use of biofuels or low-carbon fuels in field equipment; reduce agricultural water use through alternative irrigation techniques.
- **Measure E-4:** Increase on-site renewable energy generation to reduce demand for grid energy.
- **Measure E-5:** Promote on-farm renewable energy facilities.
- **Supporting Measures for Solid Waste and Wastewater:** Reduce disposal of organic materials.

Additionally, the following measures apply to all cannabis uses:

- **Measure E-2:** Reduce energy consumption in existing non-residential units.
- **Measure E-3:** Reduce energy consumption in new non-residential units.
- **Measure E-4:** Increase on-site renewable energy generation to reduce demand for grid energy.
- **Measure E-6:** Reduce water consumption in existing buildings through increased plumbing fixture efficiency.

- **Measure E-7:** Promote weather-based irrigation systems and water efficient turf management.
- **Supporting Measures for Energy:** Energy efficient appliances, lighting, and equipment in existing buildings; require energy efficient appliances, equipment, and lighting in new construction; promote greywater and rainwater collection and non-potable water systems.
- **Supporting Measures for Solid Waste and Wastewater:** Reduce disposal of non-organic materials through increased recycling; increase natural stormwater retention through low impact development.

3.6.3 Environmental Impacts and Mitigation Measures

METHODS AND ASSUMPTIONS

The impact analysis below considers baseline energy conditions as described in Section 3.6.1, “Environmental Setting,” and evaluates to what extent adoption and implementation of the CLUO, including issuance of subsequent Cannabis Use Permits pursuant to the CLUO, may result in significant impacts to energy. This program-level analysis is based upon current building standard requirements and emissions modeling tools available from the California Air Pollution Control Officers Association. The activity footprint and design of site-specific cannabis uses assumed under each of the five alternatives based on Table 2-4 and Exhibits 2-4 through 2-8 that are provided in Chapter 2, “Description of Preferred Alternative and Equal Weight Alternatives” to provide an assessment and comparison of reasonably foreseeable outcomes from different regulatory scenarios.

Permitted commercial cannabis uses could result in an increase in energy consumption from short-term construction-related activities and their long-term operation. Construction activities that require energy consumption are assumed for each alternative to take place within the entire activity footprint of cannabis cultivation sites and noncultivation uses as described in Chapter 2, “Description of Preferred Alternative and Equal Weight Alternatives” (Table 2-4) and Appendix D. Details about extent of existing cultivation site relocations under each alternative from compliance with the CLUO is included in Appendix D. The levels of energy consumption associated with construction of new and relocated cultivation and noncultivation sites were estimated. These estimates are measured in gallons of gasoline and gallons of diesel fuel used for worker trips, haul truck trips, and off-road equipment. Energy consumption was estimated using the California Emissions Estimator Model (CalEEMod) Version 2016.3.2 computer program for the types of indoor, outdoor, mixed-light, and noncultivation uses that could be permitted under the proposed ordinance. Where detailed project-specific information is unknown, these estimates rely on default values in CalEEMod that are based on the climate in Yolo County. For details about construction assumptions used in the modeling, refer to Appendix D and E.

Operation of cannabis uses were assumed to be contained within the identified activity footprint for cannabis sites, which can be found in Appendix D. The levels of energy consumption associated with operation of both existing and new licensed cultivation and noncultivation sites were also estimated using CalEEMod. For new and relocated licensed cannabis sites, CalEEMod default energy consumption rates were adjusted to account for the energy efficiency requirements pursuant to the 2019 California Energy Code, which will result in a 30-percent reduction in energy consumption compared with the 2016 California Energy Code that is used by CalEEMod. The CLUO requires the procurement of at least 50 percent renewable energy for all sites permitted and this requirement was applied to energy consumption modeled in CalEEMod.

Other sources of operational energy consumption include off-road equipment. Off-road road equipment includes the use of a utility vehicle for outdoor and mixed-light cultivation sites, and a forklift for noncultivation sites. Back-up diesel generators were also assumed to be at mixed-light and indoor cultivation sites.

Specific requirements of existing laws and regulations described in the regulatory setting as well as the proposed CLUO (see Appendix C) were assessed for their ability to reduce energy consumption and increase renewable energy generation.

Chapter 4, “Cumulative Impacts and Overconcentration,” contains a separate detailed analysis of the potential for cumulative effects not otherwise identified in this section, and effects from concentrations or clusters of multiple cannabis uses located in distinct subregions of the County.

THRESHOLDS OF SIGNIFICANCE

The following significance criteria are based on State CEQA Guidelines Appendix G. The project would result in a significant impact on energy resources if it would:

- result in the wasteful, inefficient, or unnecessary consumption of energy, or wasteful use of energy resources, during project construction or operation or
- conflict with or obstruct a state or local plan for renewable energy or energy efficiency.

IMPACT ANALYSIS

Impact ENE-1: Result in Wasteful, Inefficient, or Unnecessary Consumption of Energy

Construction and operation of commercial cannabis sites associated with adoption and implementation of the proposed CLUO, including subsequent Cannabis Use Permits pursuant to the adopted CLUO would result in the consumption of fuel (gasoline and diesel), electricity, and natural gas. The energy needs for construction of new and relocated commercial cannabis cultivation and noncultivation sites would be temporary and would not require additional capacity or increase peak or base period demand for electricity or other forms of energy. The CLUO would require all cannabis sites to derive 50 percent of their energy from renewable sources, and CCR Sections 8203, 8205, and 8206 include energy efficiency requirements that are more stringent than standard requirements in the California Energy Code. Further, CCR Sections 8203 and 8205 require all cannabis cultivation sites seeking relicensing after 2022 to supply their total electricity from a zero net energy renewable source. Energy consumption associated with all of the alternatives under the CLUO would not result in wasteful, inefficient, or unnecessary consumption of energy. Thus, the impact would be **less than significant** for all alternatives.

CEQA requires an analysis of the potential for a project to result in “wasteful, inefficient, and unnecessary energy usage (PRC Section 21100[b][3]). Appendix G of the State CEQA Guidelines requires the consideration of the energy implications of a project. Neither the law nor the State CEQA Guidelines establish criteria that define wasteful, inefficient, or unnecessary use. Project design features that include ways in which to increase energy efficiency and renewable energy consumption and decrease reliance on fossil fuel energy sources are assumed to comply with the State CEQA Guidelines.

All new buildings constructed at cannabis sites under the CLUO would be required to meet the California Energy Code in effect at the time of construction. While compliance with the California Energy Code would result in energy-efficient buildings, such compliance does not address all potential energy impacts during cannabis site construction and operation. For example, energy would be required to transport people and materials to and from each site.

Energy would be required to construct each new and relocated cultivation and noncultivation site, operate and maintain construction equipment, and produce and transport construction materials. The temporary energy expenditure required to construct physical buildings and infrastructure for new sites and relocated sites under the proposed CLUO would be nonrecoverable. Most energy consumption would result from the use of construction equipment and vehicle trips associated with commutes by construction workers and haul trucks supplying materials. Alternatives included in this analysis address the extent of construction required for the license types permitted.

Operation of cannabis sites would consume electricity and natural gas for lighting, space heating, and water heating. Diesel would be used for generators and on-site auxiliary equipment such as a utility vehicle. Indirect energy use would include wastewater treatment, water well pumping, and solid waste removal. Gasoline and diesel fuel would also be consumed by worker commute trips and haul trucks transporting materials and products.

As discussed under Section 3.6.2, “Regulatory Setting,” above, the 2019 California Energy Code will reduce energy consumption by 30 percent when compared to the 2016 standards.

The CLUO includes the following requirements that address energy use for cannabis uses:

- Section 8-2.1408(F) Building Design: Design and construction of buildings and structures shall comply with all applicable codes, standards, regulations, and guidelines, and shall demonstrate consideration of odor control, air quality, noise control, environmental controls (including temperature, humidity, and ventilation), safety and security, lighting, aesthetics, energy use, and other appropriate impact mitigation. Design, materials, and general appearance must be compatible with the character and scale of what is allowed in the applicable zone.
- Section 8-2.1408(O) Energy Use: Permittees shall demonstrate availability of adequate energy, and compliance with applicable local and regional energy saving goals. Permittees shall demonstrate use of energy efficient best practices for each proposed use type. Onsite generation of energy from clean and/or renewable sources is encouraged. Permittees shall purchase or generate a minimum of 50 percent renewable power through the Valley Clean Energy Alliance or other available energy purveyor. CDFA licensees must satisfy the requirements of Section 8305, Renewable Energy Requirements, of the CDFA Regulations (effective January 1, 2023).
- Section 8-2.1408(T) Generators: Use of generators (of any fuel type) is allowed for CDFA¹ licensees. Use of generators for other use types is prohibited, except for temporary use in the event of a power outage or emergency. CDFA licensees must demonstrate compliance with the requirements of the Yolo-Solano Air Quality Management District, and Section 8306, Generator Requirements, of the CDFA Regulations.
- Section 8-2.1408(Z) Lighting: All exterior lighting shall be operational, full cut-off, shielded, and downward facing. Lighting shall not spill over onto other properties, structures, or the night sky. Lighting inside indoor and mixed light operations shall be fully controlled so that minimal or no light escapes. Lighting is prohibited in hoop houses. CDFA licensees must comply with Section 8304(c) of the CDFA Regulations. All lighting for indoor/enclosed spaces shall utilize LED bulbs, or equivalent or more efficient technology. Mixed light use types of all tiers and sizes shall ensure that lights used for cultivation are shielded from sunset to sunrise to avoid nighttime glare, pursuant to Section 8304(g) of the CDFA Regulations

These requirements are consistent with the General Plan policies related to the use of renewable energy sources and energy efficiency (policies CC-4.5, CC-4.7, CC-4.12, CO-7.2, CO-7.3, CO-7.8, and CO-7.9). Further, as described in Section 3.6.2, “Regulatory Setting,” above, CCR Sections 8203 and 8305 set forth renewable energy requirements for new and relicensed cultivation sites. Under these requirements, all sites seeking license renewals must meet the average electricity greenhouse gas emissions intensity required of their local utility provider pursuant to the California Renewables Portfolio Standard Program. Commercial cannabis sites built under the CLUO would use more renewable energy than other types of agricultural or manufacturing buildings because of the requirements of the proposed ordinance and the requirements of CCR Section 8306.

All indoor spaces used for cannabis uses would use light-emitting diode (LED) lighting or a more efficiency lighting technology pursuant to Section 8-2.1408(Z) of the CLUO. This requirement would apply to existing buildings as well as those constructed under the project.

¹ CDFA licenses cannabis cultivation and nursery uses.

Fuel consumption associated with on-site operational equipment was quantified based on the hours of usage for each type of equipment, horsepower, and the load factor. All fuel associated with on-site utility vehicles, forklifts, and back-up generators were assumed to be diesel. Section 8-2.1408(T) of the CLUO requires compliance of generators with YSAQMD rules and CCR Section 8306.

Energy consumption associated with construction of individual cannabis use types is included in Table 3.6-1 below. Refer to Appendix D for construction assumptions for cannabis uses and Appendix E for detailed modeling input parameters and results.

Table 3.6-1 Construction Energy Consumption by Cannabis Use Type

Cannabis Use Type	Diesel (Gallons)	Gasoline (Gallons)
Cultivation		
Outdoor	5,578	724
Mixed Light	7,620	1,814
Indoor	5,716	686
Noncultivation		
Nursery	9,891	2,510
Processing	2,837	140
Manufacturing	2,640	107
Testing	2,733	74
Distribution	2,640	41
Retail	2,733	107
Microbusiness	2,720	74
Notes: Gasoline gallon estimate includes fuel consumption associated with worker trips. Diesel gallons include off-road equipment and on-road gallons from worker and vendor trips.		
Source: Calculations by Ascent Environmental in 2019		

Energy consumption associated with operation of individual cannabis use types is included in Table 3.6-2 below. Refer to Appendix D for operation assumptions for cannabis uses and Appendix E for detailed modeling input parameters and results.

Table 3.6-2 Operational Energy Consumption by Cannabis Use Type

Cannabis Use Type	Electricity (megawatt-hours/year)	Natural Gas (million British thermal units/year)	Diesel (gallons/year)
Cultivation			
Outdoor	198	0	555
Mixed Light	905	0	644
Indoor	350	0	89
Noncultivation			
Nursery	1,124	0	833
Processing	30	28	833
Manufacturing	23	35	833
Testing	23	37	833

Table 3.6-2 Operational Energy Consumption by Cannabis Use Type

Cannabis Use Type	Electricity (megawatt-hours/year)	Natural Gas (million British thermal units/year)	Diesel (gallons/year)
Distribution	8	13	833
Retail	28	20	833
Microbusiness	13	20	833

Notes: Diesel use associated with off-road equipment and back-up generator use.
Source: Calculations by Ascent Environmental in 2019

The energy needs for cannabis site construction would be temporary and would not require additional capacity or increase peak or base period demands for electricity or other forms of energy. All buildings constructed under the CLUO would be built to the California Energy Code in effect at the time of construction and compliance with the CCR requirements for energy efficiency. Section 8-2.1408(O) of the CLUO includes a renewable energy requirement of at least 50 percent for all cannabis sites. Also, the energy-related requirements in Sections 8203, 8205, and 8206 are more stringent than the standard requirements in the California Energy Code for cultivation sites. Additionally, all indoor lighting would be required to be energy-efficient pursuant to Section 8-2.1408(Z) of the CLUO.

According to the State CEQA Guidelines Section 15126.2, the means to achieve the goal of conserving energy include decreasing overall energy consumption, decreasing reliance on oil, and increasing reliance on renewable energy sources. Through implementation of the CLUO, all cannabis sites would procure at least 50 percent of its electricity needs from renewable sources.

Alternatives 1, 2, 3, and 5 assume that personal use outdoor cultivation may occur in any zoning district on a parcel with a legal residence. Personal use outdoor cultivation of up to six plants is assumed to occur within pots or garden areas on the grounds of the parcel. Alternative 4 would limit personal use cultivation to indoor only. These activities would likely involve no more than 100 square feet of land area and would be required to be outside of front yard and side yard setback areas. Given that personal cultivation would be an ancillary use to the residential parcel, no significant energy impacts are expected.

For these reasons, energy consumption associated with construction and operation of cannabis cultivation and noncultivation sites that would be permitted under any of the CLUO alternatives would not be considered wasteful, inefficient, or unnecessary. This impact would be **less than significant** for all alternatives.

Mitigation Measures

No mitigation is required for any of the alternatives.

Impact ENE-2: Conflict with Plans for Renewable Energy and Energy Efficiency

Renewable energy generation requirements pursuant to the adoption and implementation of the proposed CLUO, including subsequent Cannabis Use Permits pursuant to the adopted CLUO would result in an increase in renewable vs non-renewable energy use relative to existing agricultural uses, which would directly support the goals and strategies in the state's 2008 Energy Action Plan Update (EAP), General Plan, and Yolo County CAP. Operation of buildings for cannabis use purposes in compliance with the 2019 California Energy Code would improve energy efficiency compared to buildings built to earlier iterations of the code. The CLUO would require all cannabis sites to procure at least 50 percent of their energy demand from renewable sources, as well as install energy efficient indoor lighting. Therefore, operation of cannabis facilities under the proposed CLUO would not conflict with or obstruct a state or local plan for renewable energy or energy efficiency. This impact would be **less than significant** for all of the alternatives.

Relevant plans that pertain to the efficient use of energy include the EAP, which focuses on energy efficiency; demand response; renewable energy supply; the supply and reliability of electricity, natural gas, and transportation fuels; and achieving GHG reduction targets (CEC and CPUC 2008). The General Plan (policies CC-4.5, CC-4.7, CC-4.12, CO-7.2, CO-7.3, CO-7.8, and CO-7.9) and Yolo County CAP (measures 2, 3, and 4) also includes provisions to reduce grid energy demand and increase the use of on-site renewables, as well as reduce energy consumption associated with agricultural irrigation pumping.

As discussed in Impact ENE-1, although implementation of the CLUO under the five alternatives has the potential to result in the consumption of energy resources during construction and operation of cannabis sites, it would not result in a wasteful, inefficient, or unnecessary consumption of energy. The CLUO requires renewable energy procurements at all cannabis sites (Section 8-2.1408[O]), CCR Sections 8203 and 8305 ensure relicensed and new sites use additional renewable energy, all new buildings constructed under the CLUO would be required to demonstrate compliance with the 2019 California Energy Code, and all indoor lighting would be energy efficient (Section 8-2.1408[F] [Building Design] and 8-2.1408[Z] [Lighting]). All of these requirements would align with the EAP and the Yolo County CAP and would all apply to all five alternatives. Therefore, the project would not conflict with or obstruct a state or local plan for renewable energy or energy efficiency. This impact would be **less than significant** under all alternatives.

Mitigation Measures

No mitigation is required for any of the alternatives.

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