4.6 Energy

This section discusses the potential impacts associated with energy use associated with the Project. Utilities and public services are addressed in Section 4.13, Public Services, Utilities and Service Systems. This section also describes the environmental setting, regulatory setting, identifies the applicable significance thresholds for impacts, assesses potential impacts of the Project, and recommends measures to mitigate any significant impacts, if applicable. The section also provides a discussion of cumulative impacts. Alternatives are discussed in Chapter 5.0, Alternatives.

As described in Chapter 2.0, Project Description, the Project would include the demolition of aboveground infrastructure and remediation of the site, followed by soil stabilization or revegetation of disturbed areas, with some minor long-term operations associated with remediation.

4.6.1 Environmental Setting

The Phillips 66 Santa Maria Refinery (SMR) historically utilizes electricity and natural gas as energy sources to operate the facility. Pacific Gas and Electric Company (PG&E) currently provides electricity to the Project site that is not otherwise produced by the power-generating unit at the SMR. PG&E operates a local planning office at 4325 Higuera Street in the City of San Luis Obispo and operates the San Luis Obispo Substation on the corner of Orcutt Road and Johnson Avenue, approximately 19 miles north of the Project site.

PG&E generates electricity from the following sources: (1) PG&E-owned hydropower, gas-fired steam, and nuclear generators; (2) independent generators; and (3) out-of-state generators. A network of high-voltage transmission lines carries electricity generated from the power plants to substations. Substations use transformers to decrease the voltage of electricity to connect with the distribution system. Electricity is supplied to the SMR through an existing substation and power lines located on the site.

In order to provide information on the environmental setting and regional electrical use, electrical use within the County of San Luis Obispo (County) is shown in Table 4.6.1.

Table 4.6.1 County of San Luis Obispo Electricity Consumption

Land Use	County-wide Electricity Consumption (GWh)		
	2020	2021	2022
Non-Residential	990	1,012	1,036
Residential	682	670	694
Total	**1,671**	**1,682**	**1,729**

Note: GWh = gigawatt-hour
Source: California Consumption Data Management System (CCDMS) 2024a

Generally, commercial, industrial, and residential land uses consumed the majority of the kilowatt-hours of electricity in the County.

In order to provide information on the environmental setting and regional natural gas use, Table 4.6.2 presents the natural gas used in the County historically. An existing Southern California Gas Company (SoCalGas) natural gas pipeline supplies natural gas to the SMR for operations.

Table 4.6.2 County of San Luis Obispo Natural Gas Consumption

Land Use	County-wide Gas Consumption (millions of therms/mmscf)		
	2020	2021	2022
Non-Residential	42/4200	41/4100	50/5000
Residential	39/3900	38/3800	38/3800
Total	**81/8100**	**79/7900**	**88/8800**

Notes: 1 therm = 100 standard cubic foot (scf), mmscf = million scf
Source: CCDMS 2024b

The SMR also relies on diesel fuel as part of operations. In order to provide information as background on the environmental setting and regional fuel use, per data gathered by the California Energy Commission (CEC-A15 results, CEC 2023), the County is estimated to have about 106 gasoline and diesel dispensing stations annually selling about 125 million gallons of gasoline and an estimated 22 million gallons of diesel fuel in 2021.

4.6.1.1 Santa Maria Refinery Historical Energy Use

The SMR historically has used energy for a number of different processes, including heat and steam generation. The SMR also utilizes boilers which burn gas to produce steam and electricity, thereby reducing the amount of electricity consumed from the grid. Gas produced from the processing of crude oil captured and utilized as a fuel is called internal fuel gas. Gas purchased from the utility is called natural gas. Reports to the San Luis Obispo County Air Pollution Control District (SLOCAPCD) indicate historical use of gas at the SMR, with the majority of gas consumed being internal fuel gas. Historical energy use by the SMR for gas and diesel is shown in Table 4.6.3. Diesel fuel is used on site at the SMR for pumps and fire water pumps and is delivered to the site.

Diesel fuel is also historically used off site in trucks and trains that serviced the SMR. No specific records exist for these fuel use rates as fuel is purchased at a range of locations, but estimates based on truck trips, estimated mileage and fuel use rates, and rail trips distances and fuel use rates indicate that trucks utilized about 524,000 gallons per year of diesel fuel and trains utilized about 74,000 gallons per year of diesel fuel. See Appendix C for the calculations.

Electricity utilized by the SMR is historically supplied from off site by PG&E and also generated on site through excess heat from the boilers. The amount of electricity used annually has averaged about 41,269 MWh over the past five years, with an average of about 12 percent being from on-site generation (as per submissions to the SLOCAPCD).

Table 4.6.3 Historical SMR Energy Use (Gas and Diesel)

Year	Internal Fuel Gas, mmscf	Utility Natural Gas, mmscf	On-site Diesel, Gallons
2017	2,561	12	5,867
2018	2,187	10	5,699
2019	2,480	4	3,079
2020	2,176	32	2,398
2021	1,767	29	3,461
Average	2,234	17	4,101

Notes: Fuel gas is generated on site by crude oil processing. Natural gas is purchased from off site. Diesel use is for pumps and other miscellaneous uses on site. mmscf is million standard cubic feet.
Source: SLOCAPCD annual reports

4.6.2 Regulatory Setting

The following sections describe regulatory issues related to energy. Regulatory issues related to greenhouse gases (GHGs) are discussed in Section 4.8, Greenhouse Gas Emissions.

4.6.2.1 Federal Regulations

Energy Policy and Conservation Act

The Energy Policy and Conservation Act of 1975 sought to ensure that all vehicles sold in the United States would meet certain fuel economy goals. Through this act, U.S. Congress 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 (NHSTA), which is part of the United States Department of Transportation (U.S. DOT), is responsible for establishing additional vehicle standards and for revising existing standards. Since 1990, the fuel economy standard for new passenger cars has been 27.5 miles per gallon (mpg). Since 1996, the fuel economy standard for new light trucks (gross vehicle weight of 8,500 pounds or less) has been 20.7 mpg. Heavy-duty vehicles (i.e., vehicles and trucks over 8,500 pounds gross vehicle weight) are not currently subject to fuel economy standards. Compliance with federal fuel economy standards is determined based on each manufacturer's average fuel economy for the portion of its vehicles produced for sale in the United States. The Corporate Average Fuel Economy (CAFE) program, administered by the United States Environmental Protection Agency (U.S. EPA), was created to determine vehicle manufacturers' compliance with the fuel economy standards. The U.S. EPA calculates a CAFE value for each manufacturer based on city and highway fuel economy test results and vehicle sales. Based on the information generated under the CAFE program, the U.S. DOT is authorized to assess penalties for noncompliance.

Energy Policy Act of 1992

The Energy Policy Act (EPAct) of 1992 was passed to reduce the Country's dependence on foreign petroleum and improve air quality. EPAct includes several parts intended to build an inventory of alternative fuel vehicles (AFVs) in large, centrally fueled fleets in metropolitan areas. EPAct requires certain federal, state, and local government and private fleets to purchase a percentage of light-duty AFVs capable of running on alternative fuels each year. In addition, financial incentives

are included in EPAct. Federal tax deductions are allowed for businesses and individuals to cover the incremental cost of AFVs. States are also required by the act to consider a variety of incentive programs to help promote AFVs.

Energy Policy Act of 2005
The Energy Policy Act of 2005 was signed into law on August 8, 2005. Generally, the act provides for 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 renewable energy and rural community electrification; and establishes a federal purchase requirement for renewable energy.

4.6.2.2 State Regulations

Warren-Alquist Act
The Warren-Alquist Act of 1975 established the California Energy Resources Conservation and Development Commission, referred to as the California Energy Commission (CEC). The act established a state policy to reduce wasteful, uneconomical, and unnecessary uses of energy by employing a range of measures.

California Public Utilities Commission
The California Public Utilities Commission (CPUC) regulates privately owned telecommunications, electric, natural gas, water, railroad, rail transit, and passenger transportation companies. CPUC is responsible for ensuring that California utility customers have safe, reliable utility service at reasonable rates; protecting utility customers from fraud; and promoting the health of California's economy. CPUC establishes service standards and safety rules and authorizes utility rate changes, as well as enforcing California Environmental Quality Act (CEQA) compliance for utility construction.

CEQA Guidelines
Appendix F of the State CEQA Guidelines requires an EIR to include discussion of the potential energy impacts of proposed projects, with particular emphasis on avoiding or reducing inefficient, wasteful, and unnecessary consumption of energy (see Public Resources Code section 21100(b)(3)). According to Appendix F of the State CEQA Guidelines, the goal of conserving energy implies the wise and efficient use of energy including:

a. Decreasing overall per capita energy consumption;

b. Decreasing reliance on natural gas and oil; and

c. Increasing reliance on renewable energy sources.

4.6.2.3 Local Regulations

County of San Luis Obispo General Plan
The Energy chapter of the General Plan's Conservation and Open Space Element (County 2010) contains the following goals and policies relevant to public services in relation to the Project:

a. Goal E 3: Energy efficiency and conservation will be promoted in both new and existing development.
   - Policy E 3.1 Use of renewable energy: Ensure that new and existing development incorporates renewable energy sources such as solar, passive building, wind and thermal energy. Reduce reliance on non-sustainable energy sources to the extent possible using available technology and sustainable design techniques, materials, and resources.
   - Policy E 3.2 Energy efficient equipment: Require the use of energy-efficient equipment in all new development, including but not limited to Energy Star appliances, high-energy efficiency equipment, heat recovery equipment, and building energy management systems.
   - Policy E 3.3 Use of renewable energy for water and wastewater: Promote the use of renewable energy systems to pump and treat water and wastewater.

b. Goal E 5: Recycling, waste diversion, and reuse programs will achieve as close to zero waste as possible.
   - Policy E 5.1 Source reduction and waste diversion: Encourage source reduction and diversion of solid waste generated to as near zero waste as possible, in order to reduce energy consumption.

4.6.3 Thresholds of Significance

The thresholds of significance for the Project are based on the CEQA Guidelines Appendix G. In accordance with the CEQA Guidelines Appendix G, would the Project:

a. Use a substantial amount of fuel or energy that would:
   - Result in potentially significant environmental impact due to wasteful, inefficient, or unnecessary consumption of energy resources, during project construction or operation; or
   - Conflict with or obstruct a state or local plan for renewable energy or energy efficiency?

Appendix F of the CEQA Guidelines also addresses energy use with the following applicable criteria:

b. The effects of the project on local and regional energy supplies and on requirements for additional capacity;

c. The effects of the project on peak and base period demands for electricity and other forms of energy;

d. The degree to which the project complies with existing energy standards;

e. The effects of the project on energy resources; and

f. The project's projected transportation energy use requirements and its overall use of efficient transportation alternatives.

4.6.4 Impact Assessment Methodology

The methodology to estimate energy use impacts utilizes the baseline energy consumptions levels and compares these to the Project energy use levels and if there are substantial increases. If there are increases, the ability of the utilities to supply this level of energy use are examined. Wasteful use or conflicts with plans are also examined.

4.6.5 Project-Specific Impacts and Mitigation Measures

Impact #	Impact Description	Residual Impact
EN.1	Thresholds a), b), c), and e): Would the Project use of a substantial amount of fuel or energy that would result in potentially significant environmental impact due to wasteful, inefficient, or unnecessary consumption of energy resources, during Project construction or operation; Would the effects of the Project impact local or regional energy supplies, capacity; Would the Project peak and base period demands for electricity and other forms of energy cause impacts; Would there be impacts on energy resources?	Class III

Energy consumption would occur during construction, including diesel fuel use associated with the on-site operation of off-road equipment and vehicles traveling to and from the construction site. Equipment utilized during this period is discussed in Chapter 2.0, Project Description. Site construction, including grading and infrastructure demolition, would occur over the period of the Project. However, minimal electrical use or natural gas use would be associated with Project construction activities. Energy use compared to the baseline SMR operations would decrease.

Long-term site monitoring for restoration would utilize minimal levels of fuels for on-site and off-site occasional vehicles.

Based on the equipment requirements and off-site vehicle movements, including employee vehicles, trucks and trains, peak annual fuel use is estimated at about 234,000 gallons per year for on-site activities and about 690,000 gallons per year for off-site vehicle movements (truck and rail) within California, for a total of about 928,000 gallons of gasoline and diesel fuel per year (see Appendix C). This compares to baseline use of about 600,000 gallons annually. The Project totals at most five percent of diesel fuel sold within the County, and a small fraction of diesel fuel sold within Southern California (many of the trains and trucks traveling longer distances most likely would be fueled out of the County). Due to the small percentages, this would not affect supplies or infrastructure capacity.

Construction equipment use and associated energy consumption would be consistent with the energy use that is commonly associated with construction activities. In addition, SLOCAPCD requirements related to limits on idling of heavy-duty diesel construction equipment to five minutes would be required, increasing efficiency. The short-term energy use associated with the construction phase of the Project would not result in the need for additional energy infrastructure capacity or increased peak-period demands for electricity. Therefore, construction-related impacts associated with inefficient, wasteful, or unnecessary energy consumption would be **less than significant (Class III).**

Impact #	Impact Description	Residual Impact
EN.2	Thresholds d) and f): Would the Project be in compliance with energy standards and efficient transportation alternatives, or otherwise conflict with State or local plans?	Class III

The Project would not result in additional development that could cause an increase in energy consumption or require building efficiencies, such as with the building code or County requirements for development. The Project would utilize train transport for the majority of demolition and remediation materials, which is more fuel efficient than truck transportation on a per ton basis, and would therefore be utilizing the transportation system efficiently. As the energy use of the Project would be less than the electrical use, natural gas use, and long-term gasoline/diesel fuel use associated with the historical SMR operations, there would not be an impact to standards or efficient transportation methods. Impacts to energy standards or transportation alternatives would be **less than significant (Class III).**

4.6.6 Mitigation Measure Impacts to Other Issue Areas

As no mitigation measures are proposed for energy, there would not be any impact from the mitigation measures on other issue areas.

4.6.7 Cumulative Impacts

Cumulative projects are discussed in Chapter 3.0, Cumulative Study Area. Cumulative projects are discussed in each of the categories below.

Ongoing SMR projects, including the Slop Oil Spill and the Northern Inactive Waste Site (NIWS) remediation projects and the remaining facilities off-site projects (Summit Pump Station and Santa Maria Pump Station), would not involve large amounts of energy use and therefore, in combination with the Project, would not have a cumulative impact for either impact EN.1 or EN.2.

Other projects in the area, such as the Arroyo Grande Oil Field, Caballero Battery project, Monarch Dunes or the Dana Reserve development projects, or the Santa Barbara County projects (as discussed in Chapter 3.0, Cumulative Study Area), would entail the use of energy and could contribute to increases in energy use in the area during construction or operations. However, as the Project would involve a substantial reduction in electrical and natural gas use compared to the baseline SMR operations, a cumulative impact would not occur.

Roadway projects would not entail the use of large amounts of energy and would therefore not produce cumulative impacts.

4.6.8 References

California Consumption Data Management System (CCDMS). 2024a. California Consumption Data Management System, Electricity Consumption by Planning Area. Available at: http://www.ecdms.energy.ca.gov/elecbyplan.aspx. Accessed January 2024.

CCDMS. 2024b. California Consumption Data Management System, Gas Usage by County. Available at: http://www.ecdms.energy.ca.gov/gasbycounty.aspx. Accessed January 2024.

California Energy Commission (CEC). 2023. California Retail Fuel Outlet Annual Reporting (CEC-A15) Results and Estimates. Available at: https://www.energy.ca.gov/data-reports/energy-almanac/transportation-energy/california-retail-fuel-outlet-annual-reporting. Accessed July 2023.

County of San Luis Obispo (County). 2010. County of San Luis Obispo General Plan, Conservation and Open Space Element. Available at: https://www.slocounty.ca.gov/Departments/Planning-Building/Forms-Documents/Plans-and-Elements/Elements/Conservation-and-Open-Space-Element-(1)/Conservation-and-Open-Space-Element.pdf.