# 5.17 ELECTRICITY AND NATURAL GAS

This section addresses the potential impacts of the proposed project with regard to electricity and natural gas consumption. The analysis identifies the utilities that provide electricity and natural gas services to the City, describes the existing consumption of electricity and natural gas, indicates the nature and location of related infrastructure in the local area, and estimates the electricity demands of the proposed project.

## 5.17.1 REGULATORY SETTING

### FEDERAL

State and Federal governments extensively regulate corporate utilities. The Federal government has limited power to regulate municipal utilities. Municipal utilities are parties to certain contracts that must be filed with the Federal Energy Regulatory Commission (FERC).

### STATE

The California Public Utilities Commission (CPUC) regulates privately owned electric, natural gas, telecommunications, water, railroad, rail transit, and passenger transportation companies. Assembly Bill 1890, enacted in 1996, deregulated the power generation industry, allowing customers to purchase electricity on the open market. Under deregulation, the production and distribution of power that was under the control of investor-owned utilities was decoupled. Deregulation allowed other providers the ability to supply electricity to consumers.

The California Energy Commission is California's primary energy policy and planning agency. The Energy Commission is required to create and periodically update *Building Energy Efficiency Standards* for the State. The Standards address newly constructed buildings and additions and alterations to existing buildings. The *2008 Building Energy Efficiency Standards for Residential and Nonresidential Buildings* went into effect January 1, 2010. The 2013 Standards will go into effect on January 1, 2014 following approval of the California Building Standards Commission. The energy building regulations are contained in Title 2, Part 6 of the *California Code of Regulations*.

The *Green Building Standards Code* first published in July 2008 and updated for publication in 2010, codifies voluntary "reach" standards for energy efficiency, as compared with the mandatory Standards, for newly constructed residential and nonresidential buildings. The Green Building Standards Code established tiered energy performance levels of 15 percent and 30 percent more stringent than the mandatory 2008 Standards. Local jurisdictions may adopt the *Green Building Standards Code* as mandatory at the local level.

### LOCAL

Duarte Municipal Code Chapter 19.52, Sustainable Development Practices, are established to encourage conservation of natural resources, increased energy efficiency, and use of sustainable practices in the development process, and to implement State laws regarding reduction in greenhouse gas emissions, water conservation, and other resource conservation directives. All new construction in the City is required to apply sustainable development practices as identified in Chapter 19.52. Prior to implementing the standards, the level of

development (project size) and the corresponding required sustainable development practices must be identified and incorporated into the project design and building plans.

## 5.17.2 ENVIRONMENTAL SETTING

The project site is currently developed with a mix of industrial uses. The 19.08-acre site is comprised of three parcels, each containing a single building on-site. The three buildings are served by existing infrastructure, including electricity and natural gas.

### ELECTRICITY

### Electrical Supply

Southern California Edison (SCE) currently provides electricity service in the City of Duarte, including the project site. SCE provides electricity to approximately 13 million people within 430 cities and communities through its 50,000 square miles of service area.[1] SCE provides electricity to its users through the operation and maintenance of transmission and distribution infrastructure. According to the California Energy Commission (CEC), SCE is projected to deliver 105,527 gigawatt-hours (GWh) to its customers during 2013.[2] By 2020, SCE's demand is expected to increase to 114,872 GWh.

SCE obtains its electricity from a variety of sources, including natural gas, nuclear, renewables (solar, wind) and hydroelectric plants throughout the Western United States.

SCE facilities have included hydropower and nuclear power facilities and one coal-powered facility: the Big Creek Hydroelectric Plant, the San Onofre Nuclear Generating Station, and the Mojave Generating Station. The San Onofre nuclear plant has been permanently retired, requiring SCE to increase the ability to import power as well as stabilize and protect the existing grid. Various transmission projects have been completed, or are currently under construction in order to meet electrical demand.[3]

SCE currently has existing facilities throughout the City of Duarte, including within the project area. Electricity service is provided through SCE's 12 kilovolt (KV) electrical system via overhead and underground facilities. In 2010, SCE added a new circuit to the Duarte Substation that serves the City of Duarte and portions of Monrovia. The new circuit provides load relief and improved switching capabilities to the City of Duarte. The upgrades include the installation of 23 underground structures, two miles of underground cable, and several miles of new and reconditioned overhead lines.[4]

[1] City of Duarte, *Utilities,* 2013, http://www.accessduarte.com/?option=com_content&view=article&id=91&Itemid=134, accessed July 26, 2013.

[2] Kavalec, Chris and Tom Gorin. 2009. *California Energy Demand 2010-2020, Staff Draft Forecast,* California Energy Commission. CEC-200-2009-012SD, http://www.energy.ca.gov/ 2009publications/CEC-200-2009-012/CEC-200-2009-012-SD.PDF, accessed July 26, 2013.

[3] Southern California Edison, *Preparing for a California Summer*, https://www.sce.com/wps/wcm/connect/9aa08bc2-dea6-4b74-915d-28a488b960ec/SummerReadiness06072013.pdf?MOD=AJPERES, accessed August 1, 2013.

[4] Southern California Edison, *Southern California Edison Upgrades Duarte Distribution Substation to Enhance Reliability in the Region, 2010,* http://www.edison.com/files/090710_news2.pdf, accessed July 29, 2013.

*Table 5.17-1*, *Existing Estimated Electricity Demand*, provides an estimate of the electricity demand currently generated by existing uses within the Specific Plan Area. As indicated in *Table 5.17-1*, electricity demand for existing uses within the Specific Plan Area is estimated to be 3.1 million kilowatt-hours per year.

**Table 5.17-1**
**Existing Estimated Electricity Demand**

| Land Use | Building Area | Consumption Factor[1] | Electricity Demand (kWh/year) |
|---|---|---|---|
| Industrial | 313,955 SF | 9.83 kWh/SF/year | 3,086,177 |
| **Total** | | | **3,086,177** |

1. Consumption factor obtained from California Emissions Estimator Model (CalEEMod), 2011.
kWh = kilowatt-hour SF = square feet

## NATURAL GAS

The City of Duarte, including the project site, receives gas service from the Southern California Gas Company (SCGC). SCGC is the nation's largest natural gas distribution utility, providing energy to 20.9 million consumers through 5.8 million meters in more than 500 communities across the United States.[5]

The City of Duarte lies entirely within the SCGC utility service territory. SCGC facilities located within the City of Duarte include medium pressure mains (pipelines) that feed from high pressure lines through pressure regulating stations. Medium pressure mains and services in the public streets feed private residents and business. The majority of public streets in the City have existing steel or plastic medium pressure distribution mains that feed individual service lines. Gas consumption of private residents and businesses are considered proprietary.

*Table 5.17-2*, *Existing Estimated Natural Gas Demand*, provides an estimate of the natural gas demand currently generated by existing uses within the Specific Plan Area. As indicated in Table 5.17-2, natural gas demand for existing uses within the Specific Plan Area is estimated to be 5.9 million cubic feet per year.

**Table 5.17-2**
**Existing Estimated Natural Gas Demand**

| Land Use | Building Area | Consumption Factor | Natural Gas Demand (cf/year) |
|---|---|---|---|
| Industrial | 313,955 SF | 18.81 cf/sf/year | 5,905,494 |
| **Total** | | | **5,905,494 cf/year** |

Source: Consumption factors obtained from California Emissions Estimator Model (CalEEMod), 2011.
cf = cubic feet sf = square feet du = dwelling unit yr = year

[5] Southern California Gas Company, *Company Profile*, 2013, http://www.socalgas.com/about-us/company-info.shtml, accessed July 26 2013.

## 5.17.3 SIGNIFICANCE THRESHOLD CRITERIA

The issues presented in the Initial Study Environmental Checklist (Appendix G of the *CEQA Guidelines*) have been utilized as thresholds of significance in this Section. Accordingly, a project may create a significant environmental impact if it causes one or more of the following to occur:

- The project would create demands on electricity or natural gas supply and/or infrastructure which exceed the capacity of the utility serving the project area.

Based on these significance thresholds and criteria, the proposed project's effects have been categorized as either "no impact," a "less than significant impact," or a "potentially significant impact." Mitigation measures are recommended for potentially significant impacts. If a potentially significant impact cannot be reduced to a less than significant level through the application of mitigation, it is categorized as a significant unavoidable impact.

## 5.17.4 PROJECT IMPACTS AND MITIGATION MEASURES

### ELECTRICITY

■ **IMPLEMENTATION OF THE PROPOSED PROJECT COULD INCREASE THE DEMAND FOR ELECTRICAL SERVICE OR COULD REQUIRE THE EXPANSION OF EXISTING FACILITIES.**

**Impact Analysis:** Implementation of the proposed project would result in an increase in demand for electrical power and service to the Specific Plan Area. *Table 5.17-3, Estimated Net Change in Electricity Consumption*, estimates the potential net change in electricity consumption associated with implementation of the proposed project.

**Table 5.17-3**
**Estimated Net Change in Electricity Consumption**

| Land Use | Building Area | Consumption Factor | Electricity Demand (kWh/year) |
|---|---|---|---|
| Residential | 475 DU | 3,437.8 kWh/du/year | 1,632,955 |
| Hotel | 250 Rooms | 12,342 kWh/hotel room/year | 3,085,500 |
| Office | 400,000 SF | 14.53 kWh/sf/year | 5,812,000 |
| Retail | 12,000 SF | 15.17 kWh/sf/year | 182,040 |
| *Proposed Project Demand* | | | *10,712,495* |
| *Existing Demand* | | | *-3,086,177* |
| **Net Change** | | | **7,626,318** |
| Source: Consumption factors obtained from California Emissions Estimator Model (CalEEMod), 2011. | | | |
| kWh = kilowatt-hour sf = square feet du = dwelling unit | | | |

As indicated in *Table 5.17-3*, the proposed project could consume an additional 7.6 million kWh of electricity per year when compared to existing conditions. According to the California Energy Demand 2010-2020 Adopted Forecast (CEC-200-2009-012-CMF) it is anticipated that by 2020, electricity demand for the SCE Planning Area would be 112,964 gigawatt hours (GWh) and SCE is forecasted to provide a net energy load of 114,872 GWh to its customers.[6] It should be noted that electricity demand provided by the CEC is for year 2020, as 2030 projections are not currently available. However, the 7.63 GWh electricity demand associated with the proposed project represents 0.00007 percent of the quantity of energy that SCE is estimated to supply in 2020. Thus, sufficient supplies are anticipated to be available to serve development associated with the proposed project. Future development projects within the Specific Plan Area would be required to provide a load schedule as part of the project submittal to determine more accurately the each individual project's electrical demand.

The proposed project includes a Specific Plan for mixed-use transit-oriented development with residential, office, and hotel uses on an existing 19.08-acre industrial area in the City. Although the project area is primarily urbanized and currently served by infrastructure providing electricity to existing uses, the location of SCE facilities may create the need for transmission and/or service infrastructure to be relocated prior to site excavation and project construction. SCE would update existing facilities or add new facilities in the City based upon specific requests for service from end users. Financial responsibility for any updates or additional facilities would be in accordance with SCE's rules and tariffs. All new development that requires new electricity lines to be installed would be required to pay applicable fees assessed by SCE to extend electricity lines to serve the specific project site. SCE would not provide service to new development if there were not adequate electricity supplies and infrastructure to maintain existing service levels and meet the anticipated electricity demands of the specific development requesting service. Individual development projects would be required to coordinate with SCE to ensure conflicts are reduced and that service interruptions would be minimized. Impacts would be less than significant in this regard.

**Mitigation Measures:** No mitigation measures are required.

**Level of Significance:** Less Than Significant Impact.

## NATURAL GAS

■ **IMPLEMENTATION OF THE PROPOSED PROJECT COULD INCREASE THE DEMAND FOR NATURAL GAS OR COULD REQUIRE THE EXPANSION OF EXISTING FACILITIES.**

**Impact Analysis:** Implementation of the proposed project would result in a net increase in demand for natural gas service to the Specific Plan Area. *Table 5.17-4*, *Estimated Net Change in Natural Gas Consumption*, estimates the potential net change in natural gas associated with implementation of the proposed project.

[6] Kavalec, Chris and Tom Gorin. 2009. *California Energy Demand 2010-2020, Staff Draft Forecast,* California Energy Commission. CEC-200-2009-012SD, http://www.energy.ca.gov/2009publications/CEC-200-2009-012/CEC-200-2009-012-SD.PDF, accessed July 26, 2013.

**Table 5.17-4**
**Estimated Increase in Natural Gas Consumption**

| Land Use | Building Area | Consumption Factor | Natural Gas Demand (cf/year) |
|---|---|---|---|
| Residential | 475 DU | 13,263 cf/du/year | 6,299,840 |
| Hotel | 250 Rooms | 36,329 cf/hotel room/year | 9,082,250 |
| Office | 400,000 SF | 10.93 cf/sf/year | 4,372,000 |
| Retail | 12,000 SF | 1.7 cf/sf/year | 20,400 |
| *Proposed Project Demand* | | | 19,774,490 |
| *Existing Demand* | | | -5,905,494 |
| **Net Change** | | | **13,868,996 cf/year** |

Source: Consumption factors obtained from California Emissions Estimator Model (CalEEMod), 2011.
cf = cubic feet sf = square feet kcf = thousand cubic feet du = dwelling unit yr = year
* In order to provide a conservative analysis a retail consumption factor was used for Public Uses.

As indicated in *Table 5.17-4*, the proposed project could consume an additional 13.9 million cf of natural gas per year when compared to existing conditions.

According to the CEC, SCGC customers within the SCGC planning area demanded roughly 746 billion cubic feet (b.c.f.) of natural gas during 2011[7], and by 2020, it is anticipated that annual natural gas demand to SCGC customers would increase to 782.9 b.c.f. per year.[8] The 13,868,996 cf increase in natural gas demand associated with the proposed project represents 0.000002 percent of the quantity of natural gas that SCGC is estimated to supply in the year 2020. Thus, sufficient supplies are anticipated to be available to serve natural gas demand associated with the proposed project.

The proposed project includes a Specific Plan for mixed-use transit-oriented development with residential, office, and hotel uses on an existing 19.08-acre industrial area in the City. The project site is located within an urbanized area of the City currently served by SCGC through existing natural gas infrastructure. Any future development within the Specific Plan Area that requires new infrastructure/gas main extensions would be required to pay any applicable fees assessed by SCGC necessary to accommodate the specific project.

Natural gas service provided would be required to comply with all policies and extension rules of SCGC when contractual arrangements are made with the development applicant. SCGC would not allow new development projects to connect to existing gas mains unless the system could maintain adequate service and supply to existing customers and meet the anticipated demands of the project requesting service. Individual development projects would be analyzed to identify project-specific impacts to utility infrastructure on a project-by-project basis. Individual development projects would coordinate with SCGC to ensure conflicts are reduced and that service interruptions would be minimized. Impacts would be less than significant in this regard.

[7] California Energy Commission, *Gas Consumption by Planning Area*, 2011, http://www.ecdms.energy.ca.gov/gasbyplan.aspx, accessed July 29, 2013.
[8] Kavalec, Chris and Tom Gorin. 2009. *California Energy Demand 2010-2020, Staff Draft Forecast,* California Energy Commission. CEC-200-2009-012SD, http://www.energy.ca.gov/2009publications/CEC-200-2009-012/CEC-200-2009-012-SD.PDF, accessed July 26, 2013.

**Mitigation Measures:** No mitigation measures are required.

**Level of Significance:** Less Than Significant Impact.

## 5.17.5 CUMULATIVE IMPACTS AND MITIGATION MEASURES

■ **IMPLEMENTATION OF THE PROPOSED PROJECT AND OTHER RELATED CUMULATIVE PROJECTS COULD RESULT IN CUMULATIVELY CONSIDERABLE IMPACTS RELATED TO ELECTRICAL AND/OR NATURAL GAS SERVICES AND FACILITIES.**

### Impact Analysis:

#### Electricity

Electrical loads associated with the proposed project and related cumulative projects would increase the demand for electricity service beyond existing conditions. All electrical lines and other system improvements would be installed, in whole or in part, at the expense of development project applicants, and would serve to avoid adverse impacts to the electricity distribution system. Although the proposed project and related cumulative projects would create additional demands on electricity supplies and distribution infrastructure, these demands are within the parameters of projected load growth and the service capabilities of SCE. Individual projects would be reviewed on a project-by-project basis to ensure adequate facilities are in place to serve the proposed development. Thus, cumulative impacts would be less than significant.

#### Natural Gas

Implementation of the proposed project and related cumulative projects would result in increased natural gas demand. It is anticipated that SCGC has sufficient capacity and the necessary infrastructure to serve development associated with the proposed project. Therefore, the proposed project and related cumulative projects would not result in cumulatively considerable impacts on natural gas service. Although development of the proposed project and related cumulative projects would result in additional demand for natural gas, that demand would be within existing capacity. Where necessary, natural gas distribution pipelines would be installed or upsized to serve development associated with related cumulative projects at the expense of the project applicants. Thus, cumulative impacts would be less than significant.

**Mitigation Measures:** No mitigation measures are required.

**Level of Significance:** Less Than Significant Impact.

## 5.17.6 SIGNIFICANT UNAVOIDABLE IMPACTS

Implementation of the proposed project would result in less than significant project and cumulative impacts related to electricity and natural gas supply and facilities. As such, no significant unavoidable impacts would result from implementation of the Duarte Station Specific Plan.

## 5.17.7 SOURCES CITED

California Energy Commission, *Gas Consumption by Planning Area*, 2011, http://www.ecdms.energy.ca.gov/gasbyplan.aspx, accessed July 29, 2013.

City of Duarte, *Utilities,* 2013, http://www.accessduarte.com/?option=com_content&view=article&id=91&Itemid=134, accessed July 26, 2013.

Kavalec, Chris and Tom Gorin, 2009. California Energy Demand 2010-2020, Staff Draft Forecast, California Energy Commission. CEC-200-2009-012SD, http://www.energy.ca.gov/2009publications/CEC-200-2009-012/CEC-200-2009-012-SD.PDF, accessed July 26, 2013.

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