

4.6 Energy

This section evaluates potential impacts related to energy conservation due to implementation of the project, which consists of the 2021 General Plan Update (GPU), Housing Element Update, and Climate Action Plan (CAP). The analysis area covers the entire city of Moreno Valley (city) and sphere of influence, which are collectively referred to as the Planning Area. This energy analysis evaluates potential effects associated with the project and cumulative increases of transportation-related fuel use and building-related energy use (electricity and natural gas) resulting from buildout of the 2021 GPU land use designations. In accordance with the California Environmental Quality Act (CEQA), the project is evaluated for its potential to result in wasteful, inefficient, or unnecessary consumption of energy resources or to conflict with applicable plans for renewable energy and energy efficiency.

4.6.1 Existing Conditions

4.6.1.1 Utility Provider

Southern California Edison (SCE) is the main electricity provider in the Planning Area. SCE is regulated by the California Public Utilities Commission (CPUC), which is responsible for making sure that California utilities' customers have safe and reliable utility service. The city is also served by Moreno Valley Utility (MVU), and since incorporation, is in charge of providing electric power to new development, also known as greenfields.

Senate Bill 1078 (SB 1078) established the California Renewables Portfolio Standard (RPS) Program, which requires SCE and other statewide energy utility providers to achieve renewable energy goals by certain milestone dates (see Section 4.6.2.1). Table 4.6-1 summarizes the SCE and MVU power mix as of 2019. As shown, SCE's default power mix included 35 percent of its energy from renewable resources in 2019, and SCE offered "green rate" enrollment options for customers who wanted to purchase additional renewable energy (SCE 2020). MVU's default power mix included 33 percent of its energy from renewable resources.

Energy Resources	SCE			MVU	2019
	Default Power Mix	Green Rate (50% Option)	Green Rate (100% Option)	Default Power Mix	California Power Mix
Eligible Renewable	35.1%	67.5%	100.0%	33.4%	31.7%
<i>Biomass & Biowaste</i>	0.6%	0.3%	0.0%	0.0%	2.4%
<i>Geothermal</i>	5.9%	2.9%	0.0%	9.3%	4.8%
<i>Eligible Hydroelectric</i>	1.0%	0.5%	0.0%	6.8%	2.0%
<i>Solar</i>	16.0%	58.0%	100.0%	9.5%	12.3%
<i>Wind</i>	11.5%	5.7%	0.0%	7.8%	10.2%
Coal	0.0%	0.0%	0.0%	0.0%	3.0%
Large Hydroelectric	7.9%	4.0%	0.0%	0.0%	14.6%
Natural Gas	16.1%	8.1%	0.0%	0.0%	34.2%
Nuclear	8.2%	4.1%	0.0%	0.0%	9.0%
Other	0.1%	0.1%	0.0%	0.0%	0.2%
Unspecified Sources*	32.6%	16.3%	0.0%	0.0%	7.3%

SOURCE: SCE 2020, City of Moreno Valley 2020b.
 *"Unspecified Sources" means electricity from transactions that are not traceable to specific generation sources.

4.6.2 Applicable Regulatory Requirements

4.6.2.1 State Regulations

a. California Energy Efficiency Action Plan

In September 2008, the CPUC adopted the Long Term Energy Efficiency Strategic Plan, which established the first integrated framework of goals and strategies for saving energy, covering government, utility, and private sector actions. Assembly Bill (AB) 758 subsequently established a requirement for regular updates to the plan in 2010, and SB 350 identified a plan goal in 2015 of achieving a doubling of statewide energy efficiency savings in electricity and natural gas final end uses of retail customers by January 1, 2030 (relative to 2015 base year). Since 2008, the plan has been implemented through focused action plans such as the Zero Net Energy Commercial Building Action Plan in June 2011, the Research and Technology Action Plan in August 2013, the Lighting Action Plan in November 2013, the Codes and Standards Action Plan in March 2014, and the New Residential Zero Net Energy Action Plan in June 2015.

The first comprehensive update to the plan, the 2019 California Energy Efficiency Action Plan, was adopted in November 2019 (CEC 2019). In response to new direction from legislature, the focus of the new plan has been expanded. Rather than being focused on traditional end-use energy efficiency, the new plan also includes measures aimed at building decarbonization.

b. Sustainable Communities Strategy

SB 375, the 2008 Sustainable Communities and Climate Protection Act, provides for a new planning process that coordinates land use planning, regional transportation plans, and

funding priorities to help California meet the greenhouse gas (GHG) reduction goals established in AB 32. SB 375 requires regional transportation plans developed by metropolitan planning organizations (MPOs) to incorporate a Sustainable Communities Strategy in their plans. The goal of the Sustainable Communities Strategy is to reduce regional vehicle miles traveled (VMT) through land use planning and consequent transportation patterns. SB 375 also includes provisions for streamlined CEQA review for some infill projects, such as transit-oriented development.

c. Renewables Portfolio Standard

The RPS promotes diversification of the state's electricity supply and decreased reliance on fossil fuel energy sources. Renewable energy includes (but is not limited to) wind, solar, geothermal, small hydroelectric, biomass, anaerobic digestion, and landfill gas. Originally adopted in 2002 with a goal to achieve a 20 percent renewable energy mix by 2020 (referred to as the "Initial RPS"), the goal has been accelerated and increased by Executive Orders (EOs) S-14-08 and S-21-09 to a goal of 33 percent by 2020. In April 2011, SB 2 (1X) codified California's 33 percent RPS goal. SB 350 (2015) increased California's renewable energy mix goal to 50 percent by year 2030. SB 100 (2018) further increased the standard set by SB 350 establishing the RPS goal of 44 percent by the end of 2024, 52 percent by the end of 2027, and 60 percent by 2030. This bill also says that it is the policy of the state that eligible renewable energy resources and zero-carbon resources supply 100 percent of retail sales of electricity to California end-use customers and 100 percent of electricity procured to serve all state agencies by December 31, 2045.

d. California Code of Regulations, Title 24 – California Building Code

The California Code of Regulations (CCR), Title 24, is referred to as the California Building Code (CBC). It consists of a compilation of several distinct standards and codes related to building construction, including, but not limited to, plumbing, electrical, interior acoustics, energy efficiency, and handicap accessibility.

Title 24, Part 6 – Energy Efficiency Standards

The CCR, Title 24, Part 6 is the Energy Efficiency Standards or California Energy Code. This code, originally enacted in 1978, establishes energy-efficiency standards for residential and non-residential buildings in order to reduce California's energy consumption. The Energy Code is updated periodically to incorporate and consider new energy-efficiency technologies and methodologies as they become available. New construction and major renovations must demonstrate their compliance with the current Energy Code through submission and approval of a Title 24 Compliance Report to the local building permit review authority and the California Energy Commission (CEC).

The current version of the Energy Code, known as the 2019 Title 24, or the 2016 Energy Code, became effective January 1, 2020. The 2019 Energy Code includes provisions for smart residential photovoltaic (PV) systems, updated thermal envelope standards (preventing heat transfer from the interior to exterior and vice versa), residential and nonresidential ventilation requirements, and nonresidential lighting requirements. The 2019 Energy Code

aims to reduce energy use in new homes by requiring that all new homes include individual or community solar PV systems or community shared battery storage system that achieves equivalent time-dependent value energy use reduction. Accounting for solar PV requirements, the CEC's preliminary estimates indicate that homes built consistent with the 2019 Energy Code will result in 53 percent less energy use than those built under previous 2016 standards.

Title 24, Part 11 – California Green Building Standards Code

The California Green Building Standards Code, referred to as CALGreen, was added to Title 24 as Part 11, first in 2009 as a voluntary code, which then became mandatory effective January 1, 2011 (as part of the 2010 CBC). The 2019 CALGreen institutes mandatory minimum environmental performance standards for all ground-up new construction of non-residential and residential structures. It also includes voluntary tiers (I and II) with stricter environmental performance standards for these same categories of residential and non-residential buildings. Local jurisdictions must enforce the minimum mandatory Green Building Standards and may adopt additional amendments for stricter requirements. The mandatory standards require:

- Outdoor water use requirements as outlined in local water-efficient landscaping ordinances or current Model Water Efficient Landscape Ordinance standards, whichever is more stringent;
- Requirements for water conserving plumbing fixtures and fittings;
- 65 percent construction/demolition waste diverted from landfills;
- Infrastructure requirements for electric vehicle charging stations;
- Mandatory inspections of energy systems to ensure optimal working efficiency; and
- Requirements for low-pollutant emitting exterior and interior finish materials such as paints, carpets, vinyl flooring, and particleboards.

4.6.2.2 Regional Regulations

The Southern California Association of Governments (SCAG) is the MPO for Imperial County, Los Angeles County, Orange County, Riverside County, San Bernardino County, Ventura County, and the 191 cities located within these counties. Moreno Valley is within the Western Riverside Council of Governments' (WRCOG) subregion of SCAG, which encompasses the western 18 cities in Riverside County.

a. Sustainable Communities Strategy

SCAG is responsible for developing long-range regional plans and strategies for efficient multi-modal transportation. As the MPO and Regional Transportation Planning Agency, SCAG supports freeway construction projects, regional and local road improvements, train and bus transportation, railroad crossings, call boxes, ridesharing, congestion management efforts and long-term planning studies. Following the California ARB Board Hearing on

March 22, 2018, the regional vehicle-use reduction targets from automobiles and light duty trucks for SCAG are:

- 8 percent reduction from the 2005 per capita amount by 2020
- 19 percent reduction from the 2005 per capita amount by 2035

To achieve regional vehicle-use emission reduction targets, SCAG initially developed and adopted the 2016-2040 Regional Transportation Plan/Sustainable Communities Strategy (RTP/SCS) in April 2016, and in September 2020 adopted Connect SoCal, the updated 2020-2045 RTP/SCS (SCAG 2020). Connect SoCal is a planning document for the region that builds upon and expands land use and transportation strategies to increase mobility options and achieve a more sustainable growth pattern.

b. Western Riverside Council of Government

The WRGOC is a joint power agency intended to coordinate regional planning efforts. WRCOG adopted its Economic Development & Sustainability Framework in December 2012 and a Subregional Climate Action Plan (Subregional CAP) in September 2014 (WRCOG 2012 and 2014). The Framework identified measures that its member jurisdictions could implement to improve transportation planning, energy efficiency, and reduce GHG emissions; established goals to inform local action; and defined indicators for member jurisdictions to gauge measure effectiveness. The subsequent Subregional CAP recommends measures; many of these measures require joint implementation with support from both WRCOG staff and local “CAP coordinators” in member jurisdictions.

4.6.2.3 Local Regulations

Energy Efficiency and Climate Action Strategy

The City adopted its Energy Efficiency and Climate Action Strategy in October 2012 (Moreno Valley 2012). The strategy includes a comprehensive list of measures for the City to consider that are intended to reduce energy consumption, reduce water use, encourage recycling and waste diversion, promote use of alternative fuel vehicles, facilitate the use of renewable energy, or otherwise reduce GHG emissions. Examples of policy measures intended to reduce energy use support include the following:

- **R2-T1:** Land Use Based Trips and VMT Reduction Policies. Encourage the development of Transit Priority Projects along High Quality Transit Corridors identified in the SCAG Sustainable Communities Plan, to allow a reduction in VMT.
- **R2-T3:** Employment-Based Trip Reductions. Require a Transportation Demand Management (TDM) program for new development to reduce automobile travel by encouraging ride-sharing, carpooling, and alternative modes of transportation.
- **R2-E2:** New Construction Residential Renewable Energy. Facilitate the use of renewable energy (such as solar (PV) panels or small wind turbines) for new

residential developments. Alternative approach would be the purchase of renewable energy resources off-site.

- **R2-E5:** New Construction Commercial Energy Efficiency Requirements. Require energy efficient design for all new commercial buildings to be 10 percent beyond the current Title 24 standards. (Reach Code)
- **R3-E1:** Energy Efficient Development, and Renewable Energy Deployment Facilitation and Streamlining. Updating of codes and zoning requirements and guidelines to further implement green building practices. This could include incentives for energy efficient projects.
- **R3-L2:** Heat Island Plan. Develop measures that address “heat islands.” Potential measures include using strategically placed shade trees, using paving materials with a Solar Reflective Index of at least 29, an open grid pavement system, or covered parking.

4.6.3 Methodologies for Determining Impacts

The project does not specifically address any particular development project(s); therefore, impacts to energy resources are addressed generally, based on projected buildout of the project. Energy resources would be consumed during construction of future development and redevelopment under the project. Energy would also be consumed to provide operational lighting, heating, cooling, and transportation for future development. Building-related energy use under existing conditions, as well as buildout of the existing 2006 General Plan and the project were obtained from the GHG inventory and projections prepared in conjunction with the CAP. Transportation-related energy use was analyzed by comparing VMT associated with buildout of the project to buildout of the existing 2006 General Plan.

4.6.4 Basis for Determining Significance

Thresholds used to evaluate impacts to energy resources are based on applicable criteria in the CEQA Guidelines (California Code of Regulations Sections 15000-15387), Appendix G. A significant impact would occur if the project would:

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

4.6.5 Impact Analysis

4.6.5.1 Topic 1: Energy Consumption

Would the project result in potentially significant environmental impact due to wasteful, inefficient, or unnecessary consumption of energy resources, during project construction or operation?

Implementation of the project would have the potential to impact energy supply due to the development that is anticipated to occur in response to projected population growth in the Planning Area. Depending on the types of future uses, impacts would need to be addressed in detail at the time specific projects are proposed. Consistent with CEQA Guidelines, impacts to energy resources could be significant if implementation of the project would develop land uses and patterns that would cause the wasteful, inefficient, and unnecessary consumption of energy or the construction of new or retrofitted buildings that would have excessive energy requirements for daily operation. To better analyze the environmental effects associated with the project, energy use is evaluated in three distinct categories:

- a) Equipment energy use from construction of future development and redevelopment implemented under the project;
- b) Transportation energy use from people traveling to, from, and within the Planning Area; and
- c) Building energy use within the Planning Area after buildout.

a. Construction-Related Energy Use

During construction, energy use would occur in two general categories: fuel use from vehicles used by workers commuting to and from the construction site, and fuel use by vehicles and other equipment to conduct construction activities. At the program level, it is too speculative to quantify the construction-related energy consumption of future development, either in total or by fuel type. Although the exact details of future development are not known at this time, there are no known conditions in the Planning Area that would require nonstandard equipment or construction practices that would increase fuel-energy consumption above typical rates. It should also be noted that all construction equipment is subject to the CARB In-Use Off-Road Diesel-Fueled Fleets Regulation. This regulation, which applies to all off-road diesel vehicles 25 horsepower or greater, limits unnecessary idling to 5 minutes, requires all construction fleets to be labeled and reported to CARB, bans Tier 0 equipment and phases out Tier 1 and 2 equipment (thereby replacing fleets with cleaner equipment), and requires that fleets comply with Best Available Control Technology requirements, which would increase construction equipment fuel efficiency. Therefore, future development would not result in the use of excessive amounts of fuel or other forms of energy during construction of future projects, and impacts would be less than significant.

b. Transportation-Related Energy Use

Buildout of the project would consume energy associated transportation uses. Trips by individuals traveling to, from, and within the Planning Area would largely rely on passenger vehicles or public transit. Passenger vehicles would be mostly powered by gasoline, with some fueled by diesel or electricity. Public transit would be powered by diesel or natural gas, and could potentially be fueled by electricity. Additionally, the City experiences higher volumes of heavy truck traffic which is generally powered by diesel. In 2020, CARB adopted the Advanced Clean Trucks Regulation which requires manufacturers to sell zero-emission trucks as an increasing percentage of their annual state sales starting in 2035. As a result, the number of diesel-fueled heavy trucks will decrease over time.

The Planning Area generates 3,144,986 VMT in the existing condition, and buildout of the existing 2006 General Plan would generate 4,566,084 VMT (Fehr & Peers 2021). In comparison, buildout of the project would generate 4,524,038 VMT, which would be less than buildout of the existing 2006 General Plan. The project would achieve this reduction in VMT by primarily focusing future development and redevelopment within the proposed Concept Areas, which would reduce reliance on vehicular travel compared to the existing 2006 General Plan. Therefore, the project would generate less VMT compared to buildout of the existing 2006 General Plan.

Additionally, the Planning Area is currently served by eight local bus routes (Riverside Transit Agency Routes 11, 16, 18, 19, 19a, 20, 31, and 41), and the Metrolink line is located at the city's western boundary. The 2021 GPU Transportation Element provides key goals to increase the use of public transit, improve traffic congestion, and enhance the range of transportation options in the city. Implementation of these key goals would serve to further reduce VMT below the 4,524,038 VMT estimated for buildout of the proposed 2021 GPU land use plan. Therefore, the project would not create a land use pattern that would result in a wasteful, inefficient, or unnecessary use of transportation-related energy, and impacts would be less than significant.

c. Building-Related Energy Use

As future development within the city is implemented, new or renovated buildings would be required to use electricity and natural gas to run various appliances and equipment, including space and water heaters, air conditioners, ventilation equipment, lights, and numerous other devices. Generally, electricity use is higher in the warmer months due to increased air conditioning needs, and natural gas use is highest when the weather is colder as a result of high heating demand. Residential uses would likely see the most energy use in the evening as people return from work, while most nonresidential facilities would have high energy use during normal business hours and lower levels at other times.

Existing and future residential and non-residential energy use was calculated as a part of the GHG inventory and projections prepared in conjunction with the CAP. Existing energy consumption data for residential, commercial, and industrial sectors, as well as public facilities (public services, public lighting, and street lights) were obtained from SCE, Moreno

Valley Utility, and the Southern California Gas Company. Residential, commercial, and industrial energy consumption was projected to year 2040 for both the existing 2006 General Plan and the proposed 2021 GPU land use plan. These projections also considered population forecasts and applied energy savings associated with implementation of Title 24 standards in newly constructed buildings. Energy consumption from the public sector, including public lighting, were calculated assuming that the 2019 program to retrofit street lights to LED will reduce emissions from public lighting by 68 percent. Table 4.6-2 summarizes the projected energy use within the Planning Area, buildout of the existing 2006 General Plan, and the proposed 2021 GPU land use plan.

Sector	Existing (2018)		Existing 2006 General Plan (2040)		Proposed 2021 GPU (2040)	
	Electricity (kWh)	Natural Gas (Therms)	Electricity (kWh)	Natural Gas (Therms)	Electricity (kWh)	Natural Gas (Therms)
Residential	391,975,510	21,934,767	432,886,344	29,732,577	457,231,019	457,231,019
Commercial	302,328,359	5,885,682	549,184,393	10,784,918	478,239,443	9,376,637
Industrial	99,775,374	41,302	1,025,747,391	410,716	754,522,614	305,384
Public Services, Public Lighting, Street Lights	9,646,466	--	5,639,176	--	5,639,176	--
TOTAL	803,725,709	27,861,751	2,013,457,303	40,928,210	1,695,632,252	466,913,039

SOURCE: Dyett & Bhatia 2020c.

As shown in Table 4.6-2 above, buildout of the project would result in a decrease in electricity and natural gas usage compared to buildout of the existing 2006 General Plan. Future development implemented under the project would be required at a minimum to meet the mandatory energy requirements of CALGreen and the California Energy Code (Title 24, Part 6 of the CCR) in effect at the time of development, and would benefit from the efficiencies associated with these regulations as they relate to building heating, ventilating, and air conditioning mechanical systems, water heating systems, and lighting. Additionally, rebate and incentive programs that promote the installation and use of energy-efficient plug-in appliances and lighting would be available as incentives for future development.

In addition to the energy efficiencies that would be realized from compliance with current CALGreen and Title 24 standards in new developments, the 2021 GPU aims to promote energy conservation through voluntary programs that provide energy-efficiency audits, retrofits, rebates, and other financing programs and incentives. Additionally, the CAP includes a number GHG reduction goals related to energy use and energy conservation (see Section 4.8). Therefore, the project would not create a land use pattern that would result in a wasteful, inefficient, or unnecessary use of building-related energy, and impacts would be less than significant.

4.6.5.2 Topic 2: Renewable Energy or Energy Efficiency

Would the project conflict with or obstruct a state or local plan for renewable energy or energy efficiency?

The applicable state plans that address renewable energy and energy efficiency are CALGreen, the California Energy Code, and RPS. As discussed under Section 4.6.5.1 above, future development implemented under the project would be required at a minimum to meet the mandatory energy requirements of CALGreen and the California Energy Code in effect at the time of development. SCE and MVU, the electricity providers for the Planning Area, are currently meeting RPS goals and are on track to achieve future RPS goals. Thus, electricity provided to the Planning Area is increasingly coming from renewable sources. Implementation of the project would not interfere with SCE's and MVU's progress towards achieving RPS goals. Additionally, as discussed in Section 4.6.5.1, buildout of the project would result in less VMT and less building energy consumption compared to buildout of the existing 2006 General Plan. Therefore, the project would not conflict with or obstruct implementation of CALGreen and the California Energy Code, or with SCE's and MVU's implementation of RPS, and impacts would be less than significant.

4.6.6 Cumulative Analysis

Future development within the Planning Area would generate additional energy demand. However, as new development and redevelopment occurs, buildings would be required to comply with the California Energy Code, Title 24 requirements in place at the time of building permit issuance. Each update to the Energy Code has historically incorporated more stringent energy efficiency requirements, and the state is headed towards a net-zero energy goal for new development. Therefore, redevelopment would replace older, less energy efficient buildings with more energy efficient buildings that meet current energy efficiency standards. Furthermore, the City's CAP includes additional energy efficiency requirements that would be required of future discretionary developments, and all development is required to comply with Title 24 requirements. Additionally, by changing land use designations and focusing development in Concept Areas, the project would reduce VMT when compared to buildout of the existing 2006 General Plan. Therefore, the project would not contribute to cumulative impacts related to energy consumption.

4.6.7 Significance of Impacts before Mitigation

4.6.7.1 Topic 1: Energy Consumption

Energy conservation measures required by applicable energy conservation regulations (e.g., CALGreen, Title 24) and energy conservation policies included in the proposed 2021 GPU, and the CAP would support the minimization of energy consumption from operations associated with future development. VMT and building energy use associated with buildout of the project would be less than the VMT and building energy use associated with buildout of the existing 2006 General Plan. Therefore, the project would not result in a wasteful,

inefficient or unnecessary consumption of energy resources, and impacts would be less than significant.

4.6.7.2 Topic 2: Renewable Energy or Energy Efficiency

Future development allowed under the project would implement applicable regulation that would ensure development would be energy efficient. Therefore, the project would not conflict with or obstruct implementation of CALGreen and the California Energy Code, or with SCE and MVU's implementation of RPS, and impacts would be less than significant.

4.6.8 Mitigation

4.6.8.1 Topic 1: Energy Consumption

Impacts would be less than significant. No mitigation is required.

4.6.8.2 Topic 2: Renewable Energy or Energy Efficiency

Impacts would be less than significant. No mitigation is required.

4.6.9 Significance of Impacts after Mitigation

4.6.9.1 Topic 1: Energy Consumption

Impacts would be less than significant. No mitigation is required.

4.6.9.2 Topic 2: Renewable Energy or Energy Efficiency

Impacts would be less than significant. No mitigation is required.