4.13 ENERGY

4.13.1 INTRODUCTION

This section addresses the potential for the Proposed Project to produce energy impacts. Following an overview of the environmental setting in **Section 4.13.2** and the relevant regulatory setting in **Section 4.13.3**, project-related impacts and recommended mitigation measures are presented in **Section 4.13.4** and **Section 4.13.4**, respectively.

4.13.2 ENVIRONMENTAL SETTING

Energy usage is typically quantified using the British Thermal Unit (BTU). As a point of reference, the approximate amount of energy contained in common energy sources are as follows: gasoline, 125,000 BTUs per gallon; natural gas, 100,000 BTUs per therm; electricity, 3,413 BTUs per kilowatt hour (kWh; EMS, 2016).

Total energy usage in California was 7,684 trillion BTUs in 2013, which equates to an average of 200 million BTUs per capita. Of California's total energy usage, the breakdown by sector is 39 percent transportation, 24 percent industrial, 18 percent residential, and 19 percent commercial (EIA, 2016a). Petroleum satisfies 50 percent of California's energy demand, natural gas 36 percent, and retail electricity 13 percent. Coal fuel accounts for less than one percent of California's total energy demand (EIA, 2016b). The other sources are made up of renewable energy sources, including wind power and solar, among other uses. Electric power and natural gas in California are generally consumed by stationary users, whereas petroleum consumption is generally accounted for by transportation-related energy use.

Given the industrial nature of the Proposed Project, the following discussion will focus on three sources of energy that are most relevant to the Proposed Project—namely, electricity, propane, and transportation fuel for vehicle trips generated by the Proposed Project.

Baseline Conditions

Under baseline conditions, which are considered to be the year 2013 when Crystal Geyser Water Company (CGWC) purchased the property, the facilities within the project site are non-operational, with the exception of security lighting. Therefore, under baseline conditions, the energy usage within the project site is conservatively considered zero. It should be noted that although baseline conditions within the project site are set to the year 2013, this section presents information available regarding existing energy resources and regulatory requirements as of the publication of the notice of preparation in June 2016.

Electricity

Electricity supply in California involves a complex grid of power plants and transmission lines located in the Western United States, Canada, and Mexico. In 2015, California electricity was primarily produced from power plants fueled by natural gas (44.0 percent), coal (6.0 percent), large hydro (5.4 percent), nuclear (9.2 percent), and renewable (21.9 percent) (CEC, 2016b). Electricity consumption in California

increased by 6.4 percent from approximately 260,399 gigawatt hours (GWh) in 2000 to approximately 277,140 GWh in 2013, and is forecast to increase as much as 21.6 percent from 2013 to approximately 336,892 GWh in 2025 (CEC, 2014).

Electricity usage for differing land uses varies substantially by the type of uses in a building, the type of construction materials used in a building, and the efficiency of all electricity-consuming devices within a building. Electricity used in California is consumed by the commercial sector (46 percent), residential sector (34 percent), and industrial sector (20 percent; EIA, 2016c).

In 2000–2001, electricity demand exceeded supply on various occasions, which required utilities to institute systematic rotating outages to maintain the stability of the grid and prevent widespread blackouts. In addition, the power shortages were exacerbated by inadequate transmission capacity between Northern and Southern California. Since that time, additional generating capacity has come online and upgrades to various transmission lines are being constructed. According to the California Energy Commission's (CEC's) *2015 Integrated Energy Policy Report*, average annual electricity demand growth from 2012-2024 is expected to range from 0.54 to 1.27 percent (CEC, 2015c).

In an effort to minimize power shortages, the CEC and California Public Utilities Commission (CPUC) have initiated a number of programs to increase supplies and reduce demand for electricity. CEC and CPUC are actively promoting alternative energy sources such as solar, wind, and biomass. In January 2006, the CPUC approved the California Solar Initiative, under which the CEC managed a program of financial incentives, involving cash rebates, for installation of solar electricity systems in existing residential construction between 2007 and 2016 (CEC, 2016c).

In September 2006, the governor signed Assembly Bill (AB) 32, The Global Warming Solutions Act of 2006, which directs the California Environmental Protection Agency (CalEPA) to work with state agencies to implement a cap on greenhouse gas (GHG) emissions (primarily carbon dioxide) from stationary sources such as electric power generation facilities, and industrial, commercial, and waste disposal sectors. Since carbon dioxide emissions are directly proportional to fossil fuel consumption, the cap on emissions is expected to have the incidental effect of forcing a reduction in fossil fuel consumption from these stationary sources.

The CEC's Energy Action Plan II, adopted in 2005, and identifies a number of other initiatives for increasing supply and reducing demand. One example involves the reduction of peak energy demand for the state's water supply infrastructure, which comprises almost 20 percent of the state's electricity consumption (CEC, 2005b).

PacifiCorp

The project site is located within the service area of PacifiCorp for electrical and natural gas services. PacifiCorp would be the service provider for the Proposed Project. PacifiCorp provides natural gas and electric service to approximately 1.8 million people throughout six states in the Western U.S. (PacifiCorp, 2016c). PacifiCorp electricity is generated by many producers as well as PacifiCorp generating plants utilizing hydropower, thermal, and wind. Additionally, PacifiCorp also acquires electricity from customer generation. On average, approximately 20 percent of the electricity PacifiCorp generates is a

combination of renewable and GHG-free resources (PacifiCorp, 2016d). PacifiCorp operates a 169 megawatts (MW) hydroelectric project on the Klamath River which is responsible for almost 15 percent of its hydroelectric generation (PacifiCorp, 2016e). In 2000 the Federal Energy Regulatory Commission relicensing process was initiated, and as a result of a stakeholder process the Klamath Hydroelectric Settlement Agreement (KHSA) was developed. PacifiCorp is currently in compliance with Oregon's Renewable Portfolio Standard (RPS) statute, which requires 15 percent renewables in 2015, 20 percent in 2020, and 25 percent in 2025 (ODOE, 2016).

Propane

In 2014, California consumed 51.5 trillion BTUs. Propane was the second least used fuel type in California in 2014, exceeding only the use of coal (EIA, 2015). Major uses of propane as an energy source include on-site and back-up generators, heating appliances, cooking equipment, and some vehicles. Propane is a by-product of natural gas processing and crude oil refining. Propane engines produce fewer emissions of carbon monoxide and hydrocarbons than gasoline and natural gas (EIA, 2016d). The CEC and United States Department of Energy (USDOE) currently have campaigns to expand the use of propane in transportation fuels in lieu of gasoline, but do not have similar initiatives advocating for propane as a stationary energy source because it is non-renewable (CEC, 2015b).

Transportation Fuel

California is the third highest producer of transportation fuels in the nation, with a crude oil distillation capacity of approximately 1,986,971 barrels per day (EIA, 2015). According to the CEC's *2015 Integrated Energy Policy Report*, gasoline and diesel will continue to be the primary sources of transportation fuel through 2026. Fuel efficiency standards and zero emissions vehicle standards are forecasted to reduce the demand for gasoline in California by 3.7 percent annually (CEC, 2015c).

The average fuel economy for the fleet of light-duty vehicles (autos, pickups, vans, and SUVs) steadily increased from about 14.9 miles per gallon (mpg) in the 1980 to the 24.1 mpg in 2014 (USDOT, 2016). In 2012, the National Highway Traffic Safety Administration (NHTSA) established final passenger car and light truck Corporate Average Fuel Economy (CAFE) standards for model years 2017-2021, requiring a fleet-wide average of 40.2 - 41.0 mpg (USDOT, 2014).

4.13.3 REGULATORY CONTEXT

Federal

Energy Policy Act of 2005

Passed by Congress in July 2005, the Energy Policy Act includes a comprehensive set of provisions to address energy issues. The act includes tax incentives for the following: energy conservation improvements in commercial and residential buildings; fossil fuel production and clean coal facilities; and construction and operation of nuclear power plants, among other things. Subsidies are also included for geothermal, wind energy, and other alternative energy producers. It directs the USDOE to study and report on alternative energy sources such as wave and tidal power, and includes funding for hydrogen research. The act also increases the amount of ethanol required to be blended with gasoline, and

extends daylight saving time (to begin earlier in spring and end later in fall) to reduce lighting requirements. It also requires the federal vehicle fleet to maximize use of alternative fuels. The Act further includes provisions for expediting construction of major energy transmission corridors, such as high-voltage power lines, and fossil fuel transmission pipelines. These are just a few examples of the provisions contained in the act (US Congress, 2005).

Energy Independence and Security Act of 2007

Signed into law in December 2007, this broad energy bill included an increase in auto mileage standards, and also addressed biofuels, conservation measures, and building efficiency. The United States Environmental Protection Agency (USEPA) administers the CAFE program, which determines vehicle manufacturers' compliance with existing fuel economy standards. The bill amended the CAFE standards to mandate significant improvements in fuel efficiency (i.e., average fleet-wide fuel economy of 35 mpg by 2020, versus the previous standard of 27.5 mpg for passenger cars and 22.2 mpg for light trucks) (USEPA, 2007).

Another provision includes a mandate to increase use of ethanol and other renewable fuels by 36 billion gallons by 2022, of which 21 million gallons is to include advanced biofuels, largely cellulosic ethanol, that have 50 to 60 percent lower GHG emissions. The bill also includes establishment of a new energy block grant program for use by local governments in implementing energy-efficiency initiatives, as well as a variety of green building incentives and programs, among other things (USEPA, 2007).

State

Title 24 (California Energy Code)

The California Energy Code (Title 24, Part 6, of the California Code of Regulations [CCR], California's Energy Efficiency Standards for Residential and Nonresidential Buildings), provides energy conservation standards for all new and renovated commercial and residential buildings constructed in California. The provisions of the California Energy Code apply to the building envelope, space-conditioning systems, and water-heating and lighting systems of buildings and appliances; they also give guidance on construction techniques to maximize energy conservation. Minimum efficiency standards are given for a variety of building elements, including appliances; water and space heating and cooling equipment; and insulation for doors, pipes, walls, and ceilings. The CEC adopted the 2016 changes to Building Energy Efficiency Standards, which emphasized lowering the energy demand of buildings through building materials and energy efficient lighting and climate control. The 2016 Title 24 standards require energy savings of 28 percent relative to the previous 2013 Title 24 standards. Compliance with Title 24 standards is verified and enforced through the local building permit process (CEC, 2016d; CEC, 2016e). The 2016 Title 24 standards will go into effect on January 1, 2017.

California Green Building Standards Code

All new construction must adhere to the California Green Building Standards Code (CCR, Title 24, Part 11) in place at the time of construction. As an example, the 2016 Title 24 California Green Building Standards, referred to as CALGreen:

- Sets a water efficiency standards for showers, faucets, and toilets.
- Requires the recycling or salvaging of 65 percent of the non-hazardous construction waste.
- Requires that paint, carpet, vinyl flooring, particle board and other interior finish materials be low-emitting in terms of pollutants.

Senate Bill X1 2

SB X1 2, enacting the California Renewable Energy Resources Act, expands the RPS by establishing a goal of 20 percent of the total electricity sold to retail customers in California per year from renewable sources by December 31, 2013, and 33 percent by December 31, 2020, and in subsequent years. Under the bill, a renewable electrical generation facility is one that uses biomass, solar thermal, photovoltaic, wind, geothermal, fuel cells using renewable fuels, small hydroelectric generation of 30 MW or less, digester gas, municipal solid waste conversion, landfill gas, ocean wave, ocean thermal, or tidal current, and that meets other specified requirements with respect to its location. In addition to the retail sellers covered by SB 107, SB X1 2 adds local publicly owned electric utilities to the RPS. The CPUC has established the quantity of electricity products from eligible renewable energy resources to be procured by retail sellers in order to achieve targets of 20 percent by December 31, 2013; 25 percent by December 31, 2016; and 33 percent by December 31, 2020. The Act also requires that the governing boards for local publicly owned electric utilities establish the same targets, and the governing boards are responsible for ensuring compliance with these targets. The CPUC is responsible for enforcement of the RPS for retail sellers, while the CEC and California Air Resources Board (CARB) will enforce the requirements for local publicly owned electric utilities.

Senate Bill 350

SB 350 codifies the GHG targets for 2030 set by Executive Order (EO) B-30-15. To meet these goals, SB 350 also raises the RPS from 33 percent renewable generation by 2020 to 50 percent renewable generation by December 31 2030.

California Global Warming Solutions Act of 2006

In September 2006, the governor signed AB 32, the Global Warming Solutions Act of 2006, which mandates that California's GHG emissions be reduced to 1990 levels by 2020. The act directs CARB to adopt regulations to achieve the maximum technology feasible and cost-effective GHG emission reductions. Pursuant to AB 32 CARB updates the Climate Change Scoping Plan every five years, which includes a suite of measures to cut GHG emissions. AB 32 is implemented by the Climate Action Team (CAT) which includes 19 different state agencies (CARB, 2014c).

California Environmental Quality Act (CEQA) Guidelines Appendix F

Appendix F of the California Environmental Quality Act (CEQA) Guidelines addresses energy conservation goals, notes that potentially significant energy implications of a project should be considered in an Environmental Impact Report (EIR), and contains general examples of mitigation measures for a project's potentially significant energy impacts. Appendix F provides a framework to analyze potential impacts to local and regional energy supplies and consumption of non-renewable energy.

Local

Siskiyou County General Plan (SCGP)

The County of Siskiyou General Plan Energy Element (1993) includes goals and policies for energy as detailed below:

Goal 1 A diverse, least-cost energy supply portfolio that is in balance with County energy demands; with an ability to accommodate future energy needs in a reliable, affordable, and environmentally-sound manner; and which gives priority to local self-sufficiency.

Policy 1 Proposed energy projects and programs shall be evaluated, in part, by the degree to which they support goal achievement.

Policy 2 The County shall monitor state and regional energy planning processes to identify potential local impacts; and where appropriate, shall participate in such processes to advocate local energy goals and policies.

Policy 3 Citizens, businesses, and affected utilities and agencies shall be provided with opportunities to participate in all phases of County energy planning and decision making.

4.13.4 IMPACTS

Method of Analysis

For the purpose of this analysis, energy consumption from the Proposed Project was evaluated in the context of CEQA Guidelines Appendix F. As discussed in **Section 4.0**, to provide a conservative analysis, this EIR evaluates impacts resulting from all modifications undertaken and proposed by CGWC to operate the proposed bottling facilities; therefore, the energy impacts of construction activities occurring prior to the publication of the Notice of Preparation (NOP) in June 2016, proposed future construction activities, and operation are evaluated below.

Thresholds of Significance

Criteria for determining the significance of impacts associated with energy were developed based on Appendix F of the CEQA Guidelines. CEQA Guidelines Appendix F provides guidance for assessing potential impacts that a project could have on energy supplies, focusing on the goal of conserving energy by ensuring that projects use energy wisely and efficiently. Because Appendix F does not include specific significance criteria, the following thresholds are based on the goals of Appendix F.

An energy impact is considered significant if the Proposed Project would:

- Result in the wasteful, inefficient or unnecessary consumption of energy; or
- Result in a substantial increase in demand upon energy resources in relation to projected supplies or capacity.

CEQA Guidelines Appendix F states that the means of achieving the goal of energy conservation includes the following:

- Decreasing overall per capita energy consumption;
- Decreasing reliance on fossil fuels such as coal, natural gas and oil; and
- Increasing reliance on renewable energy sources.

Project Impacts

IMPACT 4.13-1	RESULT IN THE WASTEFUL, INEFFICIENT OR UNNECESSARY CONSUMPTION OF ENERGY
Significance	Less than Significant
Mitigation Measures	None Required
Significance After Mitigation	Less than Significant

Construction Phase Energy Requirements

Fossil fuels used for construction vehicles and other equipment would be consumed during construction activities and equipment delivery. Fuel consumption during construction would be temporary in nature. The Proposed Project involves modifications to existing facilities and infrastructure within the site, thus construction energy requirements would be much less when compared to new development of a vacant site. Additionally, as a part of the effort to acquire Leadership in Energy and Environmental Design (LEED) certification, the Applicant has implemented or will implement the following measures during construction:

- All metals waste has been recycled in Redding.
- All glass waste has been recycled in Sacramento.
- All concrete removed from the existing floors and exterior structures was recycled for road base locally.
- All wood and cardboard packing materials for shipped equipment was recycled locally.
- All of the old unused insulated metal wall panels were given to Chico area small organic farmers for reuse as cold storage rooms.
- The majority of the construction materials have been and are to be sourced within a 500-mile radius of the project site.
- All wood products used or to be used during construction are to be Sustainable Forest Product certified.

Therefore, construction of the project would not result in the wasteful, inefficient, or unnecessary consumption of energy, and this impact is **less than significant**.

Operational Phase Energy Use

The operational phase would consume energy for multiple purposes including, but not limited to, air molding bottles, pumping groundwater, filling bottles, wastewater treatment plant operations, building heating and cooling, lighting, and product shipments. The Proposed Project's annual energy demand is presented in **Table 4.13-1** below. The following analysis of operational energy use begins with a discussion of on-site energy use and conservation measures, and is followed by a discussion of transportation energy use and conservation.

TABLE 4.13-1
MAXIMUM ANNUAL DEMANDS OF THE PROPOSED PROJECT BOTTLING PLANT OPERATIONS

Type of Energy	Maximum Annual Demand
Electricity	**42,818[1] MWh**
Propane	
Boilers	2,098,766[2] gallons
Generators	1,210,716[3] gallons
HVAC Systems	1,802[4] gallons
Total	**3,302,294 gallons**
Gasoline	**13,412[5] gallons**
Diesel	
Truck Trips	2,385,098[6] gallons
Standby Diesel Generators	2,975 gallons[7]
Total	**2,388,073 gallons**

1 - Calculated based on a demand of 5.6 MWh for full production (2 bottling lines) and 6,760 operational hours per year (based on 6 days of operation per week with 24 hour operations 5 days per week and 10 hours on the weekend).
2 - Based on 91,333 Btu per gallon of propane (EIA, 2016e)
3 - This conservatively presents all demands associated with operation of all three on-site generators and all four on-site boilers, when use of the generators would reduce the demand for electricity
4 - Based on 4 units at 65 MBH, 2 hours a day, 160 days per year
5 - Based on the NHTSA passenger car and light truck CAFE standards for model years 2017-2021 (USDOT, 2014); Annual gasoline use in gallons/year = (1,720 miles/day)*(312 day/year)* (0.025 gallons/mile)
6 - Based on NACFE 2014 Annual Fleet Study Report business-as-usual 6.1 MPG Annual diesel use in gallons/year = (47,778 miles/day)*(312 days/year)*(0.16 gallons/mile)
7 - Based on the fire pump fuel throughput of 8.2 gallons per hour at 200 hours per year, and a back-up generator through put of 26.7 gallons an hour at 50 hours per year (**Appendix E**; Kohler Power Systems, 2015).
Note this table is calculated based on 6 days a week of 24 hour operations.

Bottling Plant Energy Use

As discussed in **Section 3.5.10** and shown in **Table 4.13-1**, the Proposed Project would require the use of up to 42,818 megawatt hours (MWh) of electricity and up to 3,302,294 gallons of propane (for boilers and generators) annually for operation of the bottling plant and ancillary facilities. This includes but is not limited to energy usage for the domestic well, production well, bottling lines, computer systems, light fixtures, Heating Ventilation and Air-Conditioning (HVAC) systems, pH neutralization system, and security/caretaker residence (energy demands of the various wastewater treatment options are discussed in the next subsection).

As part of the modifications completed in support of the Proposed Project, the Plant has been renovated in accordance with the California Green Building Standards Code. In addition, CGWC is pursuing LEED certification from the United States Green Building Council, which requires implementation of measures to reduce energy consumption (USGBC, 2016). In pursuing LEED, the following steps have been or will be taken to achieve energy efficiency and savings:

- All interior and exterior light fixtures throughout the plant have been or will be changed to light-emitting diode (LED) fixtures prior to operation of the plant;
- Water fixtures throughout the Plant were retrofitted with low-flow fixtures;
- Rooms with exterior windows have been equipped with sensors to harvest daylight and reduce lighting loads;
- Frequency drives were installed on motors (reduces energy demand);
- Former HVAC equipment was changed to meet new California Green Building Standards and fitted with MERV 13 filters to meet LEED standards for occupant comfort and air quality; and
- Cooling Towers are High Efficiency "Dolphin" type which do not need anti scaling chemicals and have lower water use than conventional towers (Harris, 2016).

The Proposed Project has taken steps towards minimizing energy consumption beyond standard regulatory requirements through the measures listed above. Therefore, the Proposed Project would not result in the wasteful, inefficient, or unnecessary consumption of energy associated with plant operations, and this impact is **less than significant**. Additionally, mitigation measures have been recommended in other issue area sections of this EIR that would further reduce the energy demands of the Proposed Project. These mitigation measures are listed in **Section 4.13.5**.

Wastewater Treatment Energy Use

As described in **Section 3.5.8**, there are four options under consideration for wastewater treatment. The energy demands associated with Options 1, 2, and 4 under full buildout (two bottling lines) are shown in **Table 4.13-2**. The energy demands of Option 3 have not been quantified as this is an interim option that could only be utilized in the initial phase of the project prior to production of juice and tea beverage products. The energy requirements of this option would be significantly less than the other options as all industrial process and rinse wastewater flows would be send to the on-site leach field, which provides passive treatment through percolation of wastewater through soil that has minimal energy requirements.

TABLE 4.13-2
MAXIMUM ANNUAL DEMANDS OF THE PROPOSED PROJECT WASTEWATER TREATMENT OPTIONS

Wastewater Treatment Option[1]	Maximum Annual Electricity Demand
Options 1 and 2	146.7 MWh[1]
Option 4	281.7 MWh[2.]

Notes:
1. PACE Engineering, 2016b.
2. Assumes on-site WWTS has a demand of 0.0375 MWh for full production (2 bottling lines) and 7,512 operational hours per year (based on 24 hour operations 6 days per week) (Weklych, 2016c).

The project has incorporated a number of measures to reduce its wastewater generation and associated energy requirements, including dry aseptic bottle air rinse system, use of low flow fixtures, and high efficiency, "Dolphin" type cooling towers. With these project components, the Proposed Project would not result in the wasteful, inefficient, or unnecessary consumption of energy associated with wastewater treatment, and this impact is **less than significant**.

Transportation Energy Use

The total estimated vehicle miles traveled (VMT) for the Proposed Project is 15,443,345 miles annually (**Appendix M**); approximately 536,484 of these miles would be traveled by employees using gasoline automobiles resulting in consumption of an estimated 13,412 gallons of gasoline annually, and 14,906,860 of these miles would be traveled by delivery vehicles and wastewater haul trucks resulting in consumption of 2,385,098 gallons of diesel annually. This estimate is conservative as it is anticipated that both truck and automobile fleets will become increasingly more fuel efficient over the life of the project, as fuel standards improve and older vehicles are phased out. Almost all bottled water produced from the Proposed Project would be shipped and sold within the Western United States (CGWC, 2016). As discussed in **Section 3.5.1**, the Proposed Project will inflate plastic bottle preforms on site, which will reduce the number of truck trips required to transport bottles to the site. In addition, showers have been installed at the Plant to encourage walking or biking to work. These measures will reduce vehicles miles traveled and thus transportation fuel consumption associated with plant operations. Therefore, the Proposed Project would not result in the wasteful, inefficient, or unnecessary consumption of transportation fuel energy resources, and this impact is **less than significant**.

Cumulative Impacts

IMPACT 4.13-2	RESULT IN SUBSTANTIAL INCREASED DEMAND ON ENERGY RESOURCES IN RELATION TO PROJECTED SUPPLIES OR CAPACITY
Significance	Less than Significant
Mitigation Measures	None Required
Significance After Mitigation	Less than Significant

Total consumption of energy in the state of California for electricity, propane, and transportation fuel is described in **Section 4.13.2**. The estimated consumption of electricity, propane, and transportation fuel as a result of implementation of the Proposed Project is shown in **Table 4.13-1**. Specific impacts to local service from the electricity demands are discussed further in **Section 4.12.3**. As described therein, with the existing capacity of PacifiCorp (3.2 MW) and the inclusion of the generators as part of the Proposed Project (1.1 MW), no off-site electrical utilities improvements are required to meet the initial demands of the Plant during the initial phase (4.2 MW). In order to meet the demands of full production, the Proposed Project would require approximately 1.5 MW of additional power supplies. This additional power supply would be provided by PacifiCorp through the development and operation of the proposed Lassen Substation Project, described in **Section 3.7**, which would result in additional power to meet current and future projected demand of the service area, including the Proposed Project. Therefore, the electricity

demand for the Proposed Project would be adequately met from projected local supply provided by PacifiCorp. Because the PacifiCorp has a diverse supply of electricity, including from renewable sources as required by Oregon's RPS, and given the relatively minor demands of the Proposed Project in relation to statewide demands, the Proposed Project would not exceed PacifiCorp projected supplies.

As described in **Section 3.5.1**, the Proposed Project would include blow molding of polyethylene terephthalate (PET) plastic bottles from purchased preforms, which would increase the amount of bottling material per truck delivered to the site, and thereby reducing the amount of truck trips and transportation fuel consumption compared to bottling plants that do not utilize preforms. The resulting demand for transportation fuel would be minimal when considered in relation to State of California supply and demand discussed above. It is expected that gasoline consumption in the State will decrease in the future largely due to efficiency gains, competing fuel technologies, and mandated increases of alternative fuel use. As a consequence of improved vehicle efficiency, California should experience a continuing decline in gasoline consumption (CEC, 2016f). Project-related demand for transportation fuel would not be substantial in relation to the State's available gasoline supplies.

Therefore, the increase in demand for energy resources resulting from the Proposed Project in relation to projected supplies and capacity would be **less-than-significant**. Additionally, mitigation measures have been recommended in other issue area sections of this EIR that would further reduce the energy demands of the Proposed Project. These mitigation measures are listed in **Section 4.13.5**.

4.13.5 MITIGATION MEASURES

Appendix F Mitigation Measure Considerations

CEQA Guidelines Appendix F lists options for mitigation measures that would reduce the energy impacts of a project. The mitigation categories are listed below followed by a discussion of whether or not the measures have been incorporated into the Proposed Project, recommended as mitigation, or dismissed and the reasons why.

1. **Potential measures to reduce wasteful, inefficient, and unnecessary consumption of energy during construction, operation, maintenance and/or removal. The discussion should explain why certain measures were incorporated in the project and why other measures were dismissed.**

   CGWC has renovated the Plant in accordance with the California Green Building Standards Code and is pursuing LEED certification from the United States Green Building Council, which requires implementation of measures to reduce energy consumption. Specific steps that have been or will be taken to reduce energy consumption during both construction and operation are described above under **Impact 4.13-1** and are part of the Proposed Project. These measures would reduce energy consumption of the Proposed Project beyond standard regulatory requirements, avoiding the potential for wasteful, inefficient, and unnecessary consumption of energy.

2. The potential of siting, orientation, and design to minimize energy consumption, including transportation energy, increase water conservation and reduce solid waste.

As the Plant building is an existing facility, siting and orientation considerations could not be taken into account. However, the Plant has been retrofitted to include various measures for energy efficiency, as described in **Impact 4.13-1**. The Proposed Project would inflate plastic bottle preforms on-site, reducing the VMT and number of truck trips required to transport bottles to the site. Additionally, the Proposed Project includes the use of a new, dry aseptic bottle air rinse system that will significantly reduce water used in manufacturing. Further, measures to reduce its wastewater generation, including dry aseptic bottle air rinse system and high efficiency, "Dolphin" type cooling towers, would reduce the Proposed Project's water consumption. **Mitigation Measure 4.12-2** (described below under heading of ***Energy Mitigation Measures Recommended in this EIR***) also requires that CGWC commit to recycling at least 75 percent of employee and process solid waste through the implementation of various measures as described in **Section 4.12.2.4**. Each of these measures have been incorporated into project design or included as mitigation and would reduce energy consumption for the Proposed Project.

3. The potential for reducing peak energy demand.

As discussed under **Impact 4.13-1** and Appendix F Mitigation Measure Consideration 1 above, CGWC has renovated the Plant in accordance with the California Green Building Standards Code and is pursuing LEED certification, which requires implementation of measures to reduce energy consumption. Additionally, Plant operations are planned for 24 hours per day, which would help reduce peak hour demands through the distribution of energy demand throughout the day, including during nighttime hours while overall energy demand is typically lower.

4. Alternate fuels (particularly renewable ones) or energy systems.

As described in below (under heading of ***Energy Mitigation Measures Recommended in this EIR***), the installation of solar arrays on the rooftop of the existing warehouse and/or within the disturbed areas of the project site has been recommended as an optional measure to reduce GHG emissions associated with the Proposed Project. Depending on the final size and configuration, installation of the solar array may result in significant environmental impacts, which are discussed in further detail in **Section 5.1.3**.

In addition to solar, wind was also considered as a source of alternative energy. In order to provide approximately 10 percent of the Proposed Project's hourly energy demand, accounting for a capacity factor of 25 percent due to varying wind speeds, a 2 MW wind turbine would need to be installed on the project site. Wind turbines of this capacity are typically around 400 feet in height (National Wind Watch, 2016). Installation of a 400-foot wind turbine on the project site would lead to significant unavoidable environmental impacts associated with aesthetics, as the turbine would interfere with the surrounding area's views of the Cascade Mountain Range, including Mt. Shasta and Mt. Shastina. Additionally, wind turbines can lead to significant unavoidable impacts on migratory birds and other birds of prey that may fly into the blades as

they are operating. For these reasons, the installation of a wind turbine on the project site as mitigation to reduce energy consumption was dismissed and is not discussed further.

5. Energy conservation which could result from recycling efforts.

As part of the Proposed Project, CGWC is pursuing LEED certification. As discussed under **Impact 4.13-1**, as part of this effort, metals, glass, concrete, wood, and cardboard waste generated during construction activities have been or will be recycled at facilities in the region. Additionally, **Mitigation Measure 4.12-2** requires CGWC commit to recycling at least 75 percent of solid waste generated on-site and not being utilized in commercial products. This would be accomplished through the implementation of various measures described in **Section 4.12.2.4**. Recycling efforts implemented during both construction and operation would reduce the Proposed Project's energy consumption.

Energy Mitigation Measures Recommended in this EIR

MM 4.6-1 Reduce GHG Emissions below Numerical Threshold

CGWC shall implement a combination of the following measures to achieve a net reduction of 25,486 metric tons (MT) of CO_2e annually.

a) Install solar arrays on the rooftop of the existing warehouse and/or within the disturbed areas of the project site to off-set energy demands and the use of on-site generators. Utilizing approximately 7.5 acres of disturbed land within the central portion of the project site to the south, east and north of the Plant building, approximately 3,876 solar frames could achieve a capacity of 4,048 MWh annually (which is approximately 10 percent of the annual energy demands of the project) (REC Solar, 2015). The proposed configuration and specifications of the on-site solar array shall be provided to the County for review and verification. The plans shall identify the capacity of the solar array, and the expected annual yield of MWh. This measure would provide a reduction of 0.868 MT of CO_2e per MWh of solar energy generated annually. Assuming 10 percent of the facilities energy demands would be met through on-site solar as described above, this measures would provide a reduction of 3,515 MT of CO_2e annually.

b) Establish and administer a carpool or rideshare program. This shall include a shift scheduling program that allows interested parties to work similar work schedules to promote ride-sharing. This measure would provide a reduction of 1.11 MT of CO_2e per participant annually.

c) Prior to the County's issuance of building permits and the operation of the Plant, CGWC shall purchase 25,486 CO_2e offset credits from a carbon registry, where reductions are real, permanent and have been quantified. The emissions reduction credits may be purchased from the Climate Action Reserve, the Verified Carbon Standard, the American Carbon Registry, or an equivalent carbon emissions reduction credit trading market, which has the same or more stringent standards for carbon sequestration projects which reduce atmospheric GHGs or direct GHG

emissions reductions achieved by existing GHG emitters. The CO_2e emission reduction credits must be permanently retired through the registry. The retirement of the credit ensures that it is not re-sold and that the designated off-set project remains in operation for the lifetime of the Proposed Project; thereby reducing annual GHG emissions as enforced by the carbon registry. The amount of credits may be reduced through the implementation of on-site measures described above. The reductions achieved through these measures shall be verified by the County through a review of the implementation program.

MM 4.6-2 Additional Measures to Reduce GHG Emissions

CGWC shall implement the following best management practices to further reduce the GHG emissions of the Proposed Project:

a) Power from the PacificCorp distribution grid shall be utilized when available. This measure would minimize the use of higher emitting on-site propane generators.

b) Trucks and vehicles in loading or unloading queues shall have their engines turned off when not in use. Permanent signage shall be posted at loading docks informing truck drivers of CARB's commercial vehicle idling regulations. This regulation limits vehicles with a gross vehicle weight rating of 10,000 lbs. or greater to idle no more than 5 minutes. Fines are currently a minimum of $300 and can be as much as $1000 per day.

c) All equipment shall be turned off when not in use. Engine idling of all equipment shall be minimized. All equipment engines shall be maintained in good operating condition and in tune per manufacturers' specifications.

d) Participate in the USEPA's voluntary SmartWay program to assist in establishing green freight initiatives.

MM 4.12-2 Recycle Employee and Process Waste

CGWC shall recycle at least 75 percent of solid waste generated on site and not being utilized in commercial products (approximately 9 cubic yards per week). This recycling rate will be encouraged with recycling measures that may include, but would not limited to:

a) place recycling bins in areas of high employee traffic (e.g. lunch room) alongside instructional signs describing the type of waste that should be recycled;

b) place appropriately sized recycling receptacles near unloading and unpacking areas where high volumes of process recyclables are generated;

c) regularly empty the all recycling bins so that recyclables are not diverted into the solid waste stream; and

d) provide information on both employee and process recycling as part of employee training and orientation.