

IV. Environmental Impact Analysis

K.5 Utilities—Natural Gas

1. Introduction

The following section is based on the *Convention and Event Center Project Natural Gas System Technical Report* prepared by KPFF Consulting Engineers (2012) for the Convention and Event Center Environmental Impact Report. The full text of the report is included as Technical Appendix Z to this Draft EIR.

The natural gas analysis focuses upon the relationship between supply and demand. In general, the supply side involves both the availability of natural gas and the ability to convey natural gas to the Project Site. The demand side involves the incremental demand generated by the Proposed Project.

Natural gas is a combustible mixture of simple hydrocarbon compounds. It is used as a fuel source and is therefore a consumption item. Natural gas consumed in California is obtained from naturally occurring reservoirs, primarily located outside the State, and delivered via high-pressure transmission pipelines. The natural gas transportation system is a nationwide network and therefore, resource availability is not typically an issue. The focus is primarily on the local distribution network and its ability to deliver required amounts. Natural gas as analyzed in this section of the Draft EIR is evaluated in terms of therms, which is equivalent to 100,000 cubic feet of natural gas.

The analysis presented below describes the natural gas distribution system in the Proposed Project area, including its physical characteristics and existing transmission capacities. It then presents the calculations that describe the additional demand for natural gas created by the Proposed Project, and evaluates this demand in comparison to future available natural gas supplies and pipeline capacities.

2. Environmental Setting

a. Regulatory Framework

Natural gas is addressed at a regulatory level via state legislation. These regulations include: Senate Bill 1389, which is responsible for developing an integrated plan for electricity, natural gas, and transportation fuels; Assembly Bill 32, which is also

known as the California Global Warming Solutions Act of 2006, and the California Code of Regulations (i.e., Title 24) which sets forth the State's Building Energy Efficiency Standards. A more detailed description of the regulatory framework with regard to natural gas is presented in Appendix Z of this Draft EIR.

b. Existing Setting

(1) Regional Conditions

Southern California Gas Company (SCG), also known as The Gas Company or Sempra Energy Utilities, is the principal distributor of natural gas in Southern California, serving residential, commercial, and industrial markets. SCG serves approximately 20.5 million customers in more than 500 communities.

The 2010 California Gas Report prepared by the California Gas and Electric Utilities presents an outlook for natural gas requirements and supplies in California through the year 2030. Based on this report, California natural gas demand, including volumes not served by utility systems, is expected to contract at an annual rate of 0.212 percent from 2010 to 2030. In addition, demand for natural gas is expected to be flat for the next 20 years due to modest economic growth, decline in commercial and industrial demand, renewable goals, and savings linked to advanced metering methods.¹

The Southern California Gas Company receives gas supplies from several sedimentary basins in the western United States and Canada, including supply basins located in New Mexico (San Juan Basin), West Texas (Permian Basin), the Rocky Mountains, and Western Canada, as well as local California supplies.² Gas supply available to SCG from California sources was 160 million cubic feet per day (MMcf/day) in 2009.

(2) Local Area Conditions

The Project Site is served primarily by the following four SCG lines, as shown in Table IV.K.5-1 on page IV.K.5-3: (1) a 4-inch line that runs along Georgia Street that connects to a 4-inch line in Chick Hearn Court that travels westerly from Georgia Street

¹ California Gas and Electric Utilities, "2010 California Gas Report," www.socalgas.com/regulatory/documents/cgr/2010_CGR.pdf; accessed December 6, 2011.

² *Ibid.*

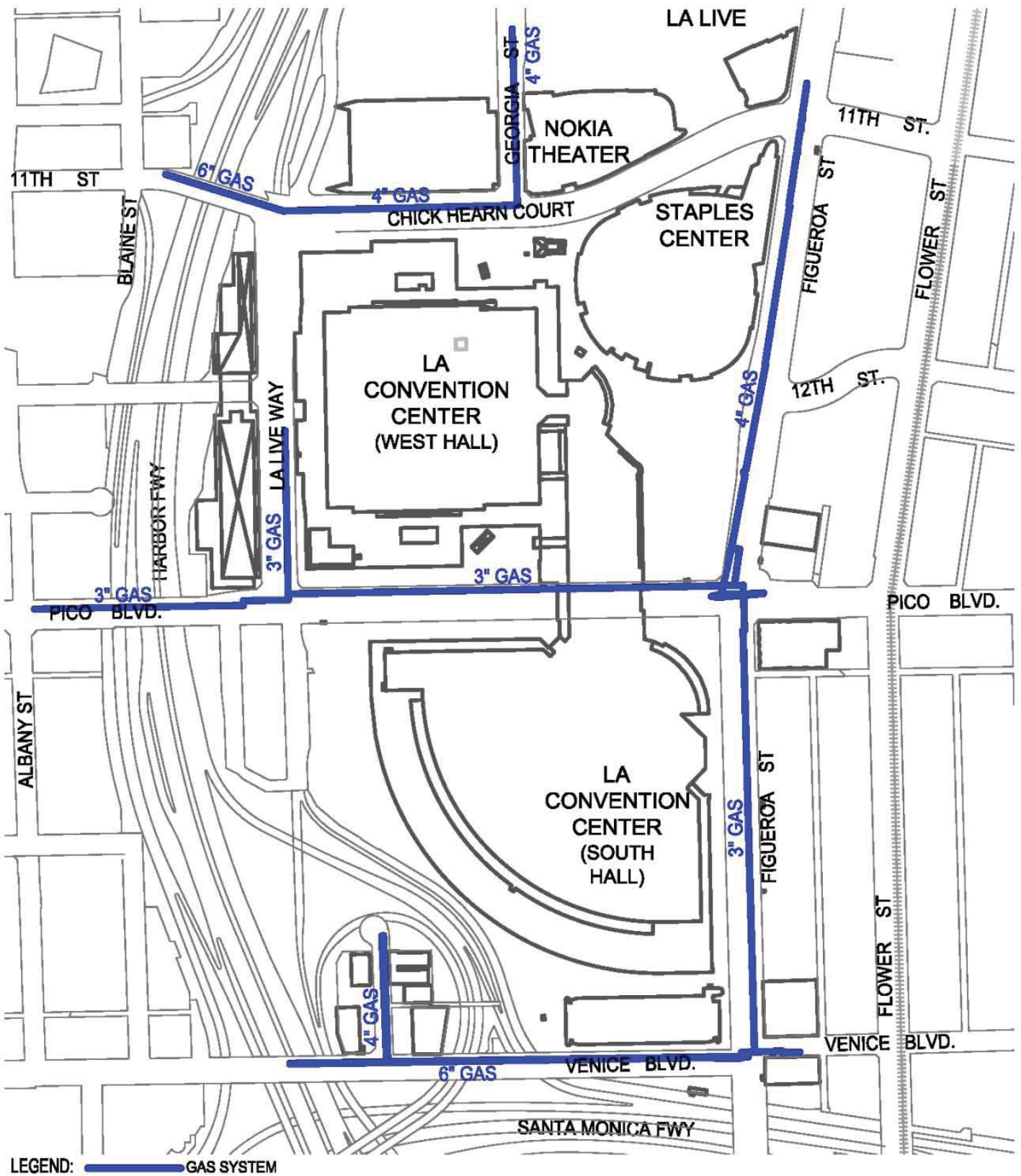
**Table IV.K.5-1
Existing Natural Gas Consumption**

Street	Size of Line
Georgia Street	4 inch
Chick Hearn Court	4 inch (Georgia to L.A. Live Way) 6 inch (west of L.A. Live Way)
Pico Boulevard	3 inch
L.A. Live Way	3 inch
Venice Boulevard	6 inch
Figueroa Street	3 inch (Venice Boulevard to Pico Boulevard) 4 inch (Pico Boulevard to Olympic Boulevard)
<i>Source: Matrix Environmental 2012.</i>	

and increases to a 6-inch line in 11th Street, west of L.A. Live Way; (2) a 3-inch line that runs along Pico Boulevard and into L.A. Live Way in the middle of the Project Site; (3) a 6-inch line that runs along Venice Boulevard and connects to a 4-inch line traveling north in Wright Street southwest of the Los Angeles Convention Center South Hall; (4) a 3-inch line that runs along Figueroa Street from Venice Boulevard to Pico Boulevard east of the Project Site, which increases to a 4-inch line that runs along Figueroa Street from Pico Boulevard to Olympic Boulevard east of the Project Site.

(3) On-Site Conditions

Natural gas is delivered throughout the Project Site via connections to the SCG gas lines described above and shown on Figure IV.K.5-1 on page IV.K.5-4. Specifically, STAPLES Center receives service from a 4-inch SCG main on Chick Hearn Court. The Los Angeles Convention Center (Convention Center) West Hall receives gas from a 4-inch service lateral on Pico Boulevard, while the Convention Center South Hall receives gas from two 4-inch service laterals from Venice Boulevard. Natural gas within the Project Site is currently used for heating, hot water, and food preparation. The Project Site currently consumes approximately 318,180 therms of natural gas per year, with a peak demand of 250 therms per hour as shown in Table IV.K.5-2 on page IV.K.5-5. The SCG supply sources and existing on-site natural gas distribution facilities are sufficient to meet the current needs of the Project Site.



Source: KPFF Engineers, 2011.



Figure IV.K.5-1
Existing Natural Gas Lines
in the Project Area

**Table IV.K.5-2
Existing Natural Gas Consumption**

Facility	Existing Demand (Therms)
STAPLES Center	
Peak Demand (hour)	70 ^a
Annual Consumption	
Arena Operation	241,580
Central Plant ^a	19,500
Total^b	261,080
Convention Center (All Facilities)	
Peak Demand (hour)	180 ^c
Annual Consumption	
Convention Center Operations	33,300
Central Plant ^a	57,100
Total^d	90,400
Total Project Site	
Peak Demand	250
Annual Consumption	
Facility Operations	241,580
Central Plants	76,600
Total	318,180
Convention Center (Facilities Part of Proposed Project)	
Peak Demand – West Hall + Central Plant (hour)	158
Annual Consumption	
West Hall Operations	0 ^e
Central Plant ^a	57,100
Total	57,100
<i>1 Therm = 100,000 Btu = 100 cubic foot (CF)</i> ^a <i>Based on data provided by Syska Hennessey Group, Inc., 2012.</i> ^b <i>Based on utility bill data provided by AEG, 2011.</i> ^c <i>Based on data provided by M-E Engineers, Inc.</i> ^d <i>Based on utility bill data provided by Los Angeles Convention Center, 2011.</i> ^e <i>Heating of the existing West Hall currently run on electricity. As the existing west Hall does not include any other natural gas consumption sources there is no consumption of natural gas at the West Hall. Under the Proposed Project, heating of the New Hall would occur via natural gas combustion. Therefore, in order to determine the incremental change in natural gas combustion associated with the Proposed Project the existing West Hall is included in this table.</i> <i>Source: Matrix Environmental, 2012.</i>	

3. Environmental Impacts

a. Methodology

The analysis of the Proposed Project's natural gas impacts is based on how much natural gas is consumed by the Project at buildout, as well as the capability of the existing infrastructure to convey the Proposed Project's peak demand for natural gas. On the Project Site, natural gas would be consumed by the equipment located within the Proposed Project's central plant facilities and within each of the Proposed Project structures. Cooking areas and concessions areas inside the structures are where natural gas combustion would primarily occur. Separate engineering forecasts for each of the Proposed Project's two main structures (i.e., the Event Center and the New Hall) have been prepared. No sources of natural gas usage are anticipated to occur within the Project's two new parking garages.

The amount of natural gas consumption at the Event Center would vary with the level of activity at the facility. Daily use at the facility falls within one of three categories: event days (e.g., the day of a football game, concert, exhibition, etc.); days that the Event Center is used to get ready for or break down following an event; and days when no activities occur. Separate forecasts were developed for each of these three activity levels. On a set-up or take down day, natural gas usage is forecasted to be 20 percent of that consumed on an event day, and no natural gas is assumed to occur when no activities are occurring at the Event Center. Natural gas usage at the Event Center also varies depending on the type of event being held. For example, natural gas consumption when the entire facility is being used for Spectator or Exhibition Events is very different than when only a portion of the facility is being used for meeting room purposes. As such, the annual forecast of natural gas consumption for the Event Center takes into account the following factors: (1) equipment (e.g., boilers, water heaters, and kitchen/concession areas); (2) level of daily activity (e.g., event day, set-up or break down day, or no activity); and (3) facility usage (e.g., entire facility for Spectator or Exhibition Events, or for meeting room usage only).

Natural gas consumption for the Convention Center is forecasted based on increased gas usage for heating purposes and the growth in attendance at Convention Center events.

The forecast of peak hourly demand for the Event Center takes into consideration the type of equipment or source, the amount of equipment or number of locations, btu rating (the maximum amount of consumption in an hour), and a factor that adjusts maximum consumption to peak consumption. Peak demand for the Convention Center is

forecasted based on new boiler capacity, and demand loads for the kitchens and concession areas.

b. Thresholds of Significance

Appendix F of the CEQA Guidelines states that the potentially significant energy implications of a project should be considered in an EIR. Environmental impacts may include:

- The project's energy requirements and its energy use efficiencies by amount and fuel type for each stage of the project's life cycle including construction, operation, maintenance, and/or removal. If appropriate, the energy intensiveness of materials may be discussed;
- The effects of the project on local and regional energy supplies and on requirements for additional capacity;
- The effects of the project on peak and base period demands for electricity and other forms of energy;
- The degree to which the project complies with existing energy standards;
- The effects of the project on energy resources;
- The Project's projected transportation energy use requirements and its overall use of efficient transportation alternatives.

In the context of the above thresholds, the City of Los Angeles CEQA Thresholds Guide states that a determination of significance shall be made on a case-by case basis, considering the following factors:

- The extent to which the project would require new (off-site) energy supply facilities and distribution infrastructure; or capacity enhancing alternations to existing facilities;
- Whether and when the needed infrastructure was anticipated by adopted plans; and
- The degree to which the project design and/or operations incorporate energy conservation measures, particularly those that go beyond City requirements.

Based on these factors the Project would have a significant impact if:

- The Project would result in an increase in demand for natural gas that exceeds available supply or distribution infrastructure capabilities; or
- The design of the Project fails to incorporate energy conservation measures that go beyond existing requirements.

c. Project Design Features

No project design features are proposed with regard to natural gas consumption.

d. Project Impacts

(1) Construction Impacts

Construction activities for the Proposed Project would not require the consumption of natural gas. Construction impacts associated with the installation of new natural gas distribution lines would primarily involve trenching and would not have any significant impacts for the Project Site or to adjoining property, including the upsizing of the existing 4-inch natural gas line to a proposed 6-inch natural gas line within Chick Hearn Court between L.A. Live Way and Georgia Street. Prior to ground disturbance, Project contractors would coordinate with SCG to identify the locations and depth of all lines. Further, SCG would be notified in advance of proposed ground disturbance activities to avoid natural gas lines and disruption of natural gas service.

As discussed further in Section IV.B.1, Transportation, of this Draft EIR, to reduce any temporary pedestrian access and traffic impacts, the contractor would implement a Construction Management Plan, which would provide for safe pedestrian access and vehicle travel in general, and emergency vehicle access, in particular, throughout the construction period. Overall, when considering impacts resulting from the installation of any required natural gas distribution lines, all impacts would be of a relatively short-term duration (i.e., months) and would cease to occur once the installation is complete. Additional information regarding the construction impacts associated with the installation of on-site upgrades to the natural gas distribution lines are addressed in Sections IV.E, Noise, and IV.F.1, Air Quality, of this Draft EIR. Therefore, Project impacts on natural gas associated with construction activities would be less than significant.

(2) Operational Impacts

The Proposed Project would increase the demand for natural gas resources within the Project Site. Table IV.K.5-3 on page IV.K.5-9 analyzes the connected load for the Event Center and the peak demand in terms of therms per hour for the Event Center and

**Table IV.K.5-3
Forecasted Natural Gas Peak Demand
(Therms per Hour)**

	Event Center ^a	Convention Center ^b			Total Convention Center and Event Center Under Proposed Project
		New Facilities (New Hall and Central Plant)	Increased Usage by Existing Facilities Due to Growth ^c	Total Convention Center Under Proposed Project	
Boilers					
Number of Boilers	4	10	—		
Therms/hour	60	22	—		
Connected Load	240	220	30	250	
Peak Demand Load Factor	1	0.75	—		
Peak Demand ^d	240	165	22.5	187.5	427.5
Kitchen Cooking					
Number of Kitchens	28	2	—		
Therms/hour	6.07	28.4	—		
Connected Load	170	56.7	16.6	73.3	
Peak Demand Load Factor	1	0.75	—		
Peak Demand ^d	170	43	12	55	225
Water Heaters					
Number of Boilers	2	6 (concessions) ^d	—		
Therms/hour	12	5	—		
Connected Load	24	30		30	
Peak Demand Load Factor	1	1			
Peak Demand ^d	24	30		30	54
Total Peak Demand	434	238	35	272	706
1 Therm = 100,000 Btu = 100 cubic foot (CF) ^a Data provided by M-E Engineers Inc., 2012. ^b Data provided by Syska Hennessy Group Inc., 2012. ^c Gas increase in Convention Center based on several factors; increased number of visitors (kitchen load) and gas provided for heat to new hall (demolished west hall used electric heat, not gas - so although similar area, gas use increased) ^d Peak Demand equals Connected Load multiplied by Peak Demand Load Factor ^e No gas water heaters in Convention Center except at kitchens, load shown here is for concessions on floor. Source: Matrix Environmental, 2012.					

the Convention Center based on usage type (i.e., boilers, kitchen cooking, or water heaters). As shown on Table IV.K.5-4 on page IV.K.5-10, the Proposed Project is

**Table IV.K.5-4
Proposed Project Increase in Natural Gas Peak Demand
(Therms per Hour)**

	Event Center^a	Convention Center^b	Total
Existing Conditions	0	158 ^c	158
Proposed Project	434	272	706
Increase Due to Proposed Project	434	114	548
¹ Therm = 100,000 Btu = 100 cubic foot (CF) ^a Data provided by M-E Engineers Inc., 2012. ^b Data provided by Syska Hennessy Group Inc., 2012. ^c Number represents Convention Center (Facilities Part of the Proposed Project to remain). Source: Matrix Environmental, 2012.			

forecasted to result in an increase in peak demand from 158 therms per hour to 706 therms per hour. While the Event Center represents a completely new source, a 72 percent increase in peak demand is forecasted for the Convention Center. The Proposed Project as a whole is forecasted to result in a 346 percent increase in peak demand from existing conditions. This large increase in natural gas consumption result from the following two factors: (1) the New Hall would be heated by natural gas whereas the existing West Hall is heated via electricity; and (2) increase in annual attendance from approximately 2.7 million annual patrons under existing conditions to approximately 4.0 million annual patrons under the Proposed Project. Even though there is a substantial increase in peak demand, the existing infrastructure is capable of delivering this increase in demand, except for the natural gas line located in Chick Hearn Court between L.A. Live Way and Georgia Street. To provide adequate service to the Event Center, this particular line needs to be upgraded from a 4-inch to a 6-inch line.³

Table IV.K.5-5 on page IV.K.5-11 provides the annual forecast of natural gas consumption by the Proposed Project at buildout (2017) which is analyzed by mechanical equipment and plumbing equipment. As shown in Table IV.K.5-6 on page IV.K.5-13 the forecasted Proposed Project consumption levels are compared to existing site conditions.

At buildout, the forecasted natural gas usage for the Event Center, would be approximately 356,596 therms per year. The forecasted increase in natural gas usage at the Convention Center would be 88,140 therms per year, which would account for a 154

³ KPFF Consulting Engineers, 2012.

**Table IV.K.5-5
Forecasted Natural Gas Consumption
(Therms)**

	Daily Natural Gas Consumption		Annual Natural Gas Consumption		
	Event Day	Set-Up/ Take Down Day	Event Day	Set-Up/Take Down Day	Total
Event Center					
Mechanical (Boilers)					
Spectator Events/Exhibition Events (with Meeting Room Usage)	1,008.0 ^a	201.6 ^b	109,872.0 ^c	42,537.6 ^c	152,409.6
Meeting Room Usage Only ^d	151.2	151.2	11,340.0 ^e	11,340.0 ^e	22,680.0
Sub-Total			121,212.0	53,877.6	175,089.6
Plumbing (Kitchen Cooking/Water Heaters)					
Spectator Events/Exhibition Events (with Meeting Room Usage)	920.4 ^f	184.08 ^b	100,323.6 ^g	38,840.88 ^h	139,164.48
Meeting Room Usage Only ^d	138.06	138.06	31,987.12 ⁱ	10,354.50 ^j	42,341.62
Sub-Total			132,310.72	49,195.38	181,506.10
Total Event Center			253,522.72	103,072.98	356,595.70
			Annual Consumption		
Convention Center ^k					
Central Plant			95,100		
Kitchen Cooking/Water Heaters/Concessions					
New Hall			33,430		
Increased Usage at Existing Facilities Due to Growth			16,710		
Total Convention Center			145,240		
Proposed Project			501,835.70		
1 Therm = 100,000 Btu = 100 cubic foot (CF)					
^a Event Day consumption calculated at 4 hours at peak demand and 4 hours at non-peak demand (calculated at 40 percent of peak demand). An Event Day is the day the actual event occurs on; e.g., NFL football game, concert.					
^b Set-Up and Take Down Day calculated at 20 percent of Event Day consumption. A Set-Up Day is the day or days required to prepare the facility for the Event Day. A Take Down Day occurs after the Event Day to remove any and all materials that supported the Event Day.					
^c Based on 109 Event Days and 211 Set-Up/Take Down Days per year.					
^d Assumed that 15 percent of the building area would be used when only meeting rooms in use.					
^e Based on 75 Event Days and 75 Set-Up/Take Down Days per year.					

Table IV.K.5-5 (Continued)
Forecasted Natural Gas Consumption
(Therms)

	Daily Natural Gas Consumption		Annual Natural Gas Consumption		
	Event Day	Set-Up/ Take Down Day	Event Day	Set-Up/Take Down Day	Total
^f Event Day consumption calculated at 4 hours at peak demand and 3 hours at non-peak demand (calculated at 75 percent of peak demand). ^g Based on annual attendance of 5,862,500 persons. ^h Based on 211 Set-Up/Take Down Days per year. ⁱ Based on annual attendance of 231,690 persons. ^j Based on 75 Set-Up/Take Down Days per year. ^k Data based on Syska Hennessy Group, Inc., 2012. Source: Matrix Environmental, 2011.					

percent increase in natural gas consumption at the Convention Center. As described above, the large increase in peak demand at the Convention Center is using natural gas to heat the New Hall and the increase in annual patronage at the Convention Center. As shown in Table IV.K.5-6, overall the Proposed Project is forecasted to consume approximately 501,835.70 therms per year, a five to six-fold increase over existing conditions. Under the Proposed Project and No Existing Convention Center Activity scenario, the increase in daily natural gas consumption and demand would be the same as that forecasted for the Proposed Project and shown in Tables IV.K.5-3 and IV.K.5-5 on pages IV.K.5-9 and IV.K.5-11, respectively. This occurs because under this scenario no natural gas consumption would be occurring at those portions of the Project Site that are analyzed in this Draft EIR. As these increases constitute a small percentage of the supply available to SCG, long-term impacts associated with the consumption of natural gas would be less than significant.

4. Cumulative Impacts

The SCG service area extends from Mono County on the north to Orange and San Bernardino Counties on the south. As population and growth forecasts are not available for this entire service area, the County of Los Angeles is selected as the geographic area of analysis. Therefore, in estimating the cumulative projected increase in natural gas demand within this service area, the Southern California Association of Governments population and growth forecasts between 2011 and 2017 for Los Angeles County was used.

**Table IV.K.5-6
Forecasted Proposed Project Increase in Natural Gas Annual Consumption
(Therms)**

	Annual Natural Gas Consumption		
	Event Center	Convention Center	Total
Existing Conditions	0	57,100	57,100
Proposed Project	356,595.7	145,240	501,835.7
Increase Due to Proposed Project	356,595.7	88,140	444,735.7
<i>One (1) Therm = 100,000 Btu = 100 cubic foot (CF)</i> <i>Source: Matrix Environmental 2012.</i>			

The Proposed Project, as well as cumulative growth in the region, would result in a substantial increase in demand for natural gas as shown in Table IV.K.5-6. As shown in Table IV.K.5-7 on page IV.K.5-14, based on forecasted growth within Los Angeles County, an increase in demand amounting to 2,485.6 million therms per year would be consumed. With the addition of the Proposed Project's 444,735.7 therms per year, cumulative natural gas demand would increase to approximately 2,486.04 million therms per year. Based on these forecasts, the Project constitutes approximately 0.017 percent of the forecasted cumulative natural gas demand. It is anticipated that the forecasted growth would incorporate design features and energy conservation measures, as required by Title 24, which would lessen the impact on natural gas demand. Additionally, the 2010 California Gas Report prepared by the California Gas and Electric Utilities forecasts that California natural gas demand is expected to be flat for the next 20 years due to modest economic growth, decline in commercial and industrial demand, renewable goals, and savings linked to advanced metering methods. These facts in conjunction with the relatively small increase in demand represented by the Proposed Project as well as the fact that all system deficiencies related to Proposed Project development are mitigated to a less than significant level, demonstrates that the Proposed Project's incremental effects are not cumulatively considerable. As a result, the Proposed Project's natural gas impact would not be cumulatively considerable and would be less than significant.

5. Project Design Features and Mitigation Measures

a. Project Design Features

No project design features are proposed with regard to natural gas consumption.

**Table IV.K.5-7
Cumulative Natural Gas Consumption
(Therms)**

	Square Footage/ Units	Consumption Rate (cubic feet/month)	Total Consumption (million therm/year)
Consumption by Forecasted Growth			
Commercial Retail	43,441,333 ^a	2.90 ^b	1,511.8
Residential	184,246 ^c	5,285.18 ^c	973.8
Total Forecasted Growth			2,485.6
Proposed Project			0.44
Cumulative Total			2,486.04
1 Therm = 100,000 Btu = 100 cubic foot (CF) ^a Based on Southern California Association of Governments forecasted employment growth and an average of 3 employees per 1,000 square feet of floor area. ^b Retail/Shopping Center factor used for forecasting purposes, SCAQMD CEQA Air Quality Handbook, April 1993. ^c Consumption factor is based on weighted average of single-family and multi-family homes, SCAQMD CEQA Air Quality Handbook, April 1993. Source: Matrix Environmental, 2012.			

b. Mitigation Measures

Mitigation Measure K.5-1: In the event that the Event Center final building design requires connection to the existing natural gas line in Chick Hearn Court, then the Event Center Applicant shall upgrade or cause to be upgraded the existing 4-inch natural gas line located in Chick Hearn Court between L.A. Live Way and Georgia Street to a 6-inch line prior to the completion of construction of the Event Center.

No mitigation measures are required to support the construction of the New Hall, the Bond Street Garage, the L.A. Live Way Garage or any other on-site improvements constructed as part of the Proposed Project.

6. Level of Significance After Mitigation

With the implementation of the mitigation measure, natural gas impacts would be less than significant.