

3.2 ENERGY

At the time the certified 2008 Campus Master Plan Update EIR was prepared, specific details related to energy use were not available and environmental impacts were evaluated to the extent possible given the level of project information available at the time. The 2008 EIR included a brief qualitative discussion of energy consumption in Chapter 5.0 as part of the analysis of the Master Plan. The analysis disclosed that energy would be consumed as part of Master Plan implementation during both construction and operation, but would not be considered a wasteful use of resources. Consistent with the current CEQA standard of practice, this section provides a comprehensive, quantitative energy analysis of the current proposed project.

3.2.1 Environmental Setting

Electricity

California consumed approximately 257,268 megawatt hours of electricity in 2017 (U.S. Energy Information Administration 2018).

(U.S. Energy Information Administration 2018). In California, approximately 15.1 billion gallons of gasoline and 4.2 billion gallons of diesel, including off-road diesel were sold and consumed in 2015. Approximately 97 percent of all gasoline consumed in California is utilized by light-duty cars, pickup trucks, and sport utility vehicles. Nearly all heavy-duty trucks, delivery vehicles, buses, trains, ships, boats and barges, farm, construction, and heavy-duty military vehicles have diesel engines (California Energy Commission n.d.).

3.2.2 Regulatory Setting

Federal

Federal Energy Policy and Conservation Act

In 1975, Congress enacted the Federal Energy Policy and Conservation Act, which established the first fuel economy standards for on-road motor vehicles in the United States. Pursuant to the Act, the National Highway Traffic Safety Administration is responsible for establishing additional vehicle standards. In 2012, new fuel economy standards for passenger cars and light trucks were approved for model years 2017 through 2021 (77 Federal Register 62624-63200). Fuel economy LV G H W H U P L Q H G E D V H G R Q H D F K P D Q X I D F W X U H U ¶ V D Y H U D J H I available for sale in the United States.

Energy Independence and Security Act of 2007

On December 19, 2007, the Energy Independence and Security Act of 2007 (EISA) was signed into law. In addition to setting increased Corporate Average Fuel Economy standards for motor

- x EISA established new categories of renewable fuel, and set separate volume requirements for each one.
- x EISA required the United States Environmental Protection Agency to apply lifecycle GHG performance threshold standards to ensure that each category of renewable fuel emits fewer GHGs than the petroleum fuel it replaces.

Additional provisions of the EISA address energy savings in government and public institutions,

culminating in a 20-percent standard by December 31, 2017. These retail sellers include electrical corporations, community choice aggregators, and electric service providers. The bill also required the CEC to certify eligible renewable energy resources, design and implement an accounting system to verify compliance with the RPS by retail sellers, and allocate and award supplemental energy payments to cover above-market costs of renewable energy. SB 107 (2006) accelerated the RPS established by SB 1078 by requiring that 20 percent of electricity retail sales be served by renewable energy resources by 2010 (not 2017). Additionally, SB X1-2 (2011) requires all California utilities to generate 33 percent of their electricity from eligible renewable energy resources by 2020. Specifically, SB X1-2 sets a three-stage compliance period: by December 31, 2013, 20 percent had to come from renewables; by December 31, 2016, 25 percent had to come from renewables; and by December 31, 2020, 33 percent will come from renewables.

SB 350 (2015) expanded the RPS because it requires retail seller and publicly owned utilities to procure 50 percent of their electricity from eligible renewable energy resources by 2030, with interim goals of 40 percent by 2024 and 45 percent by 2027.

SB 100 (2018) accelerated and expanded the standards set forth in SB 350 by establishing that 44 percent

California Building Standards

Part 6 of Title 24 of the California Code of Regulations was established in 1978 and serves to establish energy efficiency standards for residential and non-residential buildings constructed in California to reduce energy demand and consumption. Part 6 is updated periodically to incorporate and consider new energy efficiency technologies and methodologies. The 2016 Title 24 building energy efficiency standards, which became effective on January 1, 2017, further reduce energy used in the state. In general, single-family homes built to the 2016 standards are anticipated to use approximately 28 percent less energy for lighting, 7.46 13(r)-3(,)-4()-22 T-cirul29976 cm 0ve4(i)5(ci)5(pao)3(ns)-89(, cmd)-42

3.2.3 Environmental Impact Analysis

3.2.3.1 Methodology

Appendix F of the CEQA Guidelines states that the goal of conserving energy implies the wise and efficient use of energy, to be achieved by decreasing overall per capita energy consumption; decreasing reliance on natural gas and oil; and increasing reliance on renewable energy resources. To assure energy implications are considered in project decisions, CEQA requires that EIRs include a discussion of the potential energy impacts of proposed projects, with particular emphasis on avoiding or reducing inefficient, wasteful and unnecessary consumption of energy.

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The air quality analysis prepared for the proposed project, included in Table 4-1 of Chapter 4, Other CEQA Topics, of this Supplemental EIR, includes a quantification of construction-related carbon dioxide equivalent (CO₂e) emissions using the California Emissions Estimator Model. These emissions were used to estimate construction energy from CO₂e emission factors derived for the CARB GHG emissions inventory. The 2018 Climate Registry indicates that for gasoline fuel, approximately 25.4 pounds of CO₂e are generated per gallon combusted, and for diesel fuel, approximately 29.8 pounds of CO₂e are generated per gallon combusted. The fuel consumption was estimated from the equipment and vehicles that would be employed in construction activities. Diesel engines are installed in heavy-duty off-road construction equipment and on-road haul trucks. Gasoline engines are typically found in passenger vehicles that would be used for construction worker daily commutes.

3.2.3.2 Thresholds of Significance

Based on Appendix G of the CEQA Guidelines, the project would normally have a significant impact with respect to energy if it would:

- x Result in potentially significant environmental impact due to wasteful, inefficient, or unnecessary consumption of energy resources, during project construction or operation; or,
- x Conflict with or obstruct a state or local plan for renewable energy or energy efficiency.

3.2.3.3 Impact Analysis

ENERGY-1: Would the project result in potentially significant environmental impact due to wasteful, inefficient, or unnecessary consumption of energy resources, during project

electricity for construction would be minimal and would cease after completion of the proposed project. Electricity use would be minimized to the extent feasible through incorporation of sustainability features and best management practices. Therefore, construction of the proposed project would result in a less than significant impact related to wasteful, inefficient, or unnecessary consumption of electricity.

Operation

The proposed project would be constructed as a Net Zero Energy (NZE) building in which 100 percent renewable power generation. A total of approximately 400 solar PV panels would be installed on the roofs of the proposed HRL office building and commons building and central courtyard canopy to generate approximately 89 kilowatts of energy. In addition, the campus will seek full Living Building Challenge certification for the buildings, which is a performance-driven design standard for self-sufficient buildings that incorporates design elements that encourage a regenerative built

local energy goals to increase renewable energy generation and energy efficiency. Therefore, the proposed project would result in no impact related to conflict of obstruction of a state or local plan for renewable energy or energy efficiency.

3.2.4 Mitigation Measures

No mitigation measures are required.

3.2.5 Level of Significance after Mitigation

No mitigation measures are required. The proposed project would result in less than significant impacts without mitigation.

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