

4.14 ENERGY

This section of the Draft EIR describes the potential energy use of the proposed project including the consumption of electricity, natural gas and petroleum, as well as the project's energy conservation measures. Electricity and natural gas consumption occurs in conjunction with a number of activities including space heating and cooling, lighting, food preparation and maintenance.

CEQA requires that an EIR set forth mitigation measures proposed to reduce wasteful, inefficient and unnecessary consumption of energy (Public Resources Code § 21100(b).) This chapter was prepared pursuant to CEQA Guidelines Sections 2100(b)(3) and 15126.4(a)(1)(c), and is consistent with Appendix F of the CEQA Guidelines.

EXISTING SETTING

PROJECT SITE - EXISTING USES

The project site is located at the northwest corner of the intersection of Mitchell Road and Service Road and consists of five parcels totaling 26.3 acres. See **Figure 3.0-2** for proposed project location. Currently, there is one abandoned and vacant structure on the proposed site. The site contains areas of open space with disked soil and trees scattered throughout. The landscape within the site is flat with an elevation of approximately 92 feet above mean sea level and is primarily undeveloped and has limited public infrastructure. Portions of the project site adjacent to Service Road, Don Pedro Road and Mitchell Road have curb, gutter, but the remaining area is not improved.

PROJECT AREA

The project site is located in an area that is predominately being developing for commercial uses. On May 19, 2008, the City of Ceres Planning Commission approved development applications for the Ceres Gateway Center, located just south of the proposed project. The Ceres Gateway Center will include two hotels and approximately 26,000 square feet of various commercial uses for this vacant commercial property. Similarly, a small commercial development that will total 32,575 square feet and will include retail uses and a gas station has been approved southeast of the project site. There is land developed as strip retail and an Arco Station on the opposite side of Mitchell Road to the east of the proposed project as well as undeveloped land zoned for commercial uses to the west and south of Service Road. Partially developed lands zoned for light industrial and residential uses abut the site to the west.

EXISTING ENERGY CONSUMPTION

Energy consumption is analyzed in an EIR because of its relationship to environmental impacts associated with its production and usage. Such impacts include the depletion of nonrenewable resources (e.g., oil, natural gas, coal, etc.) and emissions of pollutants during both the production and consumption phases of the proposed project.

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California

Electricity

In 2008, California used over 285,574 gigawatts of electricity (CEC, 2009b).¹ California's electricity generation system currently generates over 290,000 gigawatt hours of electricity each year, which is transported over California's 32,000 miles of transmission lines (CEC, 2007). By 2020, electricity consumption in the state is projected to reach almost 320,000 gigawatts (CEC, 2009b, Figure 5, pg 49). In 2008, this electricity was produced from power plants fueled by natural gas (45.7%), hydrologic sources (11.0%), coal (18.2%), nuclear (14.4%), and renewable methods (10.6%). Approximately 68.1 percent of the electricity was generated within California, with the balance imported from other states, Canada, and Mexico (CEC, 2009b, pg 43). Overall electricity use in California is projected to grow by 1.2 percent annually (CEC, 2009b, pg 49). However, peak demand is growing at a rate of 1.30 percent (850 megawatts) per year (CEC, 2009, pg 49). This increase in peak demand is the result of a population that is moving inland to the warmer areas of the state, prompting higher demand for electricity for air conditioning.

Electricity usage varies substantially by the type of uses, type of construction materials used, and the efficiency of all electricity consuming devices within a building. The average annual usage of electricity is roughly 6,500 kilowatt hours (kWhr)/residence. The average annual usage of electricity is roughly 13 kWhr/square foot for all commercial buildings and roughly 18 kWhr/square foot for office/research and development buildings (CEC, 2007).

Electricity supply in California involves a complex grid of power plants and transmission lines located in the western United States, Canada, and Mexico. Almost 32 percent of the electricity used in California is imported from 11 other western states as well as Canada and Mexico. The issue is complicated by market forces that have become prominent since 1998, when a new regulatory environment commonly referred to as "deregulation" took effect in California. Supply is further complicated by the fact that the peak demand for electricity is significantly higher than the off-peak demand. For example, in August 2004, peak electric demand - due in large part to hot weather - reached a record high of 44,497 megawatts, which is almost double the lowest demand period.

Natural Gas

In 2007, California consumed about 12,494 million (MM) therms of natural gas. The California natural gas demand for 2010 is projected to be just slightly less than this (CEC, 2009b, pg 133, Table 6). As a state, California is the second largest natural gas consumer in the United States, representing more than 10 percent of national natural gas consumption. Customers in the residential and commercial sectors, referred to as "core" customers, accounted for 29 percent of the state's natural gas demand in 2008 (CEC, 2009b, pg 132). Large consumers such as electricity generators and the industrial sector, referred to as "noncore" customers, accounted for about 71 percent of demand in the same year. California remains heavily dependent on natural gas to generate electricity which accounted for more than 40 percent of natural gas demand in 2008 (CEC, 2009b, pg 132). Approximately 13.5 percent of the natural gas produced in 2006 was within California, with the balance imported via pipeline from other states and

¹ Energy usage is typically quantified using the British Thermal Unit (Btu). As points of reference, the approximate amount of energy contained in a gallon of gasoline, a cubic foot of natural gas, and a kilowatt hour (kWhr) of electricity are 123,000 Btu's, 1,000 Btu's, and 3,400 Btu's, respectively.

Canada (CEC, 2007). California is at the furthest end of those pipelines, forcing it to compete with other states that are located closer to generation plants in Canada for supplies.

As with electricity, natural gas usage in California varies substantially by the type of land use, type of construction materials, and the efficiency of all gas-consuming devices in a given building. The average annual usage of natural gas is roughly 45,000 cubic feet/residence. The average annual usage of natural gas is roughly 37 cubic feet/square foot for commercial buildings and roughly 29 cubic feet/square foot for office buildings.

According to the California Energy Commission's 2009 *Integrated Energy Policy Report*, natural gas has become an increasingly important source of energy since more of the state's power plants rely heavily on this fuel. While California's successful efficiency programs and its reliance on renewable sources of electricity should slow the demand for natural gas, competition for the state's imported supply is increasing. This reliance on imported gas leaves the state vulnerable to price shocks and supply disruptions.

The annual forecast of North American natural gas production has decreased each year since 2002, a difference of about eight trillion cubic feet a year (CEC, 2007, pg 173). Pacific Gas and Electric Company (PG&E) has publicly commented that it believes that western Canadian natural gas production will be less than predicted while another energy company, Sempra/SoCalGas believes that several supply basins throughout North America will produce less than forecasted.

Natural gas is critical in meeting the state's energy demand. California's growing population requires more natural gas for residential heating and cooking, industrial processing and most importantly, electricity production. Natural gas, like petroleum, has become a global commodity and California competes not just with other U.S. states for access to less abundant natural gas supplies, but also with Western Europe and Asia Pacific consumers in a world market for natural gas. The result is that prices are likely to continue increasing (CEC, 2007, pg 173).

Peak electricity demand in California is expected to grow at about 1.30 percent each year through 2017, and will be the sector with the largest natural gas increase over the next decade. Before 1997, natural gas consumption for electricity averaged 500 billion cubic feet each year (1,400 million cubic feet per day); however, future demand is anticipated to average 2,500 million cubic feet each day (CEC, 2007).

City of Ceres

Electricity

The project site is provided with electrical service by the Turlock Irrigation District (TID). The TID, in correspondence dated September 2007, indicated that the District's electric utility has existing overhead distribution lines along the east side of Mitchell Road and the south side of Service Road. Further, it was noted that these lines have enough capacity to serve the proposed project.

Turlock Irrigation District

Established in 1887, the Turlock Irrigation District is the first publicly owned irrigation district in the state and one of only four in California today that also provides electric retail energy directly to homes, farms and businesses. Organized under the Wright Act, the District operates under the

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provisions of the California Water Code as a special district. TID is also an independent control area and is governed by a five member Board of Directors.

TID provides electrical service to more than 97,000 homes, farms, businesses, and industrial and municipal accounts in portions of Stanislaus, Merced, and Tuolumne counties. The proposed project is within TID's service area; TID is currently the only electrical service provider in the City of Ceres. Each electric lines serving the project area is a 12 KV (Kilovolt) distribution feeder line, with adequate capacity to provide electricity to the proposed project, according to TID engineer Arie Vander Pol (2007).

TID generates nearly 40 percent of the energy TID's customers require at Don Pedro Dam and Powerhouse. A substantial amount of energy is generated at other District-owned facilities, including small hydroelectric power plants on irrigation canals and three natural gas-fired turbine generating plants. Energy is also purchased under long- and short-term contracts from other suppliers as needed.

TID operates its own electric service control area. TID has adequate resources to supply the total power demand of its customers. If there is an instance where TID is unable to generate sufficient energy to meet current demands, TID can purchase power on the wholesale market from outside resources.

Table 4.14-1 presents comparisons of electricity consumption for selected years, as well as forecasts of future consumption for 2010, 2015, 2018 and 2020.

TABLE 4.14-1
TID PLANNING AREA ELECTRICITY CONSUMPTION AND FORECASTS

Year	Consumption (Gigawatt Hours) ¹
2000	2,119
2003	1,958
2005	2,764
2009	1,966
2010	1,979
2015	2,138
2018	2,234
2020	2,302

Note: Historic values are shaded

Source: Shaded Numbers: TID, 2008; Non Shaded Numbers: CEC, 2009c, pg 38, Form 1.1c

1. Gigawatt equals one billion watts

According to the 2008 Annual Report, TID has been making substantial capital investments to improve the capacity of its infrastructure. TID purchased the Tuolumne Wind Project rather than rely on acquiring credits associated from renewable projects owned by others. Located in Klickitat County, Washington along the Columbia River, this site has been recognized as one of the most productive wind resource areas in the Western United States (TID, 2008). The project consists of 62 turbines which can generate a total of 136.6 megawatts, enough green energy to power approximately 44,000 households each year (TID, 2008). Upon completion, the project will add significantly to TID's renewable energy portfolio, taking it to 28 percent qualified renewable energy, eight years ahead of the Board adopted goal of 20 percent by 2017.

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In addition, TID customer participation in TID's solar photovoltaic (PV) rebate program has increased significantly since its adoption in 2006. In 2008, TID interconnected 941.4 kilowatts to the grid and paid over \$2,800,000 in rebates. The systems connected include 30 residential homes, 3 commercial properties and 4 agricultural installations. The solar rebate program provides an incentive to TID customers that purchase and install solar power at their home or business. TID's rebate program is currently one of the highest rebates available in California at \$2.80 per watt for non-residential customers and \$4.00 per watt for residential customers. TID customers that install solar are placed on a Net Metering rate schedule. Customers continue to pay the customer and demand charges, but their energy consumption is netted against the amount of energy they generate. If a customer ends the billing cycle generating more energy than they consume, the customer receives a credit for the kilowatt-hours they generated and sent to the TID grid. The amount credited for the kilowatt-hours produced is at the same rate TID would have charged the customer.

Natural Gas

Pacific Gas and Electric Company (PG&E) provides natural gas to customers within the City limits. PG&E offers several rebates and energy efficiency tips for residential and commercial customers. PG&E provides rebates for residential customers including, but not limited to, approved household appliances, general household improvements, heating and cooling, lighting, home electronics, and pools. PG&E also offers energy-saving resources including education and training information for customers and industry professionals. All construction and maintenance activities for natural gas facilities are the responsibility of PG&E.

Pacific Gas and Electric

PG&E provides natural gas to most of Northern California. The PG&E natural gas planning area is defined as the combined PG&E and Sacramento Municipal Utility District (SMUD) electric planning areas. It includes all PG&E retail gas customers and customers of private marketers using the PG&E natural gas distribution system. **Table 4.14-2** presents comparisons of natural gas consumption for selected years as well as forecasts for 2010 and 2018.

TABLE 4.14-2
PG&E PLANNING AREA NATURAL GAS CONSUMPTION AND FORECASTS

Year	Natural Gas Consumption (MM Therms) ¹
1990	5,275
2000	5,291
2008	4,309
2010	4,186
2018	4,358

Source: CEC, 2009c, pg 220, Table 31

¹ Million therms. A therm is unit of heat energy equal to 100,000 British thermal units (BTU). It is approximately the energy equivalent of burning 100 cubic feet (often referred to as 1 hcf) of natural gas.

Note: Historic values are shaded

Gasoline for Motor Vehicles

In 2001, the U.S. consumed 113.1 billion gasoline-equivalent gallons (GEG) to fuel passenger travel by light-duty vehicles, a rise of 3.3 percent per year from 1994, when 90.6 billion was

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consumed (EIA, 2005). Such fuel consumption by light-duty vehicles, stored in a tank the size of a regulation football field, would require the tank to have walls nearly 50 miles high (EIA, 2005). The entire transport sector is not only the second largest consumer of energy, but it also has recently become the largest contributor to U.S. greenhouse gas emissions of carbon dioxide, topping industrial emissions in 1999. This is primarily due to transport's heavy reliance on petroleum products such as motor gasoline.

The nation currently cannot provide for all of its petroleum demand with domestically produced crude oil. The decline in domestic oil production, coupled with a rise in oil consumption, resulted in net imports of crude oil and petroleum products surpassing 11.8 million barrels per day in 2004. Imports reached an all-time high of just over 12.9 million barrels per day in 2004, of which over 40 percent had originated at countries belonging to the Organization of Petroleum Exporting Countries (OPEC) (EIA, 2005). Motor gasoline accounted for nearly one-half (8.9 million barrels per day) of the 20 million barrels per day of petroleum products consumed domestically in 2004, with 13.6 million barrels per day of the total identified as transport sector use.

In California, petroleum use accounts for approximately 42 percent of all energy consumption. Californians presently consume roughly 43 million gallons of gasoline and diesel each day (CEC, 2009b), slightly less than recent years; however, a significant increase from 25 years ago when Californians consumed roughly 20 million gallons of gasoline and diesel each day (CEC, 2003). The primary factors contributing to this increase are: 1) population growth; 2) declining per-mile cost of gasoline; 3) land use patterns that have increased the distance between jobs and housing; and 4) a shift in consumer preferences to larger, less fuel efficient motor vehicles.

Approximately 53 percent of petroleum use is for motor vehicle fuel. The average fuel economy for the fleet of light-duty vehicles (autos, pickups, vans, and SUVs) steadily increased from about 12.6 miles-per-gallon (mpg) in the mid-1970s to the current 20.7 mpg.

Although the state's 20 crude oil refineries processed more than 1.8 million barrels a day of crude oil in 2008, California crude oil production continues to decline, despite record crude oil prices and increased drilling activity greater than at any point since 1985. Since 1986, California crude oil production declined by more than 41 percent at an average rate of 3.2 percent per year over the last 10 years and slowed to an annual average of 2.2 percent between 2006 and 2008. Imports of foreign crude oil will increase as in-state and Alaskan supplies diminish. The state's refinery capacity is expanding at a slower rate than that of the United States and the rest of the world. Refinery capacity growth, known as refinery creep, is relatively slow and expected to increase at an annual average rate between 0 and 0.45 percent per year through 2030.

Increased exploration and drilling in state and federal waters could reverse the continuing decline of the state's crude oil production, but any significant production of off shore oil is at least a decade away. In 2008, the federal government lifted the moratorium on drilling in the Outer Continental Shelf off the coast of California. It is uncertain if off shore drilling will proceed because of numerous environmental and economic concerns.

Crude oil imports are determined by trends in consumer demand, California refinery output, and exports of petroleum products to neighboring states. In 2008, California refineries imported 406 million barrels of crude oil. Differences in crude oil import forecasts result from contrasting assumptions on the production capabilities of California's refineries and the production of California's crude oil.

Overall, California is experiencing a downward trend in sales for gasoline and diesel (CEC, 2009b, pg 146). For example, California's average daily gasoline sales for the first four months of

2009 were 2.1 percent lower than the same period in 2008, continuing a reduction in demand observed since 2004. Daily diesel fuel sales for the first three months of 2009 were 7.7 percent lower than the same period in 2008, continuing a declining trend since 2007 (CEC, 2009b, pg 146).

The California Energy Commission expects annual gasoline consumption to decrease over the forecast period, largely because of high fuel prices, efficiency gains, competing fuel technologies, and mandated increases of alternative fuel use (CEC, 2009b, pg 146). The estimate of future gasoline and diesel fuel demand for California was the result of two distinct stages of analysis, each conducted by the California Energy Commission. The first step was to quantify demand levels using California Energy Commission computer models for both traditional fuels (gasoline and diesel fuel) and specific types of alternative fuels. The second step was to determine the impact of the federal renewable fuel mandates that will likely result in even higher levels of ethanol and biodiesel use beyond the levels initially forecast during the first step of the analysis (CEC, 2009b, pg 146). The California Energy Commission conducted two case scenarios, a Low Petroleum Price Case (High Demand) and a High Petroleum Price Case (Low Demand).

In the initial results of the forecast's Low Petroleum Price Case (High Demand), the recovering economy and lower relative prices led to a gasoline demand peak in 2014 of 16.4 billion gallons before falling to a 2030 level of 14.3 billion gallons, 4.0 percent below 2008 levels (CEC, 2009b, pg 146). The initial High Petroleum Price Case (Low Demand) forecast projects a gasoline demand peak of 15.69 billion gallons in 2014 before declining to 13.57 billion gallons by 2030, a decrease of 9.0 percent compared to 2008 (CEC, 2009b, pg 146).

Between 2008 and 2030, it is expected that the total diesel demand in California will increase 49.8 percent in the initial results of the High Petroleum Price Case (Low Demand) to 5.14 billion gallons and 57.4 percent in the Low Petroleum Price Case (High Demand) to 5.40 billion gallons (CEC, 2009b, pg 146).

REGULATORY FRAMEWORK

Federal and state agencies regulate energy consumption through various policies and programs. Federal agencies, such as the U.S. Department of Transportation (USDOT), U.S. Department of Energy (USDOE) and the Environmental Protection Agency (EPA) affect energy consumption in the transportation sector through fuel economy standards, funding for transportation infrastructure, and funding for energy related research and development projects. At the state level, the California Energy Commission collects and analyzes energy-related data, prepares state-wide energy policy recommendations and plans, promotes and funds energy efficiency programs, and regulates the power plant siting process. California is prevented by federal law from setting state fuel economy standards for new on-road motor vehicles.

FEDERAL

Energy Policy and Conservation Act

The Energy Policy and Conservation Act of 1975 required that all vehicles sold in the U.S. meet certain fuel economy goals. The Act gave the National Highway Traffic and Safety Administration (NHTSA, part of U.S. Department of Transportation (USDOT)) authority to establish additional vehicle standards and revise existing standards. NHTSA set the fuel economy standard for new passenger cars at 27.5 miles per gallon (MPG) in 1990, and 20.7 mpg for new light trucks

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in 1996. Heavy-duty vehicles (i.e., vehicles and trucks over 8,500 pounds gross vehicle weight) are not currently subject to fuel economy standards. The Corporate Average Fuel Economy (CAFE) program, administered by the Environmental Protection Agency (EPA), was created to determine vehicle manufacturers' compliance with the fuel economy standards. The EPA calculates a 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 USDOT is authorized to assess penalties for noncompliance.

Intermodal Surface Transportation Efficiency Act (ISTEA)

In 1991, Congress established ISTEA to promote the development of inter-modal transportation systems to maximize mobility, as well as address national and local interests in air quality and energy. ISTEA includes requirements that Metropolitan Planning Organizations (MPOs) address in developing transportation plans and programs, including energy-related issues. To meet the new ISTEA requirements, Metropolitan Planning Organizations (MPOs) adopted explicit policies defining social, economic, energy, and environmental policies to guide transportation decisions in metropolitan areas. MPOs must also consider the consistency of transportation planning with federal, state, and local energy goals. This requirement was designed to make energy consumption a decision criterion in determining the best transportation solution.

STATE

California Environmental Quality Act (CEQA)

An EIR should include a discussion of potentially significant energy impacts of the proposed project, with emphasis on avoiding or reducing inefficient, wasteful and unnecessary consumption of energy [See Public Resources Code Section 21100(b)(3)]. Energy conservation implies that a project's cost effectiveness be reviewed not only in dollars, but also in terms of energy requirements. For many projects, cost effectiveness may be determined more by energy efficiency than by initial dollar costs. A lead agency may consider the extent to which an energy source serving the project has already undergone environmental review that adequately analyzed and mitigated the effects of energy production.

Appendix F of the CEQA Guidelines describes a suggested approach to the energy conservation information and analyses that should be included in an EIR.

1. The project's energy requirements and its energy use efficiencies by amount and fuel type for each stage of the project including consumption, operation, maintenance and/or removal. If appropriate, the energy intensiveness of materials.
2. The effects of the project on local and regional energy supplies and on requirements for additional capacity.
3. The effects of the project on peak and base period demands for electricity and other forms of energy.
4. The degree to which the project complies with existing energy standards.
5. The effects of the project on energy resources.
6. The project's projected transportation energy use requirements and its overall use of efficient transportation alternatives.

State of California Energy Action Plan (EAP)

Administered by the California Energy Commission, the EAP was initially created in 2003 and updated in 2005. The California Energy Commission identifies emerging trends in energy supply,

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demand, conservation, public health and safety, and the maintenance of a healthy economy in the state Energy Action Plan. The plan calls upon the state to reduce congestion and increase the efficient use of fuel supplies. The plan also encourages urban designs that reduce vehicle miles traveled and accommodate pedestrian and bicycle access.

LOCAL

City of Ceres General Plan

The City of Ceres General Plan was adopted in February 1997 and serves as the overall guiding policy document for land use, development, and environmental quality for the City.

Table 4.14-3 analyzes the proposed project’s consistency with applicable City of Ceres General Plan policies related to energy conservation and related goals. While this Draft EIR analyzes the consistency of the proposed Mitchell Ranch Center project with the City of Ceres General Plan pursuant to California Environmental Quality Act (CEQA) Guidelines Section 15125(d), the City of Ceres will ultimately make the determination of the proposed project’s consistency with the General Plan. Environmental impacts associated with inconsistency with General Plan goals and policies are addressed under the appropriate impact discussion sections of this Draft EIR.

**TABLE 4.14-3
PROJECT CONSISTENCY WITH CITY OF CERES GENERAL PLAN POLICIES: GEOLOGY AND SOILS**

General Plan Policy	Consistency with General Plan	Analysis
Policy 4.L.1. The City shall communicate its major development plans with utility companies and coordinate planning of extension of these facilities.	Yes	All utility companies were contacted as part of the Notice of Preparation, and were given copies of this Draft EIR.
Policy 4.L.2. The City shall require undergrounding of utility lines in new development and as areas are redeveloped, except where infeasible for operational or financial reasons.	Yes	All lines within the project site will be undergrounded.
Policy 4.L.3. The City shall promote technological improvements and upgrading of utility services in Ceres.	Yes	The project design includes numerous sustainability features including energy efficient lighting, building materials, and practices as well as the use of ozone-friendly refrigerants.

Mitchell Road Corridor Specific Plan

The Mitchell Road Corridor Specific Plan has no policies pertaining to energy conservation.

IMPACTS AND MITIGATION MEASURES

STANDARDS OF SIGNIFICANCE

Per Appendix F of the California Environmental Quality Act (CEQA) Guidelines, the proposed project would have a significant energy impact if it would result in:

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- Wasteful, inefficient, and unnecessary usage of energy as identified by CEQA Section 21100(b)(3) and CEQA Guidelines 15126.4(a)(1)(c); or
- Placement of a significant demand on regional energy supply or requirement of substantial additional capacity.

METHODOLOGY

Proposed development of additional building space would result in the consumption of additional energy, including electricity, natural gas and other fossil fuels. For the purposes of this analysis, the energy consumption of the proposed project is compared to existing conditions.

PROJECT IMPACTS AND MITIGATION MEASURES

Construction Impacts

Impact 4.14.1 Construction and maintenance of the proposed project could result in wasteful, inefficient, and unnecessary usage of energy. This is considered a **less than significant** impact.

Implementation of the proposed project would involve grading and construction of building pads, roads, structures, and other appurtenant improvements as well as processing improvements. These construction activities would require the use of gasoline, diesel fuel, other fuels, and electricity in order to be completed. Energy usage during construction typically involves the use of motor vehicles both for transportation of workers and equipment but also for direct construction actions such as the use of cranes or lifts. Additional energy usage would occur as power for tools and equipment used on-site; including but not limited to gas generators, air compressors, air handlers and filters, and other typical direct construction energy uses.

Construction of the proposed project would use electricity and gas as a short-term consequence of construction of the project. Gas and electricity will be used to power construction equipment. The proposed project is within the service area of TID and PG&E and services are available to the project site. Gas and other fuel is available in the community through a network of existing private distributorships. The proposed project is similar in nature to other construction activity within the City of Ceres and surrounding area, in that it will use nail guns, compressors, and other conventional construction equipment. The power and energy system is considered adequate to handle the demand during construction. Because of the high cost of fuel, construction activities are not anticipated to result in wasteful, inefficient, and unnecessary use of energy as construction contractors would purchase fuel from local suppliers and would conserve the use of their supplies to minimize the cost of constructing the project. For these reasons this impact is considered **less than significant**.

Mitigation Measures

None required.

Operational Impacts

Impact 4.14.2 Future operation of the project could place a significant demand on regional energy supply possibly requiring substantial additional capacity. This would result in a **less than significant** impact.

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The average annual usage of electricity is roughly 13 kWhr/square foot for all commercial buildings and the average annual usage of natural gas is roughly 37 cubic feet/square foot for commercial buildings (CEC, 2007). Electricity and/or natural gas energy will be used for space heating, cooling and ventilation equipment; water heater; cooking and refrigeration units; interior and exterior lighting of the building and parking lot, and cash register equipment and other miscellaneous fixtures in the stores. Because retail stores have diverse loads, long operating hours and high occupancy in the evenings, providing an accurate estimate of energy use data is rather subjective and very store specific. The current and expected energy use rates are only approximates and are shown in **Table 4.14-4**.

**TABLE 4.14-4
PROJECT ELECTRICITY AND GAS CONSUMPTION**

	Annual Energy ¹
<i>Electric</i>	4,253,977 kilowatt hours (4.25 gigawatt hours)
<i>Gas</i>	12,107,473 cubic feet (0.12 MM therms)

¹ 13 kWhr/square foot x 327,229 square feet of assumed project.
Source: PMC, 2009

According to the applicant, several sustainable features will be incorporated into the proposed Walmart store (Major 1) aimed at the increase in efficiency of energy consumption. A complete description of these energy reduction features can be found in Section 3.0 Project Description of this Draft EIR and Section 4.2, Air Quality (Table 4.12-15). These aspects include:

- Daylighting (skylights/dimming)
- Interior Lighting Retrofit Program
- Night Dimming
- LED Signage Illumination
- Energy efficient HVAC units
- Integrally Colored Concrete Floors
- Central Energy Management
- Recycling
- Water Heating Advances
- Water-Conserving Fixtures
- White Roofs
- Ozone-Friendly Refrigerants
- Non-PVC Roofs
- Food Displays

A complete description of these energy reduction features can be found in Section 3.0 Project Description of this Draft EIR and Section 4.2, Air Quality (Table 4.12-16). The following measures may be included in the non-Walmart portion of the proposed project:

- Access to public transportation.
- Water efficient landscaping with "smart" irrigation systems.
- On-site bicycle storage.
- High efficiency HVAC units with zero (0) use of CFC-based refrigerants.
- High albedo roofing materials.
- Storage and collection points for tenants use for recyclables including glass, plastic and paper products.
- Energy efficient site lighting utilizing cut-off fixtures to minimize light pollution.

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- Construction waste management to divert a minimum of fifty percent (50%) of construction waste from land fill.
- Use of recycled materials where feasible.
- Focus on use of regionally sourced, rapidly renewable and certified wood materials.
- Low-emitting materials finishes.

There is no way to quantify the total energy savings realized as a result of the above project features. Each feature provides an incremental savings over current 'conventional' projects through the use of better technology, but there is no effective method of comparing the energy use of the proposed project to another similar project that does not have any or all of the above features. For this impact, it is sufficient to evaluate whether the proposed project would place a significant demand on the regional energy supply.

According to the *California Energy Demand 2010-2020 Staff Revised Forecast Second Edition*, electricity demand within the TID Planning Area is projected to reach approximately 1,979 gigawatt hours per year by the year 2010 (see **Table 4.14-1**). Therefore, the proposed project would result in a gross electricity demand of approximately 0.214 percent of the projected 2010 annual TID electricity demand. The proposed project would increase natural gas usage by approximately 0.12 MM therms (121,000 therms) annually. This represents approximately 0.0028 percent of the 2010 natural gas demand for PG&E. Based on the small fraction of power the proposed project represents of the TID and PG&E demand the proposed project does not represent a significant demand on regional energy supply or require for substantial additional capacity. Nor would this projected demand result in a need for new systems or supplies or substantial alternations to the existing power or natural gas utilities. The proposed project would result in a very low percentage of the overall combined TID and PG&E planning areas demand and incorporates several energy reduction features into the project design in order to lessen the demand for electricity. The project's impact related to increased energy use is considered **less than significant**.

Mitigation Measures

None required.

Traffic-Related Energy Impacts

Impact 4.14.3 Traffic increases resulting from the proposed project would require relatively substantial amounts of petroleum. This is a **less than significant** impact to energy resources.

In 2000, motor vehicle fuel use accounted for 22 percent of total statewide energy consumption (14.4 billion gallons of fuel). As the proposed project involves several uses, it is expected that some vehicles visiting one of the different features provided by the ten stores of proposed project will also be visiting one (or all) of the other uses. While the traffic study describes the project as resulting in a potential of 13,550 "new" weekday vehicle trips daily to the proposed project (17,650 "new" weekend vehicle trips per weekend day), these trips are not necessarily new but more likely re-routed trips which are currently traveling to other sources of retail/grocery uses in the area and already consuming gasoline. In addition, the proposed project is not likely to produce an increase in population as would a residential development. Other than additional trucks to serve the expanded store, additional vehicles from an increased population is unlikely. In fact, implementation of the proposed project may result in a decrease in gasoline consumption from vehicles emissions due to the availability of retail and grocery shopping at

one location. For example, a vehicle leaving the existing Walmart store in Ceres to visit a grocery store at another location in the City may very well conduct the same needed grocery shopping at the proposed project resulting in a single trip. This additional shopping would not occur creating another vehicle trip to a grocery store off-site, but rather could be accomplished on foot within the same shopping opportunity after parking. As such, the actual increase in "new" vehicle trips resulting from project implementation is most likely much less than projected. Because the traffic associated with the proposed project is already within the market area and consuming gasoline, and the proposed project provides a variety of shopping opportunities enabling a single trip to accomplish visits to multiple retailers and services which reduces the vehicle miles travelled and therefore reduces the amount of gasoline consumed, the project is not considered to result in a wasteful and unnecessary consumption of energy. This impact is considered **less than significant**.

Mitigation Measures

None required.

CUMULATIVE SETTING, IMPACTS, AND MITIGATION MEASURES

CUMULATIVE SETTING

The potential for cumulative impacts to energy resources was assessed based upon consideration of the proposed project in combination with all projects within the TID planning area and PG&E planning area. The proposed project, in combination with other future projects, would result in an increased demand for energy. Both PG&E and TID would need to supply additional energy resources, which could result in the need to expand existing facilities or to build new power plants. Both TID and PG&E offer incentives for energy efficiency beyond the obvious savings in operational costs. TID is also adding renewable energy sources, such as wind and solar power to its existing power generation facilities. Because of new technology such as LED lighting and efficient HVAC equipment, new development will be more energy efficient than current development in the service area. More efficient development will reduce the need to add energy sources to the grid. New development must also determine the source and extent of power usage as part of the environmental process, providing opportunity to review energy intensive uses.

Sources of energy are diverse and widespread. Electricity can be transmitted over long distances, and supply is usually made available from varying and numerous sources. Electricity needed in the region may in fact be generated outside of the state or country. It is not possible to reasonably predict where the new generation facilities would be located, or to evaluate environmental impacts from the construction and operation of these new facilities. However, should new generation facilities be proposed in California, the California Energy Commission conducts a complete environmental review (Public Resources Code section 25541) of proposed power plant projects 50 megawatts and larger before approving them. Smaller projects must also go through environmental review under the oversight of the local jurisdiction in which they are proposed.

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CUMULATIVE IMPACTS AND MITIGATION MEASURES

Cumulative Energy Use Impacts

Impact 4.14.4 The proposed construction and operation of the project in conjunction with existing, approved, and planned development would require a substantial use of energy. This is considered a **less than cumulatively considerable** impact to energy resources.

The construction of the proposed project, as well as construction in other communities and businesses in Ceres and the surrounding region, would depend upon the regional suppliers of energy in the future. The demand for energy at completion of the proposed project construction would not by itself be sufficient to trigger the need for new electric or gas generation facilities. As depicted in **Tables 4.14-1** and **4.14-2**, electricity demand for the TID service area in the year 2018 is forecasted at 2,234 gigawatt hours and natural gas demand for the PG&E service area in the year 2018 is forecasted at 4,358 MM therms (4,358,000,000 therms). The proposed project would result in the annual demand of approximately 0.19 percent of TID's 2018 forecasted electricity demand and 0.0027 percent of PG&E's 2018 forecasted natural gas demand.

Implementation and operation of the proposed project in combination with all planned and approved projects within the TID planning area and PG&E planning could result in a substantial increase on regional electricity or natural gas demand relative to the availability of supply such that impacts would be significant or require for substantial additional capacity. Cumulative development throughout the region is likely to result in the demand for new systems or supplies or substantial alternations to the existing power or natural gas utilities. However, the proposed project is consistent with long range planning in the City of Ceres and the region as a whole, the City has policies that require coordination of new development with both PG&E and TID, and both providers have indicated that they can serve the proposed project. Future projects will undergo similar environmental review and coordination with the service providers to determine the extent of power demand. This continual coordination process, coupled with energy use reduction strategies designed to address greenhouse gas emissions, will ensure that the types of development considered are consistent with the service plans of both PG&E and TID. As this project is consistent with the City's long range plans such as the City's General Plan, and included in both the PG&E and TID service area plans, the project's incremental contribution to cumulative energy impacts would be **less than cumulatively considerable**.

Mitigation Measures

None required.

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