State of Nevada
Renewable Energy Tax Abatement Application
AFN:

Facility Information	
Date of Submittal to GOE:	
Type of Incentives (Please check all that the company is applying for on this application)	
[X] Sales & Use Tax Abatement [X] Property Tax Abatement	
Company Information (Legal name of company under which business will be transacted in Nevada)	
Company Name: **Copper Mountain Solar 4, LLC**	
Department of Taxation's Tax Payer ID number:	**1017626570-001**
Federal Employer ID number (FEIN, EIN or FID):	**46-2285135**
NAICS Code:	**221114 (2012 NAICS)**
Description of Company's Nevada Operations: **Develop, own and operate a solar power generation facility. It is expected that Copper Mountain Solar 4, LLC will be an Exempt Wholesale Generator under applicable FERC regulations. Copper Mountain Solar 4, LLC is a Sempra Energy Company. Sempra Energy is a Fortune 500 energy services holding company with 2013 revenues of $10.5 billion. A copy of its annual report is at: http://www.sempra.com/pdf/financial-reports/2013-annualreport.pdf**	
Percentage of Company's Market Inside Nevada: **The delivery point for all electricity is the Merchant 230kV Switchyard in Nevada. Beginning on January 1, 2020, the electricity will be transmitted to California for the Southern California Edison customers. Electricity generated prior to the January 1, 2020 date will be sold through a variety of arrangements to include merchant sales.**	**0%.**
Mailing Address: **101 Ash Street**	
City: **San Diego** **CA** Zip: **92101-3017**	
Phone: **(619) 696-4836**	
APN: Portions of the following APNs: 213-00-001-031, 213-00-001-027, 213-00-001-010, 21300-001-011	
Taxation District where facility is located: **52**	
Nevada Facility	
Type of Facility (please check all that are relevant to the facility)	
[ ] Geothermal [ ] Process Heat from Solar Energy [X] Solar PV [ ] Solar Thermal [ ] Wind [ ] Biomass [ ] Waterpower [ ] Fuel Cells [X] Transmission that is interconnected to a renewable energy or geothermal facility [ ] Transmission that contributes to the capability of the electrical grid to accommodate and transmit electricity produced from Nevada renewable energy facilities and/or geothermal facilities	
Name Plate Production Capacity of the Facility:	**93.6 MW**
Net Output Production Capacity of the Facility in MW:	**92 MW**
Annual Net Production Capacity of the Facility in MWh (or other appropriate unit):	**278.2 GWh**
Estimated total capital investment: - **See Attachment G**	**236,112,000**
Percent of total estimated capital investment expended in Nevada:	**Approximately 28%**
Anticipated date or time range for the start of construction:	**December 1, 2015**
Anticipated date for the Commercial Operation Date (COD) of the facility:	**November 30, 2016**
Address of the Real Property for the Generation Facility: **659 Eldorado Valley Drive**	
City: **Boulder City, NV** Zip: **89005**	

Size of the total Facility Land (acre):	**Approximately 682 Acres**

Are you required to file any paper work with the PUC and/or FERC?	**Yes**

If yes,	Purpose of the Filing with PUC: **Yes. Obtain order/permit to construct electric generation facility pursuant to the Utilities Environmental Protection Act (UEPA).**	Filing Date OR Anticipated filing Date: **UEPA application was filed on 10/8/14. Order granted on 12/17/14.**	If Filed, PUC Docket Number: **Docket No. 14-10013**	**See Attachment D**
If yes,	Purpose of the Filing with FERC: **Obtain 1.) Market Based Rate Authority, 2.) Exempt Wholesale Generator Status**	Filing Date OR Anticipated filing Date: **Second Quarter of 2015**	If Filed, FERC Docket Number:	

	List All the county(s), Cities, and Towns where the facility will be located	
1	**City of Boulder City, Clark County**	
2		
3		
4		
5		
6		
7		
8		
9		

	CHECKLIST - PLEASE ATTACH:	
1	Description of the Technology and Complete Facility including generation, transmission or distribution, the physical point at which the ownership of energy is transferred and nature of the connection to the transmission grid - **See Attachment A**	
2	Complete and legal description of the location of the proposed facility, including a regional facility map that identifies the location, county boundaries and state boundaries of the proposed facility or a reference to any such map of appropriate scale - **See Attachment B**	
3	Description of any natural or nonrenewable resources that will be affected by or required to be used in the construction or operation of the proposed facility, including statement of any areas of mitigation, controversy, issue or concern - **Diesel generators and heavy equipment will be used for grading and construction. See Attachment C**	
4	Summary of the PUC and FERC Dockets if any PUC and FERC filing have started - **See Attachment D**	
5	Copy of the Business Plan for the Nevada Facility - **See Attachment E**	
6	For Expansion Applications, Copy of the most recent assessment schedule and tax bill from the County Assessor's Office or the Department of Taxation - **N/A**	
7	Website link to company profile **http://www.semprausgp.com/**	
8	Copy of the Current Nevada State Business License - **Attached**	
9	Facility Information Form	
10	Employment Information, construction, and permanent employee salary schedules	
11	Supplemental Information Form	
12	Taxation Reporting Forms (Summary Sheet and Schedules 1 through 8)	
13	Names and contact information for construction company, contractors, subcontractors	
14	Letter from the utility or company describing the highlights of PPA, LOI, or MOU. - **See Attachment F**	
15	Confidential Information Identification Form	

State of Nevada
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List of Required Permits or Authorizations for the Proposed Facility

	Permit or Authorization Title	Issuing Agency	Project Circumstance Requiring Permit or Authorization	Steps to Obtain Permit	Application Date	Approval Date or Expected Approval Date
I. Federal Permits or Authorizations						
II. State of Nevada Permits or Authorizations						
	UEPA Compliance Order	Public Utilities Commission of Nevada	Renewable energy facility greater than 70 MW	Submit initial application and amended as needed.	10/8/2014	12/17/2014
	UEPA Permit to Construct - Phase 1	Public Utilities Commission of Nevada	Site grading/Temporary Construction Facilities	Submit required permits for applicable phase (per Corrected Order)	6/1/2015	6/15/2015
	UEPA Permit to Construct - Phase 2	Public Utilities Commission of Nevada	Substation, Gen-Tie, and Solar Field Construction.	Submit required permits for applicable phase (per Corrected Order)	7/1/2015	7/15/2015
	Coverage under the General Storm water Permit for Construction Activities	Nevada Division of Environmental Protection	Construction activities impacting greater than 1 acre	Submit Notice of Intent, prepare and implement a Storm Water Pollution Prevention Plan	7/6/2015	10/19/2015
	Hazardous Material Permit	Nevada State Fire Marshall	Installation of fuel tanks	Submit application, undergo inspection by Fire Marshall	1012/15	11/9/2015
	Onsite Temporary Septic Permit	Nevada Division of Environmental Protection	Construction of water line and access road	Submit initial application, complete NDEP Review, submit a Notice of Intent (NOI) application, verify by letter, and engineer's stamp (Nevada P.E.), that construction of this OSDS system was completed according to the approved plans.	8/3/2015	9/7/2015
III. County Permits or Authorizations						
	Dust Control Permit	Clark County Department of Air Quality and Environmental Management	Construction activities impacting greater than 0.1 acre	Submit application with detailed dust control plan	7/20/2015	11/2/2015

	Coverage under the Clark County Multispecies Habitat Conservation Plan	Clark County (as Plan Administrator)	Ground disturbing activities on non-Federal lands within Clark County	Submit application for grading permit to Boulder City. Pay mitigation fee.	9/21/2015	11/2/2015
IV. City Permits or Authorizations						
	Excavation Permit, Water Line [Ref 50-13]	Boulder City	Construction of water line and access road	Submit application for permit to Boulder City. Pay fee.	6/1/2015	6/15/2015
	Underground Utilities, Water Line [Ref 13-029]	Boulder City	Construction of water line and access road	Submit application for permit to Boulder City. Pay fee.	6/1/2015	6/15/2015
	Fire Underground Installation, Water Line [Ref 2013-29]	Boulder City	Construction of water line and access road	Submit application for permit to Boulder City. Pay fee.	6/1/2015	6/15/2015
	Onsite Utilities, Water Line [Ref 13-0295]	Boulder City	Construction of water line and access road	Submit application for permit to Boulder City. Pay fee.	6/1/2015	6/15/2015
	Excavation Permit, Access Road [Ref 71-13]	Boulder City	Construction of water line and access road	Submit application for permit to Boulder City. Pay fee.	6/1/2015	6/15/2015
	Grading Permit [Ref 13-0190]	Boulder City	Construction of substation and gen-tie lines	Submit application for permit to Boulder City. Pay fee.	6/1/2015	6/15/2015
	Foundations, Below Grade Conduit and Ground Grid [Ref 13-0306]	Boulder City	Construction of substation and gen-tie lines	Submit application for permit to Boulder City. Pay fee.	6/1/2015	6/15/2015
	Transmission Line and Associated Structures, Foundations and Conductor [Ref 13-0330]	Boulder City	Construction of substation and gen-tie lines	Submit application for permit to Boulder City. Pay fee.	6/1/2015	6/15/2015
	Set Temp Trailer - Boulder City Fire Dept [Ref 13-0303]	Boulder City	Construction of substation and gen-tie lines	Submit application for permit to Boulder City. Pay fee.	6/1/2015	6/15/2015
	Grading Permit	Boulder City	Construction of solar site	Submit application for grading permit to Boulder City. Pay fee.	7/1/2015	7/25/2015
	Building Permit	Boulder City	Construction of solar site	Submit application for building permit to Boulder City. Pay fee.	7/1/2015	7/25/2015
	Fence Permit	Boulder City	Construction of solar site	Submit application for permit to Boulder City. Pay fee.	7/1/2015	7/25/2015

NOTE: Project contractors, subcontractors, and other entities including owner that will be purchasing goods and equipment for the construction of the Facility are entitled to claim or receive the sales and use tax abatement.

Contractors and Subcontractors List

Vendor 1	Amec Foster Wheeler
Tax ID	
Contact	
Mailing Address	1979 Lakeside Parkway Suite 400, Tucker, GA 30084
E-Mail	
Vendor 2	Cupertino Electric, Inc.
Tax ID	
Contact	
Mailing Address	1132 N. 7th Street, San Jose, CA 95112
E-Mail	
Vendor 3	
Tax ID	
Contact	
Mailing Address	
E-Mail	
Vendor 4	
Tax ID	
Contact	
Mailing Address	
E-Mail	
Vendor 5	
Tax ID	
Contact	
Mailing Address	
E-Mail	
Vendor 6	
Tax ID	
Contact	
Mailing Address	
E-Mail	
Vendor 7	
Tax ID	
Contact	
Mailing Address	
E-Mail	

Contains Sensitive Contractor Information

Employment Information

Employment

New Operations or Expansion

CONSTRUCTION EMPLOYEES	Full Time	Part Time
Number of anticipated construction employees who will be employed during the entire construction phase?	200	
Average anticipated hourly wage of construction employees, excluding management and administrative employees:	$64.62	
Number of anticipated construction employees who will be employed during the second-quarter of construction?	85	
Percentage of anticipated second-quarter construction employees who will be Nevada Residents?	68%	
Number of anticipated second-quarter construction employees who will be Nevada Residents?	58	

Contains Sensitive Contractor and Employee Information

PERMANENT EMPLOYEES		
Number of anticipated permanent employees who will be employed as of the end of its first fourth-quarter of new operations or expansion?	3	0
Average anticipated hourly wage of permanent employees, excluding management and administrative employees:	$31.00	
Number of permanent employees who were employed prior to the expansion?	0	0
Average hourly wage of current permanent employees, excluding managements and administrative employees		

Employee Benefit Program for Construction Employees

Health Insurance for construction employees and an option for dependents must be offered upon employment

List Benefits Included (medical, dental, vision, flex spending account, etc.): Medical, Dental, and Vision

Name of Insurers: Local 357 - BeneSys, Inc., Las Vegas, NV and Local 396 - Line Construction Benefit Fund (LINECO),Las Vegas, NV

Cost of Total Benefit Package:	Local 357: JM - $28.50 FM - $27.40 GF - $28.41 Local 396: All - $21.67	Cost of Health Insurance for Construction Employees:	Local 357: JM/FM/GF - $7.90/HR Local 396: All - $5.30

Construction Employee Schedule

List all anticipated construction employees and associated wages for all persons who will be working on the construction of the facility during the entire construction period.

FULL TIME EMPLOYEES

		(a)	(b)	(c) = (a)+(b)	(e) = (c) x (d)	(f) = Σ(e) / Σ(c)
#	Job Title	# of Nevada Employees	# of Non-Nevada Employees	Total # of Employees	Total Hourly Wage per category ($)	Average Hourly Wage ($)
	Construction Employees, excluding					
	Management and Administrative Employees					
	Site Superintendent					
	General Foreman					
	Foreman					
	Journeyman					
	Apprentice					
	TOTAL	120	80	200		$64.62
	TOTAL CONSTRUCTION PAYROLL	*estimated at time of award				$33,000,000*

Contains Sensitive Contractor Information

Second Quarter Construction Employee Schedule

List all anticipated construction employees and associated wages for all persons who will be working on the construction of the facility during the **second quarter** of construction.

FULL TIME EMPLOYEES

		(a)	(b)	(c) = (a)+(b)	(e) = (c) x (d)	(f) = Σ(e) / Σ(c)
#	Job Title	# of Nevada Employees	# of Non-Nevada Employees	Total # of Employees	Total Hourly Wage per job title ($)	Average Hourly Wage ($)
	Site Superintendent					
	General Foreman					
	Foreman					
	Journeyman					
	Apprentice					
	TOTAL	58	27	85		$63.19

Contains Sensitive Contractor Information

TOTAL CONSTRUCTION PAYROLL	*estimated at time of award	$9,350,000*

Permanent Employee Schedule

List all anticipated permanent employees who will be employed by the Nevada Facility as of the end of its first fourth-quarter of new operations or expansion and the employment per job title will continue next 20 years

FULL TIME EMPLOYEES

		(c)	(f) =Σ(e) / Σ(c)
#	Job Title	# of Employees	Average Hourly Wage ($)
1	Management and Administrative Employees	1	
2	Permanent Employees, excluding Management	2	
	and Administrative Employees		
	TOTAL		$31.00

TOTAL ANNUAL PAYROLL	

Contains Sensitive Employee Information

State of Nevada
Renewable Energy Tax Abatement Application
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Supplemental Information

Please respond to each question. Answers to the questions will assist Department of Taxation staff in determining whether the facility should be locally or centrally assessed. Other questions will assist staff in understanding whether the reported replacement costs capture all aspects of taxable value.

1) Will you have a possessory interest in any governmentally owned property for this facility? Please describe if yes.

Yes. The Solar PV facility and generation tie-line will be built on land leased by Applicant from the City of Boulder City. The City of Boulder City owns the land that will be leased.

2) Will the facility, including generation, transmission, or distribution cross state or county boundaries? If yes, please describe.

No.

3) Is the facility owned by a subsidiary of a company that is interstate or intercounty in nature? Name and location of the subsidiary company, if yes.

Yes. Copper Mountain Solar 4, LLC is a subsidiary of Sempra Energy. Sempra Energy is a Fortune 500 energy services holding company with headquarters located at 101 Ash Street, San Diego, CA 92101-3017. Copper Mountain Solar 4, LLC is the entity that owns the facility which is located at 659 Eldorado Valley Drive, Boulder City, NV 89005.

4) At what physical point is the ownership of energy transferred? Describe the location and nature of the connection to the transmission grid.

Ownership of the energy is transferred at a meter at Applicant's substation which is located at the Solar PV facility. From the substation, energy is transmitted via approximately 0.5 mile gen-tie line to Merchant Switchyard. At the switchyard, the energy enters the transmission grid. Applicant will hang a circuit on the 0.5 mile gen-tie line that is anticipated be jointly owned with Copper Mountain Solar 2, LLC.

5) Will the facility be eligible for other abatements or exemptions such as pollution control exemptions? Please describe if yes

No.

6) Has your company applied and/or been approved for any abatements or exemptions for this facility or any other facility by the State of Nevada and/or local governments? If yes, list the abatements awarded, name and location of the project, name of the awarder, date of approval, amounts and status of the accounts.

No. Note: Sempra Energy affiliated companies, Copper Mountain Solar 1, LLC, Copper Mountain Solar 2, LLC and Copper Mountain Solar 3, LLC have been granted an abatement for solar generation facilities.

State of Nevada
Renewable Energy Tax Abatements Application
AFN:

Summary Report
Schedules 1 through 8

Company: Copper Mountain Solar 4, LLC

Division: _____

Line No.	Schedule	Total Estimated RCNLD or Transaction Cost	Department Use Only
1	Sch. 1 Personal Property - Property Tax - Total from Col. J.	$148,579,068	
2	Sch. 2 Real Property - Improvements - Total from Col. F.	$6,642,828	
3	Sch. 3 Real Property - Land - Total from Col. I	$2,385,845	
4	Sch. 4 Operating Leases - Total from Col. F	$0	
5	Sch. 5 Contributions in Aid of Construction - Total from Col. F	$400,942	
6	Sch. 6 First Year Estimated Sales & Use Tax - Total from Col. J	$11,948,965	
7	Sch. 7 Second Year Estimated Sales & Use Tax - Total from Col. J	$46,251	
8	Sch. 8 Third Year Estimated Sales & Use Tax - Total from Col. J	$16,200	

State of Nevada
Renewable Energy Tax Abatements Application
AFN:

Property Tax: Personal Property
Schedule 1

Company: Copper Mountain Solar 4, LLC

Division: _____

Instructions:

(1) List each item of personal property subject to property tax in Col A. Pursuant to NRS 361.030, personal property includes stocks of goods on hand; any vehicle not included in the definition of vehicle in NRS 371.020; all machines and machinery, all works and improvements, and all property of whatever kind or nature not included in the term "real estate" as that term is defined in NRS 361.035.

(2) For each item in Col. A, complete the requested information in Col. B and Col. D (if applicable), Col. C and Col. D through Col. J.

(3) The total estimated cost reported in Col. H should include estimated or actual costs of installation and costs of transportation per NAC 361.1351 and NAC 361.1355. Costs of installation include the costs of direct labor, direct overhead and the capitalized expense of interest or imputed charges for interest which are necessary to make the property operational.

(4) Use the Personal Property Manual published by the Department of Taxation to determine the Cost Less Depreciation in Column (J). Select the Life Schedule that is closest to the estimated life of the personal property listed in Col. I. *See http://tax.state.nv.us. Then select: Publications/Locally Assessed Properties/Personal Property Manual.*

(5) Attach additional sheets as necessary.

A	B	C	D	E	H	I	J
Personal Property Itemized Description	**G/L Account No. (if applicable)**	**Purchased by Facility Owner (FO) Contractor (C) Subcontractor (SC)**	**Date Purchased (if applicable)**	**Date Received or Estimated Date of Receipt in Nevada**	**Estimated Total Acquisition Cost**	**Estimated Life of Personal Property**	**Estimated Acquisition Cost Less Depreciation**
Inverter Deliveries		C					
PV Module Deliveries		C					
PV Rack Deliveries		C					
SCADA Deliveries		C					
Transformer Deliveries		C					
Electrical System Material		S					
Substation & Interconnect Material		C					
Engineering & Permitting		C					
Switchgear		C					
							$ -
							$ -
							$ -
							$ -
							$ -
							$ -
							$ -
							$ -
							$ -
							$ -
							$ -
Grand Total							$148,579,067.94

Contains Sensitive Deatiled Facility Cost Information

State of Nevada
Renewable Energy Tax Abatements Application
AFN:

Property Tax: Real Property Improvements
Schedule 2

Company: Copper Mountain Solar 4, LLC
Division: _____

Instructions:

(1) List each item of real property improvements subject to property tax in Col A. Pursuant to NRS 361.035, real property includes all houses, buildings, fences, ditches, structures, erections, railroads, toll roads and bridges, or other improvements built or erected upon any land, whether such land is private property or public property; as well as mobile or manufactured

(2) For each item in Col. A, complete the requested information in Col. B (if applicable), and Col. C through Col. F.

(3) The total estimated cost reported in Col. F should include estimated or actual costs of labor, materials, supervision, contractors' profit and overhead, architects' plans and specifications, engineering plans, building permits, site preparation costs, sales taxes and insurance; costs of buying or assembling land such as escrow fees, legal fees, right of way costs, demolition, storm drains, rough grading or other land improvement costs, yard improvements including septic systems, signs, landscaping, paving, walls, yard lighting; off-site costs including roads, utilities, park fees, jurisdictional hookup, tap-in, impact

(4) Use Schedule 3 to report land; Schedule 4 to report operating leases; and Schedule 5 to report contributions in aid of

(5) Attach additional sheets as necessary.

A	B	C	F
Real Property Improvements Itemized Description	G/L Account No. (if applicable)	Estimated Date of Completion	Estimated Total Construction Cost
Grading and Site Work			
Fencing			
Grand Total			$ 6,642,828.00

Contains Sensitive Deatiled Facility Cost Information

State of Nevada
Renewable Energy Tax Abatements Application
AFN:

Company: Copper Mountain Solar 4, LLC

Division: _____

Property Tax: Real Property Land
Schedule 3

Show the requested data for **all land**, owned or leased, in Nevada.

A	B	C	D	E		F	G	H	I
	Where Situated			Brief Description, Size of the Land (acre), Date Acquired	Assessor's Parcel Number (APN)	Owned (O) Leased (L) Rented (Rtd)	G/L Account Number (if applicable)	Purchase Price (if applicable)	Assessor's Taxable Value
Line #	County	City or Town	Tax District						
1	Clark	Boulder City	52	306.01	Portions of 213-00-001-031	L		N/A	$ 1,071,035
2	Clark	Boulder City	52	169.62	213-00-001-027	L		N/A	$ 593,670
3	Clark	Boulder City	52	320.13	213-00-001-010	L		N/A	$ 1,120,455
4	Clark	Boulder City	52	640.00	Portions of 213-00-001-011	L		N/A	$ 2,240,000
5	Total			1435.76					$ 5,025,160
6	Total Acres Leased by CMS4			681.67					
7	Ratio of Leased Acres to Total Acres			47.4780%					
8	Assessor's Taxable Value of Leased Acres								$ 2,385,845
9									
10									
11									
12	**Grand Total**								$ 2,385,845

Note: CMS4 will utilize a non-exclusive gen-tie easement with portions of APN 213-00-001-027 and 214-00-001-026.
The gen-tie towers are shared between CMS projects and reside on land leased by CMS projects and/or SDG&E from the City of Boulder City.

State of Nevada
Renewable Energy Tax Abatements Application
AFN:

Property Tax: Operating Leases
Schedule 4

Company: Copper Mountain Solar 4, LLC

Division: _____

Instructions:

(1) List each operating lease for real or personal property. Designate whether the lease is for real or personal property in Col. C.

(2) For each item in Col. A, complete the requested information in Col. B (if applicable), and Col. C through Col. F.

(3) The total estimated cost reported in Col. E and Col. F should contain the costs appropriate to real or personal property. For definitions, please refer to Schedule 1 for personal property and Schedule 2 for Improvements.

(4) Report the Annual Lease Payment in Col. G; the term of the lease in Col. H; and any residual value at the end of the lease term in Col. I.

(5) Attach additional sheets as necessary.

A	B	C	E	F	G	H	I
Operating Lease Itemized Description	G/L Account No. (if applicable)	Real or Personal Property?	Lessor's Replacement Cost Per Unit	Estimated Total Replacement Cost	Annual Lease payment	Lease Years Remaining	Residual Value
Lease Agreement* (see notes below)		Real	<Sch 3>	<Sch 3>	$ 1,022,505	20	<Sch 3>
Grand Total							

* CMS4 has an option to lease a 681.67-acres site with Boulder City. Current annual option payments are $40,000 payable in June.
When CMS4 executes the option to begin the lease, it will pay $375.00/acre annually for the first year during construction
Then it will pay $750/acre annually for the second year of construction
When CMS4 is operational, base rent will be $1,500/acre annually for twenty years, no escalation.
The lease has two 10-year extension terms; rent will escalate at 2.5% annually only during the extension terms.
Due to the later timing of the PPA, CMS4 expects it will need to exercise the first lease extension term.

State of Nevada
Renewable Energy Tax Abatements Application
AFN:

Property Tax: Contributions in Aid of Construction
Schedule 5

Company: Copper Mountain Solar 4, LLC
Division: _____

Instructions:

(1) List all contributions in aid of construction (CIAC). CIAC is defined in NAC 361.260 as property which has been contributed to a utility by a prospective customer or which has been constructed by the utility and paid for by the prospective customer for which no reimbursement is required to be made by the utility to the prospective customer as a prerequisite to obtaining service.

(2) For each item in Col. A, complete the requested information in Col. B (if applicable), and Col. C through Col. F.

(3) The total estimated cost reported in Col. E and Col. F should contain the costs appropriate to real or personal property. For definitions, please refer to Schedule 1 for personal property and Schedule 2 for improvements.

(4) Attach additional sheets as necessary.

A	B	C	D	E	F
Contributions in Aid of Construction (CIAC) Itemized Description	**G/L Account No. (if applicable)**	**Real or Personal Property?**	**Number of Units**	**Replacement Cost Per Unit**	**Estimated Total Replacement Cost**
LGIA: Extend Gen-Tie from the POI at the 230 kV Bus at Merchant Switchyard to the POCO (Install 190 feet of 230 kV, bundled 954 kcmil conductor with OPGW). The facilities are owned by SDG&E.		Personal Property			
UFA: Interconnection Facilities Costs. The facilities are owned by SoCal Edison.		Personal Property			
Grand Total					$ 400,942

Contains Sensitive Deatiled Facility Cost Information

State of Nevada
Renewable Energy Tax Abatements Application
AFN:

Sales and Use Tax
First Year of Eligible Abatement
Schedule G

Company: Copper Mountain Solar 4, LLC
Division: _____

Construction Year 1 - December 2016 through November 2016

Instructions:

(1) Column A: List each item of personal property or materials and supplies subject to sales and use tax (please include leases. Refer to NRS Chapter 372 for taxable events.
(2) Column B: For each item in column A, list applicable account number.
(3) Column C: List the Facility Owner, Contractor or Subcontractor that will be purchasing the personal property or materials and supplies subject to sales and use tax.
(4) Column D: List the date the personal property or materials and supplies were purchased.
(5) Column E: List the date that possession of the personal property or materials and supplies will be taken.
(6) Column F: List the cost of the personal property or materials and supplies.
(7) Column G: List the county where possession will be taken and the applicable sales tax rate of that county. *Find the appropriate sales/use tax rate on the Department of Taxation's website at http://tax.state.nv.us. Then scroll to "Quick Links" and select "Sales/Use Tax Rate Map".*
(8) Column H: Multiply Column F by the Sales Tax Rate in Column G.
(9) Attach additional sheets as necessary.

A	B	C	D	E	F	G	H
Personal Property or Materials and Supplies Itemized Description	G/L Account No. (if applicable)	Purchased by Facility Owner (FO) Contractor (C) Subcontractor (SC)	Date Purchased	Date of Possession	Total Transaction Cost	County and Applicable Sales Tax Rate	Estimated Sales Tax Paid or to be Paid
Electrical Install							
Fencing							
Mechanical Install							
Post Install							
Substation & Interconnect							
Fencing							
Mechanical Install							
Post Install							
PV Rack Deliveries							
Substation & Interconnect							
Civil Site Work							
Electrical Install							
Fencing							
Mechanical Install							
Post Install							
PV Rack Deliveries							
Civil Site Work							
Electrical Install							
Fencing							
Inverter Deliveries							
Mechanical Install							
Post Install							
PV Module Deliveries							
PV Rack Deliveries							
Transformer Deliveries							
Civil Site Work							
Electrical Install							
Fencing							
Inverter Deliveries							
Mechanical Install							
Post Install							
PV Module Deliveries							
PV Rack Deliveries							
Transformer Deliveries							
Civil Site Work							
Electrical Install							
Fencing							
Inverter Deliveries							
Mechanical Install							
Post Install							
PV Module Deliveries							
PV Rack Deliveries							
SCADA Deliveries							
Transformer Deliveries							
Electrical Install							
Fencing							
Inverter Deliveries							
Mechanical Install							
Post Install							
PV Module Deliveries							
PV Rack Deliveries							
Transformer Deliveries							
Electrical Install							
Fencing							
Inverter Deliveries							
Mechanical Install							
PV Module Deliveries							
PV Rack Deliveries							
Transformer Deliveries							
Electrical Install							
Inverter Deliveries							
Mechanical Install							
PV Module Deliveries							
SCADA Deliveries							
Transformer Deliveries							
Electrical Install							
Inverter Deliveries							
Mechanical Install							
PV Module Deliveries							
Transformer Deliveries							
Electrical Install							
Mechanical Install							
Electrical Install							
							$ -
							$ -
							$ -
							$ -
							$ -
							$ -
Grand Total							$ 11,948,966.03

[redacted]
Contains Sensitive Detailed Facility Cost Information

State of Nevada
Renewable Energy Tax Abatements Application
AFN:

Sales and Use Tax
Second Year of Eligible Abatement
Schedule 7

Construction Year 2 - December 2015 through November 2017

Company: Copper Mountain Solar 4, LLC

Division: _____

Instructions:

(1) Column A: List each item of personal property or materials and supplies subject to sales and use tax (please include losses. Refer to NRS Chapter 372 for taxable events.

(2) Column B: For each item in column A, list applicable account number.

(3) Column C: List the Facility Owner, Contractor or Subcontractor that will be purchasing the personal property or materials and supplies subject to sales and use tax.

(4) Column D: List the date the personal property or materials and supplies were purchased.

(5) Column E: List the date that possession of the personal property or materials and supplies will be taken.

(6) Column F: List the cost of the personal property or materials and supplies.

(7) Column G: List the county where possession will be taken and the applicable sales tax rate of that county. *Find the appropriate sales/use tax rate on the Department of Taxation's website at http://tax.state.nv.us. Then scroll to "Quick Links" and select "Sales/Use Tax Rate Map".*

(8) Column H: Multiply Column F by the Sales Tax Rate in Column G.

(9) Attach additional sheets as necessary.

A	B	C	D	E	F	G	H
Personal Property or Materials and Supplies Itemized Description	G/L Account No. (if applicable)	Purchased by Facility Owner (FO) Contractor (C) Subcontractor (SC)	Date Purchased	Date of Possession	Total Transaction Cost	County and Applicable Sales Tax Rate	Estimated Sales Tax Paid or to be Paid
Facility Equipment Mobilization		FO					
BOP Spare Parts		FO					
O&M Materials - First Year of Operation		FO					
							$ -
							$ -
							$ -
							$ -
							$ -
							$ -
Grand Total							$ 46,251.00

Contains Sensitive Detailed Facility Cost Information

State of Nevada
Renewable Energy Tax Abatements Application
AFN:

Sales and Use Tax
Construction Year 3 - December 2017 through November 2018
Third Year of Eligible Abatement
Schedule 8

Company: Copper Mountain Solar 4, LLC
Division: _____

Instructions:

(1) Column A: List each item of personal property or materials and supplies subject to sales and use tax (please include leases. Refer to NRS Chapter 372 for taxable events.
(2) Column B: For each item in column A, list applicable account number.
(3) Column C: List the Facility Owner, Contractor or Subcontractor that will be purchasing the personal property or materials and supplies subject to sales and use tax.
(4) Column D: List the date the personal property or materials and supplies were purchased.
(5) Column E: List the date that possession of the personal property or materials and supplies will be taken.
(6) Column F: List the cost of the personal property or materials and supplies.
http://tax.state.nv.us. Then scroll to "Quick Links" and select "Sales/Use Tax Rate Map".
(7) Column H: Multiply Column F by the Sales Tax Rate in Column G.
(8) Attach additional sheets as necessary.

A	B	C	D	E	F	G	H
Personal Property or Materials and Supplies Itemized Description	G/L Account No. (if applicable)	Purchased by Facility Owner (FO) Contractor (C) Subcontractor (SC)	Date Purchased	Date of Possession	Total Transaction Cost	County and Applicable Sales Tax Rate	Estimated Sales Tax Paid or to be Paid
O&M Materials - Second Year of Operation		FO					
Grand Total							$ 16,200.00

Contains Sensitive Deatiled Facility Cost Information

Attestation and Signature

I, James R. Asay, by signing this Application, I do hereby attest and affirm under penalty of perjury the following:

(1) I have the legal capacity to submit this Application on behalf of the applicant;
(2) I have prepared and personally knowledgeable regarding the contents of this Application; and
(3) The content of this Application are true, correct, and complete.

James R. Asay	
Name of person authorized for signature:	**Signature:**
Vice President - Tax	02/13/2015
Title:	**Date:**

This Application contains confidential information: Yes __X__ No

If yes, please identify any information in the within Application or documents submitted herewith, which Applicant considers confidential or trade secret information. Further, identify: (1) the applicable statutory authority or agreement preventing public disclosure of the information; and (2) Applicant's rationale underlying non-disclosure of the information or document(s).
Applicant acknowledges that the burden of demonstrating confidentiality or trade secret status lies with the Applicant, and Applicant agrees to defend and indemnify the State and its agencies for honoring such designation. Notwithstanding, Applicant understands that the over-inclusive designation of information or documents as confidential or trade secret may cause the Nevada State Office of Energy to conduct further inquiry of the Applicant into the confidentiality of the information, potentially delaying submission of the Application to the Nevada Energy Director.

Material for which confidentiality is claimed:
Confidentiality is claimed for data relating to costs and prices, as well as to private information of individuals and companies, such as e-mail addresses of individuals and tax id numbers of companies

Basis for claims of confidentiality:
This information constitutes proprietary information, confidential economic information or trade secrets pursuant to NRS 360.247, 361.044, 49.325, 600A.070, 703.190, 239B.030 & 239B.040

Placeholder for Attachment A

Description of the Technology and Complete Facility including generation, transmission or distribution, the physical point at which the ownership of energy is transferred and nature of the connection to the transmission grid

Not confidential. Attachments removed to reduce file size.

See separate files

Attachment A

NEVADA ENERGY COMMISSIONER

RENEWABLE ENERGY AND ENERGY EFFICIENCY AUTHORITY

Nevada renewable Energy Tax Abatement Application Form

Description of the Technology and Complete Facility including generation, transmission or distribution, the physical point at which the ownership of energy is transferred and nature of the connection to the transmission grid:

Copper Mountain Solar 4 uses polycrystalline silicon technology solar photovoltaic (PV) panels to convert sunlight into direct current (DC) electricity. The project will employ single axis tracking to optimize solar energy harvest. The DC power generated by the PV panels will be fed through a series of DC cables to Power Conversion Stations (PCS) where the DC power is converted to alternating (AC) current power. The AC power will also be transformed at each PCS to a higher voltage, 34.5 kV and aggregated again in single way switchgear. Copper Mountain Solar 4 will have six (6) single way switchgear stations that feed the collector substation via both overhead conductors.

The collector substation will have a 34.5 kV circuit breaker for each overhead feed. The two 34.5 kV breakers feed into a common 34.5 kV bus. This bus will be connected to a transformer that increases the voltage from 34.5 kV to 230 kV. The 230 kV side of the transformer will be connected to electric metering equipment and an overhead line that serves as the generation tie between Copper Mountain Solar 4 and the electric grid at the Merchant Switchyard. San Diego Gas & Electric is the Transmission Operator for the Merchant Switchyard located approximately 0.5 miles west of the solar project site.

The electric metering equipment serves as the point of exchange and is monitored by the California Independent System Operator and Southern California Edison, the purchaser of the power.

Placeholder for Attachment B

Complete and legal description of the location of the proposed facility, including a regional facility map that identifies the location, county boundaries and state boundaries of the proposed facility or a reference to any such map of appropriate scale

Not confidential. Attachments removed to reduce file size.

See separate files

EXHIBIT "C"
OPTION PROPERTY

LEGAL DESCRIPTION

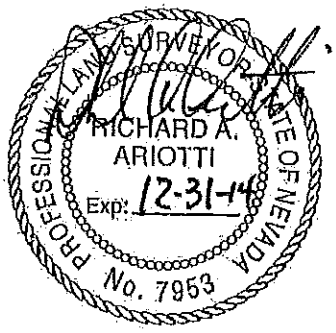
THOSE PORTIONS OF SECTION 6, SECTION 7 AND SECTION 8, TOWNSHIP 25 SOUTH, RANGE 63 EAST, M.D.B.&M., IN THE CITY OF BOULDER CITY, COUNTY OF CLARK, STATE OF NEVADA, DESCRIBED AS FOLLOWS:

BEGINNING AT THE SOUTHWEST CORNER OF SAID SECTION 6, SAID POINT BEING MARKED WITH BRASS CAP IN A WELL MONUMENT; THENCE NORTH 0°19'36" WEST 2639.64 FEET ALONG THE WEST LINE OF SAID SECTION 6 TO A GOVERNMENT LAND OFFICE (GLO) BRASS CAP AT THE QUARTER (1/4) CORNER OF SECTION 1, TOWNSHIP 25 SOUTH, RANGE 62 EAST, M.D.B.&M. AND SECTION 6, TOWNSHIP 25 SOUTH, RANGE 63 EAST, M.D.B.&M.; THENCE NORTH 89°37'25" EAST 2121.04 FEET ALONG THE NORTH LINE OF THE SOUTHWEST QUARTER (SW1/4) OF SAID SECTION 6 TO A POINT MARKED WITH AN ALUMINUM CAP ON A 5/8" REBAR (STAMPED "E.G. RADIG, INC. PLS 22373"); THENCE SOUTH 0°24'53" EAST 2640.50 FEET TO A POINT ON THE SOUTH LINE OF THE SOUTHWEST QUARTER (SW1/4) OF SAID SECTION 6, SAID POINT BEING MARKED WITH NAIL AND BRASS TAG (STAMPED PLS 22373); THENCE NORTH 89°38'48" EAST 520.00 FEET TO A GOVERNMENT LAND OFFICE (GLO) BRASS CAP IN A WELL MONUMENT AT THE QUARTER (1/4) CORNER OF SECTION 6 AND SECTION 7, TOWNSHIP 25 SOUTH, RANGE 63 EAST, M.D.B.&M.; THENCE NORTH 89°38'38" EAST 2638.73 FEET TO A GOVERNMENT LAND OFFICE (GLO) BRASS CAP IN A WELL MONUMENT AT THE COMMON CORNER OF SECTION 5, SECTION 6, SECTION 7 AND SECTION 8, TOWNSHIP 25 SOUTH, RANGE 63 EAST, M.D.B.&M.; THENCE NORTH 89°40'49" EAST 524.34 FEET TO A NAIL AND BRASS TAG (STAMPED PLS 22373); THENCE SOUTH 0°23'56" EAST 5279.72 FEET TO AN ALUMINUM CAP ON A 5/8" REBAR (STAMPED "E.G. RADIG, INC. PLS 7953"); THENCE SOUTH 89°40'11" WEST 524.28 FEET TO A GOVERNMENT LAND OFFICE (GLO) BRASS CAP AT THE COMMON CORNER OF SECTION 7, SECTION 8, SECTION 17 AND SECTION 18, TOWNSHIP 25 SOUTH, RANGE 63 EAST, M.D.B.&M.; THENCE SOUTH 89°38'45" WEST 2638.63 FEET TO A GOVERNMENT LAND OFFICE (GLO) BRASS CAP AT THE QUARTER (1/4) CORNER OF SECTION 7 AND SECTION 18, TOWNSHIP 25 SOUTH, RANGE 63 EAST, M.D.B.&M.; THENCE NORTH 0°23'56" WEST 2487.34 FEET TO AN ALUMINUM CAP ON A 5/8" REBAR (STAMPED "E.G. RADIG, INC. PLS 7953"); THENCE SOUTH 89°39'46" WEST 2647.77 FEET TO AN ALUMINUM CAP ON A 5/8" REBAR (STAMPED "E.G. RADIG, INC. PLS 7953"); THENCE NORTH 0°22'34" WEST 151.88 FEET TO A GOVERNMENT LAND OFFICE (GLO) BRASS CAP AT THE QUARTER (1/4) CORNER OF SECTION 12, TOWNSHIP 25 SOUTH, RANGE 62 EAST, M.D.B.&M. AND SECTION 7, TOWNSHIP 25 SOUTH, RANGE 63 EAST, M.D.B.&M.; THENCE NORTH 0°20'45" WEST 2639.76 FEET TO THE POINT OF BEGINNING.

CONTAINS 681.67 ACRES

Prepared by:
Richard A. Ariotti, Nevada P.L.S. No. 7953
Acting as Agent for:

E.G. Radig, Inc.
1577 Foothill Drive #1
Boulder City, NV 89005
Phone: (702) 293-3330
Fax: (702) 293-6153



8-12-14

ALTA/ACSM LAND TITLE SURVEY

COUNTY OF CLARK — STATE OF NEVADA — CITY OF BOULDER CITY
COPPER MOUNTAIN SOLAR 4, LLC — LEASE AREA
PORTION OF
THE SW1/4, SECTION 6, T25S, R63 E, M.D.M
AND PORTIONS OF
SECTION 7, AND SECTION 6, T25S, R62E, M.D.M.

LEGAL DESCRIPTIONS

DIGEST OF TITLE ITEMS PER STEWART TITLE GUARANTY COMPANY

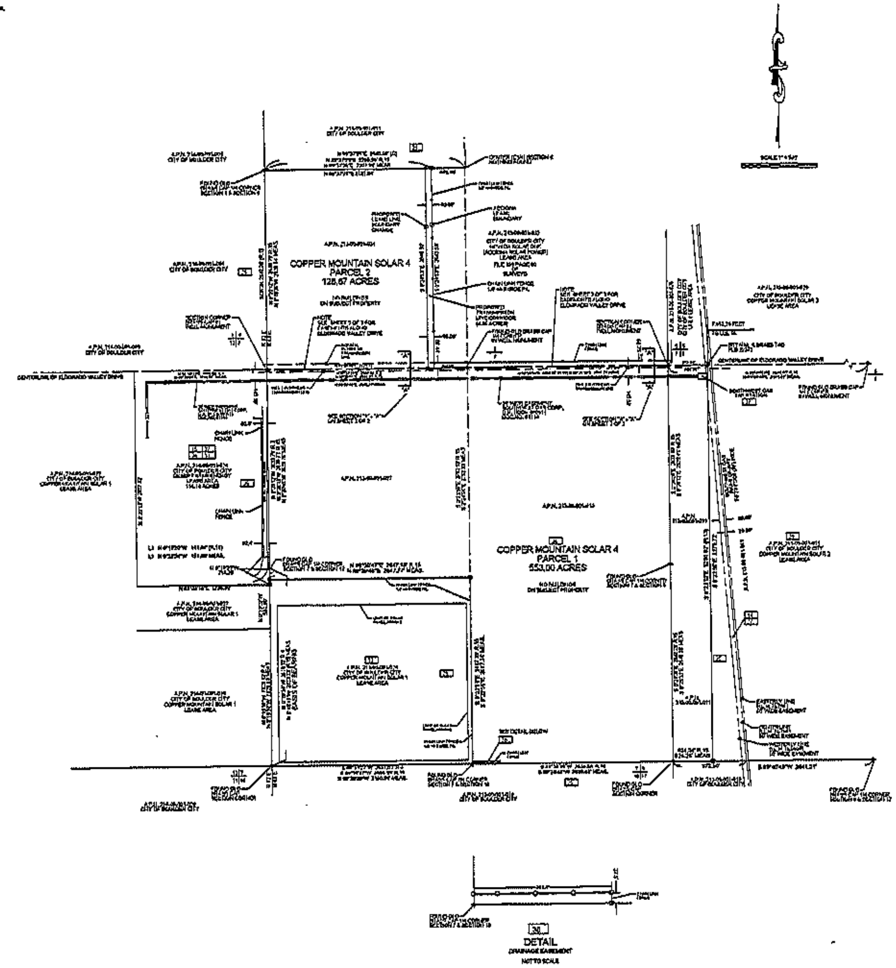
[ ] INDICATES PLOTTED ITEM

SURVEYOR'S CERTIFICATE

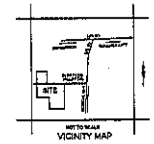
TABLE A ITEMS

REFERENCES

THIS SURVEY HAS BEEN PREPARED FOR TITLE INSURANCE PURPOSES



LEGEND



BASIS OF BEARING

REVISIONS / UPDATES			
NO.	DESCRIPTION	DATE	BY

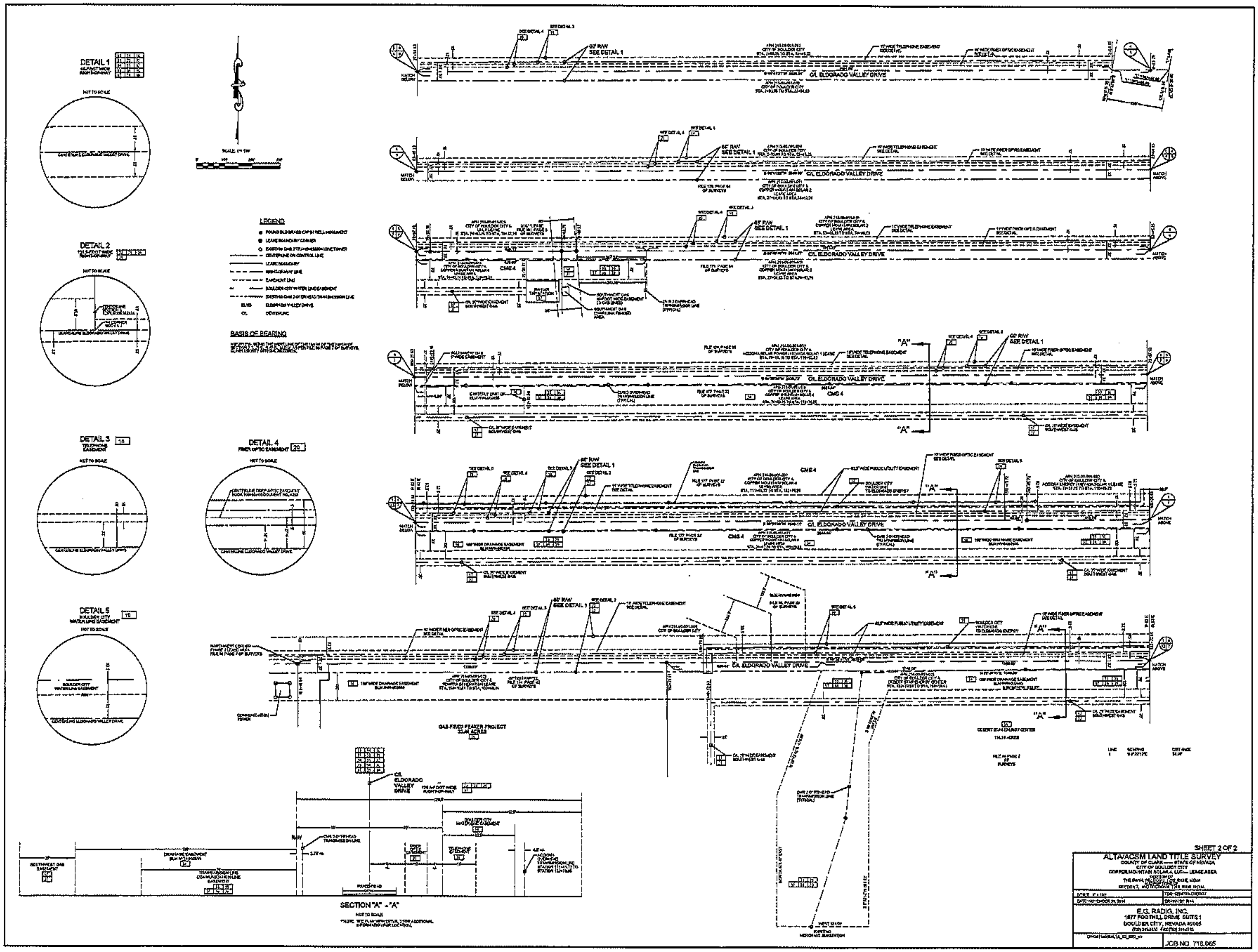
SHEET 1 OF 2

ALTA/ACSM LAND TITLE SURVEY

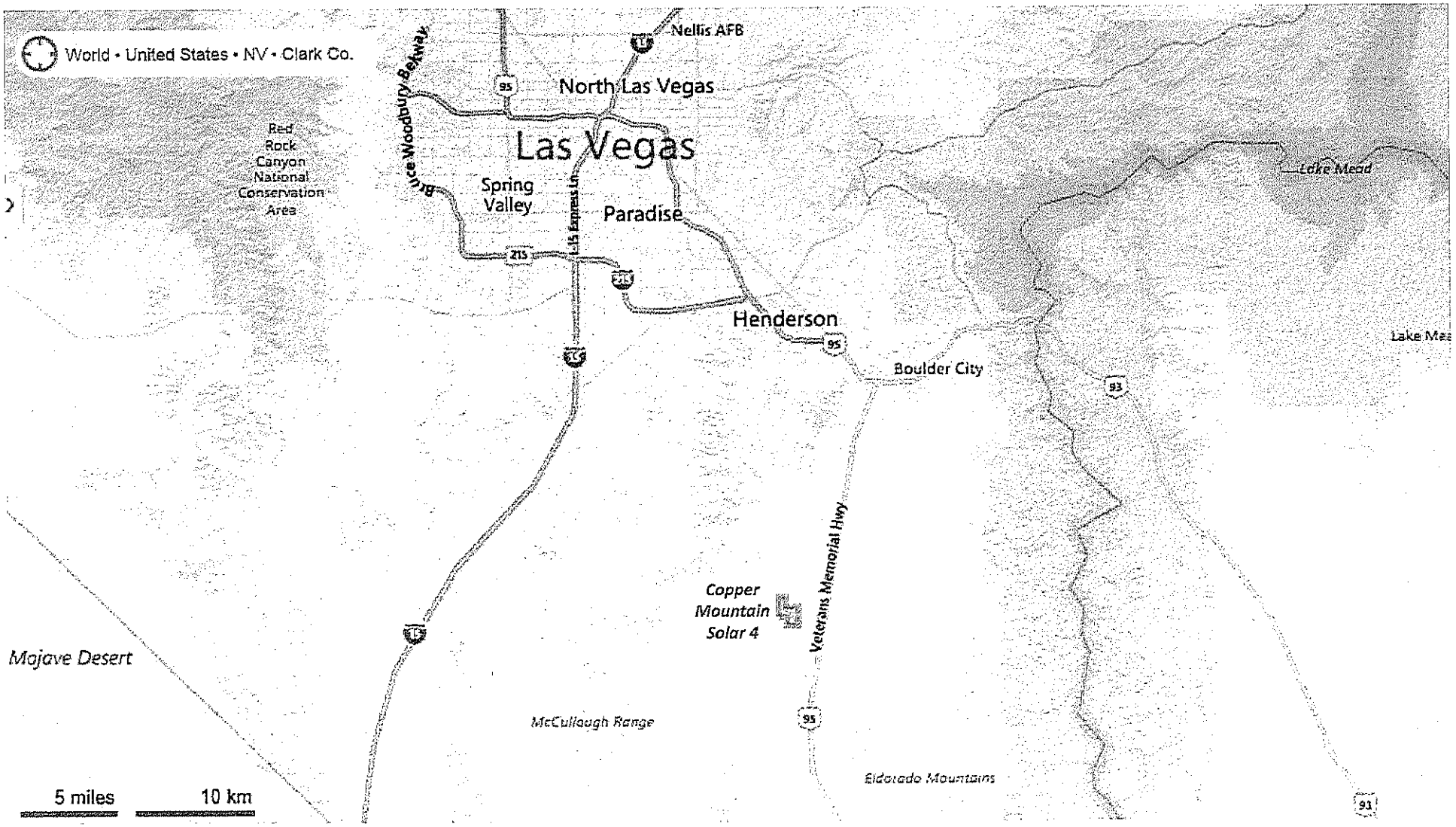
E.Q. RADIO, INC.

BOULDER CITY, NEVADA

JOB NO. 716.065


DETAIL 1
NOT TO SCALE
CENTERLINE ELDORADO VALLEY DRIVE
DETAIL 2
NOT TO SCALE
DETAIL 3
NOT TO SCALE
CENTERLINE ELDORADO VALLEY DRIVE
DETAIL 4
NOT TO SCALE
DETAIL 5
NOT TO SCALE
CENTERLINE ELDORADO VALLEY DRIVE
LEGEND
BASIS OF BEARING
SEE DETAIL 1
C/L ELDORADO VALLEY DRIVE
MATCH BELOW
MATCH ABOVE
CMS 4
"A"
GAS FIRED PEAKER PROJECT
COMMUNICATION TOWER
C/L ELDORADO VALLEY DRIVE
R/W
SECTION "A" - "A"
NOT TO SCALE
SHEET 2 OF 2
ALTA/ACSM LAND TITLE SURVEY
COUNTY OF CLARK — STATE OF NEVADA
CITY OF BOULDER CITY
COPPER MOUNTAIN SOLAR 4, LLC — LEASE AREA
E.G. RADIG, INC.
BOULDER CITY, NEVADA
JOB NO. 718.065

Copper Mountain Solar 4 – Vicinity Map

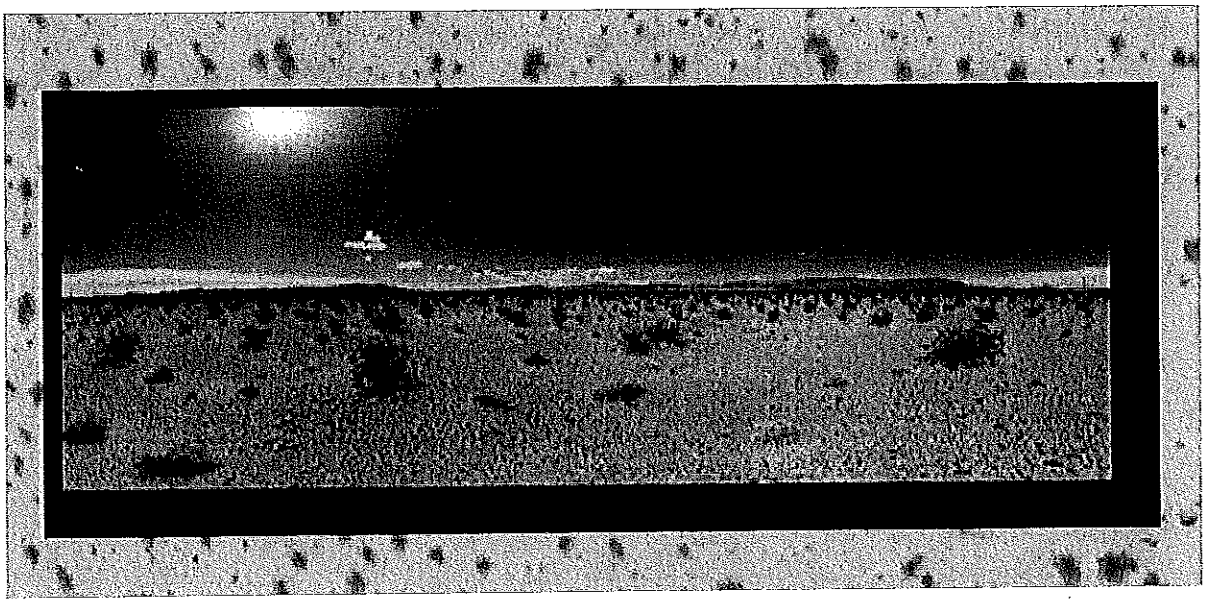


Placeholder for Attachment C

Description of any natural or nonrenewable resources that will be affected by or required to be used in the construction or operation of the proposed facility, including statement of any areas of mitigation, controversy, issue or concern

See separate file

Environmental Statement
Copper Mountain Solar 4 Project
Clark County, Nevada



Prepared for:

Copper Mountain Solar 4, LLC

101 Ash Street
San Diego, California 92101

Prepared by:

NewFields

8250 West Charleston Boulevard, Suite 100
Las Vegas, Nevada 89117

October 2014

Table of Contents

Tables

Figures

1. Introduction

Copper Mountain Solar 4, LLC ("CMS4"), a wholly-owned subsidiary of Sempra Renewables, LLC, is proposing the construction, operation, and maintenance of a solar energy generating facility of 94 megawatts ("MW") on 682 acres of land owned by the City of Boulder City ("City") and leased by CMS4. The Copper Mountain Solar 4 Project ("Project") will share poles with an existing gen-tie to transmit the generated energy to the grid and also will utilize an existing waterline to provide water for construction and maintenance activities. This Environmental Statement ("ES") will evaluate environmental impacts of the Project, which will be reviewed by the Public Utility Commission of Nevada ("PUCN") in order to comply with the Utilities Environmental Protection Act ("UEPA").

The proposed site is located within City's Eldorado Valley Energy Zone. Land within the Energy Zone may be used for the development of private and/or public solar and gas-fired electric generation facilities, electrical gen-tie and distribution facilities, ancillary facilities, and other similar uses.[1]

1.1. Project Purpose and Need

The economics of photovoltaic ("PV") solar energy have improved over the past several years, making solar energy an electricity source of choice. Solar energy offers the opportunity to protect the environment by avoiding the production of greenhouse gases and other air emissions, decreasing our dependence on fossil fuels, and reducing the need for construction of fossil fueled power plants. Solar energy also benefits the economy generating jobs, business income, and tax revenue for Clark County and Nevada. Because solar energy is produced when demand for electricity is at its highest (during bright daylight hours), it helps to meet peak demand.

1.2. Authorizing Actions

The primary approval required for this Project will be issued by PUCN. The PUCN will review the Project ES in accordance with UEPA guidelines. Should the Project be approved, the PUCN will issue a Permit to Construct.

The PUCN list of potential federal, state, and local permits was reviewed and Table 1 lists those permits that may be necessary for the Project in order for the PUCN to issue a Notice to Construct. These permits and requirements are typical and well understood for projects of this nature in the Eldorado Valley. Details about the permits are described in the Permit Plan, included as Appendix A. Table 1 also lists the issuing agency for each permit and the anticipated completion date.

[1] See Boulder City, Nevanda zoning ordinance, Title 11, Chapter 19, ER Energy Resource Zone.

Table 1. Regulatory Permits and Approvals that May Be Required

Permit Type/Name	Issuing Agency	Projected Completion Date
UEPA Permit	PUCN	December 2014
UEPA Permit to Construct	PUCN	April 2015
Nevada State Hazardous Materials Roving Permit	Nevada State Fire Marshall	April 2015
Stormwater Pollution Prevention Plan	NDEP	April 2015
Dust Control	Clark County DAQEM	April 2015
Grading Permit (Endangered Species Act Compliance under Section 10 as disclosed the Clark County Multiple Species Habitat Conservation Plan requires a tortoise remuneration fee of $550/acre to be submitted with grading permit fees)	Boulder City	April 2015
Building Permit	Boulder City	April 2015
Fencing Permit	Boulder City	April 2015
Installation Permit for Fire Protection and Protection Systems	Boulder City	April 2015
Permit for Flammable and Combustible Liquids and/or Motor Vehicle Fuel Dispensing Station	Boulder City	April 2015

1.3. Environmental Statement Organization

To aid the reviewers and decision-makers, this section outlines the organization of the Environmental Statement.

- Introduction - This provides a brief general description of the Project and its purpose and need. Also summarized is the Project location, the state and local reviews, regulatory approvals, and permits likely to be required.
- Description of Proposed Action and Alternatives -This describes the Project as well as the alternatives that were considered but eliminated from detailed consideration along with the rationale for their elimination.
- Existing Setting, Environmental Consequences, and Mitigation Measures - This describes the existing environment at and near the site. It also details the potential environmental consequences of the Project and mitigation measures designed to reduce, minimize, or avoid impacts so they are reduced to an acceptable level. In addition, a table summarizing the potential effects, the recommended mitigation measures, along with the timing of those measures and identification of entities responsible for implementation and monitoring, has been included.

- List of Preparers - Lists persons who contributed to the preparation and review of this Environmental Statement.
- List of Acronyms - Contains the abbreviations and acronyms contained in this Environmental Statement.
- References - Lists references used in this Environmental Statement.
- Appendices – Supplemental information on permitting and mitigation measures.

2. Description of Proposed Action and Alternatives

2.1. Project Location and Access

The Project consists of a 94 MW solar PV generating facility located on approximately 682 acres in the Eldorado Valley, approximately 17 miles south of the city of Henderson. The Project is located approximately 13 miles south of the intersection of Highway 93 and Highway 95, and is located to the west of Highway 95 (Figure 1). The site currently is vacant with the exceptions of (a) Eldorado Valley Drive running east to west, (b) Southwest Gas natural gas pipeline and tap station, (c) electric power lines, (d) fiber optic lines, and (e) a water line. The site is bordered on the west by Desert Star Energy, on the southwest by Copper Mountain Solar 1 ("CMS1"), on the northeast by Nevada Solar One, and on the east by Copper Mountain Solar 2 ("CMS2").

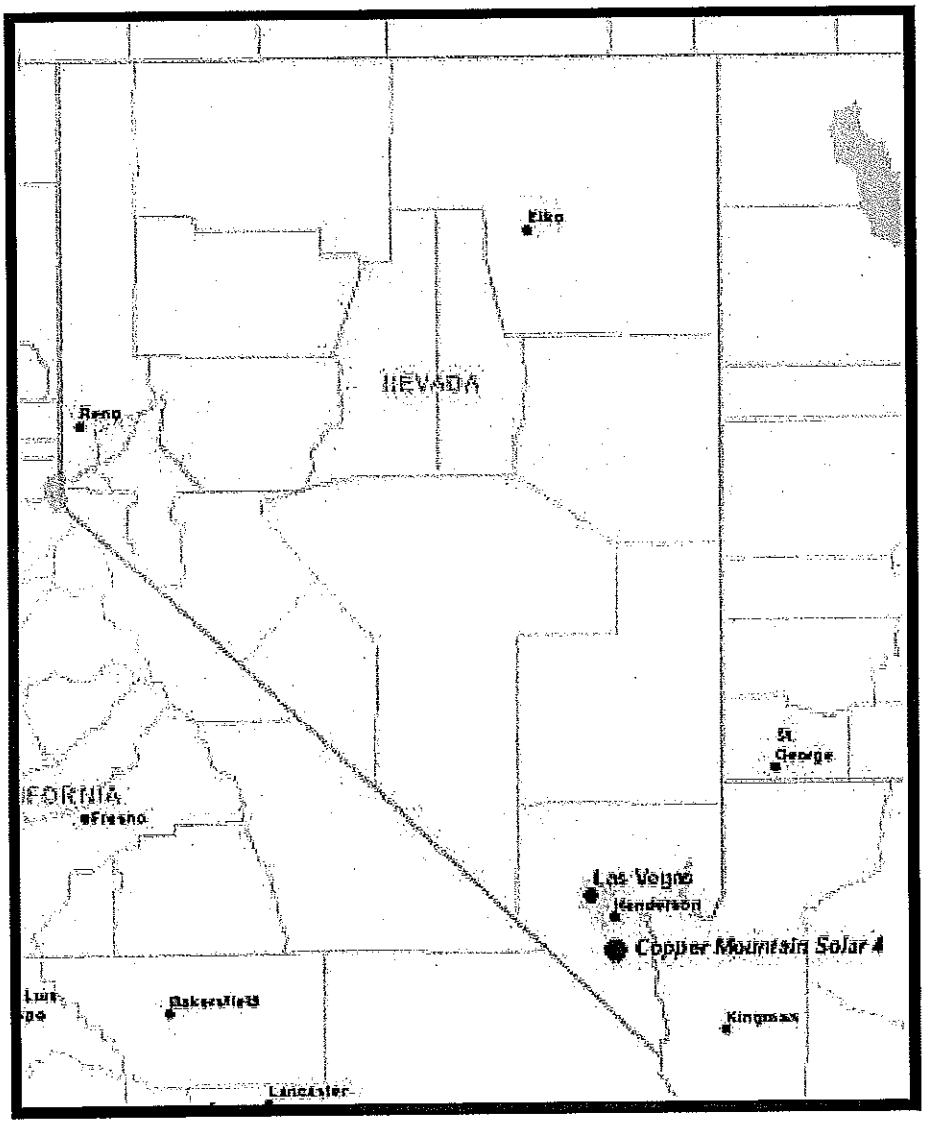


Figure 1. Project Location

Main access to the Project will be via Eldorado Valley Drive (a private road), which connects the site with interstate highway 95 (Figure 2). Eldorado Valley Drive is shared by other users; agreements and coordination with City and other Project owners may be required to use the road.

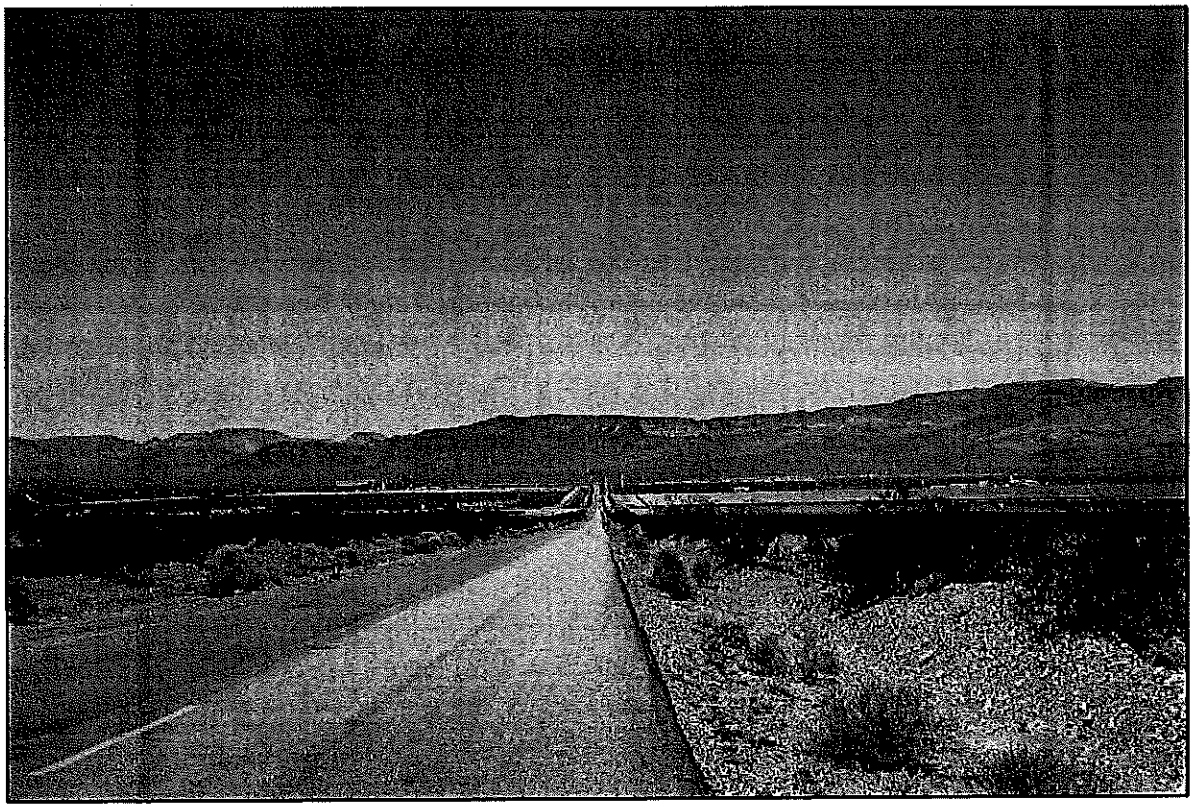


Figure 2. View of Eldorado Valley Drive Looking West from Highway 95.

2.2. Project Facilities

This Chapter discusses the Project layout and design for the solar facility and associated structures. Refer to Figure 3, which illustrates the conceptual layout of the facilities.

2.2.1. Major Equipment and Site Arrangement

The solar energy generation facility employs PV panels that absorb sunlight and directly produce electricity. The facility consists of (a) a solar field of PV panels mounted on single axis tracking steel structures, (b) an electrical collection system that aggregates the output from the PV panels and converts the electricity from direct current ("DC") to alternating current ("AC"), (c) a solar substation where all of the facility output is combined and transformed to a voltage of 230 kV, (d) a generation tie line used to transmit the electrical power to the electrical grid, and (e) civil infrastructure including driveways, drainage channels, and fencing.

The Solar PV facility's major equipment includes:

- PV modules
- Single-Axis Tracking Module Racking System
- DC Combiner Boxes
- Inverter Skid Assemblies (ISA) including
    - DC to AC inverters
    - Medium Voltage (MV) transformers;
- Solar Substation including a 34.5-230kV step-up transformer
    - 34.5 kV Capacitor Banks as required
- Plant Control System

The design will include PV modules, inverters, and medium voltage transformers combined into units that are repeated to reach the required capacity. The proposed PV facility will use commercially proven PV modules, inverters, and transformers. Inverter and transformer manufacturers and capacities will be selected based on cost, efficiency, reliability, and market availability.

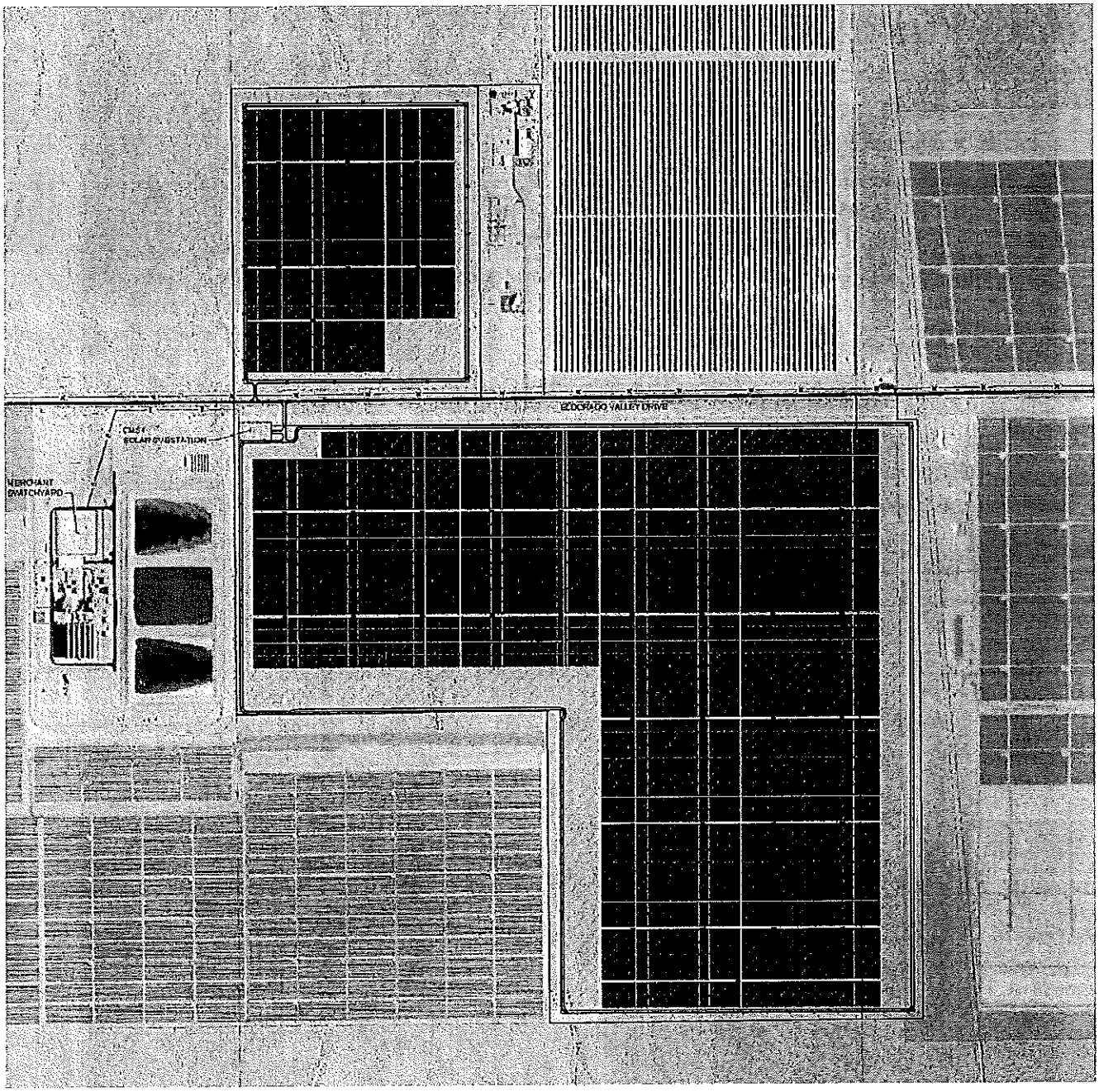


Figure 3. Conceptual Layout

2.2.1.1. PV Modules

The solar field will consist of PV panels mounted on single-axis tracking steel support structures. The assembled PV panels installed height will not exceed 10 feet. The rows will be aligned north to south and the PV panels will pivot, tracking the sun, east to west.

2.2.1.2. Electrical Collection System

PV panels convert the sun's energy into DC power. Combiner boxes are used to collect the power from multiple panels. Multiple combiner boxes concentrate the DC power to the power conversion inverters which convert the DC power to AC. The panel / combiner boxes will be organized into electrical groups referred to as "arrays." The size of each array will depend upon the selected size of the inverter.

Conductors will be suspended under the PV panels and will extend underground to feed DC power to the inverters. The inverters convert the DC power to AC power and AC output voltage is boosted to 34.5 kV through a Medium Voltage ("MV") Step-up Transformer. The inverter / MV transformer together are referred to as an Inverter Skid Assembly ("ISA"). From each such transformer, electricity will be conveyed via an overhead or underground collector circuit to the Solar Substation. Such collector circuits originating in the northern portion of the site will cross Eldorado Valley Drive. Each circuit coming into the Solar Substation will deliver between 20 MW and 50 MW of output capacity from the solar field to the electrical grid.

2.2.2. Solar Substation

The solar substation will be located on the south side of Eldorado Valley Drive (as shown on Figure 3). The substation is a central hub for the 34.5 kV collector circuits and increases the electricity voltage from 34.5 kV to 230 kV. The substation includes, but is not limited to the following major components:

- 34.5 kV bus and associated switching devices
- 230 kV bus and associated switching devices
- 34.5/230 kV transformer
- 34.5 kV capacitors (as required)
- Grounding grid
- Prefabricated modular control building (unoccupied except during inspection and maintenance)
- Perimeter security fence.

2.2.3. Gen-tie lines and associated structures

The gen-tie power line route from this facility will be within Boulder City's Eldorado Valley Energy Zone. The 230-kV gen-tie power line will consist of a new, second circuit on some of Copper Mountain Solar 2's existing common structures in the gen-tie easement corridor along

Eldorado Valley Drive. The common structures are monopole towers no more than 120 feet high on concrete pier foundations. The span between supporting structures ranges between 200 and 700 feet.

Access for construction and maintenance of the gen-tie and the solar facility will be along Eldorado Valley Drive. A driveway from Eldorado Valley Drive will access a parking area located adjacent to the on-site solar switchyard.

The design characteristics of the existing 230 kV gen-tie line are listed in Table 2.

Table 2. Typical Design Characteristics for a 230 kV Gen-tie Line

Feature	230 kV Characteristics
Type of structure	Tubular Steel Structures
Structure height	Between 105 - 120 feet
Span length	Between 200 feet to 700 feet
Number of structures per mile	Approximately 10
Voltage	230 kV
Conductor size	up to 795 kcmil ACSR
Ground clearance of conductor	Minimum 30 feet
Pole foundation depth	19 to 24 feet

Figure 4 shows the existing CMS2 gen-tie line monopole structures where the new circuit will be suspended.

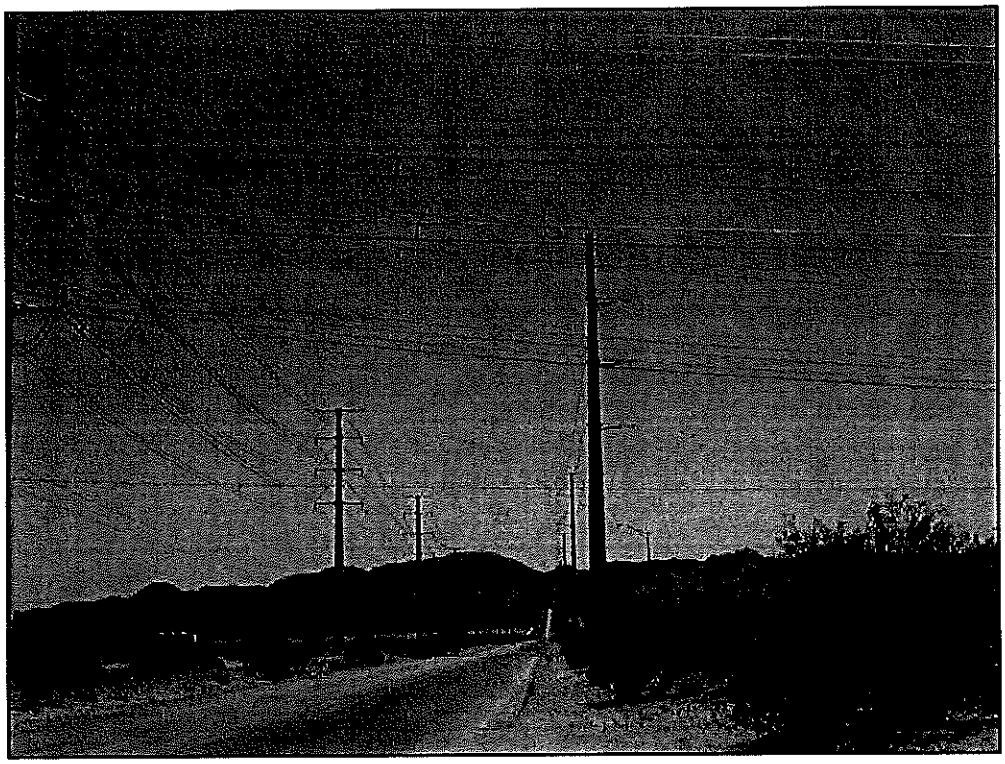


Figure 4. Existing Gen-tie Steel Monopoles along Eldorado Valley Drive Corridor.

2.2.4. Gen-tie Interconnection

The Project's substation will connect to Merchant Switchyard via a 230 kV gen-tie power line of approximately 0.5 miles from the proposed Project Solar Substation. The gen-tie will share some existing pole structures with the Copper Mountain Solar 2 Project. The gen-tie will also provide a communication path via OPGW fiber optic cable from the Project Solar Substation to Merchant Switchyard. A redundant communication path is also required.

2.2.5. Electrical System for Plant Auxiliaries

During daylight hours, power for plant auxiliaries will be provided by the Project's electrical generation. During non-daylight hours, the Project will require small amounts of power to keep transformers energized, and for plant lighting and security. This auxiliary power will be provided by back-feed from the electrical grid. Auxiliary power will be stepped down to an appropriate voltage to support plant auxiliaries and will be connected to the station service power switchgear.

2.2.6. Plant Auxiliaries Process Description

The following subsections describe the various power plant auxiliary systems associated with the Project.

2.2.6.1. Water

CMS4 proposes to utilize an existing waterline along Eldorado Valley Road that connects to Boulder City's water main. This connection would provide water during construction of the solar facility and gen-tie. Under the terms of an agreement with the City of Boulder City, water will be made available to the Project from the City's water supply. Water is provided by connection to the Boulder City's 14 inch water main located along the west side of US-95.

During the construction phases of the Project, water will primarily be used for grading and for dust control. Construction is estimated to take 18 months to complete. It is assumed that dust control will be required up to the point when the panels are installed. Total water needs for the Project including dust control were estimated to be up to 295 acre-feet per year during construction.

2.2.6.2. Plant Control System

The microprocessor-based plant control system ("PCS") will provide control, monitoring, alarm, and data storage functions for plant systems as well as communication with the Solar Field SCADA system. Redundant capability will be provided for critical PCS components so that no single component failure will cause a plant outage.

All field instruments and controls will be hard-wired to local electrical panels. Local panels will be hard-wired to the plant PCS system.

Operator interface for plant control will be via Human Machine Interface (HMI) work stations located within the Copper Mountain Solar 3 (CMS3) Operations and Maintenance Building. Communications between CMS4 and CMS1 will be

2.2.6.3. Lighting System

The Project's lighting system will provide operation and maintenance personnel with illumination for both normal and emergency conditions. Lighting will be designed to provide the minimum illumination needed to achieve safety and security objectives and will be downward facing and shielded to focus illumination on the desired areas only. There will be no lighting in the solar field, so light trespass on the surrounding properties will be minimal. If lighting at individual solar panels or other equipment is needed for night maintenance, portable lighting will be used. There will be lighting at the substation to provide personnel with illumination for substation operation and maintenance under normal conditions, and means of egress under emergency conditions.

2.2.6.4. Cathodic Protection Systems

Underground metal structures will have cathodic protection, as necessary, based on soil conditions, to avoid corrosion of metal surfaces.

2.2.6.5. Site Access, Roads, Fencing, and Security

As depicted in Figure 2, the existing paved Eldorado Valley Drive crosses through the Project site. An additional unpaved road will extend around the perimeter of the site. Subsidiary unpaved roads will provide operations and maintenance access to the facility.

The perimeter of the solar site will be enclosed by a 7-foot-high chain link fence that may be topped with a one-foot barbed wire section. The two access points from Eldorado Valley Drive to the site will be controlled-access (authorized personnel only) by employing swinging or rolling chain link gates.

2.3. Fabrication and Construction

2.3.1. Preconstruction Site Drainage Characteristics

Most of the Project site will be drained by sheet flow to perpetuate the existing flow patterns through the site. Areas of the facility that may release contaminants, such as the control building, inverters and substation, will be elevated above the 100-year flood event, as appropriate. On- and off-site drainage is being coordinated with the City's Public Works Department and the Clark County Regional Flood Control District.

2.3.2. Clearing, Grubbing, and Grading

Minor grading will occur throughout the solar field to create a uniformly graded site. Vegetation will be removed as needed; however, there is minimal vegetation on the Project site. Minor

grading will include cuts and fills that are not expected to exceed 24 inches. The minor grading will be limited to that necessary for the technology chosen.

2.3.3. Assembly and Construction

A temporary construction workspace located adjacent to the solar field area would include a parking area, a construction office, a warehouse, and a laydown area. All of these facilities would be removed once Project construction is completed.

Assembly of the solar panel units and construction of the solar array will occur concurrently. The solar panel units will be assembled within the Project area footprint. Multiple temporary staging and laydown areas will be located throughout the Project site to support final assembly and installation.

As construction progresses across the site, equipment will be removed from each temporary staging and laydown area, and solar panel units will be installed. To provide concrete during construction, an off-site ready mix plant will be used and trucks will be required to deliver concrete.

Construction of the solar array will occur in a series of approximately 1- to 3-MW blocks. Each block will be connected to the electrical grid as it is completed. Improved (earthen or gravel) roads will be located in a generally north-south orientation to allow access within the solar array.

Stringing lines on the existing 230-kV gen-tie poles will occur concurrently with the solar array construction and solar panel unit assembly. Structure heights are no more than 120 feet. Span lengths are approximately 200 feet to 700 feet, with approximately 10 structures per mile. Conductor stringing will occur by stationing stringing equipment at stringing sites along the gen-tie route, with smaller equipment (pickup trucks and flatbed trucks) traveling along the gen-tie line route as the conductor is installed. Stringing will take place within the existing gen-tie line right-of-way.

Typical equipment expected to be used for gen-tie line stringing includes:

- crane,
- line truck with air compressor,
- various pickup and flatbed trucks,
- bucket trucks, and
- truck-mounted tensioner and puller.

2.3.4. Design and Construction Schedule

CMS4 anticipates that construction of the solar facility will begin in early-2015 and continue for approximately 1.5 years, to be completed late in 2016. The anticipated design and construction period for the solar facility is presented in Table 3 below.

Table 3. Construction Schedule

Milestones	Dates
Receive CEC Pre-Certification as eligible for California's Renewables Portfolio Standard	1/21/2014
Obtain control of all lands and rights-of-way comprising the Site	6/24/2014
File UEPA permitting application	10/3/2014
Execute Interconnection Agreement ("LGIA")	10/17/2014
Execute Affected Participating Transmission Owner Upgrades Facilities Agreement	10/31/2014
Receive UEPA permit approval from PUCN	12/192014
Execute an Engineering, Procurement and Construction ("EPC") contract	11/30/2014
Deliver full notice to proceed ("FNTP") under EPC contract	4/30/2015
Begin construction of Project	4/30/2015
Execute Meter Service Agreement and Participating Generator Agreement	12/31/2015
Achieve initial operation	02/01/2016
Achieve substantial completion	09/30/2016
Receive CEC Certification and Verification	12/31/2016

Typical construction work schedules are expected to be from 7:00 A.M. to 5:00 P.M., Monday through Friday, which complies with the local noise ordinance restrictions for construction activity of 7:00 AM to 7:00 PM, except Sundays and federal holidays.

2.3.5. Construction Sequencing

Given the proposed Commercial Operation Date is September 30, 2016, CMS4 will commence construction on April 30, 2015. The construction period is approximately 1.5 years. The engineering process may commence before starting construction and is divided between the basic design phase and detail design phase. During the basic design phase, key information drawings and technical specifications will be developed. The RFP for the GCC (General Construction Contractor) will be developed and issued at the stage as well. At the detail design phase, the Engineering, Procurement and Construction contract will be executed and the detail drawings and specifications for all equipment will be completed. Procurement of equipment will be conducted at the time of construction commencement.

There will be two phases of construction as follows:

1. Grading/Temporary Construction Facilities. Grading of the pad for the collector substation and establishment of temporary construction facilities associated with the collector substation and 230 kV transmission line. Grading of the site for the solar photovoltaic facility and establishment of temporary construction facilities associated with the solar photovoltaic facility.

2. Substation, Gen-Tie and Solar Field Construction. Construction of the collector substation facilities and the 230 kV transmission line extending from the collector substation to Merchant Substation. Construction of the solar photovoltaic facilities.

The construction stage will commence with site mobilization. Site clearing and grading work will last for approximately 3 months or as required to support Project schedule. Piling work will then commence. Following normal installation processes for similar PV plants, the mounting structure will first be installed. Next, the modules will be installed and connected to each other in series as a string. The solar generation facility will be installed as a unit block concept with 94 MW_{AC} capacity. The construction of the Solar Substation is expected to last for approximately 5 months including its commissioning, and expected to commence between 2015Q2 and 2015Q3. The commissioning for all components of the plant will be conducted separately. Upon completion of conventional commissioning, a "Performance and Acceptance" test will be performed.

Temporary construction facilities will include:

- Full-length trailer offices or equivalent
- Parking for construction worker vehicles
- Construction equipment parking
- Chemical toilets
- Holding Tanks and/or Temporary Septic System
- Tool sheds/containers
- Covered assembly area
- Solar field equipment laydown area
- Water Holding Pond
- Diesel Power Generator(s).

Construction materials such as concrete, pipe, wire and cable, fuels, reinforcing steel and small tools and consumables will be delivered to the site by truck. Initial grading work will include the use of excavators, graders, dump trucks, and end loaders, in addition to support pickups, water trucks, and cranes. It is anticipated that the following equipment will be required:

- Scraper(s)
- Concrete truck(s)
- Motor grader(s)
- Backhoe/loader(s)
- Excavator(s)
- Truck-mounted crane(s)
- Dozer(s)
- Grader-all(s)
- Dump truck(s)
- Flatbed truck(s) for pre-cast foundations
- Pad drum vibrato' roller(s)
- Trencher(s)
- Water truck(s)
- Pile driver(s)
- Lightweight truck(s).

2.3.6. Construction Staff

The workforce needed for the Project will vary during construction, with the peak personnel during construction to be close to 400 people. Table 4 and Figure 5 depict the anticipated construction workforce for the duration of construction.

Table 4. Estimated Personnel During Construction

Company	Mar-15	Apr-15	May-15	Jun-15	Jul-15	Aug-15	Sep-15	Oct-15	Nov-15	Dec-15	Jan-16	Feb-16	Mar-16	Apr-16	May-16	Jun-16	Jul-16
Engineering	2	6	6	10	15	20	20	20	20	20	20	15	10	10	5	2	2
Electrical			50	100	200	200	200	200	200	150	150	120	75	40	10	2	2
Racking			25	60	60	60	60	60	60	60	60	20	20				
Civil		25	50	50	50	50	50	50	50	50	50						
Post Installation			20	30	30	30	30	30	30								
Fencing		15	15	15	15	15	15										
Biological Monitoring		1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1
Soil Testing				2	3	3	3	3	3	2	2	2					
Total	2	47	167	268	324	379	379	364	364	314	283	158	108	51	16	5	5

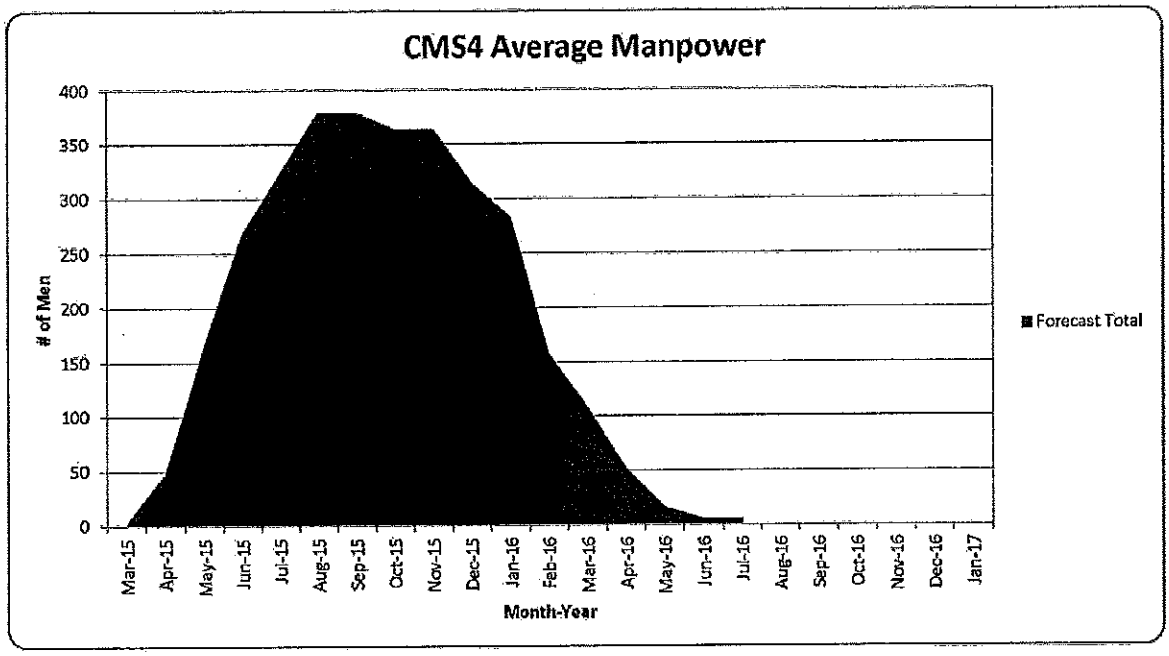


Figure 5. Average Manpower During Construction

2.3.7. Construction Waste Management

During construction, the primary waste generated will be solid non-hazardous waste. However, some non-hazardous liquid waste and hazardous waste (solid and liquid) will also be generated. All of the waste generated by the Project will be at the Project site. The types of waste potentially generated during construction are described in the following discussion.

2.3.7.1. Non-hazardous Solid Waste/Wastewater

Project construction could potentially generate the following non-hazardous waste streams:

Paper, Wood, Glass, and Plastics: Paper, wood, glass, and plastic wastes are typically generated from packing materials, waste lumber, insulation and empty non-hazardous chemical containers. These wastes will be recycled to the extent practical. Waste that cannot be recycled will be disposed of weekly at an appropriately licensed landfill. On site, the waste will be placed in dumpsters.

Metal: Metal wastes that include steel (from welding and cutting operations, packing materials, and empty non-hazardous chemical containers) and aluminum waste (from packing materials and electrical wiring) will be generated during construction. Metal waste will be recycled where practical and non-recyclable waste will be deposited in an appropriately licensed landfill.

2.3.7.2. Wastewater

During construction, wastewater will be collected in self-contained systems which will be pumped and disposed of in accordance with local requirements. Wastewater generated during construction will include sanitary waste, stormwater runoff, and equipment washdown water. These wastewaters may be classified as hazardous or nonhazardous depending on their chemical quality, and handled and disposed of in accordance with applicable laws. See Section 2.3.7.3 for additional discussion of hazardous wastewaters.

2.3.7.3. Hazardous Waste

Most of the hazardous waste generated during construction will consist of liquid waste, such as flushing and cleaning fluids, passivating fluid (to prepare pipes for use), and solvents. Some hazardous solid waste, such as welding materials and dried paint, may also be generated during construction.

When pipes are cleaned and flushed, waste liquid will be generated. The volume of flushing and cleaning liquid waste generated is estimated to be one to two times the internal volume of the pipes cleaned. The quantity of welding, solvent, and paint waste is expected to be minimal. Wastewaters generated during construction could also be identified as hazardous, based on sampling and testing results.

2.3.8. Erosion and Sediment Control Measures

Due to the removal or disturbance of soil and vegetation during construction, appropriate water erosion and dust-control measures will be required to minimize dust and sediment load to water bodies.

2.3.8.1. Water Erosion Control Measures

The Project will implement Best Management Practices ("BMPs") erosion-control measures to control stormwater runoff. Site-specific BMPs will be implemented by the contractor in compliance with regulations and permit conditions. As appropriate, the Project will implement practices for temporary and final erosion control, including:

- Monitor the weather using National Weather Service reports during construction to track conditions and alert crews to the onset of rainfall events.
- Preserve existing vegetation where feasible. Conduct clearing and grading only in areas necessary for Project activities and equipment traffic. Install temporary fencing or signage prior to construction along the boundaries of the construction zone to clearly mark this zone, preventing vehicles or personnel from straying onto adjacent off-site habitat.
- Sequence construction activities with the installation of erosion control and sediment control measures. Arrange the construction schedule as much as practicable to leave existing vegetation undisturbed until grading begins.
- Stabilize non-active areas as soon as feasible on those portions of the Project site where construction has temporarily or permanently ceased.
- Place covers over stockpiles prior to forecasted storm events and during windy conditions as necessary to prevent erosion of stockpiles. Place sediment controls (e.g., fiber rolls, straw bales, silt fencing) around the perimeter of stockpiled materials to control sediment runoff.
- Maintain sufficient erosion control materials on-site to allow implementation of BMPs. This includes implementation requirements for active areas and non-active areas that require deployment before the onset of rain.
- Promptly repair and reapply controls according to BMPs in areas where erosion is evident.

2.3.8.2. Wind Erosion Control Measures

The Project will implement the following practices for wind erosion control:

- Minimize vegetation removal and grading to the extent practicable.
- Apply water to disturbed soil areas of the Project site to control dust and maintain optimum moisture levels for compaction as needed. Apply the water using water trucks. Minimize water application rates as necessary to prevent runoff and ponding.

- During windy conditions forecast or actual wind conditions of approximately 25 miles per hour or greater, apply dust control to haul roads to adequately control wind erosion. Cover exposed stockpiled material areas.
- Suspend excavation and grading during periods of high winds when dust cannot be reasonably controlled.
- Cover all trucks hauling soil and other loose material or maintain at least 2 feet of freeboard.

2.4. Operation and Maintenance

2.4.1. Facility Operation

O&M activities associated with a PV power plant are much different than those associated with conventional power plants. Operation of the facility would be managed, remotely monitored, and controlled by the existing staff of the CMS3 facility, and maintained by operations and maintenance personnel shared with the neighboring CMS1 facility. CMS1 was completed in December 2010 and has been operating for nearly four years. The primary third-party maintenance and security services will be based out of the greater Las Vegas area.

Daily operation of the plant will begin when there is sufficient sunlight to begin operation of the single-axis tracking solar arrays. Operators work rotating 12-hour shifts, and will be on site during generation hours. Operators will be on site weekends and may work nights to complete maintenance requirements. After the Project is constructed, a security contract will be shared with CMS1 and CMS2. Security staff, either employees or contract personnel, may conduct patrols and monitoring of the site during nighttime hours.

2.4.2. Maintenance

Long-term maintenance schedules will be developed to include periodic maintenance and equipment replacement in accordance with manufacturer recommendations. Solar panels may be warrantied for 20 to 25 years and are expected to have a life of 40 years. Moving parts, such as tracker motors, motorized circuit breakers and disconnects, and inverter ventilation equipment, will be serviced on a regular basis, and unscheduled maintenance will be conducted as necessary.

Due to the efficiencies gained by adopting solar panel technology, the cost and time for O&M is expected to be minimal compared to that of conventional power plants.

2.4.3. Waste Management

The primary waste generated at the Project site during operations will be non-hazardous solid waste. However, varying quantities of liquid non-hazardous waste and solid and liquid hazardous waste will also be generated. The types of wastes and their estimated quantities are discussed below.

2.4.3.1. Non-hazardous Solid Waste

The Project will produce non-hazardous waste, including rags, broken and rusted metal and machine parts, defective or broken electrical materials, empty containers, typical refuse generated by workers and small office operations, and other miscellaneous solid wastes. Large metal parts will be recycled. Other non-hazardous wastes will be disposed of in an appropriately licensed landfill.

Only limited hazardous materials are associated with the operation of the Project. However, during maintenance activities, the potential for a vehicle petroleum spill exists. Spill cleanup kits will be available on equipment so that spills or leaks of vehicle fluids could be quickly cleaned up for proper disposal. Material storage yards, and access roads will be kept in an orderly condition throughout the construction period. Refuse and trash, including stakes and flags, will be removed from the sites and disposed of in an approved manner. No construction equipment oil or fuel will be drained on the ground. Oils or chemicals will be hauled to an approved site for disposal.

2.4.3.2. Non-hazardous Wastewater

During operation, routine semi-annual or annual panel cleaning is not anticipated due to clear local conditions and occasional rainfall. If the panels become soiled over time, water would be used to wash dust and dirt off each solar panel for a cleaning. This water will be non-hazardous and will be allowed to flow onto the ground.

2.4.3.3. Hazardous Waste

Limited quantities of hazardous materials will be used and stored at CMS1 for operation and maintenance that may require disposal as hazardous waste. These materials will include oils, diesel fuel, lubricants, solvents, janitorial supplies, office supplies, laboratory supplies, paint, degreasers, herbicides, pesticides, air conditioning fluids (chlorofluorocarbons [CFC]), sulfur hexafluoride (SF6), gasoline, hydraulic fluid, propane, and welding rods. These materials will generally be used in small quantities.

Any hazardous materials will be stored in the warehouse area of the CMS1 O&M building. Flammable materials, such as paints and solvents, will be stored in flammable material storage cabinets with built-in containment sumps. The remainder of the materials will be stored on shelves, as appropriate. Due to the small quantities involved, the controlled environment, and the concrete floor of the CMS1 O&M building, a spill will be able to be cleaned up without resulting in any considerable environmental consequences.

The PV panels and inverters produce no waste during operation. However, the PV panels may include solid materials that are considered to be hazardous, such as cadmium telluride. As such materials are in a solid and non-leachable state, broken PV panels would not be a source of pollution to storm water.

2.4.4. Decommissioning

CMS4 would operate the Project for the foreseeable future. However, CMS 4 will be required to remove its facilities following the termination of the Project site lease from the City. When the Project ultimately is decommissioned, the PV panels, support structures, and electrical equipment would be removed. The PV panels and inverters produce no waste during operation, and the panels and related equipment are solid and in a non-leachable state. Thus, no ground decontamination or remediation would be required. All panels removed from the site would be returned to the manufacturer or trucked off-site to an appropriate disposal facility.

2.4.5. Health and Safety

The health and safety of employees and contractors is a high priority. All employees and contractors will be required to adhere to the appropriate health and safety plans and emergency response plans. All construction and operation contractors will be required to operate under a health and safety program that meets industry standards.

An operational Environmental Health and Safety Plan will be prepared for the proposed solar facility and gen-tie line. The Safety Plan will outline all Project activities, identify all hazardous substances and chemicals used at the site, and ensure compliance with Occupational Safety and Health Administration (OSHA) Standards, the Nevada Division of Industrial Relations requirements, and all other local, state, and federal regulatory requirements. The Safety Plan will identify site-specific safety control measures, site health and safety roles and responsibilities, speed limits, and site safety hazards and controls.

2.4.6. Site Security and Lighting

The Project site will be secured with 7-foot chain-link fencing that may be topped with barbed wire. Lighting will be provided at the control building, and the main plant access road. Lighting will be directed downward and shielded as required by County and local ordinance to minimize light trespass. A perimeter security system may also be installed as necessary.

2.5. Alternatives Considered but Eliminated from Detailed Consideration

Potential alternatives for the proposed CMS4 Project were evaluated to determine whether they could substantially achieve the Project goals and objectives in order to be considered feasible and appropriate for further consideration. This section describes the evaluation criteria, interconnection options, and technologies eliminated because they did not meet the Project objectives and/or did not reduce environmental consequences compared to the proposed action.

2.5.1. Facility Location Criteria

The primary objective of CMS4 was to locate the solar facility in southern Nevada. A number of criteria were developed and used in evaluating appropriate sites including:

- adequate solar irradiation;
- close proximity to a high capacity substation with access to multiple energy markets;
- adequate transmission capacity to convey the electrical output of the Project;
- minimal environmental concerns;
- relatively flat site to minimize the need for site grading;
- existing access to accommodate construction workforce needs;
- land parcel large enough to accommodate a utility scale solar facility; and
- access to nearby workforce sufficient to support Project construction.

The Project site is located within Boulder City's Eldorado Valley Energy Zone, which meets all of the Project's siting objectives. Boulder City has established a zoning category of Energy Resource Zone[2] ("ER") in which land may be used for the development of private and/or public solar and gas-fired electric generation facilities, electrical transmission and distribution facilities, ancillary facilities, and other similar uses as permitted uses. The Eldorado Valley Energy Zone is an approximately 8,000 acre area specifically designated for this use. The remote location of the Energy Zone with respect to the Boulder City population center minimizes the potential for impacts affecting the local population. Noise, visual, and traffic impacts are all minimized by locating the Project in the Energy Zone. Four utility-scale solar generating facilities are already in commercial operation or under construction within the Energy Zone (Nevada Solar One, CMS1, CMS2 and CMS3). Other commercial solar projects are contemplated in the Energy Zone. Environmental pre-permitting of the Energy Zone by the City allows the Project to proceed based on the issuance of a building permit by Boulder City. Species mitigation is accomplished through payment of an established Clark County fee.

The Project site is located near several electrical substations/switchyards, including Merchant, Nevada Solar One, Eldorado, Marketplace and McCullough. These substations could provide the Project with access to multiple energy markets including direct interconnection to the California Independent System Operator, NV Energy, and municipal systems.

2.5.2. Gen-tie Power Line Criteria

Another key objective of CMS4 was to locate the PV facility and the gen-tie line in an area such that: (1) the length of the gen-tie line interconnection to the electrical grid is less than 5 miles to minimize gen-tie line losses and costs; and (2) necessary gen-tie line ROW can be acquired. The Project site meets these criteria through use of the existing CMS2 gen-tie poles to convey power to the grid at the nearby Merchant substation.

[2] See Boulder City, Nevada's Zoning Ordinance, Title 11, Chapter 19.

2.5.3. Alternatives Considered and Eliminated

Alternative gen-tie route options and technologies were considered and eliminated are summarized below.

2.5.3.1. Alternative Gen-tie Routes

No alternative Gen-tie line routes were considered for the Project. Because an existing gen-tie power line runs through the Project area, the existing poles can be used for the proposed Project with minimal environmental impacts and minimal cost, and a different route would not have any advantages.

2.5.3.2. Alternative Technologies

The CMS4 Project is designed to utilize crystalline silicon or thin-film PV technology mounted on single-axis tracker racking. Other solar technologies considered by CMS4 for the Project included concentrating PV and solar thermal technologies. The water demand is significantly greater for solar thermal technology and therefore presents greater environmental concerns. Crystalline silicon and thin film are commercially-proven technologies already in use by affiliates of CMS4 in the Eldorado Valley.

CMS4 determined that using crystalline silicon or thin film PV solar panels is the preferred technology for this Project given the comparatively low water requirements, and reliable, proven technology. Additionally, none of the alternative technologies mentioned above are considered to be capable of reducing the potential environmental impacts associated with the proposed action. Concentrating solar would have greater impacts on visual and biological resources and solar thermal would increase water use. Therefore, other alternative solar technologies were eliminated from further consideration.

3. Existing Setting and Environmental Consequences

The proposed Project site is located in the Boulder City Solar Energy Zone in the Eldorado Valley, Clark County, Nevada. This site is approximately 17 miles south of Henderson, Nevada and within the incorporated City of Boulder City.

The Eldorado Valley is within the southern portion of the Basin and Range province characterized by north-south trending valleys. Specifically, this portion of the Eldorado Valley is flanked by the McCullough Mountain Range directly west and the Eldorado Range directly to the east.

Resources analyzed in this ES include the following:

- Geology, Minerals and Soils, Section 3.1
- Water Resources, Section 3.2
- Air Quality and Climate, Section 3.3
- Biological Resources Section 3.4
- Cultural Resources, Section 3.5
- Land Use Section 3.6
- Transportation, Section 3.7
- Visual Resources, Section 3.8
- Noise, Section 3.9
- Waste Management and Hazardous Materials, Section 3.10
- Socioeconomics, Section 3.11

3.1. Geology, Soils, and Paleontology

This section describes the geological, soils, and paleontological resources in the area, the impacts of the proposed Project on these resources, and the best management practices (BMPs) / mitigation measures designed to reduce these impacts.

3.1.1. Existing Setting

Eldorado Valley has an area of roughly 530 square miles (State of Nevada 1966). It is a closed drainage basin bounded to the west by the McCullough Range, to the north by the River Mountains, and the east by the Eldorado Mountains and the Opal Mountains. The mid-Tertiary volcanic and plutonic rocks occur in the McCullough, River, and Eldorado Mountains. The southern part of the McCullough Range and the Opal Mountains are formed primarily of Pre-Cambrian foliated metamorphic rock. The Eldorado Mountains were uplifted during the Miocene Basin and Range Uplift. The valley floor of Eldorado Valley is between 1,708 and 1,760 feet (State of Nevada 1966).

The Project site is located on alluvial soils in the Eldorado Valley. The Eldorado Valley is within the southern portion of the Basin and Range Province characterized by north-south trending valleys, bounded by normal faults, with alluvial fill underlain by older bedrock units. Based on the Geologic Map of the Boulder City 15-Minute Quadrangle, Clark County, Nevada (USGS 1977), the site is underlain by Holocene alluvium and fanglomerate. The alluvium is reportedly unlithified, poorly sorted basin-fill clastic deposits that form fans and sheets in the Eldorado Valley. The thickness of the alluvium below the site is approximately 1,000 feet, where it is underlain by bedrock of the Bridge Spring formation, a Miocene-age rhyolitic ash-flow tuff.

The soil textures in the Project area are sandy clay loam, very gravelly, loamy sand, silty clay loam, and very gravelly, fine sandy loam (NRCS 2012). The soil slopes range from 0 to 2 percent. The soil erosion potential for the entire Project area is low. The Project area has a moderate wind erosion potential, soils with rapid permeability (rare frequency of flooding), and very deep soil depths.

According to the Supplemental Environmental Impact Statement for the Clark County Regional Flood Control District (BLM 2004), the Quaternary alluvial deposits that cover most of the valley floors (Las Vegas Valley and Boulder City) including the Project site, have little or no paleontological potential.

3.1.2. Environmental Consequences

This section summarizes potential geologic and soil hazards or constraints on the proposed solar facility, gen-tie line, and access road.

Soils: The erosion susceptibility of the soils in Eldorado Valley ranges from low to moderate under the proposed action (BLM 1992). Soils disturbed by grading, excavation, and construction

will have a higher potential for erosion by wind and water. Grading of the solar field will include cuts and fills that are not expected to exceed 24 inches. The minor grading will be limited to that necessary for the technology chosen.

Some potential for soil erosion exists from the proposed solar field site, due to soil disturbance and removal of vegetation. The Project will utilize BMPs for soil protection thereby minimizing the contribution to cumulative impacts. In addition, a fugitive dust plan will be developed with mitigation measures to reduce the potential for fugitive dust.

Faulting: The nearest potentially active fault is a 2-mile long feature located within the Eldorado Valley. Based on the estimated ages of faulted deposits and scarp-profile interpretation, the most recent surface faulting event probably occurred less than 11,000 years ago. Diffusion-equation modeling of the scarp suggests that the age of the fault ranged from 5,500 to 8,200 years ago (City of Las Vegas 2010). This site, as well as most of the southern Nevada region, may experience ground shaking from possible future earthquakes in the region. In Clark County there have never been any major earthquakes (City of Las Vegas 2010). However, tremors of intensities ranging between VI and VII on the Modified Mercalli Scale have been felt in the Clark County area as a result of strong earthquakes in west-central Nevada and Southern California. Because of these occurrences, the Las Vegas area is classified in Seismic Zone 2B of the Uniform Building Code (UBC) so that construction should remain sound if subjected to Modified Mercalli Scale intensities of VII (City of Las Vegas 2010). Therefore, potential impacts to the Project from earthquakes are minor.

Mineral Resources: River Mountains Area of Critical Environmental Concern (ACEC) is an area of about 45 km^2, east of the City of Henderson, near Boulder City. The area is underlain by Miocene volcanic rocks, but no important mineral deposits are known nearby (USGS 2004). The Keyhole Canyon ACEC is about 4 km east of U.S. 95, just west of Boulder City. There has been no known mining in the immediate area of Keyhole Canyon (USGS 2004), therefore, no impacts to mining operations are expected as a result of the Project.

Paleontological Resources: There are no known paleontological resources or fossils that are sensitive or legally protected in the Project area (Longwell, et al. 1965).

3.1.3. Mitigation Measures

Before the start of construction, the construction contractor will address potential impacts from erosion and obtain a dust control permit from the Clark County Department of Air Quality and Environmental Management as required. Other potential BMPs/mitigation measures may include, but are not limited to, the following:

- Minimize grading and vegetation removal, and limit surface disturbance during construction to the time just before PV module support structure installation;

- Limit vehicular speeds on non-paved roads (Clark County ordinance speed limit is 25 miles per hour mph);
- Apply water to disturbed soil areas of the Project site to control dust and maintain optimum moisture levels for compaction, as needed. Apply the water using water trucks. Minimize water application rates, as necessary, to prevent runoff and ponding;
- Apply dust control measures to haul roads to adequately control wind erosion during windy conditions (forecast or actual wind conditions of approximately 25 miles per hour or greater). Cover exposed stockpiled material areas;
- Suspend excavation and grading during periods of high winds;
- Cover all trucks hauling soil and other loose material or maintain at least 2 feet of freeboard;
- Use gravel or other similar material where dirt access roads intersect the paved roadways to prevent mud and dirt track-out;
- All paved roads will be kept clean of objectionable amounts of mud, dirt, or debris, as necessary;
- Applying soil stabilizers, where permissible;
- Installing a construction entrance with track-out control devices;
- Stabilizing of disturbed surfaces after construction is completed;
- All construction vehicle movement will be restricted to the Project area, pre-designated access roads, and public roads
- Site inspections will be conducted by the construction contractor during the construction period to ensure that erosion-control measures were properly installed and are functioning effectively;
- Prohibiting construction activities when the soil is too wet to adequately support construction equipment;
- Construction activities will be limited to the Project area to reduce soil compaction, erosion, and vegetation loss;
- Implement BMPs such as locating waste and excess excavated materials outside drainages to avoid sedimentation; and,
- Install silt fences, temporary earthen berms, temporary water bars, sediment traps, stone check dams, or other equivalent measures (including installing erosion-control measures around the perimeter of stockpiled fill material), as necessary.

3.2. Water Resources

Hydrologic resources include groundwater, surface water, and wetlands. Groundwater quality and the issuance of permits for the use of both groundwater and surface water are overseen by the State Engineer under authority granted by the Nevada Revised Statutes 533 and 534. Wetlands are managed by the US Army Corps of Engineers. This section describes the water resources in the area, the impacts of the proposed Project on these resources, and the best management practices/mitigation measures that will reduce these impacts.

3.2.1. Existing Setting

3.2.1.1. Groundwater

The Eldorado Valley is part of the Las Vegas Flow System, a subsystem of the regional Colorado Flow System. Precipitation originating in the mountains surrounding the Eldorado Valley flows toward the axis of the basin and then northward into either the Las Vegas Valley or eastward to the Colorado River Valley, eventually becoming groundwater. An estimated 1,000 acre-feet of groundwater discharges annually to the Colorado River Valley (Harrill et al. 1988).

The two sources from which groundwater in the Eldorado Valley area is derived include the recharge of the basin via precipitation (an estimated 1,100 acre-feet/year) and as subsurface inflow from Hidden Valley. The inflow from Hidden Valley is thought to be less than 300 acre-feet per year (Rush and Huxel 1966).

Eldorado Valley's groundwater has high concentrations of total dissolved solids, medium to high salinity hazard, and is primarily sodium-bicarbonate (Rush and Huxel 1966). Historically, some areas of the Eldorado Valley have groundwater that exceeds drinking water standards for concentrations of total dissolved solids, sulfate, and chloride. Other trace constituents and soluble metals may also be present in parts of the aquifer as a result of the presence of historic mining districts in the area. Iron, lead, manganese, mercury, and nitrate have been detected in the groundwater at levels which exceed their respective maximum contaminant levels according to records with the Clark County Department of Health Services (Buqo and Giampaoli 1988).

According to the Nevada Division of Water Resources, Eldorado Valley is a designated groundwater basin with high variability in the depth of water. Records from the Nevada Division of Water Resources list a borehole near the Marketplace substation, approximately 1.6 miles northwest of the Project site. The depth in the borehole to static groundwater was measured at 315 feet below land surface in 1994 (NDWR, 1994).

The Safe Drinking Water Act sets up barriers against pollution to drinking water which includes the protection of source waters. States and water suppliers are responsible for ensuring that these sources are protected. The state of Nevada's Division of Environmental Protection (NDEP) has

primary authority granted under this Act granted by the United States Environmental Protection Agency and has delegated responsibility to the owners, managers and operators of public water systems (NDEP 2013). Since source waters will not be contaminated as a result of any activities associated with the Project within Eldorado Valley, there is no regulation.

3.2.1.2. Surface Water

The presence of surface water resources in the Eldorado Valley is very limited. Estimated runoff within the basin, though not known, is estimated at less than 100 acre-feet/year (Scott et al., 1971). There is infrequent runoff from the surface which occurs as ephemeral flow in streambeds and, rarely, ponding of water occurs on the Eldorado Dry Lake. It is likely that the flooding characteristic of the Eldorado Valley basin exhibit shallow flash flooding over large areas as observed in surrounding basins. An earthen berm bordering the east side of U.S. Highway 95 serves in directing the infrequent stormwater runoff northward.

The Project site is located within Eldorado Valley, portions of which have been designated as a special flood hazard area subject to inundation by the 100-year floodplain. Areas to the north and southwest of the Project are within a designated floodplain. However, the Project is not within the 100-year floodplain. "Water of the United States," defined in 33 CFR 328.3(a) to include navigable waters as well as intermittent streams, are not present in the Eldorado Valley. Additionally, the Project site does contain hydric soils and habitat in the area does not meet the definition of a wetland. It does not contain: (1) wetlands, wetland fringes or adjacent wetlands, or (2) spawning, feeding, or nesting areas for fish or other important aquatic species.

As the Eldorado Valley is a closed basin in which surface water runoff from the surrounding mountains is directed to the Eldorado Dry Lake, a permit is not expected to be required for this project; however, a jurisdictional determination report can be submitted to the U.S. Army Corps of Engineers if an official determination is necessary. No permanent surface waters or wetlands exist on or near the Project area. Narrow and shallow ephemeral drainage washes flow from south to north across the site. Though water does flow during infrequent storm events, since there is no connection of this flow to the Colorado River system, there is no regulation under section 404 of the Clean Water Act.

3.2.2. Environmental Consequences

3.2.2.1. Groundwater

Activities associated with the construction and operation of the Project will not have impacts at depths exceeding 30 feet, and therefore will not intercept or impact the groundwater, at approximately 315 feet, in any way. Groundwater will not be utilized for either the construction or operation of the Project.

Water for construction activities and for operation of the Project will be provided by a connection to the Boulder City Public Works Department's water main which is located along the west side of U.S. Highway 95. CMS4 will utilize a waterline that runs along Eldorado Valley Drive to transport water to the Project.

Water use during construction will be used primarily for dust control and will total approximately 295 acre-feet per year for the estimated 1.5 year construction period. A temporary lined pond and/or storage tanks will provide buffer for water storage and use.

Water use during the operation of the Project will also be provided by the water meter connection to the Boulder City Public Works department water main. Water may be used for dust control activities. It is anticipated that panel washing will not be necessary; however, in the event that it is water would be used for panel cleaning. Annual water usage is not expected to exceed 8 acre feet per year.

3.2.2.2. Surface Water

Activities associated with the construction and operation of the Project will not divert flows from areas of perennial flow or from ephemeral washes and will not divert water from downstream habitats. As no discharge of hazardous materials to surface water resources will occur, considerations under the Safe Drinking Water Act will not be required.

Increased soil disturbance will occur during construction of the Project, potentially resulting in increased levels of erosion. It is possible that this erosion will result in increased levels of sedimentation to the Eldorado Dry Lake. Potential impacts resulting from this increased erosion and sedimentation due to soil disturbance will be reduced through the use of BMPs and mitigation measures.

3.2.3. Mitigation Measures

3.2.3.1. Groundwater

As no excavation activities will be expected to exceed 30 feet in depth and the groundwater level is at approximately 315 feet, no groundwater mitigation measures will be necessary.

Project maintenance operations may require occasional cleaning of solar panels using water from the Boulder City Public Works Department's water main. While runoff from these activities will occur, no impacts will result from these activities due to the use of non-hazardous water sources as well as the extreme depth of the groundwater; therefore, no mitigation is required.

During construction of the Project, a sanitary facility will provide and maintain on-site portable toilets so no impacts to groundwater resources from discharge of sanitary wastewater will occur; therefore, no mitigation is required.

3.2.3.2. Surface Water

As no existing water bodies are located down gradient of the Project, no impacts to surface waters are anticipated; therefore, no mitigation is required.

The construction and operation of the Project will require a general permit for stormwater discharge which will include the preparation and implementation of a Stormwater Pollution Prevention Plan (SWPPP). Mitigation measures will also be in place for control of on-site surface flows, impacts from increased erosion, and sedimentation due to soil disturbance activities as described in Chapter 2.

3.3. Air Quality

For the analysis, air quality is characterized by the existing concentrations of various pollutants and those conditions that influence the quality of the ambient air surrounding the proposed Project. The primary factors that determine the air quality of the region are the locations of air pollution sources, the type and magnitude of pollutant emissions, and the local meteorological conditions. This analysis takes into account these factors and provides a reliable and conservative prediction of the air impacts that would occur during construction and operation of the proposed Project. The Federal Clean Air Act (CAA) and subsequent amendments have provided the authority and framework for United States Environmental Protection Agency (USEPA) regulation of air emission sources. The USEPA regulations serve to establish requirements for the monitoring, control, and documentation of activities that affect ambient concentrations of certain pollutants that may endanger public health or welfare.

As an enforcement tool, the CAA established National Ambient Air Quality Standards (NAAQS), which have historically applied to six criteria pollutants—sulfur dioxide (SO2), carbon monoxide (CO), nitrogen dioxide (NO2), particulate matter equal to or less than 10 microns in diameter (PM10), ozone (O3), and lead (Pb) (Table 5). These standards are defined in terms of threshold concentration (e.g., micrograms per cubic meter [µg/m3]) measured as an average for specified periods of time (averaging times). Short-term standards (i.e., 1-hour, 8-hour, or 24-hour averaging times) were established for pollutants with acute health effects, while long-term standards (i.e., annual averaging times) were established for pollutants with chronic health effects. More recently, additional standards for 8-hour average O3 concentrations and particulate matter equal to or less than 2.5 microns in diameter (PM2.5) were added.

This section describes the air quality in the area, the impacts of the proposed Project on air quality, and the best management practices (BMPs)/mitigation measures that will reduce these impacts.

Table 5. National Ambient Air Quality Standards

Pollutant	Primary Standards		Secondary Standards	
	Concentration	Averaging Time	Concentration	Averaging Time
Carbon monoxide	9 ppm (10 mg/m^3) 35 ppm (40 mg/m^3)	8-hour [1] 1-hour [1]		None
Lead	0.15 µg/m^3 [2]	Rolling 3-month average	Same as primary	
Nitrogen dioxide	0.053 ppm	Annual (arithmetic mean)	Same as primary	
	1 ppm	1-hour	None	
Particulate matter (PM_{10})	150 µg/m^3	24-hour [3]	Same as primary	
Particulate matter ($PM_{2.5}$)	15.0 µg/m^3	Annual [4] (arithmetic mean)	Same as primary	
	35 µg/m^3	24-hour [5]	Same as primary	
Ozone	0.075 ppm (2008 standard)	8-hour [6]	Same as primary	
	0.12 ppm	1-hour [8]	Same as primary	
Sulfur Dioxide	0.03 ppm	Annual (arithmetic mean)		
	0.14 ppm	24-hour [1]	0.5 ppm	3-hour [1]
	0.075 ppm	1-hour [9]		

Source: EPA 2011

mg/m^3 = milligrams per cubic meter, µg/m^3 = micrograms per cubic meter, ppm = parts per million by volume

Assumptions/Notes:

(1) Not to be exceeded more than once per year.

(2) Final rule signed October 15, 2008.

(3) Not to be exceeded more than once per year on average over three years.

(4) To attain this standard, the three-year average of the weighted annual mean $PM_{2.5}$ concentrations from single or multiple community-oriented monitors must not exceed 15.0 µg/m^3.

(5) To attain this standard, the three-year average of the 98th percentile of 24-hour concentrations at each population-oriented monitor within an area must not exceed 35 µg/m^3 (effective December 17, 2006).

(6) To attain this standard, the three-year average of the fourth-highest daily maximum 8-hour average ozone concentrations measured at each monitor within an area over each year must not exceed 0.075 ppm (effective May 27, 2008).

(7) (a) To attain this standard, the three-year average of the fourth-highest daily maximum 8-hour average ozone concentrations measured at each monitor within an area over each year must not exceed 0.08 ppm.

(7) (b) The 1997 standard—and the implementation rules for that standard—will remain in place for implementation purposes as EPA undertakes rulemaking to address the transition from the 1997 ozone standard to the 2008 ozone standard.

(8) (a) The standard is attained when the expected number of days per calendar year with maximum hourly average concentrations above 0.12 ppm is less than 1.

(8) (b) As of June 15, 2005, EPA has revoked the 1-hour ozone standard in all areas except the fourteen 8-hour ozone nonattainment Early Action Compact (EAC) Areas. For one of the 14 EAC areas (Denver, Colorado), the 1-hour standard was revoked on November 20, 2008. For the other 13 EAC areas, the 1-hour standard was revoked on April 15, 2009.

(9) Final rule signed June 2, 2010. To attain this standard, the 3-year average of the 99th percentile of the daily maximum 1-hour average at each monitor within an area must not exceed 75 parts per billion.

Geographic areas are designated as attainment, non-attainment, or unclassified for each of the six criteria pollutants with respect to the NAAQS. If sufficient monitoring data are available and air

quality is shown to meet the NAAQS, the USEPA may designate an area as an attainment area. Areas in which air pollutant concentrations exceed the NAAQS are designated as non-attainment for specific pollutants and averaging times. Typically, non-attainment areas are urban regions and/or areas with higher-density industrial development. Because an area's status is designated separately for each criteria pollutant, one geographic area may have more than one classification.

Currently, Clark County meets the PM2.5 and NO2 and CO NAAQS, and is unclassifiable for Pb and SO2. The County is developing a maintenance plan for PM10. Clark County was re-designated to attainment for carbon monoxide in 2010 (Federal Register Vol. 75, No. 145, July 29, 2010), was re-designated to attainment for PM_{10} in 2010 (Federal Register Vol. 75, No. 148, August 3, 2010), and was re-designated to attainment for ozone in 2011 (Federal Register Vol. 76, No. 60, March 29, 2011).

Currently there are no emission limits for so-called greenhouse gases (GHG), and no technically defensible methodology for predicting potential climate changes from GHG emissions. However, there are, and will continue to be, several efforts to address GHG emissions.

Ongoing scientific research has identified the potential impacts on the global climate of anthropogenic (manmade) GHG emissions and changes in biological carbon sequestration due to land management activities. Through complex interactions on a regional and global scale, these GHG emissions and net losses of biological carbon sinks cause a net warming effect on the atmosphere, primarily by decreasing the amount of heat energy radiated by the earth back to space. Although GHG levels have varied for millennia, recent industrialization and burning of fossil carbon sources have caused carbon dioxide concentrations to increase dramatically, and are likely to contribute to overall global climatic changes.

3.3.1. **Existing Setting**

The Project area and surrounding region is located near a dry lake bed in the low-elevation arid Mojave Desert, surrounded by desert mountain terrain, all within Clark County, Nevada. Clark County maintains an arid climate year round, with an average temperature of 68 degrees Fahrenheit. The hottest month is July with an average temperature of 90 degrees and the coldest month is December with an average temperature of 47 degrees (The Weather Channel). The Project lies within the Eldorado Valley, between the McCullough Range to the west and the Eldorado Range to the east. Within the valley elevation in the vicinity of the Project area is approximately 470 feet above mean sea level (MSL), the highest elevations in the area included peaks of more than 7,000 feet above MSL in the McCullough Range and 5,060 feet above MSL in the Eldorado Range. The elevation of these mountain ranges along with the lower elevations of the valley creates existing discernible air quality effects in the valley as the mountain ranges keep pollutants within the valley.

There are no ambient air quality monitoring stations within the Project area. The nearest station, which monitors O_3 and PM_{10} is located approximately 15 miles to the northeast of the Project area in Boulder City, Nevada.

3.3.2. Environmental Consequences

It is anticipated that there will be impacts to air quality due to emissions associated with the construction and operation of the 94 MW photovoltaic solar generation facility. Air emissions associated with the Project are expected to occur primarily during construction and will be chiefly associated with fugitive dust during construction from ground-disturbing activities include grading, pad construction and installation of the gen-tie line, as well as some emissions associated with engine exhaust from construction equipment, the transportation of goods and construction workers, all of which are included in this analysis. Once the facility is operational relatively few contributions to air emissions will be generated due to on-road travel of vehicles associated with worker commutes for maintenance activities.

Construction of the proposed project is projected to take approximately 18 months. Construction traffic is estimated at 300 trips per day and 400 workers during peak construction. Truck traffic during construction is expected to average approximately 20 truck trips per day. The emissions for the paved road components were based upon maximum trucks per month and number of workers at peak construction.

Emissions of criteria pollutants for the proposed Project were calculated for three distinct Project elements. Those elements considered were:

1. The initial land disturbance that includes clearing, grading, grubbing, etc.
2. Construction of the solar field.
3. Operation and maintenance of the facility following construction.

During site development, the Project would include grading approximately 665 acres of the approximately 682-acre site resulting in localized, short-term increases in fugitive dust (PM_{10} emissions). The increase in PM_{10} would be primarily from soils disturbed during clearing and grubbing of vegetation and grading the site. The other criteria pollutants associated with site development would result in insignificant quantities of emission associated with the combustion of fuel from the various construction equipment.

Criteria pollutant emissions during construction activities would result from employee and construction vehicles, and heavy equipment moving across the site during construction of the solar array. Those emissions from worker travel to and from the Project site have been included in this analysis. Exhaust from construction vehicles and heavy equipment would result in localized, short-term increases in CO and NO_x emissions.

During operations, criteria pollutant emissions would result from vehicle traffic within the facility fence line during the operation and maintenance of the solar arrays. These emissions can be characterized as *de minimis* and would result in no long-term impact on the existing ambient air quality.

The methodologies and calculated criteria pollutant emissions data associated with the aforementioned phases are further discussed below. Each element of site development and its associated mass emissions were calculated as worst-case scenarios using USEPA and/or Clark County DAQEM-approved pollutant emission factors and methodologies.

Emission estimates were compiled for construction of the facility and routine ongoing operations and maintenance. Primary sources of criteria pollutant emissions for construction activities are related either to fuel use in internal combustion engines or to dust emitted into the air from various activities. Criteria pollutant emissions from both of these source types are described in detail below and are summarized in Table 6.

Table 6. Criteria Air Pollution Emissions (Tons/Year) Over the 18 Month Proposed Project Construction Duration

Source	CO	CO_2	NO_X	VOC	SO_2	PM_{10}	$PM_{2.5}$
Solar Field construction	136	1,435	12.9	7.8	0.04	62	8
General Conformity de *minimis* Thresholds	**100**	**NA**	**100**	**100**	**NA**	**70**	**NA**

CO = carbon monoxide; CO_2 = carbon dioxide; NO_X = nitrogen oxides; PM_{10} = particulate matter with a mean aerodynamic diameter of 10 micrometers or less; $PM_{2.5}$ = particulate matter with a mean aerodynamic diameter of 2.5 micrometers or less; SO_2 = sulfur dioxide; VOCs = volatile organic compounds

The PM_{10} emission factor for construction (0.11 tons/acre-month) was obtained from the March 2001 Clark County PM_{10} State Implementation Plan (SIP). Based on the emissions factors for unpaved roads (*Compilation of Air Pollutant Emission Factors, Volume 1: Stationary Point and Areas Sources* [AP-42], EPA 2008, Section 13.2.2), the $PM_{2.5}$ emission factor is 10% of the PM_{10} factor. For the purpose of this inventory, it was assumed that 700 acres would be disturbed by construction activities.

Emissions associated with constructing the solar field and the gen-tie line are from heavy trucks delivering materials and employee vehicles. Emission sources include fugitive dust emissions for vehicle travel on paved and unpaved roads, motor vehicle exhaust, and wind erosion. Fugitive dust emissions from paved and unpaved roads were calculated using AP-42 emission factors, the estimated number of vehicles, vehicle parameters, paved and unpaved road travel distances, and an estimated 55 percent control factor for watering the unpaved roads during construction (AP-42 Section 13.2.1 and Section 13.2.2). Wind erosion emissions for the

disturbed area were calculated, based on an AP-42 emission factor (Section 11.9), and an AP-42 particle size distribution for PM_{10} and $PM_{2.5}$ (Section 13.2.5).

Emissions associated with operating the facility are from employee vehicles and wind erosion (Table 7). Emission sources include fugitive dust emissions for vehicle travel on paved and unpaved roads, motor vehicle exhaust, and wind erosion. Fugitive dust emissions from paved and unpaved roads were calculated using AP-42 emission factors, the estimated number of vehicles, vehicle parameters, paved and unpaved road travel distances, and an estimated 55 percent control factor for dust suppressants planned for the facility roads (AP-42 Section 13.2.1 and Section 13.2.2). Wind erosion emissions for the area were calculated, based on an AP-42 emission factor (Section 11.9), an AP-42 particle size distribution for PM_{10} and $PM_{2.5}$ (Section 13.2.5), and an estimated 90 percent control factor for the planned mitigation measures.

Vehicle exhaust emissions (NO_x, SO_2, CO, PM_{10}, $PM_{2.5}$, and VOC,) can come from on-road and non-road motor vehicles. On-road vehicles would include heavy trucks and employee vehicles. It was assumed that both the trucks and employee vehicles would travel 30 miles each way.

Based on the criteria pollutant emission data and the Project not having triggered a federal action, the Project is not required to carry out criteria pollutant dispersion modeling for a demonstration of compliance with the NAAQS.

Table 7. Criteria Air Pollutant Emissions (Tons/Year) During the Proposed Project O&M Duration of 12 Months

Source	CO	CO_2	NO_X	VOC	SO_2	PM_{10}	$PM_{2.5}$
Emissions generated by maintenance and operation site traffic	2.7	25	0.16	0.15	0.001	1	0.1
Windblown dust from exposed ground	NA	NA	NA	NA	NA	1	0.2
TOTAL	**2.7**	**25**	**0.16**	**0.15**	**0.001**	**2**	**0.3**
General Conformity *de minimis* Thresholds	**100**	**NA**	**100**	**100**	**NA**	**70**	**NA**

CO = carbon monoxide; CO_2 = carbon dioxide ; NO_X = nitrogen oxides; PM_{10} = particulate matter with a mean aerodynamic diameter of 10 micrometers or less; $PM_{2.5}$ = particulate matter with a mean aerodynamic diameter of 2.5 micrometers or less; SO_2 = sulfur dioxide; VOCs = volatile organic compounds

3.3.3. Mitigation Measures

The construction of the Project will temporarily cause fugitive dust related to grading and other construction activities. In order to comply with Clark County dust control requirements, water would be used to control dust. Areas of higher erosion or poor soils, outside of desert tortoise

habitat, may require application of a palliative dust reducing agent. The Project will implement the following BMPs for fugitive dust and wind erosion control:

- Minimize grading and vegetation removal, and limit surface disturbance during construction to the time just before PV module support structure installation;
- Limit vehicular speeds on non-paved roads (Clark County ordinance speed limit is 25 miles per hour mph);
- Apply water and/or palliatives (as allowed) to disturbed soil areas of the Project site to control dust and maintain optimum moisture levels for compaction, as needed. Apply the water using water trucks. Minimize water application rates, as necessary, to prevent runoff and ponding;
- During windy conditions (forecast or actual wind conditions of approximately 25 miles per hour or greater), apply dust control measures to haul roads to adequately control wind erosion. Cover exposed stockpiled material areas;
- Suspend excavation and grading during periods of high winds;
- Cover all trucks hauling soil and other loose material or maintain at least 2 feet of freeboard; and
- Gravel or other similar material will be used where dirt access roads intersect the paved roadways to prevent mud and dirt track-out. All paved roads will be kept clean of objectionable amounts of mud, dirt, or debris, as necessary.

3.4. Biological Resources

The term "biological resources" refers to the plants and animals that inhabit the Project area. These are divided into three categories: vegetation, referring to plants; wildlife, referring to animals; and special status species, which refers to plants, animals, or other organisms that are protected by the Endangered Species Act or the Nevada Administrative Codes NAC.501 and NAC.503. This section describes the biological resources in the area, the impacts of the proposed Project on these resources, and the best management practices (BMPs)/mitigation measures that will reduce these impacts.

3.4.1. Existing Setting

3.4.1.1. Vegetation

Boulder City lies in the Mojave Basin and Range ecoregion. This is an arid desert environment, receiving approximately 2-8 inches of rain annually. Mojave Creosote Bush Scrub is the major vegetation type in the Project area. This vegetation type consists mostly of creosote shrub (*Larrea tridentate*), white bursage (*Ambrosia dumosa*), and burro-weed (*Ambrosia dumosa*) in a sparse, widely-spaced pattern of growth that appears on slopes, fans, and valleys (UCSB 2004, BLM 2012). Additional species that were documented during field visits in May 2014 are presented in Table 8.

Table 8. Plants Observed in the Project Area

Common Name	Scientific Name
beavertail cactus	*Opuntia basilaris*
buck horn cholla	*Cylindropuntia acanthocarpa*
Devil's spineflower	*chorizanthe rigida*
Mediterranean grass	*schismus barbatus*
desert marigold	*Baileya multiradiata*
wingnut cryptantha	*Cryptantha pterocarya*
cotton top cactus	*Echinocactus polycephalus*
Freemont's pincushion	*Chaenactis fremontii*
cheesebush	*Ambrosia salsola*
soft prairie clover	*Dalea mollisima*
six-weeks grama	*Bouteloua barbata*
Parry's sandmat	*Chamaesyce parryi*

Non-Native Invasive Plant Species

Four non-native invasive plant species are known to have colonized within or near the Project area: Sahara mustard (*Brassica tournefortii*), Mediterranean grass (*Schismus* spp.), red brome (*Bromus madritensis*), and Russian thistle/tumbleweed (*Salsola iberica*; NextLight 2009). These invasive plants occupy the Project area in low numbers, and none of them are particularly abundant (NextLight 2009). Sahara mustard is the only one designated as a noxious weed by the

Nevada Department of Agriculture. It is classified as a Category B weed species. Category B species are defined as "weeds established in scattered populations in some counties of the state; actively excluded where possible, and actively eradicated from nursery stock dealer premises; control required by the state in areas where populations are not well established or previously unknown to occur" (NVDA 2005).

Cactus and Yucca

Cactus and Yucca are protected under NRS 527.060-527.120, Nevada State Protection of Christmas Trees, Cacti, and Yucca and addressed in this section. During field surveys, cactus plants were observed in the proposed Project area including cotton top cactus (*Echinocactus polycephalus*) and beavertail cactus (*Opuntia basilaris*). No yucca was observed within the proposed Project area.

3.4.1.2. Wildlife

Species known to inhabit the area include species typical of the Mojave Desert. Wildlife and wildlife sign observed during field surveys (May 2014) are presented in Table 9.

Table 9. Wildlife and Wildlife Sign Observed in the Project Area.

Common Name	Scientific Name
Reptiles	
western whip-tail lizard	*Cnemidophorous* spp
common zebra-tailed lizard	*Callisaurus draconoides*
desert horned lizard	*Phrynosoma platyrhinos*
Western shovel-nosed snake	*Chionactis occipitalis*
Desert tortoise (sign only)	*Gopherus agassizii*
Birds	
common nighthawk	*Chordeiles minor*
raven	*Corvus corax*
red-tailed hawk	*Buteo jamaicensis*
Mammals	
black-tailed jack rabbit	*Lepus californicu*
kit fox	*Vulpes macrotis*
coyote	*Canis latrans*
ground squirrel	*Spermophilus* sp.

Other common wildlife in this area may include turkey vultures (*Cathartes aura*), cactus mice (*Peromyscus* spp.) and kangaroo rats (*Dipodomys* spp.) as well as several bat and migratory bird species.

3.4.1.3. Special-Status Species

The only federally-protected special-status species that may occur in the Project area was the desert tortoise (*Gopherus agassizii*), which is classified as Threatened under the Endangered

Species Act (ESA) and migratory birds, which are protected under the Migratory Bird Treaty Act (MBTA). State-protected special-status species that have the potential to occur in the Project area include the western burrowing owl and Gila monster (*Heloderma suspectum*; BLM 2012).

Desert Tortoise

The desert tortoise was listed as Endangered under the ESA in 1990 (USFWS 2011a) and subsequently reclassified as Threatened. It occurs in the Mojave and Sonoran deserts in Southern California, southern Nevada, Arizona, and the southwestern tip of Utah in the United States, as well as Sonora and northern Sinaloa in Mexico (USFWS 2011a). As per USFWS (2011a), the "Mojave population" of this animal includes: "all individuals living north and west of the Colorado River in the Mojave Desert in California, Nevada, Arizona, and southwestern Utah, and in the Sonoran (Colorado) Desert in California".

Throughout their range, primary threats to desert tortoise populations include habitat loss and alteration, illegal collection by human beings, disease, and predation (USFWS 2011a). Desert tortoise habitat is affected by urbanization, transportation infrastructure, off-road vehicle activity, poor grazing management, colonization by invasive plants, and wildfire (USFWS 2011a). All of these factors can cause alteration, fragmentation, or even the outright elimination of desert tortoise habitat. While desert tortoise is protected by the ESA, illegal take of desert tortoises for food, pets, or other purposes does still occur (USFWS 2011a). Existing evidence suggests that upper respiratory tract disease has had a significant negative impact on desert tortoise populations (USFWS 2011a). There is some evidence to suggest that exposure to environmental contaminants, especially heavy metals, predisposes desert tortoises to contracting upper respiratory tract disease (USFWS 2011a). Desert tortoise populations are also threatened by various naturally-occurring predators, the most important of which are ravens and coyotes.

In May 2014, regionally experienced biologists conducted pre-project tortoise surveys (See Appendix D) within the entire action area in accordance with 2010 USFWS protocols (USFWS 2010). According to the USFWS, the objective of the field surveys is to determine presence or absence of desert tortoise, estimate the number of tortoises (abundance), and assess the distribution of tortoises within the Project area (USFWS 2010). The survey area included the entire proposed Project site (682 acres) and was located using topographical maps, aerial photographs, and global positioning system (GPS) coordinates. Physical landmarks such as roads, surveyor markers, existing transmission lines, solar power plants and substations were also used for orientation.

No live tortoises were found within the Proposed Action area; therefore, relative tortoise abundance could not be estimated using the USFWS estimation equation. Desert tortoise sign observed is discussed in detail in the Biological Survey Report, and summarized in Table 10:

Table 10. Desert Tortoise Sign Observed in the Project Area.

Sign Type	Number Observed
Live Tortoises	0
Tortoise Burrows	29
Scat	2
Carcasses	2
Egg Shell Fragments	1

Migratory Birds Including Western Burrowing Owl

Executive Order (January 11, 2001) defines the MBTA of 1918 and subsequent amendments (16 U.S.C. 703–711) state that it is unlawful to take, kill, or possess migratory birds. Numerous bird species travel through Nevada during spring and fall migrations. A complete list is published at the USFWS web site (USFWS 2006). A list of those that are protected birds is in 50 CFR 10.13. The list of birds protected under this regulation is extensive and the Project area has potential to support many of these species. Typically, the breeding season is when these species are most sensitive to disturbance, which generally occurs from March 1 through August 31.

Migratory birds that were observed during desert tortoise surveys include the common raven, common nighthawk, and red-tailed hawk. It is assumed that the Project area contains potential nesting and foraging habitat for a wide range of migratory birds including the burrowing owl.

Burrowing owl habitat typically consists of open, dry, treeless areas on plains, prairies, and desert floors (Haug et al. 1993). Burrowing owls most frequently use mammal burrows created by other animals such as kit fox, coyotes or desert tortoises. Burrow presence is the limiting factor to burrowing owl distribution and abundance (Coulumbe 1971; Martin 1973; Green and Anthony 1989; Haug et al. 1993). The burrows are used for nesting, roosting, cover, and caching prey (Coulumbe 1971; Martin 1973; Green and Anthony 1989; Haug et al. 1993).

Western burrowing owls are protected by the Migratory Bird Treaty Act (MBTA) and are a state-protected species in Nevada (NRS 503.620). Threats to burrowing owl populations throughout their range include alteration of breeding and wintering habitat, illegal hunting, predation, disease, inadequacy of existing regulatory mechanisms, pesticides, and various other natural or manmade factors (such as collisions with stationary/moving structures, or disease; USFWS 2003).

No western burrowing owls or owl burrows were observed in during field visits and desert tortoise surveys. However, the Project area does have the potential for burrowing owl use, as it contains potential nesting and foraging habitat (BLM 2012).

Gila Monster

Gila monsters are carnivorous/insectivorous lizards in the genus *Heloderma* (USFWS 2011b) whose range is centered in western and southern Arizona, and extends south through Sonora, Mexico (USGS 2006). They inhabit rocky slopes, washes, and sandy valleys in the desert environment, and can spend more than 95 percent of their time in underground shelters (USFWS 2011b). At the time of this writing, gila monsters are not a federally-protected species. They are, however, classified as State Sensitive Reptiles in Nevada (NAC 503.080) and are protected under Nevada state laws NAC 503.090 and NAC 503.093.

No Gila monsters were observed during the 2014 surveys for this Project. Data compiled by Nevada Natural Heritage Program (NNHP) from previous surveys reported the Gila monster occurs near the proposed Project.

3.4.2. Environmental Consequences

3.4.2.1. Vegetation

About 665 acres of the proposed site will be graded causing direct removal of vegetation and wildlife habitat. About 17 acres comprising the Eldorado Valley Drive easement corridor will not be graded for solar facility installation. Additionally, construction activities could facilitate the introduction or spread of noxious or invasive weed species that can displace native vegetation, increase fire frequency, and reduce the quality of wildlife habitat.

During field surveys, only a few cactus plants were observed in the Project site, which are protected for commercial sale and transport under NRS 527.060-527.120, Nevada State Protection of Christmas Trees, Cacti, and Yucca. Grading activities will cause direct removal of a few cactus plants. Few cacti were observed in the proposed Project site: however, it is probable that a cactus could be crushed or removed during construction activities.

3.4.2.2. Wildlife

During construction of the solar facility and associated facilities, ground-disturbing activities could directly result in mortality to various wildlife species as about 665 acres will be graded. Fencing will be installed to help exclude wildlife after construction. Some species that are particularly mobile might be able to avoid injury or mortality by leaving the area. However, some wildlife, such as nocturnal species or species that use burrows, might be more susceptible to injury or mortality. Although temporary in nature, noise and activity associated with construction could cause animals to avoid the area, thus altering their normal behavior patterns.

Increased traffic on established roads could result in more vehicle/wildlife collisions, thereby resulting in injury or death to wildlife. This might be of particular concern for reptiles and species that utilize roads for heat sources or for other less mobile wildlife.

3.4.2.3. Special Status Wildlife Species

Desert Tortoise

The entire 682 acre proposed site is within desert tortoise habitat. However, during surveys conducted in May 2014, no live tortoise sign was found in the Project site. Development of the solar facility is on private lands (i.e. those owned by Boulder City) and therefore will utilize the existing Clark County MSHCP Section 10 permit which allows take of desert tortoise.

Tortoises may be injured or killed during construction activities. Although not required under the Clark County MSHCP prior to construction, the project clearance survey will be conducted. If a tortoise is found during the pre-construction survey, it will be removed and appropriately relocated by an authorized biologist.

Increased human activity and construction vehicle traffic may also result in tortoise/vehicle collisions that result in tortoise injury or death. Tortoise may take shelter under parked vehicles and be killed, injured, or harassed. Minimization measures such as a Worker Environmental Action Plan (WEAP), and speed limits on roads, will reduce or eliminate these effects.

Indirect effects could be caused by access roads, newly constructed fencing and the new gen-tie circuit which may facilitate increased predation. Predators such as ravens, coyotes, or other raptors may be attracted to the construction site due to an increase in food opportunities including construction site litter and voluntary feeding from construction staff; an increased number of perching opportunities due to new gen-tie lines, fences, or other opportunities; or increased water sources due to dust control protocols. An increased presence of predators could lead to a predation increase on smaller, more vulnerable tortoises.

Ground disturbing activities during construction may result in an increase of noxious and invasive plant species in the area. Construction machinery may facilitate the spread of existing noxious or invasive species throughout the site, or may facilitate the introduction of new noxious weeds or invasive species. Noxious and invasive plants may displace native species that provide forage for tortoises.

Effects to desert tortoises due to stringing the gen-tie circuit will be the less than those described for construction of the Project Site because the impacted area has previously been disturbed. In addition, the gen-tie line right-of-way will not be fenced so desert tortoises will be able to access the area.

Migratory Birds

Migratory birds could be injured or killed during construction activities such as vegetation removal and grading activities. Adult birds may be able to flee the area; however, during

migratory bird nesting season, eggs and juvenile birds that are confined to nests may be injured or destroyed. During operation of the facility birds may be injured, electrocuted, or killed from collisions with power lines or construction vehicles. During decommissioning, impacts to birds would be similar as those described for construction. Birds may be injured or killed during gen-tie line pole removal.

Approximately 665 acres of native plant communities that provide potential habitat to nesting migratory birds would be removed as a result of the proposed Project.

Gila Monster

Gila monsters may be injured or killed during construction activities. The entire 682 acre proposed site is within Gila monster habitat. Therefore, the grading, construction, and fencing associated with Project will result in a loss of 682 acres of potential Gila monster habitat.

Increased human activity and construction vehicle traffic may also result in Gila monster/vehicle collisions that result in Gila monster injury or death. Minimization measures such as a WEAP, and speed limits on roads, will reduce or eliminate these effects.

Indirect effects that could be caused by fencing and the gen-tie circuit include increased predation. Predators such as ravens, coyotes, or other raptors may be attracted to the construction site due to an increase in food opportunities including construction site litter and voluntary feeding from construction staff; an increased number of perching opportunities due to the new gen-tie circuit, fences, or other opportunities; or increased water sources due to dust control protocols. An increased presence of predators could lead to a predation increase on smaller, more vulnerable Gila monsters.

Ground disturbing activities during construction may result in an increase of noxious and invasive plant species in the area. Construction machinery may facilitate the spread of existing noxious or invasive species throughout the site, or may facilitate the introduction of new noxious weeds or invasive species. Noxious and invasive plants may displace native species that provide forage for the prey of Gila monsters.

3.4.3. Mitigation Measures

3.4.3.1. Vegetation

The following BMPs/mitigation measures will be implemented to reduce construction impacts on vegetation and wildlife habitat:

- All construction vehicle movement will be restricted to the Project area, predesignated access roads, and public roads; and

- The Project proponent will avoid creating soil conditions that promote weed germination and establishment;

3.4.3.2. Wildlife

These general conservation measures are adapted from the Clark County Multiple Species Habitat Conservation Plan and Environmental Impact Statement (Clark County 2002). The following BMPs/mitigation measures will aid in preserving the quality of adjacent desert tortoise habitat and will benefit other species:

- Store, use, and dispose chemicals, fuels, and other toxic materials in an appropriate manner;
- Keep equipment in good condition with no significant leaks of fuel or other substances that could be toxic to animals and fish. Equipment should be washed prior to first site use to prevent the spread of invasive species;
- Keep materials to absorb small spills of toxic materials available onsite;
- Ensure that roads are engineered to adequately spread runoff to minimize erosion; and
- Minimize soil compaction, erosion, and vegetation loss to preserve habitat by limiting construction activities to the Project site.

3.4.3.3. Special Status Wildlife Species

Desert Tortoise

The following BMPs/mitigation measures will be implemented to reduce effects on the desert tortoise and other species during construction:

- **Pre-Construction Clearance Survey:** Field biologists would conduct a single-pass clearance survey immediately prior to any construction activities. Tortoises found during this survey would either be collected and/or relocated outside the Project area by Clark County Desert Tortoise Pick-Up Program.
    - Burrows with the potential to be occupied by tortoises within the construction area would be searched for tortoise presence. In some cases, a fiber optic scope would be used to determine presence or absence within a deep burrow. If a tortoise-occupied burrow is located, the tortoise would be excavated using hand tools by a qualified biologist in accordance with standard USFWS protocols.
- **Worker Environmental Awareness Program (WEAP):** A WEAP would be presented to all personnel onsite during construction. This program would contain information concerning the biology and distribution of the desert tortoise, desert tortoise activity patterns, and its legal status and occurrence in the proposed Project area. The program would also discuss the definition of "take" and its associated penalties, measures

designed to minimize the effects of construction activities, the means by which employees limit impacts, and reporting requirements and procedures to be implemented if tortoises are encountered. Personnel would be instructed to check under vehicles before moving them as tortoises often seek shelter under parked vehicles.

- **Trash and Litter Control:** Trash and food items would be disposed properly in predator proof containers with resealing lids. Trash would be emptied and removed from the Project site on a weekly basis. Trash removal reduces the attractiveness of the area to opportunistic predators such as ravens, coyotes and fox.
- **Habitat Compensation:** Prior to surface disturbance activities, the Project proponent would pay a one-time remuneration fee (per acre of proposed disturbance). The compensation rate for habitat loss under Section 10 through the MSHCP is $550/acre for development on private lands.

Migratory Birds

The following BMP and mitigation measures will be implemented to reduce effects on the migratory birds and Western burrowing owls during construction:

- In compliance with the Migratory Bird Act of 1918, habitat-altering portions of the Project would be scheduled outside bird breeding season (generally March 1st to August 31st) whenever possible. For work occurring during the nesting period, a qualified biologist would survey the area for nests within 5 days prior to initial grading and vegetation removal. If any active nests (containing eggs or young) are found, a 100-foot diameter no-construction buffer area for small passerine (perching birds) and a 500-foot diameter no- construction buffer for western burrowing owls) would be established and maintained until the young birds fledge and have left the nest.
- To reduce impacts to burrowing owls, CMS4 would implement the protocols in the USFWS's pamphlet: *Protecting Burrowing Owls at Construction Sites in Nevada's Mojave Desert Region* (Appendix B).

Gila Monster

The following BMP and mitigation measures will be implemented to reduce effects on the Gila monster (Note: these measures are in accordance with Nevada Department of Wildlife (NDOW) protocols issued September 7, 2012 [Appendix C])

- Gila monsters found during the desert tortoise clearance survey would be relocated offsite.

- In the event a Gila monster is injured, it would be transferred to a veterinarian proficient in reptile medicine for evaluation of appropriate treatment. Rehabilitation or euthanasia expenses will not be covered by the Nevada Department of Wildlife (NDOW).
- NDOW will be immediately notified of any injury to a Gila monster and which veterinarian is providing care for the animal.
- If an animal is killed or found dead, the carcass will be immediately frozen and transferred to NDOW with a complete written description of the discovery and circumstances, date, time, habitat, and mapped location. .

3.5. Cultural Resources

Cultural Resources are defined as "physical features, both natural and manmade, associated with human activity. Cultural properties are unique and nonrenewable resources" (Fowler 1999). They may include: structures, archaeological sites, historical archaeological sites, buildings, Native American graves and cultural items, shipwrecks, religious sites, cultural landscapes, and traditional cultural properties that are listed or eligible for listing on the National Register of Historic Places (NRHP). This section summarizes the results of cultural resources investigations conducted for the Project site, impacts of the proposed Project on those resources, and the BMP/mitigation measures that would be implemented to reduce impacts (DuBarton 2014).

3.5.1. Existing Setting

Cultural resources with potential to affect the Project location were identified through archeological investigations located on approximately 682 acres within the Project site. The investigations included an archeological site file search for entire Project area and surrounding region, and a Class III inventory of the area. The archeologists located one new historic site, and six isolate artifacts.

3.5.1.1. Historic Context

Little historical information is available for the Eldorado Valley and its relationship to local and regional archaeological cultures. The region is generally considered to be part of the Southern Paiute culture area. It is believed to have served both prehistorically and historically as a major travel corridor between the Colorado River and the Las Vegas Valley with the majority of activity occurring from 1,500 to 200 years before present day. Based on previous cultural resources surveys, a number of cultural influences were present in the Project area, including Anasazi, Patayan, and Numic. Because of these multiples influences, determining a sequence of phases for the area is difficult. However, a chronological framework has been developed for the area based on works from Ezzo and Majewski (1995); Ahlstrom (2003); Ahlstrom and Roberts (1999, 2001a, 2001b); Roberts and Ahlstrom (2000); Roberts et al. (2003a, 2003b). It includes four major periods: Paleo-Archaic (10,000-5500 BC), Archaic (5500 BC – 500 AD), Ceramic (500 AD – 1800 AD) and Historical (1,500 AD – 1900 AD). The first three periods (10,000 BC–AD 1800) are defined with reference to archaeological data, whereas the fourth period (AD 1800–1950) is based on historical and ethnohistorical data. Summaries of each period are available below in Table 11.

Table 11. Chronological Sequence of the Las Vegas Valley

Period	Subperiod	Date Range
Paleo-Archaic	Fluted Point Tradition Stemmed Point Tradition	10,000–9200 BC 9200–5500 BC
Archaic	Middle Late	5500–3000 BC 3000 BC–AD 500
Ceramic	Early Middle Late	AD 500–1000 AD 1000–1500 AD1500–1800
Historical Paiute, Chemehuevi, and Mohave		AD 1600–1905
Historical Euro-American	Exploration/Pioneering Transportation Mining Power Generation and Transmission	AD 1800–1855 AD 1856–Modern AD 1863–1941 AD 1931–1950

Paleo-Archaic Period (10,000–5,500 BC)

The Paleo-Archaic period includes the end of the Pleistocene epoch and the first several millennia of the Holocene epoch, and it combines what have generally been termed the Paleo-Indian and Early Archaic periods. Today, Great Basin archaeologists (Grayson 1993; Schroedl 1991) generally distinguish two artifact traditions within the Paleo-Archaic period: the Fluted Point (Paleo-Indian) and the Stemmed Point (Lake Mojave) traditions. Little evidence of either the Fluted or Stemmed Point traditions has been found in southern Nevada, although Projectile points associated with these traditions have been found in surrounding areas.

Middle Archaic (5500–3000 BC) and Late Archaic (3000 BC–AD 500) Periods

The Archaic Tradition is characterized by a broad-spectrum adaptation to the animal and plant resources of a Holocene environment with conditions resembling those of the historic and modern-day environment. Jesse Jennings (1957) coined the concept of the Desert Archaic to refer to the Western expression of the American Archaic. His view emphasized the continuity of this hunting-and-gathering adaptation from the Early Archaic period until the adoption of agriculture. In southern Nevada, the earliest clear evidence of this generalized hunting and gathering lifeway does not appear until around 5500 BC, that is, in the Middle Archaic period.

Characteristic artifacts of the Middle and Late Archaic periods include large Projectile points that would have been hafted to darts that were propelled with atlatls. The bow and arrow was introduced sometime prior to A.D. 400. Grinding tools appear to be an important part of tool assemblages dating to the Middle Archaic, and they are common in Late Archaic assemblages. The Middle Archaic has also been called the Pinto period, in reference to the Pinto point, and the Late Archaic the Gypsum period, in reference to the Gypsum point (Ezzo and Majewski 1995; Warren and Crabtree 1986). This usage reflects the fact that both Pinto and Gypsum points have been considered useful Archaic temporal markers (Bettinger et al. 1991).

The Ceramic Period (AD 500–1800)

The introduction of pottery for cooking and storage marks the beginning of the Ceramic period. As previously noted, the bow-and-arrow was apparently introduced to the Southern Nevada region before ceramic technology. The replacement of lightweight basketry with heavier ceramic containers is usually associated with a farming economy and greater sedentism. Because pottery types vary from region to region, and because they correlate with other traits such as architecture and settlement patterns, pottery often forms the basis for defining prehistoric cultures. In the past, the Ceramic period in southern Nevada was defined and subdivided into subperiods and phases with specific reference to the Virgin Branch (Anasazi) cultural sequence, specifically the sequence developed for the Moapa and Virgin River valleys (Ezzo and Majewski 1995; Lyneis 1982). This temporal and cultural framework does not take into account the strong Patayan presence in Southern Nevada from around AD 1000 to AD 1500 (Seymour 1997, 1999).

Ceramic data suggest that, during the Early Ceramic period, outside contacts were with Virgin Branch culture area, located to the east. Later, during the Middle and Late Ceramic periods, these contacts shifted to the Patayan area, located to the south. Also during the Middle Ceramic period, Paiute ceramics first appeared in the Las Vegas Valley.

Historical Paiute, Chemehuevi, and Mohave (1600–1905).

During the period from 1600 to 1905 Southern Paiute people inhabited the Las Vegas Valley and surrounding region. They utilized wild plants and animals, but also practiced small-scale horticulture where water sources were sufficient. They practiced what has been termed a "double-loop" subsistence strategy, planting crops and harvesting mesquite in the lower valleys and then moving to higher elevations in late summer and fall to harvest agave and pine nuts (Warren 1981).

The Chemehuevi, often described as an off-shoot of the Las Vegas Paiute, occupied the region between the Las Vegas Paiute and the Mojave. They were influenced by the Mojave, and took on traits such as vocabulary, floodplain farming, earth-covered houses, songs, emphasis on dreams, and a complex of elements related to warfare (Laird 1976). They also adopted the squared metate, balsa rafts, ferrying pots, ceramic forms and ornaments, paddle-and-anvil pottery techniques and hair dye.

The ancestors of the Mojave (known archaeologically as the Lowland Patayan), have lived along the Colorado River since about AD 500. These groups practiced a form of floodwater farming, growing crops such as pumpkins, squash, corn, beans, sunflower, and amaranth. After contact, they also grew introduced crops such as wheat and watermelon (Fowler 1999). There is growing evidence that the Mojave utilized portions of the Las Vegas Valley along the Las Vegas Wash (Seymour 1999).

Historical Euro-American (1600–1950)

While exploration of the Lower Colorado River region began as early as 1540, the Spanish explorers found the river inhospitable and did not attempt any permanent settlement along its banks until the early 1800s. Prospecting and mining began around this time, although the lack of roads impeded such activities in the Eldorado Valley.

Cultural Resource Survey

An archeological survey (See Appendix E) of the Project site was conducted utilizing the Nevada BLM Cultural Resource Inventory General Guidelines (BLM 2012). The survey area was located "on the ground" using U.S. Geological Survey topographic maps and physical landmarks such as roads. A crew consisting one crew chief and three technicians surveyed the Project area walking parallel transects spaced no more than 30 meters apart. Survey of most portions of the Project area was accomplished utilizing transects oriented along primary directions, while in other areas topography or man-made landmarks served to orient the survey routes.

The archeological survey recorded one small historic site and six isolates (isolated occurrences of resources). The historic site consisted of five food cans lids and two can bodies. Isolates discovered include mainly historic debris, consisting mostly of crushed metal food and motor oil cans. The only prehistoric isolate consisted of a basalt biface fragment (an early stage of production in making a projectile point or knife (NewFields 2014).

3.5.2. Environmental Consequences

The construction of the Project will result in adverse impacts to the one historic site and six isolates found at the site, through physical disturbance associated with construction and construction activities as well as operation of the solar facility. However, being that none of the artifacts are eligible for listing in the NRHP these impacts are not expected to be extensive and are considered acceptable.

3.5.3. Mitigation Measures

If potential resources are found during Project construction, work will be halted immediately and a professional archaeologist will be mobilized to the site to evaluate the find and determine appropriate further steps and mitigation measures as necessary. Any cultural and/or paleontological resource discovered during construction will be reported immediately to the appropriate authority. Work will not proceed until a notice to proceed has been issued. SHPO and appropriate Tribes will be notified and consulted with on eligibility and suitable treatment options. If significant resources are discovered, they will be recovered, transported, and stored at an approved curation facility that meets the standards specified in Title 36 CFR Part 79.

3.7. Land Use

Land use is the way in which a community uses land. This includes what is built, where it is built, and includes aspects such as the ownership of land as well as the governing entities' management plans and zoning which regulate development and define types of land use. This section describes the land uses in the area and the Project's consistency with the zoning criteria of the area.

3.7.1. Existing Setting

In 1958, acting on the behalf of the State of Nevada, the United States Congress Public Law 85-339 provided for the direct sale of 126,775 acres of public land located in the Eldorado Valley of Clark County, Nevada to the Colorado River Commission. In 1995, the Colorado River Commission also purchased 107,412 acres of land from the United States Department of the Interior, Bureau of Land Management (BLM). This land was then sold to the City of Boulder City and is now referred to as the Eldorado Valley Transfer Area. This resulted in a substantial extension of the City's corporate limits to the south and west. The sale of this land was subject to specified land uses. The City designated 8,000 acres for the development of energy; 6,000 acres were designated for recreational use, and remaining areas were designated to conserve and protect the desert tortoise (BLM 1994)

The Project site and the surrounding area is part of the Eldorado Valley Transfer area which is zoned by the Boulder City Comprehensive Master Plan as "ER" for Energy Resource Zone. Boulder City zoning ordinance permits the use of this type of zone for the development of private and/or public electric generation facilities, electrical transmission and distribution facilities, ancillary facilities, and other similar uses (Boulder City 1997).

Land adjacent to the "ER" zone is zoned for government use. These areas may be used for public or quasi-public uses or for open space preservation. As a condition of the sale by the BLM, Boulder City granted an easement to Clark County for these adjacent lands, consisting of approximately 85,000 acres. The easement is managed by the Desert Conservation Program for the preservation and protection of the desert tortoise and its habitat (Boulder City 1988).

The Project is located on vacant, undisturbed land within the ER zone. Several substations already exist within a few miles of the Project. These substations, which connect the transmission systems of southern Nevada, California, and Arizona, include: the El Dorado Substation, the McCullough Substation, the Marketplace Switching Station, the Nevada Solar One Substation, and the Merchant Substation.

The Project site is located within a sparsely populated area of Clark County approximately 17 miles to the south of Henderson within the Eldorado Valley. The surrounding land is primarily

characterized by power generation facilities, energy transmission infrastructure, transportation infrastructure, and open space. Some portions of the Eldorado Valley are used recreationally for off-road vehicles. Activities such as land sailing and remote control aircraft flying take place on the dry lake. The Project will share an existing 230 kV gen-tie line route and structures with the Copper Mountain Solar 2 Project. The gen-tie line will be located entirely on land owned by the City of Boulder City.

3.7.2. **Environmental Consequences**

Construction of the Project will convert approximately 682 acres into a solar generation facility and associated infrastructure. As described above, the Project site will be located in an area of Boulder City that is zoned specifically for energy resource development. Several similar solar energy generation facilities currently exist in the area surrounding the Project. Development of the Project falls into the appropriate zoning designations, will not impact or conflict with any current or future authorized land uses, and is consistent with other development activities occurring in the surrounding area.

3.7.3. **Mitigation Measures**

Because development of the Project will not impact current or future land use activities in the area, no mitigation measures are necessary.

3.8. Transportation

This section describes the traffic and transportation facilities in the area, the impacts of the proposed Project on these resources, and BMPs/mitigation measures that will reduce these impacts.

3.8.1. Existing Setting

The Project site is adjacent to several major roadways that provide access to the Project site and to surrounding areas. U.S. Highway 95 (US 95) extends in a north-south manner through Eldorado Valley and is divided with two lanes in each direction. At the northern end of the valley, US 95 intersects U.S. Highway 93 approximately half the distance between Boulder City, Nevada, and Henderson, Nevada. U.S. Highway 93/95 continues northwestward through Henderson and through Las Vegas where it intersects Interstate 15. At the southern end of the valley at Searchlight, Nevada, US 95 intersects east-west trending State Route 164, a single lane in both directions (see Figure 6).

Nevada Department of Transportation (NDOT) maintains Annual Average Daily Traffic (AADT) Count Stations. The nearest to the site, Station 0031014, is located about 0.1 miles south of the Railroad Pass intersection on US 95. Annual Average Daily Traffic at this station is shown in Table 12 below.

Table 12. Annual Average Daily Traffic Nearest to the Project Location

	2005	2006	2007	2008	2009	2010	2011	2012	2013
AADT at Station 0031014	12,300	12,700	12,000*	10,000	9,900	10,000*	7,000	8.000	8,200

*Data adjusted or estimated
Source: NDOT 2013

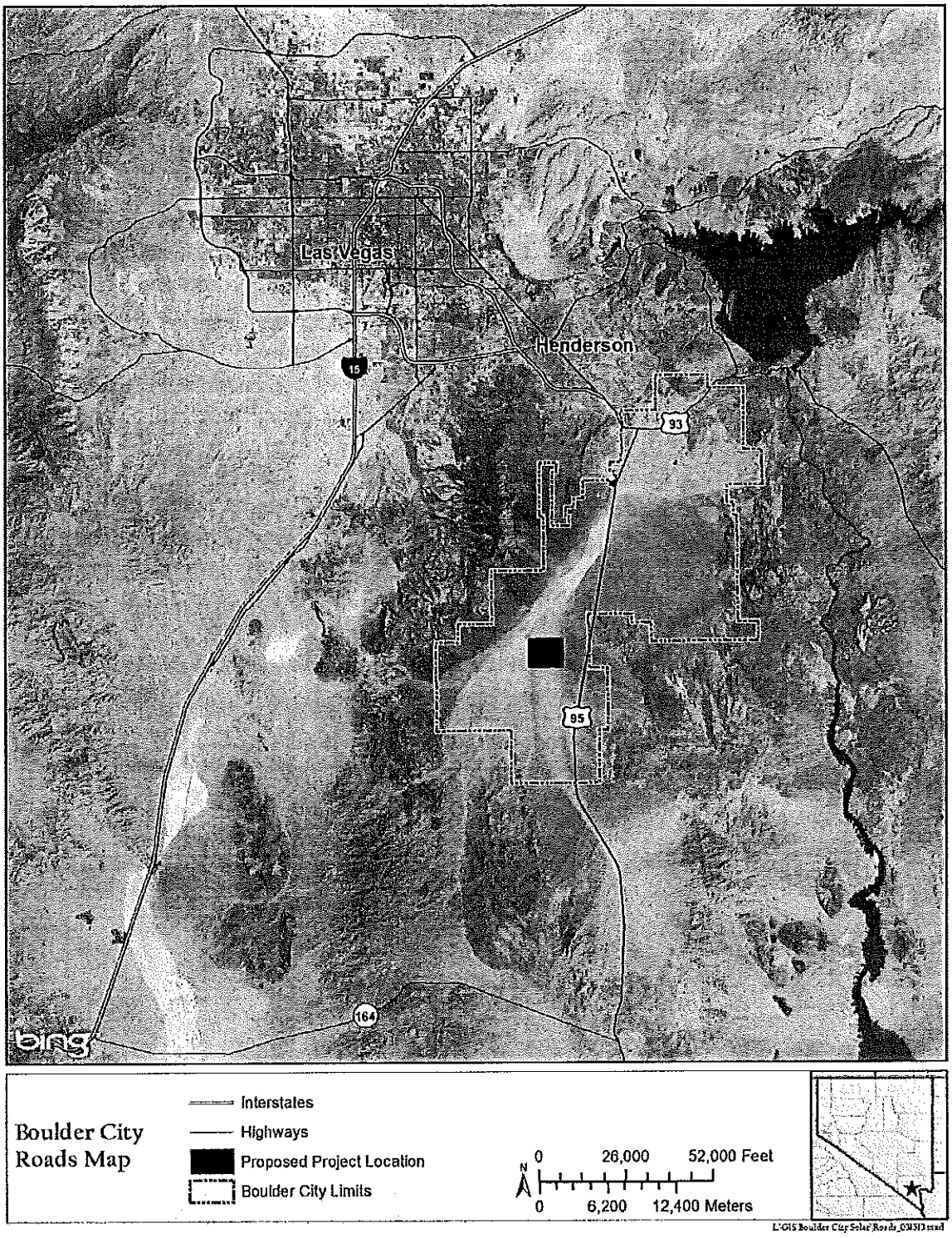


Figure 6. Major Roadways Adjacent to the Project Area

3.8.2. Environmental Consequences

During peak construction, an estimated average of approximately 350 daily trips for arriving/departing construction workers, and 30 truck trips per day will be required to supply concrete, construction materials, and equipment to the Project site. To provide concrete during construction, an off-site ready mix plant will be used. In either event, a similar number of trucks will be required to supply either concrete or concrete raw materials. Traffic associated with the construction, maintenance, and operation of the solar facility is not expected to present a noticeable incremental increase to traffic in the area.

As the most recent traffic count of 8,200 is less than the historic high of 12,700 AADT (as seen in Table 12, above), this will represent a negligible incremental increase in traffic and be well within the normal variability where the roads have demonstrated historic capacity to handle the traffic. Therefore, no impacts to level of service are anticipated. The turning movements of vehicles exiting US 95 during peak construction have a minor potential to affect the flow of traffic. Traffic is also expected to increase minimally as a result of maintenance operations to the gen-tie line and solar panels.

3.8.3. Mitigation Measures

Because the proposed Project would not result in major impacts to traffic; no mitigation is required.

3.9. Visual Resources

Aesthetics can be defined as a mix of landscape character, the context in which the landscape is being viewed, and the scenic integrity of the landscape. This section describes visual characteristics of the area, the impacts of the proposed Project on the visual setting, and the best management practices (BMPs)/mitigation measures that will reduce these impacts, if any.

3.9.1. Existing Setting

The city limit of Boulder City is inclusive of the Eldorado Valley with a residential area/business area in the northeast section of the city limits. The Project site is located at the south end of the Eldorado Valley, approximately 15 miles from the residential area of Boulder City, Nevada. The Project will share poles with an existing gen-tie line and utilize Eldorado Valley Drive.

The Eldorado Valley landscape is monotone with mostly hues of brown, tan and dark green. The area is sparsely vegetated. Located in the Mojave Desert, the Project area is generally flat and dominated by sandy soils and scattered low-growing vegetation. Mountain ranges can be seen in the distance and surrounding the Project site; however, the topography of the site itself is flat. Some small, ephemeral drainage channels occur on the site and in the immediate vicinity.

Manmade elements are abundantly evident on the landscape. U.S. Highway 95, an asphalt four lane highway, runs through the center of the city boundary. U.S. Highway 95 does offer broad views of the surrounding landscape; however the landscape is not particularly pristine. In the Project area there are five major transmission line corridors, containing multiple transmission lines within each corridor. Given the generally flat topography, the infrastructure can be seen for long distances and is very visible from the roadways. There are four major substation sites within the Project vicinity (varying in size from 100 acres to over 350 acres) and existing solar facilities in the area (varying from 180 acres to over 1000 acres).

There are six solar facilities in the Project vicinity west of U.S. Highway 95. The facilities are visible from the highway. Overall, the current landscape in the Project area has been significantly altered by human influence and includes a variety of utility infrastructure. Infrastructure includes transmission lines, major highways, gas pipelines, substations, a natural gas-fired power plant and solar facilities.

The Project area can be classified as having a low visual value based on the above description of the visual character of the Project site. The visual sensitivity level, i.e. the level of public concern for scenic quality at the site, is also considered low. Overall, visual values at the Project site are considered low.

3.9.2. Environmental Consequences

The construction of additional solar facilities under the proposed Project will result in little change to the existing landscape. Eldorado Valley is currently dominated by solar installations, collection facilities and accompanying gen-tie lines. The degree of modification to this existing setting attributable to the proposed new facility will be minimal and will not represent a substantial departure from the nature of development that has already occurred in the surrounding vicinity. Overall, implementation of the Project will result in minimal impacts to visual resources.

3.8.3. Mitigation Measures

Because potential impacts to visual character are consistent with the existing setting and planned use in the Energy Zone, mitigation is not warranted.

3.10. Noise

Noise refers to unwanted sound that interferes with normal activities or reduces the quality of the environment. Response to noise varies according to its type, its perceived importance, its appropriateness in the setting, time of day, and the sensitivity of the individual receptor.

A decibel (dB) is a unit of measurement used to define sound levels. Sound measurement is further defined by using an "A-weighted" decibel (dBA) scale that describes how an individual perceives sound. There are differing sensitivities to noises relative to the time of day. Therefore, a day-night average noise level (Ldn) is used to determine whether noise will be perceived adversely. The United States Environmental Protection Agency (USEPA) has developed an index (threshold) to assess noise impacts from a variety of sources using residential receptors (EPA 1974).

Noise is one of the major public concerns associated with construction and operational activities. Some of the factors to consider when assessing an acceptable level for a specific area are distance from major thoroughfares and airports, population density, age of the neighborhood, and time of day. Noise sensitive receptors are defined as the occupants of a facility or a location where a state of quietness is a basis for use or where excessive noise interferes with the normal use of the facility or location. Typical noise sensitive receptors include schools, hospitals, churches, libraries, homes, parks, and wilderness areas.

This section describes the existing ambient noise in the area, the impacts of the proposed Project on these resources, and the best management practices (BMPs)/mitigation measures that will reduce these impacts, if any.

3.10.1. Existing Setting

The Project site is located in a rural area. Day-night ambient noise levels of 40 to 50 dB on the A-weighted scale (dBA) are expected in rural areas (USEPA 1974). There is low to moderate ambient noise levels in the Project area. Sources of noise include the power generating stations at Desert Star Energy, Copper Mountain Solar 1, the Nevada Solar One (NSO), and Copper Mountain Solar 2. Other sources include the natural gas line regulating station, traffic on U.S. Highway 95, and off-road vehicles. The Project area experiences low to moderate noise levels. Although no specific data are available, background noise levels at the Project site will be expected to range from 40 dBA (rural area during the day) to 60 dBA (commercial area heavy traffic), with occasional spikes related to equipment operation and off-road vehicles passing the site.

3.10.2. Environmental Consequences

Construction

Construction of the Project will result in temporary increases in ambient noise levels for approximately 1.5 years. A variety of construction equipment such as scrapers, concrete trucks, motor graders, backhoes/loaders, excavators, truck-mounted cranes, bulldozers, grader-alls, dump trucks, flatbed trucks, pad drum vibrator rollers, trenchers, water trucks, and lightweight trucks will generate noise intermittently during daylight hours. As seen in Table 13 below, typical construction equipment noise levels measure at less than 90 dBA at a distance of 50 feet from the site (BLM 2005).

Stationary point sources of noise, including stationary mobile sources such as idling vehicles, attenuate (lessen) at a rate of 6 to 7.5 dBA per doubling of distance from the source, depending on the topography of the area and environmental conditions (e.g., atmospheric conditions and noise barriers, either vegetative or manufactured). Thus, a noise measured at 90 dBA 50 feet from the source will be about 84 dBA at 100 feet, 78 dBA at 200 feet, 72 dBA at 400 feet, and so forth (Lawrence Berkeley National Laboratory 2007).

Table 13. Noise Levels at Various Distances from Typical Construction Equipment

Construction Equipment	Noise Level $L_{eq(1-h)}$[a] at Distances (dBA)					
	50 ft	250 ft	500 ft	1,000 ft	2,500 ft	5,000 ft
Bulldozer/scraper	85	71	65	59	51	45
Concrete mixer	85	71	65	59	51	45
Concrete pump	82	68	62	56	48	42
Crane, derrick	88	74	68	62	54	48
Crane, mobile	83	69	63	57	49	43
Front-end loader	85	71	65	59	51	45
Generator	81	67	61	55	47	41
Grader	85	71	65	59	51	45
Shovel	82	68	62	56	48	42
Truck	88	74	68	62	54	48

Source: BLM 2005

Note: An assumed propagation rate is 6 dBA per doubling of distance.

[a] $L_{eq(1-h)}$ is the equivalent steady-state sound level that contains the same varying sound level during a 1-hour period.

Operation

Operational noise from the single-axis tracking solar panel arrays that will be installed on the proposed site will be negligible and will likely be inaudible against ambient levels. Performing outdoor maintenance, repositioning test equipment, and using tools in the test areas of the

proposed PV site will temporarily increase ambient noise levels but no receptors will be impacted.

Operational noise from the electrical equipment, primarily corona noise from the new gen-tie circuit, will also be negligible. Gen-tie line corona noise is the noise sometimes generated from the strong electric field at the surface of a high-voltage power line conductor ionizing the nearby air, resulting in an audible, continuous, low-level noise or "buzz" during operation of transmission lines and substation equipment. The amount of corona produced by a gen-tie circuit is a function of the voltage of the line, the diameter of the conductor, the elevation of the line above sea level, the condition of the conductor and hardware, and the local weather conditions.

3.10.3. **Mitigation Measures**

Typical construction work schedules are expected to be from 7:00 A.M. to 5:00 P.M., Monday through Friday, which complies with the local noise ordinance restrictions for construction activity of 7:00 AM to 7:00 PM, except Sundays and federal holidays. This construction schedule will mitigate noise impacts for the surrounding areas because noise from construction activities will only occur from 7:00 A.M. to 5:00 P.M., Monday through Friday. However, because no nearby sensitive receivers exist, extended construction hours may be acceptable.

3.11. Waste Management and Hazardous Materials

This section addresses potential site contamination issues: the use, handling and storage of hazardous and toxic substances and the generation and disposal of hazardous materials associated with the proposed construction and operations of the Project. Hazardous materials are substances that, because of their quantity, concentration, or physical, chemical, or infectious characteristics, may present a substantial danger to public health or the environment if released. In relation to this Project hazardous materials may include fuels, lubricants, and other liquid materials that will be used at the site during construction and operations. Non-hazardous solid waste refers to waste that is commonly discarded during everyday activities and for this Project may include construction debris, landscaping waste, and household waste from construction workers and operational staff.

3.11.1. Existing Setting

A Phase I Environmental Site Assessment was conducted in 2014 of the Project site in general accordance with American Society for Testing and Materials (ASTM) International Practice E-1527-05 (Ninyo and Moore 2014). That study included a review of the site history, including ownership records; historical aerial photographs, and interviews with representatives of the City of Boulder City, and review of environmental databases. The assessment described the site as vacant desert land with a Southwest Gas natural gas pipeline traversing the site in a north-south direction. Based on a review of historical sources the Project area has not been previously developed with structures. No drums, unidentified substance containers, or other evidence of the storage or disposal of hazardous substances were observed on the Project site. Review of environmental databases indicated that there are three facilities in the vicinity of the Project that have handled hazardous materials or petroleum products and/or have been listed as having reported releases of hazardous materials or petroleum products. Based on the distance from the Project area, regulatory status of these facilities, and/or assumed groundwater flow direction in the vicinity of the Project area, there is a low likelihood that these facilities represent an environmental concern to the Project site at this time (Ninyo and Moore 2014).

The nearest site for municipal solid waste disposal is a Class I Municipal Landfill in the City of Boulder City. Municipal solid waste is collected under contract by private solid waste services from residencies and businesses and it disposed of at the landfill location at the end of Utah Street at the southeast portion of the city. A Class I site is one that refers to a municipal solid waste landfill unit including all contiguous land structures for the disposal of solid waste and accepts more than 20 tons of solid waste per day on an annual average. In addition, Republic Services operates the Apex Regional Class I Landfill, which handles commercial and municipal wastes from incorporated and un-incorporated areas within the Las Vegas Valley. The next closest Class I municipal waste landfill is the Mesquite Municipal Waste Landfill, located in Mesquite, Nevada approximately 100 miles from the site (NDEP 2012).

3.11.2. Environmental Consequences

The construction of the Project will generate solid waste in the form of soil and brush from clearing and grubbing, as well as materials from installation of the PV panels, gen-tie circuit, access road, and parking area. Solid waste generated during construction will be transported for disposal at a licensed waste management facility. The operation of the Project is expected to generate limited amounts of solid waste stemming from routine maintenance activities. Any waste generated as a result of these activities will be disposed of at a licensed waste management facility.

The construction and operation of the Project is not expected to require the transportation, use, or generation of hazardous materials or hazardous wastes that could create a significant hazard to the public or environment. The types of materials that will potentially be present during construction will be minimal volumes of vehicle fuels, lubricating oils, paints, adhesives and sealants. The ordinary use of these materials will not result in the generation of hazardous wastes. To comply with federal, state and local regulations for waste minimization, storage and disposal, a solid and hazardous waste management plan will be prepared and implemented for both the construction and operation of the Project. As the construction contractors will be required to comply with environmental and workplace safety laws and procedures, no significant risks to public health and safety are expected from the proposed action.

3.11.3. Mitigation Measures

The following BMP and mitigation measures that be implemented to prevent and reduce impacts caused by hazardous waste:

- Spill cleanup kits will be available on construction equipment and vehicles so that spills or leaks of vehicle fluids would be quickly cleaned up for proper disposal.
- Construction sites, material storage yards, and access roads will be kept in an orderly condition throughout the construction period.
- Refuse and trash, including stakes and flags, will be removed from the sites and disposed of in an approved manner.
- No construction equipment oil or fuel will be drained on the ground.
- Oils or chemicals will be hauled to an approved site for disposal. No open burning of construction trash will occur.
- An operational Environmental Health and Safety Plan will be prepared for the Project. The Safety Plan will outline all Project activities, identify all hazardous substances and chemicals used at the site, and ensure compliance with OSHA Standards, the Nevada Division of Industrial Relations requirements, and all other local, state, and federal

regulatory requirements. The Safety Plan will identify site-specific safety control measures, site health and safety roles and responsibilities, speed limits, and site safety hazards and controls.

- A Solid and Hazardous Waste Management Plan will need to be prepared and implemented for both construction and operation of the Project. Included in the solid and hazardous waste management plans will be stipulations and procedures regarding compliance with federal, state, and local regulations for waste minimization, storage, and disposal. The construction contractor shall prepare BMPs that describe the methods for working with hazardous materials during construction.

3.12. Socioeconomics

3.12.1. Existing Conditions

The Project site is located in the undeveloped, uninhabited, and rural area that Boulder City, Nevada, acquired from the Bureau of Land Management in 1994. The inhabited area of Boulder City is over 15 miles from the Project site, although the site is located within the official city boundary. Boulder City is locally recognized as a "rural oasis" for the residents of the urban center of Las Vegas, Nevada (Hughes 2011), which is located approximately 22 miles to the northwest of Boulder City. Both Las Vegas and Boulder City are located in Clark County, Nevada.

Boulder City, Nevada, is a small town of 208 square miles (U.S. Census Bureau 2012a) known for its recreational opportunities and rural lifestyle (Hughes 2011). Its population remained almost totally stable during the period 2000 to 2010, growing only 0.4% from 14,966 in 2000 to 15,023 in 2010 (Census 2012a). Clark County, Nevada had a population of almost 1.4 million in 2010, with Las Vegas city comprising over 30% of the county population.

Median household income in 2010 was $62,171, which decreased 5.2% from the high of $65,572 in 1999 (U.S. Census Bureau 2012a). In comparison, Clark County, Nevada had a median household income of $56,258 in 2010, approximately $6,000 less than the median household income in Boulder City.

The civilian employed population in Boulder City (including civilian workers of age 16 or older) was 6,473 in 2010 (U.S. Census Bureau 2012b). Tourism and recreation businesses, due to its proximity to Las Vegas, are very important to Boulder City's economy (Hughes 2011). The three top employing sectors in Boulder City in 2010 were:

- Construction (18.4% of total employment);
- Arts, entertainment, recreation, and accommodation and food services (17.5% of total employment); and
- Educational services, health care, and social assistance (13.6% of total employment). (U.S. Census Bureau 2012b)

In Clark County, the civilian employed population was 907,510. The top employing industries in Clark County are:

- Arts, entertainment, recreation, and accommodation and food services (27.9% of total employment);
- Educational services, health care, and social assistance (13.3% of total employment);
- Retail sales (11.1% of total employment); and
- Construction (9.4% of total employment).

3.12.1.1. Environmental Justice

The U.S. EPA defines a community with potential environmental justice populations as one that has a higher proportion of minority or low-income populations than does an identified reference community. An environmental justice assessment requires an analysis of whether low income or poverty populations will be disproportionately and adversely affected by a Project. For this analysis, "minority" includes all racial groups other than "white, not Hispanic or Latino." Low-income populations are defined as those individuals that are considered living below poverty levels, as defined by the U.S. Census Bureau. The U.S. Census Bureau defines poverty level thresholds for individuals and a family of four as income levels below $11,139 and $22,314, respectively (U.S. Census Bureau 2012c). Populations in either group are considered significant if their share of the population is more than ten percentage points higher than the minority/low-income population's share of the state and the county.

Table 14 shows that Boulder City as a whole has a higher proportion of white, non-Hispanic residents and lower proportions of low income residents when compared to those in Clark County and Nevada. The Project is located in two Census Tracts, which are located to the south and west of the inhabited area of Boulder City. These Tracts show larger proportions of minority populations relative to Boulder City, but similar or smaller proportions of minorities when compared to Clark County. Census Tract 300573 shows a higher portion of low income residents than in Boulder City, Clark County or the state.

Table 14. 2010 Race, Ethnicity and Low Income Indicators

Environmental Justice Indicator	Nevada	Clark County	Boulder City	Census Tract 3005703	Census Tract 3005711
White, Non-Hispanic	54.1%	48.0%	88.0%	72.2%	70.8%
Black	10.5%	8.1%	0.9%	6.4%	2.7%
American Indian and Alaska Native	1.2%	0.7%	0.8%	1.1%	0.4%
Asian	7.2%	8.7%	1.1%	5.9%	10.9%
Native Hawaiian and Other Pacific Islander	0.6%	0.7%	0.3%	0.1%	0.4%
Two or More Races	4.7%	5.1%	3.0%	3.6%	5.1%
Hispanic or Latino, Total	26.5%	29.1%	7.1%	12.4%	11.6%
Low-Income Population	11.9%	11.7%	8.2%	24.8%	0.9%

Source: US Census Bureau 2012a,d,e

3.12.2. Environmental Consequences

The Project will generate temporary employment during construction of the solar field, substation, and gen-tie line. The construction of the solar field and associated facilities is anticipated to employ between approximately 300 workers during peak activity beginning in 2015 for 18 months. Peak construction activities will be from June 2015-May 2016.

Temporary construction jobs will bring employment and income to Clark County. It is expected that the construction workers will primarily be local residents. However, a small amount of workforce is expected to require specialty skills and will either relocate to the region temporarily or permanently, including staying in hotels/motels, apartments, or purchasing a home. Thus, population is expected to grow at least temporarily by up to 100 individuals over the duration of the construction phase, representing a very minor impact on population and temporary housing. The temporary employment will bring income to the region, which will support other businesses in the area. Workers spend their income on food services, transportation services, accommodations, retail stores, medical services, and other services and products. As worker spending rolls over in the local economy, it supports additional jobs and income in the area. Additionally, the state of Nevada as well as Boulder City is expected to gain from sales and property tax receipts from the successful construction and operation of the Project.

The analysis indicates that the Project will be partially located in a Census Tract that has a higher percentage of minorities and low income residents than the population of Boulder City and a higher proportion of low income residents than Clark County. However, no one lives adjacent to or in close proximity to the site (over 10 miles); therefore, no environmental justice populations will be unduly affected. Additionally, construction and operation of the Project will not have long-term or adverse health or environmental impacts, and therefore there will not be disproportionate and adverse effects to these residents.

3.12.3. Mitigation Measures

Potential impacts to socioeconomic conditions may be beneficial, and therefore no mitigation is required.

4. List of Preparers and Reviewers

This section provides the name, qualifications, professions, and contact information of each person with primary responsibility for the preparation of the environmental statement and of each person who has provided comments or input in the preparation of the statement.

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Copper Mountain Solar 4, LLC – c/o Sempra Renewables, LLC - 101 Ash Street, San Diego, California 92101		
Marilyn Burke	Director, Commercial Development	Project Developer
Mike End CSP, CIH	Environmental Permitting and Safety	Project Manager
Travis Jones	Project Engineer	Project Engineer
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Ken MacDonald	Partner	Senior Project Manager
Anne DuBarton	Project Manager, Cultural Resource Specialist	Author of Environmental Statement and Cultural Report
Stephanie Locke	Project Manager, Biologist	Author of Environmental Statement and Biological Resources Report
Justin Romanowitz	Biologist	Author of Permitting Plan

5. List of Acronyms and Abbreviations

AC	alternating current
ASTM	American Society for Testing and Materials
BLM	Bureau of Land Management
BMP	best management practices
CAA	Clean Air Act
CMS4	Copper Mountain Solar 4
CO	carbon monoxide
CO_2-e	CO_2 equivalent
DAQEM	Department of Air Quality and Environmental Management
dB	decibel
dBA	"a-weighted" decibel
DC	direct current
ER	Energy Resource
EPA	Environmental Protection Agency
ESA	Endangered Species Act
FEMA	Federal Emergency Management Agency
GCC	general construction contractor
GHG	greenhouse gas
kV	kilovolt
MSL	mean sea level
MW	megawatt
NAAQS	National Ambient Air Quality Standards
NDEP	Nevada Division of Environmental Protection
NDWR	Nevada Department of Water Resources
NDOW	Nevada Department of Wildlife
NO_2	nitrogen dioxide
NRCS	Natural Resource Conservation Service

NRHP	National Register of Historic Places
NSO	Nevada Solar One
O_3	ozone
O&M	operations and maintenance
OSHA	Occupational Safety and Health Administration
Pb	lead
$PM_{2.5}$	particles with a diameter less than or equal to a nominal 10 micrometers
PM_{10}	particles with a diameter less than or equal to a nominal 2.5 micrometers
PUCN	Public Utilities Commission of Nevada
PV	photovoltaic
ROW	right-of-way
SCADA	supervisory control and data acquisition
SO_2	sulfur dioxide
SWPPP	Stormwater Pollution Prevention Plan
UEPA	Utility Environmental Protection Act
USEPA	United States Environmental Protection Agency
USFWS	United States Fish and Wildlife Service
USGS	United States Geological Service
VOC	volatile organic compound

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2003 Status Assessment and Conservation Plan for the Western Burrowing Owl in the United States. U.S. Department of Interior, Fish and Wildlife Service, Biological Technical Publication FWS/BTP-R6001-2003, Washington, D.C.

2011a Revised Recovery Plan for the Mojave Population of the Desert Tortoise (Gopherus agassizii). U.S. Department of the Interior, Fish and Wildlife Service, Region 8, Pacific Southwest Region, Sacramento, California.

2011b Gila Monster. U.S. Department of the Interior, Fish and Wildlife Service, Endangered Species, Mountain-Prairie Region. Information available at: http://www.fws.gov/mountainprairie/species/reptiles/gilamonster/

University of California Santa Barbara (UCSB)

2004 UCSB Biogeography Lab. Information available at: http://www.biogeog.ucsb.edu/Projects/gap/gap_home.html

Placeholder for Attachment D

Summary of the PUC and FERC Dockets if any PUC and FERC filing have started

Provide Status update of PUC & FERC Process prior to sending application in.

PUC	PUCN granted CMS4's UEPA Application for Permit to Construct contingent upon CMS4's completion of compliance requirements which must be met prior to Permits to Construct being issued.

See separate file

FERC	Filing will be required to 1.) obtain Market Based Rate Authority and 2.) Exempt Wholesale Generator Status. Filing anticipated 2nd, quarter 2015

BEFORE THE PUBLIC UTILITIES COMMISSION OF NEVADA

Application of Copper Mountain Solar 4, LLC, under the provisions of the Utility Environmental Protection Act, for a permit to construct the Copper Mountain Solar 4 Project consisting of a 94 MW solar photovoltaic generation facility, approximately 0.5 miles of 230 kV generation-tie line, and associated facilities to be located in Boulder City, Nevada.	)	Docket No. 14-10013

At a general session of the Public Utilities Commission of Nevada, held at its offices on December 17, 2014.

PRESENT: Chairman Alaina Burtenshaw
Commissioner Rebecca D. Wagner
Commissioner David Noble
Assistant Commission Secretary Breanne Potter

ORDER

The Public Utilities Commission of Nevada ("Commission") makes the following findings of fact and conclusions of law:

I. INTRODUCTION

Copper Mountain Solar 4, LLC ("CMS 4") filed with the Commission an Application, designated as Docket No. 14-10013, under the provisions of the Utility Environmental Protection Act ("UEPA"), for permits to construct the Copper Mountain Solar 4 project consisting of a 94 megawatt ("MW") solar photovoltaic generation facility, approximately 0.5 miles of 230 kilovolt (" kV") generation-tie line, and associated facilities to be located in Boulder City, Nevada.

II. SUMMARY

The Commission grants the Application contingent upon completion of the compliances delineated in this Order, which must be met prior to UEPA Permits to Construct being issued to CMS 4.

III. PROCEDURAL HISTORY

- On October 8, 2014, CMS 4 filed with the Commission its initial Application.

- CMS 4 filed the Application pursuant to the Nevada Revised Statutes ("NRS") and Nevada Administrative Code ("NAC"), Chapters 703 and 704, including but not limited to NRS 704.820

DOCUMENT REVIEW AND APPROVAL ROUTING		
DRAFTED BY: MSF for AVH		
FINAL DRAFT ON: 12 / 19 / 14 AT 2 : 00 P M		
REVIEWED & APPROVED BY:		DATE:
☐ ADMIN/ASST. (_____)	_____	/ /
☒ COMM / COUNSEL	MSF for HW	12 / 19 / 14
☐ SECRETARY / ASST. SEC.	_____	/ /
☐ OTHER (_____)	_____	/ /

through 704.900, and NAC 703.423.

- On October 13, 2014, the Commission issued a Notice of Application for Utility Environmental Protection Act Permit to Construct a Solar Generation Facility.

- The Regulatory Operations Staff ("Staff") of the Commission participates as a matter of right pursuant to NRS 703.301.

- On December 11, 2014, Staff filed a briefing memorandum.

IV. UEPA PERMIT TO CONSTRUCT

CMS 4's Position

1. CMS 4 seeks permits to construct the Copper Mountain Solar 4 project consisting of a 94 MW solar photovoltaic generation facility, approximately 0.5 miles of 230 kV generation-tie line, and associated facilities to be located in Boulder City, Nevada.

2. CMS 4 requests that the Commission issue an order granting the request of CMS 4 for the issuance of two UEPA permits for construction of the project in the following two phases:

i. Phase 1: Grading/Temporary Construction Facilities

ii. Phase 2: Substation, Gen-Tie and Solar Field Construction

Staff's Recommendation

3. Staff recommends that the Commission grant the Application, contingent upon CMS 4 satisfying the compliances delineated in this Order. Specifically, Staff recommends that the Commission issue an order for two UEPA Permits to construct the Copper Mountain Solar 4 project consisting of a 94 MW solar photovoltaic generation facility, approximately 0.5 miles of 230 kV generation-tie line, and associated facilities to be located in Boulder City, Nevada, in the above-referenced two phases, upon the satisfaction of such conditions and modifications that may allow for the issuance of each UEPA Permit to Construct, including the condition that the

Applicant file any outstanding, required permits, licenses, or approvals, pursuant to NRS 704.890(1)(e) and NRS 704.890(2), with the Commission and receive permits to construct prior to commencing construction of the project.

4. Staff recommends that a Commission order granting the final Application include the following provision: If CMS 4 does not file with the Commission all of the compliances included in this Order, within five years of the effective date of the Order, the Compliance Order will be deemed to be vacated, without any further action by or order of the Commission.

5. Staff recommends that a Commission order granting the final Application include the following provision: No construction may commence on any utility facilities that are the subject of this Application for a UEPA Permit to Construct until after the Commission has issued the Permit to Construct for the applicable phase of the project.

6. Staff recommends that a Commission order granting the Application includes specific findings and conclusions that:

i. Accept and incorporate the findings and conclusions in CMS 4's Environmental Statement for the project;

ii. CMS 4 and Newfields Environmental and Engineering determined the nature of the probable effect of the project on the environment in CMS 4's Environmental Statement for the project;

iii. The need for the project balances any adverse effect on the environment;

iv. The project represents the minimum adverse effect on the environment, considering the state of available technology and the nature and economics of the various alternatives;

v. CMS 4 has obtained, or is in the process of obtaining, all other permits, licenses, and approvals required by federal, state, and local statutes, regulations, and ordinances; and

vi. The project will serve the public interest.

7. Staff recommends that two UEPA permits setting forth a description for each phase of the project be issued to CMS 4 upon CMS 4 obtaining and filing the following permits as compliance items:

i. Phase 1: Grading/Temporary Construction Facilities

a. Nevada Division of Environmental Protection, Bureau of Water Pollution Control – System General Stormwater Permit;

b. City of Boulder City, Community of Development – Grading Permit; and

c. Clark County, Department of Air Quality – Dust Control Permit.

ii. Phase 2: Substation, Gen-Tie and Solar Field Construction

a. Nevada State Fire Marshal – Hazardous Materials Permit;

b. City of Boulder City, Community Development – Building Permit;

c. City of Boulder City, Fire Department – New Construction Permit; and

d. City of Boulder City – Permit for Flammable and Combustible Liquids and/or Motor Vehicle Fuel Dispensing Station.

Commission Discussion and Findings

8. The Commission finds that it is in the public interest to grant the Application and issue the UEPA Permits to Construct the project, contingent upon CMS 4 satisfying the

compliances outlined herein, consistent with Staff's recommendation.

9. The Commission finds that, upon CMS 4's completion of all of the required compliances outlined herein, the Commission will issue CMS 4 two UEPA Permits to Construct the project.

10. Pursuant to NRS 704.890, the Commission further finds and concludes the following:

i. The findings and conclusions in CMS 4's Environmental Statement for the project are accepted and incorporated;

ii. CMS 4 and Newfields Environmental and Engineering determined the nature of the probable effect of the project on the environment in CMS 4's Environmental Statement for the project;

iii. The need for the project balances any adverse effect on the environment;

iv. The project represents the minimum adverse effect on the environment, considering the state of available technology and the nature and economics of the various alternatives;

v. CMS 4 has obtained, or is in the process of obtaining, all other permits, licenses, and approvals required by federal, state, and local statutes, regulations, and ordinances; and

vi. The project will serve the public interest.

THEREFORE, it is ORDERED that:

1. The Application of Copper Mountain Solar 4, LLC, designated as Docket No. 14-10013, is GRANTED as filed, contingent upon Copper Mountain Solar 4, LLC satisfying the compliances outlined herein.

2. The requested Utility Environmental Protection Act Permits to Construct a 94 megawatt solar photovoltaic generation facility, approximately 0.5 miles of 230 kilovolt generation-tie line, and associated facilities SHALL BE ISSUED, subject to Copper Mountain Solar 4, LLC's satisfaction of the compliance items set forth below and outlined herein.

Compliances:

3. Prior to the issuance of each of the Utility Environmental Protection Act Permits to Construct, Copper Mountain Solar 4, LLC shall file the following permits/authorizations with the Commission:

i. Phase 1: Grading/Temporary Construction Facilities

a. Nevada Division of Environmental Protection, Bureau of Water Pollution Control – System General Stormwater Permit;

b. City of Boulder City, Community of Development – Grading Permit; and

c. Clark County, Department of Air Quality – Dust Control Permit.

ii. Phase 2: Substation, Gen-Tie and Solar Field Construction

a. Nevada State Fire Marshal – Hazardous Materials Permit;

b. City of Boulder City, Community Development – Building Permit;

c. City of Boulder City, Fire Department – New Construction Permit; and

d. City of Boulder City – Permit for Flammable and Combustible Liquids and/or Motor Vehicle Fuel Dispensing Station.

4. No construction may commence on any utility facilities that are the subject of this Application until after the Commission has issued the Permits to Construct for each respective phase of the project.

5. If Copper Mountain Solar 4, LLC does not file with the Commission all of the compliances included in this Order, within five years of the effective date of the Order, the Compliance Order will be deemed to be vacated, without any further action by or order of the Commission.

6. The Commission may correct any errors that have occurred in the drafting or issuance of this Order without further proceedings.

By the Commission,

BREANNE POTTER,
Assistant Commission Secretary on behalf of
the Commissioners

Dated: Carson City, Nevada

12-22-14

(SEAL)

Placeholder for Attachment E

Copy of the Business Plan for the Nevada Facility

See separate file

Attachment E

NEVADA ENERGY COMMISSIONER
RENEWABLE ENERGY AND ENERGY EFFICIENCY AUTHORITY

Nevada Renewable Energy Tax Abatement Application Form

Business Plan for the Nevada Facility

Copper Mountain Solar 4, LLC will be operated in a safe and reliable manner, consistent with the Management practices and processes demonstrated successfully at the nearby Copper Mountain Solar 1, LLC, Copper Mountain Solar 2, LLC and Copper Mountain Solar 3, LLC facilities.

On-site plant management will be responsible for the following:

- Management, supervision, operation, repair and maintenance of the Copper Mountain Solar 4, LLC facility, in accordance with an approved operating budget. They will also be similarly responsible for management, supervision, operation, repair and maintenance of facilities (like the administration building) shared between Copper Mountain Solar 1, LLC, Copper Mountain Solar 2, LLC and Copper Mountain Solar 3, LLC, and Copper Mountain Solar 4, LLC.
- Safety, compliance, operations, technical problems, and the Original Equipment Manufacturers long term relationships.

Headquarters personnel located in San Diego, CA will support and augment on-site personnel and be responsible for such functions as:

- Accounting, taxes, administration and compliance with all project documents, coordination with lenders and lender's engineer, communication with the power purchaser or grid operator, performance monitoring and
- The asset manager will work closely with the plant manager but focus more on the projects financial performance, performance guarantees, relationships and point of contact for the lenders, and off-takers

Staffing: The facility will be staffed and equipped to support normal operations and routine preventative and corrective maintenance. The existing Copper Mountain Solar projects utilize a pool of shared employees to obtain operational efficiencies. Existing Management and Administrative employees (Plant Manager, Operations and Maintenance Manager, Facility Administrator, Administrative Assistant, IT/Control System Technician and Compliance Coordinator) from the shared employee pool will oversee the Copper Mountain Solar 4, LLC facility. The increase in full time equivalent headcount is projected to include 1 Senior Solar Technician and 2 Solar Technicians. Incentive compensation will be part of the employment benefit package, with targets based on safety, compliance, and budget performance.

Maintenance activities which require special qualifications are contracted to outside vendors. Examples of maintenance items that are contracted out are high voltage maintenance, construction projects, vegetation management, plant vehicle maintenance and road maintenance. As part of their normal duties, the staff will escort outside vendors to their designated work areas and monitor the activities to ensure safe and quality workmanship. In addition, prior to commencing work all outside vendors will complete the Copper Mountain Solar 4, LLC safety qualification program to ensure their understanding of plant safety policies and procedures.

The well-being of all employees working at Copper Mountain Solar 4, LLC is the highest priority. Management is strongly committed to creating a culture of safety that integrates itself into every aspect of the work. In this culture, the well-being of employees, visitors and the community are the highest priority. Everyone working on the Copper Mountain Solar 4, LLC site is held accountable for their participation in the safety program and adherence to all safety requirements.

Budget: An annual operations and maintenance budget will be used as a management tool to support decision making in all aspects of operating Copper Mountain Solar 4, LLC. Individual account pages will be created for each budget account detailing the expected expenditures for the upcoming year and the following four years which is called our 5 year plan. Each budget component will be supported by appropriate documentation of assumptions and contingencies developed during its preparation. The budget will be submitted for review and approval in accordance with the schedule published each year.

The operating and maintenance budget is used throughout the year to forecast total expenditures and explain account variances through the production of the monthly budget variance report.

The Facility Manager will be responsible for obtaining the information for the compilation of the budget variance report and will generate the monthly budget variance report (for the previous month) containing the current month and year to date variances as well as the projected year end variance.

Policies and Procedures: A set of PPM's (Policy and Procedure Manuals) will be written to guide the staff on their day to day business.

The facility equipment is to always be operated per the operating procedures, which are to be based on the vendor recommendations, accepted industry practice and validated experience of the team members.

Operations and Maintenance Management: Operational activities will include continuous performance monitoring of the facility by using the Supervisory Control and Data Acquisition (SCADA) systems and other available software to ensure the facility is operating at maximum efficiency. SCADA alarms will be investigated immediately and acted on accordingly using the equipment procedures. There will also be daily visual inspections of the major equipment, substation and perimeter fence. As required, operations will monitor weather activity and apply dust control measures. Maintenance will be controlled normally as part of the Maintenance and Materials Management Systems (MMMS). Tasks will be developed to cover the daily and weekly routines. Individual work orders will be developed by plant personnel to cover maintenance classified as routine. These tasks and work orders will normally be classified in Weekly, Monthly, Quarterly, Semi-Annual and Annual PM format. All scheduled maintenance will be planned to avoid or minimize any business interruption.

Spare Parts and Inventory Control: The spare parts will be warehoused at Copper Mountain Solar 2. The Maintenance and Materials Management System (MMMS) will be fully utilized to provide spare parts inventory control and keep the inventory records accurate.

The warehouse will be stocked to sufficiently achieve and exceed availability goals for the facility. The warehouse will be managed so that the necessary inventory will be based on usage, delivery times and the size and cost of each individual item. The selection of spare parts to be stocked will be based on the vendor recommendations and team members experience, as well as those the long lead times and those parts that have a significant effect on unit output or plant reliability.

Placeholder for Attachment F

[redacted]

Contains Sensitive Contract Terms and Pricing Information of the Power Purchase Agreement

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SUMMARY OF PRINCIPAL COMMERCIAL TERMS
FOR THE SALE OF ENERGY
FOR THE COPPER MOUNTAIN SOLAR 4 PROJECT
January 2015

POWER PURCHASE AGREEMENT	
Seller:	Copper Mountain Solar 4, LLC
Purchaser:	The project has executed a long term Power Purchase Agreement ("PPA") with Southern California Edison ("SCE")[1]. The SCE PPA has a forecasted commercial operation date of January1, 2020.
Project Location:	The Copper Mountain Project will be located in Clark County, Nevada, approximately 7.5 miles southwest of the Boulder City and within Boulder City's Solar Enterprise Zone. Copper Mountain has secured site control to support the Copper Mountain Project.
Delivery Term:	SCE PPA 20 year delivery term
Product:	All electric energy produced by the Generating Facility through the Delivery Term, net of Station Use; all Green Attributes; all Capacity Attributes; and all Resource Adequacy Benefits; generated by, associated with or attributable to the Generating Facility throughout the Delivery Term.
Contract Capacity:	93.6 MWac
Delivery Point:	At the point of interconnection with the CAISO-Controlled Grid, Merchant Substation.

[1] Renewable Portfolio Standard ("RPS") power purchase and sale agreements require California Public Utility Commission ('CPUC") approval. SCE has filed a CPUC Advice Letter as part of the process of obtaining Commission approval.

Estimated total capital investment **Attachment G**

[redacted]

Contains Sensitive Detailed Facility Cost Information