

5.10 Socioeconomics

5.10.1 Introduction

The Hidden Hills Solar Electric Generating System (HHSEGS) will be located on privately owned land in Inyo County, California, adjacent to the Nevada border. It will comprise two solar fields and associated facilities: the northern solar plant (Solar Plant 1) and the southern solar plant (Solar Plant 2). Each solar plant will generate 270 megawatts (MW) gross (250 MW net), for a total net output of 500 MW. Solar Plant 1 will occupy approximately 1,483 acres (or 2.3 square miles), and Solar Plant 2 will occupy approximately 1,510 acres (or 2.4 square miles). A 103-acre common area will be established on the southeastern corner of the site to accommodate an administration, warehouse, and maintenance complex, and an onsite switchyard. A temporary construction laydown and parking area on the west side of the site will occupy approximately 180 acres.

Each solar plant will use heliostats – elevated mirrors guided by a tracking system mounted on a pylon – to focus the sun’s rays on a solar receiver steam generator (SRSG) atop a tower near the center of each solar field. The solar power tower technology for the HHSEGS project design incorporates an important technology advancement, the 750-foot-tall solar power tower. One principle advantage of the HHSEGS solar power tower design is that it results in more efficient land use and greater power generation. The new, higher, 750-foot solar power tower allows the heliostat rows to be placed closer together, with the mirrors at a steeper angle. This substantially reduces mirror shading and allows more heliostats to be placed per acre. More megawatts can be generated per acre and the design is more efficient overall.

In each solar plant, one Rankine-cycle steam turbine will receive steam from the SRSG (or solar boiler) to generate electricity. The solar field and power generation equipment will start each morning after sunrise and, unless augmented, will shut down when insolation drops below the level required to keep the turbine online. Each solar plant will include a natural-gas-fired auxiliary boiler, used to augment the solar operation when solar energy diminishes or during transient cloudy conditions, as well as a startup boiler, used during the morning startup cycle, and a nighttime preservation boiler, used to maintain system temperatures overnight. On an annual basis heat input from natural gas will be limited by fuel use and other conditions to less than 10 percent of the heat input from the sun.

To save water in the site’s desert environment, each solar plant will use a dry-cooling condenser. Cooling will be provided by air-cooled condensers, supplemented by a partial dry-cooling system for auxiliary equipment cooling. Raw water will be drawn daily from onsite wells located in each power block and at the administration complex. Groundwater will be treated in an onsite treatment system for use as boiler make-up water and to wash the heliostats.

Two distinct transmission options are being considered because of a unique situation concerning Valley Electric Association (VEA). Under the first option, the project would interconnect via a 230-kilovolt (kV) transmission line to a new VEA-owned substation

(Tap Substation) at the intersection of Tecopa Road¹ and Nevada State Route (SR) 160 (the Tecopa/SR 160 Option). The other option is a 500-kV transmission line that interconnects to the electric grid at the Eldorado Substation (the Eldorado Option), in Boulder City, Nevada.

A 12- to 16-inch-diameter natural gas pipeline will be required for the project. It will exit the HHSEGS site at the California-Nevada border and travel on the Nevada side southeast along the state line, then northeast along Tecopa Road until it crosses under SR 160. From this location a 36-inch line will turn southeast and continue approximately 26 miles, following the proposed Eldorado Option transmission line corridor, to intersect with the Kern River Gas Transmission (KRGT) pipeline. A tap station will be constructed at that point to connect it to the KRGT line. The total length of the natural gas pipeline will be approximately 35.3 miles.

The transmission and natural gas pipeline alignments will be located in Nevada, primarily on federal land managed by the U.S. Bureau of Land Management (BLM), except for small segments of the transmission line (both options) in the vicinity of the Eldorado Substation, which is located within the city limits of Boulder City, Nevada. A detailed environmental impact analysis of the transmission and natural gas pipeline alignments will be prepared by BLM.

This section discusses the environmental setting, consequences, regional and local impacts, and mitigation measures associated with the socioeconomic aspects of the HHSEGS. Section 5.10.2 presents the laws, ordinances, regulations, and standards (LORS) applicable to socioeconomics. Section 5.10.3 describes the environment that may be affected by HHSEGS construction and operation. Section 5.10.4 identifies environmental impacts from development of the power plant, and Section 5.10.5 discusses cumulative effects. Environmental Justice issues are discussed in Section 5.10.6. Mitigation measures are discussed in Section 5.10.7. Section 5.10.8 presents the agencies involved and provides agency contacts. Section 5.10.9 presents the required permits and permitting schedule. Section 5.10.10 provides the references used to prepare this section.

5.10.2 Laws, Ordinances, Regulations, and Standards

5.10.2.1 Federal LORS

A summary of the LORS, including the project's conformance to them, is presented in Table 5.10-1.

Civil Rights Act of 1964, Public Law 88-352, 78 Stat. 241 (codified as amended in various sections of 42 U.S.C.) Title VI of the Civil Rights Act prohibits discrimination on the basis of race, color, or national origin by all federal agencies or activities receiving federal financial assistance.

Executive Order 12898, "Federal Actions to Address Environmental Justice in Minority Populations and Low-Income Populations," requires U.S. Environmental Protection Agency (EPA) and other federal agencies to identify and address whether adverse human health or environmental effects are likely to fall disproportionately on minority and/or low-income

¹ The road is also called Tecopa Highway and Old Spanish Trail Highway. The names are generally used interchangeably.

members of the community (EPA, 1996). This applies only to federal agencies, not agencies receiving federal funds.

TABLE 5.10-1
Laws, Ordinances, Regulations, and Standards Applicable to Socioeconomics

LORS	Requirements/ Applicability	Administering Agency	AFC Section Explaining Conformance
Federal			
Civil Rights Act of 1964	Prohibits discrimination on the basis of race, color, or national origin.	Applies to all federal agencies and agencies receiving federal funds.	Section 5.10.5
Executive Order 12898	Avoid disproportionate impacts to minority and low-income members of the community.	Applies only to federal agencies. Does not apply to agencies receiving federal funds.	Section 5.10.5
State			
Government Code Sections 65996-65997	Establishes that the levy of a fee for construction of an industrial facility be considered mitigating impacts on school facilities.	Death Valley Unified School District charges a one-time assessment fee to mitigate potential school impacts.	Section 5.10.6
Education Code Section 17620	Allows a school district to levy a fee against any construction within the boundaries of the district for the purpose of funding construction of school facilities.	Death Valley Unified School District charges a one-time assessment fee to mitigate potential school impacts.	Section 5.10.6
Local			
Inyo County General Plan, Economic Development Element, Government Element, Land Use Element	To increase job creation through business expansion.	Encourages resource industries to locate in the County to create jobs	

5.10.2.2 State LORS

Government Code Sections 65996 and 65997 provide the exclusive methods of considering and mitigating impacts to school facilities that might occur as a result of the development of real property.

Education Code Section 17620, listed in Government Code Section 65997 as an approved mitigation method, allows school districts to levy a fee or other requirement against any construction within the boundaries of the school district for the purpose of funding construction of school facilities.

5.10.2.3 Local LORS

5.10.2.3.1 Inyo County

Inyo County General Plan's (2001) Economic Development Element calls for encouraging the expansion of existing industry of all types (including resource and service industries) and actively recruiting new businesses that will bring new jobs (Inyo County General Plan, 2001).

The Government Element of the General Plan, updated and approved in February 2010, encourages the development of energy projects. Policy Government 10.1 calls for the encouragement of energy resource development on public and private lands within the bounds of economic reason and environmental health (Inyo County, 2010a). Energy resources identified include solar, wind, geothermal, and biomass.

The 2010 draft General Plan Amendment of the Land Use Element calls for the facilitation of solar energy development. Policy LU -1.17 (Solar and Wind Renewable Energy Development) directs the county to consider solar or wind energy facilities within areas with a Renewable Energy Land Use Designation Overlay and in any zoning district under Title 18 of Inyo County code (Inyo County, 2010b).

5.10.3 Affected Environment

5.10.3.1 Population

Inyo County is bordered on the north by Mono County, to the south by San Bernardino County, to the west by Fresno and Tulare counties, and to the east by Nye and Clark counties, Nevada. Inyo County contains one incorporated city (Bishop) and 65 small unincorporated communities. There are five incorporated cities in Clark County, Nevada, including Las Vegas. Clark County also has numerous unincorporated townships.

For purposes of this analysis, the Region of Influence (ROI) was determined to be the counties of Inyo, California, and Clark and Nye, Nevada. The Las Vegas Valley Urban Area (Nevada) is the largest population center in Clark County with an estimated population of 1,965,950 as of July 1, 2010. Las Vegas is located about 45 miles southeast of the project site (Clark County, 2011a). Sandy Valley is a small community (called Census Designated Place or CDP) in Clark County located about 20 miles south of the project site with a population of 2,051 (Census, 2011c). The Town of Pahrump in Nye County, Nevada, is a small unincorporated town with an estimated population of 36,441 as of July 1, 2010. Pahrump is located approximately 18 miles northwest of the HHSEGS site (Census, 2011c).

As of July 1, 2010, Inyo County's population was estimated at 18,201 (Census, 2011c). Historical and projected population data for the counties in the ROI are summarized in Table 5.10-2.

TABLE 5.10-2
Historical and Projected Population

Area	1990 ^a	2000 ^b	2010 ^c	2020(p)	2030(p)
Inyo County	18,281	17,945	18,546	20,495 ^g	22,132 ^g
State of California	29,760,021	33,871,648	37,253,956	44,135,923^g	49,240,891^g
Pahrump CDP	7,424	24,631	36,441	NA	NA
Sandy Valley CDP	NA	1,804	2,051	NA	NA
Nye County	17,781	32,485	43,946	44,417 ^d	46,859 ^d
Clark County	741,459	1,375,765	1,951,269	2,715,000 ^e	3,126,000 ^e
State of Nevada	1,201,833	1,998,257	2,700,551	3,452,283^f	4,282,102^f

Source:

^a US Census 1990 (Census, 2011b)

^b US Census 2000 (Census, 2011c)

^c US Census 2010 (Census, 2011a)

^d Nevada Small Business Development Center (2011)

^e Clark County Nevada(2011b)

^f Nevada State Library and Archives (2011b)

^g Department of Finance (2011a).

(p) Projected

N/A = Not Available

Table 5.10-3 summarizes the average annual compounded population growth rates for the ROI based on the population estimates summarized in Table 5.10-2. During the 1990s, population of Nye and Clark counties increased at an average annual rate of 6 percent, while that of the town of Pahrump (a CDP) increased at an average annual rate of 12 percent, which is double the rate of Nye and Clark counties. Inyo County had a slight population decline (-0.2 percent) during the 1990s.

TABLE 5.10-3
Historical and Projected Average Annual Compounded Population Growth Rates

Area	1990-2000 Percent	2000-2010 Percent	2010-2020 Percent	2020-2030 Percent
Inyo County	-0.2	0.3	1	0.8
State of California	1.3	1.0	1.7	1.1
Pahrump CDP	12.7	4.0	NA	NA
Sandy Valley CDP	NA	1.3	NA	NA
Nye County, NV	6.2	3.1	0.1	0.5
Clark County, NV	6.4	3.6	3.4	1.4
State of Nevada	5.2	3.1	2.5	2.2

The average annual growth rates for the 2000-2010 period for Nye and Clark counties were similar (both exceeding 3 percent) with the larger Clark County growing at an annual average of 0.5 percent more; whereas, Inyo County's 2010 population recovered its losses and barely exceeded its 1990 population by only 265 people. Population growth rates for all counties within ROI are expected to slow in the future. However, Inyo County is expected to have a growth spurt and Nye County is expected to be almost stagnant. Greatest population growths in the counties within the ROI have occurred in the 1990s; however, Inyo County is expected to have its highest growth rate in the period 2010–2020.

During the 1990s, California and Nevada grew at an average annual rate of 1.3 and 5.2 percent, respectively. Based on population projections, California is expected to have its greatest relative population growth from 2010 to 2020, while Clark and Nye counties had their highest population growth from 1990 to 2000. Historically, the population of Inyo county changes at a smaller rate compared to Nye and Clark counties. However, population growth in the future is expected to decline.

Table 5.10-4 shows the distribution of racial minority and Hispanic-origin population for the census block groups that are located at least partially within a 6-mile radius of the HHSEGS site. Although all census block groups that are at least partially within the 6-mile radius are typically included in this analysis, as shown in Figures 5.10-1 and 5.10-2 (figures are provided at the end of this section), those portions of the census block groups within Clark and Nye counties that are within the 6-mile radius are located solely on BLM-managed land that have no residents. However, Block Group 1, Census Tract 7, in Inyo County includes those residents located to the south of the project site in the Charleson View/Calvada Springs area plus additional residents. Hence, only that block group (bolded in the tables below) was used for this analysis.

The racial minority and Hispanic origin data are from the 2000 U.S. Census because the 2010 Census data were not yet available at the census block level at the time of the preparation of this analysis. It should be noted that the population numbers retrieved from the U.S. Census Bureau for minority (Table 5.10-4) and low income (Table 5.10-5) data are not the same for each of these Census Block Groups. The U.S. Census Bureau provides no explanation of why the population data for each table differ slightly. Of the overall total population for Block Group 1, Census Tract 7, 18.3 percent are racial minority and 6.7 percent are of Hispanic origin.²

² Hispanics or Latinos are those people who classified themselves in one of the specific Spanish, Hispanic, or Latino categories listed on the Census 2000 questionnaire—"Mexican, Mexican Am., Chicano," "Puerto Rican," or "Cuban"—as well as those who indicate that they are "other Spanish/Hispanic/Latino." People who identify their origin as "other Spanish/Hispanic/Latino" may be of any race. Thus, the percent Hispanic should not be added to percentages for racial (i.e., minority) categories.

TABLE 5.10-4
Distribution of Racial/Ethnic Minority Population in Census Block Groups Within a 6-Mile Radius of HHSEGS

Census Block Groups	Population	Non-Hispanic White	Minority	Percent Minority	Hispanic Origin*	Percent Hispanic Origin
Block Group 1, Census Tract 7, Inyo County, California	638	521	117	18.3	43	6.7
Block Group 1, Census Tract 58.16, Clark County, Nevada	3,877	3,589	288	7.4	300	7.7
Block Group 1, Census Tract 9804.05, Nye County, Nevada	2,236	2,050	186	8.3	200	8.9
Block Group 2, Census Tract 9804.05, Nye County, Nevada	1,102	1,001	101	9.2	65	5.9
Block Group 1, Census Tract 9804.06, Nye County, Nevada	4,525	4,040	485	10.7	425	9.4
TOTAL	12,378	11,201	1,177	9.5	1,033	8.3
State of California	33,871,648	15,771,163	18,100,485	53.0	10,969,132	32.4
State of Nevada	1,998,257	1,301,738	696,519	35.0	393,539	19.7

Source: 2000 Census.

*Hispanics or Latinos are those people who classified themselves in one of the specific Spanish, Hispanic, or Latino categories listed on the Census 2000 questionnaire—"Mexican, Mexican Am., Chicano," "Puerto Rican," or "Cuban"—as well as those who indicate that they are "other Spanish/Hispanic/Latino." People who identify their origin as "other Spanish/Hispanic/Latino" may be of any race. Thus, the percent Hispanic should not be added to percentages for racial (i.e., minority) categories.

Table 5.10-5 shows the distribution of low-income population for the census block groups located at least partially within the 6-mile radius of the proposed project site. Of the total population for Block Group 1, Census Tract 7, for whom poverty is determined, 12.6 percent are low-income.

TABLE 5.10-5
Distribution of Low-income Population by Census Block Groups Within a 6-mile Radius

Census Block Group	Total Population*	Income below Poverty Level	Percent low-income
Block Group 1, Census Tract 7, Inyo County, California	625	79	12.6
Block Group 1, Census Tract 58.16, Clark County, Nevada	3,860	326	8.4
Block Group 1, Census Tract 9804.05, Nye County, Nevada	2,326	363	15.6
Block Group 2, Census Tract 9804.05, Nye County, Nevada	1,077	84	7.8
Block Group 1, Census Tract 9804.06, Nye County, Nevada	4,525	343	7.6
TOTAL	12,413	1,195	9.6
State of California	33,100,044	4,706,130	14.2
State of Nevada	1,962,948	205,685	10.5

Source: 2000 Census.

*Population numbers are only those for whom poverty was determined and exclude full-time college students.

Figures 5.10-1 and 5.10-2 show the percent distribution of minority and low-income populations by 2000 census block groups that have a portion of their area within a 6-mile radius of the HHSEGS site.

5.10.3.2 Housing

As shown in Table 5.10-6, housing stock for Inyo County as of January 1, 2010, was 9,283 units. Single-family homes accounted for 5,749 units, multiple family dwellings accounted for 893 units, and mobile homes accounted for 2,641 units (DOF, 2011b). New housing authorizations for Inyo County in 2007 totaled 25 units; about 52 percent were single-family units and 48 percent were multi-family units (DOF, 2011c). These authorizations were valued at \$5.03 million (DOF, 2011c). The town of Pahrump and Nye County's housing vacancy rates were 8.1 percent and 19 percent, respectively, as of January 1, 2010. Inyo County's vacancy rate has increased a little between 1990 and 2010 (from 13.2 percent to 14.8 percent) (DOF, 2011b; 2011d). As of July 1, 2010, Clark County, had 814,868 units, of which 493,593 units were single-family homes; 293,511 units were multiple family homes; and 27,764 units were mobile homes (Table 5.10-6). The vacancy rate for Clark County was 8.4 percent, a figure that is higher than the federal standard of 5 percent. Because all of the vacancy rates are higher than the federal standard of 5 percent, it indicates that housing within the ROI is not in short supply.

The preliminary median sales price of existing single family homes in the fourth quarter of 2010 in Las Vegas-Paradise Metropolitan Statistical Area (MSA) was \$134,200 (NAR, 2011). As of May 2011, the median sales price of homes in the Pahrump Valley was approximately \$90,000 (Trulia, 2011). The same source shows the average median home sales price for Inyo County to be \$146,369 during the period April through June 2011 (Trulia, 2011). Assuming

that these median prices and the current prevailing and historically low mortgage interest rates (Bloomberg, 2011) continue into the future, it is conceivable that all of the operation workforce may purchase homes in the area instead of renting.

TABLE 5.10-6
Housing Estimates by City and County for 2010

Area	Total Units	Single-family	Multi-family	Mobile Homes	Percent Vacant
Pahrump CDP ^a	17,824 ^d	N/A	N/A	N/A	8.1 ^d
Sandy Valley CDP ^a	1024 ^d	N/A	N/A	N/A	21.1 ^d
Nye County ^a	22,350 ^d	N/A	N/A	N/A	19.3 ^d
Clark County ^b	814,868 ^e	493,593 ^e	293,511 ^e	27,764 ^e	8.4 ^f
State of Nevada ^a	1,173,814 ^d	N/A	N/A	N/A	14.3 ^d
Inyo County ^c	9,283 ^g	5,749 ^g	893 ^g	2,641 ^g	14.8 ^g
California ^c	13,591,866 ^g	8,747,293 ^g	4,247,635 ^g	596,938 ^g	5.9 ^g

^aEstimates are as of April 1, 2010

^bEstimates are as of July 1, 2010

^cEstimates are as of January 1, 2010

^d U.S. Census Bureau, 2011

^eClark County, 2011c

^fClark County, 2011d

^gDOF, 2011b

In addition to the lower home prices and historically low mortgage rates mentioned above, the ROI, similar to the rest of the country, has been affected by increased foreclosures. Table 5.10-7 shows the estimated foreclosures for the communities and counties in the ROI. Thus, the ROI has adequate affordable housing.

TABLE 5.10-7
Housing Foreclosures Estimates, June 2011

Area	Inventory
Pahrump CDP	1,133
Nye County	1,152
Sandy Valley CDP	NA
Clark County	48,220
State of Nevada	57,860
Inyo County	66
California	275,787

Source: RealtyTrac, 2011.

NA = Not Available

5.10.3.3 Economy and Employment

Between 2000 and 2010, employment in Inyo County decreased by 100 jobs or about 1.3 percent. This 1.3 percent decrease is smaller than 4.15 percent decrease in industry employment in California during that same period (California Employment Development Department [CEDD], 2011a). As shown in Table 5.10-8, the government services and trade sectors experienced the largest increases in employment. Although employment in the financial activities sector and in the transportation and warehousing and utilities sector increased significantly between 2000 and 2010, the government and services sectors' contribution to the Inyo County economy remained the highest compared to the other sectors. Government sector contribution to the economy increased from 35 percent to about 42 percent while the services sector's contribution declined slightly from about 36 percent to 32 percent. The construction sector lost 8 percent of its workforce between 2000 and 2010 (CEDD, 2011a.).

TABLE 5.10-8
Employment Distribution in Inyo County, 2000 to 2010

Industry	2000		2010		2000-2010	
	Number of Employees	Employment Share (%)	Number of Employees	Employment Share (%)	Percentage Change (%)	Average Annual Compound Growth Rate (%)
Agriculture	50	0.6	50	0.7	0.0	0.0
Natural Resources, Mining	150	1.9	50	0.7	-66.7	-10.4
Construction	370	4.7	160	2.1	-56.8	-8.0
Manufacturing	320	4.1	260	3.4	-18.8	-2.1
Trade Wholesale & Retail	1,150	14.7	1,070	14.0	-7.0	-0.7
Transportation, Warehousing and Utilities	80	1.0	200	2.6	150.0	9.6
Information	90	1.2	80	1.0	-11.1	-1.2
Financial Activities	100	1.3	150	2.0	50.0	4.1
Services	2,780	35.6	2,450	32.0	-11.9	-1.3
Government	2,740	35.1	3,210	41.9	17.2	1.6
Total Employment	7,810	100.0	7,660	100.0	-1.9	-0.2

Source: CEDD, 2011a.

Between 2000 and 2010, employment in the Las Vegas-Paradise MSA increased by 103,700 jobs or about 14.9 percent (NDETR, 2011a). This 14.9 percent increase is slightly greater than Nevada's net increase (13.2 percent) during that same period (NDETR, 2011b). As shown in Table 5.10-9, the mining, construction, manufacturing, and information sectors were the only sectors that experienced a decline in employment between 2000 and 2010. Although employment in government, trade, and transportation/warehousing/utilities

increased between 2000 and 2010, the contribution of these sectors to the Las Vegas-Paradise MSA is smaller than the contribution of the services sector, which provides about 50 percent of total employment and increased by 21 percent during the period.

TABLE 5.10-9
Employment Distribution in Las Vegas-Paradise MSA*, 2000 to 2010

Industry	2000		2010		2000-2010	
	Number of Employees	Employment Share (%)	Number of Employees	Employment Share (%)	Percentage Change (%)	Average Annual Compound Growth Rate (%)
Agriculture and Natural Resource	N/A	N/A	N/A	N/A	N/A	N/A
Mining	600	0.1	300	0.0	-50.0	-6.7
Construction	66,400	9.5	45,000	5.6	-32.2	-3.8
Manufacturing	20,200	2.9	19,300	2.4	-4.5	-0.5
Trade Wholesale & Retail	92,600	13.3	112,100	14.0	21.1	1.9
Transportation, Warehousing and Utilities	27,800	4.0	34,200	4.3	23.0	2.1
Information	13,300	1.9	9,100	1.1	-31.6	-3.7
Financial Activities	38,000	5.4	39,700	5.0	4.5	0.4
Services	368,100	52.8	445,700	55.6	21.1	1.9
Government	70,600	10.1	95,900	12.0	35.8	3.1
Total Employment	697,600	100.0	801,300	100.0	14.9	1.4

*Las Vegas-Paradise MSA includes Clark and Nye counties.

Source: NDETR, 2011a.

Note: Totals may not add due to independent rounding.

Table 5.10-10 provides more detail on the characteristics of the regional labor force. It shows 2010 employment data for Las Vegas-Paradise MSA, Inyo County, and California.

The Las Vegas-Paradise MSA has a larger labor force and higher unemployment rate than Inyo County. CEDD does not project future unemployment rates.

TABLE 5.10-10
Employment Data, 2010

Area	Labor Force	Employment	Unemployed Labor Force	Unemployment Rate (%)
Las Vegas-Paradise MSA*	969,098	821,597	147,501	15.3
Inyo County	9,550	8,600	950	10.0
California State	18,176,200	15,916,300	2,259,900	12.4
Nevada State	1,350,309	1,149,537	200,772	15.0

*Las Vegas-Paradise MSA includes Clark and Nye counties.

Source: CEDD, 2011b; NDETR, 2011a, 2011b

5.10.3.4 Fiscal Resources

The local agency with taxing power is Inyo County, California. However, the project area is near other population centers. Therefore, it is assumed that the majority of workers would reside in these population centers and the fiscal resources in these areas may be included indirectly through existing mutual aid agreements for emergency response between Inyo and Nye counties. Additionally, because the HHSEGS site is closer to Las Vegas than the metropolitan areas in California, the fiscal resources of both the City of Las Vegas and Clark County are included in the discussion below.

Inyo County's estimated summary of expenditures and revenues are presented in Table 5.10-11. From fiscal year (FY) 2008 to FY 2009, the county's revenues grew almost 6.5 percent. However, the next year, they showed a 3.9 percent decline. The major sources of revenue for the county are intergovernmental revenues (about 45 percent), followed by taxes (about 38 percent).

TABLE 5.10-11
Inyo County Expenditures and Revenue

	FY 2008	FY 2009	FY 2010
Expenditures for Countywide Operations			
General Government	9,435,524	9,409,404	11,616,575
Public Protection	16,935,643	17,436,282	16,855,677
Public Ways and Facilities	31,061	—	—
Health and Sanitation	5,755,579	5,844,905	5,913,784
Public Assistance	6,489,657	6,405,065	6,243,222
Education	754,461	757,698	670,606
Recreation and Culture	1,026,060	912,982	874,856
Capital Outlay	1,365,143	913,193	269,551
Debt Service (Principal and Interest)	810,695	673,200	675,511
Total Expenditures	42,603,824	42,352,729	43,119,782
Revenues			
Taxes	14,355,037	16,590,270	17,046,983
Licenses and permits	406,063	403,506	436,554
Fines, forfeitures and penalties	1,323,320	1,853,699	1,636,214
Use of money and property	1,419,748	780,646	646,099
Intergovernmental	20,306,631	21,458,383	20,404,083
Charges for services	6,125,259	5,823,436	4,861,796
Other Revenues	338,037	226,148	262,764
Total Revenues	44,274,095	47,136,088	45,294,493

Source: Inyo County, 2008; 2009; and 2010.
Numbers may not add up due to independent rounding.

Clark County's estimated summary of expenditures and revenues are presented in Table 5.10-12. Over the last 3 years, the County's revenues have shown steady decline. From FY 2008 to FY 2009, revenues declined by 2.9 percent. From FY 2009 to FY 2010, the revenues continued to decline at 5.4 percent. The major sources of revenue for the county are taxes (about 36 percent) and intergovernmental revenues (about 29 percent), followed by licenses and permits (about 21 percent), followed by charges for services (about 9 percent).

TABLE 5.10-12
Clark County Expenditures and Revenue

	FY 2008	FY 2009	FY 2010
Expenditures for Countywide Operations			
General Government	\$105,966,417	\$125,776,139	\$127,176,984
Judicial	\$144,277,455	\$140,327,933	\$146,502,648
Public Safety	\$205,777,429	\$207,312,119	\$212,290,725
Public Works	\$15,227,899	\$15,076,750	\$14,709,836
Health	\$62,919,755	\$92,225,951	\$83,677,333
Welfare	\$83,974,688	\$105,904,299	\$92,910,160
Culture and Recreation	\$29,258,569	\$28,305,713	\$19,824,777
Other General Expenditure	\$108,771,107	\$98,917,444	\$113,340,912
Total Expenditures	\$756,173,319	\$813,846,348	\$810,433,375
Revenues			
Taxes	\$345,422,881	\$383,096,346	\$347,888,378
Licenses and permits	\$219,886,318	\$212,457,083	\$210,359,702
Intergovernmental Revenue	\$330,571,827	\$287,980,237	\$257,030,863
Charges for Services	\$82,533,326	\$85,915,596	\$75,314,190
Fines and forfeitures	\$24,644,256	\$24,535,699	\$25,671,295
Interest	\$27,324,416	\$7,869,934	\$4,844,673
Other	\$6,370,568	\$4,626,029	\$30,829,371
Total Revenues	\$1,036,753,592	\$1,006,480,924	\$951,938,472

Source: Clark County, 2011e; 2011f; 2011g.
Totals may not add due to independent rounding.

Estimated summary of expenditures and revenues for the City of Las Vegas are presented in Table 5.10-13. The City's revenues have also shown steady decline over the last 3 years. From FY 2008 to FY 2009, revenues declined almost 3.2 percent. From FY 2009 to FY 2010, the revenues continued to decline almost 7.3 percent. The major sources of revenue for the city are intergovernmental revenues (about 49 percent), followed by taxes (about 23 percent), and licenses and permits (about 16 percent).

TABLE 5.10-13
City of Las Vegas Expenditures and Revenue

	FY 2008	FY 2009	FY 2010
Expenditures for Countywide Operations			
General Government	\$86,525,003	\$52,640,787	\$49,034,775
Judicial	\$25,930,320	\$24,928,427	\$24,388,080
Public Safety	\$317,165,831	\$329,644,660	\$323,578,261
Public Works	\$19,931,689	\$18,822,710	\$19,029,401
Health	\$2,717,579	\$3,477,423	\$3,369,009
Culture and Recreation	\$44,215,535	\$49,075,995	\$47,360,934
Economic Development and Assistance	\$7,490,063	\$6,680,341	\$6,419,948
Transit System	\$1,290,881	\$1,256,554	\$236,052
Total Expenditures	\$505,266,901	\$486,526,897	\$473,416,460
Revenues			
Taxes	\$116,574,425	\$122,793,161	\$114,313,427
Licenses and permits	\$83,402,354	\$80,022,859	\$77,241,337
Intergovernmental	\$255,611,961	\$224,408,195	\$205,486,430
Charges for Services	\$27,844,553	\$30,468,507	\$31,125,047
Fines and forfeits	\$18,038,379	\$21,737,862	\$20,349,142
Interest	\$3,711,593	\$3,549,942	\$1,659,964
Miscellaneous	\$4,622,848	\$2,586,912	\$3,006,118
Total Revenues	\$509,806,113	\$485,567,438	\$453,181,465

Source: City of Las Vegas, 2011a, 2011b, 2011c.
Numbers may not add up due to independent rounding.

5.10.3.5 Education

There are 28 elementary, high school, and unified school districts in Inyo County. The HHSEGS site is within the boundary of the Death Valley Unified School District, which has five schools: Death Valley Elementary, Death Valley High Academy, Shoshone Elementary, Shoshone High (Continuation) and Tecopa-Francis Elementary. All schools of Death Valley Unified School District are relatively far from the HHSEGS site except for Tecopa-Francis Elementary (28 miles from project site) located at Old Spanish Trail in Tecopa, California. However, buses are available for these schools (Rock, 2011). Based on the project location, the closest schools are Tecopa-Francis Elementary School from kindergarten to 4th grade, Shoshone Elementary School from 5th to 6th grade, and Death Valley Academy from 7th to 12th grade (Rock, 2011).

Current and historical enrollment figures for the Death Valley Unified School District are presented in Table 5.10-14. As shown in the table, the current enrollment levels for the school district have decreased by 12 students (or 15 percent) since the 2008/09 school year.

TABLE 5.10-14
Death Valley Unified School District Enrollment

Grade Level	Enrollment (2008-09)	Enrollment (2009-10)	Current Enrollment (2010-11)
Kindergarten	4	4	4
First	5	3	4
Second	7	4	3
Third	6	6	2
Fourth	4	7	6
Fifth	3	3	6
Sixth	6	4	5
Seventh	9	5	5
Eighth	8	9	8
Ninth	7	6	9
Tenth	4	6	4
Eleventh	9	3	7
Twelfth	5	7	2
TOTAL	77	67	65

Source: CDE, 2011.

Schools in Nye and Clark counties are considered in the impacts analysis. The town of Pahrump is served by Nye County School District, which operates 27 schools (NDE, 2011). The Pahrump area has eight schools: Floyed Elementary, Hafen Elementary, Pathways High School, Pathways Middle School, Mt. Charleston Elementary, Rosemary Clarke Middle School, Manse Elementary, and Pahrump Valley High School (Paniagua, 2011). Mt. Charleston school will be closed next year and students will be accommodated in other schools. Also, elementary schools will be rezoned next year.

The City of Las Vegas and the Sandy Valley CDP are within the Clark County School District which operates 359 elementary schools in the fastest growing county in the country. Student enrollment over the last three academic years for Nye County and Clark County School Districts are shown in Table 5.10-15.

TABLE 5.10-15
Current and Projected Enrollment by Grade

Grade Level	Pahrump Valley Schools	Nye County School District			Clark County School District		
	Current Enrollment (2010-11)	Enrollment (2008-09)	Enrollment (2009-10)	Current Enrollment (2010-11)	Enrollment (2008-09)	Enrollment (2009-10)	Current Enrollment (2010-11)
Pre-Kindergarten	N/A	113	105	92	2,476	2,778	2,932
Kindergarten	202	402	420	392	23,915	23,459	23,817
First	244	471	417	431	25,193	24,684	24,501
Second	241	455	426	402	25,413	24,692	24,437
Third	244	445	456	410	25,114	24,923	24,277
Fourth	243	466	447	434	24,984	24,536	24,715
Fifth	264	495	464	425	24,446	24,490	24,248
Sixth	365	481	486	463	24,595	24,374	24,650
Seventh	397	475	498	470	24,776	24,024	24,425
Eighth	388	533	467	482	25,078	23,746	23,651
Ninth	371	635	599	521	30,607	25,145	23,617
Tenth	396	559	554	502	24,906	26,128	24,134
Eleventh	348	446	481	479	17,931	21,622	23,191
Twelfth	328	372	340	420	16,922	18,404	20,405
TOTAL	4,031	6,348	6,160	5,923	316,356	313,005	313,000

5.10.3.6 Public Services and Facilities

This section describes public services in the project area.

5.10.3.6.1 Law Enforcement

The HHSEGS site is under the jurisdiction of the Inyo County Sheriff's Office, which is headquartered at 550 South Clay Street, Independence, California, 93526. There is a Sheriff station (#15) located on Highway 127 in Shoshone, which is approximately 85 miles away from the project site. Response to the project site would likely originate from the location of the officers who are normally on patrol. Officers are usually on patrol and on call in the service area and not present at the station. As such, response time to an emergency on the project site ranges between 0.5 hour to 3 hours. If the response originates from the station on Highway 127, which has two deputies, the response time would be 1.5 hours to 2 hours. Additional support could also come from the California Highway Patrol (CHP) which has a resident unit between Death Valley National Park and the border (Hardcastle, 2011).

The CHP is the primary law enforcement agency for state highways and roads. Services include law enforcement, traffic control, accident investigation, and the management of hazardous materials spill incidents (Hardcastle, 2011). Because the HHSEGS site is on the western border of the Nevada state line, the roads and highway in the vicinity (to the east of the project) are under the jurisdiction of the Nevada Highway Patrol (NHP). The NHP

station closest to the project site is the Pahrump Substation located at 2250 East Postal Drive #6 in Pahrump (Rivera, 2011).

5.10.3.6.2 Fire Protection

The project site is within the Southern Inyo Fire Protection Department (SIFPD) jurisdiction. The SIFPD staff is mostly volunteers; there are 13 volunteers and 1 full time firefighter. The SIFPD has one station in Tecopa (410 Tecopa Hot Springs Road, Tecopa California) and one temporary location in Charleston View. Tecopa station has 9 personnel (1 full time and 8 volunteers) and Charleston View location has 5 volunteer firefighters. The response time for Charleston View and Tecopa locations are 10 minutes and 30 minutes, respectively (Postle, 2011).

BLM has a fire station located in Pahrump at 1651 East Calvada Boulevard that covers all federal land including the project area in Inyo County (Postle, 2011).

Because of the limited resources and the distant location of the project from other fire stations in Inyo County, the SIFPD has mutual aid agreements with Pahrump Valley and Clark County (Las Vegas Fire Department). Under these agreements, the SIFPD may request assistance from these fire departments and they have full-time staff and reasonable response time (Postle, 2011).

Pahrump Valley Fire Rescue Services (PVFRS) has four stations, all of which are located in Nevada: Station 1 (located on 300 North Highway 160), Station 2 (located on Bel Vista at Barney), Station 3 (located on Kellogg at Squaw Valley Roads) and Station 5 (located on 461 East Harris Farm). These stations are staffed with full-time and volunteer firefighters. Stations 3 and 5 have full-time staff, Station 2 has volunteer staff, and Station 1 has a combination staff of full-time and volunteers. All staff have basic medical training and the PVFRS has five ambulances and two medical squads distributed among these stations. Station 1 has the only hazardous materials (Hazmat) team (PVFRS, 2011). The response time to the project site from Pahrump Valley is approximately 30 to 45 minutes (Postle, 2011).

5.10.3.6.3 Emergency Response

The Inyo County Department of Environmental Health Services is the local CUPA for Inyo County and it is located on 168 North Edwards, Independence, California (Long, 2011).

However, Nye County Fire Hazmat would also respond to any hazardous material incident at the project site. Nye County has two Hazmat teams; North and South. The South Hazmat Team would be the responding team. The South Hazmat Team is located at 1510 Siri Lane Suite 2, Pahrump, Nevada.

5.10.3.6.4 Hospitals

The closest hospital to the project site with an emergency room is the Desert View Regional Medical Center located at 360 South Lola Lane, Pahrump, Nevada (Postle, 2011). This facility is a 24-bed hospital with 24/7 emergency care. Trauma injuries from the project site can be air lifted by Mercy Air or Medical Evac to the University Hospital Medical Center (UMC) (Postle, 2011). The UMC is located on 1800 West Charleston Boulevard, Las Vegas, and is designated as a Level I adult and Level II pediatric trauma center. The UMC is equipped with 11 resuscitation and 18 intensive care unit beds (UMC, 2011).

5.10.3.7 Utilities

This section describes utilities in the area.

5.10.3.7.1 Electricity and Gas

VEA is the local electrical utility serving Pahrump. VEA is a non-profit electrical co-op that is member-owned. Its service territory (primarily in Nevada) stretches from Sandy Valley, NV on the south end to just inside Mineral County, Nevada, on the north end. HHSEGS will tie into the VEA service territory.

There is no natural gas service in the area including the Town of Pahrump. The project will connect to the closest natural gas source – the Kern River Gas Transmission line approximately 35 miles to the east.

5.10.3.7.2 Water and Wastewater

Potable water will come from treated groundwater using a package treatment plant. The water supply is described in Section 5.15, Water Resources.

Raw water will be drawn daily from onsite wells located at each power block and at the administration complex. These wells will supply both solar plants and will be used for make-up water, mirror-wash water (each solar plant will include a water treatment and deionizing facility in the power block structure), and for domestic uses. The combined capacity of the plants will require up to 140 acre-feet per year of water.

No reject streams from water treatment are planned to be generated onsite under the planned treatment scheme. Each solar plant includes a thermal evaporator system to reduce the volume of the process wastewater stream or stormwater streams that cannot be recycled back to the service water tank. The reject from the thermal evaporator will be trucked offsite.

5.10.3.7.3 Sanitary Waste Disposal

Each solar plant and the administration/warehouse building will include a septic tank and leach field system for potable water streams, including showers and toilet. When needed, septic tank contents will be removed from the site by a sanitary service.

5.10.4 Environmental Analysis

This section assesses the potential environmental impacts of the project.

5.10.4.1 Potential Environmental Impacts

Local environmental impacts were determined by comparing project demands during construction and operation with the socioeconomic resources of the project area (i.e., Inyo County). A proposed solar electric generating system could impact employment, population, housing, public services and utilities, and/or schools. Impacts could be local and/or regional, though most impacts would tend to be more regional than local. Although it is anticipated that the project will not have any significant adverse impacts on the socioeconomic environment, it is expected to result in some socioeconomic benefits to the area.

5.10.4.2 Significance Criteria

The criteria used to determine the significance of project-related socioeconomic impacts are as suggested in the California Environmental Quality Act Checklist. Project-related impacts are determined to be significant if they:

- Induce substantial growth or concentration of population
- Displace a large number of people or existing housing
- Result in substantial adverse environmental impacts associated with the provision of utility services
- Result in substantial adverse physical impacts associated with the provision of public services

Other impacts may be significant if they cause substantial change in community interaction patterns, social organization, social structures, or social institutions; substantial conflict with community attitudes, values, or perceptions; or substantial inequities in the distribution of project cost and benefit.

5.10.4.3 Construction Impacts

HHSEGS construction will take place over a 29-month period. It is anticipated that perimeter fencing and tortoise clearance for both Solar Plants 1 and 2 would occur during the third quarter 2012. Construction of Solar Plant 1 will commence 3 months before start of construction for Solar Plant 2. For Solar Plant 1, the construction period will take place from the fourth quarter 2012 through the fourth quarter 2014. As shown in Table 5.10-16, boundary fencing and tortoise site clearance will occur in Month 0, before the start of construction. Mobilization will occur the first months followed by site clearing and grubbing, which will take place over a 6-month period. Actual construction will take place over approximately 25 months, from Month 3 through Month 27. For Solar Plant 1, testing is planned to commence in the fourth quarter of 2014 with commercial operation by the end of the first quarter 2015. For Solar Plant 2, testing is planned to commence in the first quarter of 2015, with commercial operation by the end of the second quarter of 2015.

5.10.4.3.1 Construction Workforces

It is anticipated that most (75 percent) of the construction workforce will be drawn from Clark County and 20 percent from Nye County while the remaining (5 percent) will be drawn from Inyo County. The primary trades in demand will include pipefitters, electricians, construction managers, ironworkers, laborers, pre-assembly, carpenters, and unskilled labor. Table 5.10-16 provides estimates of construction personnel requirements for HHSEGS. Total personnel requirements during construction of HHSEGS will be approximately 18,465 person-months. Construction personnel requirements for the site will peak at approximately 1,033 workers in Month 14 of the construction period.

Available skilled labor in Inyo County was evaluated by surveying the Building and Trades Council (Table 5.10-17) and contacting CEDD (Table 5.10-18). Both sources show that the workforce in Inyo County will be adequate to fulfill Inyo County's portion (5 percent) of HHSEGS labor requirements for construction. Therefore, HHSEGS construction will not place an undue burden on the local workforce in Inyo County. Available skilled labor in the Las Vegas-Paradise MSA was determined by evaluating occupational projections (Table 5.10-19).

TABLE 5.10-16
Construction Personnel by Month

Month	0	1	2	3	4	5	6	7	8	9	10	11	12	13
PROJECT SITE														
Craft-day shift	40	60	88	139	556	625	690	725	746	756	756	786	806	795
Non-Craft-day shift	0	15	19	25	24	32	32	32	32	33	35	35	35	38
Craft-swing shift	0	0	0	0	60	60	60	60	60	60	60	60	60	60
Non-Craft-swing shift	0	0	0	0	3	3	3	3	3	3	3	3	3	3
Owner + Others	4	15	25	40	40	40	40	40	40	40	40	40	40	40
Compliance Support	80	80	30	30	30	30	30	30	30	30	30	30	30	80
Subtotal Site	124	170	162	234	713	790	855	890	911	922	924	954	974	1016
OFFSITE LINEARS*														
Transmission Line	0	0	0	0	0	0	0	0	0	0	0	3	3	3
Gas Line	0	0	0	0	0	0	0	0	0	0	0	2	2	21
Linear Compliance Support	0	0	0	0	0	0	0	0	0	0	0	0	0	6
TOTAL WORKFORCE	124	170	162	234	713	790	855	890	911	922	924	959	979	1,046

*Workforce for linears was included for use in dermning cumulative impacts.

TABLE 5.10-16
Construction Personnel by Month

Month	14	15	16	17	18	19	20	21	22	23	24	25	26	27	28	29	TOTAL
PROJECT SITE																	
Craft-day shift	812	853	840	785	778	724	665	633	269	225	181	131	88	44	30	20	14,606
Non-Craft-day shift	38	38	38	38	38	37	36	35	37	36	33	30	27	20	8	5	881
Craft-swing shift	60	60	60	60	60	60	60	60	0	0	0	0	0	0	0	0	1,080
Non-Craft-swing shift	3	3	3	3	3	3	3	3	0	0	0	0	0	0	0	0	54
Owner + Others	40	40	40	40	40	40	40	40	40	40	35	30	25	15	10	5	1,000
Compliance Support	80	30	30	20	20	10	10	10	5	5	5	5	5	5	5	5	820
Subtotal Site	1,033	1,024	1,011	946	939	874	814	781	351	306	254	196	145	84	53	35	18,361
OFFSITE LINEARS*																	
Transmission Line	15	36	39	37	37	29	10	10	6	0	5	0	0	0	0	0	233
Gas Line	21	21	21	21	30	0	0	0	0	0	0	0	0	0	0	0	139
Linear Compliance Support	6	6	6	6	6	4	4	4	4	0	2	0	0	0	0	0	54
TOTAL WORKFORCE	1,075	1,087	1,077	1,010	1,012	907	828	795	361	306	261	196	145	84	53	35	18,787

*Workforce for linears was included for use in dermining cumulative impacts.

TABLE 5.10-17
Labor Union Contacts

Labor Union	Contact
Kern, Inyo, Mono Counties Building Trades Council	John Spaulding (661) 323-7957
United Association of Local 525-Plumbers, Pipefitters and HVAC Refrigeration Technicians	Jeff Orr (702) 452-1520

TABLE 5.10-18
Available Labor by Skill in Inyo County, 2008 to 2018

Occupational Title	Annual Averages		Absolute Change	Percentage Change	Average Annual Compounded Growth Rate (%)
	2008	2018			
Carpenters	270	270	0	0.0	0
Cement Masons and Concrete Finishers	—	—	—	—	—
Painters, Construction and Maintenance	110	100	-10	-9.1	-1.0
Metal Workers and Plastic Workers	30	40	10	33.3	2.9
Electricians	50	40	-10	-20.0	-2.2
Welders, Cutters, Solderers, and Brazers	—	—	—	—	—
Industrial Truck and Tractor Operators	100	110	10	10.0	1.0
Operating Engineers and other Construction Equipment Operators	60	60	0	0.0	0.0
Helpers, Construction Trades	20	10	-10	-50.0	-6.7
Construction Laborers	120	130	10	8.3	0.8
Plumbers, Pipefitters, and Steamfitters	50	50	0	0.0	0.0
Administrative Services Managers	20	30	10	50.0	4.1
Civil Engineers	90	100	10	11.1	1.1
Engineering Technicians	20	20	0	0.0	0.0
Plant and System Operators	100	110	10	10.0	1.0

Source: CEDD, 2011c.

TABLE 5.10-19
Available Labor by Skill in Las Vegas-Paradise MSA, Nevada, 2008 to 2018

Occupational Title	Annual Averages		Absolute Change	Percentage Change	Average Annual Compounded Growth Rate (%)
	2008	2018			
Carpenters	17,456	17,360	-96	-0.55	-0.06
Cement Masons and Concrete Finishers	3,196	3,151	-45	-1.41	-0.14
Painters, Construction and Maintenance	3,689	3,772	83	2.25	0.22
Sheet Metal Workers	1,507	1,442	-65	-4.31	-0.44
Electricians	6,676	6,356	-320	-4.79	-0.49
Welders, Cutters, Solderers, and Brazers	1,212	1,311	99	8.17	0.79
Industrial Truck and Tractor Operators	2,007	2,241	234	11.66	1.11
Operating Engineers and other Construction Equipment Operators	2,212	2,233	21	0.95	0.09
Helpers, Construction Trades, All Other	661	550	-111	-16.79	-1.82
Construction Laborers	7,414	6,745	-669	-9.02	-0.94
Plumbers, Pipefitters, and Steamfitters	5,781	5,515	-266	-4.60	-0.47
Administrative Services Managers	1,187	1,327	140	11.79	1.12
Mechanical Engineers	—	—	—	—	—
Electrical Engineers	302	330	28	9.27	0.89
Engineering Technicians	559	569	10	1.79	0.18
Plant and System Operators	78	83	5	6.41	0.62

Source: NDETR, 2011c.

The occupational projections for Las Vegas-Paradise MSA indicate that there will be adequate skilled workforce to meet HHSEGS's labor requirements for construction within Clark County. In addition, as shown in Tables 5.10-8 and 5.10-9, employment in the construction sector has been declining primarily due to the weak economy. Therefore, HHSEGS will not result in a significant construction impact and will most likely help alleviate unemployment in the construction industry in both California and Nevada (i.e., would have a project benefit).

5.10.4.3.2 Population Impacts

Most workers are expected to commute to the HHSEGS site from communities in eastern Inyo County or Nye and Clark counties. Even workers that commute on a work-week basis do not tend to bring their families. Therefore, project construction will not contribute to an increase in the population of the area.

5.10.4.3.3 Housing Impacts

Most of the construction workforce will have to commute to the project site daily because accommodations are not available at the project site. Pahrump, Nevada, located approximately 18 miles from the project site, could provide some accommodations. Additionally, there are over 148,935 hotel/motel rooms located in Las Vegas, about 45 miles to the east of the project site (LVCVA, 2011). Some of these facilities could potentially accommodate California workers who choose to commute to the project site on a work-week basis.

5.10.4.3.4 Impacts to the Local Economy and Employment

The total cost of HHSEGS is estimated at \$2.7 billion (in 2011 dollars). The estimated direct material cost is \$2.3 billion. The estimated value of materials and supplies that will be purchased locally during construction is \$189.2 million. Of this amount, \$179.8 million (95 percent) would be spent in Clark and Nye counties combined, while the remaining \$9.5 million (5 percent) would be spent within Inyo County.

HHSEGS will provide about \$160 million (in 2011 dollars) in construction payroll, at an average salary of \$50 per hour (including benefits). The anticipated payroll for employees, as well as the purchase of materials and supplies during the construction period, will have a slight but temporary beneficial impact on the economies of Inyo, Clark, and Nye counties. Assuming that 5 percent of the construction workforce will reside in Inyo County, it is expected that approximately \$8.0 million in payroll will stay in Inyo County. Assuming, that 95 percent of the construction workforce will reside in either Clark or Nye county, it is expected that the remaining \$152 million in estimated construction payroll will remain in these two Nevada counties. These additional funds will cause a temporary beneficial impact by creating the potential for other employment opportunities (indirect and induced employment) for local workers in other service areas, such as transportation and retail.

Indirect and Induced Economic Impacts from Construction

Construction activity associated with HHSEGS would result in secondary economic impacts (indirect and induced impacts) within Inyo County. Secondary employment effects would include indirect and induced employment due to the purchase of goods and services by firms involved with construction, and induced employment due to construction workers spending their income within the county. In addition to these secondary employment impacts, indirect and induced income effects will arise from construction.

Indirect and induced impacts were estimated using an IMPLAN Input-Output model of Inyo County. IMPLAN is an economic modeling software program. The estimated HHSEGS indirect and induced employment within Inyo County would be 18 and 12 jobs, respectively. These additional jobs result from the \$3.9³ million in annual local construction expenditures as well as the approximately \$2,317,680 in spending by local construction workers. The \$2,317,680 represents the disposable portion of the annual construction payroll (assumed to be 70 percent of \$3,310,970). Assuming an average direct construction employment of 32, the employment multiplier associated with the construction of HHSEGS

³ The \$3.9 million is the annual portion of the total local construction expenditures (\$9.5 million) that is assumed to be spent in Inyo County. Annual portion of total expenditures = \$189.2 million x (29 months/12 months) = \$78.3 million. Since 5 percent of the construction expenditures are assumed to be from Inyo County, the annual construction expenditures within Inyo County = \$78.3 x 0.05 = \$3,915,092.

is approximately 1.9 [i.e., $(32 + 18 + 12)/32$]. This project construction employment multiplier is based on a Type SAM model.

Indirect and induced income impacts were estimated at \$711,110 and \$399,200, respectively. Assuming a total annual local construction expenditure (payroll, materials and supplies) of \$7,226,060 (\$3,310,970 in payroll + \$3,915,090 million in materials and supplies), the project construction income multiplier based on a Type SAM model is approximately 1.2 (i.e., $[\$7,226,060 + \$711,110 + \$399,200]/\$7,226,060$).

Indirect and induced impacts were also estimated using an IMPLAN Input-Output model of a region composed of the combined counties of Clark and Nye. The estimated HHSEGS indirect and induced employment within the two-county region would be 347 and 398 jobs, respectively. These additional jobs result from the \$74.4⁴ million in annual local construction expenditures as well as approximately \$44 million in spending by local construction workers. The \$44 million represents the disposable portion of the annual construction payroll (assumed to be 70 percent of \$62.9 million). Assuming an average direct construction employment of 605, the employment multiplier associated with the construction phase of the project is approximately 2.2 (i.e., $(605 + 347 + 398)/605$). This project construction phase employment multiplier is based on a Type SAM model.

Indirect and induced income impacts were estimated at \$14,303,860 and \$17,105,240, respectively. Assuming a total annual local construction expenditure (payroll, materials and supplies) of approximately \$137.3 million (\$62.9 million in payroll + \$74.4 million in materials and supplies), the project construction phase income multiplier based on a Type SAM model is approximately 1.2 (i.e., $[\$137,295,100 + \$14,303,860 + \$17,105,240]/\$137,295,100$).

5.10.4.3.5 Fiscal Impacts

HHSEGS' capital cost is estimated to be \$2.7 billion (in 2011 dollars). The estimated value of materials and supplies that will be purchased locally during construction of HHSEGS is \$189.2 million. Of this amount, about \$9.5 million (5 percent) would be spent in Inyo County, and the remaining \$179.8 million (95 percent) would be spent in the two-county region.

The effect on fiscal resources during construction will be from sales taxes realized on equipment and materials purchased in the county and from sales taxes on other expenditures. The sales tax rate in Inyo County is 7.75 percent (as of July 1, 2011). Of this, 6.25 percent goes to the state; one percent goes to the place of sale; and 0.5 percent goes to the special districts (BOE, 2011). Local sales tax revenues expected to be generated within Inyo County during the 29-month construction period is \$141,900. The sales tax rate in Clark and Nye counties are 8.1 percent and 7.1 percent, respectively (NDT, 2011). The total sales tax expected to be generated within the two-county region during the approximately 29-month construction period is \$14,180,540.

⁴ The \$74.4 million is the annual portion of the total local construction expenditures (\$179.8 million) that is assumed to be spent in the two-county region. Annual portion of total expenditures = \$189.2 million x (29 months/12 months) = \$78.4 million. Since 95 percent of the construction expenditures are assumed to be from the two-county region, the annual construction expenditures within the two-county region = \$78,301,850 x 0.95 = \$74,386,750.

5.10.4.3.6 Summary of Economic Impacts from Construction

Table 5.10-20 provides a summary of the inputs to the IMPLAN model and other key factors used to assess potential construction impacts. The table also provides a summary of the economic impacts from construction within Inyo County and the two-county region.

TABLE 5.10-20
Summary of Total Economic Impacts from Construction

	Inyo County, California	Two-County Region (Clark and Nye counties), Nevada	Total
Capital Cost (million \$)	\$2,703.3	\$0.0	\$2,703.3
Local Materials & Supply Purchases (million \$)	\$9.5	\$179.8	\$189.2
Total Construction Payroll (million \$)	\$8.0	\$152.0	\$160.0
Construction Payroll (Disposable) (million \$)	\$5.6	\$106.4	\$112.0
Annual Local Construction Expenditures (million \$)	\$3.9	\$74.4	\$78.3
Annual Average Local Construction Payroll (million \$)	\$3.3	\$62.9	\$66.2
Annual Average Local Construction Payroll (Disposable) (million \$)	\$2.3	\$44.0	\$46.4
Average Monthly Direct Construction Employment	32	605	637
Indirect Employment	18	347	365
Induced Employment	12	398	410
Construction Employment Multiplier	1.9	2.2	NA
Indirect Income	\$711,110	\$14,303,860	\$1,140,900
Induced Income	\$399,200	\$17,105,240	\$1,492,700
Construction Income Multiplier	1.2	1.2	NA
Total Sales Taxes	\$733,150	\$14,180,540	\$14,322,440

5.10.4.3.7 Impacts on Education

The schools in the Death Valley Unified School District and Pahrump area are not currently considered at capacity (Rock, 2011, and Paniagua, 2011) and, per Table 5.10-15, the enrollment levels have been declining. If there are additional students, the school district will enroll them as required by law.

Construction of HHSEGS will not cause significant population changes to Inyo, Nye, or Clark counties. Most employees will commute to the site from areas within the three counties, as opposed to relocating to the area. As a result, HHSEGS construction will not cause any significant increase in demand for school services.

5.10.4.3.8 Impacts on Public Services and Facilities

Due to the remote nature of the area, the construction phases of the project may have minor impacts on police, fire, or hazardous materials handling resources. The Applicant is working with the Inyo County Sheriff's office and fire department to understand requirements and reduce any impacts to services. HHSEGS construction is not expected to create significant adverse impacts on medical resources in the area because minor injuries could be treated at the Saint Rose Hospital in Henderson, Nevada or the University Medical Center Las Vegas. Both of these facilities have trauma centers.

5.10.4.3.9 Impacts on Utilities

HHSEGS construction will not make significant adverse demands on local water, sanitary sewer, electricity, or natural gas. Water requirements for construction are relatively minor. Given the number of workers and temporary duration of the construction period the impacts on the local sanitary sewer system (from emptying the "porta-potties") would not be significant.

5.10.4.4 Operational Impacts

There is a planned 3-month delay between the start of construction of Solar Plant 1 and Solar Plant 2. Solar Plant 1 is expected to begin operation 3 months before Solar Plant 2; although, the construction sequence could be reversed.

5.10.4.4.1 Operational Workforce

Table 5.10-21 shows the anticipated job classifications for the operations workforce for each Plant. It is expected to employ up to 120 full-time employees. Table 5.10-21 provides a breakdown by shift and work area.

TABLE 5.10-21
Operational Workforce by Work Area

Location	Solar Plant 1	Solar Plant 2	Admin Bldg	Total
Solar fields	15	15	—	30
Power blocks	12	12	—	24
MWM operators allocated in Admin building shower and sewage calculation	6	6	—	12
Warehouse & Maintenance	—	—	13	13
Admin personal – day shift only	—	—	31	31
TOTAL (actual)	33	33	44	110
Misc. Support	3	3	4	10
TOTAL (max)	36	36	48	120

TABLE 5.10-22
Operational Workforce by Shift and Work Area

	Solar Plant 1	Solar Plant 2	Admin Bldg	Total
Day shift	—	—	40	40
Night Shift	36	36	8	80
TOTAL				120

Operation workers will be drawn from the local workforce and from existing Applicant staff. Consequently, only a slight increase in population is anticipated as a result of this project. There will be no significant impact on local employment.

5.10.4.4.2 Population Impacts

Some of the operational workforce may be drawn from the local population (Pahrump). However, it is anticipated that most of the operational workforce will be drawn from Las Vegas in Clark County as well as parts of surrounding rural areas in Inyo County. Assuming that all 120 of the operations and maintenance workers reside in Inyo County, the expected increase in population would be less than one percent (0.3 percent). If all 120 workers reside in Pahrump, the anticipated increase in that city's population would also be negligible (0.6 percent). As such, the project is not likely to result in population impacts.

5.10.4.4.3 Housing Impacts

Due to the few operations staff, significant impacts to housing are not anticipated. Based on the housing vacancy data in Table 5.10-6, there are about 68,450 housing units in Clark County. Based on the same information (Table 5.10-6), there are about 1,374 housing units within Inyo County. Thus, some employees who need to relocate could choose to live within Inyo or Clark counties. Some may even want to have a new home built. However, the additional demand for housing would not be significant.

5.10.4.4.4 Impacts to the Local Economy and Employment

Operation of HHSEGS will generate a small, permanent beneficial impact by creating employment opportunities for local workers through local expenditures for materials, such as office supplies and services. HHSEGS will provide about \$15.65 million (in 2011 dollars) in operational payroll, at an average salary of \$130,435 per year (including benefits) for the assumed 120 full-time employees. There will be an annual operations and maintenance budget of approximately \$0.54 million (in 2011 dollars), 5 percent of which is assumed to be spent within Inyo County while the remaining 95 percent is assumed to be spent within the two-county region. These additional jobs and spending will generate other employment opportunities and spending in Inyo County and the two-county region. However, the addition of 120 (6 in Inyo County, 104 in the two-county region) full-time jobs would not significantly reduce unemployment rates.

Indirect and Induced Economic Impacts from Operation. Operation of HHSEGS would result in indirect and induced economic impacts that would occur within the counties depending on the point of sale. These indirect and induced impacts represent permanent increases in each county's economic variables. The indirect and induced impacts would result from annual expenditures for payroll as well as those on operations and maintenance and were estimated using separate IMPLAN Input-Output models of Inyo County and the two-county region.

The estimated HHSEGS indirect and induced employment within Inyo County would be none and three permanent jobs, respectively. The additional jobs result from the \$782,600 in payroll and the \$27,000 in local O&M expenditures. The operational phase employment multiplier is estimated at 1.6 (i.e., $[6 + 0 + 3]/6$) and is based on a Type SAM multiplier.

Indirect and induced income impacts are estimated at \$6,100 and \$109,490, respectively. The income multiplier associated with the operational phase of the project is approximately 1.1 (i.e., $[\$809,700,000 + \$6,100 + \$109,490]/\$809,700$) and is based on a Type SAM model.

The HHSEGS estimated indirect and induced impacts within the two-county region in Nevada would be 2 and 107 permanent jobs, respectively. These additional 109 jobs result from the \$15,382,570 (\$14,869,570 in payroll, \$513,000 in operations and maintenance) in annual operational budget. The operational phase employment multiplier is estimated at 2.0 (i.e., $[114 + 2 + 109]/114$) and is based on a Type SAM multiplier.

Indirect and induced income impacts are estimated at \$139,040 and \$4,616,900, respectively. The income multiplier associated with the operational phase of the project is approximately 1.3 (i.e., $[\$15,382,570 + \$139,040 + \$4,616,900]/\$15,382,570$) and is based on a Type SAM model.

5.10.4.4.5 Fiscal Impacts

Property Taxes

HHSEGS is expected to bring both sales tax and property tax revenue to Inyo County. Because the HHSEGS is a renewable energy power-generating facility, the county has jurisdiction over the valuation (Beck, 2011). As the legislation currently stands, HHSEGS qualifies for the exclusion of certain parts from valuation per the Revenue and Taxation Code, Section 73 (Lyle, 2011). Because there is no development in the project area currently, the property tax revenues are not distributed to individual assessment districts but instead go to the county. The applicable property tax rate for the project site is one percent (Ontano, 2011). Assuming the property tax exemptions apply, Inyo County would receive about \$3.9 million annually. This additional property tax revenue would constitute an almost 23 percent increase in the total county taxes over fiscal year 2010 amounts (see Table 5.10-11). As such, the additional property tax revenues generated by the HHSEGS would *significantly benefit* Inyo County.

Since the non-payroll O&M expenditures assumed to be spent within Inyo County is so small (\$27,000), the benefits to the county from sales tax revenues during operation are negligible.

5.10.4.4.6 Summary of Economic Impacts from Operation

Table 5.10-23 provides a summary of the operation inputs to the IMPLAN model and other key factors used to assess potential operation impacts.

TABLE 5.10-23
Summary of Total Economic Impacts from Operations & Maintenance

	Inyo County	Two-County Region	Total
Annual Local O&M Purchases (\$)	\$27,000.0	\$513,000	\$540,000
Total Annual O&M Payroll (\$)	\$782,600	\$14,869,570	\$15,652,170

TABLE 5.10-23
Summary of Total Economic Impacts from Operations & Maintenance

	Inyo County	Two-County Region	Total
Employment	6	114	120

Tables 5.10-24 summarize the economic impacts from operation by phase within Inyo County and the two-county region.

TABLE 5.10-24
Summary of Economic Impacts from Operation

	Inyo County	Two-County Region	Total
Indirect Employment	0	2	2
Induced Employment	3	107	110
Annual O&M Employment	6	114	120
O&M Employment Multiplier	1.5	2.0	NA
Indirect Income	\$6,010	\$139,030	\$145,140
Induced Income	\$109,470	\$4,616,900	\$4,726,370
Operation Phase Income Multiplier	1.1	1.3	NA
Total Annual Sales Taxes	\$410	\$38,990	\$39,400

5.10.4.4.7 Impacts on Education

The schools in the Death Valley Unified School District are not currently at capacity (Cook, 2011). Although HHSEGS is not expected to result in increased school enrollment that would be higher than the typical enrollment fluctuation observed in any given school year, any development (industrial or residential) within the Death Valley Unified School District boundaries is currently charged a one-time assessment fee of \$0.47 per square foot of principal building area (Cook, 2011). Based on 23,673 square feet of administration/storage (occupied structures), HHSEGS would pay \$11,126.31 in school impact fees as full mitigation for potential school impacts. Assuming that 95 percent of the 120 operational employees end up residing within Clark County, Nevada, the HHSEGS operation is not expected to create any significant adverse impacts to the local school system.

5.10.4.4.8 Impacts on Public Services and Facilities

Project operation will not make significant demands on public services or facilities. To minimize impacts, plant staff will be trained as first responders. HHSEGS operation will not create significant adverse impacts on medical resources in the area due to the safety record of power plants and few operations staff.

5.10.4.4.9 Impacts on Utilities

HHSEGS operation will not make significant adverse demands on sanitary sewer because the plant will use a septic system and leach line. The only impact to the sanitary sewer would come from the occasional need to have the septic tank's contents removed. Electricity would be provided by VEA. The project's load would be minor compared to VEA's service territory. There is no natural gas service in the area. Impacts to natural gas provided by KRGT would be small because HHSEGS requirements are small compared to the KRGT service territory.

5.10.5 Cumulative Effects

Because the majority of both construction and operations personnel will reside primarily in the Clark County, Nevada and live within commuting distance, no adverse effect to local schools or housing is anticipated. Although there are a number of projects that are currently under development in the vicinity of HHSEGS (see Section 5.6, Land Use) that could potentially have an adverse cumulative socioeconomic effect, most of these projects have not advanced to the point where enough is known about them in terms of construction workforce requirements or construction schedule. Despite the potential for construction schedule overlap with the Pahrump Valley General Aviation Airport, no adverse cumulative socioeconomic effects are anticipated from either the construction or operation of HHSEGS because construction workforce will ramp up slowly and would allow for workers to complete construction work and move to this project. Instead, the three counties will enjoy a beneficial (but not significant) impact from short-term construction and longer-term operations employment. In addition, the long-term payment of taxes and fees are expected to have a significant beneficial impact to the region.

For additional discussion of cumulative effects, see Section 5.6, Land Use.

5.10.6 Environmental Justice

President Clinton's Executive Order 12898, "Federal Actions to Address Environmental Justice in Minority Populations and Low-income Populations" was signed on February 11, 1994. The purpose of this Executive Order is to identify and address whether adverse human health or environmental effects are likely to fall disproportionately on minority and/or low-income members of the community.

The federal guidelines set forth a three-step screening process:

1. Identify which impacts of the project are high and adverse
2. Determine if minority or low-income populations exist within the high and adverse impact zones
3. Examine the spatial distribution of high and adverse impact areas to determine if these impacts are likely to fall disproportionately on the minority and/or low-income population

According to the guidelines established by EPA to assist federal agencies to develop strategies to address this circumstance, a minority and/or low-income population exists if the minority and/or low-income population percentage of the affected area is 50 percent or

more of the area's general population. The guidance suggests using two or three standard deviations above the mean as a quantitative measure of disparate effects.

A screening-level analysis of Environmental Justice is presented in Appendix 5.10A. According to that analysis, HHSEGS does not create high and adverse impacts. Therefore, there are no environmental impacts that are likely to fall disproportionately on minority and/or low-income members of the community.

5.10.7 Mitigation Measures

Pursuant to Education Code Section 17620, the Applicant will pay the one-time impact fee to the Death Valley Unified School District.

The Applicant will also provide onsite security during construction and operations and will work with County emergency service departments (sheriff and fire) to address the need for any additional support during the construction or operation of the project.

5.10.8 Involved Agencies and Agency Contacts

Table 5.10-25 provides a list of agencies and contact persons of potentially responsible agencies.

TABLE 5.10-25
Agency Contacts for Socioeconomics

Issue	Agency	Contact
Available resources and potential impacts to resources	Southern Inyo County Fire District	Paul Postle Chief of Southern Inyo County Fire District 410 Tecopa Hot Springs RD Tecopa, California 92389-0051 (760) 852-4130 paul2701@wildblue.net
Available resources and potential impacts to resources	Nevada Highway Patrol	Carlos Rivera Sergeant of Pahrump Substation Nevada Highway Patrol 2250 East Postal Drive #6 Pahrump Nevada 89048 (775) 727-7090 E-mail: crivera@dps.state.nv.us
Availability of labor	Kern, Inyo, Mono Counties Building Trades Council	John Spaulding Executive Secretary 200 West Jeffery St. Bakersfield, CA 93305 (661) 323-7957 Spauldingclc@yahoo.com
Availability of Labor	United Association Local 525 –Plumbers, Pipefitters and HVAC Refrigeration Technicians	Jeff Orr Financial Secretary UA Local 525 Plumbers and Pipefitters 760 North Lamb Blvd. Las Vegas, NV 89110 (702) 452-1520 Spauldingclc@yahoo.com

TABLE 5.10-25
Agency Contacts for Socioeconomics

Issue	Agency	Contact
Property Valuation	California Board of Equalization	Kurt Beck Senior Specialist Property Auditor-Appraiser 3321 Power Inn Rd., Ste. 210 Sacramento, CA 95826-3889 (916) 274-3300 Kurt.beck@boe.ca.gov
Property Tax Valuation and Rate	Inyo County Assessor	Phil Lyle Assistant Assessor 168 N Edward St. Independence, CA 93526 (760) 878-0357 plyle@Inyocounty.us
Property Tax Distribution	Inyo County Auditor-Controller	Amy Shepard Assessor/Auditor 168 N Edward St. Independence, CA 93526 (760) 870-0253 Ashephard@Inyocounty.us
Potential enrollment impacts, school impact fees	Death Valley Unified School District	Carrie Rock Administrative Assistant P.O. Box 217 Shoshone, CA 92384 (760) 852-4303 carrie_rock@inyo.k12.ca.us
Potential enrollment impacts, school impact fees	Death Valley Unified School District	Jennifer Cook Business Assistant P.O. Box 217 Shoshone, CA 92384 (760) 852-4303 Jennifer_cook@inyo.k12.ca.us
Potential enrollment impacts, school impact fees	Nye County School District	Kerry Paniagua Executive Secretary of the Superintendent & BOT P.O. Box 113 Tonopah, NV 89049 (775) 482-6258 kpaniagua@nye.k12.nv.us
Emergency response time	Inyo County Sheriff's Department	Keith Hardcastle, Undersheriff 550 South Clay Street P.O. Box S Independence, CA 93526 (760) 878-0327 khardcastle@Inyocounty.us

5.10.9 Permits Required and Permit Schedule

Permits dealing with the effects on public services are addressed as part of the building permit process. For example, school development fees are typically collected when the Applicant pays building permit fees to the County. No permits are required to comply with the socioeconomic impacts of the project.

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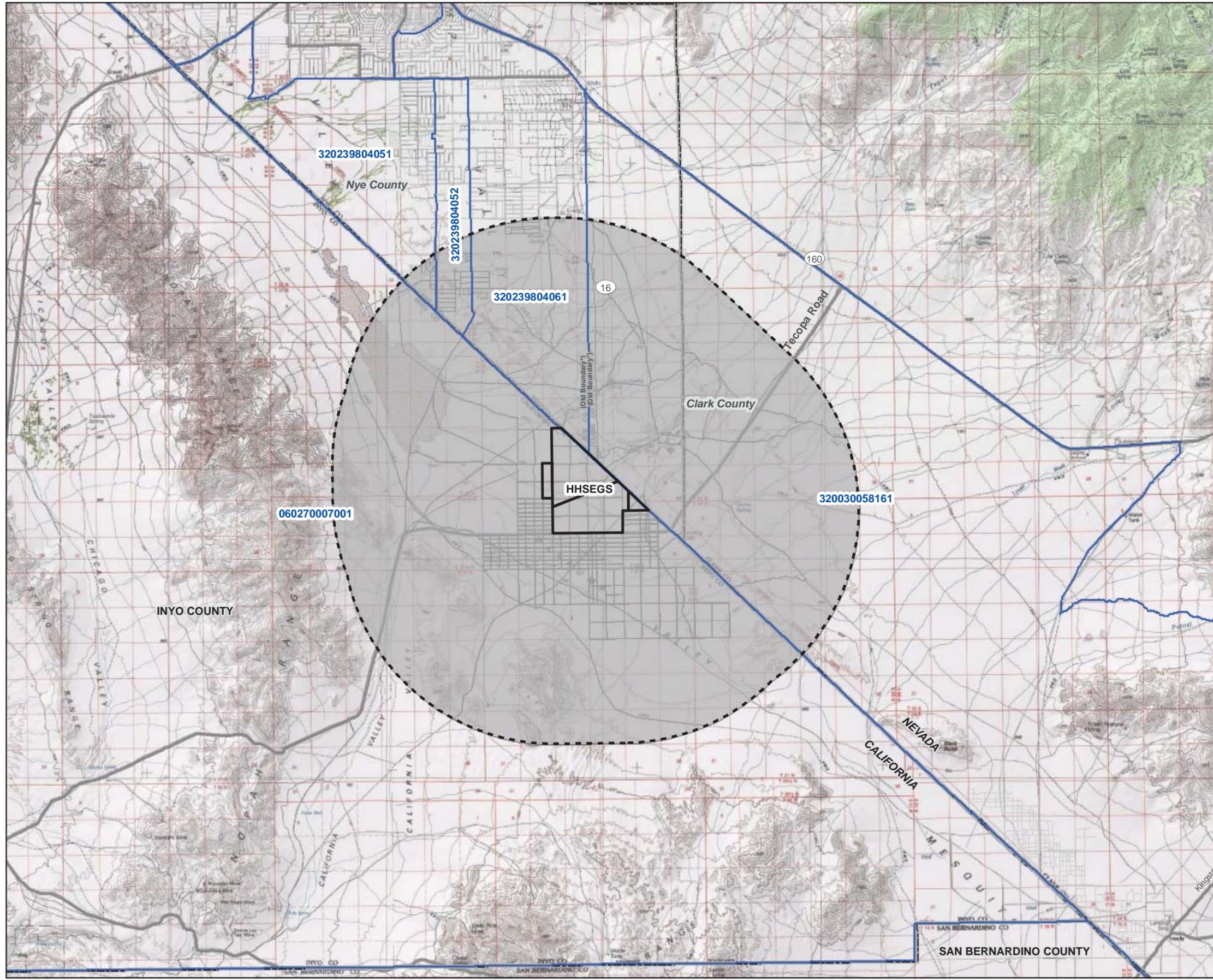
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LEGEND

Project Site Data

- HHSEGS Boundary
- 6-mile Buffer of HHSEGS

Percentage of Minority Population

- No Minority Population
- 0-50 Percent Minority Population
- 50-100 Percent Minority Population
- Census Block Groups

*County boundary moved due to annexation, 2001

Notes:
 1. Source: American Fact Finder, Census 2000 Summary File 1 (SF 1) 100-Percent Data, U.S. Census Bureau, 2011

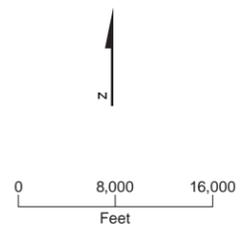
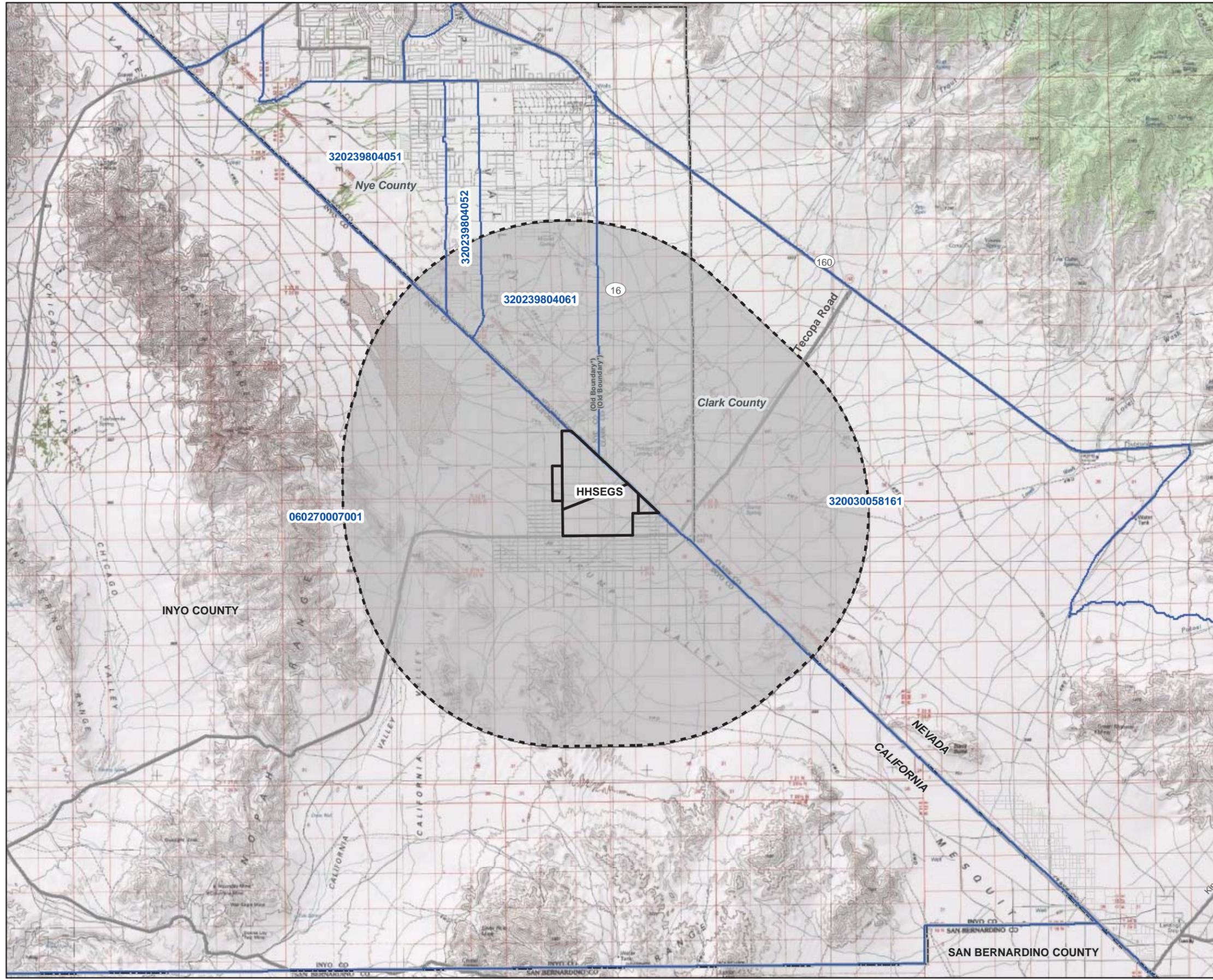


FIGURE 5.10-1
Minority Population Distribution By
Census Block Groups Within 6 Miles
 Hidden Hills Solar Electric Generating System



LEGEND

Project Site Data

- HHSEGS Boundary
- 6-mile Buffer of HHSEGS
- Census Block Groups

Percentage of Low Income Population

- No Low Income Population
- 0-50 Percent Low Income Population
- 50-100 Percent Low Income Population

*County boundary moved due to annexation, 2001

Notes:
 1. Source: American Fact Finder, Census 2000 Summary File 1 (SF 1) 100-Percent Data, U.S. Census Bureau, 2011

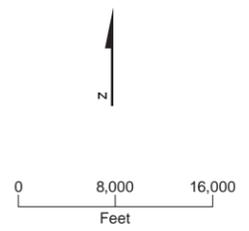


FIGURE 5.10-2
Low Income Population Distribution
By Census Block Groups Within 6 Miles
 Hidden Hills Solar Electric Generating System