ENVIRONMENTAL PROTECTION AGENCY

[ER–FRL–8993–7]

Environmental Impacts Statements; Notice Of Availability

Responsible Agency: Office of Federal Activities, General Information (202) 564–1399 or *http://www.epa.gov/compliance/nepa/.*

Weekly receipt of Environmental Impact Statements Filed 11/08/2010 Through 11/12/2010.

Pursuant to 40 CFR 1506.9.

Notice

In accordance with Section 309(a) of the Clean Air Act, EPA is required to make its comments on EISs issued by other Federal agencies public. Historically, EPA has met this mandate by publishing weekly notices of availability of EPA comments, which includes a brief summary of EPA's comment letters, in the **Federal Register**. Since February 2008, EPA has been including its comment letters on EISs on its Web site at: *http://www.epa.gov/compliance/nepa/eisdata.html.* Including the entire EIS comment letters on the website satisfies the Section 309(a) requirement to make EPA's comments on EISs available to the public. Accordingly, on March 31, 2010, EPA discontinued the publication of the notice of availability of EPA comments in the **Federal Register**.

EIS No. 20100444, Final EIS, BLM, NV, Tonopah Solar Energy Crescent Dunes Solar Energy Project, a 7,680-Acre Right-of-Way (ROW) on Public Lands to Construct a Concentrated Solar Thermal Power Plant Facility, Nye County, NV, Wait Period Ends: 12/20/2010, Contact: Timothy Coward 775–482–7800

EIS No. 20100445, Final EIS, NPS, NC, Cape Hatteras National Seashore Off-Road Vehicle Management Plan, Implementation, NC, Wait Period Ends: 12/20/2010, Contact: Mike Murray 252–473–2111 Ext 148.

EIS No. 20100446, Draft EIS, FHWA, CA, Ferguson Slide Permanent Restoration Project, Proposes to Restore Full Highway Access along State Route 140 from 8 miles east of Briceburg to 7.6 miles west of El Portal in Mariposa County, CA, Comment Period Ends: 01/13/2011, Contact: Kristen Helton 559–243–8224.

EIS No. 20100447, Final EIS, FTA, AK, Hatcher Pass Recreation Area Access Trails, and Transit Facilities, To Develop Transportation Access and Transit-Related Infrastructure, Northern and Southern Areas, Hatcher Pass, AK, Wait Period Ends: 12/20/2010, Contact: Dan Drais 206–220–7954.

EIS No. 20100448, Final EIS, USACE, NM, U.S. Steel Keetac Taconite Mine Expansion Project, Propose to Restart an Idled Production Line and Expand Contiguous Sections of the Open Pit Iron Ore Mine, located near Keewatin, Itasca and St. Louis Counties, MN, Wait Period Ends: 12/20/2010, Contact: Ralph Augustin 651–290–5378.

Amended Notices

EIS No. 20100386, Draft EIS, BLM, UT, Uinta Basin Natural Gas Development Project, To Develop Oil and Natural Gas Resources within the Monument Butte-Red Wash and West Tavaputs Exploration and Developments Area, Applications for Permit of Drill and Right-of-Way Grants, Uintah and Duchesne Counties, UT, Comment Period Ends: 12/30/2010, Contact: Mark Wimmer 435–781–4464.

Revision to FR Notice Published 10/01/2010: Extending Comment Period from 11/15/2010 to 12/30/2010.

EIS No. 20100431, Final EIS, USFS, WA, Dosewallips Road Washout Project, To Reestablish Road Access to both Forest Service Road (FSR) 2610 and Dosewallips Road, Hood Canal Ranger District Olympic National Forest, Olympic National Park, Jefferson County, WA, Wait Period Ends: 12/06/2010, Contact: Tim Davis 360–956–2375.

Revision to FR Notice Published 11/05/2010: Correction to Contract Phone Number.

EIS No. 20100438, Draft EIS, USA, CO, PROGRAMMATIC—Growth, Realignment, and Stationing of Army Aviation Assets, Evaluates Environmental Impacts of Stationing Army Combat Aviation Brigade at Fort Carson, CO and Joint Base Lewis-McChord, WA, Comment Period Ends: 12/20/2010, Contact: Mike Ackerman 210–295–2273.

Revision to FR Notice Published 11/05/2010; Correction to Lead Agency from COE to USA and Correction to the Title.

Dated: November 16, 2010.

Robert W. Hargrove,

Director, NEPA Compliance Division, Office of Federal Activities.

[FR Doc. 2010–29227 Filed 11–18–10; 8:45 am]

BILLING CODE 6560–50–P

United States Department of the Interior
Bureau of Land Management

Battle Mountain District Office
Battle Mountain Nevada
Tonopah Field Office
Tonopah, Nevada

November 19, 2010

FES-10-57

N-86292
DOI-BLM-NVB020-2009-0104-EIS

Tonopah Solar Energy, LLC
Crescent Dunes Solar Energy Project

Final Environmental Impact Statement

BLM Mission Statement

It is the mission of the Bureau of Land Management to sustain the health, diversity, and productivity of the public lands for the use and enjoyment of present and future generations.

BLM/NV/BM/EIS/10/30+1793

DOI No. FES 10-57

United States Department of the Interior

BUREAU OF LAND MANAGEMENT
Tonopah Field Office
P.O. Box 911 (1553 S. Main St.)
Tonopah, Nevada 89049
Phone: 775-482-7800; Fax: 775-482-7810
http://www.blm.gov/nv/st/en/fo/battle_mountain_field.html

In Reply Refer To:
N-86292
DOI-BLM-NVB020-2009-0104-EIS
2800 (NVB0200)

Dear Reader:

The Tonopah Field Office has concluded its review of the Draft Environmental Impact Statement for the Tonopah Solar Energy, LLC, Crescent Dunes Solar Energy Project, located near Tonopah, Nye County, Nevada. The Final Environmental Impact Statement (Final EIS) is available for your review.

Printed copies or a compact disc of the Final EIS are available upon request from the BLM Tonopah Field Office, 1553 So. Main Street, P.O. Box 911, Tonopah, Nevada 89049; phone (775) 482-7800; and at the Battle Mountain District Office, 50 Bastian Road, Battle Mountain, Nevada 89820; phone (775) 635-4000; or e-mail at crescent_dunes@blm.gov. Interested persons may also view the Final EIS at the following Web site:

http://www.blm.gov/nv/st/en/fo/battle_mountain_field.html.

Copies of the Final EIS are available for public inspection at the following locations in Nevada:

- BLM Nevada State Office, 1340 Financial Boulevard, Reno.
- BLM Battle Mountain District Office, 50 Bastian Road, Battle Mountain.
- BLM Tonopah Field Office, 1553 South Main, Tonopah.

The Final EIS analyzes the direct, indirect, and cumulative impacts associated with the proposed construction and operation of the Crescent Dunes Solar Energy Project. Technical baseline reports are available upon request at the above address.

During the comment period for the Draft EIS, the BLM received 23 comment letters. Comment responses and resultant changes in the impact analyses are documented in the Final EIS. Comments resulted in the addition of clarifying text but did not identify any substantial issues that changed the Proposed Action. The BLM Preferred Alternative remains the same as identified in the Draft EIS published on September 3, 2010.

If you would like any additional information, please contact Timothy Coward, Renewable Energy Project Manager, at (775) 482-7800.

Sincerely,

Thomas J. Seley
Field Manager

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FINAL ENVIRONMENTAL IMPACT STATEMENT
TONOPAH SOLAR ENERGY, LLC
CRESCENT DUNES SOLAR ENERGY PROJECT

Lead Agency:	U. S. Department of the Interior Bureau of Land Management Battle Mountain District Office
Cooperating Agencies:	Department of Defense, Department of Energy, Nevada Department of Wildlife, Esmeralda County, Nye County, Town of Tonopah
Project Location:	Nye County, Nevada
Correspondence on This EIS	Tim Coward, Renewable Energy Project Manager
Should be Directed to:	Bureau of Land Management P.O. Box 911 Tonopah, NV 89049 (775) 482-7800

ABSTRACT

Tonopah Solar Energy, LLC applied to the BLM for a 7,680-acre right-of-way (ROW) on public lands to construct a concentrated solar thermal power plant facility approximately 13 miles northwest of Tonopah, Nye County, Nevada. The proposed project is not expected to use the total acres applied for in the ROW application. The facility is expected to operate for approximately 30 years. The proposed solar power project would use concentrated solar power technology, using heliostats or mirrors to focus sunlight on a receiver erected in the center of the solar field (the power tower or central receiver). A heat transfer fluid is heated as it passes through the receiver and is then circulated through a series of heat exchangers to generate high-pressure steam. The steam is used to power a conventional Rankine cycle steam turbine, which produces electricity. The exhaust steam from the turbine is condensed and returned via feedwater pumps to the heat exchangers where steam is regenerated. Hybrid cooling processes would be used for this project to minimize water use while continuing to maintain efficient power generation. The plant design would generate a nominal capacity of 110 megawatts.

The project's proposed facility design includes the heliostat fields, a 653-foot central receiver tower, a power block, buildings, a parking area, a laydown area, evaporating ponds, and an access road. A single overhead 230-kilovolt transmission line would connect the plant to the nearby Anaconda Moly substation.

This Environmental Impact Statement analyzes the environmental effects of the Proposed Action, two action alternatives, and the No Action Alternative. Because the comments received on the draft EIS did not warrant substantive changes to the draft document, the final EIS is an abbreviated version, including errata sheets indicating where the draft document is revised, comments received on the draft document, the formal response to comments, and appendices including final mitigation plans

Responsible Official for EIS: Thomas J. Seley
Field Manager, Tonopah Field Office

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1.0 Introduction to the Final Environmental Impact Statement

The U.S. Bureau of Land Management (BLM) has prepared this Environmental Impact Statement (EIS) to analyze potential environmental impacts associated with approval of development of the Crescent Dunes Solar Energy Project. Tonopah Solar Energy, LLC (TSE), the Proponent, has proposed construction of this solar power generation facility in Nye County, Nevada. Nevada Department of Wildlife, Nye County, Esmeralda County, U.S. Department of Defense-Air Force, and the Department of Energy (DOE) accepted invitations to be cooperating agencies in the development of this document.

Because the comments received on the draft EIS did not warrant substantive changes to the draft document, the final EIS is an abbreviated version, including errata sheets indicating where the draft document is revised, comments received on the draft document, the formal response to comments, and appendices including final mitigation plans

Project Purpose and Need

The BLM Tonopah Field Office (TFO) has received a ROW application from TSE (Proponent) and must consider permitting the solar facility. The Proponent proposes to construct, operate, and decommission a solar power electric generation facility and associated infrastructure on lands managed by the TFO. The TFO's purpose is to respond to the Proponent's ROW grant application under Title V of the Federal Land Policy and Management Act (FLPMA) (43 USC 1761) for completeness and in compliance with the FLPMA, BLM ROW regulations, and other applicable federal and state laws.

The TFO's need is to consider permitting TSE's application under the BLM's CFR 2800 while, based on the BLM's EIS, limiting undue or unnecessary degradation of public lands.

Proponent's Intended Use of the Project

The proposed project would contribute much needed on-peak power to the electrical grid that serves the western United States as demand for power continues to grow in these states. The thermal storage capability of this technology allows renewable electricity to be produced even when the peak demand period extends into the late evening hours. As older technology fossil-fuel plants reach the end of their useful lives, replacing them with clean, reliable energy sources is a net benefit. The Proponent has executed a Power Purchase Agreement with NV Energy for sale of the electricity produced from the facility. The facility is expected to produce approximately 110 MW of power.

Project Description

The proposed solar facility will use Concentrating Solar Power (CSP) technology to generate electricity. This specific technology uses heliostat/reflecting mirrors to redirect sunlight on a receiver erected in the center of the solar field (called the central receiver). The central receiver

consists of a series of tubes through which a liquid salt passes and is heated by the concentrated solar energy. The heated salt is then routed to a large insulated tank where it can be stored with minimal energy loss. When electricity is to be generated, the heated salt is circulated through a series of heat exchangers to generate high-pressure, superheated steam that is used to power a conventional Rankine cycle steam turbine/generator to produce electricity. Energy produced from the facility would interconnect to the electrical grid through a new transmission line extending to the existing NV Energy Anaconda Moly Substation, approximately 6 miles north of the site.

Major project components include:

- a solar field consisting of a large area of heliostats
- a central receiving tower
- a conventional steam turbine to generate electricity
- thermal storage tanks to store the hot and cold liquid salt
- a hybrid cooling system (i.e., an air-cooled condenser with a wet cooling augmentation system designed to minimize water consumption by use only during times of high electricity demand)
- a water treatment system and evaporation ponds to remove impurities from the groundwater, thereby protecting the turbine
- associated equipment such as pumps, transformers, heat exchangers, and buildings
- associated linear facilities, including a Transmission Line (TL) and access road, and a borrow pit for aggregate.

This EIS analyzes the environmental effects of the Proposed Action, the No Action Alternative, and two alternatives. The Proposed Action would:

- Approve a right-of-way (ROW) application submitted by TSE to construct and operate a 110-megawatt (MW) solar power generating facility based on concentrating solar power technology (CSP), an approximately 9.5-mile 230 kilovolt (kV) TL, and the temporary use of a 40-acre borrow pit to extract aggregate for construction. The technology uses heliostats (reflecting mirrors) to redirect sunlight onto a receiver erected in the center of a solar field. The solar power facility is proposed to be located on BLM-managed lands in Nye County, Nevada.

Project Location

The proposed project site is located in south-central Nevada, approximately 13.5 miles northwest of Tonopah, in Nye County. The project is located within the southern portion of the Big Smoky Valley, north of US Highway 95/6 along Poleline Road (State Highway 89). The proposed project would be built on lands administered by BLM. BLM's general solar policy is to facilitate environmentally responsible commercial development of solar energy projects on public lands and to use solar energy systems on BLM facilities where feasible (BLM 2007). Given BLM's

solar policy and the advantage of the BLM controlling large areas of land in the southwestern United States, the Proponent is proposing this project on BLM-administered lands as opposed to private lands.

2.0 Agency Coordination

Agency and public review is an integral part of the NEPA process and provides the public and agencies with an opportunity to be involved in the decision process. During this comment review process, BLM solicited comments from pertinent agencies and the public. These comments have been organized and analyzed so that the relevant issues can be addressed in this FEIS.

After the publication of the Notice of Availability of the DEIS, BLM contacted relevant federal, state, and local government agencies to facilitate an Agency Meeting. The following agencies had accepted to become co-operating agencies during the scoping process and were invited to attend:

- Nevada Department of Wildlife (NDOW)
- U.S. Department of Energy
- Nye County
- Esmeralda County
- Town of Tonopah
- U.S. Department of Defense, Air Force

Meetings were subsequently set up for September 22, 2010 at the BLM Southern Nevada District Office, and September 23, 2010 at the BLM, Tonopah Field Office.

During the NEPA process for this project the BLM has been coordinating the analysis with the DOD.

Representatives from NDOW, Nye County, and the Town of Tonopah attended the meeting on September 23, 2010, and discussed a number of topics. Including but not limited to:

- Impacts to the pale kangaroo mouse, raptors, burrowing owls, kit foxes, and other wildlife species and potential mitigation measures
- Potential impacts on recreational activities near the sand dunes
- Potential beneficial impacts of the project on the economy of the region
- Emergency services in the region
- The Development Agreement between Tonopah Solar and Nye County
- Future use of the groundwater well being developed for the project.

The BLM and NDOW met at the TFO Field Office on September 23, 2010. Attendees included 5 BLM staff, 3 NDOW staff and representatives from the proponent. The main discussion topic included recommendations for wildlife mitigation measures to be included in the mitigation plans.

3.0 DEIS Review Period

Federal Register Notice of Availability

The *Federal Register* Notice of Availability of the Draft EIS was published on September 7, 2010, marking the beginning of the comment period for the project (Appendix A). The comment period ended on October 18, 2010. This period fulfills the BLM minimum requirement of a 45-day comment period; however, BLM will continue to accept comments throughout the EIS process.

Announcements, and Media Releases

Announcements for the public review meetings were published in local newspapers (see Table 1). Additionally, meeting dates, times, and locations were posted on the BLM Tonopah Field Office Web site (www.BLM.gov/nc/st/en/fo/Battle_Mountain_Field.html).

Table 1. DEIS Public Review Meeting Announcement Publications

Newspaper	Community	Dates Published
Las Vegas Review-Journal	Southern Nevada	Tuesday, September 7, 2010
Reno Gazette-Journal	Western Nevada	Tuesday, September 7, 2010

Copies of these announcements can be found in Appendix A.

Public Meetings

Public meetings are required where "there may be substantial environmental controversy concerning the environmental effects of the proposed action, a substantial interest in holding the meeting, or a request for a meeting by another agency with jurisdiction over the action" (40 CFR 1506.6). Public meeting locations, dates, and number of attendees are provided in Table 2. In accordance with BLM requirements, sign-in sheets were provided and attendees were encouraged to sign in. Copies of the sign-in sheets are provided in Appendix A.

Table 2. Public meeting information

Meeting Location/Type	Date	Number of Public Attendees
BLM Southern Nevada District Office 4701 N. Torrey Pines Drive Las Vegas, Nevada/ Public	Wednesday, September 22, 2010	15
Tonopah Convention Center 301 Brougher Ave Tonopah, Nevada/ Public	Thursday, September 23, 2010	52

Note: Public meetings were held from 6–8 p.m.

Both public meetings began with a brief presentation of the project area, alternative areas, and technology process involved. Additionally, posters summarizing the proposed project location, proposed technology, and an overview of the NEPA process were displayed for public review (Appendix A). BLM, Tonopah Solar Energy, LLC, and HDR representatives were available to answer questions. Project fact sheets and comment cards were provided at each meeting. A copy of the handouts are included in Appendix A. Comment cards were provided so members of the public could submit comments regarding issues or concerns of the proposed project. Comment cards could be submitted at the meeting, or mailed, emailed, or faxed to the BLM Tonopah Field Office.

4.0 Comments and Response to Comments

Comment 1: Department of Energy

Comment 1-A: Agency Coordination

From 40 CFR 1502.10 (i) – will the required distribution list be included with this document? We need to add DOE stakeholders to the extent they are not already included.

Response 1-A

The BLM agrees.

Comment 1-B: Environmental Justice

While there is an indication in several places in the document (e.g., Table 2-5, 3-1, 4-25) that no EJ populations are present in the project vicinity and a subsequent conclusion that no impacts will result, there is no data or analysis presented to establish that this is in fact true (nor is there an Appendix where this can be found referenced in the text). This may be controversial in light of the impacts on social and economic resources (indicated on p. xxiv) that will be brought by the workforce (an overall increase of 2%) that will be coming to the area and 'moving into' the small communities nearby. An influx of the number of workers identified may have an impact (even if seemingly small and temporary) on local services to the permanent and existing residents of those communities. This should be explicitly discussed in the document. BLM received a comment to this effect and a request for the outright analysis of EJ by the Town of Tonopah and EPA, respectively (table 1-5).

Response 1-B

The following information was collected and analyzed during the preparation of the DEIS. The data showed no impacts to Environmental Justice (EJ) populations; therefore, it was not included for further analysis in the DEIS.

The potentially affected populations of both Nye and Esmeralda counties include minority and low-income populations. Tonopah, the only population center in both Nye and Esmeralda counties, had a 2000 Census population of approximately 2,700. In Nye County, there is a census area (Census Tract 9801, Block Group 1) (Table not included here) that indicates the population of Native Americans is 20 percent (99 Native Americans), which exceeds the Nevada 2000 Census data percentage of 1.3 percent. Within this block group, the minority population is "meaningfully greater" than the minority population in Nevada. The next question to be posed is: Would this population be disproportionately affected by the proposed project? The proposed project is approximately 13 miles out of town, and the primary impacts would be felt inside the project area. There would be traffic slowing and increased temporary population in the area during construction. However, all local populations would experience this impact. No one group would be disproportionately affected by the proposed project.

In addition, an area of Esmeralda County (Census Tract 9501, Block Group 2) (Table not included here), according to 2000 Census data, has meaningfully greater populations of both elderly and disabled persons, showing 33.4 percent and 36.7 percent, respectively. Nye County also has a block group (Census Tract 9802, Block Group 1) with a disabled population of 32.8 percent. Both Esmeralda and Nye counties have elderly populations—26.3 percent and 26.1 percent, respectively—that exceed the Nevada elderly population of 15.2 percent. This elderly population could potentially be identified as an environmental justice or Title VI population of concern; however, this potential project would be built in an area 13 miles from any population. In the Native American and elderly and disabled populations, no one group would be affected disproportionately.

One remaining population type stands out: low-income populations that are meaningfully greater in two different block groups, one in each county (Table not included here). In Esmeralda and Nye counties (Census Tract 9501, Block Group 1, and Census Tract 9801, Block Group 1), the block groups are at 18 percent and 15.8 percent, respectively. This is compared with 10.5 percent for the Nevada low-income population. While this population could potentially be identified as an environmental justice or Title VI population of concern, this project would bring both temporary and permanent jobs to the area, which may assist this population in improving its income status. Therefore, this group would not be disproportionately affected by the project. The potential for increased jobs, both temporary and permanent, was mentioned in the community meetings, discussed subsequently, as a potential positive impact of this project.

Measures to reduce impacts would take into account community views. At this stage, there have been two open house community meetings: one in Tonopah and another in Las Vegas in December 2009. In addition to receiving public comments at the open houses, the project team received comments from the public before and after the events through e-mail and mail. At this time, none of the community members have voiced opposition to this proposed project.

Comment 1-C: Project Description

Is this meant to say, that except for the outgoing transmission line to Pole Line Road that the rest of the TL will be constructed in existing ROW? If not, it would be helpful to indicate where the 'new' disturbance would/is anticipated to occur along the TL route because it is unclear in the current description.

Response 1-C

Except for the outgoing transmission line to Pole Line Road, the remainder of the transmission line will be constructed in a new ROW, within an existing BLM utility corridor. Disturbance for the TL is shown in Table 4-1 for each alternative because the transmission line disturbance will be different for each.

Comment 1-D: Project Description
What are the dimensions of the 'small ditches' that would be constructed along roads for water run-off?

Response 1-D
The small drainage ditches will be sized as part of the detailed design process. However, these ditches will be no deeper than 3 feet and will be constructed with side slopes no steeper than 3H : 1V.

Comment 1-E: Water Use
Given that this is an area where recreational off-road vehicle use occurs regularly, there may be more dust deposited on mirrors and thereby an increased need to wash them. While amount of water anticipated during washing activities is indicated on p. 2-40 as 70 acre feet per year, is there potential for there to be more water needed due to fugitive dust from ORV use in the area? Should a range of water use for mirror washing be anticipated for the project and, as a result, articulated in the document?

Response 1-E
The project is proposed with a maximum allowed yearly water use of 600 AFY. A portion of the total water use would be used for mirror washing approximately 70 AFY. However, it is expected that the mirror wash water use will vary from year to year and the expected range is between 50 AFY and 100 AFY. However, as earlier stated, the project total water use will not exceed 600 AFY.

Comment 1-F: Hazardous Materials
Is there a standard or BMP that would be followed in cleaning up (or disposal) of residual HTF from the surface soil after processing? Since the HTF is highly flammable and a strong oxidizing agent, how this will be done is perhaps information useful for purposes of transparency.

Response 1-F
The heat transfer fluid (HTF) for the project is "salt", which is a mixture of potassium nitrate and sodium nitrate. This material is not flammable and solidifies upon exposure to air or contact with the ground. A waste management plan for the facility will include stipulations for the handling and disposal of any HTF that is spilled. The BMP and procedures will include clean up methods, interim disposal in 55-gallon drums, and ultimate disposal at a properly licensed facility.

Comment 1-G: Fire Protection
Will workers be trained to fight fires that occur on site? The documents discuss plans for an onsite fire protection and suppression capability (for example, there is a good deal on infrastructure design and equipment related to fire suppression), but it is not clear whether there would be a trained fire suppression squad on site at all times, or whether all employees

would be trained to fight fires or will the local fire departments be relied upon (thus causing an increased demand on local services)?

Response 1-G
The project will have on-site fire fighting capabilities and personnel to combat on-site fires. The project proponent (TSE) is also working with Nye County and the Town of Tonopah to ensure any increased demand on local services is mitigated. See section 5.0 for errata sheets.

Comment 1-H: Native American Values
This discussion indicated that during initial consultation that no Native American values were identified but there is a comment directing BLM to the Yomba Shoshone Tribe. Perhaps the intention to consult with this tribe as well as the Timbisha Shoshone Tribe would be appropriate here. In table 1-5, BLM received a comment from the Timbisha tribe that the Yomba Shoshone may have an interest.

Response 1-H
Section 3.8.4.2 "Summary of Findings" details the Native American consultations that have been completed. This includes the Timbisha and Yomba tribes.

Comment 1-I: Fire Protection
Wildfire prevention and control does not seem to receive sufficient attention in the document. Due to large grading activities, the project may be expected to increase growth of non-native vegetation (e.g., halogeton, Russian thistle, presence of cheat grass in area), thus increasing the potential for wildfires. Wildfire fire potential also could be increased due to heat from the mirrors. Propose considering discussion of this topic further in the FEIS.

Response 1-I
No increase of wild land fire risk will occur as a result of the project. Between road construction in and around the heliostat field, weed reduction measures proposed by TSE, and extensive bare ground or dust suppressant treated bare ground, wildfires should not be able to propagate across the project area.

Comment 1-J: Cultural Resources
Section 101(d)(6)(A) of the National Historic Preservation Act provides that properties of traditional religious and cultural significance to an Indian tribe or Native Hawaiian organization may be eligible for listing in the National Register of Historic Places.

There is a possibility that eagle habitation in the vicinity of the project may render the landscape a potential historic property of religious and cultural importance to Indian tribes. If so, impacts to the eagle habitation need to be considered by BLM and SHPO during consultation under Section 106. In the recent, Final Environmental Assessment Proposal to Permit Take as Provided Under the Bald and Golden Eagle Protection Act (http://alaska.fws.gov/eaglepermit/index.htm), the US FWS explains that some Indian tribes

find eagles or eagle nests, or both, to be sacred sites. These, and the landscapes and landforms associated with them, could be eligible for listing in the National Register.

Given that an impact to Golden eagles is identified in the document, there may be a reason to believe that Tribes that have a current or historic presence near the proposed site consider eagle habitation (which includes eagles and eagle nests) sacred. DOE suggests consulting with the Yomba and Timbisha Shoshone Tribes to assess the present and historic importance of eagles (particularly Golden) and their nests to these Tribes culture.

Response 1-J:
Traditionally, eagles have not been sacred for the tribes in the project area, as maybe the case in Alaska and other states, or for Plains Indians etc. During consultation with the tribes, eagles were not identified as a Native American concern.

The BLM does not consult with the USFWS on Take Permits. TSE will apply for a Take Permit from the USFWS. Currently, an Avian and Bat Protection Plan has been developed and is being reviewed by the USFWS. BLM will adapt necessary mitigation measures in their Wildlife Mitigation and Monitoring Plan from the ABPP.

A notice to proceed for construction will not be given by the BLM to TSE until that time the BLM has a letter of concurrence from the USFWS stating the ABPP supplied by TSE is adequate.

Comment 1-K: Project Description
There is no discussion of possible impacts related to glare from the mirrors (potentially if one or more becomes misdirected for various reasons) on pilots during training exercises given the presence of the Nevada Training Facility and Air Force base located approximately 40 miles away. DOE suggests consideration of this potential indirect impact of the project on operations based at the DOD facility.

Response 1-K
Throughout the EIS process, the BLM has consulted with the DOD. The DOD scientific advisory board (SAB) has been briefed on the project.

Comment 1-L: Project Description
Is this meant to say, that except for the outgoing transmission line to Pole Line Road that the rest of the TL will be constructed in existing ROW? If not, it would be helpful to indicate where the 'new' disturbance would/is anticipated to occur along the TL route because it is unclear in the current description.

Response 1-L
See Comment Response 1-C.

Comment 1-M: Intentional Destructive Acts

Accidents and Intentional Destructive Acts is an area of analysis that DOE must include in the document. Although the potential may appear to be minor, DOE has concerns that there is no analysis in the DEIS regarding potential intentional destructive acts to the project and project elements:

In case of an accidental or intentional destructive act that may require immediate 'shut down' of the towers, how will the mirrors be positioned in time to allow towers to cool down?

Response 1-M

In an emergency and at night, the mirrors are placed in the "stow" position, which is a horizontal position with the mirror surface facing up.

DOE's own wording notes that the potential for, "intentional destructive acts to the project and project elements," appear to be minor. The project will be completely fenced with controlled access. In order to protect its investment, TSE will provide adequate security measures for protecting the facility and its infrastructure.

Comment 1-N: Emissions

Is it possible to include a quantitative analysis? Something simple such as the formula for "direct emissions" calculations in the EPA's mandatory reporting rule (for projects over 25,000 metric tons/year)?

Response 1-N

Any calculations are in literature cited and available upon request; Tables shown in Section 4.6.2.3 "Operational Phase" shows air emissions are in conformance with regulatory requirements.

Comment 2: U.S. Bureau of Reclamation

I believe that this project was determined to not have potential to impact any of our lands or facilities. That being said, I'll save the paper and the postage and just access the link from the BLM site if we decide to take a second look at the project. No need to send us a copy of the DEIS. Thank you for considering us in the NEPA process.

Response 2:

Thank you for your comment.

Comment 3: U.S. Environmental Protection Agency

Comment 3-A: Water Resources

One of the major concerns identified by EPA in our scoping comments for the Crescent Dunes Solar Energy Project (Project) was the potential impacts to water resources, particularly groundwater. While EPA is pleased that a hybrid cooling system (consisting of an air-cooled condenser with a wet cool augmentation system) is planned for the Project to

reduce water use (with a small evaporative cooler to be used only at times of high energy demand), we remain concerned about the effect on existing groundwater supplies, as well as the potential for cumulative impacts over the life of the Project. Although the draft EIS states that the amount of drawdown for the Project (approximately 600 acre-feet per year) will "not result in wells going dry," it also states that "some of the existing wells in the area will experience a drawdown of between 1-foot and 1.5-feet," and that impacts to groundwater may include "well pumping causing drawdown" and "restrictions to existing well access or use."

Response 3-A:
The proposed solar project currently has a 33-year life: three years of construction and 30 years of operation.

The water wells (there will actually be two wells: a primary water source and a back-up well should the primary well fail) will be used during construction for dust suppression and providing well water for mixing concrete etc.

BLM's current numeric water-modeling standard is to predict impacts at the 10-foot drawdown contour, or isopleths. The BLM believes that due to uncertainty in water model parameters, the models cannot accurately predict drawdown contours beyond the 10-foot isopleth. This information is significant with respect to the modeling effort for the single well analysis performed for the Crescent Dunes Solar Project well analysis.

The depth to groundwater across the alluvial fill in the project area is approximately 150 feet below the ground surface. When the model was completed for this proposed project (based on information gathered during the well's pump test), the results indicated that the 10-foot isopleth was very steep and proximate to the production well itself; and the 10-foot isopleth/drawdown contour was contained solely within the proposed power plant area. Therefore, the BLM determined that there would be no direct, indirect, or cumulative impacts to any other wells, springs, seeps, riparian areas, or phreatophyte plant zones as a result of 33 years of pumping the well over the project's projected life cycle.

The BLM opted to complete the hydro-geologic model for 53-year scenario (i.e. 20 years beyond the construction/production life of the project). The reason for the additional 20-year modeling effort was to address additional potential cumulative impacts from the project. Additionally, TSE hypothesized that with proper maintenance, the project could operate for an additional 20 years.

For purposes of demonstrating impacts in the DEIS, the BLM opted to represent the drawdown contours/isopleths to the one-foot and one and one-half foot isopleths. These modeled drawdowns demonstrate the very limited impacts predicted to all of the potential water resources, including private water rights.

As noted in the DEIS cumulative impact analysis, the result was a one-foot to one and one-half foot drawdown of two livestock wells located approximately 4.5 miles southeast of the proposed well location. Since these wells are located at the groundwater depth of 150 feet below ground surface; and in general the screening level of the wells are an additional 50 to 100 feet below the ground water surface , a 53-year drawdown of one or one-and-a-half feet is not considered a significant impact to these private water rights (i.e. wells).

As noted in the cumulative impact analysis in the DEIS, the BLM is currently unaware of any reasonable foreseeable projects in the CESA area for groundwater (i.e. the Lower Smoky Valley Hydrographic Basin) where the Crescent Dunes Solar Project would be contributing cumulative impacts to the groundwater resources of the Lower Smoky Valley.

Comment 3-B: Water Resources

EPA is also concerned about the potential impacts to surface water associated with the Project, including "increased runoff flows, increased sediment transport, increased discharge and transport of contaminants, or possible affects to drainage paths or altered flow." The EIS states that the stormwater drainage system would be "designed to allow the storm flow to follow its preexisting drainage paths," yet later in the document, states that "increased runoff and sediment transport are expected to have a potential cumulative effect."

Recommendation:

EPA recommends that BLM provide additional information in the FEIS explaining how the Project will affect water supplies for existing wells during its years in operation, as well as measures that could be taken to minimize or mitigate the impacts to these wells.

Additionally, we ask that BLM include a description of the long-term viability of the Project's groundwater source, taking into account reasonably foreseeable projects planned for the area, as well as other factors, such as climate change, that may impact the Project and surrounding wells.

We ask that BLM include in the FEIS a discussion of the feasibility of recycling the water that would be sent to the evaporation pond and re-injecting or reusing this water.

Response 3-B:

When the plant-cooling tower is in operation, all plant waste streams are directed to the cooling tower where they are re-used (recycled) until the concentration levels in the water make it no longer suitable for use. At that point, it is discharged to the evaporation ponds. When the cooling tower is not in use, rejected water from the water treatment operation is re-used where it can be, but ultimately is sent to the evaporation ponds with constituent levels that are concentrated. In both cases, the water sent to the evaporation ponds cannot be further recycled within the proposed project.

Due to the concentration levels in the water discharged to the evaporation ponds, injection into the ground would require a Class 1 disposal permit. The geology and hydrogeology in the project location are such that injection of the water discharged to the evaporation ponds into the ground with an injection is not appropriate and would not be in compliance with NDEP regulations.

Comment 3-C: Stormwater Pollution Prevention Plan

EPA also recommends that BLM incorporate mitigation measures into the proposed Project sufficient to avoid potential cumulative effects from increased runoff and sediment transport. The Stormwater Pollution Prevention Plan (SWPPP) being developed to avoid these effects should be included in the FEIS.

Response 3-C

A SWPPP for operation of the facility is included the Plan of Development (POD). A SWPPP for construction will be developed in accordance with Nevada Department of Environmental Protection (NDEP) requirements.

Comment 3-D: Special Status Species (Plants and Wildlife)

EPA commends the work undertaken by the BLM to assess the risks to special status species from the Project. For the species highlighted in the DEIS, including Nevada oryctes, pale kangaroo mice, bats, golden eagles, and migratory birds, some mitigation measures have been prepared. These measures, such as covering the evaporation ponds with a porous screen, and, in the case of migratory birds, avoiding land clearing activities during the avian breeding season, should serve as crucial safeguards. But comprehensive mitigation plans for these species are characterized in the

DEIS as "being developed" or "would be developed," and are not included in the document, making it difficult for EPA to assess whether the mitigation measures planned for the Project will be sufficient to reduce potentially significant impacts.

Recommendation:

EPA recommends that BLM include comprehensive mitigation plans in the FEIS for the special status species located in the Project area.

Response 3-D:

Mitigation plans for pale kangaroo mice, golden eagles, bats, and migratory birds were developed in coordination with NDOW and USFWS and included in the FEIS. Please refer to the Wildlife Mitigation and Monitoring Plan included in the FEIS.

Based on input from NDOW for the industrial pond permit; netting (i.e. porous screen) would not be required for the Crescent Dunes project's evaporation ponds. This is a change in mitigation requirements from the DEIS (See section 5.0, Errata to the DEIS).

Comment 3-E: Climate Change

EPA commends the BLM for devoting a substantive section of the EIS to greenhouse gases (GHG), including detailed estimates of emissions from construction and operation of the Project. The EIS, however, does not include a discussion of the potential impacts of climate change on the Project. Considering the Project is planned to be in operation for 30, and possibly as many as 50 years, the EIS should include a description of how climate change may affect the Project, particularly groundwater resources.

Recommendation:

EPA recommends that BLM provide information detailing what impacts climate change may have on the Project, particularly sensitive species, its sources of groundwater, and reclamation and restoration efforts after construction and decommissioning.

Response 3-E:

According to EPA's Climate Change Web Page (EPA 2010): "Annual average precipitation decreases in most of the Mediterranean, northern Africa, northern Sahara, Central America, the American Southwest, the southern Andes, as well as southwestern Australia during winter."

As noted in the other responses to the EPA, this project is located in the Great Basin Desert ecoregion, not the "Southwest" Mojave ecoregion. However, this is the most definitive information the BLM has been able to find related to climate change and EPA's comment.

EPA's webpage further notes: "However, regional precipitation projections from climate models must be considered with caution since they demonstrate limited skill at small spatial scales."

The Crescent Dunes Solar Project is approximately a 1,600-acre project, which is an extremely small portion of the earth's surface compared to the earth's total surface. Evaluating the Crescent Dunes Solar Project in the context of EPA's qualifying statement above, any current climatological model's capability to address the project's overall contribution to climate change is limited.

It could be concluded that if precipitation in the project area were to decline (as noted above) in the next 53 years, then the recharge projected in the DEIS would be an overestimate of the recharge of the Lower Smoky Valley (i.e. recharge of the Lower Smoky Valley would take a longer period of time).

Conversely, should precipitation recharge of the Lower Smoky Valley remain near historic records, or actually increase, recharge would likely occur as predicted in the model; or sooner if precipitation recharge were to increase.

The EPA's Web Page further states: "It is important to recognize that projections of climate change in specific areas are not forecasts comparable to tomorrow's weather forecast. Rather, they are hypothetical examples of how the climate might change and usually contain a range of possibilities as opposed to one specific high likelihood outcome."

Based on this information, the Crescent Dunes Solar Project's contribution to climate change is speculative. Currently, no sufficient processes are in place (i.e. climate change models) to empirically assess future impacts to specific resources.

Comment 3-F: Cumulative Impacts

Another major concern identified by EPA in our NOI letter for this Project was the cumulative impact of multiple large-scale solar projects in the desert southwest, particularly potential impacts to water supplies, endangered species, and habitat. While BLM identified proposed projects in the cumulative effects study area (CESA), including a geothermal energy facility, two solar photovoltaic energy projects, a transmission line, and a mine, no description was provided of what the cumulative impacts may be from these and other reasonably foreseeable projects.

Recommendation:

EPA recommends that BLM provide additional information regarding the cumulative impacts associated with this and other large-scale renewable energy projects on various sensitive desert resources, including water supplies, special status species, and habitat.

Response 3-F

The Council on Environmental Quality (CEQ) has specific recommendations for completing cumulative analysis. The BLM policies further refines CEQ cumulative analysis. The BLM Tonopah Field Office believes they are in compliance with both BLM and CEQ cumulative analysis requirements.

Additionally, the Crescent Dunes Solar Project is located in the Great Basin Desert ecoregion. No other large-scale solar projects are located in this ecoregion.

Comment 4: Nevada Division of Water Resources, Water Resources

The proposed project resides in hydrographic basin 137A, Big Smokey Valley. There are approximately eight to ten currently held water rights on or near the described lands in this proposed project and include wells, lakes and vested rights.

Please be advised that wells and/or points of diverting water on these lands, whether new or existing, shall require prior approval from the Nevada Division of Water Resources. All waters of the State belong to the public and may be appropriated for beneficial use pursuant to the provisions of Chapters 533 and 534 of the Nevada Revised Statutes (NRS), and not otherwise. Water wells must be permitted, Monitor wells require a Waiver from the State

Engineer's Office, all boreholes must be plugged within sixty (60) days after being drilled as required by NAC 534.4371.

Any water or monitor wells, or boreholes that may be located on either acquired or transferred lands are the ultimate responsibility of the owner of the property at the time of the transfer and must be plugged and abandoned as required in Chapter 534 of the Nevada Administrative Code. If artesian water is encountered in any well or borehole it shall be controlled as required in NRS § 534.060(3).

Any water used on the described project for construction, dust control, or maintenance should be provided by an established utility or under permit or waiver issued by the State Engineer's Office. If artesian water is located in any well or borehole it shall be controlled as required in NRS 534.060(3).

Response 4:

The stipulation for the grants will include obtaining all federal, state, and local permits (see Table 1-1 and Table 1-2 in DEIS).

Comment 5: Nevada Division of State Lands, Visual Resources

I've reviewed the DEIS for Crescent Dunes Solar and I cut and pasted the text below. I highlighted one section too.

COMMENT: I think you, as the BLM representative for the area, have a lot of leeway and authority to require these guys to be more proactive. It is no different than a city requiring landscaping in a shopping center parking lot, the developer knows it is a cost of doing business, but he sure as heck won't bother putting one bush in if the city doesn't stand up to them. Their wording, "would be shielded from public view to the extent possible" simply doesn't cut it in my mind, and I am not alone, especially in Tonopah, the Dark Sky Capital of the world. BLM should place a condition on these guys that corresponds to the attached RAC letter. These guys should be required to place shields on ALL of the lights except FAA safety lights. (Note: none of the bulleted items require FAA lights except for the tower, ALL of the other lights should have shields). If it is required up front, the lighting specs can easily accommodate the shields. I hope you can do this as it is an easy fix if done up front.

BLM (i.e. YOU)have the chance with this project to set the standard for future projects all over Nevada and theWest, it can be a good precedent!

These developers will jump through any hoop that is rational and justified, and if required up front as a condition of approval. After the fact, we the people are out of luck.

Response 5

See Section 5, Errata to the DEIS for updated language.

Comment 6: Nevada Division of Transportation

At this time we do not have any comment on this project

Response 6:

Thank you for your comment. Comment noted.

Comment 7: Nevada Department of Wildlife, Agency Coordination

The Nevada Department of Wildlife welcomes commenting on review of the Draft EIS for the Crescent Dunes Solar Energy Project. Foremost, we concur with BLM's selection of its Preferred Alternative, i.e. Alternative II. This confers the least environmental impacts of the alternatives considered and would result in economies of project construction and operation. Early on in the planning process, NDOW was invited to participate in discussions and is serving as a cooperating agency regarding wildlife resource considerations. The majority of NDOW's inputs have been incorporated into the present Draft EIS which reflects important measures for avoiding and minimizing impacts to wildlife and the resources on which they depend. We look forward to continuing the positive working relationship with the BLM and Tonopah Solar LLC and its agents for effectively and reasonably resolving aspects of outstanding impacts to avian and terrestrial wildlife resources.

Response 7:

Thank you for your comment. BLM and TSE will continue to coordinate with NDOW on the project.

Comment 8: Nevada State Historic Preservation Office

The Nevada State Historic Preservation Office (SHPO) reviewed the subject document. The SHPO recommends that the word "salvage" found in the sections describing the effect of the undertaking on cultural resources should be replaced with the word "mitigate" or "mitigated" to be consistent with the existing regulations and its terminology. The SHPO reminds the Bureau of Land Management that a Memorandum of Agreement for the subject undertaking should be executed before a Record of Decision is signed for the project. If you have any questions concerning this correspondence, please feel free to contact me at (775) 684-3443 or bye-mail at Rebecca.Palmer@nevadaculture.org.

Response 8:

The word salvage has been replaced with mitigate/mitigated. Please see Section 5, Errata to the DEIS.

The BLM has reviewed its obligations under Section 106 of the National Historic Preservation Act (NHPA), especially direction provided under 36 Code of Federal Regulations (CFR) 800 (particularly part 800.8 section 4). This section states that:

Approval of the undertaking. If the agency official has found, during the preparation of an EA or EIS that the effects of an undertaking on historic properties are adverse, the agency official shall develop measures in the EA, DEIS, or EIS to avoid, minimize, or mitigate such effects in accordance with paragraph (c)(1)(v) of this section. The agency official's responsibilities under section 106 and the procedures in this subpart shall then be satisfied when either:

a binding commitment to such proposed measures is incorporated in
(A) the ROD, if such measures were proposed in a DEIS or EIS (emphasis added); or
(B) an MOA drafted in compliance with § 800.6(c); or (ii) the Council has commented under § 800.7 and received the agency's response to such comments.

Specific Section 106 compliance under the BLM Nevada/State Historic Preservation Officer (SHPO) State Protocol were initiated early in the process of permitting the Crescent Dunes Solar Project; and has been ongoing since June 2009 (Page 3-52 of the DEIS).

The formal consultation process with the SHPO correctly identified (within regulatory constraints) all information and processes related to that Section 106 Consultation. During the Consultation Process, the need for a Historic Properties Treatment Plan (HPTP) was identified. This plan will require TSE to provide funding for the recordation and archiving of cultural resources located within Alternatives 1 and 2 of the proposed Crescent Dunes project. In addition, a Cultural Bond supporting the HPTP and a MOA are identified in the FEIS; and properly stipulated as a binding agreement in the proposed ROD (to be signed on or about December 20th, 2010 by the Secretary of Interior.)

This plan will require TSE to provide funding and bonding for the treatment of all National Register Eligible sites identified within the area of potential effect identified as Alternatives 1 & 2.

A binding commitment for the following measures is incorporated in the ROD and proposed in the DEIS.

1. Receipt of ACHP response to an invitation to comment on the project and agency response to any comments.
2. Letters to Native American tribes informing them of the plans for mitigation (ARPA Letter) and requesting comments within 30 days. Copies of the agency’s responses to any comments received from Native American tribes.
3. SHPO concurrence for the HPTP.
4. Bonding to ensure that the HPTP is adequately completed in its entirety.
5. MOA between SHPO and BLM with concurring partner signatures.

In addition, a Cultural Bond supporting the HPTP and a Memorandum of Agreement (MOA) are all identified in the FEIS; and properly stipulated as a binding agreement in the proposed ROD (to be signed on or about December 20th, 2010 by the Secretary of Interior.)

Comment 9: L.J. Ramirez, General Support

Tonopah needs this project and I support it.

This project could be the spark that ignites other projects in the area. Sort of put us on the map. JOBS, JOBS, JOBS.

Response 9:

Thank you for your comment. Comment noted.

Comment 10: Jean Public, Land Use

7680 acres of public land used by a profiteer - not a good idea. we need to save somenatural land. let the solar facility go on a landfill or some other used site. let this profiteer buyE PUT private land instead of trying to weasel so he becomes a public charge on the taxpayers back. Let this be a private endeavor. the only land we should let go at lease rates is old landfills. not virgin land that needs to be saved for natural. They are NOT MAKING NEW LAND IN AMERICA. WE CANT LET PROFITEERS COME IN AND RUIN. WE HAVE TO RE USE. IBET IF THEY HAVE TO BUY PRIVATE LAND, THE ACRES REQUIRED WILL GO DOWN BY TWO THOUSAND PERCENT. THIS PROFITEER IS LOOKINGI TO TAKE ADVANTAGE OF TAXPAYERS.THIS TAKING AND SITING IS NOT NECESSARY HERE. DONT TAKE OPEN NATURAL SPACE. SOLAR CAN BE PUT ON ROOFS OF HOMES. YO UDONT NEED TO CREATE A HEAT ISLAND. YOU DONT NEED TO TAKE ALL THE WATER-THAT IS ALSO A DETRIMENT. THIS IS NOT THE BEST USE OF SOLAR POWER. THIS IS OPEN SPACE AND NEEDS PRESERVATION FOR ITSELF. THIS IS A TRULY PERVERTED OPPORTUNISTIC APPLICATION. THIS APPLICATION MEANS THE ANNIHILATION OF THE FOLLOWING INT HIS AREA: BIO RESOURCES, WATER RESOURCES, GEOLOGICAL RESOURCES, OPEN SPACE RESOURES, PALEO RESOURCES, VISUAL RESOURCES, WILDERNESS RESOURCES PLUS OTHER IMPACTS. DENY THISAPPLICATION. JEAN PUBLIC 1 ELM ST FLORHAM PARK NJ07932

Response 10:

Thank you for your comments. Comments noted. The BLM feels that these issues have been addressed in the DEIS. Please refer to the DEIS for details.

Comment 11: Brendan Hughes, General Opposition

I would like to express my opposition to the Crescent Dunes Solar project. This project will have unnecessary impacts on water, wildlife, habitat, and recreation. FLPMA charged BLM with preventing undue degradation to the public lands when alternatives exist. It is obvious that alternatives in the form of energy conservation, efficiency, and rooftop solar exist and

should be implemented before we sacrifice large swaths of our public lands. It may not be BLM's duty to identify specific project alternatives, but it is BLM's duty to protect the public lands. If BLM approves this project it will have failed in one of the main objectives of its organic act, FLPMA. The proof that this project should not go forward is in the data contained within the DEIS, as it has been with every other project located on public land. This project will harm sensitive or T&E species and destroy habitat. It is up to BLM to be a reasoned, scientific arbiter and reject these destructive proposals.

Response 11:

Thank you for your comments. Comments noted. The purpose of the DEIS is to assess impacts to each resource area. The BLM feels it has adequately addressed impacts to each resource of the proposal and alternatives.

Comment 12: Basin and Range Watch

Comment 12-A: Land Use

The preferred project site contains up to 1,600 acres of undeveloped land. The Right of Way is substantially larger. Will it expand?

Response 12-A:

The project is not planned for expansion. The right-of way was sized to accommodate flexibility to potentially avoid impacts to various resources.

Comment 12-B: Purpose and Need

All alternatives are now defined by a Need reflecting the recent Secretarial Order 3283: Enhancing Renewable Energy Development on Public Lands. The goals of Section 4 in Secretarial Order 3283 clearly state a need for environmental responsibility: “the permitting of environmentally responsible wind, solar, biomass, and geothermal operations and electrical transmission facilities on the public lands;

Response 12-B:

The BLM’s purpose and need remains as written. Addressing the need to meet Nevada renewable portfolio standards is mentioned in the proponent’s purpose and need statement.

Comment 12-C: Alternatives

Following the guidelines of the National Environmental Policy Act, the final EIS should present the environmental impacts of the proposal and the alternatives in comparative form, thus sharply defining the issues and providing a clear basis for choice among options by the decision maker and the public. In this section agencies shall:

(a) Rigorously explore and objectively evaluate all reasonable alternatives, and for alternatives which were eliminated from detailed study, briefly discuss the reasons for their having been eliminated.

(b) Devote substantial treatment to each alternative considered in detail including the proposed action so that reviewers may evaluate their comparative merits.
(c) Include reasonable alternatives not within the jurisdiction of the lead agency.
(d) Include the alternative of no action.
(e) Identify the agency's preferred alternative or alternatives, if one or more exists, in the draft statement and identify such alternative in the final statement unless another law prohibits the expression of such a preference.
(f) Include appropriate mitigation measures not already included in the proposed action or alternatives.

Response 12-C:
Comment noted. The BLM's Crescent Dunes Solar Energy project Draft EIS correctly followed the guidelines established by CEQ quality as noted in the comment.

Comment 12-D: Alternatives
Included in the guidelines of the National Environmental Policy Act are requirements to"Include reasonable alternatives not within the jurisdiction of the lead agency.

Distributed generation in the built environment should be given much more full analysis, as it is a completely viable alternative. Crescent Dunes will need just as much dispatchable baseload behind it, and also does not have storage. But environmental costs are negligible with distributed generation, compared with the Silver State project. Distributed generation cannot be "done overnight," but neither can large transmission lines across hundreds of miles from remote central station plants to load centers. Most importantly, distributed generation will not reduce the natural carbon-storing ability of healthy desert ecosystems, will not disturb biological soil crusts, and will not degrade and fragment habitats of protected, sensitive, and rare species. Alternatives should be looked at that are in load centers, not closest to the project site. There is a need to consider the "macro" picture, the entire state, to look at maximum efficiency.

A Master comprehensive plan should exist before large expensive inefficient solar plants are sited and built out in the wildlands. This plan should carefully analyze the recreational and biodiversity resources of the Nevada desert. A list of assumptions should be included detailing the plan for integrating various fuels mixes and technologies into each utility's plan, an overall state plan, and a national plan. Loads should be carefully analyzed to determine whether additional capacity is needed for peaking, intermediate, or baseload purposes. Unit size, which impacts capital and operating costs and unit capacity factors, has a direct bearing on the relative economics of one technology over another. A plan might recommend that smaller units built in cities and spaced in time offer a less risky solution than one large unit built immediately.

Right now there is no utility plan, no state plan, and no national plan. Large-scale central station solar plants have been sited very far from load centers out in remote deserts, with the only criterion being nearness to existing transmission lines and natural gas lines. Very little thought has been given to the richness of biological resources, the cumulative impacts on visual scenery to tourists, the proximity to ratepayers, or the level of disturbance of the site.

The California Energy Commission says there will be a need to build many new efficient natural gas peaker or baseload plants to back up the renewables planned, and this will undoubtedly be the case in Nevada as well. Instead, the renewables should be distributed generation in load centers, which will provide much more efficiency, rather than inefficient remote central station plants that reduce biodiversity and require expensive transmission lines. This reduces the risk, as distributed generation is a known technology and has been proven in countries like Germany where incentive programs have been tested. Incentive programs can be designed in an intelligent manner to vastly increase distributed generation. Incentives for large remote projects like Crescent Dunes are unproven to lower risk and may actually raise debt levels with runaway costs associated with poor siting and higher-than-anticipated operating and maintenance costs.

Many renewable project developers have failed to consider reasonable or viable alternatives that could serve as solutions that everybody could live with. In the case of this particular project, conflicts with endangered species, cultural resources, storm water drainage erosion, viewscapes from National Parks and wilderness areas could all be avoided with a distributed generation alternative. Thin film photovoltaic can be sited on developed areas using rooftops, parking lots and other urban vacant lots.

Response 12-D:
Distributed generation, also known as "on-site" generation would be a national policy determination, well beyond the scope of this DEIS. CEQ guidelines require federal agencies to analyze "reasonable" alternatives. While you correctly identify "…not within the jurisdiction of the lead agency", the latest census places current "households" in the U.S. in excess of 113 million. Such an analysis as proposed by B&RW would not only be a comprehensive change in national power supply strategy.

CEQ's 40 Most Asked Questions (specifically answer 1b) states: "When there are potentially a very large number of alternatives, only a reasonable number of examples, covering the full spectrum of alternatives, must be analyzed and compared in the EIS."

In addition, CEQ defines "reasonable as :.. includes those that are practical or feasible from the technical and economic standpoint." The BLM maintains that B&RW proposed alternative does not meet the "reasonable" criteria for the current DEIS.

Comment 12-E: Alternatives
The FEIS should provide two additional alternatives away from the preferred alternative.

Response 12-E:
Three alternatives were proposed and fully analyzed in the DEIS (i.e. Proposed Action , Alternative 1 and Alternative 2). The DEIS also include two sites (i.e. alternative locations) previously identified by TSE. These sites were eliminated for further analysis based on the criteria cited in Section 2.6.2.1 of the DEIS.

Comment 12-F: Alternative
Our preferred alternative would be to deny the Right of Way to the applicant and designate the region unsuitable for renewable energy development.

Response 12-F:
The BLM has identified its preferred alternative as the Alternative 2 site; along with reasons supporting its rationale for the decision. See Section 2.8 of the DEIS for the BLM's supporting rationale for selection of its preferred alternative.

Comment 12-G: Air Quality
Greenhouse gases: The DEIS has indicated a need for transmission line upgrades and new transmission facilities. The green house gas called SF6 is used primarily in electricity transmission - and is emitted in especially large amounts in construction of new lines – and is 24,000 times as potent as CO2 in its global warming impacts. The Environmental Protection Agency has declared "that the electric power industry uses roughly 80% of all SF6 produced worldwide". Ideally, none of this gas would be emitted into the atmosphere. In reality significant leaks occur from aging equipment, and gas losses occur during equipment maintenance and servicing. With a global warming potential 23,900 times greater than CO2 and an atmospheric life of 3,200, one pound of SF6 has the same global warming impact of 11 tons of CO2. In 2002, U.S. SF6 emissions from the electric power industry were estimated to be 14.9 Tg CO2 Eq. …http://www.epa.gov/electricpower-sf6/basic.html Please provide a more detailed analysis of the amount of SF6 gases that would be released by this project.

Response 12-G:
No leakage of SF6 is projected as TSE is obligated to follow both Federal and State guidelines for its use; which includes recycling of SF6.

Comment 12-H: Air Quality
Scientific studies have revealed that desert ecosystems and minerals have the ability to store C02 gases. Have Desert Researchers Discovered a Hidden Loop in the Carbon Cycle? Richard Stone: Science 13 June 2008: Vol. 320. no. 5882, pp. 1409 - 1410 DOI:10.1126/science.320.5882.1409

How much $C0_2$ storage capability would be replaced by development? If the goal is indeed to reduce greenhouse gases, is it wise to remove this much carbon storing living crust? Please provide a detailed analysis on the amount of GHG that would otherwise be offset by an intact arid ecosystem.

Response 12-H
According to current literature, the function of deserts storing CO_2, remains inconclusive to researches at this time (Stone 2008). This indicates that more research is required before the conclusions B&RW state or imply are proven as fact. BLM cannot include a speculative analysis in the NEPA process.

Comment 12-I: Biological Resources
Development of this project will result in the loss of 1,600 acres of habitat for the following species:
Pronghorn
Mule Deer
Elk

Response 12-I:
Elk and mule deer do not normally occur within the proposed project area except perhaps while migrating between mountain ranges. It is unlikely this project would impede migration through the Lower Smoky Valley because the project area is very small compared to the surrounding land available for migration activities. For impacts to Wildlife (i.e. pronghorn) see section 4.2.2 in the DEIS.

Comment 12-J: Biological Resources
Bighorn Sheep: Bighorn biologists Dr. John Wehausen and Dr. Vern Bleich have concluded that radio telemetry studies of bighorn sheep in various southwestern deserts, including the Mojave Desert of California, have found considerable movement of these sheep between mountain ranges.... Consequently, intermountain areas of the desert floor that bighorn traverse between mountain ranges can be as important to the long-term viability of populations as are the mountain ranges themselves.

Alluvial fans near steep rocky terrain can provide crucial foraging habitat for big horn sheep (Wehausen 2009)
For example, ewes at the end of gestation that need nutrients may come down from steep, rocky terrain looking for higher quality forage. They might use areas like the project site for only three weeks, but those three weeks are critical. The Ivanpah Valley might also provide important movement corridors for deer and bighorn sheep. The California Department of Fish and Game has noted that wildlife corridors are present through and adjacent to the Silver State Site and Ivanpah Solar Electric Generating System Site, and have expressed concern that the ISEGS project could adversely affect bighorn sheep. Due to ISEGS close proximity to the Silver State site.

"Radio telemetry studies of bighorn sheep in various southwestern deserts, including the Mojave Desert of California, have found considerable movement of these sheep between mountain ranges (Bleich et al., 1990b). This is especially true of males, but also of ewes

(Bleich et al., 1996). Within individual mountain ranges, populations often are small (Table 1). Levels of inbreeding could be high in such populations, but intermountain movements provide a genetic connection with a larger metapopulation, and this will counteract potential inbreeding problems (Schwartz et al., 1986; Bleich et al., 1990b). Intermountain movements also are the source of colonization of vacant habitat, which is fundamental to metapopulation dynamics and persistence. .Colonization by ewes is the slow link in this process, but has recently been documented in two Mojave Desert ranges in California (Bleich et al., 1996; Torres et al., 1996). Consequently, intermountain areas of the desert floor that bighorn traverse between mountain ranges are as important to the long term viability of populations as are the mountain ranges themselves (Schwartz et al., 1986; Bleich et al., 1990b, 1996)."

What if any measures would be provided to mitigate the loss of this habitat? Would land be purchased?

Response 12-J

There is some documented use by big horn sheep in the San Antonio Mountain Range east of the project. It is possible that individual males may periodically move between the San Antonio Range and the Monte Cristo Range to the west; or vice versa. It is unlikely that this small 1,600-acre project would impede movement of bighorn sheep between these mountain ranges since the project would only occupy a small part of Lower Smoky Valley.

Comment 12-K: Special Status Wildlife Species

Special Status Wildlife Species: How much foraging habitat would be lost for bald and golden eagles? Would this result in any Take under the Bald and Golden eagle Protection Act? Raptors potentially resident or migratory on the site that could be adversely impacted by towers:

American kestrel
Prairie falcon
Peregrine falcon
Northern harrier
Swainson's hawk
Ferruginous hawk
Rough-legged hawk
Osprey
Bald eagle
Golden eagle
Sharp-shinned hawk
Northern goshawk

Response 12-K:
The BLM does not consult with the USFWS on Take Permits. TSE will apply for a Take Permit from the USFWS. Currently, an Avian and Bat Protection Plan has been developed and is being reviewed by the USFWS.

A notice to proceed for construction will not be given by the BLM to TSE until that time the BLM has a letter of concurrence from the USFWS stating the ABPP supplied by TSE is adequate.

Comment 12-L: Migratory Birds, Insects, and Polarized Light Pollution
The heliostat mirror towers will assume the appearance of water from a distance.

The Nature Conservancy has just released their Mojave Desert Ecoregional Assessment. In the assessment, they discuss the impacts of polarized light pollution on birds and insects:

"Light and noise pollution associated with electrical power plants can be problematic for wildlife. Polarized light pollution can attract aquatic insects and other species that mistake the panels for bodies of water, potentially leading to population decline or even local extinction of some organisms (Horvath et al. 2010). Nighttime lighting for security or other reasons may negatively impact a variety of Mojave Desert species, many of which have developed nocturnal behavior to escape the daytime heat of the desert. (Mojave Desert Ecoregional Assessment September 2010, The Nature Conservancy of California 201 Mission Street, 4th Floor San Francisco, CA 94105) p. 50"

Response 12-L"
The BLM concurs with these concerns. The mitigation and monitoring plans provide for progressive responses to any change in impacts to migratory birds or other wildlife as a result of evaporation pond or other project-related operations. The final mitigation plans have been provided in the FEIS (See Appendix E—BLM Wildlife Mitigation and Monitoring Plan).

Comment 12-M: Biological Resources
Evaporation Ponds: Saline evaporation ponds will attract birds, bats and insects and be toxic. How will mortality from pollutants be mitigated?

Response 12-M:
The BLM concurs with these concerns. The mitigation and monitoring plans do provide for progressive responses to any change in impacts to migratory birds or other wildlife as a result of evaporation pond or other project-related operations. In addition, a NDOW Industrial Pond Permit will be required for TSE to operate the evaporation ponds. Permit conditions will include appropriate measures to protect wildlife.

The selected alternative (Alternative 2 in the DEIS) does not contribute to any direct, indirect, or cumulative impacts to the Crescent Dunes (i.e. sensitive beetle habitat); therefore, the BLM has determined that mitigation for sensitive invertebrates is not warranted.

Comment 12-N: Biological Resources
Pale Kangaroo Mice: Approval of this project will result in the loss of habitat and impede connectivity for this species. How will this be mitigated?

Response 12-N:
BLM feels it has minimized impacts to this species by selecting Alternative 2. The final mitigation plans have been provided in the FEIS (See Appendix E—BLM Wildlife Mitigation and Monitoring Plan).

Comment 12-O:
Endemic Dune Beetle: Direct loss of 1,600 acres will occur for *Aegelia crescentia* a diurnal, flightless dune beetle. How will this loss be mitigated?

Response 12-O:
Alternative 2, the BLM's preferred alternative is located approximately 1 mile from the Crescent Dunes and will not directly impinge upon the dunes or the beetle.

Also see response 12-M.

Comment 12-P: Special Status Plant Species
Special Status Plant Species: Over 1,600 acres will be lost for rare plants such as Sand Cholla and Nevada oryctes.

There are no mitigation measures outlined for avoidance of rare plants or enhancement of habitat for these plants..

Mitigation measures for several California renewable energy projects with a similar sized destructive footprint outline plans to form a "halo" of construction avoidance around rare plant species that have been located on the site.

Response 12-P:
Because Nevada oryctes is an annual plant, individual plants cannot be relocated; therefore, no mitigation is proposed. Cacti will be relocated in accordance with Nevada Administrative Code 527.250 under a Nevada Division of Forestry Permit.

Comment 12-Q: Alternatives
Again, our preferred alternative would be to deny the Right of Way to the applicant and designate the region unsuitable for renewable energy development.

Response 12-Q:
Thank you for your comment. Comment noted.

Comment 13: Ann McGaw, General Support

I am very supportive of the project. Nye County needs jobs and we need the taxes.

The location is ideal. I have never heard of the Crescent Dunes Special Resource Management Area and I have lived here 18 year.

I do have one concern and that is the fact that our power bill will increase because the power generated by the solar energy plant is more expensive than what we receive now. So this cost will be passed on to us.

But as will all 'green' energy produces, we have to weigh the pros and cons, and are we willing to pay for 'green.'

Response 13:

Thank you for your comment. Comment noted. The purpose of the DEIS is to assess environmental impacts to resources. Electricity rates are established and maintained by the Public Utilities Commission of Nevada.

Comment 14: Danny Costella, General Support

I believe this is an excellent project that will benefit the area economically. The construction jobs alone and influx of workers over the next 3 years will be a boom to the local economy not to mention the 50 or so permanent jobs that will also contribute.

The use of apprentice during construction will aid in training a future workforce for our state. Hopefully the developer will use Nevada workers to build this project and include fair wages and benefits. I also believe this is a well engineered, quality project that will benefit the area for years to come.

Judging by the presentation I feel this will have little or no environmental impact. Build it!

Response 14:

Thank you for your comment. Comment noted.

Comment 15: Duane Kramer, General Support

This project will be a very important to the local economy as well as the job market as well as the future of renewable energies, it should be very exciting to participate I nthis venture, I can hardly wait to get started.

Response 15:

Thank you for your comment. Comment noted.

Comment 16: Bill Primeau, General Support

This project will be of economic benefit for Nye County. The construction work force will help ease the Nevada unemployment problem. The renewable energy benefits go without mention. I am most definitely in favor of this project.

Response 16:

Thank you for your comment. Comment noted.

Comment 17: Keith Ingram, General Support

I am in favor of this project.

Response 17:

Thank you for your comment. Comment noted

Comment 18: David Rios, General Support

I am in support of this project. I am an avid outdoor enthusiast.

Response 18:

Thank you for your comment. Comment noted

Comment 19: Paul Davies, General Support

I think that the proposed #2 alternative would be a good idea for this project. This is a needed action to the community for green energy and jobs for the area.

Response 19:

Thank you for your comment. Comment noted

Comment 20: Dennis McGaw, Alternatives

I think they should move the project a couple of miles west to Esmeralda County. They need the tax revenue more than Nye County. That way both Nye and Esmeralda County benefits overall. The project will provide more money than the occasional money spent by people coming here to stargaze. The only real problem is the true cost of producing the power which is approx. $.13 per kw compared to approx. $.08 per kw of coal, gas, oil, fired power plants. As stated this actually increases the cost for power so as a rate payer and tax payer it decreases the amount of money that I can spend on other items.

Response 20

Thank you for your comment. Comment noted. The purpose of the DEIS is to assess environmental impacts to resources. Electricity rates are established and maintained by the Public Utilities Commission of Nevada.

Comment 21: Red Rock Audubon Society

Comment 21-A: Water Resources and Land Use

Thank you for the opportunity to comment on the Crescent Dunes Solar Energy Project draft EIS. While we support the concept of moving toward renewable energy and away from fossil fuels for electric power generation we have some concerns about how utility scale renewable energy projects in the desert southwest are implemented. It doesn't make sense to destroy the very environment we're trying to save by reducing generation of greenhouse gases.

This project will permanently alter some 1700 acres of marginal habitat and use some 600 acre-feet/year of groundwater. There will, in addition, be impacts to migratory birds. According to the draft EIS a mitigation plan is being developed, but is not yet available. It is not possible for the public to provide meaningful comments on a plan which does not yet exist. The wildlife impact mitigation plans need to be provided to the decision makers and the general public as part of this draft EIS, not provided as a fait accompli in the final EIS. In addition to a mitigation plan a monitoring plan needs to be developed so that we can know how many birds are killed or injured by the heliostat field and the tower. Much bird migration takes place at night and collisions with towers are well known to be a significant source of mortality for migrating birds or many species. We have very little experience with large tower energy collectors of the size proposed here with relation to effects on raptors. The thermal uplift above and around the tower will be substantial and as such attractive to large soaring birds. However, the air temperature in the immediate vicinity of the tower may potentially be lethal. This subject deserves a comprehensive monitoring plan.

Response 21-A

The BLM concurs with these concerns. The mitigation and monitoring plans do provide for progressive responses to any change in impacts to migratory birds or other wildlife as a result of evaporation pond or other project-related operations.

Comment 21-B: Water Resources

The 600 acre-feet/year of water that will be used is approximately 10% of the estimated perennial yield of the hydrographic basin. Unfortunately, the groundwater basin in which this project is located is already greatly over allocated, although actual pumping at this time is considerably less. Given the very long-term nature of this proposed project and the large financial investment involved we can be confident that pumping will occur at the maximum permitted level for the life of the project (unlike mining projects which are temporary or intermittent). Hence, now is the time to start getting control of groundwater utilization in this groundwater basin. It is essential that mitigation include purchase and retirement of groundwater rights in an amount that is at least equal to the proposed usage of this project.

The draft EIS discusses reclamation of temporarily disturbed areas when the construction phase is finished and reclamation and restoration of the entire site at the end of the ROW permit period. Since little is known about how to restore areas of degraded and disturbed soil in that area reclamation efforts need to be result based rather than effort based, since successful restoration of the native plant community on the first try is unlikely.

Response 21-B

Dry, wet, and hybrid cooling were evaluated by Tonopah Solar Energy during project development and prior to submitting a BLM application. Due to the decrease in efficiency, and thereby a higher power cost, the fully dry cooled technology was not carried forward in the analysis (Section 2.6.2.1 Alternative Cooling Technology).

The BLM determined that the project water use would not cause undue or unnecessary degradation; the project is in compliance with approvals from the Nevada Department of Water Resources and does not affect the overall water balance of the Lower Smoky Valley hydrographic basin.

Comment 21-C: Decommissioning and Reclamation

The draft EIS discusses reclamation of temporarily disturbed areas when the construction phase is finished and reclamation and restoration of the entire site at the end of the ROW permit period. Since little is known about how to restore areas of degraded and disturbed soil in that area reclamation efforts need to be result based rather than effort based, since successful restoration of the native plant community on the first try is unlikely.

Response 21-C

Reclamation efforts are described in the DEIS (Section 2.5.11) and the POD. Additionally, TSE has prepared a decommissioning and reclamation plan (See Appendix D—Conceptual Decommissioning and Reclamation Plan in FEIS).

Comment 21-D: Social and Economics

The section on socioeconomic impacts notes that due to the depressed housing market in Tonopah that there is quite a bit of unoccupied housing available for construction workers. The impacts to schools, however, are dismissed with the statement that: "The Nye County School District has an established schooling program, which would accommodate the relocating families"(p.4-86). Given the dire state of K-12 school funding in Nevada it is not reasonable to assume that the Nye County School District will be able to just absorb a significant number of additional students. The developer of this project should be required to provide the Nye County School District with the additional funds necessary to provide for an influx of construction related school children. The students will arrive and need to be educated long before Nye County derives any tax benefit from this project. The same is true for other county services such as police, fire and medical personnel.

Response 21-D

TSE will execute a Development Agreement with the Town of Tonopah and Nye County to address impacts to public facilities.

As stated in the DEIS, TSE would provide on-site fire protection and HAZMAT response.

Comment 22: The Wilderness Society, Nevada Wilderness Project, and Toiyabe Chapter Sierra Club

Comment 22-A: Alternatives

Note that the BLM's Preferred Alternative in the DEIS is not the Proposed Action, but rather Alternative 2 (p. 2-71). It is our understanding based on personal communication with TSE that Alternative 2 is also TSE's Preferred Alternative. We agree that Alternative 2 has the

least resource impacts. We support Alternative 2 as the Preferred Alternative, and these comments are focused on Alternative 2.

Recommendation: The BLM should carry forward Alternative 2 as the Preferred Alternative.

Response 22-A
Thank you for your comment. Comment noted.

Comment 22-B: Air Quality
The CDSEP offers the potential to reduce greenhouse gas (GHG) emissions related to electricity production during its 30 year lifetime by avoiding electricity production and associated greenhouse gas emissions at highly polluting fossil fuel plants. The CDSEP is expected to produce approximately 485,000 megawatt hours (MWh) of no-emissions electricity annually, (p. 1-72) enough to power over 40,000 homes.

The State of Nevada has passed a RPS rule requiring that the investor-owned utilities generate 25 percent of their electricity from renewable resources by the year 2025 (p. 1-7). The CDSEP could help the utilities reach the RPS goals.

The CDSEP would provide the opportunity for local economic benefits including creation of jobs and the addition of personal income to the State of Nevada. The DEIS states that during construction, "through direct, indirect and induced impacts during the peak of construction, approximately 1,500 jobs would be created, $140 million of personal income would be added to the State of Nevada annually, and $160 million would be added to the gross state product annually." (p. 4-87) During operations and maintenance, the DEIS states that "through direct, indirect and induced impacts during operations and maintenance of the facility, approximately 200 jobs would be created, $30 million of personal income would be added to the State of Nevada annually, and $22.7 million would be added to the gross state product annually." (p. 4-87)

Response 22-B
Thank you for your comment. Comment noted.

Comment 22-C: General Support
Tonopah Solar Energy seems to have identified a site with excellent solar resources, close to existing transmission and other infrastructure, and with limited conflicts with biological and other resources. Further, the site does not contain any officially designated sensitive and protected areas such as Areas of Critical Environmental Concern, nor has been it been proposed by citizens for designation as wilderness or other conservation status. The efforts of TSE to identify a good site should be generally commended.

Response 22-C
Thank you for your comment. Comment noted.

Comment 22-D: Biological Resources

There are natural resources that will be impacted by construction of a utility-scale solar plant on the site, as would be expected for industrial development on any intact 1,628-acre parcel of desert. Chapters 3 and 4 of the DEIS detail potential impacts from CDSEP in detail, and additional potential impacts are listed below. We include this summary to help illustrate the scope of potential impacts and highlight the importance of incorporation of robust mitigation measures, described further in Section V of these comments. Impacts identified in the DEIS – impacts to plant and wildlife species from the CDSEP could include loss of habitat and/or direct mortality to:

- Game species, including pronghorn, mule deer, bighorn sheep and elk (p. 3-21, 4-11).
- Special Status Animal Species, specifically the Crescent Dunes aegialian scarab Crescent Dunes aphodius scarab and Crescent Dunes serician scarab (p. 2-48, 3-33).
- Special Status Plant Species, specifically sand cholla and Nevada oryctes (p. 3-23, 4-15).
- Special Status Wildlife Species, including golden eagles, migratory birds, pale kangaroo mice and potentially several species of bats (p. 3-30, 4-23).

Impacts not identified in the DEIS – impacts from CDSEP could also include impacts to cultural resources:

- Direct effects would include surface and subsurface disturbances to four existing properties recommended eligible for listing on the National Register of Historic Places (eligible sites) caused by construction activities. (p. 4-65)
- Indirect effects: numerous eligible sites have been identified outside the Preferred Alternative, and indirect effects to these sites could be significant. Despite the importance of these potential effects, they have not been analyzed by the BLM in the DEIS. Possible effects to eligible sites outside the Preferred Alternative could include surface and subsurface disturbances from vehicle traffic, increased visitation and possible illicit artifact collection.

Recommendation: Given the significant natural and cultural resources that would be impacted by CDSEP, the BLM should require robust mitigation measures that are directly related to the expected impacts, and define how the efficacy of those mitigation measures will be evaluated. Section V of these comments includes additional recommendations on this issue, including recommendations to address potential indirect effects to cultural resources, including eligible sites.

Response 22-D

The final mitigation plans have been provided in the FEIS (See Appendices D,E, and F). Further response to cultural resources is given in comment 22-I.

Comment 22-E: Biological Resources

In order to evaluate the CDSEP, the public needs to know the potential impacts of CDSEP, the mitigation measures that the BLM will require TSE to employ, and how those measures will be monitored and evaluated for effectiveness and modified as necessary under a robust adaptive management plan.

Unfortunately, many of the mitigation measures and plans mentioned in the DEIS lack important details or are not present at all. The DEIS does include some good details in several areas, including raptor deterrent mechanisms (p. 2-48), compaction of soils (p. 2-51), and dark skies (p. 2-53). However, numerous other plans are missing altogether. For example, the DEIS mentions a mitigation plan for the Nevada State Protected Species pale kangaroo mouse and lists a few elements that the plan will contain, but does not provide the plan for review: "A mitigation plan is being developed between TSE, BLM, and NDOW." Plans mentioned in the DEIS but not included for public review and comment include:

- Special Status Wildlife Species – pale kangaroo mice and bats (p. 2-48)
- Weed Management Plan (p. 2-47)
- Golden eagle monitoring plan (p. 2-48)
- Spill Prevention Control and Countermeasure plan (2-49)
- Stormwater Pollution Prevention Plan (p. 2-49) and
- Hazardous Materials Management Plan (p. 2-55).

The DEIS also does not explain how the mitigation measures and plans described in the document would be translated into terms and conditions in the Record of Decision (ROD) and incorporated in the ROW grant, or how TSE and the public will receive confirmation that the requirements have been met.

The comments in this section are intended to clarify our understanding of the mitigation measures included in the DEIS and recommend specific ways in which the BLM should improve its treatment of mitigation in the mitigation plans and the Final Environmental Impact Statement (FEIS). The best way to address this issue would be to publish a supplement to the DEIS that clarifies and improves the discussion and incorporation of mitigation measures and includes the specific mitigation plans. At the very least, the BLM should publish this additional information and the actual mitigation plans on the BLM project website as soon as they are finalized and provide an opportunity for public comment.4 This additional information and the mitigation plans and/or DEIS supplement should be published prior to publication of the FEIS, and should also be incorporated into the FEIS.

Recommendations: As detailed above, the BLM should provide additional information on mitigation, as well as the actual mitigation plans for public review and comment. The plans should include details on what, where, when, and how mitigation measures will be carried out, how they relate to the likely impacts of the project, how results will be monitored, and

how adaptive management will be carried out based on the monitoring. The BLM should also specify how the mitigation measures will be translated into terms and conditions in the ROD.

As an example, we would direct the BLM to the Jack Morrow Hills Coordinated Activity Plan, prepared by the BLM in Rock Springs (Wyoming), which includes a highly detailed section (Appendix 17: "Implementation, Monitoring, and Evaluation Process" – attached for your reference (Attachment A)) that provides the specificity needed to evaluate the effectiveness of planned mitigation measures by setting out specific indicators, measurements and actions to be taken if these measures are not effective. We particularly note the following sections, as examples of the sort of detail that should be contained in the environmental analysis for SSEP:

- Table A17-1 Resource Management Indicators - p. 8
- Table A17-2 Indicator Detail - p. 9-11
- Table A17-3 Measurement Detail - p. 12-14
- Figure A17-3 CAP Management Process - p. 16 and
- Discussion of the JMH CAP - p. 20-21.

Response 22-E:
The BLM-approved mitigation plans are included in Appendix D, E, F, and G in the FEIS.

Grant stipulations require that all other federal, state, and local permits are obtained as part of approval process. Refer to section 1.6 – Authorizing Actions and Permits in the DEIS.

Comment 22-F: Mitigation
The BLM should ensure that a robust adaptive management program is included in the FEIS and carried forward in the ROD. This is particularly important for measures for potentially serious impacts, such as mitigating impacts to wildlife from evaporation ponds. For example, if the BLM chooses to modify the mitigation plan for evaporation ponds and employ hazing or misting instead of the more aggressive and expensive netting, the BLM should carry forward a robust monitoring program, set clear thresholds for unacceptable levels of impacts, and specify additional mitigation measures required if thresholds are exceeded.

Recommendation: The BLM should include a robust adaptive management plan in the FEIS.

Response 22-F
See response to 22-E

Comment 22-G: Mitigation
Utility-scale solar development has significant impacts on project sites, and off-site mitigation is one tool that should be used to offset impacts from converting intact, multiple-use lands to single-use, industrial energy production. TSE and the BLM should commit to further discussions with interested stakeholders to develop additional ideas for off-site

mitigation, and the BLM should commit to further consideration and analysis of potential off-site mitigation measures.

We direct the BLM's attention to Instruction Memorandum (IM) 2008-204, which describes the broad type of actions that may be taken to address both direct impacts of a project and greater cumulative effects that development is having on a landscape. IM 2008-204 identifies and elaborates on the types of off-site mitigation that can be used. For example:

- Offsite mitigation may include, as appropriate:
    - In-kind: Replacement, substitution or permanent protection of resources that are of the same type and kind as those being impacted.
        - Example: For every acre of new, long-term surface disturbance in important pale kangaroo mouse habitat in Area (A), (X) acres of suitable, in-use habitat in Area (B) will be administratively protected with permanent mineral withdrawal and no off-road/route vehicular activities with the specific purpose of protecting pale kangaroo mouse habitat.
    - Out-of-kind: Replacement or substitute resources that, while related, are of equal or greater overall value to public lands.
        - Example: For every acre of new, long-term surface disturbance in important pale kangaroo mouse habitat in Area (A), the project proponent agrees to bury (Y) miles of existing power lines and remove the power poles used as hunting perches by raptors in Area (B).
    - In-lieu-fee: Payment of funds to the BLM or a natural resource management agency, foundation, or other appropriate organization for performance of mitigation that addresses impacts of a project.
        - Example: The applicant may make payment to the BLM or a conservation group based on the amount of acres that will be disturbed in exchange for commitment from the recipient to apply the funds toward local, specified pale kangaroo mouse habitat protection/restoration projects.

In the context of solar development, there may be additional conservation priorities that can be pursued to mitigate the impacts of individual projects and the BLM could hold discussions with interested stakeholders to identify these potential targets for off-site mitigation efforts or funding. Regarding CDSEP, we are not comfortable with decisions regarding mitigation being made in closed negotiations, especially in light of the presence of poorly understood, but incredibly localized species (i.e., scarabs that have very high conservation importance but little scientific information). Although the preferred alternative does not directly impact the dune habitats where scarabs are believed to be localized, there is not enough known about the ecology and life history of these species to definitively rule out impacts that might arise from possibilities not discussed, e.g., shading from the tower on the dune habitats. (It is known that

larval stages of invertebrates are particularly sensitive to variation in their thermal environment. Nothing is known about the larval requirements of these species and potential impacts from additional shade that change the thermal environment.)

Recommendation: Tonopah Solar Energy should commit to further discussions with interested stakeholders to develop additional ideas for off-site mitigation, and the BLM should commit to further consideration and analysis of potential off-site mitigation measures. A mitigation team should be assembled that would include expertise on the poorly understood invertebrate species in the area.

Response 22-G
See response 22-E

The selected alternative (Alternative 2 in the DEIS) does not contribute to any direct, indirect, or cumulative impacts to the Crescent Dunes (i.e. sensitive beetle habitat); therefore, the BLM has determined that off-site mitigation for sensitive invertebrates is not warranted.

Comment 22-H: Biological Resources
The BLM should provide additional details on the methods used for field surveys. Some good detail is included regarding the area of analysis and methodology for special status plant species surveys, including dates of surveys, and specifics on methods for pedestrian surveys. However, additional information is necessary in several areas. The BLM should specify how many traps were used per trap line for kangaroo mice (p. 3-28), as well as whether and how many traps were used for reptiles. The BLM should also specify whether surveys were completed for bats.

We have seen that in Nevada as well as in other states, there is a lack of consistency in carrying out full protocol surveys and ensuring they are done at different times of the year to capture such things as fall-blooming plants. The BLM needs to implement standard, comprehensive guidelines for conducting surveys to ensure that all species' presence on proposed renewable energy sites can be identified.

Recommendation: The BLM should provide the additional details covered above regarding field surveys. The BLM should also ensure that going forward, comprehensive wildlife and plant surveys are completed at least twice and at different times of the year (i.e., spring and fall) for every large scale renewable energy project.

Response 22-H
Upon publication of the notice of available (NOA), the public may request from the BLM all supporting technical (baseline) reports.

Based on baseline data from several sources (including the BLM, Nevada Natural Heritage Program, NDOW, etc.), it was assumed that a wide variety of vertebrate species utilize the

lower Smoky Valley and therefore could be present within the three alternatives area. Surveys were only conducted for pale kangaroo mouse, golden eagles, Nevada oryctes and cacti. BLM coordinated pale kangaroo mouse survey methods with NDOW because it is a state-sensitive species. BLM coordinated Golden Eagle surveys methods with the USFWS because this species is protected under the Bald and Golden Eagle Protection Act. Other species observed during biological field surveys were documented.

Comment 22-I: Native American Religious Concerns and Cultural Resources
We commend the BLM for actively consulting with interested Native Americans to determine any concerns they may have. However, no clear plan is included for addressing these concerns.

The DEIS does not make it clear whether the Nevada SHPO has had an opportunity to review the results of the Class III archaeological inventory, or whether the SHPO concurs with the eligibility determinations made by the BLM. The DEIS also fails to identify or explain whether any plan for protection against indirect effects has been developed for the eligible sites outside of the Preferred Alternative that have been identified during the inventory. Increased access of workers and the public may affect significant cultural resources through illicit collecting or inadvertent damage. The BLM needs to provide these details to the public.

Recommendation: The BLM should continue to consult with interested Native American tribes about the project and any concerns they may have. Understanding the sensitivities of these concerns, the BLM should clarify if a plan for alleviating issues has been developed to the satisfaction of all interested parties. The BLM should also make clear whether the SHPO has had an opportunity to review the Class III archaeological inventory and concurs with the determinations made by the BLM, as well as detailing a plan for avoidance of eligible sites found outside of the Preferred Alternative. The BLM should mandate education of the workers on the importance of avoiding cultural sites and artifacts and provide rules for areas not within the work area, for example, prohibiting off-road driving outside of the project.

Response 22-I
The HPTP is currently under review by the SHPO; until such time the HPTP is completed and agreed upon by the SHPO, no notice to proceed would be given until Section 106 has been completed, which includes Native American Consultation.

Cultural stipulations are included in the ROW grant. These include construction worker education to identify resources not previously discovered. These stipulations will include a stop work order should any unidentified/undiscovered cultural resources being discovered at any phase of construction or operation of the project. Work may not be reinitiated until written authorization by the appropriate BLM Line officer is obtained by TSE or its contractors.

Comment 22-J: Project Description

The BLM should provide further analysis of the potential economic and technical feasibility of dry cooling, including potential impacts to the levelized cost of electricity (LCE), the annualized electrical production, and the capital cost of CDSEP.

As demand increases for the southwest's already strained water resources, it is critical to capitalize on any available opportunities to limit unnecessary water use. Substantial groundwater pumping is already contributing to a lowering of the water table. Significant drops can contribute to ground subsidence and impact nearby wells, and harm any connected surface water and related wildlife. Because of these reasons, we appreciate that TSE and the BLM are proposing hybrid cooling rather than wet cooling for CDSEP. However, additional information is necessary on the potential impacts and benefits of dry cooling.

Though the DEIS does nominally analyze wet, dry and hybrid cooling, the analysis does not appear to be very deep. Similarly, the DEIS appears to dismiss dry cooling out of hand, simply stating that "because of the decrease in efficiency and, thereby, a higher power cost, the fully dry-cooled technology was not carried forward in the analysis." (p. 2-65)

There are a number of hybrid and dry cooled power plants in operation today that illustrate the technical and economic feasibility of low water use cooling in some situations. A study by the California Energy Commission's Public Interest Energy Research (CA PIER) program detailed years of data from five dry or hybrid cooled power plants (four combined cycle natural gas plants and one wood waste fired plant) and found limited difficulties with operations and maintenance of the dry and hybrid cooled systems. Further, a number of proposed solar plants that intend to begin construction by the end of this year in California and Nevada plan to use dry cooling.

Overall, additional analysis of the potential impacts of dry cooling to the capital costs, annual output, and LCE from SSEP will be necessary to determine which option makes the most sense from environmental, economic and technical perspectives.

Recommendations: The BLM should provide further analysis of the potential impacts of dry cooling to the LCE, the annualized electrical production, and the capital cost of from CDSEP. If dry cooling is determined to be technically and economically feasible, the BLM should select the least water-intensive cooling method as the agency's Preferred Alternative.

Response 22-J

Throughout the BLM approval process, the BLM's responsibility is to insure that undue or unnecessary degradation of the Public Land resources does not occur. The BLM's role is not to mandate specific engineering or business processes to a proponent. BLM does endeavor during the permitting process to work with the proponent to make changes to a proposal to limit impacts to resources.

The BLM worked with Tonopah Solar Energy on the Crescent Dunes project during the application process to minimize environmental impacts.

Dry, wet, and hybrid cooling were evaluated by Tonopah Solar Energy during project development and prior to submitting a BLM application. Due to the decrease in efficiency, and thereby a higher power cost, the fully dry cooled technology was not carried forward in the analysis (Section 2.6.2.1 Alternative Cooling Technology).

The BLM determined that the project water use would not cause undue or unnecessary degradation; the project is in compliance with approvals from the Nevada Department of Water Resources and does not affect the overall water balance of the Lower Smoky Valley hydrographic basin.

Comment 22-K: Purpose and Need

The purpose statement in the DEIS is restricted to responding to TSE's application for a ROW (p. 1-6). We are glad to see that the BLM's need is defined to include limiting unnecessary or undue degradation of public lands. We are also glad to see mention of the broader goals for the BLM's solar energy program in TSE's purpose and need, including the Energy Policy Act of 2005's goal of 10,000 MW of non-hydropower renewable energy on public lands by 2015 and Interior Secretary Salazar's March 11, 2009 Secretarial Order prioritizing responsible renewable energy development on public lands. (p. 1-8) However, to both make clear the BLM's goals for its solar program and ensure that the DEIS is legally defensible, we recommend that the BLM go further in defining the purpose and need to include mention of the broader goal of "facilitating environmentally responsible commercial development of solar energy projects" and the possibility of CDSEP helping meet Nevada's RPS and other clean energy goals.

Recommendation: The BLM should go further in defining the purpose and need for CDSEP to include mention of the broader goal of "facilitating environmentally responsible commercial development of solar energy projects" and the possibility of CDSEP helping meet Nevada's RPS and other clean energy goals.

Response 22-K

The BLM's purpose and need remains as written. Addressing the need to meet Nevada renewable portfolio standards is mentioned in the proponent's purpose and need statement.

Sufficient information is provided in Section 2.6.2.1

Comment 22-L: Alternatives

The DEIS does a good job of selecting three action alternatives and one no-action alternative for analysis in the DEIS. Further, the description of parameters used for site selection is very helpful. (p. 2-62). The fact that the project proponent and the BLM included enough flexibility to consider three action alternatives with different footprints was important in

arriving at an alternative which minimizes impacts. We also appreciate that the BLM provides some description of the analysis conducted on two additional alternative sites outside of the current ROW application area, the Mud Lake Site, east of Tonopah, and the Peavine Creek Site, west of the proposed project site. (p. 2-63)

Though the information in the DEIS is helpful, we would recommend that the BLM include additional details on the results of the analyses of the Mud Lake and Peavine Creek sites to provide the public with additional information on why the sites identified as action alternatives were selected and why these sites were not.

Recommendation: The BLM should provide additional details on the results of the analyses of the Mud Lake and Peavine Creek sites to provide the public with additional information on why the sites identified as action alternatives were selected. For future NEPA analysis on proposed renewable energy projects, the BLM should fully analyze a robust range of action alternatives, including alternatives outside the proposed ROW, projects of different size, and projects that include phasing.

Response 22-L

The Mud Lake and Peavine Creek sites were included in the DEIS to show the public that additional sites beyond the three alternatives had been investigated. Early in the site selection process, the Mud Lake and Peavine Creek sites were dismissed as alternatives to be carried forward for further analysis (see 2.6.2 Alternatives Considered and Eliminated from Detailed Analysis).

Comment 22-M: Project Description

The DEIS makes it clear that the project area would be graded: "Approximately 1,500 acres (including the access road) would be graded in order to construct the project facilities (i.e., heliostats, power block, evaporation ponds, and administrative buildings), and a paved access road." (p. 4-2) However, conflicting statements throughout the DEIS leave the reader with several different acreages of graded project area. Further, statements made by TSE staff at the public meetings in Las Vegas suggested that there would be little grading necessary because the area is level. We recommend limiting grading as much as possible to limit impacts to the project site.

Recommendations: The BLM should limit grading of the project site to the extent possible, and the BLM should make clear the extent of the grading of the project area. The BLM should be commended for their public meetings format for the DEIS, and should continue to use this or a similar format in future CDSEP and other public meetings The BLM should be commended for the format of their public meetings for CDSEP. These meetings included a presentation on CDSEP from the BLM and TSE, as well as "open house" time for the public to review poster boards and ask questions of BLM, TSE and other staff. The meetings also allowed participants to ask questions during a group question and answer session. These

types of meetings are much more effective in engaging the public than meetings consisting only of open house time because of the opportunity for public discourse and questions.

Recommendation: The BLM should continue to hold public meetings in the format used for the CDSEP.

Response 22-M

Thank you for your comment. Comment noted.

Comment 23: Center for Biological Diversity

Comment 23-A: Plants

The DEIS discloses that the only BLM Sensitive Plant species, aside from cacti and yuccas, found on the site is the Nevada Oryctes. This plant is of concern and is classified by the Nevada Heritage Program as "imperiled due to rarity or other demonstrable factors". Agency direction contained in BLM Manual 6840.2 establishes that, "…the BLM shall designate Bureau sensitive species and implement measures to conserve these species and their habitats, including ESA proposed critical habitat, to promote their conservation and reduce the likelihood and need for such species to be listed pursuant to the ESA."
Section 6840.2 C. on implementation of this direction provides:

> "On BLM-administered lands, the BLM shall manage Bureau sensitive species and their habitats to minimize or eliminate threats affecting the status of the species or to improve the condition of the species habitat, by:
> 2. Ensuring that BLM activities affecting Bureau sensitive species are carried out in a way that is consistent with its objectives for managing those species and their habitats at the appropriate spatial scale.
> 4. Working with partners and stakeholders to develop species-specific or ecosystem-based conservation strategies.
> 7. Considering ecosystem management and the conservation of native biodiversity to reduce the likelihood that any native species will require Bureau sensitive species status.
> 8. I the absence of conservation strategies, incorporate best management practices, standard operating procedures, conservation measures, and design criteria to mitigate specific threats to Bureau sensitive species during the planning of activities and projects."

Despite this direction, the proposed action would grade and destroy over 1374 acres of suitable and occupied habitat for this plant, while the BLM's preferred alternative would destroy approximately 434 acres of such habitat. Nowhere in the document is there any

analysis or disclosure of the impacts to the status of this plant from this amount of habitat loss, or a disclosure of the likelihood that such loss would increase the need for listing of this plant under the Endangered Species Act.

These deficiencies should be addressed in the final environmental impact statement ("FEIS").

Response 23-A

BLM feels project impacts have been minimized to this species by selecting Alternative 2. Approximately 434 acres of suitable habitat for oryctes would be graded in order to construct the project facilities; this is approximately 1.7 percent of the available suitable habitat identified within the CESA (25,880 acres) (See Section 4.3.4).

Additionally, this species has been documented in Churchill, Esmeralda, Humboldt, Mineral, Pershing, Storey, and Washoe counties in Nevada, as well as Inyo county of California (See Section 3.4.1.3.5 of the DEIS). BLM does not believe that the removal of 1.7 percent of habitat within the CESA would facilitate the listing of Nevada oryctes under the Endangered Species Act.

Comment 23-B: Biological Resources

The Tonopah milkvetch (Astragalus pseudiodanthus) is not yet a BLM Sensitive Species in Nevada, but arguably could be given its rarity and its Sensitive Species Status in California. The State Natural Heritage Program ("Heritage") ranks this species as both globally and state "imperiled due to rarity and/or other demonstrable factors". According to Heritage maps it is found in the project site vicinity. It is a perennial herb with a buried root crown found in deep loose sandy soils of sand dune margins. According to NatureServe and Heritage databases, there are only ten occurrences in California and fifteen in Nevada. Estimated population levels for Nevada are likely in the vicinity of 1420 individuals – a number far less than the estimates for Oryctes (24,000+) a designated sensitive species.

Due to the rarity of the Tonopah milkvetch, the Center requests that it be treated as a Nevada BLM Sensitive Species and provided the protections called for in BLM Manual 6840. The FEIS must analyze and disclose the impacts to this species and how the BLM will comply with the mandates of Manual 6840.

Response 23-B

Tonopah Milkvetch is currently not a BLM-sensitive species in Nevada; therefore, it is not given any preferential status under current BLM policies.

Comment 23-C: Invertebrates

Heritage and NatureServe rank the Crescent-dune Aegialian scarab beetle (*Aegialia crescent*) as globally and state "critically imperiled due to extreme rarity, imminent threats, and/or biological factors". It is found only within the Southern Big Smoky Valley, 4 and the proximity of the proposed solar project to the primary habitat at Crescent Dunes creates an imminent threat. It is a BLM Sensitive Species.

The Crescent Dune Serican scarab beetle (*Serica ammomenisco*) is ranked by Heritage and NatureServe as being globally and state "critically imperiled due to extreme rarity, imminent threats, and/or biological factors". It too is found only within the Southern Big Smoky

Valley, and the proximity of the proposed solar project to the primary habitat at Crescent Dunes creates an imminent threat. It also is a BLM Sensitive Species.

These two beetles, along with four other found elsewhere, have been petitioned for listing under the Endangered Species Act, adding to the burden and responsibility of the BLM toprovide adequate protections as to not further jeopardize their survival and viability.

Another beetle, the Crescent Dunes Aphodious scarab is a BLM Sensitive Species, but awaits further taxonomic work and is not listed in Heritage or NatureServe databases.

The DEIS discloses that Alternative 1 would directly impact the beetles by destroying 8 acres of dune habitat.

The proposed action and alternative 2 are said to not impact the beetles since the mapped dune ecosystem is avoided. This is a faulty justification due to the premise that the alternatives do not impact areas mapped as "Inter-Mountain Basins Active or Stabilized Dune Habitat". A study of images obtained with Google Earth as well as a comparison of Figures 2-1, 3-2, 3-15 and 3-16 reveals gross errors in mapping as well as in interpretations as to the habitat for the above beetles.

Specifically, our concerns are:

- DEIS Figure 3-15 identifies soil types STC and TGE as the primary types in the proposal alternative's impact area. Both these soil types are comprised of deep, fine sands, easily displaced by wind.
- DEIS Figure 2-1 and views from Google Earth clearly show the dunes systems as being much more expansive than mapped on Figure 3-2. In addition, the soil mapping found on Figure 3-16 also shows the dunes covering a much greater area than that mapped on Figure 3-2. It is quite likely that Alternative 2 impacts greater than the 8 acres disclosed, and the same argument for soil type STC made in the bullet above applies to Alternatives 1 and 2.

Nowhere in the DEIS does the BLM analyze or disclose the impacts from disrupting sand transport to the dunes and the habitat provided for the beetles, nor does it discuss the cumulative impacts to the dunes and the beetles from continued off-road recreational use.

We are also concerned that no mitigation is planned to off-set the impacts to these species. The full intent of BLM Manual 6840 must be met and disclosed.

The Center requests that as part of the project approval process a thorough inventory be made of the entire proposed right-of-way area to determine the presence, absence and status of these species within it, and if present that the environmental compliance process document the avoidance and mitigation strategies that will be employed to ensure the long term survival of the species to preclude the need for listing under the Endangered Species Act. Included

should be a cumulative effects analysis of the off-road vehicle ("ORV") use at the Crescent Dunes, another major threat to these species. In addition, the survey should be robust enough to identify the presence or absence of other rare or imperiled species that may not have previously been known at this site.

Response 23-C

The Crescent Dune Aegialian scarab beetle and the Crescent Dune Serican scarab beetle are associated with the sandy soils of the Crescent Dunes. The selected alternative (Alternative 2 in the DEIS) does not contribute to any direct, indirect, or cumulative impacts to the Crescent Dunes (i.e. sensitive beetle habitat); therefore, the BLM has determined that mitigation for sensitive invertebrates is not warranted.

The migration and deposition of sand within the Crescent Dunes System was not identified as a resource of concern during scoping for DEIS; therefore, not address in the draft. However, Tonopah Solar Energy had a Geomorphic Aeolian Report completed in April 2010 to assess the movement of the Crescent Dunes including the migration and deposition of sand (Worley Parsons 2010d). The Crescent Dune System is star dunes, which means the dunes are created by multiple relative strong wind directions. Utilizing aerial photographs from 1954-2006, it was determined that the Crescent Dunes system does not appear to have migrated substantially. It appears that the star dune has moved less then 250 feet in one direction since 1954. Upon publication of the NOA, the public may request from the BLM all supporting technical (baseline) reports.

Comment 23-D: Insects, Birds, Bats, and Raptors

The Center asserts that the DEIS is lacking due to its failure to address the impacts from the proposed facility on flying creatures. Our concerns stem from several factors:

- Direct mortality from the death ray zone. While the DEIS does mention a short term study done on a small concentrated solar facility in 1986 on bird mortalities However, the DEIS merely speculates that it is possible that migratory birds and golden eagles may be harmed by the intense concentration of reflected light and heat towards to top of the central receiver. McCrary estimated 1.7 birds deaths per week on a 32 ha site with one 86 m tower.9 The proposed project site is approximately 647 ha (over 20 times larger) with a 653 foot receiving tower. Lacking baseline data of mean daily count of birds on the project site, analysis of the impacts to birds is impossible. Based on the existing literature, the impact may be significant. Further, no mention was made regarding the impacts to flying insects by either McCrary's study or the DEIS. As a minimum the BLM and proponent should present details in the FEIS on the death zones associated with the tower, perhaps by temperature, height and area of influence, similar to what is done with respect to the area of influence of wind power blades. In the FEIS BLM must address this issue and make a good faith attempt to describe the magnitude of the potential impacts.

- Also, there was no mention made of any raptor or other bird surveys having been conducted aside from a single survey for golden eagles done on June 4, 2010 and a single flight looking for eagle nesting areas on June 24, 2010.10 9 McCrary, M.D. 1986. Avian Mortality at a Solar Energy Power Plant. Journal of Field Ornithology 57(2): 135-141. This presents several concerns. First, no site specific information was collected for migrating raptors and passerine species. Second, there is considerable doubt on the reliability of such limited sampling and how such surveys did or did not meet scientifically acceptable protocols. Third, the use of office analysis of existing available data not specific to the project also creates great doubt in the reliability of the information presented in the DEIS. The DEIS fails to disclose the number of pairs of golden eagles that could be affected by the proposed project. Scientific literature on this subject is clear - the presence of humans detected by a raptor in its nesting or hunting habitat can be a significant habitat-altering disturbance even if the human is far from an active nest.11 Regardless of distance, a straightline view of disturbance affects raptors, and an effective approach to mitigate impacts of disturbance for golden eagles involves calculation of viewsheds using a threedimensional GIS tool and development of buffers based on the modeling. The BLM must address these data deficiencies and conduct scientifically credible surveys to detect the species likely to be impacted by the proposed project and then to address and disclose the impacts and mitigation in the FEIS.
- There is a lack of clarity in the DEIS as to how impacts from the evaporative ponds will be mitigated. Early on in Section 2.5.3.5.7, the DEIS discloses that when the ponds are filled with water, a porous screen would cover the entire pond so that wildlife (presumably, birds, bats and other mammals) would not be attracted to the water surface. However. Later in section 4.5.11 on “Mitigation”, no mention is made of the protective cover. Instead, a monitoring scheme is described that would document the occurrences of bird and wildlife species use of then ponds and any deaths, deformities or other abnormalities found, and share that information with the BLM, NDOW and other appropriate agencies. The Center feels that the avoidance/mitigation value of the protective cover in essential, and must be the first line of protection against undesirable impacts. The monitoring program should also be implemented, but geared towards measuring the effectiveness of the screen.

Response 23-D

As correctly pointed out by CBD, the only existing such facility is 86 meters tall in the U.S. Similar facilities as the proposed project do not currently exist in the U.S.; therefore, no information exists on the impacts to golden eagles, migratory birds, insect, and bats. The BLM concurs with these concerns. The mitigation and monitoring plans do provide for progressive responses to any change in impacts to migratory birds or other wildlife as a result of increased temperature zones around the central receiver and heliostats, evaporation ponds, or other project-related operations.

In addition, the Notice to Proceed for construction would be contingent upon BLM receiving concurrence from USFWS on the proposed Avian and Bat Protection Plan (ABPP). The proposed ABPP is an agreement between TSE and the USFWS that addresses potential impacts, mitigation measures, and monitoring requirements.

Golden eagle surveys methodology was coordinated with and approved by the USFWS.

Comment 23-E: Water Needs

The POD stated and the DEIS confirms that the Tonopah Flat sub-basin in which the proposed project is located is currently over allocated by about 20,000 acre-feet per year. This disturbing fact is somewhat dismissed by pointing out that the existing water rights in the basin do not represent the actual groundwater withdrawal and consumption. The DEIS states that water for the proposed project would come from purchased and retired active irrigation rights 10.6 miles from the project site. The DEIS fails to specifically identify these wells/rights and their location.

The proposed project will employ a "hybrid cooling system", and together with the water needed for steam cycle makeup, mirror washing and dust control would require an estimated 600-854 acre-feet per year, all to come from groundwater wells.

The Center is concerned about the ability of this overdrawn basin to supply the water needs without impacting biological and spring resources within and adjacent to the basin. Alternatives that consume less groundwater should be evaluated and, in particular, the applicant must assess dry cooling as an alternative. Additionally the proponent should be required to purchase and retire water rights in excess of their own needs to bring the basin into a better balance in order to protect biological and hydrologic resources.

Response 23-E

Water rights have been negotiated from a current state water-rights holder north of the proposed project. BLM will not issue a NTP until verification of water rights is received from Nevada Division of Water Resources (NDWR).

The BLM determined that the project water use would not cause undue or unnecessary degradation; the project is in compliance with approvals from the NDWR and does not affect the overall water balance of the Lower Smoky Valley hydrographic basin.

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5.0 Errata to the Draft Environmental Impact Statement

The errata section of this FEIS illustrates the BLM's revisions to the DEIS. The revisions have been developed from either comments received or BLM's internal review of the DEIS. ~~Strike-outs~~ indicate that text has been removed for the FEIS. **Bold** indicates that text has been added or revised for the FEIS.

Executive Summary

Page xxi – Vegetation
Construction activities associated with the Proposed Action ~~Alternative~~ would result in direct effects, including the removal of topsoil and vegetation within the project areas during grading activities.

Page xxii – Special Status Species (Wildlife)
~~A porous screen will cover~~ Active management of the ponds ~~so~~ will help ensure that **migratory birds, pale kangaroo mice, and all other wildlife** are excluded from the pond.

Page xxiii – Cultural
Development of the Proposed Action ~~Alternative~~ would impact four historic properties.

Page xxiv – Social Economics
Through direct and indirect impact, approximately ~~1,500~~ 450 jobs would be created, $140 million of personal income would be added to the State of Nevada annually, and $160 million would be added to the gross state product annually during the peak of construction.

Page xxv – Hazardous Materials and Other Waste
The construction activities associated with the proposed project will result in an increase**d** risk of accidental hazardous material spills from vehicles and heavy equipment. These risks will be mitigated with the implementation of operational plans and best management practices. ~~Start-up and operation of the facility will involve large volumes of heated molten salt, which if released, could be harmful to the local natural resources within the project footprint.~~

1.0 Introduction and Purpose and Need

Page 1-3, 1.3 Project Location
TL, Substation and Construction Power Line (N-87933, N-89273, N-89272) ~~**TL and Substation (N-87933)**~~

2.0 Alternatives Including the Proposed Action

Page 2-4, 2.2 Project Background
The annual average direct normal solar resource for this site averages **7.34 kiloWatt-hours (kWh)** ~~7.4 Watt-hours (Wh)~~ per square meter (m^2) per day.

Page 2-7, 2.5.2 Project Component Summary, Generating Facility Components

1. Solar Array (Figure 2-5) – The array would consist of a circular field encompassing an area with a radius of 4,300 feet (approximately ~~330~~ 1,330 acres) where the heliostats (or mirrors) would be located.
2. Reverse Osmosis Water Treatment System and Evaporation Ponds – These facilities would purify the groundwater to be used in the production of electricity **and to provide a means of wastewater disposal through evaporation.**

Page 2-8, Figure 2-4, Central Receiving Tower

Crane height is **15** feet, not ~~20~~ feet, and the cylindrical receiver should be **100** feet not ~~95~~ feet.

Page 2-11, 2.5.2 Project Component Summary, Major Electrical Systems and Equipment

3. Lighting Systems – The lighting system for the facility would be limited to those areas required for safe operation of the facility. Where lighting is required, it would be designed and installed to minimize visual impacts **(including impacts to night skies)** in the region. **Additionally, perimeter lighting, including lighting used to illuminate walkways, roadways, equipment yards, and parking lots would be fully shielded, low-pressure sodium lighting to reduce or eliminate detrimental lighting impact and prevent unnecessary light pollution and usage.**

Page 2-21, 2.5.2 Project Component Summary, Water Sources and Water Demand

4. Water Sources – ~~Approximately 854 AFY of existing water rights in the basin would be acquired and used for this project, subject to approval from the Nevada Division of Water Resources (NDWR).~~ Water used by the proposed project would not exceed 600 acre-feet per year. The projects water needs will be met through the acquisition of existing waters rights from within the Lower Smoky Valley **Hydrographic** ~~water~~ basin and would not require allocation of any new water rights.

Page 2-23, 2.5.3.1.3 Power Block

The primary components of the power block include (see Figure 2-6):

5. ~~Solar~~ Steam Generator System – The steam generator would be the core of the steam supply system for the power block. The steam generator system would include a preheater, evaporator, superheater, reheater, and steam drum. High-pressure feedwater would enter the steam generator from the preheaters and would leave as saturated steam that subsequently flows to the superheaters.

Page 2-24, 2.5.3.1.3 Power Block

6. ~~Solar~~ Preheater – The solar preheaters would have a shell and tube design. High-pressure feedwater would enter the preheaters from the low-pressure feedwater heaters and would leave as high-pressure feedwater.

Page 2-24, 2.5.3.1.3 Power Block

7. ~~Solar~~ Superheaters/Reheaters – The saturated steam would flow to a shell and tube superheater to reach the desired steam-turbine temperature and pressure-operating conditions.

The reheater would receive "cold" outlet steam from the high-pressure turbine stage and reheat the steam before being reintroduced into the intermediate-pressure stage of the turbine.

Page 2-28, 2.5.3.3 Construction Power Supply

A ~~60~~ 55 kV power line is located adjacent to and west of the existing Millers to Anaconda TL. This power line is owned and operated by NV Energy and would be used to provide a source of temporary power for construction and for a backup to auxiliary plant/house power load requirements. A separate overhead power line would be installed adjacent to the project TL to deliver power from this ~~60~~ 55 kV line to the plant site. Transformers would be installed to step down the power to the voltage necessary for use.

Page 2-28, 2.5.3.4.1 Interconnection

The anticipated pole configuration used for the new TL would be a ~~steel "mono" pole or~~ H-frame **wood structure, as shown** ~~; a H-frame structure is shown~~ on Figure 2-9.

Page 2-33, 2.5.3.5.7 Evaporation Ponds

…..near the site. When ponds are filled with water, ~~a porous screen would cover the entire pond~~ **hazing and other deterrents will be utilized as part of the adaptive management** so that wildlife would not be attracted to the water surface. Additional information on the design and operation of the evaporation ponds is provided in the Wastewater Plan (WorleyParsons 2010b).

Page 2-34, 2.5.4.2 Construction Process and Conceptual Schedule

Construction of the generating facility, from site preparation and grading to commercial operation, would be expected to take approximately 30 months. Typically, construction would be scheduled to occur between 5 a.m. and 7 p.m. on weekdays and Saturdays (approximately ~~14~~ 10 hours per day, ~~6~~ 5 days per week).

Page 2-34, 2.5.4.2 Construction Process and Conceptual Schedule

Therefore, preparations may take place overnight to ready the facility for start-up tests the following day, when the sun would provide the energy to power the start-up testing. **A conceptual construction schedule is presented in Table 2-1.**

Page 2-40, 2.5.7 Land Ownership and Mining Claims

During the analysis, ~~three~~ **five** mining claims had been filed (April 2010) in Section 34 of the TSE ROW application area **(Alternative 2)**. **Additionally, mining claims were filed along the proposed transmission line ROW** ~~Several other existing mining **claims** exist along the transmission route~~ (Figure 2-1 **and 2-2**) **and on the borrow pit area**. **John O. Rud, as authorized representative for the group of individuals that filed placer claims on the gravel pit, have no objection to the disposal of mineral materials per the letter received on July 26, 2010. A copy of this letter is available upon request.**

Page 2-43, 2.5.8 Hazardous Materials Management, Table 2-4

Mineral oil quantity on site is **30,000 gallons** (not ~~100,000 gallons~~)

Page 2-45, Fire Protection

The project would rely on both on-site fire protection systems and off-site fire protection services during both construction and operation of the facility. **On-site fire protection by trained TSE staff will be the primary response. Because the off-site fire departments are pure volunteer departments, their response would strictly be as emergency back-up.**

2.5.10 Applicant-Committed Environmental Protection Measures Page 2-47, Vegetation
The Proponent has developed a Preliminary Weed Risk Assessment and will develop Weed Management Plan (WMP) for the project **(see Appendix G—Weed Management Plan)**.

Page 2-48, Wildlife Resources
Some wildlife such as small mammals and reptiles may still access the ponds, so ponds will be equipped with materials **(such as geo-strips or ramps)** in each corner that would provide trapped wildlife with sufficient traction to be able to exit the ponds. Additional mitigation is described in Section 4.5.11. **and in Appendix E--BLM Wildlife Mitigation and Monitoring Plan.** ~~Mitigation would be further developed in coordination with NDOW as part of the Industrial Artificial Pond Permit.~~

Page 2-48, Special Status Wildlife Species
Mammals: Pale Kangaroo Mice and bats
~~A mitigation plan is being developed between TSE, BLM, and NDOW. Mitigation would include raptor deterrent mechanisms on TLs and any vertical structures that could promote raptor predation. In addition, the proponent may undertake additional studies of the Pale Kangaroo mouse during construction, in coordination with NDOW.~~ **The BLM Wildlife Mitigation and Monitoring Plan was developed in coordination with NDOW and includes mitigation for pale kangaroo mice, bats, and migratory birds (Appendix E)**

Golden Eagles and Migratory Birds
~~A golden eagle monitoring plan for known nest locations would be developed between BLM, NDOW, and USFWS.~~ **An Avian and Bat Protection Plan (ABPP) has been developed by the proponent and the USFWS; BLM has adapted mitigation measures that are in Appendix E-Wildlife Mitigation and Monitoring Plan.**

~~In order to mitigate potential effects of TLs on birds, all static TLs would be marked with wire marks. This should make the static lines easier to see and reduce bird/wire collisions.~~ In order to minimize potential bird electrocutions, TL wires would be spaced to accommodate the wingspan of the largest bird in the project area. **Detailed mitigation is presented in Appendix E-BLM Wildlife Mitigation and Monitoring Plan. Additionally, mitigation to migratory birds and golden eagles will be negotiated between TSE and USFWS. The BLM will not issue TSE at Notice to Proceed until the Tonopah Field Office receives a concurrence letter from USFWS on TSE's Avian and Bat Protection Plan.**

Page 2-49, Water Quality and Quantity
Facility water needs are estimated to be less than the anticipated maximum water right quantity to be acquired and would not negatively affect or alter the appropriation of groundwater. **A groundwater monitoring plan for the project is presented in Appendix F—Groundwater Monitoring Plan.**

Page 2-50, Evaporation Ponds
Evaporation ponds would be ~~covered with a porous screen, that would allow for evaporation, but also act as an avian deterrent~~ **subject to the adaptive management plan, which will incorporate hazing and other methods that will act as an avian deterrent (See Appendix E-BLM Wildlife Mitigation and Monitoring Plan). Additionally, NDOW will require TSE to**

obtain and comply with an Artificial Industrial Pond Permit, which will detail wildlife protection measures.

Page 2-50, Cultural Resources
Further archaeological data collection will be needed to mitigate the adverse impacts to historic properties. A Historic Property Treatment Plan (HPTP) ~~is being~~ **has been** developed by TSE. The HPTP will list all historic properties to be adversely affected by the project and specify and describe in detail the mitigation measures—site avoidance, testing, data recovery, or monitoring—to be implemented prior to and/or during construction.

Page 2-54, Hazardous Materials
During facility operation, various hazardous materials and one regulated substance will be stored onsite as shown in Table 4-23. Material Safety Data Sheets (MSDS) for the chemicals likely to occur on site during operation of the proposed Project can be found in the **Plan of Development (**POD**)** (Tonopah Solar Energy 2009).

3.0 Affected Environment

Page 3-23, 3.4.1.3 Affected Environment
The field surveys did not identify any BLM sensitive plant in the Proposed Area during the May 2009 field surveys. However, in the 2010 surveys of the Alternative Area, Nevada oryctes (*Oryctes nevadensis*), a BLM sensitive species, was found to be widespread throughout the Inter-Mountain Basins Mixed Salt Desert Scrub vegetation association, where the dominant shrub cover was Nevada dalea (*Psorothamnus polydenius*) and the soils were Stumble Loamy fine sand 0-8 percent slopes (STC) (Figure 3-5 and Figure ~~3-14~~ **3-15** in Section ~~3.8~~ **3.10**, Soils).

Page 3-25, 3.4.1.3.2 Alternative Area
Because of the number of plants observed in the area, a detailed count of the plants was not obtained, but the boundary of the area within which the plants were observed was mapped (Figure 3-5, and Figure ~~3.15~~ **3.16** in Section ~~3.8~~ **3.10**, Soils).

Page 3-25, 3.4.1.3.3 Borrow Pit
One cactus was found in proposed borrow pit. No other BLM sensitive species or associated habitat or soils were found throughout the borrow pit area (Figure ~~3.16~~ **3.17** in Section ~~3.8~~ **3.10**, Soils).

Page 3-25, 3.4.1.3.4 TL and Anaconda Moly Substation
In 2009, one Nevada oryctes plant was found within the TL and Anaconda Moly Substation corridor ~~(Figure 3-5).~~

Page 3-37, 3.5 Water Quality and Quantity
Groundwater CESA – The 1-foot, 53-year draw-down contour for the proposed groundwater well (Figure 3-10). The CESA for groundwater resources was developed using a ~~numerical~~ analytical model developed by WorleyParsons (WorleyParsons 2010c) in cooperation with the BLM Nevada State Office. The full report is available at the BLM TFO for review.

~~It is estimated that only 600 AFY would be needed for facility operations.~~ **Water used by the proposed project would not exceed 600 AFY. The water rights needed for the proposed**

project would be obtained by acquiring existing water rights within the Lower Smoky Valley and would not require allocation of new water rights.

Page 3-39, 3.5 Water Quality and Quantity

There are many springs and seeps within the Tonopah Flat (137A) hydrographic basin (Figure ~~3-11~~ **3.10**).

Page 3-39, 3.5 Water Quality and Quantity

Historical groundwater consumption in the undeveloped Tonopah Flat subarea is attributed to agriculture water use. This includes irrigation of crop and pasture land and stock watering. Current ~~groundwater consumption is~~ **subsurface water rights are** summarized in Table 3-15.

Page 3-39, 3.5 Water Quality and Quantity

Table 3-15. ~~Current groundwater consumption in the Tonopah Flat subarea~~ Current Subsurface Water Rights

Page 3-82, 3.5 Water Quality and Quantity

The most recent data on housing conditions and mortgage costs indicate that median housing conditions in Nye County are generally about 60 percent less than for the state of Nevada as a whole (Table ~~3-34~~ **3-33**).

Page 3-64, 3.9.3.1 Affected Environment

The Tonopah RMP identifies the project area as having "low" mineral potential. The only known historical hard rock mineral development is in the San Antonio Mineral District located approximately nine (9) miles north of the current Preferred Alternative location. A former copper operation, with a known molybdenum deposit, known as the "Hall Mine," operated in the mid-to late 1980s at this location. It is currently owned by General Moly Corporation.

Within the proposed Crescent Dunes Alternative 2 area, the only known hard rock mining "activity" is the mining claims for lithium filed in April 2010. No actual hard rock or other potential mining activities, including leasable/saleable activities, have occurred in the Proposed Action or Alternative areas.

Page 3-64, 3.9.3.1.2 Alternative Area

As of April 2010, mining claims comprise approximately 460 acres out of 3,800 acres in this alternative area (Figure 2-1).

Table 3-22. Authorized and Pending BLM ROWS **and Mining Claims** within the Alternative Area.

Area of Analysis	U.S. Bureau of Land Management Serial Number	Status	Description
Alternative Area	N-~~0~~86292	Pending	Crescent Dunes Solar Energy Project, by Tonopah Solar Energy, LLC
Alternative Area	**N-89272**	**Pending**	**Tonopah Solar Energy, LLC**
Alternative Area	**N-89273**	**Pending**	**Tonopah Solar Energy, LLC**
Alternative Area	N-~~0~~33242	Authorized	Right-of-way (ROW) – power transmission, by Sierra Pacific Power Company (now NV Energy)
Alternative Area	N-~~0~~40052	Authorized	ROW – water facility, by federal government
Alternative Area	N-88177	Authorized	ROW – test well for Crescent Dunes Solar Energy Project, by Tonopah Solar Energy, LLC
Alternative Area	**NMC1022994 (FM#68) NMC1022995 (FM#69) NMC1022996 (FM#70) NMC1022997 (FM#71) NMC1022998 (FM#72)**	**Active**	**Placer claims (FM) – Nevada Alaska Mining Co Inc., Robert Craig, Barbara Anne Craig, Elizabeth Dickman**

Page 3-65, 3.9.3.1.4 TL and Anaconda Moly Substation

As of April 2010, mining claims in the TL ROW comprise approximately 54 acres out of the 180 acres in the proposed TL ROW (Figure 2-1).

While the Tonopah RMP indicates that mineral potential of the Proposed Action and Alternative Area is low, it is conceivable minerals other than lithium and/or other hard rock or leasable minerals may exist in the area. With the low potential for minerals, however, and the lack of development efforts in the proposed project area, possible impacts to mining in general are considered minimal.

Page 3-87, 3.11.3.1 Proposed Area

Public Water Supply and Wastewater

There are few public water supply systems in the project area. The majority of water users rely on individual wells. Tonopah Public Utilities manages public water supply **and wastewater** systems near the project area (Economic Development Authority of Nye County 2010).

Page 3-93, 3.12.3.2 Project Setting

The project area is located in ~~northeastern Esmeralda County and southwestern~~ **western** Nye County and lies in Gabb's Valley Range north of SR 95 and south of the Humboldt-Toiyabe National Forest.

Page 3-94, 3.12.3.3.1 KOP 1 – Crescent Dunes SRMA

KOP 1 is within the SRMA (the view faces ~~north toward the Anaconda Moly Substation~~ **southwest towards Miller's rest stop**). From this vantage point, high-relief mountains are visible for nearly 180 degrees from north to south (Photograph 1).

Photograph 1 caption - View from KOP 1 faces ~~north toward the Anaconda Moly Substation~~ **southwest toward Miller's Rest Stop**

Page 3-105, 3.15.1 Area of Analysis and Methodology

To assess the existing condition of recreation and wilderness, the locations of national forests, wilderness areas, wilderness study areas, hunting units, campgrounds, and SRMAs were reviewed and are illustrated on Figures 3-21 and 3-22. In addition, these resources were evaluated within a ~~10-mile~~ **25-mile** radius of the project area to assess potential cumulative effects (Figure 3-22~~). Additionally, the~~ **The** Statewide Comprehensive Outdoor Recreational Plan, hunter information sheets, and NDOW Big Game Statistics were reviewed to identify recreational opportunities within the project area.

In addition to the above information, the BLM conducted a wilderness characteristics study report (BLM 2010g), to document the current wilderness status in the project area. A summary of findings and conclusions from the wilderness inventory findings show the area meets size requirements for wilderness. However, the area does not appear to be natural and does not offer outstanding opportunities for solitude or a primitive and unconfined type of recreation. The area is bordered to the south by the Gabbs Pole-Line road, to the north and west by another developed road, and to the east by the Crescent Dunes. Recreational OHV use occurs on the dunes, as well as camping in an area at the base of the dunes.

Several ROWs in the area include power lines, pipeline, range improvements, and additional 2-track roads.

4.0 Environmental Consequences

Page 4-15, 4.2.9 Mitigation

In addition to fencing that would exclude larger wildlife, the evaporations ponds would be ~~covered with a porous screen, which would allow evaporation but exclude wildlife (i.e. birds, mice and bats)~~ **subject to the adaptive management, which will incorporate hazing and other methods that will act as an avian deterrent,** additional mitigation is described in Section 4.5.11. Mitigation, **and in Appendix E—BLM Wildlife Mitigation and Monitoring Plan**~~. would be further developed in coordination with NDOW as part of the Industrial Artificial Pond Permit.~~

Page 4-23, 4.4.2.2 Operation

Golden Eagles and Migratory Birds

Additionally, birds that utilize the water may experience a build-up of sodium crystals in their feathers, resulting in a reduction of the feathers' thermoregulatory properties **or oily properties**, causing the birds to die of hypothermia during cold weather or **drown, respectively** (USFWS 2009b, 2010). **Adaptive management would be implemented in accordance with**

the mitigation measures shown in the BLM Wildlife Mitigation and Monitoring Plan (Appendix E)., ~~A porous screen would cover the evaporation ponds this~~ minimizing/eliminating these effects on golden eagles and migratory birds.

Page 4-34, 4.5.1 Methods

The **Groundwater Resources Evaluation report outlines the data and methods used to assess the potential effects of water use for construction and operation of the proposed project, including the effect of diverting water currently in use for agricultural irrigation to the project site for industrial use. The current agricultural water usage occurs approximately 10.6 miles to the northeast of the project location.** ~~report outlines the data and methods used to assess the potential effects of water use for construction and operation of the proposed project, including the effects from the original point of diversion, which was located approximately 10.6 miles northwest of the project site(s).~~ The location of the final point of diversion would be within the project area boundary based on the alternative chosen.

Page 4-35, 4.5.2.1 Construction

Construction describes the drawdown and well interference effects for the 3 years of construction and the 50 year operational life (total 53 years). For purpose of water impacts during construction, the analysis used the impacts derived from the operational water consumption of 600 AFY.

Page 4-38, 4.5.2.1 Construction

Currently, these ephemeral streams lose definition before reaching Peavine Creek, as shown in Figure ~~3-7~~ **3-10**.

Page 4-65, 4.7.2.1 Construction

Indirect Effects

Any existing property eligible for listing on the NRHP would be ~~salvaged~~ **mitigated** prior to construction; therefore, no indirect impacts are associated with construction of the project.

Page 4-65, 4.7.2.2 Operation

Direct Effects

Any existing property eligible for listing on the NRHP would be ~~salvaged~~ **mitigated** prior to construction; therefore, no direct impacts are associated with operation of the project. Undiscovered historic properties could be directly affected by operation of the facility.

Indirect Effects

Any existing property eligible for listing on the NRHP would be ~~salvaged~~ **mitigated** prior to construction; therefore, no indirect impacts are associated with operation of the project.

Page 4-66, 4.7.3.1 Construction

Indirect Effects

Any existing property eligible for listing on the NRHP would be ~~salvaged~~ **mitigated** prior to construction; therefore, no indirect impacts are associated with construction of the project.

Page 4-66, 4.7.4.1 Construction

Indirect Effects

Any existing property eligible for listing on the NRHP would be ~~salvaged~~ **mitigated** prior to construction; therefore, no indirect impacts are associated with construction of the project.

Page 4-66, 4.7.4.2 Operation

Direct Effects

Any existing property eligible for listing on the NRHP would be ~~salvaged~~ **mitigated** prior to construction; therefore, no direct impacts are associated with operation of the project. Undiscovered historic properties could also be directly affected by operation.

Page 4-67, 4.7.4.2 Operation

Indirect Effects

Any existing property eligible for listing on the NRHP would be ~~salvaged~~ **mitigated** prior to construction; therefore, no indirect impacts are associated operation of the project.

Page 4-70, 4.9.2.1 Construction

The Proposed Action would have no direct effects to the authorized and pending BLM rights-of-way identified in Table 3-21 and presented in Figure ~~3-11~~ **3-14**.

Page 4-73, 4.9.4.1 Construction

As with the Proposed Action, Alternative 2 would have no direct effects to the authorized and pending BLM rights-of-way identified in Table 3-21 and presented in Figure ~~3-11~~ **3-14**.

During the preparation of this FEIS, no notices of intent for exploration, exploration plans of operations, or plans of operation have been submitted for mineral exploration or mine development identified in Chapter 3 Section 3.9.3.1; therefore, no direct effects could be identified.

Page 4-74, 4.9.4.2 Operation

During the preparation of this FEIS, no notices of intent for exploration, exploration plans of operations, or plans of operation have been submitted for mineral exploration or mine development identified in Chapter 3 Section 3.9.3.1; therefore, no direct effects could be identified.

Page 4-74, 4.9.5.1 Construction

The TL and substation would have no direct effects to the authorized and pending BLM rights-of-way identified in Table 3-21 and presented in Figure ~~3-11~~ **3-14**.

During the preparation of this FEIS, no notices of intent for exploration, exploration plans of operations, or plans of operation have been submitted for mineral exploration or mine development identified in Chapter 3 Section 3.9.3.1; therefore, no direct effects could be identified.

Page 4-75 4.9.5.2 Operation

During the preparation of this FEIS, no notices of intent for exploration, exploration plans of operations, or plans of operation have been submitted for mineral exploration or mine development identified in Chapter 3 Section 3.9.3.1; therefore, no direct effects could be identified.

Page 4-84, 4.11.2.1 Construction

As a backup to the on-site services, the Tonopah Fire and Emergency Medical Services have 14 emergency medical technicians and 3 ambulances, which are backed up by a **two** volunteer hazardous materials ~~team~~ **teams** from Tonopah and Round Mountain.

Page 4-106, 4.12.9 Mitigation

Mitigation measures would include color treating the buildings located on site ~~the backs of the solar panels, and the central receiving tower~~ to a BLM-approved color that blends into the surrounding landscape. Subsequent to construction, restoration efforts would be made in areas that were temporarily disturbed.

Page 4-109, 4.13.2.2 Operation, Table 4-25

Add footnote: standard cubic foot (scf), Pound(s) (lb), Gallons (gal)

Page 4-132, 4.19.5 Reasonable Foreseeable Future Actions

Potential Mining Activities: Potential mining activities are identified in sections 3.9.3.1 and 3.9.3.2. As described in section 4.9 Land Use and Access, no notices of intent for exploration, exploration plans of operations, or plans of operation have been submitted for mineral exploration or mine development on the preferred alternative site (Alternative 2). However based upon concerns that after project construction a plan of operation for mining development could be submitted within the Alternative 2 project area and TL ROW, the BLM has decided to analyze the potential for development of these lithium mining claims.

Additional future mining claims filed after the ROW is granted would have to wait until the ROW expired to conduct surface-disturbing activities. Mineral extraction that did not involve surface-disturbing activity could operate contemporaneously with the ROW grant.

The Alternative 2 project area is located in a very broad alluvial fan in the Lower Smoky Valley. The alluvium is many hundreds of feet thick; and as such provides potential access to numerous saleable minerals areas such as sand and gravel (Worley Parsons 2010a). Closing the approximately 1,600 acres of the Alternative 2 project area by constructing the Crescent Dunes Solar project is unlikely to limit access to a multitude of additional saleable minerals outside the project area.

That stated, there has been some recent interest in lithium, a mineral. As such, the possible impacts to development to the lithium mineral resource are addressed to identify the specific impacts that could result from the development of the proposed project.

Impacts to the development of potential lithium mineral resources may vary depending on how development of the resource occurs. For example, mining of a lithium resource found under the proposed project could occur <u>outside</u> of the Project ROW by:

1) **down hole drilling (i.e. non-directional or non- slant drilling) and removal of any lithium bearing groundwater; or**
2) **through directional (slant) drilling/extraction of any lithium bearing ground water from under the project;**

Utilizing these techniques, impacts to the lithium resource would be slightly different than if mining of the lithium resource found under the proposed project requires on-site mining techniques. The two different development options and associated impacts are discussed below.

Should mining be proposed <u>on site</u>:

1) **after construction of the solar project is complete:**
    a) **460 acres of the northern portion of the Alternative 2 project area could be affected leading to overall decreased efficiency of power generating capabilities. This could potentially lead to less electrical production and/or result in TSE closing the project due to lower profit margins. This would be a significant impact for the project;**
    b) **Since the wells needed for lithium production are relatively small, it may be possible that co-location of the lithium wells, and thus mining could exist within the Alternative 2 project area and not affect the solar operations. This would require an agreement between TSE and the mining claim owners. Should such an agreement be reached, it is possible that the solar project and the lithium well portion of a lithium mine could occupy the Alternative 2 project area without impacts to each other's operations.**
    c) **Lithium mining has two phases: water withdrawal and evaporation/processing. Under this scenario, the evaporation ponds and any processing plants for the lithium mining could be operated outside the Alternative 2 boundary but the lithium wells would co-located within the Alternative 2 fenced area; thus, both projects could proceed simultaneously. This scenario would not be considered a significant impact to the Alternative 2 project;**

2) **After construction of the TL:**
    a) **It is likely the TL would have to be partially rerouted around the lithium operation; or**
    b) **Completely rerouted around the lithium operation.**

The effects of the Alternative 2 and TL on any proposed lithium mining would be:

a) **if directional drilling off-site of the project site is not possible, (i.e. the lithium well/s <u>must</u> be located on the project site) the number of wells and/or location of the wells would be limited due to the space taken up by solar facilities. This could be an impact to lithium production in**

both time and volume. This could be a significant impact to the lithium mine project.

b) Any evaporation ponds and/or lithium processing plants would most likely need to be placed off-site of the solar project site potentially leading to higher lithium production costs; lower profits, and/or making the lithium mining project un-profitable. If the lithium project could not be operated profitably, it would be a significant economic impact to the operator; but not a significant impact to the natural or cultural resource environment.

c) If the lithium wells and processing facilities (i.e. evaporation pond/s and processing plant) had to be located on the TL ROW, the valid existing right (i.e. the mining claims) would take precedent, and the TL would need to be relocated where the TL would not affect the lithium mining operation; or

d) the TL design is modified, the TL remains in place and the evaporation ponds constructed "around" the TL structures through use of a "bulkhead", separating the TL structures from the lithium brine solution.

e) If "d" above were to occur, the wells could:

1. **be constructed and operated within the TL ROW (if there was sufficient electrical insulating distances from the TL);**
2. **or just outside the TL ROW since the ROW is only 150 feet wide**
3. **and the processing plant would also be located outside the ROW;**

In this scenario, the TL could coexist with the lithium mining operation; therefore, no significant impacts to the lithium mining operation would occur.

f) Assuming that NV Energy or TSE agree, TSE electric power from the project could be sold directly to the lithium operation, providing benefits to both operations.

<u>Page 6-1, List of Preparers</u>

An updated list of preparers has been included in Appendix H.

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6.0 Additional References

BLM 2010g. *Wilderness characterization study.* Tonopah Field Office.

Stone, Richard. 2008. *Have desert researchers discovered a hidden loop in the carbon cycle?* Science. 320:5882

U.S. Environmental Protection Agency. 2010. *Future precipitation and storm changes.* Site accessed October 29, 2010, at <http://www.epa.gov/climatechange/science/futurepsc.html>

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Appendix A: Comment Period Materials

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Being first duly sworn, deposes and says: That as the legal clerk of the Reno Gazette-Journal, a daily newspaper of general circulation published in Reno, Washoe County, State of Nevada, that the notice referenced below has published in each regular and entire issue of said newspaper between the dates: **09/07/2010 - 09/07/2010**, for exact publication dates please see last line of Proof of Publication below.

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Signed: _____

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NOTICE BLM Seeks Comments on the Tonopah Solar Energy Crescent Dunes Project Tonopah, Nev.- The Bureau of Land Management (BLM) is asking the public to review and comment on a Draft Environmental Impact Statement addressing a proposed solar energy facility known as the Crescent Dunes Solar Energy Project, proposed near Tonopah in Nye County. A notice published in the Federal Register on Sept. 3 opens a 45-day comment period which will close on October 18, 2010. Comments may also be submitted at public meetings to be held: Wed., Sept. 22, (6 p.m. - 8 p.m.), Southern Nevada District Office, 4701 N. Torrey Pines Drive, Las Vegas, Nev. Thursday, Sept. 23, (6 p.m. - 8 p.m.), Tonopah Convention Center, 301 Brougher Ave., Tonopah, Nev. Tonopah Solar Energy is seeking approval to construct and operate an electrical generating facility with a nominal capacity of 100 megawatts. The proposed facility would operate for about 30 years. The proposed project would use a concentrated solar power technology, which utilizes heliostats with mirrors to redirect sunlight on a central receiver erected in the center of a solar field. Mail written comments to the Renewable Energy Project Manager, BLM Tonopah Field Office, P.O. Box 911, Tonopah, NV 89040, by e-mail to: crescent_dunes@blm.gov, or by fax to: 775-482-7810. The Draft Environmental Impact Statement may be viewed on the BLM Battle Mountain District web site

at: http://www.blm.gov/nv/st/en/fo/battle_mountain_field.html. Comments will be made available to the public; therefore, personal identifying information such as addresses, phone numbers, and e-mail addresses may be withheld. For more information, please call Timothy Coward, at 775-482-7830, or timothy_coward@blm.gov. -BLM- No. 721692 Sept 7, 2010

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TAKE PRIDE IN AMERICA

In Reply Refer To:
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DOI-BLM-NV-B020-2009-0104-EIS
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AUG 3 1 2010

Dear Interested Parties,

The Bureau of Land Management (BLM) Battle Mountain District, Tonopah Field Office (TFO) is seeking to identify issues and concerns in the Draft Environmental Impact Statement (DEIS) for the proposed Tonopah Solar Energy, LLC Crescent Dunes Solar Energy Project in Nye County, Nevada. The DEIS analyzes the direct, indirect, and cumulative impacts associated with the proposed construction and operation of the Crescent Dunes Solar Energy Project.

Tonopah Solar Energy, LLC submitted a Right-of-Way application and a Plan of Development to the BLM's Tonopah Field Office for the construction and operation of a proposed solar power generation facility, associated transmission facilities, and access roads. This solar power generation facility would have a net generating capacity of up to180 megawatts (MW) of electricity based on concentrating solar power technology. The proposed plant, including the heliostat array, power block, and associated facilities would use approximately 1,600 acres of BLM-managed public lands northwest of Tonopah, Nevada.

The proposed project would be designed for a life span of 30 years. Construction of the generating facility, from site preparation and grading to commercial operation, would be expected to take approximately 30 months.

Interested parties may request a copy of the DEIS and be a part of this planning process. You may request a copy of the DEIS by submitting written comments to the Bureau of Land Management, Tonopah Field Office, Attn: Tim Coward, Renewable Energy Program Manager, Tonopah Field Office, 1553 South Main Street, P. O. Box 911, Tonopah, Nev. 89049; by fax (775) 482-7830 (attention: Tim Coward); or e-mail to: crescent_dunes@blm.gov.

Copies of the DEIS will be made available to the public at the Tonopah Field Office located at 1553 South Main Street, P.O. Box 911, Tonopah, Nev. 89049.

As the start of the 45-day scoping process, a Notice of Availability (NOA) of the DEIS will be published in the Federal Register on September 3, 2010. The NOA and DEIS can also be viewed or copied on the web at the following address: www.blm.gov/nv/st/en/fo/battle_mountain_field.html.

Two Open House public meetings have been scheduled to provide further public involvement. The meetings will be held on Wednesday, September 22, 6-8 p.m. in the BLM Southern Nevada District

Office in Las Vegas, 4701 N. Torrey Pines Dr., Las Vegas, Nevada; and Thursday, September 23, 6-8 p.m. at the Tonopah convention Center, 301 Brougher Ave., Tonopah, Nevada. Representatives from Tonopah Solar Energy, LLC and the BLM will be present to answer questions.

Comments should be postmarked or otherwise delivered to the Tonopah Field Office by close of business, October 18, 2010 to ensure full consideration.

Before including your address, phone number, e-mail address, or other personal identifying information in your comment, you should be aware that your entire comment, including your personal identifying information, may be made publicly available at any time. While you can ask us in your comment to withhold your personal identifying information from public review, we cannot guarantee that we will be able to do so.

A Final Environmental Impact Statement (FEIS) will be prepared that will consider the comments received during the public review and comment period.

Federal, State, and local agencies, as well as individuals or organizations that may be interested in or affected by the BLM's decision on this project, are invited to participate in the scoping process.

Any questions regarding this proposed project may be directed to Timothy Coward, Renewable Energy Program Manager at (775) 482-7800.

Sincerely,

Thomas J. Seley
Field Manager

UNITED STATES DEPARTMENT OF ENERGY
LOAN GUARANTEE PROGRAM

CRESCENT DUNES/TONOPAH SOLAR ENERGY PROJECT
PUBLIC MEETING HANDOUT
SEPTEMBER 22 & 23, 2010
LAS VEGAS & TONOPAH, NEVADA

Loan Guarantee Program Overview

Title XVII of the 2005 Energy Policy Act, *Title XVII: Incentives for Innovative Technologies,* authorizes the U.S. Department of Energy (DOE) to issue loan guarantees to energy projects that avoid, reduce, or sequester air pollutants or anthropogenic emissions of greenhouse gases, provide a reasonable assurance of repayment, and employ new or significantly improved technologies as compared to technologies in service in the United States at the time the guarantee is issued. The American Reinvestment and Recovery Act of 2009 modified the loan guarantee program by creating the Section 1705 program for rapid deployment of renewable energy systems, electric power transmission, and leading edge biofuels projects.

DOE and the NEPA Process for the Proposed Tonopah Project

The National Environmental Policy Act (NEPA) requires Federal agencies to conduct an assessment of the environmental effects of their proposed actions prior to making a decision whether to undertake the action. The major purpose of NEPA is to help agencies make better informed decisions and allow for citizen involvement.

Tonopah Solar Energy, LLC filed an application to the U.S. Bureau of Land Management (BLM) for a land use right-of-way pursuant to the Federal Land Policy and Management Act (FLPMA) of 1976, which authorizes BLM to issue right-of-way grants for renewable energy projects. The issuance of this right-of-way grant is considered a major Federal action as defined by NEPA, and preparation of an environmental impact statement (EIS) was initiated by BLM.

Tonopah Solar Energy, LLC also applied to DOE for a loan guarantee pursuant to Title XVII of the Energy Policy Act. DOE is participating in the NEPA process with BLM as a cooperating agency to support DOE's decision-making on whether or not to issue a loan guarantee to Tonopah Solar Energy, LLC for the proposed project. While the Final Environmental Impact Statement (FEIS) is being developed, DOE will also be conducting a detailed technical and legal evaluation of the proposed project pursuant to its procedures for loan guarantees. DOE may reach agreement on a conditional commitment for a loan guarantee prior to completion of the FEIS and the BLM right-of-way grant; however, in that case a condition precedent would be included in the conditional commitment requiring that the NEPA review and the BLM right-of-way grant process be completed before DOE closes the loan guarantee transaction.

When the FEIS is completed and made available to the public by BLM, DOE will carry out an independent review to ensure that any DOE concerns with the Draft EIS were addressed and that the DOE proposed action is substantially the same as the action described in the FEIS. If these conditions are met, DOE will adopt the FEIS. If BLM concludes the NEPA process with a Record of Decision in favor of issuing the right-of-way grant, DOE will issue its Record of Decision indicating whether or not it intends to proceed to close the loan guarantee. DOE's decision will depend in part on whether the applicant has satisfied all the detailed terms and conditions contained in the loan guarantee conditional commitment and met all other contractual, statutory, and regulatory requirements.

Additional Information

DOE NEPA WEBSITE
www.gc.energy.gov/NEPA

LGPO WEBSITE
www.lgprogram.energy.gov

DOE NEPA CONTACT
Angela F. Colamaria
Phone: 202-287-5387
angela.colamaria@hq.doe.gov

TSE Crescent Dunes Solar Energy Project
DRAFT ENVIRONMENTAL IMPACT STATEMENT

SIGN-IN SHEET

PUBLIC REVIEW MEETING
Date: Wednesday, September 22, 2010
Time: 6pm–8pm
Location: BLM Las Vegas Field Office

Please Print

Name	Address, City, ZIP Code	E-mail
1. ROONEY WHISENHUNT	817 5TH ST, BOULDER CITY, NV.	ROONEY.WHISENHUNT @GCINC.COM
2. ~~Bob Gamble~~		
3. Bob Gamble	NWRPO, Nye County	rgamble@co.nye.nv.us
4. Mark Harris	PUCN, 1150 E. William St, Carson City NV 89701	mpharris@puc.nv.gov
5. RICHARD NELSON	7660 W. SAHARA AVE #150, LV 89117	RICHARD@BECNV.COM
6. Bill CADWALLADE	4430 Grissom Ave Nellis AFB,	William.CADWALLADER@NellisAF.mil
7. Greg Seymour	P.O. BOX 571675 LV NV 89157	
8. JOHN HIATT	8180 PLACID ST. L.V. NV 89123	hjhiatt@aol.net
9. Alex Dane	1660 Wynkoop St. Suite 850 Denver, CO 80202	alex_dane@tws.org
10. JON BELAK	1660 WYNKOOP SUITE 850 DENVER CO 80202	jbelak@tws.org
11. Don Reil	5222 Fiore Bella, LV	donneidlup@gmail.com
12.		
13.		
14.		
15.		

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NATIONAL SYSTEM OF PUBLIC LANDS

BLM

TSE Crescent Dunes Solar Energy Project
DRAFT ENVIRONMENTAL IMPACT STATEMENT

SIGN-IN SHEET

PUBLIC REVIEW MEETING
Date: Wednesday, September 22, 2010
Time: 6pm–8pm
Location: BLM Las Vegas Field Office

Please Print

Name	Address, City, ZIP Code	E-mail
1. MATT Lydon	10515 Laurelwood Lake Ave. LV. Nv. 89166	matt@local525.org
2. Jess Belton	346 Legacy Dr. Henderson	JBELTON@AOL.com
3. Sandra Fairchild	2020 Sunset Dr Henderson NV	sfairchild@epgaz.com
4. NEWTON DEBUDDELEBEN	2020 SUNSET DR " "	ndebuddeleben@epgaz.com
5. James Eason	P.O. Box 151 Tonopah, Nv. 89049	jeason@co.nye.nv.com
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TSE Crescent Dunes Solar Energy Project
DRAFT ENVIRONMENTAL IMPACT STATEMENT

SIGN-IN SHEET

PUBLIC REVIEW MEETING
Date: Thursday, September 23, 2010
Time: 6pm–8pm
Location: Tonopah Convention Center

Please Print

Name	Address, City, ZIP Code	E-mail
1. MICHAEL LACH	P.O. Box 1201 PAHRUMP NV	
2. Terry G Payne	P.O. Box 1027 Tonopah NV 89049	
3. Dave Haig	PO Box 334 Tonopah NV 89049	haigd05@yahoo.de
4. Kres Bishop	PO Box 1037 Sparks NV 89431	Kbishop@Gbisco[illegible]
5. Barb garvin	Box 44 Tonopah Nev 89049	
6. Ronald D. Kipp	POB 3154 TONOPAH NV 89049	arkipp@frontiernet.net
7. Ann E. McGaw	PO Box 3268 Tonopah NV 89049	
8. Hank & Jo Vanderpoem	PO Box 1765 Tonopah NV 89049	2
9. DOSE RAMIREZ	PO Box 1615 TONOPAH NV 89049	1
10. Sherrie Hall	PO Box 1304 Tonopah NV 89049	
11. Teralyn Blackburn	PO Box 109 Tonopah, NV 89049	
12. DUANE KRAMER	304 OCCIDENTAL DR. DAYTON, NV. 89403	
13. John Seymour	36 winter ST Reno NV 89503	JHSVC7@yahoo.com
14. Guy Sacco	P.O. Box 54 Tonopah NV 89049	guysacco@gummies.com
15. John Manzano	P.O. Box 3107	

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DRAFT ENVIRONMENTAL IMPACT STATEMENT

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Date: Thursday, September 23, 2010
Time: 6pm–8pm
Location: Tonopah Convention Center

Please Print

Name	Address, City, ZIP Code	E-mail
1. JAMES E. JOHNSON	10684 BRITTANY PARK DR, RENO, NV 89521	I.B.E.W #401
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Please Print

Name	Address, City, ZIP Code	E-mail
1. DANNY Costella	1110 GREG St, SPARKS, NV 89431	IW118@SBCGLOBAL.NET
2. Kelci Parks	PO BOX 1366	kparks@tonopahtimes.com
3. AMY & KEN MEIER	PO BOX 846, TONOPAH NV 89049	kpmeier@gmail.com
4. JP Higgins	8311 W Sunset Road LV NV 89118	higgins@solarmillennium.com
5. David Rios	1718 Woodhaven Ln Sparks, NV 89434	djrgps@live.com
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Location: Tonopah Convention Center

Please Print

Name	Address, City, ZIP Code	E-mail
1. CLAIR BLACKBURN	P.O. Box 109 TONOPAH	
2. Mike Whiteside	Po Box 1437 Tonopah	
3. Matt Lydon	10515 LAURELWOOD LAKE Ave LV. NV. 89166	matt@local
4. Chris Mulkerns	PO Box 3707 Tonopah	
5. RICHARD MORLEY	5441 SPANISH MOSS DR. SPARKS NV	rlm10669@yahoo.com
6. Ray Willcox	PO Bx 3098 Tonopah	
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Location: Tonopah Convention Center

Please Print

Name	Address, City, ZIP Code	E-mail
1. Randy Canale	1456 Winterwood Ave Sparks NV. 89434	rc350jate@live.com
2. Anna Whiteside	PO Box 3324 Tonopah NV 89049	annawhiteside_2@msn.c
3. Eric Woodman	P.O. Box 9114 Pahrump, NV 89060	ericw2@gwmail.gbxnv.ed
4. Michael Voegele	7404 Oak Grove Ave Las Vegas 89117	vvegele@hotmail.com
5. JONI EASTLEY	P.O. BOX 1729 TONOPAH	CASTLE@LNETT.COM
6. TERRY L RIVERO	P.O. Box 178 Tonopah	marinhlis@c.thlink.com
7. DENNIS MIGA	PO BOX 3268 TONOPAH	
8. Keith Ingram	2368 Melody Ln. Reno	
9. Jim Paulk	P.O. Box 33760 Reno NV 89533	nevadadiveguy@msn.com
10. STEVE WILBANKS	13193 MT. LOGAN ST. RENO NV 89506	STEVEW2KE@NVBELL.NET
11. Jess CABLTAC	1215 AUTUMN HILLS Dr. Reno NV.	
12. James EASON	P.O. 151 Tonopah, NV 89049	jeason@co.nye.nv.us
13. Ross Leisinger	P.O. 54 Tonopah, NV "	rossleisinger@aumines.com
14. Diane Peckham	P.O. Box 1144, Tonopah, NV	
15.		

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TSE Crescent Dunes Solar Energy Project
DRAFT ENVIRONMENTAL IMPACT STATEMENT

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PUBLIC REVIEW MEETING
Date: Thursday, September 23, 2010
Time: 6pm–8pm
Location: Tonopah Convention Center

Please Print

Name	Address, City, ZIP Code	E-mail
1. Paul McKenzie	1819 Hymn Ave Sparks, NV 89431	pmckenzie@bcfnn
2. Bill Vesbeck	GBC - Pahrump - Tonopah -	billv@gbcnv.edu
3. CHERY/BEEMAN	2100 E. CALVADA BLVD./PAH	cbeeman@co.nye.nv.us
4. Joseph Westerlund	1200 Tonopah Ave. Tonopah NV. 89049	mkentnv@hotmail.com
5. HORACE CARLYLE	P.O. Box 3879 Tonopah 89049	hcarlyle@gmail.com
6. Paul Davies	3429 Ridgecrest Dr Reno, NV	
7. PETER F. LAUBSCHER	4763 RIO PINAR DR. RENO NV 89509	
8. Bob Primeau	850 Broadway Bl Reno 89502	
9. Brooke Ingram	2368 Meldrill Ln Reno NV 89512	
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BLM

NATIONAL SYSTEM OF PUBLIC LANDS

TSE Crescent Dunes Solar Energy Project
DRAFT ENVIRONMENTAL IMPACT STATEMENT

BLM

Public Review Meeting
COMMENT FORM

Date: Thursday, September 23, 2010
Time: 6pm–8pm
Location: Tonopah Convention Center

Thank you for your interest in the TSE Crescent Dunes Solar Energy Project EIS.

Comments will be welcomed during the public review meeting, or they may be submitted to the Bureau of Land Management, Tonopah Field Office, Attention: Renewable Energy Project Manager, TSE Crescent Dunes Solar Energy EIS, 1553 South Main Street, P.O. Box 911, Tonopah, NV 89049; faxed to 775-482-7810 (Attn: Renewable Energy Project Manager, TSE Crescent Dunes Solar Energy EIS); or emailed to crescent_dunes@blm.gov. The deadline for submitting comments is October 18, 2010.

Please provide your comments on this EIS in the space below. Please feel free to use the back of this sheet for additional comments for add additional pages as needed.

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Name/Organization: _____

Phone: _____

Address: _____

E-mail: _____

NATIONAL SYSTEM OF PUBLIC LANDS

TSE Crescent Dunes Solar Energy Project
DRAFT ENVIRONMENTAL IMPACT STATEMENT

BLM

Public Review Meeting
COMMENT FORM

Date: Wednesday, September 22, 2009
Time: 6pm–8pm
Location: BLM Las Vegas Field Office

Thank you for your interest in the TSE Crescent Dunes Solar Energy Project Environmental Impact Statement.

Comments will be welcomed during the public review meeting, or they may be submitted to the Bureau of Land Management, Tonopah Field Office, Attention: Renewable Energy Project Manager, TSE Crescent Dunes Solar Energy EIS, 1553 South Main Street, P.O. Box 911, Tonopah, NV 89049; faxed to 775-482-7810 (Attn: Renewable Energy Project Manager, TSE Crescent Dunes Solar Energy EIS); or emailed to crescent_dunes@blm.gov. The deadline for submitting comments is October 18, 2010.

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Name/Organization: _____

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E-mail: _____

NATIONAL SYSTEM OF PUBLIC LANDS

BLM

U.S. DEPARTMENT OF THE INTERIOR
BUREAU OF LAND MANAGEMENT

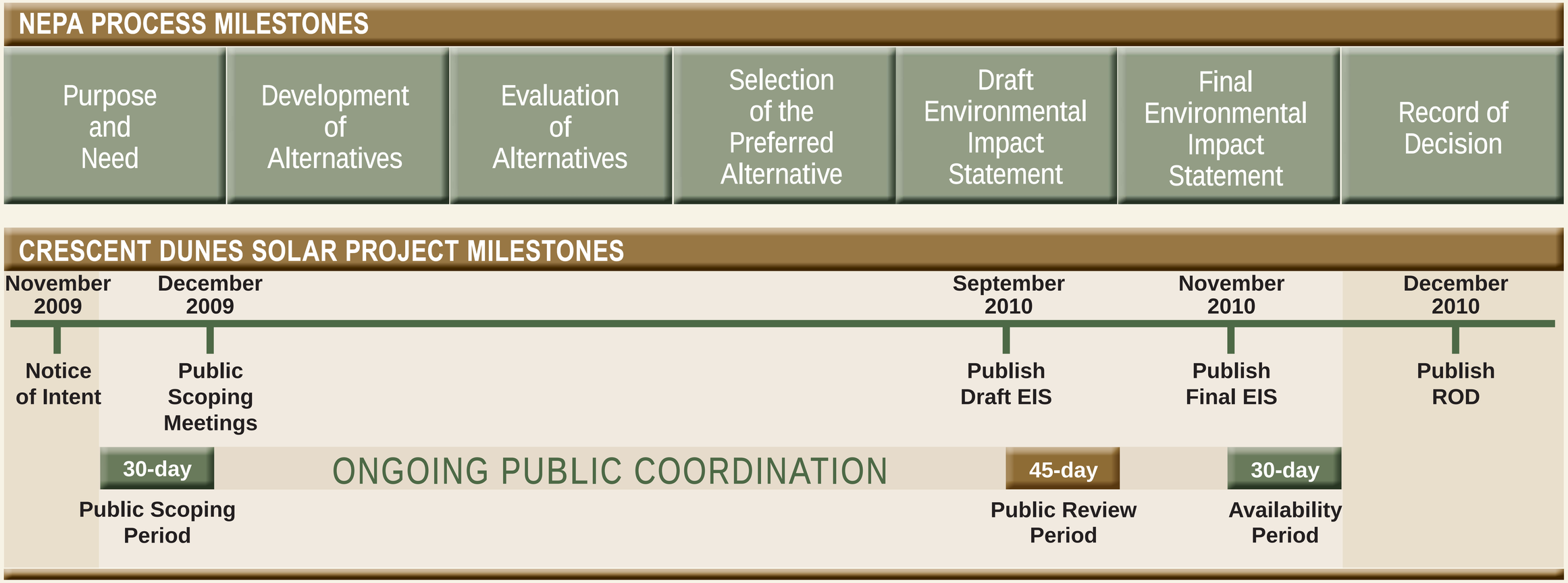
NATIONAL
SYSTEM OF
PUBLIC LANDS

Welcome to the Bureau of Land Management/ Tonopah Solar Energy, LLC (BLM/TSE) Public Review Meetings

- Wednesday, September 22, 2010
  BLM Las Vegas Field Office
  6:00 PM to 8:00 PM
- Thursday, September 23, 2010
  Tonopah Convention Center
  6:00 PM to 8:00 PM

The BLM/TSE Crescent Dune EIS Review Meetings are held in an open house forum. A short presentation will be given by the project team members at 6:30 pm, to be followed by an open format meeting, where the public can visit with project staff to get information or to have questions answered.

NEPA Process/Timeline



What is an Environmental Impact Statement?

A document that provides a comprehensive analysis of environmental and socioeconomic impacts.

What is the public review period?

The period following publication of the Draft EIS that allows interested citizens and agencies the opportunity to review and comment on the document. Comments will be considered by the BLM in preparation of the Final EIS.

NATIONAL SYSTEM OF PUBLIC LANDS

BLM/TSE Crescent Dunes Solar Energy Project

DRAFT ENVIRONMENTAL IMPACT STATEMENT

September 2010

BLM

Project Overview

The proposed project would consist of the following project components:

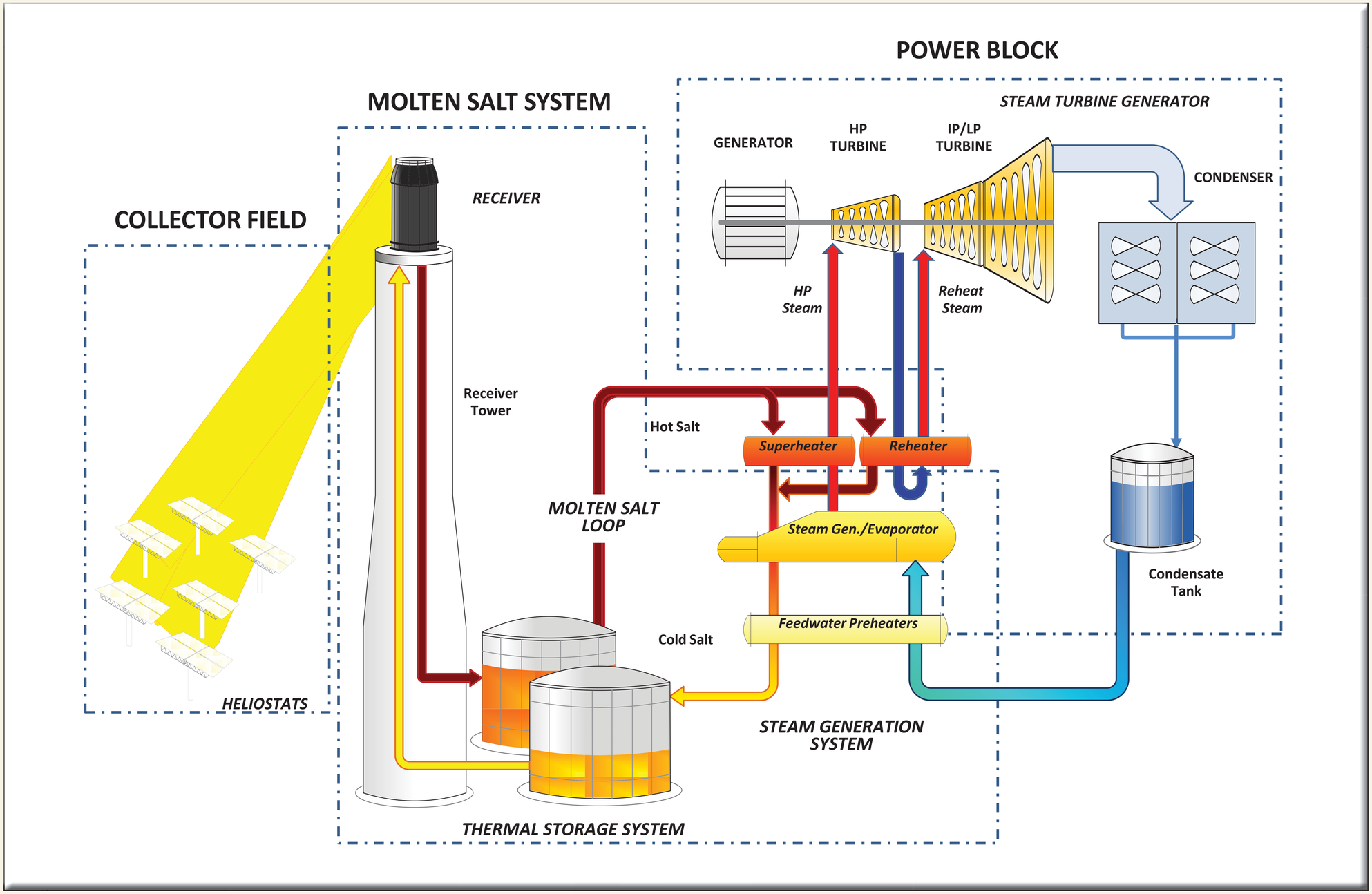
- a large field of heliostats or mirrors to reflect the sun's energy
- a conventional steam turbine to generate 110 MW of electricity
- a central receiver tower with liquefied salt
- thermal storage tanks to store the hot and cold liquid salt
- a hybrid cooling system designed to reduce water consumption
- pumps, transformers, heat exchangers, and buildings
- an access road and a transmission line

Estimated right-of-way (in acres) for project components for each alternative is:

Component	Right-of-Way (acreage)		
	Proposed Action	Alternative 1	Alternative 2 (BLM Preferred Alternative)
Project site	1,498	1,499	1,499
Access road	2	5	2
Transmission line and substation	173	136	127

In addition to the above right-of-way, each alternative would require temporary use of a 40-acre borrow pit to extract aggregate for construction.

Technology Overview



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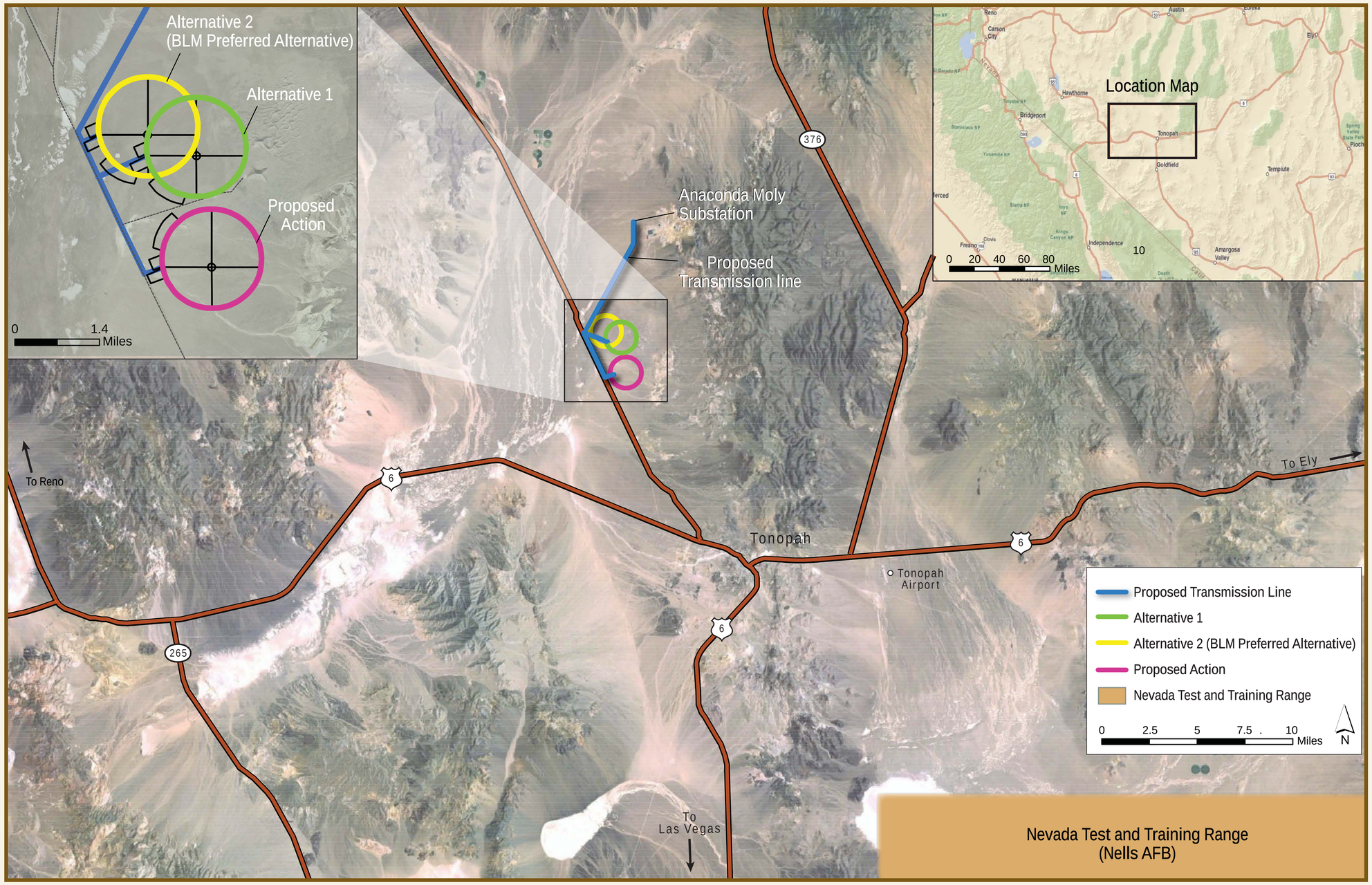
NATIONAL SYSTEM OF PUBLIC LANDS

BLM/TSE Crescent Dunes Solar Energy Project

DRAFT ENVIRONMENTAL IMPACT STATEMENT

September 2010

Project Alternatives



BLM

NATIONAL SYSTEM OF PUBLIC LANDS

BLM/TSE Crescent Dunes Solar Energy Project

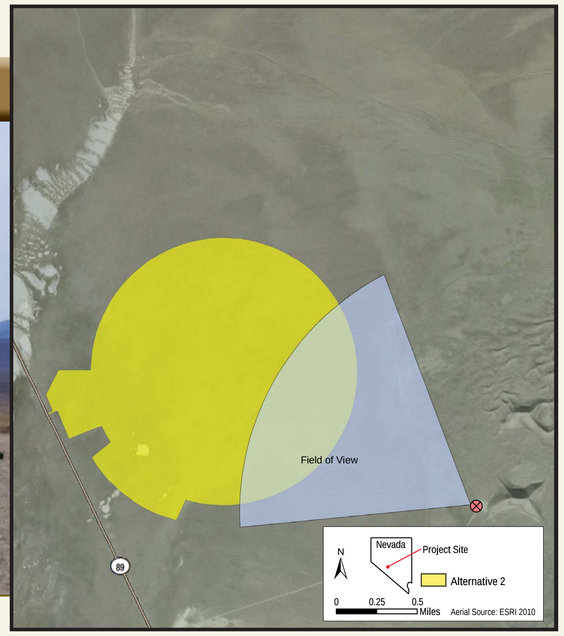
DRAFT ENVIRONMENTAL IMPACT STATEMENT

September 2010

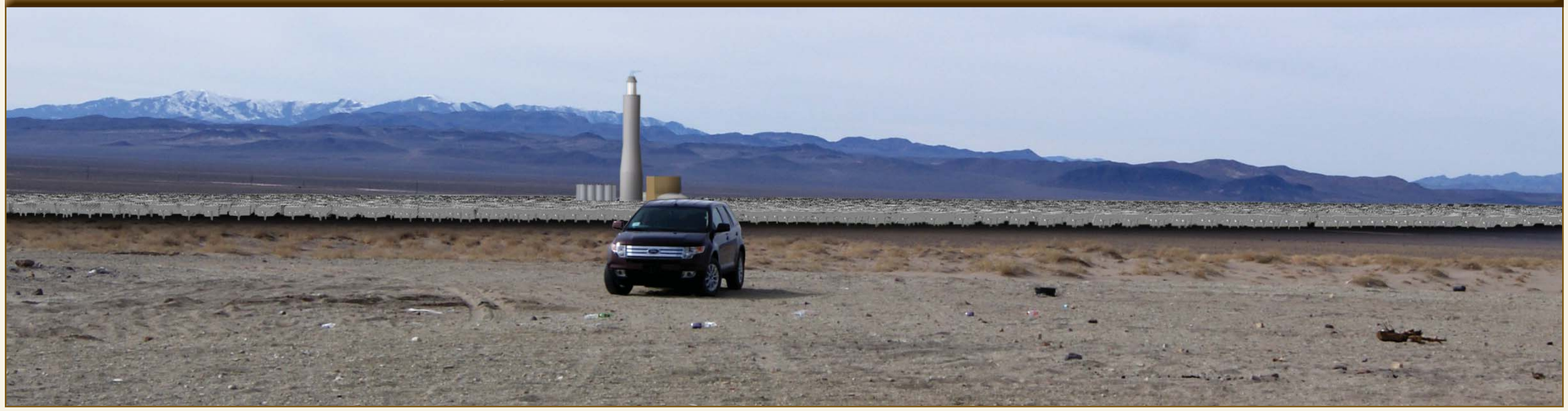
Visual Simulation

View from the Crescent Dunes to Alternative 2

Existing view



Visual simulation of view after operation



BLM

BLM/TSE Crescent Dunes Solar Energy Project

DRAFT ENVIRONMENTAL IMPACT STATEMENT

September 2010

Visual Simulation

View from the Anaconda-Moly access road to Alternative 2

Existing view

Visual simulation of view after operation

BLM

BLM/TSE Crescent Dunes Solar Energy Project

DRAFT ENVIRONMENTAL IMPACT STATEMENT

September 2010

The BLM Preferred Alternative

Alternative 2

The BLM has selected a preferred alternative based on the analysis in the Draft EIS. The preferred alternative best fulfills the agency's statutory mission and responsibilities, considering economic, environmental, technical, and other factors.

The BLM's preferred alternative is Alternative 2. The Preferred Alternative was chosen because it:

- has the least impact to special status plants and wildlife species
- stays within the existing transmission corridor and reduces the length of the transmission line
- does not impact the Crescent Dunes Special Resource Management Area
- has the least impact to recreationalists utilizing Crescent Dunes
- best complies with the Tonopah Field Office Resource Management Plan (1997)

How to Provide Comments

- Provide comments at the public review meeting
- Submit a comment form before October 18, 2010 by:
  - Mail: Bureau of Land Management
    Tonopah Field Office
    Attention: Renewable Energy Project Manager
    TSE Crescent Dunes Solar Energy EIS
    1553 South Main Street
    P.O. Box 911
    Tonopah, NV 89049
  - Email: crescent_dunes@blm.gov
  - Fax: 775-482-7810

Appendix B: Comments Received

	Tonopah Solar Energy, LLC proposed Crescent Dunes Solar Energy Project Comments from DOE - LGP Administrative Draft Environmental Impact Statement				
	Page #	**Line #**	**Reviewer Name**	**Comment**	
Comments that Should be Addressed in DEIS, but Can Be Included in FEIS Due to Time Constraints					
	General	N/A	DOE	From 40 CFR 1502.10 (i) – will the required distribution list be included with this document? We need to add DOE stakeholders to the extent they are not already included.	1-A
9	General	N/A	DOE	While there is an indication in several places in the document (e.g., Table 2-5, 3-1, 4-25) that no EJ populations are present in the project vicinity and a subsequent conclusion that no impacts will result, there is no data or analysis presented to establish that this is in fact true (nor is there an Appendix where this can be found referenced in the text). This may be controversial in light of the impacts on social and economic resources (indicated on p. xxiv) that will be brought by the workforce (an overall increase of 2%) that will be coming to the area and 'moving into' the small communities nearby. An influx of the number of workers identified may have an impact (even if seemingly small and temporary) on local services to the permanent and existing residents of those communities. This should be explicitly discussed in the document. BLM received a comment to this effect and a request for the outright analysis of EJ by the Town of Tonopah and EPA, respectively (table 1-5).	1-B
10	2-11; 2-29	20-23; 6-11	DOE	Is this meant to say, that except for the outgoing transmission line to Pole Line Road that the rest of the TL will be constructed in existing ROW? If not, it would be helpful to indicate where the 'new' disturbance would/is anticipated to occur along the TL route because it is unclear in the current description.	1-C
11	2-32	23-25	DOE	What are the dimensions of the 'small ditches' that would be constructed along roads for water run-off?	1-D
12	2-40	6-7	DOE	Given that this is an area where recreational off-road vehicle use occurs regularly, there may be more dust deposited on mirrors and thereby an increased need to wash them. While amount of water anticipated during washing activities is indicated on p. 2-40 as 70 acre feet per year, is there potential for there to be more water needed due to fugitive dust from ORV	1-E

				use in the area? Should a range of water use for mirror washing be anticipated for the project and, as a result, articulated in the document?	
13	2-42	28-29	DOE	Is there a standard or BMP that would be followed in cleaning up (or disposal) of residual HTF from the surface soil after processing? Since the HTF is highly flammable and a strong oxidizing agent, how this will be done is perhaps information useful for purposes of transparency.	1-F
14	2-46	3-12	DOE	Will workers be trained to fight fires that occur on site? The documents discuss plans for an onsite fire protection and suppression capability (for example, there is a good deal on infrastructure design and equipment related to fire suppression), but it is not clear whether there would be a trained fire suppression squad on site at all times, or whether all employees would be trained to fight fires or will the local fire departments be relied upon (thus causing an increased demand on local services)?	1-G
15	2-50	14-15	DOE	This discussion indicated that during initial consultation that no Native American values were identified but there is a comment directing BLM to the Yomba Shoshone Tribe. Perhaps the intention to consult with this tribe as well as the Timbisha Shoshone Tribe would be appropriate here. In table 1-5, BLM received a comment from the Timbisha tribe that the Yomba Shoshone may have an interest.	1-H
	2-46	3-12	DOE	Wildfire prevention and control does not seem to receive sufficient attention in the document. Due to large grading activities, the project may be expected to increase growth of non-native vegetation (e.g., halogeton, Russian thistle, presence of cheat grass in area), thus increasing the potential for wildfires. Wildfire fire potential also could be increased due to heat from the mirrors. Propose considering discussion of this topic further in the FEIS.	1-I
16	3-34; 3-58 – 3-59; 4-20	27-34 29-2 23-30	DOE	Section 101(d)(6)(A) of the National Historic Preservation Act provides that properties of traditional religious and cultural significance to an Indian tribe or Native Hawaiian organization may be eligible for listing in the National Register of Historic Places. There is a possibility that eagle habitation in the vicinity of the project may render the landscape a potential historic property of religious and cultural importance to Indian tribes. If so, impacts to the eagle habitation need to be considered by BLM and SHPO during consultation under Section 106. In the	1-J

				recent, Final Environmental Assessment Proposal to Permit Take as Provided Under the Bald and Golden Eagle Protection Act (http://alaska.fws.gov/eaglepermit/index.htm), the US FWS explains that some Indian tribes find eagles or eagle nests, or both, to be sacred sites. These, and the landscapes and landforms associated with them, could be eligible for listing in the National Register. Given that an impact to Golden eagles is identified in the document, there maybe a reason to believe that Tribes that have a current or historic presence near the proposed site consider eagle habitation (which includes eagles and eagle nests) sacred. DOE suggests consulting with the Yomba and Timbisha Shoshone Tribes to assess the present and historic importance of eagles (particularly Golden) and their nests to these Tribes culture.	
17	4-97	20-21	DOE	There is no discussion of possible impacts related to glare from the mirrors (potentially if one or more becomes misdirected for various reasons) on pilots during training exercises given the presence of the Nevada Training Facility and Air Force base located approximately 40 miles away. DOE suggests consideration of this potential indirect impact of the project on operations based at the DOD facility.	1-K
18	2-11; 2-29	20-23; 6-11	DOE	Is this meant to say, that except for the outgoing transmission line to Pole Line Road that the rest of the TL will be constructed in existing ROW? If not, it would be helpful to indicate where the 'new' disturbance would/is anticipated to occur along the TL route because it is unclear in the current description.	1-L
same as Comment 1-D				What are the dimensions of the 'small ditches' that would be constructed along roads for water run-off?	
same as Comment 1-E				Given that this is an area where recreational off-road vehicle use occurs regularly, there may be more dust deposited on mirrors and thereby an increased need to wash them. While amount of water anticipated during washing activities is indicated on p. 2-40 as 70 acre feet per year, is there potential for there to be more water needed due to fugitive dust from ORV use in the area? Should a range of water use for mirror washing be anticipated for the project and, as a result, articulated in the document?	
same as Comment 1-F				Is there a standard or BMP that would be followed in cleaning up (or disposal) of residual HTF from the	

				surface soil after processing? Since the HTF is highly flammable and a strong oxidizing agent, how this will be done is perhaps information useful for purposes of transparency.	
22	2-45	20-33	DOE	Accidents and Intentional Destructive Acts is an area of analysis that DOE must include in the document. Although the potential may appear to be minor, DOE has concerns that there is no analysis in the DEIS regarding potential intentional destructive acts to the project and project elements: a. In case of an accidental or intentional destructive act that may require immediate 'shut down' of the towers, how will the mirrors be positioned in time to allow towers to cool down?	1-M
same as Comment 1-G				Will workers be trained to fight fires that occur on site? The documents discuss plans for an onsite fire protection and suppression capability (for example, there is a good deal on infrastructure design and equipment related to fire suppression), but it is not clear whether there would be a trained fire suppression squad on site at all times, or whether all employees would be trained to fight fires or will the local fire departments be relied upon (thus causing an increased demand on local services)?	
same as Comment 1-H				This discussion indicated that during initial consultation that no Native American values were identified but there is a comment directing BLM to the Yomba Shoshone Tribe. Perhaps the intention to consult with this tribe as well as the Timbisha Shoshone Tribe would be appropriate here. In table 1-5, BLM received a comment from the Timbisha tribe that the Yomba Shoshone may have an interest.	
same as Comment 1-I				Wildfire prevention and control does not seem to receive sufficient attention in the document. Due to large grading activities, the project may be expected to increase growth of non-native vegetation (e.g., halogeton, Russian thistle, presence of cheat grass in area), thus increasing the potential for wildfires. Wildfire fire potential also could be increased due to heat from the mirrors. Propose considering discussion of this topic further in the FEIS.	
same as Comment 1-J				Section 101(d)(6)(A) of the National Historic Preservation Act provides that properties of traditional religious and cultural significance to an Indian tribe or Native Hawaiian organization may be eligible for listing in the National Register of Historic Places.	

same as Comment 1-J				There is a possibility that eagle habitation in the vicinity of the project may render the landscape a potential historic property of religious and cultural importance to Indian tribes. If so, impacts to the eagle habitation need to be considered by BLM and SHPO during consultation under Section 106. In the recent, Final Environmental Assessment Proposal to Permit Take as Provided Under the Bald and Golden Eagle Protection Act (http://alaska.fws.gov/eaglepermit/index.htm), the US FWS explains that some Indian tribes find eagles or eagle nests, or both, to be sacred sites. These, and the landscapes and landforms associated with them, could be eligible for listing in the National Register. Given that an impact to Golden eagles is identified in the document, there maybe a reason to believe that Tribes that have a current or historic presence near the proposed site consider eagle habitation (which includes eagles and eagle nests) sacred. DOE suggests consulting with the Yomba and Timbisha Shoshone Tribes to assess the present and historic importance of eagles (particularly Golden) and their nests to these Tribes culture.	
27	3-48	Section 3.6.3	DOE	Is it possible to include a quantitative analysis? Something simple such as the formula for "direct emissions" calculations in the EPA's mandatory reporting rule (for projects over 25,000 metric tons/year)?	1-N
same as Comment 1-K				There is no discussion of possible impacts related to glare from the mirrors (potentially if one or more becomes misdirected for various reasons) on pilots during training exercises given the presence of the Nevada Training Facility and Air Force base located approximately 40 miles away. DOE suggests consideration of this potential indirect impact of the project on operations based at the DOD facility.	

Comment 2

From: Minor, Andrea J
To: Christensen, Henrik
Subject: RE: Crescent Dunes DEIS
Date: Wednesday, September 15, 2010 10:40:26 AM

Dear Mr. Christensen,

I believe that this project was determined to not have potential to impact any of our lands or facilities. That being said, I'll save the paper and the postage and just access the link from the BLM site if we decide to take a second look at this project. No need to send us a copy of the DEIS. Thank you for considering us in the NEPA process.

Andrea Minor
Natural Resource Specialist
775-884-8366

From: Christensen, Henrik [mailto:Henrik.Christensen@hdrinc.com]
Sent: Wednesday, September 15, 2010 10:26 AM
To: Minor, Andrea J
Subject: Crescent Dunes DEIS

Ms. Minor,

Could you provide me with your physical address so I can forward a copy of the DEIS.

Thanks you in advance.

Henrik Christensen
Senior Project Manager
Environmental Services

HDR ONE COMPANY | *Many Solutions*
7180 Pollock Drive | Suite 200 | Las Vegas, NV | 89119
P: 702-938-6000 | Direct: 702-938-6119 | Cell: 907-317-2885
Fax: 702-938-6060 | Email: henrik.christensen@hdrinc.com
www.hdrinc.com

Comment 3

UNITED STATES ENVIRONMENTAL PROTECTION AGENCY
REGION IX
75 Hawthorne Street
San Francisco, CA 94105

October 18, 2010

Tim Coward, Renewable Energy Project Manager
Bureau of Land Management
P.O. Box 911
Tonopah, NV 89049

Subject: Draft Environmental Impact Statement, Tonopah Solar Energy, LLC, Crescent Dunes Solar Energy Project, Nye County, Nevada (CEQ #20100343)

Dear Mr. Coward:

The U.S. Environmental Protection Agency (EPA) has reviewed the Draft Environmental Impact Statement (DEIS) for the Tonopah Solar Energy, LLC Crescent Dunes Solar Energy Project (Project). Our review and comments are provided pursuant to the National Environmental Policy Act (NEPA), the Council on Environmental Quality (CEQ) Regulations (40 CFR Parts 1500-1508), and Section 309 of the Clean Air Act.

EPA provided scoping comments to the BLM in response to the Notice of Intent (NOI) for this Project on December 17, 2009. In that letter, we raised concerns about impacts to water resources, biological resources, and cumulative impacts associated with the potential development of multiple large-scale installations in the desert southwest. We remain concerned about these issues. We have rated the DEIS as Environmental Concerns - Insufficient Information (EC-2) (see enclosed "*Summary of Rating Definitions*"). Our detailed comments are enclosed.

We appreciate the opportunity to review this DEIS, and are available to discuss our comments. When the FEIS is released for public review, please send one hard copy and one CD ROM to the address above (Mail Code: CED-2). If you have any questions, please contact me at (415) 972-3521, or contact Jason Gerdes, the lead reviewer for this project. Jason can be reached at (415) 947-4221 or gerdes.jason@epa.gov.

Sincerely,

/s/

Kathleen M. Goforth, Manager
Environmental Review Office

Enclosures: Summary of Rating Definitions
EPA Detailed Comments

cc: Ron Wenker, U.S. Bureau of Land Management
Ray Brady, U.S. Bureau of Land Management

U.S. EPA DETAILED COMMENTS ON THE TONOPAH SOLAR ENERGY, LLC CRESCENT DUNES SOLAR ENERGY PROJECT DRAFT ENVIRONMENTAL IMPACT STATEMENT, NYE COUNTY, NEVADA, OCTOBER 18, 2010

Groundwater and Surface Water Resources

One of the major concerns identified by EPA in our scoping comments for the Crescent Dunes Solar Energy Project (Project) was the potential impacts to water resources, particularly groundwater. While EPA is pleased that a hybrid cooling system (consisting of an air-cooled condenser with a wet cool augmentation system) is planned for the Project to reduce water use (with a small evaporative cooler to be used only at times of high energy demand), we remain concerned about the effect on existing groundwater supplies, as well as the potential for cumulative impacts over the life of the Project. Although the draft EIS states that the amount of drawdown for the Project (approximately 600 acre-feet per year) will "not result in wells going dry," it also states that "some of the existing wells in the area will experience a drawdown of between 1-foot and 1.5-feet," and that impacts to groundwater may include "well pumping causing drawdown" and "restrictions to existing well access or use." 3-A

EPA is also concerned about the potential impacts to surface water associated with the Project, including "increased runoff flows, increased sediment transport, increased discharge and transport of contaminants, or possible affects to drainage paths or altered flow." The EIS states that the stormwater drainage system would be "designed to allow the storm flow to follow its preexisting drainage paths," yet later in the document, states that "increased runoff and sediment transport are expected to have a potential cumulative effect."

***Recommendation*:**
EPA recommends that BLM provide additional information in the FEIS explaining how the Project will affect water supplies for existing wells during its years in operation, as well as measures that could be taken to minimize or mitigate the impacts to these wells. 3-B

Additionally, we ask that BLM include a description of the long-term viability of the Project's groundwater source, taking into account reasonably foreseeable projects planned for the area, as well as other factors, such as climate change, that may impact the Project and surrounding wells.

We ask that BLM include in the FEIS a discussion of the feasibility of recycling the water that would be sent to the evaporation pond and re-injecting or reusing this water.

EPA also recommends that BLM incorporate mitigation measures into the proposed Project sufficient to avoid potential cumulative effects from increased runoff and sediment transport. The Stormwater Pollution Prevention Plan (SWPPP) being developed to avoid these effects should be included in the FEIS. 3-C

Wildlife Resources

EPA commends the work undertaken by the BLM to assess the risks to special status species from the Project. For the species highlighted in the DEIS, including Nevada oryctes, pale kangaroo mice, bats, golden eagles, and migratory birds, some mitigation measures have been prepared. These measures, such as covering the evaporation ponds with a porous screen, and, in the case of migratory birds, avoiding land clearing activities during the avian breeding season, should serve as crucial safeguards. But comprehensive mitigation plans for these species are characterized in the DEIS as "being developed" or "would be developed," and are not included in the document, making it difficult for EPA to assess whether the mitigation measures planned for the Project will be sufficient to reduce potentially significant impacts. 3-D

***Recommendation*:**
EPA recommends that BLM include comprehensive mitigation plans in the FEIS for the special status species located in the Project area.

Climate Change

EPA commends the BLM for devoting a substantive section of the EIS to greenhouse gases (GHG), including detailed estimates of emissions from construction and operation of the Project. The EIS, however, does not include a discussion of the potential impacts of climate change on the Project. Considering the Project is planned to be in operation for 30, and possibly as many as 50 years, the EIS should include a description of how climate change may affect the Project, particularly groundwater resources. 3-E

Recommendation:
EPA recommends that BLM provide information detailing what impacts climate change may have on the Project, particularly sensitive species, its sources of groundwater, and reclamation and restoration efforts after construction and decommissioning.

Cumulative Impacts

Another major concern identified by EPA in our NOI letter for this Project was the cumulative impact of multiple large-scale solar projects in the desert southwest, particularly potential impacts to water supplies, endangered species, and habitat. While BLM identified proposed projects in the cumulative effects study area (CESA), including a geothermal energy facility, two solar photovoltaic energy projects, a transmission line, and a mine, no description was provided of what the cumulative impacts may be from these and other reasonably foreseeable projects. 3-F

***Recommendation*:**
EPA recommends that BLM provide additional information regarding the cumulative impacts associated with this and other large-scale renewable energy projects on various sensitive desert resources, including water supplies, special status species, and habitat.

3-F continued

Comments 4, 5, 6, 7 and 8

JIM GIBBONS
Governor

STATE OF NEVADA

ANDREW K. CLINGER
Director

DEPARTMENT OF ADMINISTRATION
209 E. Musser Street, Room 200
Carson City, Nevada 89701-4298
(775) 684-0222
Fax (775) 684-0260
http://www.budget.state.nv.us/

October 14, 2010

Timothy Coward
US Department of the Interior
Bureau of Land Management
Tonopah Field Office
1553 South Main Street
P.O. Box 911
Tonopah, NV 89049-0911

Re: SAI NV # **E2011-042**

Reference: **DOI-BLM-NVB020-2009-0104-EIS**

Project: **Crescent Dunes solar energy project, Nye County**

Dear Timothy Coward:

Enclosed are comments from the agencies listed below regarding the above referenced document. Please address these comments or concerns in your final decision.

Department of Wildlife, Las Vegas

Division of State Lands

Division of Water Resources

State Historic Preservation Office

This constitutes the State Clearinghouse review of this proposal as per Executive Order 12372. If you have questions, please contact me at (775) 684-0213.

Sincerely,

R. Tietje
Nevada State Clearinghouse

NEVADA STATE CLEARINGHOUSE
Department of Administration, Budget and Planning Division
209 East Musser Street, Room 200, Carson City, Nevada 89701-4298
(775) 684-0209 Fax (775) 684-0260
DATE: September 2, 2010

Division of Water Resources

Nevada SAI # E2011-042
Project: Crescent Dunes Solar Energy Project, Nye County

____No comment on this project __X__Proposal supported as written

Comment 4

AGENCY COMMENTS:

The proposed project resides in hydrographic basin 137A, Big Smokey Valley.

There are approximately eight to ten currently held water rights on or near the described lands in this proposed project and include wells, lakes and vested rights.

Please be advised that wells and/or points of diverting water on these lands, whether new or existing, shall require prior approval from the Nevada Division of Water Resources. All waters of the State belong to the public and may be appropriated for beneficial use pursuant to the provisions of Chapters 533 and 534 of the Nevada Revised Statutes (NRS), and not otherwise. Water wells must be permitted, Monitor wells require a Waiver from the State Engineer's Office, all boreholes must be plugged within sixty (60) days after being drilled as required by NAC 534.4371.

Any water or monitor wells, or boreholes that may be located on either acquired or transferred lands are the ultimate responsibility of the owner of the property at the time of the transfer and must be plugged and abandoned as required in Chapter 534 of the Nevada Administrative Code. If artesian water is encountered in any well or borehole it shall be controlled as required in NRS § 534.060(3).

Any water used on the described project for construction, dust control, or maintenance should be provided by an established utility or under permit or waiver issued by the State Engineer's Office. If artesian water is located in any well or borehole it shall be controlled as required in NRS 534.060(3).

Sincerely,

Steve Shell, Staff Engineer, Nevada Division of Water Resources

Signature: //sls// Steve Shell Date: September 2, 2010

Nevada State Clearinghouse

From: Skip Canfield
Sent: Wednesday, September 01, 2010 3:41 PM
To: Nevada State Clearinghouse
Cc: 'Thomas_Seley@blm.gov'; Skip Canfield
Subject: RE: E2011-042 Crescent Dunes solar energy project, Nye County - Bureau of Land Management
Attachments: Signed Dark Sky letter.pdf

Importance: High

Comment 5

To: Tom Seley – Tonopah BLM
cc: Reese Tietje – Clearinghouse

Hi Tom:

I've reviewed the DEIS for Crescent Dunes Solar and I cut and pasted the text below. I highlighted one section too.

- COMMENT: I think you, as the BLM representative for the area, have a lot of leeway and authority to require these guys to be more proactive. It is no different than a city requiring landscaping in a shopping center parking lot, the developer knows it is a cost of doing business, but he sure as heck won't bother putting one bush in if the city doesn't stand up to them.

Their wording, ***"would be shielded from public view to the extent possible"*** simply doesn't cut it in my mind, and I am not alone, especially in Tonopah, the Dark Sky Capital of the world.

BLM should place a condition on these guys that corresponds to the attached RAC letter. These guys should be required to place shields on ALL of the lights except FAA safety lights. (Note: none of the bulleted items require FAA lights except for the tower, ALL of the other lights should have shields).

If it is required up front, the lighting specs can easily accommodate the shields.

I hope you can do this as it is an easy fix if done up front.

- BLM (i.e. YOU)have the chance with this project to set the standard for future projects all over Nevada and the West, it can be a good precedent!

- These developers will jump through any hoop that is rational and justified, and if required up front as a condition of approval. After the fact, we the people are out of luck.

-Skip

Here is the cut and paste:

2.5.3.2.7 Lighting Systems
The facility's lighting system would provide operation and maintenance personnel with illumination for both normal and emergency conditions. Lighting would be designed to minimize light pollution by using sensor lights and directional lighting in cases where this would not compromise safety or security. Although the proposed project site is in a remote area, lighting on-site would be limited to areas required for safety and **would be shielded from public view to the extent possible**. Outdoor lighting would be photocell controlled through contacts that control the outdoor lighting.

Lighting will not be provided for the solar field, but is expected to be provided in the following areas:
• building interior equipment, office, control, maintenance, and warehouse
• tower
• building exterior entrances
• outdoor equipment within the power block and tank area
• power transformers
• power block roadway
• parking areas within the power block area
• tank area
• entrance gate
• water treatment area
• ACC

5 continued

From: Nevada State Clearinghouse
Sent: Wednesday, September 01, 2010 1:01 PM
To: Skip Canfield
Subject: E2011-042 Crescent Dunes solar energy project, Nye County - Bureau of Land Management

NEVADA STATE CLEARINGHOUSE
Department of Administration, Budget and Planning Division
209 East Musser Street, Room 200, Carson City, Nevada 89701-4298
(775) 684-0213 Fax (775) 684-0260

TRANSMISSION DATE: 9/1/2010

Division of State Lands

Nevada SAI # E2011-042

Project: Crescent Dunes solar energy project, Nye County

Follow the link below to download an Adobe PDF document concerning the above-mentioned project for your review and comment.

E2011-042

Please evaluate it with respect to its effect on your plans and programs; the importance of its contribution to state and/or local

areawide goals and objectives; and its accord with any applicable laws, orders or regulations with which you are familiar.

Please submit your comments no later than Wednesday, October 13, 2010.

Use the space below for short comments. If significant comments are provided, please use agency letterhead and include the Nevada SAI number and comment due date for our reference.

Clearinghouse project archive

February 5, 2009

Ron Wenker, State Director
Bureau of Land Management
1340 Financial Blvd
Reno, NV 89502

Bureau of Land Management
MAR 06 2009
RECEIVED
Ely, NV

RE: Mojave-Southern Great Basin RAC Dark Sky Lighting Comments

Dear Ron:

At previous Mojave-Southern Great Basin Resource Advisory Council (RAC) meetings, we have discussed the fact that our dark sky attributes are a finite resource and subject to increasing deterioration as inappropriately-lighted development covers the landscape. This is even more evident in remote stretches of Nevada where dark skies prevail yet are seriously impacted by even one new lighting source. There is a concern about the cumulative visual impacts to public lands users' experiences.

Multiple use development on our public lands is the accepted rule. However, the effects of these uses are broad-ranging. Resources that are very important to some user groups are typically affected by the development of other resources. Some effects can be mitigated in a relatively simple manner if measures are taken proactively and consistently. One very prominent example is lighting. Proper lighting can play a large role in the compatibility of the built and natural environment.

Impacts of improper lighting can be mitigated inexpensively and dark sky measures are simple to implement and very mainstream. In fact, lighting that is installed using dark sky fixtures (light is only aimed at the subject property) is more efficient, safer, and results in reduced electricity costs. The end product is a less obtrusive impact to other users of adjacent public lands.

A common misnomer is that facility lighting needs to stream well beyond the property and facility to be effective. The opposite is actually the case. Many southwestern cities have enacted strict dark sky ordinances to protect the night sky, including prison facilities. Lighting seen from a distance is actually wasted light that has spilled beyond the intended location of the site. Outdoor lighting that is properly directed and shielded, of adequate lumens and lighting types, and strategically placed is more cost effective and functional to monitor a site. There is a national organization, www.darksky.org, whose fundamental purpose is to educate the public and governments on ways to preserve our valuable night skies for us and future generations.

The Mojave Southern Great Basin RAC believes that a comprehensive look at visual impacts should be considered when BLM reviews any development plan on public lands in Nevada, and nationally. The RAC encourages BLM to develop a consistent policy and "condition of approval" that can be required of applicants and included in NEPA decisions. It is hoped that all Federal agencies would include dark sky lighting as a condition of approval for permanent and temporary applications.

The following language is suggested that should be provided up front to applicants who propose development on BLM public lands that includes lighting:

Utilize appropriate lighting:

- Utilize consistent lighting mitigation measures that follow "Dark Sky" lighting practices.

- Effective lighting should have screens that do not allow the bulb to shine up or out. All proposed lighting shall be located to avoid light pollution onto any adjacent lands as viewed from a distance. All lighting fixtures shall be hooded and shielded, face downward, located within soffits and directed on to the pertinent site only, and away from adjacent parcels or areas.

- A lighting plan shall be submitted with the site plan review and/or architectural drawings indicating the types of lighting and fixtures, the locations of fixtures, lumens of lighting, and the areas illuminated by the lighting plan.

- Any required FAA lighting is exempt from this condition.

Thank you for the opportunity to provide comments to you on this important issue.

Sincerely,

John Hiatt

John Hiatt, Chair
Mojave-Southern Great Basin Resource Advisory Council

cc: Northeastern Great Basin RAC
Sierra Front-Northwestern Great Basin RAC
Skip Canfield

FW: E2011-042 Crescent Dunes solar energy project, Nye County - Bureau of Land Management

Mueller, Timothy [tmueller@dot.state.nv.us]

Sent: Tuesday, October 12, 2010 11:00 AM

To: Nevada State Clearinghouse

Cc: Compton, Terri [tcompton@dot.state.nv.us]

Good Morning Reese,

At this time we do not have any comment on this project.

Sincerely,

Tim

Comment 6

Tim Mueller
Special Projects Manager
Nevada DOT (NDOT)
775-888-7351 or tmueller@dot.state.nv.us

From: Compton, Terri
Sent: Thursday, September 30, 2010 2:28 PM
To: Mueller, Timothy
Subject: FW: E2011-042 Crescent Dunes solar energy project, Nye County - Bureau of Land Management

This is the only open clearinghouse project I have that has a response due during my absence that you don't already have. tc

---

From: Nevada State Clearinghouse [mailto:Clearinghouse@budget.state.nv.us]
Sent: Wednesday, September 01, 2010 1:01 PM
To: Compton, Terri
Subject: E2011-042 Crescent Dunes solar energy project, Nye County - Bureau of Land Management

NEVADA STATE CLEARINGHOUSE
Department of Administration, Budget and Planning Division
209 East Musser Street, Room 200, Carson City, Nevada 89701-4298
(775) 684-0213 Fax (775) 684-0260

TRANSMISSION DATE: 9/1/2010

Department of Transportation

Nevada SAI # E2011-042

Project: Crescent Dunes solar energy project, Nye County

Follow the link below to download an Adobe PDF document concerning the above-mentioned project

for your review and comment.
E2011-042

Please evaluate it with respect to its effect on your plans and programs; the importance of its contribution to state and/or local
areawide goals and objectives; and its accord with any applicable laws, orders or regulations with which you are familiar.

Please submit your comments no later than Wednesday, October 13, 2010.

Use the space below for short comments. If significant comments are provided, please use agency letterhead and include the Nevada SAI number and comment due date for our reference.

Clearinghouse project archive

Questions? Reese Tietje, (775) 684-0213 or clearinghouse@state.nv.us

___x_No comment on this project ____Proposal supported as written
AGENCY COMMENTS:

Signature:

Date:

Distribution: Sandy Quilici, Department of Conservation & Natural Resources
Gary Derks, Division of Emergency Management
David Mouat, Desert Research Institute
Kevin Kirkeby, Senator Ensign's Office
Nancy Boland, Esmeralda County
Chad Hastings, Fire Marshal
Karen Beckley, State Health Division
Kirk Bausman, Hawthorne Army Depot
Sherry Rupert, Indian Commission
Skip Canfield, AICP, Division of State Lands
Clint Wertz, Lincoln County
Zip Upham, NAS Fallon
Ed Rybold, NAS Fallon
Alan Coyner, Commission on Minerals
D. Driesner, Commission on Minerals
Lowell Price, Commission on Minerals
Sandi Gotta, Division of Conservation Districts

John Walker, Nevada Division of Environmental Protection
Terri Compton, Department of Transportation
Steve Siegel, Department of Wildlife, Director's Office
D. Bradford Hardenbrook, Department of Wildlife, Las Vegas
Craig Stevenson, Department of Wildlife, Las Vegas
Robert Martinez, Division of Water Resources
Tod Oppenborn, Nellis Air Force Base
Ms. Deborah MacNeill, Nellis Air Force Base
William Cadwallader, Nellis Air Force Base
99ABW, Nellis Air Force Base
James D. Morefield, Natural Heritage Program
Linda Cohn, National Nuclear Security Administration
Joseph C. Strolin, Agency for Nuclear Projects
Steve Weaver, Division of State Parks
Mark Harris, PE, Public Utilities Commission
Hatice Gecol, Renewable Energy and Energy Efficiency Authority
Pete Konesky, State Energy Office
Tara Vogel, State Energy Office
Jim Groth, State Energy Office
Rebecca Palmer, State Historic Preservation Office
Terry Rubald, Nevada Department of Taxation, Local Government, Centrally Assessed Property
John Muntean, UNR Bureau of Mines
Jon Price, UNR Bureau of Mines
Ron Hess, UNR Bureau of Mines
David David, UNR Bureau of Mines
Russ Land, Nevada Division of Environmental Protection
Clearinghouse, zzClearinghouse
Maud Naroll, zzClearinghouse-Maud

This communication, including any attachments, may contain confidential information and is intended only for the individual or entity to whom it is addressed. Any review, dissemination or copying of this communication by anyone other than the intended recipient is strictly prohibited. If you are not the intended recipient, please contact the sender by reply e-mail and delete all copies of the original message.

RE: E2011-042 Crescent Dunes solar energy project, Nye County - Bureau of Land Management

Brad Hardenbrook

Sent: Friday, October 08, 2010 1:14 PM

To: Nevada State Clearinghouse

Cc: Tracy Kipke; Elmer Bull; Steven Siegel

From: Nevada State Clearinghouse
Sent: Wednesday, September 01, 2010 1:01 PM
To: Brad Hardenbrook
Subject: E2011-042 Crescent Dunes solar energy project, Nye County - Bureau of Land Management

NEVADA STATE CLEARINGHOUSE
Department of Administration, Budget and Planning Division
209 East Musser Street, Room 200, Carson City, Nevada 89701-4298
(775) 684-0213 Fax (775) 684-0260

TRANSMISSION DATE: 9/1/2010

Department of Wildlife, Las Vegas

Nevada SAI # E2011-042

Project: Crescent Dunes solar energy project, Nye County

Follow the link below to download an Adobe PDF document concerning the above-mentioned project for your review and comment.

E2011-042

Please evaluate it with respect to its effect on your plans and programs; the importance of its contribution to state and/or local

areawide goals and objectives; and its accord with any applicable laws, orders or regulations with which you are familiar.

Please submit your comments no later than Wednesday, October 13, 2010.

Use the space below for short comments. If significant comments are provided, please use agency letterhead and include the Nevada SAI number and comment due date for our reference.

Clearinghouse project archive

Questions? Reese Tietje, (775) 684-0213 or clearinghouse@state.nv.us

____No comment on this project ____Proposal supported as written

Comment 7

AGENCY COMMENTS:

The Nevada Department of Wildlife welcomes commenting on review of the Draft EIS for the Crescent Dunes Solar Energy Project. Foremost, we concur with BLM's selection of its Preferred Alternative, i.e. Alternative II. This confers the least environmental impacts of the alternatives considered and would result in economies of project construction and operation. Early on in the planning process, NDOW was invited to participate in discussions and is serving as a cooperating agency regarding wildlife resource considerations. The majority of NDOW's inputs have been incorporated into the present Draft EIS which reflects important measures for avoiding and minimizing impacts to wildlife and the resources on which they depend. We look forward to continuing the positive working relationship with the BLM and Tonopah Solar LLC and its agents for effectively and reasonably resolving aspects of outstanding impacts to avian and terrestrial wildlife resources.

Signature: D. Bradford Hardenbrook
Supervisory Habitat Biologist
NDOW – Southern Region

Date: 8 October 2010

Distribution: Sandy Quilici, Department of Conservation & Natural Resources
Gary Derks, Division of Emergency Management
David Mouat, Desert Research Institute
Kevin Kirkeby, Senator Ensign's Office
Nancy Boland, Esmeralda County
Chad Hastings, Fire Marshal
Karen Beckley, State Health Division
Kirk Bausman, Hawthorne Army Depot
Sherry Rupert, Indian Commission
Skip Canfield, AICP, Division of State Lands
Clint Wertz, Lincoln County
Zip Upham, NAS Fallon
Ed Rybold, NAS Fallon
Alan Coyner, Commission on Minerals
D. Driesner, Commission on Minerals
Lowell Price, Commission on Minerals
Sandi Gotta, Division of Conservation Districts
John Walker, Nevada Division of Environmental Protection
Terri Compton, Department of Transportation
Steve Siegel, Department of Wildlife, Director's Office
D. Bradford Hardenbrook, Department of Wildlife, Las Vegas
Craig Stevenson, Department of Wildlife, Las Vegas
Robert Martinez, Division of Water Resources
Tod Oppenborn, Nellis Air Force Base
Ms. Deborah MacNeill, Nellis Air Force Base
William Cadwallader, Nellis Air Force Base
99ABW, Nellis Air Force Base
James D. Morefield, Natural Heritage Program
Linda Cohn, National Nuclear Security Administration
Joseph C. Strolin, Agency for Nuclear Projects
Steve Weaver, Division of State Parks
Mark Harris, PE, Public Utilities Commission
Hatice Gecol, Renewable Energy and Energy Efficiency Authority
Pete Konesky, State Energy Office
Tara Vogel, State Energy Office
Jim Groth, State Energy Office
Rebecca Palmer, State Historic Preservation Office
Terry Rubald, Nevada Department of Taxation, Local Government, Centrally Assessed Property
John Muntean, UNR Bureau of Mines

Jon Price, UNR Bureau of Mines
Ron Hess, UNR Bureau of Mines
David David, UNR Bureau of Mines
Russ Land, Nevada Division of Environmental Protection
Clearinghouse, zzClearinghouse
Maud Naroll, zzClearinghouse-Maud

10/6

Rebecca Palmer

From: Nevada State Clearinghouse
Sent: Wednesday, September 01, 2010 1:01 PM
To: Rebecca Palmer
Subject: E2011-042 Crescent Dunes solar energy project, Nye County - Bureau of Land Management

NEVADA STATE CLEARINGHOUSE
Department of Administration, Budget and Planning Division
209 East Musser Street, Room 200, Carson City, Nevada 89701-4298
(775) 684-0213 Fax (775) 684-0260

TRANSMISSION DATE: 9/1/2010

undertaking #2010-632

State Historic Preservation Office

Nevada SAI # E2011-042

Project: Crescent Dunes solar energy project, Nye County

Follow the link below to download an Adobe PDF document concerning the above-mentioned project for your review and comment.

E2011-042

Please evaluate it with respect to its effect on your plans and programs; the importance of its contribution to state and/or local

areawide goals and objectives; and its accord with any applicable laws, orders or regulations with which you are familiar.

Please submit your comments no later than Wednesday, October 13, 2010.

Use the space below for short comments. If significant comments are provided, please use agency letterhead and include the Nevada SAI number and comment due date for our reference.

Clearinghouse project archive

Comment 8

Questions? Reese Tietje, (775) 684-0213 or clearinghouse@state.nv.us

Rebecca Palmer 10/12/10

____No comment on this project ____Proposal supported as written

AGENCY COMMENTS:

The Nevada State Historic Preservation Office (SHPO) reviewed the subject document. The SHPO recommends that the word "salvage" found in the sections describing the effect of the undertaking on cultural resources should be replaced with the word "mitigate" or "mitigated" to be consistent with the existing regulations and its terminology. The SHPO reminds the Bureau of Land Management that a Memorandum of Agreement for the subject undertaking should be executed before a Record of Decision is signed for the project. If you have any questions concerning this correspondence, please feel free to contact me at (775) 684-3443 or by e-mail at Rebecca.Palmer@nevadaculture.org.

Comment 9

BLM

TSE Crescent Dunes Solar Energy Project
DRAFT ENVIRONMENTAL IMPACT STATEMENT

Public Review Meeting
COMMENT FORM

Date: Thursday, September 23, 2009
Time: 6pm–8pm
Location: Tonopah Convention Center

Thank you for your interest in the TSE Crescent Dunes Solar Energy Project EIS.

Comments will be welcomed during the public review meeting, or they may be submitted to the Bureau of Land Management, Tonopah Field Office, Attention: Renewable Energy Project Manager, TSE Crescent Dunes Solar Energy EIS, 1553 South Main Street, P.O. Box 911, Tonopah, NV 89049; faxed to 775-482-7810 (Attn: Renewable Energy Project Manager, TSE Crescent Dunes Solar Energy EIS); or emailed to crescent_dunes@blm.gov. The deadline for submitting comments is October 18, 2010.

Please provide your comments on this EIS in the space below. Please feel free to use the back of this sheet for additional comments or add additional pages as needed.

TONOPAH NEEDS THIS PROJECT AND I support it.

THIS project could be the spark that ignites other projects in the area. Sort of put us on the map.

JOBS JOBS JOBS.

Name/Organization: [illegible]
Phone: 775 482-5729.
Address: 3001 THUNDER MT DR
E-mail: LJ Ramirez @ Cotlink.NET

NATIONAL SYSTEM OF PUBLIC LANDS

Comment 10

From: Wendy_Seley@blm.gov
To: Christensen, Henrik
Subject: Fw: public comment on federal register Fw: STOP TAKING NATURAL PUBLIC LAND FROM NATURAL STATE TO SOLAR - USE LAND FILLS, HAZARD SITES, ETC
Date: Saturday, September 11, 2010 4:10:01 PM

FYI -

Wendy Seley
Realty Specialist, Renewable Energy
Battle Mountain District
Renewable Energy Coordination Office (RECO)
1553 S. Main St.
P.O. Box 911
Tonopah, NV 89049
775.482-7805
775.482-7810 (fax)

----- Forwarded by Wendy Seley/TFS/NV/BLM/DOI on 09/11/2010 04:09 PM -----

Timothy Coward/TFS/NV/BLM/DOI
09/08/2010 09:33 AM

To
Wendy Seley/TFS/NV/BLM/DOI@BLM, Dave Davis/BMFO/NV/BLM/DOI@BLM
cc
Thomas Seley/TFS/NV/BLM/DOI@BLM
Subject
Fw: public comment on federal register Fw: STOP TAKING NATURAL PUBLIC LAND FROM NATURAL STATE TO SOLAR - USE LAND FILLS, HAZARD SITES, ETC

Tim Coward
PM RECO
(o) 775-482-7830
timothy_coward@blm.gov
----- Forwarded by Timothy Coward/TFS/NV/BLM/DOI on 09/08/2010 09:33 AM -----

jean public <jeanpublic@yahoo.com>
09/05/2010 12:59 PM

To
crescent.dunes@blm.gov, timothy_coward@blm.gov, info@emagazine.com,

information@sierraclub.org,
foe@foe.org, info@earthjustice.org
cc
center@biologicaldiversity.org,
broads@greatoldbroads.org
Subject
public comment on federal register
Fw: STOP TAKING NATURAL PUBLIC LAND
FROM NATURAL STATE TO SOLAR - USE
LAND FILLS, HAZARD SITES, ETC

7680 acres of public land used by a profiteer - not a good idea. we need
to save somenatural land. let the solar facility go on a landfill or some
other used site. let this profiteer buyE PUT private land instead of
trying to weasel so he becomes a public charge on the taxpayers back. let
this be a private endeavor. the only land we should let go at lease rates
is old landfills. not virgin land that needs to be saved for natural. they
are NOT MAKING NEW LAND IN AMERICA. WE CANT LET PROFITEERS COME IN AND
RUIN. WE HAVE TO RE USE. IBET IF THEY HAVE TO BUY PRIVATE LAND, THE ACRES
REQUIRED WILL GO DOWN BY TWO THOUSAND PERCENT. THIS PROFITEER IS LOOKINGI
TO TAKE ADVANTAGE OF TAXPAYERS.THIS TAKING AND SITING IS NOT NECESSARY
HERE. DONT TAKE OPEN NATURAL SPACE. SOLAR CAN BE PUT ON ROOFS OF HOMES. YO
UDONT NEED TO CREATE A HEAT ISLAND. YOU DONT NEED TO TAKE ALL THE
WATER-THAT IS ALSO A DETRIMENT. THIS IS NOT THE BEST USE OF SOLAR POWER.
THIS IS OPEN SPACE AND NEEDS PRESERVATION FOR ITSELF. THIS IS A TRULY
PERVERTED OPPORTUNISTIC APPLICATION. THIS APPLICATION MEANS THE
ANNIHILATION OF THE FOLLOWING INT HIS AREA: BIO RESOURCES, WATER
RESOURCES, GEOLOGICAL RESOURCES, OPEN SPACE RESOURES, PALEO RESOURCES,
VISUAL RESOURCES, WILDERNESS RESOURCES PLUS OTHER IMPACTS. DENY
THISAPPLICATION. JEAN PUBLIC 1 ELM ST FLORHAM PARK NJ07932 10

[Federal Register: September 3, 2010 (Volume 75, Number 171)]
[Notices]
[Page 54177]
From the Federal Register Online via GPO Access [wais.access.gpo.gov]
[DOCID:fr03se10-92]

y pr
[[Page 54177]]

DEPARTMENT OF THE INTERIOR

Bureau of Land Management

[LLNVB00000 L51010000.ER0000 LVRWF0900380 241A; 10-08807;
MO 4500014355; TAS: 14X5017]

Notice of Availability of Draft Environmental Impact Statement for the Tonopah Solar Energy Crescent Dunes Solar Energy Project, Nye County, NV

AGENCY: Bureau of Land Management, Interior.

ACTION: Notice of availability.

SUMMARY: In accordance with the National Environmental Policy Act of 1969, as amended (NEPA), the Bureau of Land Management (BLM) has prepared a Draft Environmental Impact Statement (EIS) for the Crescent Dunes Solar Energy Project, Nye County, Nevada, and by this Notice is announcing the opening of the comment period.

DATES: To ensure comments will be considered, the BLM must receive written comments on the Crescent Dunes Solar Energy Project Draft EIS within 45 days following the date the Environmental Protection Agency publishes its Notice of Availability in the Federal Register. The BLM will announce future meetings or hearings and any other public involvement activities at least 15 days in advance through public notices, media news releases, and/or mailings.

ADDRESSES: You may submit comments on the Crescent Dunes Solar Energy Project Draft EIS by any of the following methods:

E-mail: crescent_dunes@blm.gov.

Fax: 775-482-7810.

Mail: Timothy Coward, Renewable Energy Project Manager, BLM Tonopah Field Office, P.O. Box 911, Tonopah, Nevada 89049.

Copies of the Draft EIS for the Crescent Dunes Solar Energy Project are available at the BLM Tonopah Field Office and at the Battle Mountain District Office, 50 Bastian Road, Battle Mountain, Nevada, or at the following Web site: http://www.blm.gov/nv/st/en/fo/battle_mountain_field.html.

FOR FURTHER INFORMATION CONTACT: Timothy Coward, (775) 482-7800, BLM Tonopah Field Office, 1553 South Main Street, P.O. Box 911, Tonopah, Nevada 89049; Timothy_Coward@blm.gov.

SUPPLEMENTARY INFORMATION: Tonopah Solar Energy, LLC applied to the BLM for a 7,680-acre right-of-way (ROW) on public lands to construct a concentrated solar thermal power plant facility approximately 13 miles northwest of Tonopah, Nye County, Nevada. The proposed project is not expected to use the total acres applied for in the ROW application. The project is located within the southern portion of the Big Smoky Valley, north of U.S. Highway 95/6 along the Gabbs Pole Line Road (State Highway 89). The facility is expected to operate for approximately 30 years. The proposed solar power project would use concentrated solar power technology, using heliostats or mirrors to focus sunlight on a receiver erected in the center of the solar field (the power tower or central receiver). A heat transfer fluid is heated as it passes through the receiver and is then circulated through a series of heat exchangers to generate high-pressure steam. The steam is used to power a conventional Rankine cycle steam turbine, which produces electricity. The exhaust steam from the turbine is condensed and returned via

feedwater pumps to the heat exchangers where steam is regenerated. Hybrid cooling processes would be used for this project to minimize water use while continuing to maintain efficient power generation. The plant design would generate a nominal capacity of 100 megawatts.

The project's proposed facility design includes the heliostat fields, a 653-foot central receiver tower, a power block, buildings, a parking area, a laydown area, evaporating ponds, and an access road. A single overhead 230-kilovolt transmission line would connect the plant to the nearby Anaconda Moly substation.

The Draft EIS describes and analyzes the proposed project's site-specific impacts on air quality, biological resources, cultural resources, water resources, geological resources, hazardous materials handling, land use, noise, paleontological resources, public health, socioeconomics, soils, traffic and transportation, visual resources, wilderness characteristics, waste management, worker safety, and fire protection. The Draft EIS also describes facility design engineering, efficiency, reliability, transmission system engineering, and transmission line safety.

Three action alternatives were analyzed in addition to the No Action alternative: the Proposed Action Alternative, Alternative 1, and Alternative 2. Alternative 2 is the BLM preferred alternative.

Scoping of the project occurred from November 24, 2009 through December 24, 2009. A total of 24 comments were received. Comments on cumulative impacts identified the affects to air quality to include criteria pollutant and ``Dark Sky'' attributes on the effects of the viewshed, and the availability of water for current and future use. Other comments were that the proposed project is located in an area of pediment adjacent to 2 highly mineralized mountain ranges which have identified molybdenum and lithium deposits.

Maps of the proposed project area and the alternatives being analyzed in the Draft EIS are available at the BLM Tonopah Field Office, the Battle Mountain District Office, and at: http://www.blm.gov/nv/st/en/fo/battle_mountain_field.html.

Please note that public comments and information submitted, including names, street addresses, and e-mail addresses of persons who submit comments, will be available for public review and disclosure at the above address during regular business hours (8 a.m. to 4 p.m.), Monday through Friday, except holidays. Before including your address, phone number, e-mail address, or other personal identifying information in your comment, you should be aware that your entire comment--including your personal identifying information--may be made publicly available at any time. While you can ask us in your comment to withhold your personal identifying information from public review, we cannot guarantee that we will be able to do so.

Authority: 40 CFR 1506.6 and 1506.10.

Thomas J. Seley,
Manager, Tonopah Field Office.
[FR Doc. 2010-21958 Filed 9-2-10; 8:45 am]
BILLING CODE 4310-HC-P

Comment 11

From: Brendan Hughes
To: crescent_dunes@blm.gov
Subject: Comments on Crescent Dunes Solar
Date: Sunday, October 17, 2010 1:50:05 PM

To whom it may concern:

I would like to express my opposition to the Crescent Dunes Solar project. This project will have unnecessary impacts on water, wildlife, habitat, and recreation. FLPMA charged BLM with preventing undue degradation to the public lands when alternatives exist. It is obvious that alternatives in the form of energy conservation, efficiency, and rooftop solar exist and should be implemented before we sacrifice large swaths of our public lands. It may not be BLM's duty to identify specific project alternatives, but it is BLM's duty to protect the public lands. If BLM approves this project it will have failed in one of the main objectives of its organic act, FLPMA. The proof that this project should not go forward is in the data contained within the DEIS, as it has been with every other project located on public land. This project will harm sensitive or T&E species and destroy habitat. It is up to BLM to be a reasoned, scientific arbiter and reject these destructive proposals.

Thank you for your consideration.

Brendan Hughes
61093 Prescott Trail
Joshua Tree, CA 92252

Comment 12

October 18th, 2010

Timothy Coward

Renewable Energy Project Manager

BLM Tonopah Field Office

P.O. Box 911

Tonopah, NV 89040

Dear Mr. Coward:

We would like to submit these comments on the Draft Environmental Impact Statement (DEIS) for the proposed Crescent Dunes Solar Energy Project.

Basin and Range Watch is a group of volunteers who live in the deserts of Nevada and California, working to stop the destruction of our desert homeland. Industrial renewable energy companies are seeking to develop millions of acres of unspoiled habitat in our region. Our goal is to identify the problems of energy sprawl and find solutions that will preserve our natural ecosystems and open spaces.

Project Right of Way: The preferred project site contains up to 1,600 acres of undeveloped land. The Right of Way is substantially larger. Will it expand? 12-A

Purpose and Need: All alternatives are now defined by a Need reflecting the recent Secretarial Order 3283: Enhancing Renewable Energy Development on Public Lands.

The goals of Section 4 in Secretarial Order 3283 clearly state a need for environmental responsibility: *"the permitting of **environmentally responsible** wind, solar, biomass, and geothermal operations and electrical transmission facilities on the public lands;* 12-B

Alternatives: Following the guidelines of the National Environmental Policy Act, the final EIS should present the environmental impacts of the proposal and the alternatives in comparative form, thus sharply defining the issues and providing a clear basis for choice among options by the decision maker and the public. In this section agencies shall: 12-C

(a) Rigorously explore and objectively evaluate all reasonable alternatives, and for alternatives which were eliminated from detailed study, briefly discuss the reasons for their having been eliminated.

(b) Devote substantial treatment to each alternative considered in detail including the proposed action so that reviewers may evaluate their comparative merits.

(c) Include reasonable alternatives not within the jurisdiction of the lead agency.

(d) Include the alternative of no action.

12-C continued

(e) Identify the agency's preferred alternative or alternatives, if one or more exists, in the draft statement and identify such alternative in the final statement unless another law prohibits the expression of such a preference.

(f) Include appropriate mitigation measures not already included in the proposed action or alternatives.

Distributed Generation Alternative:

Included in the guidelines of the National Environmental Policy Act are requirements to *"Include reasonable alternatives not within the jurisdiction of the lead agency."*

Distributed generation in the built environment should be given much more full analysis, as it is a completely viable alternative. Crescent Dunes will need just as much dispatchable baseload behind it, and also does not have storage. But environmental costs are negligible with distributed generation, compared with the Silver State project. Distributed generation cannot be "done overnight," but neither can large transmission lines across hundreds of miles from remote central station plants to load centers. Most importantly, distributed generation will not reduce the natural carbon-storing ability of healthy desert ecosystems, will not disturb biological soil crusts, and will not degrade and fragment habitats of protected, sensitive, and rare species.
Alternatives should be looked at that are in load centers, not closest to the project site. There is a need to consider the "macro" picture, the entire state, to look at maximum efficiency. 12-D

A Master comprehensive plan should exist before large expensive inefficient solar plants are sited and built out in the wildlands. This plan should carefully analyze the recreational and biodiversity resources of the Nevada desert. A list of assumptions should be included detailing the plan for integrating various fuels mixes and technologies into each utility's plan, an overall state plan, and a national plan. Loads should be carefully analyzed to determine whether additional capacity is needed for peaking, intermediate, or baseload purposes. Unit size, which impacts capital and operating costs and unit capacity factors, has a direct bearing on the relative economics of one technology over another. A plan might recommend that smaller units built in cities and spaced in time offer a less risky solution than one large unit built immediately.

Right now there is no utility plan, no state plan, and no national plan. Large-scale central station solar plants have been sited very far from load centers out in remote deserts, with the only criterion being nearness to existing transmission lines and natural gas lines. Very little thought has been given to the richness of biological resources, the

cumulative impacts on visual scenery to tourists, the proximity to ratepayers, or the level of disturbance of the site.

The California Energy Commission says there will be a need to build many new efficient natural gas peaker or baseload plants to back up the renewables planned, and this will undoubtedly be the case in Nevada as well. Instead, the renewables should be distributed generation in load centers, which will provide much more efficiency, rather than inefficient remote central station plants that reduce biodiversity and require expensive transmission lines. This reduces the risk, as distributed generation is a known technology and has been proven in countries like Germany where incentive programs have been tested. Incentive programs can be designed in an intelligent manner to vastly increase distributed generation. Incentives for large remote projects like Crescent Dunes are unproven to lower risk and may actually raise debt levels with runaway costs associated with poor siting and higher-than-anticipated operating and maintenance costs. 12-D continued

Many renewable project developers have failed to consider reasonable or viable alternatives that could serve as solutions that everybody could live with. In the case of this particular project, conflicts with endangered species, cultural resources, storm water drainage erosion, viewscapes from National Parks and wilderness areas could all be avoided with a distributed generation alternative. Thin film photovoltaic can be sited on developed areas using rooftops, parking lots and other urban vacant lots.

Off Site Alternative:

The FEIS should provide two additional alternatives away from the preferred alternative. 12-E

Basin and Range Watch Preferred Alternative:

Our preferred alternative would be to deny the Right of Way to the applicant and designate the region unsuitable for renewable energy development. 12-F

Greenhouse gases:

The DEIS has indicated a need for transmission line upgrades and new transmission facilities. The green house gas called SF6 is used primarily in electricity transmission - and is emitted in especially large amounts in construction of new lines – and is 24,000 times as potent as CO2 in its global warming impacts. The Environmental Protection Agency has declared “that the electric power industry uses roughly 80% of all SF6 produced worldwide“. Ideally, none of this gas would be emitted into the atmosphere. In reality significant leaks occur from aging equipment, and gas losses occur during equipment maintenance and servicing. With a global warming potential 23,900 times greater than CO2 and an atmospheric life of 3,200, one pound of SF6 has the same 12-G

global warming impact of 11 tons of CO2. In 2002, U.S. SF6 emissions from the electric power industry were estimated to be 14.9 Tg CO2 Eq. …

http://www.epa.gov/electricpower-sf6/basic.html

Please provide a more detailed analysis of the amount of SF6 gases that would be released by this project.

12-G continued

Carbon sink:

Scientific studies have revealed that desert ecosystems and minerals have the ability to store C02 gases. Have Desert Researchers Discovered a Hidden Loop in the Carbon Cycle? Richard Stone: Science 13 June 2008: Vol. 320. no. 5882, pp. 1409 - 1410 DOI: 10.1126/science.320.5882.1409

How much C02 storage capability would be replaced by development? If the goal is indeed to reduce greenhouse gases, is it wise to remove this much carbon storing living crust? Please provide a detailed analysis on the amount of GHG that would otherwise be offset by an intact arid ecosystem.

12-H

Biological Resources:

Development of this project will result in the loss of 1,600 acres of habitat for the following species:

Pronghorn

Mule Deer

Elk

12-I

Bighorn Sheep

Bighorn biologists Dr. John Wehausen and Dr. Vern Bleich have concluded that radio telemetry studies of bighorn sheep in various southwestern deserts, including the Mojave Desert of California, have found considerable movement of these sheep between mountain ranges.... Consequently, intermountain areas of the desert floor that bighorn traverse between mountain ranges can be as important to the long-term viability of populations as are the mountain ranges themselves.

Alluvial fans near steep rocky terrain can provide crucial foraging habitat for big horn sheep (Wehausen 2009)

For example, ewes at the end of gestation that need nutrients may come down from steep, rocky terrain looking for higher quality forage. They might use areas like the project site for only three weeks, but those three weeks are critical. The Ivanpah Valley

12-J

might also provide important movement corridors for deer and bighorn sheep. The California Department of Fish and Game has noted that wildlife corridors are present through and adjacent to the Silver State Site and Ivanpah Solar Electric Generating System Site, and have expressed concern that the ISEGS project could adversely affect bighorn sheep. Due to ISEGS close proximity to the Silver State site.

"Radio telemetry studies of bighorn sheep in various southwestern deserts, including the Mojave Desert of California, have found considerable movement of these sheep between mountain ranges (Bleich et al., 1990b). This is especially true of males, but also of ewes (Bleich et al., 1996). Within individual mountain ranges, populations often are small (Table 1). Levels of inbreeding could be high in such populations, but intermountain movements provide a genetic connection with a larger metapopulation, and this will counteract potential inbreeding problems (Schwartz et al., 1986; Bleich et al., 1990b). Intermountain movements also are the source of colonization of vacant habitat, which is fundamental to metapopulation dynamics and persistence. .Colonization by ewes is the slow link in this process, but has recently been documented in two Mojave Desert ranges in California (Bleich et al., 1996; Torres et al., 1996). Consequently, intermountain areas of the desert floor that bighorn traverse between mountain ranges are as important to the long term viability of populations as are the mountain ranges themselves (Schwartz et al., 1986; Bleich et al., 1990b, 1996)." 12-J continued

What if any measures would be provided to mitigate the loss of this habitat? Would land be purchased?

Special Status Wildlife Species:

How much foraging habitat would be lost for bald and golden eagles? Would this result in any Take under the Bald and Golden eagle Protection Act?

Raptors potentially resident or migratory on the site that could be adversely impacted by towers:

American kestrel
Prairie falcon
Peregrine falcon
Northern harrier
Swainson's hawk
Ferruginous hawk
Rough-legged hawk
Osprey
Bald eagle
Golden eagle
Sharp-shinned hawk
Cooper's hawk

12-J

Northern goshawk

12-K continued

Migratory Birds, Insects and Polarized Light Pollution

The heliostat mirror towers will assume the appearance of water from a distance.

The Nature Conservancy has just released their Mojave Desert Ecoregional Assessment. In the assessment, they discuss the impacts of polarized light pollution on birds and insects:

12-L

"Light and noise pollution associated with electrical power plants can be problematic for wildlife. Polarized light pollution can attract aquatic insects and other species that mistake the panels for bodies of water, potentially leading to population decline or even local extinction of some organisms (Horvath et al. 2010). Nighttime lighting for security or other reasons may negatively impact a variety of Mojave Desert species, many of which have developed nocturnal behavior to escape the daytime heat of the desert. *(Mojave Desert Ecoregional Assessment September 2010, The Nature Conservancy of California 201 Mission Street, 4th Floor San Francisco, CA 94105)* p. 50"

Evaporation Ponds:

Saline evaporation ponds will attract birds, bats and insects and be toxic. How will mortality from pollutants be mitigated?

12-M

Pale Kangaroo Mice:

Approval of this project will result in the loss of habitat and impede connectivity for this species. How will this be mitigated? A comprehensive mitigation plan describing land acquisition should be provided.

12-N

Endemic Dune Beetle:

Direct loss of 1,600 acres will occur for *Aegelia crescentia* a diurnal, flightless dune beetle. How will this loss be mitigated?

12-O

Special Status Plant Species

Over 1,600 acres will be lost for rare plants such as Sand Cholla and Nevada oryctes.

There are no mitigation measures outlined for avoidance of rare plants or enhancement of habitat for these plants..

12-P

Mitigation measures for several California renewable energy projects with a similar sized destructive footprint outline plans to form a "halo" of construction avoidance around rare plant species that have been located on the site.

Conclusion:

Again, our preferred alternative would be to deny the Right of Way to the applicant and designate the region unsuitable for renewable energy development. 12-Q

Thank you,

Kevin Emmerich

Laura Cunningham

Basin and Range Watch

P.O. Box 70

Beatty, NV 89003

Comment 13

BLM

TSE Crescent Dunes Solar Energy Project
DRAFT ENVIRONMENTAL IMPACT STATEMENT

Public Review Meeting
COMMENT FORM

Date: Thursday, September 23, 2010
Time: 6pm–8pm
Location: Tonopah Convention Center

Thank you for your interest in the TSE Crescent Dunes Solar Energy Project EIS.

Comments will be welcomed during the public review meeting, or they may be submitted to the Bureau of Land Management, Tonopah Field Office, Attention: Renewable Energy Project Manager, TSE Crescent Dunes Solar Energy EIS, 1553 South Main Street, P.O. Box 911, Tonopah, NV 89049; faxed to 775-482-7810 (Attn: Renewable Energy Project Manager, TSE Crescent Dunes Solar Energy EIS); or emailed to crescent_dunes@blm.gov. The deadline for submitting comments is October 18, 2010.

Please provide your comments on this EIS in the space below. Please feel free to use the back of this sheet for additional comments or add additional pages as needed.

I am very supportive of the project. Nye County needs jobs & we need the taxes.

the location is ideal.
I have never heard of the Crescent Dunes Special Resource Management Area and I have lived here 18 yrs. ~~Bmt~~

I do have one concern and that is the fact that our power bill will increase because the power generated by the solar energy plant is more expensive than what we receive now. So this cost will be passed on to us.

But as with all 'green' energy & products, we have to weigh the pros & cons, and are we willing to pay for 'green'

Name/Organization: Ann McGaw
Phone: 775 316 0180
Address: PO Box 3268, Tonopah, NV 89049
E-mail: aembrit@hotmail.com

NATIONAL SYSTEM OF PUBLIC LANDS

I would like to be kept informed of any meetings or updates to the project.

Thank you.

BLM

NATIONAL SYSTEM OF PUBLIC LANDS

Comment 14

BLM

TSE Crescent Dunes Solar Energy Project
DRAFT ENVIRONMENTAL IMPACT STATEMENT

Public Review Meeting
COMMENT FORM

Date: Thursday, September 23, 2010
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Please provide your comments on this EIS in the space below. Please feel free to use the back of this sheet for additional comments or add additional pages as needed.

I Believe this is an excellent Project that will Benefit the area economically. The construction jobs alone and influx of workers over the next 3 years will be a boon to the local economy not to mention the 50 or so Permanent Jobs that will also contribute.

The use of apprentices during construction will aid in training a future workforce for our State. Hopefully the Developer will use Nevada workers to build this Project and include fair wages + Benefits

I also Believe this is a well engineered, quality Project that will Benefit the area for years to come.

Judging by the presentation I feel this will have little or no enviormental impact.

Build it! Thank You

Name/Organization: Danny Costella, Ironworkers 118

Phone: (775) 331-8696

Address: 1110 Greg St, Sparks, NV 89431

E-mail: IW118@SBCGLOBAL.NET

NATIONAL SYSTEM OF PUBLIC LANDS

Comment 15

BLM

TSE Crescent Dunes Solar Energy Project
DRAFT ENVIRONMENTAL IMPACT STATEMENT

Public Review Meeting
COMMENT FORM

Date: Thursday, September 23, 2010
Time: 6pm–8pm
Location: Tonopah Convention Center

Thank you for your interest in the TSE Crescent Dunes Solar Energy Project EIS.

Comments will be welcomed during the public review meeting, or they may be submitted to the Bureau of Land Management, Tonopah Field Office, Attention: Renewable Energy Project Manager, TSE Crescent Dunes Solar Energy EIS, 1553 South Main Street, P.O. Box 911, Tonopah, NV 89049; faxed to 775-482-7810 (Attn: Renewable Energy Project Manager, TSE Crescent Dunes Solar Energy EIS); or emailed to crescent_dunes@blm.gov. The deadline for submitting comments is October 18, 2010.

Please provide your comments on this EIS in the space below. Please feel free to use the back of this sheet for additional comments or add additional pages as needed.

THIS PROJECT WILL BE A VERY IMPORTANT TO THE LOCAL ECOMEMY AS WELL ~~AS~~ TO THE JOB MARKET AS WELL AS THE FUTURE OF RENEWABLE ENERGIES, IT SHOULD BE VERY EXCITING TO PARTICIPATE IN THIS VENTURE, I CAN HARDLY WAIT TO GET STARTED.

Name/Organization: DUANE KRAMER I.B.E.W. LOCAL # 401 RENO NV.
Phone: (702) 722-3300 HOME (775) 434-5939 CELL
Address: 304 OCCIDENTAL DR. DAYTON, NV, 89403
E-mail: DL KRAMER @ CHARTER.NET

NATIONAL SYSTEM OF PUBLIC LANDS

Comment 16

TSE Crescent Dunes Solar Energy Project
DRAFT ENVIRONMENTAL IMPACT STATEMENT

Public Review Meeting
COMMENT FORM

Date: Thursday, September 23, 2010
Time: 6pm–8pm
Location: Tonopah Convention Center

Thank you for your interest in the TSE Crescent Dunes Solar Energy Project EIS.

Comments will be welcomed during the public review meeting, or they may be submitted to the Bureau of Land Management, Tonopah Field Office, Attention: Renewable Energy Project Manager, TSE Crescent Dunes Solar Energy EIS, 1553 South Main Street, P.O. Box 911, Tonopah, NV 89049; faxed to 775-482-7810 (Attn: Renewable Energy Project Manager, TSE Crescent Dunes Solar Energy EIS); or emailed to crescent_dunes@blm.gov. The deadline for submitting comments is October 18, 2010.

Please provide your comments on this EIS in the space below. Please feel free to use the back of this sheet for additional comments or add additional pages as needed.

This project will be of economic benefit for Nye County. The construction work force will help ease the Nevada unemployment problem. The renewable energy benefits go without mention I am most definitely in favor of this project

Name/Organization: Bob Primeau - IBEW, Local 401

Phone: 775-750-4050

Address: 2713 E. 4th St. Reno 89512

E-mail: rprim52741@aol.com

NATIONAL SYSTEM OF PUBLIC LANDS

BLM

Comment 17

BLM

TSE Crescent Dunes Solar Energy Project
DRAFT ENVIRONMENTAL IMPACT STATEMENT

Public Review Meeting
COMMENT FORM

Date: Thursday, September 23, 2010
Time: 6pm–8pm
Location: Tonopah Convention Center

Thank you for your interest in the TSE Crescent Dunes Solar Energy Project EIS.

Comments will be welcomed during the public review meeting, or they may be submitted to the Bureau of Land Management, Tonopah Field Office, Attention: Renewable Energy Project Manager, TSE Crescent Dunes Solar Energy EIS, 1553 South Main Street, P.O. Box 911, Tonopah, NV 89049; faxed to 775-482-7810 (Attn: Renewable Energy Project Manager, TSE Crescent Dunes Solar Energy EIS); or emailed to crescent_dunes@blm.gov. The deadline for submitting comments is October 18, 2010.

Please provide your comments on this EIS in the space below. Please feel free to use the back of this sheet for additional comments or add additional pages as needed.

I am in support of the Solar Energy project.

Name/Organization: Keith Ingram

Phone: 775-673-9254

Address: 2365 Melody Ln. Reno, Nev.

E-mail:

NATIONAL SYSTEM OF PUBLIC LANDS

Comment 18

BLM

TSE Crescent Dunes Solar Energy Project
DRAFT ENVIRONMENTAL IMPACT STATEMENT

Public Review Meeting COMMENT FORM

Date: Thursday, September 23, 2010
Time: 6pm–8pm
Location: Tonopah Convention Center

Thank you for your interest in the TSE Crescent Dunes Solar Energy Project EIS.

Comments will be welcomed during the public review meeting, or they may be submitted to the Bureau of Land Management, Tonopah Field Office, Attention: Renewable Energy Project Manager, TSE Crescent Dunes Solar Energy EIS, 1553 South Main Street, P.O. Box 911, Tonopah, NV 89049; faxed to 775-482-7810 (Attn: Renewable Energy Project Manager, TSE Crescent Dunes Solar Energy EIS); or emailed to crescent_dunes@blm.gov. The deadline for submitting comments is October 18, 2010.

Please provide your comments on this EIS in the space below. Please feel free to use the back of this sheet for additional comments or add additional pages as needed.

I am in support of this project. I am an avid outdoor enthusiast.

Name/Organization: David Rios

Phone: (775)-842-9496

Address: 1718 Woodhaven Ln Sparks, NV 89434

E-mail: djrgps@live.com

NATIONAL SYSTEM OF PUBLIC LANDS

Comment 19

BLM

TSE Crescent Dunes Solar Energy Project
DRAFT ENVIRONMENTAL IMPACT STATEMENT

Public Review Meeting
COMMENT FORM

Date: Thursday, September 23, 2010
Time: 6pm–8pm
Location: Tonopah Convention Center

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Comments will be welcomed during the public review meeting, or they may be submitted to the Bureau of Land Management, Tonopah Field Office, Attention: Renewable Energy Project Manager, TSE Crescent Dunes Solar Energy EIS, 1553 South Main Street, P.O. Box 911, Tonopah, NV 89049; faxed to 775-482-7810 (Attn: Renewable Energy Project Manager, TSE Crescent Dunes Solar Energy EIS); or emailed to crescent_dunes@blm.gov. The deadline for submitting comments is October 18, 2010.

Please provide your comments on this EIS in the space below. Please feel free to use the back of this sheet for additional comments or add additional pages as needed.

I think that the proposed #2 alternative would be a good idea for this project. This is a needed adition to the community for green energy and jobs for the area.

Name/Organization: Paul Davies

Phone: 775-287-5176

Address: 3429 Ridgecrest Dr Reno, NV 89512

E-mail: PLDMAD@aol.com

NATIONAL SYSTEM OF PUBLIC LANDS

Comment 20

TSE Crescent Dunes Solar Energy Project
DRAFT ENVIRONMENTAL IMPACT STATEMENT

Public Review Meeting
COMMENT FORM

Date: Thursday, September 23, 2010
Time: 6pm–8pm
Location: Tonopah Convention Center

Thank you for your interest in the TSE Crescent Dunes Solar Energy Project EIS.

Comments will be welcomed during the public review meeting, or they may be submitted to the Bureau of Land Management, Tonopah Field Office, Attention: Renewable Energy Project Manager, TSE Crescent Dunes Solar Energy EIS, 1553 South Main Street, P.O. Box 911, Tonopah, NV 89049; faxed to 775-482-7810 (Attn: Renewable Energy Project Manager, TSE Crescent Dunes Solar Energy EIS); or emailed to crescent_dunes@blm.gov. The deadline for submitting comments is October 18, 2010.

Please provide your comments on this EIS in the space below. Please feel free to use the back of this sheet for additional comments or add additional pages as needed.

I THINK THEY SHOULD MOVE TO PROJECT A COUPLE MILES WEST TO ESMERALDA COUNTY. THEY NEED THE TAX REVENUE MORE THAN NYE COUNTY. THAT WAY BOTH NYE AND ESMERALDA COUNTY BENEFITS OVERALL THE PROJECT WILL PROVIDE MORE MONEY THAN THE OCCASIONAL MONEY SPENT BY PEOPLE COMMING HERE TO STARGAZE. THE ONLY REAL PROBLEM IS THE TRUE COST OF PRODUCING THE POWER WHICH IS APPROX. $.13 PER KW COMPARED TO APPROX. $.08 PER KW OF COAL, GAS, OIL, FIRED POWER PLANTS. AS STATED THIS ACCUALLY INCREASES THE COST FOR POWER SO AS A RATE PAYER AND TAXPAYER IT ~~INCREASES~~ DECREASES THE AMOUNT OF MONEY THAT I CAN SPEND ON OTHER ITEMS.

Name/Organization: DENNIS McGAN

Phone: 775 316 2770

Address: PO BOX 3268 TONOPAH NV 89049

E-mail: DJMACKS@HOTMAIL.COM

NATIONAL SYSTEM OF PUBLIC LANDS

BLM

Comment 21

October 18, 2010

Bureau of Land Management, Tonopah Field Office
Attn: Renewable Energy Project Manager
TSE Crescent Dunes Solar Energy EIS
1553 South Main Street, P.O.Box 911
Tonopah, NV 89049

crescent_dunes@blm.gov

RE: Crescent Dunes Solar Energy Project Draft EIS comments

Thank you for the opportunity to comment on the Crescent Dunes Solar Energy Project draft EIS. While we support the concept of moving toward renewable energy and away from fossil fuels for electric power generation we have some concerns about how utility scale renewable energy projects in the desert southwest are implemented. It doesn't make sense to destroy the very environment we're trying to save by reducing generation of greenhouse gases.

This project will permanently alter some 1700 acres of marginal habitat and use some 600 acre-feet/year of groundwater. There will, in addition, be impacts to migratory birds. According to the draft EIS a mitigation plan is being developed, but is not yet available. It is not possible for the public to provide meaningful comments on a plan which does not yet exist. The wildlife impact mitigation plans need to be provided to the decision makers and the general public as part of this draft EIS, not provided as a fait accompli in the final EIS. In addition to a mitigation plan a monitoring plan needs to be developed so that we can know how many birds are killed or injured by the heliostat field and the tower. Much bird migration takes place at night and collisions with towers are well known to be a significant source of mortality for migrating birds or many species. We have very little experience with large tower energy collectors of the size proposed here with relation to effects on raptors. The thermal uplift above and around the tower will be substantial and as such attractive to large soaring birds. However, the air temperature in the immediate vicinity of the tower may potentially be lethal. This subject deserves a comprehensive monitoring plan. 21-A

The 600 acre-feet/year of water that will be used is approximately 10% of the estimated perennial yield of the hydrographic basin. Unfortunately, the groundwater basin in which this project is located is already greatly over allocated, although actual pumping at this time is considerably less. Given the very long-term nature of this proposed project and the large financial investment involved we can be confident that pumping will occur at the maximum permitted level for the life of the project (unlike mining projects which are temporary or intermittent). Hence, now is the time to start getting control of groundwater utilization in this groundwater basin. It is essential that mitigation include purchase and retirement of groundwater rights in an amount that is at least equal to the proposed usage of this project. 21-B

The draft EIS discusses reclamation of temporarily disturbed areas when the construction phase is finished and reclamation and restoration of the entire site at the end of the ROW permit period. Since little is known about how to restore areas of degraded and disturbed soil in that area reclamation efforts need to be result based rather than effort based, since successful restoration of the native plant community on the first try is unlikely. 21-C

The section on socioeconomic impacts notes that due to the depressed housing market in Tonopah that there is quite a bit of unoccupied housing available for construction workers. The impacts to schools, however, are dismissed with the statement that: "The Nye County School District has an established schooling program, which would accommodate the relocating families"(p.4-86). Given the dire state of K-12 school funding in Nevada it is not reasonable to assume that the Nye County School District will be able to just absorb a significant number of additional students. The developer of this project should be required to provide the Nye County School District with the additional funds necessary to provide for an influx of construction related school children. The students will arrive and need to be educated long before Nye County derives any tax benefit from this project. The same is true for other county services such as police, fire and medical personnel. 21-D

Sincerely,

John E. Hiatt
Conservation Chair, Red Rock Audubon Society
8180 Placid Street
Las Vegas, NV 89123
702-361-1171

October 18th, 2010

Delivered via electronic mail (crescent_dunes@blm.gov) and U.S. mail.

Timothy Coward
Renewable Energy Project Manager
BLM Tonopah Field Office
P.O. Box 911
Tonopah, NV 89040

Re: Comments on the Crescent Dunes Solar Energy Project Draft Environmental Impact Statement

Dear Mr. Coward:

Please accept and fully consider these comments on the Draft Environmental Impact Statement (DEIS) for the proposed Crescent Dunes Solar Energy Project (CDSEP) on behalf of The Wilderness Society, Nevada Wilderness Project and the Toiyabe Chapter Sierra Club.

Clearly, our nation's growing addiction to fossil fuels, coupled with the unprecedented threats brought about by global warming, imperil the integrity of our wildlands as never before. To sustain both our wildlands and our human communities, the undersigned believe the nation must transition away from fossil fuels as quickly as possible. To do this, we must eliminate energy waste, moderate demand through energy efficiency, conservation, and demand-side management practices, and rapidly develop and deploy clean, renewable energy technologies, including at the utility-scale. Renewable energy development is not appropriate everywhere on the public lands, however, and thorough review under the National Environmental Policy Act is an essential part of determining which of the many proposed utility-scale projects should be permitted to go forward.

We strongly believe that long-term, environmentally responsible success of the Bureau of Land Management's solar energy program depends on developing policy and guidelines that guide projects to the most appropriate locations, thus limiting environmental impacts and reducing obstacles to construction of the most appropriate projects. We are submitting these comments in the hope that CDSEP can be one of those projects.

I. Summary of Findings

Our review of the DEIS revealed several important potential public benefits from the development of CDSEP. These potential benefits include: reducing greenhouse gas emissions from electricity generation, helping meet Nevada's Renewable Energy Portfolio Standard (RPS), and creating new jobs and tax revenues. In addition, the BLM should be commended for the format of their public meetings for CDSEP. These meetings included a presentation on CDSEP from the BLM and the project applicant, Tonopah Solar Energy (TSE), a subsidiary of Solar

Reserve. The meetings also allowed participants to ask questions during a group question and answer session.

This review identified three key issues for additional consideration and evaluation.[1] The first is the need to provide the public with more detailed information on mitigation as well as the actual mitigation plans mentioned in the DEIS. Though there are details in some sections, the DEIS notes in numerous places that plans are being developed, but does not provide any details on the content of those plans. Clarification of these issues will enable the public to better understand the potential impacts of CDSEP and the associated mitigation measures being proposed as well as providing additional certainty for TSE.

The BLM should 1) provide these plans to the public for comment as soon as they are finalized, and certainly before the publication of the Final EIS; 2) specify which mitigation measures will be required as terms and conditions in the Record of Decision (ROD); and 3) examine opportunities to offset unavoidable impacts on the project site with off-site mitigation.

The second key issue requiring additional consideration and evaluation is the analysis of cooling options in the DEIS. We appreciate that TSE is proposing hybrid cooling rather than wet cooling. However, Nevada is an arid region of the country, water is critical to its future, and groundwater is already being depleted by numerous uses. Analysis of dry cooling in the DEIS is inadequate, and the BLM should provide further analysis of the potential economic and technical viability of dry cooling, including potential impacts of dry cooling to the levelized cost of electricity, the annualized electrical production, and the capital cost of CDSEP, as well as the potential benefits to natural resources of using dry cooling.

The third key issue is cultural resources and Native American religious concerns. It is not clear if the Nevada State Historic Preservation Office (SHPO) has had an opportunity to review and comment on the BLMs findings of eligibility of the cultural resources. It is also unclear whether mitigation plans exist for existing properties recommended eligible for listing on the National Register of Historic Places (eligible sites) and Native American religious concerns on the alternative sites. The BLM should continue to consult with interested Native American tribes about the project and any concerns they may have and clarify if a plan for alleviating issues has been developed to the satisfaction of all interested parties. The BLM should also make clear whether the SHPO has had an opportunity to review the Class III archaeological inventory and concurs with the determinations made by the BLM, as well as detailing a plan for avoidance of eligible sites found outside of the Preferred Alternative. Finally, the BLM should mandate education of the workers on the importance of avoiding cultural sites and artifacts and provide rules for areas not within the work area.

Additional issues to be considered are included in Section VIII.

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[1] We understand that BLM and TSE are working under a schedule tied to the American Recovery and Reinvestment Act (requiring projects to break ground or take other action by December, 2010). Our recommendations are not intended to jeopardize this schedule. We believe that there is sufficient time to publish the documents recommended in Section V of these comments (this should not be an additional burden, as BLM should be finalizing these documents as part of the development of the Final EIS anyway) and provide an opportunity to comment.

II. Preferred Alternative

Note that the BLM's Preferred Alternative in the DEIS is not the Proposed Action, but rather Alternative 2 (p. 2-71). It is our understanding based on personal communication with TSE that Alternative 2 is also TSE's Preferred Alternative. We agree that Alternative 2 has the least resource impacts. We support Alternative 2 as the Preferred Alternative, and these comments are focused on Alternative 2. 22-A

Recommendation: The BLM should carry forward Alternative 2 as the Preferred Alternative.

III. Potential Public Benefits from SSEP

a. Greenhouse gas emissions reductions

The CDSEP offers the potential to reduce greenhouse gas (GHG) emissions related to electricity production during its 30 year lifetime by avoiding electricity production and associated greenhouse gas emissions at highly polluting fossil fuel plants. The CDSEP is expected to produce approximately 485,000 megawatt hours (MWh) of no-emissions electricity annually, (p. 1-7[2]) enough to power over 40,000 homes.[3] 22-B

b. Helping meet Nevada's Renewable Portfolio Standard

The State of Nevada has passed a RPS rule requiring that the investor-owned utilities generate 25 percent of their electricity from renewable resources by the year 2025 (p. 1-7). The CDSEP could help the utilities reach the RPS goals. 22-B Continued

c. Local economic benefits

The CDSEP would provide the opportunity for local economic benefits including creation of jobs and the addition of personal income to the State of Nevada. The DEIS states that during construction, "through direct, indirect and induced impacts during the peak of construction, approximately 1,500 jobs would be created, $140 million of personal income would be added to the State of Nevada annually, and $160 million would be added to the gross state product annually." (p. 4-87) During operations and maintenance, the DEIS states that "through direct, indirect and induced impacts during operations and maintenance of the facility, approximately 200 jobs would be created, $30 million of personal income would be added to the State of Nevada annually, and $22.7 million would be added to the gross state product annually." (p. 4-87) 22-B Continued

IV. Relative Suitability of the CDSEP Site

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[2] Unless otherwise indicated, all page references are for the DEIS.

[3] Per the U.S. Energy Information Administration, in 2008, the average annual electricity consumption for a U.S. residential utility customer was 11,040 kWh (*available at:* http://www.eia.doe.gov/ask/electricity_faqs.asp#electricity_use_home)

a. Characteristics conducive to utility-scale solar development

Tonopah Solar Energy seems to have identified a site with excellent solar resources, close to existing transmission and other infrastructure, and with limited conflicts with biological and other resources. Further, the site does not contain any officially designated sensitive and protected areas such as Areas of Critical Environmental Concern, nor has been it been proposed by citizens for designation as wilderness or other conservation status. The efforts of TSE to identify a good site should be generally commended. 22-C

b. Potential impacts to important resources

There are natural resources that will be impacted by construction of a utility-scale solar plant on the site, as would be expected for industrial development on any intact 1,628-acre parcel of desert. Chapters 3 and 4 of the DEIS detail potential impacts from CDSEP in detail, and additional potential impacts are listed below. We include this summary to help illustrate the scope of potential impacts and highlight the importance of incorporation of robust mitigation measures, described further in Section V of these comments.

Impacts identified in the DEIS – impacts to plant and wildlife species from the CDSEP could include loss of habitat and/or direct mortality to:

- Game species, including pronghorn, mule deer, bighorn sheep and elk (p. 3-21, 4-11).
- Special Status Animal Species, specifically the Crescent Dunes aegialian scarab Crescent Dunes aphodius scarab and Crescent Dunes serician scarab (p. 2-48, 3-33).
- Special Status Plant Species, specifically sand cholla and Nevada oryctes (p. 3-23, 4-15).
- Special Status Wildlife Species, including golden eagles, migratory birds, pale kangaroo mice and potentially several species of bats (p. 3-30, 4-23).

22-D

Impacts not identified in the DEIS – impacts from CDSEP could also include impacts to cultural resources:

- Direct effects would include surface and subsurface disturbances to four existing properties recommended eligible for listing on the National Register of Historic Places (eligible sites) caused by construction activities. (p. 4-65)
- Indirect effects: numerous eligible sites have been identified outside the Preferred Alternative, and indirect effects to these sites could be significant. Despite the importance of these potential effects, they have not been analyzed by the BLM in the DEIS. Possible effects to eligible sites outside the Preferred Alternative could include surface and subsurface disturbances from vehicle traffic, increased visitation and possible illicit artifact collection.

Recommendation: Given the significant natural and cultural resources that would be impacted by CDSEP, the BLM should require robust mitigation measures that are directly related to the expected impacts, and define how the efficacy of those mitigation measures will be evaluated. Section V of these comments includes additional recommendations on this issue, including recommendations to address potential indirect effects to cultural resources, including eligible sites.

V. The BLM Should Provide More Detail on Mitigation Measures for Wildlife Impacts, Terms and Conditions, and Field Survey Methods

a. Mitigation plans and terms and conditions

In order to evaluate the CDSEP, the public needs to know the potential impacts of CDSEP, the mitigation measures that the BLM will require TSE to employ, and how those measures will be monitored and evaluated for effectiveness and modified as necessary under a robust adaptive management plan.

Unfortunately, many of the mitigation measures and plans mentioned in the DEIS lack important details or are not present at all. The DEIS does include some good details in several areas, including raptor deterrent mechanisms (p. 2-48), compaction of soils (p. 2-51), and dark skies (p. 2-53). However, numerous other plans are missing altogether. For example, the DEIS mentions a mitigation plan for the Nevada State Protected Species pale kangaroo mouse and lists a few elements that the plan will contain, but does not provide the plan for review: "A mitigation plan is being developed between TSE, BLM, and NDOW." **Plans mentioned in the DEIS but not included for public review and comment include**:

- Special Status Wildlife Species – pale kangaroo mice and bats (p. 2-48)
- Weed Management Plan (p. 2-47)
- Golden eagle monitoring plan (p. 2-48)
- Spill Prevention Control and Countermeasure plan (2-49)
- Stormwater Pollution Prevention Plan (p. 2-49) and
- Hazardous Materials Management Plan (p. 2-55).

22-E

The DEIS also does not explain how the mitigation measures and plans described in the document would be translated into terms and conditions in the Record of Decision (ROD) and incorporated in the ROW grant, or how TSE and the public will receive confirmation that the requirements have been met.

The comments in this section are intended to clarify our understanding of the mitigation measures included in the DEIS and recommend specific ways in which the BLM should improve its treatment of mitigation in the mitigation plans and the Final Environmental Impact Statement (FEIS). The best way to address this issue would be to publish a supplement to the DEIS that clarifies and improves the discussion and incorporation of mitigation measures and includes the specific mitigation plans. At the very least, the BLM should publish this additional information and the actual mitigation plans on the BLM project website as soon as they are finalized and provide an opportunity for public comment.[4] This additional information and the mitigation plans and/or DEIS supplement should be published prior to publication of the FEIS, and should also be incorporated into the FEIS.

Recommendations: As detailed above, the BLM should provide additional information on mitigation, as well as the actual mitigation plans for public review and comment. The plans

[4] Please see footnote 1.

should include details on what, where, when, and how mitigation measures will be carried out, how they relate to the likely impacts of the project, how results will be monitored, and how adaptive management will be carried out based on the monitoring. The BLM should also specify how the mitigation measures will be translated into terms and conditions in the ROD.

As an example, we would direct the BLM to the Jack Morrow Hills Coordinated Activity Plan, prepared by the BLM in Rock Springs (Wyoming), which includes a highly detailed section (Appendix 17: "Implementation, Monitoring, and Evaluation Process" – **attached** for your reference (Attachment A)) that provides the specificity needed to evaluate the effectiveness of planned mitigation measures by setting out specific indicators, measurements and actions to be taken if these measures are not effective. We particularly note the following sections, as examples of the sort of detail that should be contained in the environmental analysis for SSEP: 22-E Continued

- Table A17-1 Resource Management Indicators - p. 8
- Table A17-2 Indicator Detail - p. 9-11
- Table A17-3 Measurement Detail - p. 12-14
- Figure A17-3 CAP Management Process - p. 16 and
- Discussion of the JMH CAP - p. 20-21.

b. Mitigation and adaptive management

The BLM should ensure that a robust adaptive management program is included in the FEIS and carried forward in the ROD. This is particularly important for measures for potentially serious impacts, such as mitigating impacts to wildlife from evaporation ponds. For example, if the BLM chooses to modify the mitigation plan for evaporation ponds and employ hazing or misting instead of the more aggressive and expensive netting, the BLM should carry forward a robust monitoring program, set clear thresholds for unacceptable levels of impacts, and specify additional mitigation measures required if thresholds are exceeded. 22-F

Recommendation: The BLM should include a robust adaptive management plan in the FEIS.

c. Off-site mitigation

Utility-scale solar development has significant impacts on project sites, and off-site mitigation is one tool that should be used to offset impacts from converting intact, multiple-use lands to single-use, industrial energy production. TSE and the BLM should commit to further discussions with interested stakeholders to develop additional ideas for off-site mitigation, and the BLM should commit to further consideration and analysis of potential off-site mitigation measures. 22-G

We direct the BLM's attention to Instruction Memorandum (IM) 2008-204, which describes the broad type of actions that may be taken to address both direct impacts of a project and greater cumulative effects that development is having on a landscape. IM 2008-204 identifies and elaborates on the types of off-site mitigation that can be used. *For example*:

- Offsite mitigation may include, as appropriate:

- In-kind: Replacement, substitution or permanent protection of resources that are of the same type and kind as those being impacted.
  - Example: For every acre of new, long-term surface disturbance in important pale kangaroo mouse habitat in Area (A), (X) acres of suitable, in-use habitat in Area (B) will be administratively protected with permanent mineral withdrawal and no off-road/route vehicular activities with the specific purpose of protecting pale kangaroo mouse habitat.
- Out-of-kind: Replacement or substitute resources that, while related, are of equal or greater overall value to public lands.
  - Example: For every acre of new, long-term surface disturbance in important pale kangaroo mouse habitat in Area (A), the project proponent agrees to bury (Y) miles of existing power lines and remove the power poles used as hunting perches by raptors in Area (B).
- In-lieu-fee: Payment of funds to the BLM or a natural resource management agency, foundation, or other appropriate organization for performance of mitigation that addresses impacts of a project.
  - Example: The applicant may make payment to the BLM or a conservation group based on the amount of acres that will be disturbed in exchange for commitment from the recipient to apply the funds toward local, specified pale kangaroo mouse habitat protection/restoration projects.

22-G Continued

In the context of solar development, there may be additional conservation priorities that can be pursued to mitigate the impacts of individual projects and the BLM could hold discussions with interested stakeholders to identify these potential targets for off-site mitigation efforts or funding. Regarding CDSEP, we are not comfortable with decisions regarding mitigation being made in closed negotiations, especially in light of the presence of poorly understood, but incredibly localized species (i.e., scarabs that have very high conservation importance but little scientific information). Although the preferred alternative does not directly impact the dune habitats where scarabs are believed to be localized, there is not enough known about the ecology and life history of these species to definitively rule out impacts that might arise from possibilities not discussed, e.g., shading from the tower on the dune habitats. (It is known that larval stages of invertebrates are particularly sensitive to variation in their thermal environment. Nothing is known about the larval requirements of these species and potential impacts from additional shade that change the thermal environment.)

Recommendation: Tonopah Solar Energy should commit to further discussions with interested stakeholders to develop additional ideas for off-site mitigation, and the BLM should commit to further consideration and analysis of potential off-site mitigation measures. A mitigation team should be assembled that would include expertise on the poorly understood invertebrate species in the area.

d. Field surveys

The BLM should provide additional details on the methods used for field surveys. Some good detail is included regarding the area of analysis and methodology for special status plant species surveys, including dates of surveys, and specifics on methods for pedestrian surveys. However, 22-H

additional information is necessary in several areas. The BLM should specify how many traps were used per trap line for kangaroo mice (p. 3-28), as well as whether and how many traps were used for reptiles. The BLM should also specify whether surveys were completed for bats.

We have seen that in Nevada as well as in other states, there is a lack of consistency in carrying out full protocol surveys and ensuring they are done at different times of the year to capture such things as fall-blooming plants. The BLM needs to implement standard, comprehensive guidelines for conducting surveys to ensure that all species' presence on proposed renewable energy sites can be identified. 22-H Continued

Recommendation: The BLM should provide the additional details covered above regarding field surveys. The BLM should also ensure that going forward, comprehensive wildlife and plant surveys are completed at least twice and at different times of the year (i.e., spring and fall) for every large scale renewable energy project.

VI. Cultural Resources and Native American Religious Concerns

We commend the BLM for actively consulting with interested Native Americans to determine any concerns they may have. However, no clear plan is included for addressing these concerns.

The DEIS does not make it clear whether the Nevada SHPO has had an opportunity to review the results of the Class III archaeological inventory, or whether the SHPO concurs with the eligibility determinations made by the BLM. The DEIS also fails to identify or explain whether any plan for protection against indirect effects has been developed for the eligible sites outside of the Preferred Alternative that have been identified during the inventory. Increased access of workers and the public may affect significant cultural resources through illicit collecting or inadvertent damage. The BLM needs to provide these details to the public. 22-I

Recommendation: The BLM should continue to consult with interested Native American tribes about the project and any concerns they may have. Understanding the sensitivities of these concerns, the BLM should clarify if a plan for alleviating issues has been developed to the satisfaction of all interested parties. The BLM should also make clear whether the SHPO has had an opportunity to review the Class III archaeological inventory and concurs with the determinations made by the BLM, as well as detailing a plan for avoidance of eligible sites found outside of the Preferred Alternative. The BLM should mandate education of the workers on the importance of avoiding cultural sites and artifacts and provide rules for areas not within the work area, for example, prohibiting off-road driving outside of the project.

VII. Analysis of dry cooling

a. **The BLM should provide further analysis of the potential economic and technical feasibility of dry cooling, including potential impacts to the levelized cost of electricity (LCE), the annualized electrical production, and the capital cost of CDSEP.** 22-J

As demand increases for the southwest's already strained water resources, it is critical to capitalize on any available opportunities to limit unnecessary water use. Substantial groundwater pumping is already contributing to a lowering of the water table. Significant drops can contribute to ground subsidence and impact nearby wells, and harm any connected surface water and related wildlife. Because of these reasons, we appreciate that TSE and the BLM are proposing hybrid cooling rather than wet cooling for CDSEP. However, additional information is necessary on the potential impacts and benefits of dry cooling.

Though the DEIS does nominally analyze wet, dry and hybrid cooling, the analysis does not appear to be very deep. Similarly, the DEIS appears to dismiss dry cooling out of hand, simply stating that "because of the decrease in efficiency and, thereby, a higher power cost, the fully dry-cooled technology was not carried forward in the analysis." (p. 2-65)

22-J Continued

There are a number of hybrid and dry cooled power plants in operation today that illustrate the technical and economic feasibility of low water use cooling in some situations. A study by the California Energy Commission's Public Interest Energy Research (CA PIER) program detailed years of data from five dry or hybrid cooled power plants (four combined cycle natural gas plants and one wood waste fired plant) and found limited difficulties with operations and maintenance of the dry and hybrid cooled systems.[5] Further, a number of proposed solar plants that intend to begin construction by the end of this year in California and Nevada plan to use dry cooling.[6]

Overall, additional analysis of the potential impacts of dry cooling to the capital costs, annual output, and LCE from SSEP will be necessary to determine which option makes the most sense from environmental, economic and technical perspectives.

Recommendations: The BLM should provide further analysis of the potential impacts of dry cooling to the LCE, the annualized electrical production, and the capital cost of from CDSEP. If dry cooling is determined to be technically and economically feasible, the BLM should select the least water-intensive cooling method as the agency's Preferred Alternative.

VIII. Additional Issues to be Considered

a. The BLM should improve the purpose and need statement in the DEIS

22-K

The purpose statement in the DEIS is restricted to responding to TSE's application for a ROW (p. 1-6). We are glad to see that the BLM's need is defined to include limiting unnecessary or undue degradation of public lands. We are also glad to see mention of the broader goals for the BLM's solar energy program in TSE's purpose and need, including the Energy Policy Act of 2005's goal of 10,000 MW of non-hydropower renewable energy on public lands by 2015 and

[5] *See* Comparison of Alternate Cooling Technologies for California Power Plants: Economic, Environmental and Other Tradeoffs, California Energy Commission *available at* http://www.energy.ca.gov/reports/2002-07-09_500-02-079F.PDF

[6] *See* Dry Cooling Challenges Notion of Water Intensity for Desert Solar *available at* http://www.environmentalleader.com/2009/11/17/dry-cooling-challenges-notion-of-water-intensity-for-desert-solar/; BrighSource Energy, Ivanpah Solar Power Complex *available at* http://www.brightsourceenergy.com/projects/ivanpah

Interior Secretary Salazar's March 11, 2009 Secretarial Order prioritizing responsible renewable energy development on public lands. (p. 1-8) However, to both make clear the BLM's goals for its solar program and ensure that the DEIS is legally defensible, we recommend that the BLM go further in defining the purpose and need to include mention of the broader goal of "facilitating environmentally responsible commercial development of solar energy projects" and the possibility of CDSEP helping meet Nevada's RPS and other clean energy goals. 22-K Continued

Recommendation: The BLM should go further in defining the purpose and need for CDSEP to include mention of the broader goal of "facilitating environmentally responsible commercial development of solar energy projects" and the possibility of CDSEP helping meet Nevada's RPS and other clean energy goals.

b. Analysis of alternatives

The DEIS does a good job of selecting three action alternatives and one no-action alternative for analysis in the DEIS. Further, the description of parameters used for site selection is very helpful. (p. 2-62). The fact that the project proponent and the BLM included enough flexibility to consider three action alternatives with different footprints was important in arriving at an alternative which minimizes impacts. We also appreciate that the BLM provides some description of the analysis conducted on two additional alternative sites outside of the current ROW application area, the Mud Lake Site, east of Tonopah, and the Peavine Creek Site, west of the proposed project site. (p. 2-63) 22-L

Though the information in the DEIS is helpful, we would recommend that the BLM include additional details on the results of the analyses of the Mud Lake and Peavine Creek sites to provide the public with additional information on why the sites identified as action alternatives were selected and why these sites were not.

Recommendation: The BLM should provide additional details on the results of the analyses of the Mud Lake and Peavine Creek sites to provide the public with additional information on why the sites identified as action alternatives were selected. For future NEPA analysis on proposed renewable energy projects, the BLM should fully analyze a robust range of action alternatives, including alternatives outside the proposed ROW, projects of different size, and projects that include phasing.

c. The BLM needs to clarify the extent of the grading of the project area

The DEIS makes it clear that the project area would be graded: "Approximately 1,500 acres (including the access road) would be graded in order to construct the project facilities (i.e., heliostats, power block, evaporation ponds, and administrative buildings), and a paved access road." (p. 4-2) However, conflicting statements throughout the DEIS leave the reader with several different acreages of graded project area. Further, statements made by TSE staff at the public meetings in Las Vegas suggested that there would be little grading necessary because the area is level. We recommend limiting grading as much as possible to limit impacts to the project site. 22-M

Recommendations: The BLM should limit grading of the project site to the extent possible, and the BLM should make clear the extent of the grading of the project area.

d. The BLM should be commended for their public meetings format for the DEIS, and should continue to use this or a similar format in future CDSEP and other public meetings

22-M Continued

The BLM should be commended for the format of their public meetings for CDSEP. These meetings included a presentation on CDSEP from the BLM and TSE, as well as "open house" time for the public to review poster boards and ask questions of BLM, TSE and other staff. The meetings also allowed participants to ask questions during a group question and answer session. These types of meetings are much more effective in engaging the public than meetings consisting only of open house time because of the opportunity for public discourse and questions.

Recommendation: The BLM should continue to hold public meetings in the format used for the CDSEP.

Thank you for your thorough consideration of these comments.

Sincerely,

Alex Daue, Renewable Energy Coordinator
The Wilderness Society – BLM Action Center
1660 Wynkoop St. Suite 850
Denver, CO 80202

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Nevada Wilderness Project
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Reno, NV 89507

Comment 23

CENTER for BIOLOGICAL DIVERSITY Because life is good.

Bureau of Land Management – Tonopah Field Office October 18, 2010
Attn: Mr. Tim Coward
P.O. Box 911
Tonopah, NV 89049

Sent via e-mail: crescent_dunes@blm.gov

RE: Comments- proposed Crescent Dunes Solar Energy Project DEIS

Dear Mr. Coward:

On behalf of the Center for Biological Diversity, please accept this set of comments regarding the Draft Environmental Impact Statement ("DEIS") for the Crescent Dunes Solar Energy Project ("project") proposed by Tonopah Solar Energy, LLC.

The Center is a non-profit, public interest environmental organization dedicated to the protection of native species and their habitats through science, policy, and environmental law. The Center's Climate Law Institute develops and implements legal campaigns to limit global warming pollution, including that from the burning of dirty coal, and prevent it from driving species extinct.

The Center has over 315,000 members and on-line activists throughout Nevada and the United States. We submit these comments on behalf of our members, activists, staff, and members of the general public who are interested in protecting native species and their habitats, achieving 350 parts per million or less of CO2 in the atmosphere, and protecting quiet recreation activities, and wilderness experiences on Bureau of Land Management (BLM) lands in Nevada and particularly those lands that would be impacted by the proposed action.

The development of renewable energy is a critical component of efforts to reduce carbon pollution and climate-warming gases, avoid the worst consequences of global warming, and to assist in meeting needed emission reductions. The Center strongly supports the development of renewable energy production, and the generation of electricity from solar power, in particular. However, like any project, proposed solar power projects should be thoughtfully planned to minimize impacts to the environment. In particular, renewable energy projects should avoid impacts to sensitive species and habitat, and should be sited in proximity to the areas of electricity end-use in order to reduce the need for extensive new transmission corridors and the efficiency loss associated with extended energy transmission. Only by maintaining the highest environmental standards with regard to local impacts, and effects on species and habitat, can renewable energy production be truly sustainable.

It is unfortunate that the proposed project site is in a largely undisturbed setting rather than on previously disturbed lands or brownfields. That said, the Center prefers the Alternative 2 location because it attempt to minimize impacts to species, is furthest from the Crescent Dunes and the rare species found there, and is has the shortest transmission distance to the Anaconda-Moly Substation.

Arizona . California . Nevada . New Mexico . Alaska . Oregon . Montana . Illinois . Minnesota . Vermont . Washington, DC
4261 Lily Glen Ct . Las Vegas, NV 89032 tel: (702) 249.5821 fax: (702) 638.4261 www.BiologicalDiversity.org

We offer the following specific concerns and comments regarding the DEIS.

1. Impacts to rare species

Plants

The DEIS discloses that the only BLM Sensitive Plant species, aside from cacti and yuccas, found on the site is the Nevada Oryctes. This plant is of concern and is classified by the Nevada Heritage Program as "imperiled due to rarity or other demonstrable factors". Agency direction contained in BLM Manual 6840.2 establishes that, "…the BLM shall designate Bureau sensitive species and implement measures to conserve these species and their habitats, including ESA proposed critical habitat, to promote their conservation and reduce the likelihood and need for such species to be listed pursuant to the ESA."

Section 6840.2 C. on implementation of this direction provides:

> "On BLM-administered lands, the BLM shall manage Bureau sensitive species and their habitats to minimize or eliminate threats affecting the status of the species or to improve the condition of the species habitat, by:
>
> 2. Ensuring that BLM activities affecting Bureau sensitive species are carried out in a way that is consistent with its objectives for managing those species and their habitats at the appropriate spatial scale.
>
> 4. Working with partners and stakeholders to develop species-specific or ecosystem-based conservation strategies.
>
> 7. Considering ecosystem management and the conservation of native biodiversity to reduce the likelihood that any native species will require Bureau sensitive species status.
>
> 8. I the absence of conservation strategies, incorporate best management practices, standard operating procedures, conservation measures, and design criteria to mitigate specific threats to Bureau sensitive species during the planning of activities and projects."

23-A

Despite this direction, the proposed action would grade and destroy over 1374 acres of suitable and occupied habitat for this plant, while the BLM's preferred alternative would destroy approximately 434 acres of such habitat. Nowhere in the document is there any analysis or disclosure of the impacts to the status of this plant from this amount of habitat loss, or a disclosure of the likelihood that such loss would increase the need for listing of this plant under the Endangered Species Act.

These deficiencies should be addressed in the final environmental impact statement ("FEIS").

The Tonopah milkvetch (*Astragalus pseudiodanthus*) is not yet a BLM Sensitive Species in Nevada, but arguably could be given its rarity and its Sensitive Species Status in California. The State Natural Heritage Program ("Heritage") ranks this species as both globally and state "imperiled due to rarity and/or other demonstrable factors". According to Heritage maps it is found in the project site vicinity. It is a perennial herb with a

23-B

buried root crown found in deep loose sandy soils of sand dune margins. According to NatureServe and Heritage databases, there are only ten occurrences in California and fifteen in Nevada. Estimated population levels for Nevada are likely in the vicinity of 1420 individuals – a number far less than the estimates for Oryctes (24,000+) a designated sensitive species. [1] [2] [3]

23-B Continued

Due to the rarity of the Tonopah milkvetch, the Center requests that it be treated as a Nevada BLM Sensitive Species and provided the protections called for in BLM Manual 6840. The FEIS must analyze and disclose the impacts to this species and how the BLM will comply with the mandates of Manual 6840.

Invertebrates

Heritage and NatureServe rank the Crescent-dune Aegialian scarab beetle (*Aegialia crescent*) as globally and state "critically imperiled due to extreme rarity, imminent threats, and/or biological factors". It is found only within the Southern Big Smoky Valley, [4] and the proximity of the proposed solar project to the primary habitat at Crescent Dunes creates an imminent threat. It is a BLM Sensitive Species.

23-C

The Crescent Dune Serican scarab beetle (*Serica ammomenisco*) is ranked by Heritage and NatureServe as being globally and state "critically imperiled due to extreme rarity, imminent threats, and/or biological factors". It too is found only within the Southern Big Smoky Valley,[5] and the proximity of the proposed solar project to the primary habitat at Crescent Dunes creates an imminent threat. It also is a BLM Sensitive Species.

---

[1] Nevada Natural Heritage Program – See: http://heritage.nv.gov/atlas/atlasndx.htm

[2] NatureServe – See – http://www.natureserve.org/explorer/servlet/NatureServe?sourceTemplate=tabular_report.wmt&loadTemplate=species_RptComprehensive.wmt&selectedReport=RptComprehensive.wmt&summaryView=tabular_report.wmt&elKey=138654&paging=home&save=true&startIndex=1&nextStartIndex=1&reset=false&offPageSelectedElKey=138654&offPageSelectedElType=species&offPageYesNo=true&post_processes=&radiobutton=radiobutton&selectedIndexes=138654

[3] Nature Serve – See – http://www.natureserve.org/explorer/servlet/NatureServe?sourceTemplate=tabular_report.wmt&loadTemplate=species_RptComprehensive.wmt&selectedReport=RptComprehensive.wmt&summaryView=tabular_report.wmt&elKey=152330&paging=home&save=true&startIndex=1&nextStartIndex=1&reset=false&offPageSelectedElKey=152330&offPageSelectedElType=species&offPageYesNo=true&post_processes=&radiobutton=radiobutton&selectedIndexes=152330

[4] NatureServe – See - http://www.natureserve.org/explorer/servlet/NatureServe?sourceTemplate=tabular_report.wmt&loadTemplate=species_RptComprehensive.wmt&selectedReport=RptComprehensive.wmt&summaryView=tabular_report.wmt&elKey=110146&paging=home&save=true&startIndex=1&nextStartIndex=1&reset=false&offPageSelectedElKey=110146&offPageSelectedElType=species&offPageYesNo=true&post_processes=&radiobutton=radiobutton&selectedIndexes=110146

[5] NatureServe – See: http://www.natureserve.org/explorer/servlet/NatureServe?sourceTemplate=tabular_report.wmt&loadTemplate=species_RptComprehensive.wmt&selectedReport=RptComprehensive.wmt&summaryView=tabular_report.wmt&elKey=108779&paging=home&save=true&startIndex=1&nextStartIndex=1&reset=false&offPageSelectedElKey=108779&offPageSelectedElType=species&offPageYesNo=true&post_processes=&radiobutton=radiobutton&selectedIndexes=108779

These two beetles, along with four other found elsewhere, have been petitioned for listing under the Endangered Species Act, adding to the burden and responsibility of the BLM to provide adequate protections as to not further jeopardize their survival and viability.[6]

Another beetle, the Crescent Dunes Aphodious scarab is a BLM Sensitive Species, but awaits further taxonomic work and is not listed in Heritage or NatureServe databases.

The DEIS discloses that Alternative 1 would directly impact the beetles by destroying 8 acres of dune habitat.

The proposed action and alternative 2 are said to not impact the beetles since the mapped dune ecosystem is avoided. This is a faulty justification due to the premise that the alternatives do not impact areas mapped as "Inter-Mountain Basins Active or Stabilized Dune Habitat". A study of images obtained with Google Earth as well as a comparison of Figures 2-1, 3-2, 3-15 and 3-16 reveals gross errors in mapping as well as in interpretations as to the habitat for the above beetles.

23-C Continued

Specifically, our concerns are:

- DEIS Figure 3-15 identifies soil types STC and TGE as the primary types in the proposal alternative's impact area. Both these soil types are comprised of deep, fine sands, easily displaced by wind.[7] The BLM assumes that the beetles are only found on the actual dune area. However, the sandy areas around the current dunes are part of the dune ecological system and as the dunes shift, so does the habitat. The DEIS does not mention surveys or inventories being conducted outside the area of actual dunes to confirm the absence of the beetles.
- DEIS Figure 2-1 and views from Google Earth clearly show the dunes systems as being much more expansive than mapped on Figure 3-2. In addition, the soil mapping found on Figure 3-16 also shows the dunes covering a much greater area than that mapped on Figure 3-2. It is quite likely that Alternative 2 impacts greater than the 8 acres disclosed, and the same argument for soil type STC made in the bullet above applies to Alternatives 1 and 2.

Nowhere in the DEIS does the BLM analyze or disclose the impacts from disrupting sand transport to the dunes and the habitat provided for the beetles, nor does it discuss the cumulative impacts to the dunes and the beetles from continued off-road recreational use.

We are also concerned that no mitigation is planned to off-set the impacts to these species.[8] The full intent of BLM Manual 6840 must be met and disclosed.

[6] WildEarth Guardians, 2010. PETITION TO LIST SIX SAND DUNE BEETLES UNDER THE U.S. ENDANGERED SPECIES ACT.
[7] Table 3-24.
[8] DEIS, page 4-33.

The Center requests that as part of the project approval process a thorough inventory be made of the entire proposed right-of-way area to determine the presence, absence and status of these species within it, and if present that the environmental compliance process document the avoidance and mitigation strategies that will be employed to ensure the long term survival of the species to preclude the need for listing under the Endangered Species Act. Included should be a cumulative effects analysis of the off-road vehicle ("ORV") use at the Crescent Dunes, another major threat to these species. In addition, the survey should be robust enough to identify the presence or absence of other rare or imperiled species that may not have previously been known at this site. 23-C Continued

Insects, Birds, Bats and Raptors

The Center asserts that the DEIS is lacking due to its failure to address the impacts from the proposed facility on flying creatures. Our concerns stem from several factors:

- Direct mortality from the death ray zone. While the DEIS does mention a short term study done on a small concentrated solar facility in 1986 on bird mortalities However, the DEIS merely speculates that it is possible that migratory birds and golden eagles may be harmed by the intense concentration of reflected light and heat towards to top of the central receiver. McCrary estimated 1.7 birds deaths per week on a 32 ha site with one 86 m tower.[9] The proposed project site is approximately 647 ha (over 20 times larger) with a 653 foot receiving tower. Lacking baseline data of mean daily count of birds on the project site, analysis of the impacts to birds is impossible. Based on the existing literature, the impact may be significant. Further, no mention was made regarding the impacts to flying insects by either McCrary's study or the DEIS. As a minimum the BLM and proponent should present details in the FEIS on the death zones associated with the tower, perhaps by temperature, height and area of influence, similar to what is done with respect to the area of influence of wind power blades. In the FEIS BLM must address this issue and make a good faith attempt to describe the magnitude of the potential impacts. 23-D

- Also, there was no mention made of any raptor or other bird surveys having been conducted aside from a single survey for golden eagles done on June 4, 2010 and a single flight looking for eagle nesting areas on June 24, 2010.[10] This presents several concerns. First, no site specific information was collected for migrating raptors and passerine species. Second, there is considerable doubt on the reliability of such limited sampling and how such surveys did or did not meet scientifically acceptable protocols. Third, the use of office analysis of existing available data not specific to the project also creates great doubt in the reliability of the information presented in the DEIS. The DEIS fails to disclose the number of pairs of golden eagles that could be affected by the proposed project. Scientific literature on this subject is clear - the presence of humans detected by a raptor in its nesting or hunting habitat can be a significant habitat-altering disturbance even if the

[9] McCrary, M.D. 1986. Avian Mortality at a Solar Energy Power Plant. Journal of Field Ornithology 57(2): 135-141.
[10] DEIS, page 3-27.

human is far from an active nest.[11] Regardless of distance, a straightline view of disturbance affects raptors, and an effective approach to mitigate impacts of disturbance for golden eagles involves calculation of viewsheds using a three-dimensional GIS tool and development of buffers based on the modeling.[12]
The BLM must address these data deficiencies and conduct scientifically credible surveys to detect the species likely to be impacted by the proposed project and then to address and disclose the impacts and mitigation in the FEIS.

- There is a lack of clarity in the DEIS as to how impacts from the evaporative ponds will be mitigated. Early on in Section 2.5.3.5.7, the DEIS discloses that when the ponds are filled with water, a porous screen would cover the entire pond so that wildlife (presumably, birds, bats and other mammals) would not be attracted to the water surface. However. Later in section 4.5.11 on "Mitigation", no mention is made of the protective cover. Instead, a monitoring scheme is described that would document the occurrences of bird and wildlife species use of then ponds and any deaths, deformities or other abnormalities found, and share that information with the BLM, NDOW and other appropriate agencies. The Center feels that the avoidance/mitigation value of the protective cover in essential, and must be the first line of protection against undesirable impacts. The monitoring program should also be implemented, but geared towards measuring the effectiveness of the screen. 23-D Continued

2. Water Needs

The POD stated and the DEIS confirms that the Tonopah Flat sub-basin in which the proposed project is located is currently over allocated by about 20,000 acre-feet per year. This disturbing fact is somewhat dismissed by pointing out that the existing water rights in the basin do not represent the actual groundwater withdrawal and consumption.[13] [14] The DEIS states that water for the proposed project would come from purchased and retired active irrigation rights 10.6 miles from the project site. The DEIS fails to specifically identify these wells/rights and their location. 23-E

The proposed project will employ a "hybrid cooling system", and together with the water needed for steam cycle makeup, mirror washing and dust control would require an estimated 600-854 acre-feet per year, all to come from groundwater wells.[15]

The Center is concerned about the ability of this overdrawn basin to supply the water needs without impacting biological and spring resources within and adjacent to the basin. Alternatives that consume less groundwater should be evaluated and, in particular, the applicant must assess dry cooling as an alternative. Additionally the proponent should be required to purchase and

[11] Richardson, C.T. and C.K. Miller. 1997. Recommendations for protecting raptors from human disturbance: a review. Wildlife Society Bulletin 25(3): 634-638.
[12] Camp, R.J., D.T. Sinton and R.L. Knight 1997. Viewsheds: a Complementary Management Approach to Buffer Zones. Wildlife Society Bulletin 25(3): 612-615.
[13] POD, page 45.
[14] DEIS, page 3-39.
[15] DEIS, page 2-21.

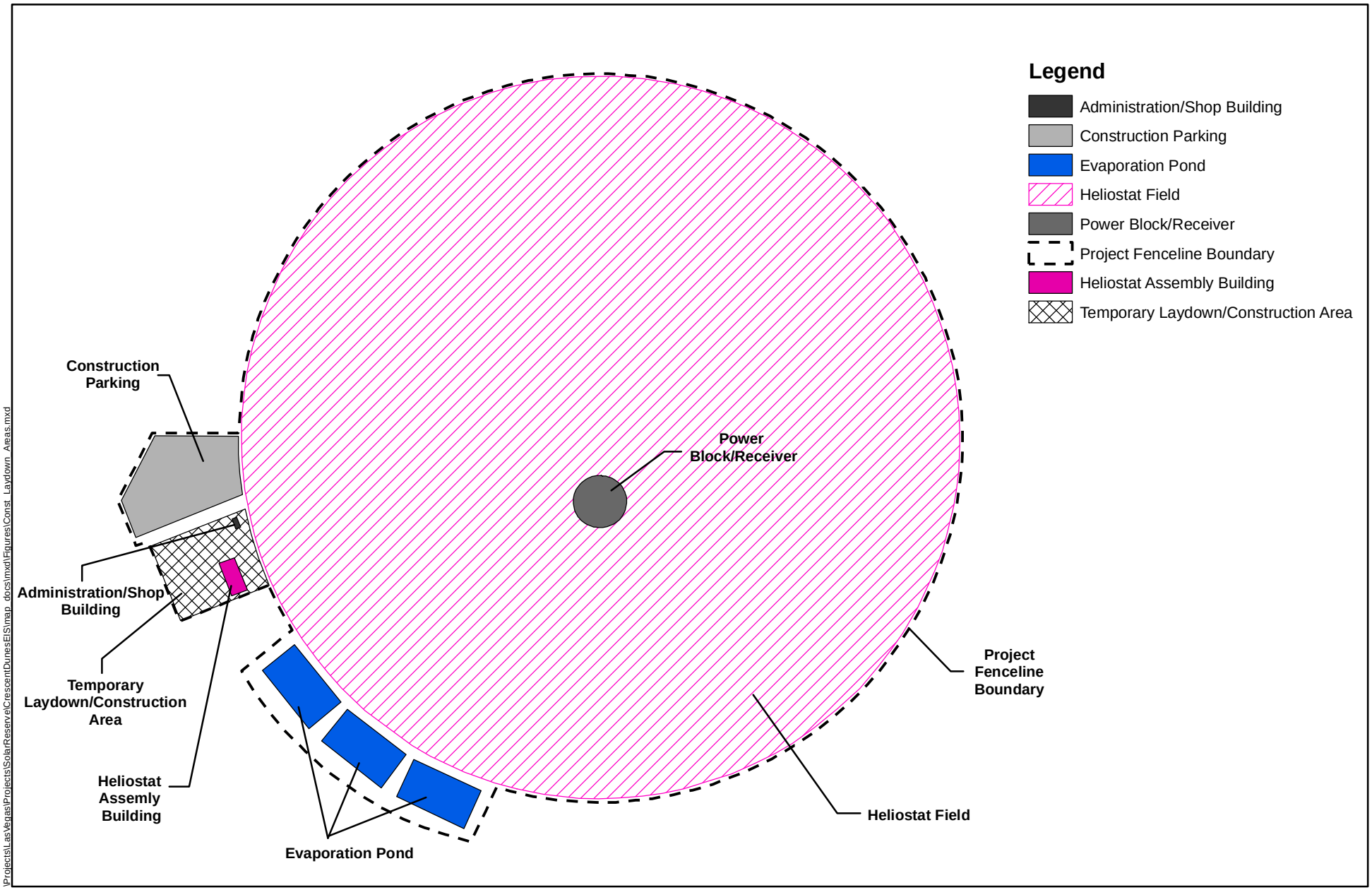
retire water rights in excess of their own needs to bring the basin into a better balance in order to protect biological and hydrologic resources. 23-E Continued

The Center appreciates the opportunity to provide comments on this project and wishes to continue to receive notices and documents pertaining to it.

Sincerely yours in conservation,

Rob Mrowka
Ecologist/Conservation Advocate

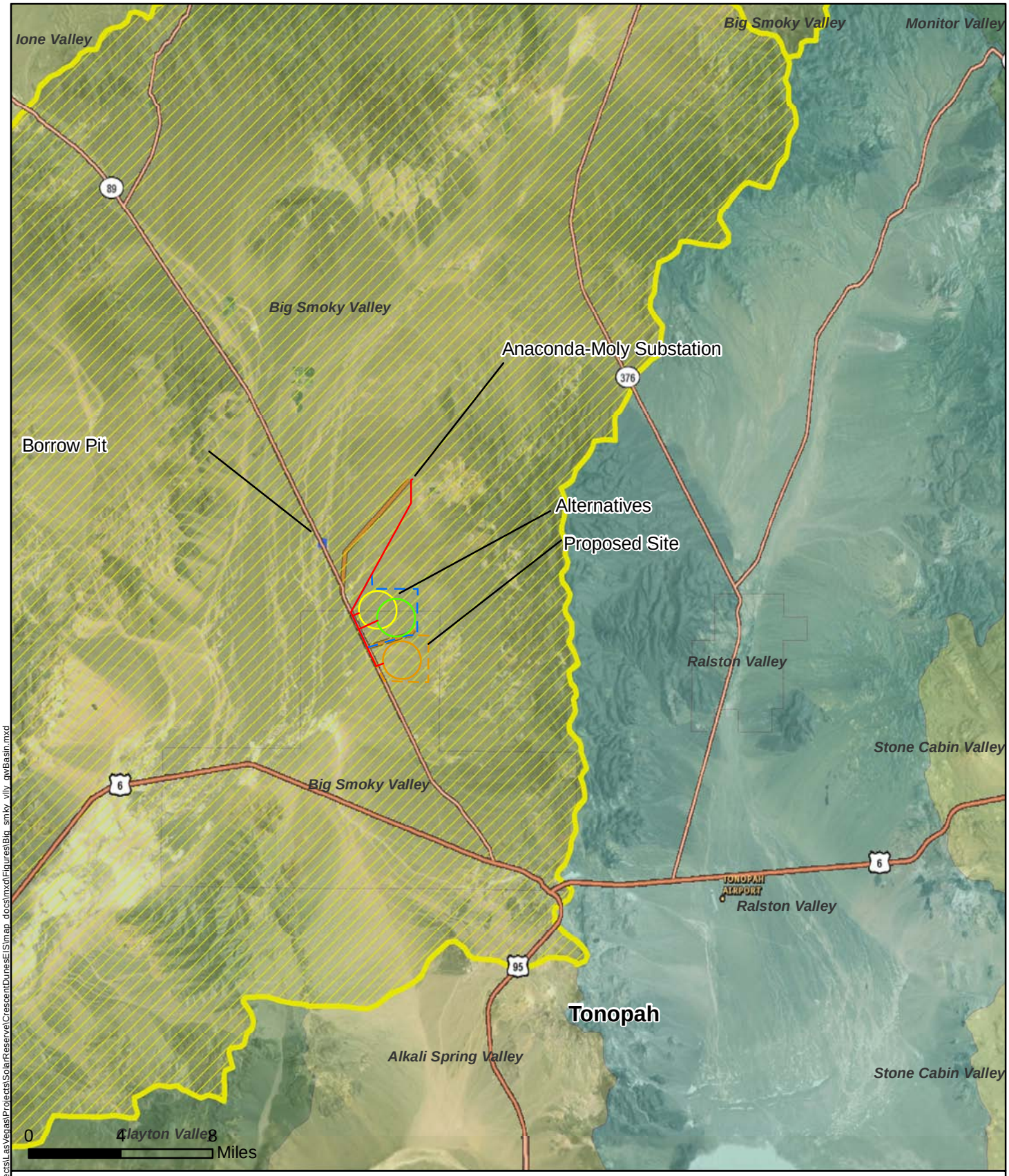
Appendix C: Revised Figures



\Projects\LasVegas\Projects\SolarReserve\CrescentDunesEIS\map_docs\mxd\Figures\Const_Laydown_Areas.mxd

Figure 2-12 Example Temporary Constuction Areas
Crescent Dunes
Solar Energy Project

Source: Solar Reserve



N

NEVADA

Project Site

Legend

- Borrow Pit
- Alternative Area
- Proposed Area
- Big Smoky Valley
- Tonopah Flat sub area
- Alternative 1
- Alternative 2
- Proposed Alternative

Figure 2-15 Big Smoky Valley Groundwater Basin

Crescent Dunes Solar Energy Project

Aerial Source: ESRI 2010

\Projects\LasVegas\Projects\SolarReserve\CrescentDunesEIS\map_docs\mxd\Figures\Big_smky_vlly_gwBasin.mxd

Appendix D: Conceptual Decommissioning and Reclamation Plan

Decommissioning & Site Reclamation Plan

Crescent Dunes Solar Energy Project (N-86292)

Nye County, Nevada

Tonopah Solar Energy, LLC

03 November 2010

Disclaimer

The information presented in this document was compiled and interpreted exclusively for the purposes stated in Section 1 of the document. WorleyParsons provided this report for Tonopah Solar Energy, LLC solely for the purpose noted.

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Any questions concerning the information or its interpretation should be directed to Bob Anders.

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1. INTRODUCTION

This report presents a Decommissioning & Site Reclamation Plan (Plan) for the Crescent Dunes Solar Energy Project (project), located on United States Department of the Interior, Bureau of Land Management (BLM) administered lands in Nye County, Nevada, and hereinafter referred to as "the Site". This Plan was prepared for Tonopah Solar Energy, LLC (TSE). The purpose of this Plan is to set forth the procedures and practices that would be employed by TSE to meet federal and state requirements for the reclamation of the site affected during construction of the project and for the rehabilitation and revegetation of the project site after decommissioning.

TSE submitted an Application for Transportation and Utility Systems and Facilities on Federal Lands (Standard Form 299) to the BLM to secure a Right-of-Way (ROW) Grant on November 5, 2008 to permit, build, construct, and operate a solar power generating facility based on concentrating solar power technology (CSP). The BLM is responsible for processing right-of-way (ROW) applications for projects on its land under the Federal Land Policy Management Act (FLPMA) conducting the federal environmental review under the National Environmental Policy Act (NEPA) and administering resulting requirements and mitigation. In compliance with NEPA, the BLM has since prepared a Draft Environmental Impact Statement (EIS) that analyzes the environmental impacts of the proposed project. On September 3, 2010 the BLM published a notice in the *Federal Register* opening a 45-day comment period on the Draft EIS which will close on October 18, 2010. It is assumed that a final Record of Decision (ROD) will be issued for the project in December 2010. All activities presented herein will be carried forth in compliance with the requirements of the Federal ROW Grant and associated NEPA review.

FLPMA Title V, requires an applicant for a right-of-way on BLM-administered lands to submit a plan including "rehabilitation for such right-of-way" and further requires the holder of the right-of-way grant "to furnish a bond, or other security" to secure all of the obligations, including reclamation, under the terms and conditions of the right-of-way grant. Regulations at 43 C.F.R. § 2805.12 detail the terms and conditions for reclamation and the bond securing that obligation.

The BLM Washington Office Instruction Memorandum (IM) No. 2007-0097, as updated by IM-2011-003, provides guidance on the processing and administration of ROW applications for solar energy projects on public lands administered by the BLM. The IM requires a bond for solar energy development ROW grants to ensure compliance with the terms and conditions of the authorizations and the requirements of the regulations including reclamation.

The nature and size of the disturbed areas for the project and linear facilities associated with the project are based on the Plan of Development (POD) and EIS for the project. As with any large, mulit-year project, there are potential changes that may affect the POD and operational measures that will be occasioned by unanticipated constructability measure or external factors (resource protection). Because these changes could affect the rehabilitation and Revegetation measures, and anticipated schedules, this Plan also includes procedures for modifying methods or criteria, if the project owner or the responsible agencies find the need to do so.

The following components are included in this Plan:

- A description of existing site conditions;

- Conceptual procedures for demolition and removal of equipment and above ground structures;
- Procedures for management of each material/waste stream, including handling procedures and standard disposition practices (disposal and recycling);
- A surface management plan;
- A reclamation plan that includes conceptual plans for soil and drainage preparation and restoration; weed management; and monitoring and reporting;
- A description of financing of decommissioning and restoration activities;
- A cost estimate methodology discussion and cost breakdown including activities to decommission, demolish, remove and reclaim the structures within the Project and the site to acceptable conditions as outlined within this plan.

This Plan begins with an overview of current project site conditions (prior to construction) and a brief overview of the proposed project description, including proposed project structures. The remainder of the Plan addresses decommissioning and reclamation (interim and final) criteria, objectives, methodology, implementation and monitoring procedures.

2. SITE CONDITIONS

2.1 Location

The proposed project site is located in south-central Nevada, approximately 13.5 miles northwest of Tonopah, in Nye County. The project is located within the southern portion of the Big Smoky Valley, north of US Highway 95/6 along Poleline Road (State Highway 89). The proposed project would be built on lands administered by BLM.

The proposed project site, transmission line (TL), and borrow pit (temporary during construction) are located in south-central Nevada, west of Tonopah, in Nye County. The proposed project encompasses approximately 2,950 acres (**Figure 1**), as located in the lands described by aliquot parts in the below table. While the proposed project encompasses approximately 2,950 acres, the project is expected be constructed on and disturb only a portion of this area.

Proposed Project Site (N-86292)	
Township 4 North, Range 41 East:	Western half of Sections 12 and 13
	Sections 11 and 14
	Northwestern, northeastern, and southeastern quarters of Section 15
	Southwestern, northeastern, and southeastern quarters of Section 10
	Southern half of the northwestern quarter of Section 10
	Eastern half of the southwestern quarter of Section 15
TL and Substation (N-87933)	
Township 4 North, Range 41 East:	Eastern half of Section 9
	Northwestern, southwestern, and southeastern quarters of Section 4
Township 5 North, Range 41 East:	Northwestern, southwestern, and northeastern quarters of Section 33
	Eastern half of Section 28
	Section 22
	Southeastern quarter of Section 15
	Western half of Section 14
	Southwestern, southeastern, and northeastern quarters of Section 11
	Eastern half of Section 2
	Northwestern quarter of Section 27

Borrow/Gravel Pit	
Township 5 North, Range 41 East:	Northeastern quarter of Section 19
	Western half of the northwestern quarter of Section 20
	Southern half of the southeastern quarter of Section 18

2.2 Land Use

Existing land use conditions in the area of analysis are characterized primarily by open desert, utility corridors and facilities, grazing allotment, recreation, and transportation and access. BLM administers the vast majority of land in the proposed project area through the BLM Tonopah Field Office (TFO). According to the Tonopah Resource Management Plan (RMP) (BLM 1997), the area of analysis for the proposed project is subject to the following authorizations or restrictions:

• San Antone grazing allotment (covers entire area of analysis)

• A ROW avoidance area (Classification 2—other),

• Off-highway vehicle restriction (limited to existing roads and trails and closed to competitive events)

• Visual resource management (Class 4) (covers entire area of analysis)

• A utility corridor

• Mineral leasing restrictions (no surface occupancy)

• Avoidance of Crescent Sand Dunes (Special Resource Management Area [SRMA])

In addition, based on a data search within BLM's GeoCommunicator (BLM 2010b), the area of analysis is contained within a DOD Airspace Consultation Area.

2.3 Topography

The topography of the Proposed Area is generally flat with elevations ranging from approximately 5,000–5,060 feet. Steeply sloping elevations in the background distances range between 9,100 and 11,000 feet. The topography in the borrow pit area is generally flat, with an elevation of approximately 4,881– 4,972 feet. The topography along the TL and substation corridor rises slightly from the valley floor to the location of the substation, with an elevation of approximately 4,880–5,200 feet.

2.4 Geology

The principal geologic units in southern Big Smoky Valley are consolidated rocks (bedrock) and unconsolidated basin-fill deposits. Bedrock units include volcanic, sedimentary and granitic rocks which underlie the basin fill deposits and are exposed in mountains surrounding the valley. Unconsolidated basin fill material includes Quaternary playa, channel, and alluvial fan deposits. These unconsolidated deposits of gravel, sand, silt, and clay lenses can be up to 5,000 feet thick in the Tonopah Flat Subarea.

The Quaternary basin fill deposits consist of inter-bedded playa, distal fluvial, aeolian sands, and alluvial fan sediments. The alluvial fan deposits occur along the flanks of the valley and are composed of sediments eroded from the bedrock terranes of the local mountain ranges. The fans deposits generally become finer grained away from the mountain fronts toward the valley floor. The surficial playa lake deposits occur within the center and relatively flat regions of the valley. However, relatively older subsurface playa deposits occur at depth beneath older alluvial fan deposits toward the mountain fronts.

Many of the Basin and Range Geomorphic Province (BRGP) valley sinks contained lakes during the glacial maximums of the Pleistocene (Morrison, 1991; Reheis, 1999; Reheis et. al., 2007). Typical pluvial deposits likely occur within the Tonopah Flat region further toward the center of the valley where the ancient lakes would have been deeper (Briggs, et. al, 2005; Morrison, 1991; Dohrenwend, 1991).

The principal structural features of the basin are surface contours of the bounding consolidated rock that may provide conduits or obstructions to groundwater flow. In addition, mountain range bounding faults that generally occur near the edge of the valley sediments and the mountain fronts may provide obstructions to groundwater flow.

2.5 Climate and Hydrology

The project is located within the South Central Nevada climatological division, a semi arid to arid desert climate. Temperatures are mild, rarely exceeding 100°F in the summer and cold in the winter. Daily temperature ranges may be as much as 40°F (Rush and Schroer, 1971).

Two seasonal weather patterns bring precipitation to south central Nevada, winter cold fronts and summer monsoons. The winter cold fronts are characterized by long duration, low intensity broad storms while summer monsoons are short in duration, high Intensity, localized events. It is common to have months of no precipitation between the two periods (Jeton, 2006). Big Smoky Valley occurs in a rain shadow east of a series of major mountain ranges. The rain shadow effect is the most important variable influencing the latitude and elevation distribution of precipitation. In general, precipitation increases with land surface altitude. The air is cooled about 5°F for every 100 feet of lift (Rush and Schroer, 1971).

The Tonopah Flat Subarea receives a total of approximately 580,000 acre-feet of precipitation annually, with most moisture falling in the winter (Water for Nevada, 1971). Average annual precipitation is 4-8 inches per year falling over the basin with the least occurring in the valleys. Higher mountains generally receive 20 inches or more per year, mostly as winter snowfall (Rush and Schroer, 1971). The average evaporation rate exceeds precipitation with as much as 90 to 95 percent of the total annual precipitation is lost through evaporation and transpiration (Buqo, 2004).

Drainage in the Tonopah Flat hydrographic area is internal and terminates in playas located in the lowest portions of the valley floor. The lowest part of the valley floor is located approximately 18 miles southwest of the Project site. Surface drainage to the playas is from the surrounding mountains and toward the south and southwest along the valley floor. In addition, Tonopah Flat receives surface water inflow from Ione Valley to the northwest and Royston Valley to the west.

Most of the precipitation in the area falls on the mountains that surround Tonopah Flat. Because more precipitation falls on the higher mountains, the primary source of surface water in Tonopah Flat consists of runoff in streams originating in the Toyabe Range or flowing southeastward into Tonopah

Flat from Lone Valley. These streams include Knickerbocker, Cloverdale, Cottonwood and Peavine Creeks. Peavine Creek terminates approximately 2 miles west and downslope of the Project site. These streams are generally gaining flow in the mountains and losing flow on the alluvial aprons that ring the valley floor. Thus, the streams have their maximum flow at the mountain front and then infiltrate into the basin alluvium or are diverted near the canyon mouths and used for irrigation of local ranches.

Maximum stream flows occur in the spring and early summer and are derived from snowmelt. Flow generally does not reach the valley floor, except during periods of maximum runoff or during infrequent intense rain events. Flow during wet years is nearly twice the average annual flow, and dry year flows are typically at about 75% of the average flows. The largest stream draining from the Toiyabe Range to Tonopah Flat is Peavine Creek, with an average discharge rate of 2.8 cubic feet per second (CFS) and a maximum discharge rate of 13.6 CFS.

Average annual discharge from Peavine Creek is reported as 2,800 AFY. Cottonwood and Cloverdale Creeks do not flow during dry years and have average annual discharges of 350 and 325 AFY, respectively. In 1968, surface water inflows from Royston and Ione Valleys were 60 and 300 acre feet, respectively.

At the Project Location, ephemeral surface water flow occurs in westward draining washes that drain down the alluvial apron at the mountain front. As stated previously, flow in these washes is intermittent and limited to runoff from intense rainfall events.

Approximately 30 springs and seeps have been identified near the margins of Tonopah Flat. The closest springs and seeps are located more than 10 miles from the site. Available data regarding spring flows rates range from less than 1 gallon per minute (GPM) to 3 GPM (Rush and Schroer, Table 31, 1971). In general, these springs and seeps are located in the bedrock areas outside the boundaries of the alluvial aquifer system; however, some springs are reported to be located in alluvium. These springs support local phreatophytes and some are used for stock watering or domestic water supply.

2.6 Area Hydrogeology

The Crescent Dunes Solar Energy Project is situated within the southern portion of Big Smoky Valley, located in the Great Basin section of the Basin and Range Physiographic Province. The Great Basin is composed of two types of aquifers: basin fill aquifers and carbonate rock aquifers.

The basin fill aquifer occurs in topographic basins that are physically separated from each other by mountain ranges. The carbonate rock aquifers can extend across topographic basins through the mountain ranges forming multi-basin groundwater flow systems. The carbonate aquifer system is composed of thick sequences of Paleozoic and Mesozoic limestone and underlies a large portion of Nevada. The carbonate aquifer was estimated to reach its western extent along the San Antonio Mountains, which form the eastern edge of the Tonopah Flat Subarea. Thus the Tonopah Flat Subarea is not believed to be hydraulically connected to the carbonate aquifer flow system.

The project site is located in the Central Hydrographic Region, the largest hydrographic region in Nevada, which covers 46,783 square miles in thirteen Nevada counties (Water for Nevada, 1971). The Central Region is located within the larger Basin and Range Groundwater Aquifer System. Basin fill aquifers are composed primarily of alluvial, colluvial and lacustrine deposits with virtually all major groundwater development and withdraw occurring in the upper 500 feet of these aquifers (Buqo, 2004).

The Central region includes 89 valleys and is characterized as a basin of mostly topographically closed valleys (Rush 1968). The Big Smoky Valley area is designated as Hydrographic Area 137 and is broken up into two Subareas, (A) Tonopah Flat and (B) Northern Part. Subarea 137A is bounded by non-water bearing rocks and a low alluvial ridge separates it from Subarea 137B. The Tonopah Flat Subarea (where the Project site is located) has a surface area of 1,603 square miles and encompasses parts of Nye, Esmeralda and Mineral County. Tonopah Flat receives surface inflow from Ione Valley but has no surface water outflow (Rush and Schroer, 1971).

3. PROJECT DESCRIPTION AND STRUCTURES

The proposed solar power project is based on concentrating solar power (CSP) technology. The proposed CSP technology utilizes heliostats/reflecting mirrors to redirect sunlight on a receiver erected in the center of the solar field (the power tower or central receiver). Liquid salt, which has the viscosity and appearance similar to water when heated, is circulated through tubes in the receiver, collecting the energy gathered from the sun. The heated salt is then routed to an insulated storage tank where it can be stored with minimal energy losses. When electricity is to be generated, the hot salt is routed to a heat exchanger (or steam generator) and used to produce steam. The steam is then used to power a conventional Rankine cycle steam turbine/generator, which produces electricity. The exhaust steam from the turbine is condensed and returned via feedwater pumps to the heat exchangers where the high-pressure superheated steam is generated again.

3.1 Site Layout

The overall site layout for the proposed facility includes the following components:

3.1.1 Generating Facility Components

- Solar Collecting Tower – The concrete tower would be approximately 538 feet tall and would house a 100-foot-tall cylindrical solar receiver and a 15-foot maintenance crane. The total height would be approximately 653 feet, and would have appropriate lighting for aviation safety and lightning protection.
- Solar Array – The array would consist of a circular field encompassing an area with a radius of 4,300 feet (approximately 1,330 acres) where the heliostats (or mirrors) would be located.
- Power Block - The power block, in a circular area with a radius of about 400 feet, would house the central receiver tower, storage tanks, steam turbine, cooling tower, ACC, transformers, heat exchangers, power block buildings, and other ancillary equipment.
- Reverse Osmosis Water Treatment System and Evaporation Ponds – These facilities would purify the groundwater to be used in the production of electricity and be used as the means for industrial wastewater disposal.
- Hybrid Cooling System – The system would include an evaporative cooling tower and ACC.
- Thermal Storage System – The storage system would include two large, insulated storage tanks and associated piping for the liquefied salt, one “hot” tank for the storage of the materials prior to use in generating the steam, and a “cool” tank for storing salt prior to resending it to the central tower for heating.

3.1.2 Major Electrical Systems and Equipment

- Generator Step-Up (GSU) Transformer – A GSU Transformer would be designed and installed in accordance with current standards and guidelines for a project of this size. The GSU steps up the voltage to 230 kV for delivery to the electrical grid.
- Unit Auxiliary Transformers (UATs) – UATs would be used to convert electricity to a lower voltage for use in the plant auxiliary systems.

- Electrical Building – A small building would be constructed in the power block to house switchgears, motor controllers, control panels, power and lighting panels, control equipment, a battery back-up system, and other similar items.
- Emergency Power Generator(s) – Diesel-powered generator(s) would be used to provide emergency power in addition to the battery back-up system.
- Lighting Systems – The lighting system for the facility would be limited to those areas required for safe operation of the facility. Where lighting is required, it would be designed and installed to minimize visual impacts in the region.
- Communication Systems – The Supervisory Control and Data Acquisition (SCADA) system, which controls power generation and transmission processes, would use fiber-optic or copper lines in the facility. Other communications during construction and operation would occur through new fiber-optic or copper lines installed in the TL corridors, or through a satellite (dish) system.

3.1.3 Transmission Systems and Interconnections

- Transmission Route – The outgoing TL would follow the proposed project site access road to Pole Line Road, head north along Pole Line Road to where the Millers to Anaconda TL is located, and then parallel the Millers to Anaconda TL to the Anaconda Moly Substation, for a distance of approximately 9.5 miles.
- Interconnections – The project would interconnect to the Anaconda Moly Substation located approximately 6 miles due north of the generating facility location.
- A temporary 55 kV transmission line for construction power, to be located within the permanent ROW.

3.1.4 Civil/Structural Features

- Access Roads – A paved, two-lane access road would extend approximately 1,500 feet from Pole Line Road to the facility. An existing access road that follows the Millers to Anaconda TL, would be used for access during construction and for maintenance of the TL. Pole Line Road would also be used for access to the TL where the TL would follow Pole Line Road.
- Building and Enclosures – A control building, a warehouse, and other buildings would be developed within the project area to support operations of the facility.
- Storage Tanks – Tanks would be constructed to store demineralized water, non-demineralized water, salt or HTF, lube oil, and other materials for the power block.
- Site Drainage – The heliostat array would be graded such that existing drainage patterns will be maintained, but the area in the power block will graded to divert Stormwater to ditches.

4. DECOMMISSIONING & RECLAMATION

4.1 Criteria and Planning

The goal of project decommissioning and both interim and final reclamation is to remove the installed power generation equipment and return the site to a condition as close to a pre-construction state as feasible. The procedures described for decommissioning and reclamation are designed to ensure public health and safety, environmental protection, and compliance with applicable regulations. The procedures outlined for reclamation include a description of the proposed activities for reclamation to be undertaken during and after completion of project operation and measures to be taken to prevent unnecessary or undue degradation.

The objective of interim reclamation is to restore vegetative cover and a portion of the landform sufficient to maintain healthy, biologically active topsoil; control erosion; and minimize habitat, visual, and forage loss during the life of the well or facilities.

The long-term objective of final reclamation is to return the land to a condition approximating that which existed prior to disturbance. This includes restoration of the landform and natural vegetative community, hydrologic systems, visual resources, and wildlife habitats. To ensure that the long-term objective will be reached through human and natural processes, actions will be taken to ensure standards are met for site stability, visual quality, hydrological functioning, and vegetative productivity.

The major activities required for the decommissioning and reclamation are:

- Heliostat and power block removal
- Electrical system removal
- Structural foundation removal per ROW grant requirements
- Road removal
- Re-grading
- Re-vegetation

The proposed implementation strategy to achieve the goals for site decommissioning and reclamation would include the following:

- Use of industry standard demolition means and methods to decrease personnel and environmental safety exposures by minimizing time and keeping personnel from close proximity to actual demolition activities to the extent practical;
- Plan each component of the decommissioning project such that personnel and environmental safety are maintained while efficiently executing the work;
- Conduct pre-decommissioning activities such as final decommissioning and restoration planning that addresses the “as-found” site conditions at the start of the project;
- Remove all residual materials and chemicals from the Site prior to demolition for reuse at other facilities or for proper disposal at licensed facilities;

- Demolition of the above-ground structures (dismantling and removal of improvements and materials) in a phased approach while still using some items until close to the end of the project. For instance, the water supply, administrative building and some electrical power components will be modified to be used until very late in the decommissioning project;
- Demolition and removal of below-ground facilities (floor slabs, footings, and underground utilities) as needed to meet the decommissioning goals;
- Soils cleanup, if needed, with special attention applied to retention pond and hazardous materials use/storage areas to ensure that clean closure is achieved;
- Disposal of materials in appropriate facilities for treatment / disposal or recycling;
- Recontouring of lines and grades to match the natural gradient and function of the site; and
- Revegetation with native plants.

These activities are discussed in more detail in the subsequent sections. The specific requirements and approach for each activity is an estimate, since the technologies and construction techniques available when the project is decommissioned are expected to change.

4.1.1 Schedule

It is assumed that decommissioning of the permanent plant facilities would begin 30 years after the commercial operation date of the project. Decommissioning of temporary facilities including but not limited to temporary septic systems, temporary underground conduit, temporary power poles, temporary concrete pads, and similar items will be completed during the plant commissioning timeframe or within the first 6 to 12 months of facility operation following completion and start up of the project.

Decommissioning will be competed using traditional heavy construction equipment including but not limited to front end loaders, cranes, track mounted and rubber tired excavators, bull dozers, and scrapers. Although various types of decommissioning and demolition equipment will be utilized to dismantle each type of structure or equipment, dismantling will proceed according to the following general staging process. The first stage consists of dismantling and demolition of above-ground structures to be removed. The second stage consists of concrete removal as needed to ensure that no concrete structure remains within 3 feet of final grade (i.e., floor slabs, below-ground walls, and footings) as appropriate. The third stage consists of removal/dismantling of underground utilities within 3 feet of final grade. The fourth stage is excavation and removal of soils, and final stage is site contouring to return the originally disturbed area of the site to near original conditions while disturbing as little of the other site areas as is practical.

A proposed schedule of the time for initiation of surface disturbance activities and completion of activities for reclamation is presented below.

Activity	Estimated Date/Timeframe (in working days)
Interim Reclamation	

Activity	Estimated Date/Timeframe (in working days)
Regrade	20 Days
Revegetate	10 Days
Recontour	10 Days
Decommissioning	
Temporary facility decommissioning	20 Days
dismantle & demolition of above grade structures	110 Days
concrete removal	110 Days
removal & dismantle underground utilities	88 Days
excavation & removal of soil	66 Days
Reclamation	
Regrade	66 Days
Revegetation	66 Days
final site contour	66 Days

The BLM will be notified 24 hours prior to commencement of any reclamation operations.

4.1.2 Future Land Use

Future land use will be guided by the BLM's TFO RMP. Should the land no longer be under the administration of the BLM at the time of decommissioning, land use will be guided by the Nye County General Plan.

4.2 Process Description

4.2.1 Stage 1: Dismantle & Demolition of Above Grade Structures

Above ground demolition entails breakdown and removal of above-ground structures and facilities. Residual materials from these activities would be transported via heavy haul dump truck to one or more central recycling / staging areas where the debris will be processed for transport to an off site recycler

The strategy for demolition consists of the use of mechanized equipment and trained personnel in the safe dismantling and removal of the following above-ground structure:

- Heliostats and related equipment using low environmental impact equipment;

- Towers using explosives to put the towers on the ground, then conventional heavy equipment to size reduce and transport for recycling (this is the industry standard for safe demolition of large towers and massive concrete structures);
- Removal of the turbine generators, condensers and related equipment (including salt tanks), transmission lines and towers, and above ground pipelines using conventional demolition equipment and techniques; and
- Near the very end of the project, the removal of site related fencing.

4.2.2 Stage 2: Concrete Removal

A project recycle center (either at the power unit as the work progresses or at the central admin area) would be established to:

- Size reduce and stage metals and mirrors for transport to an off site recycler:
- Crush concrete and remove rebar;
- Stockpile concrete for later use at the Site;
- Stage rebar for transport to an off site recycler; and
- Temporarily store and act as a shipping point for any hazardous materials to an approved TSD facility.

4.2.3 Stage 3: Remove & Dismantle Underground Utilities

The below-ground facilities to be removed include concrete slabs and footings that would remain within 3 feet of final grade at the end of the project. It is anticipated that any and all site related piping and utilities, including water lines, below ground electric / control / communication lines, and gas lines would be completely removed, regardless of the depth below final grade. These materials would be excavated and transported to the recycling area(s) for processing and ultimate recycling. The resulting trenches would be backfilled with suitable material of similar consistency and permeability as the surrounding native materials and compacted to 85 percent relative compaction.

4.2.4 Stage 4: Excavation & Removal of Soil

The need for, depth and extent of contaminated soil excavation will be based on observation of conditions and analysis of soil samples after removal of the evaporation pond and hazardous materials storage areas, and upon closure of the recycling center(s) and waste storage areas using during decommissioning. At this time, removal of contaminated soil is assumed not to be needed. To ensure worker safety, the hot and cold HTF tank areas are designed such that any release will be contained in a basin. The construction SWPPP will specify procedures to prevent contact between HTF and storm water during processing of this material prior to plant startup. In addition, the processing area would be cleaned to assure residual HTF is removed from surface soil after processing. If required, removal would be conducted to the extent feasible and as required to meet regulatory cleanup criteria for the protection of groundwater and the environment. If contaminated soil removal is required, the resulting excavations would be backfilled with native soil of similar permeability and consistency as the surrounding materials and compacted to 85 percent relative compaction.

4.2.5 Stage 5: Final Site Contour

Recontouring of the site would be conducted using standard grading equipment to return the land to match within reason the previously existing surface and surrounding grade and function. Grading activities would be limited to previously disturbed areas that require recontouring. Efforts would be made to disturb as little of the natural drainage and vegetation as possible. Concrete rubble, crushed to approximately 2-inch minus size, would be placed in the lower portions of fills, at depths at least 3 feet below final grade. Over excavation of an expansive area will be implemented to create voids for concrete rubble on site as needed. Fills would be compacted to approximately 85 percent relative compaction by wheel or track rolling to avoid over-compaction of the soils. To the extent feasible, efforts would be made to place a layer of coarser materials at the ground surface to add stability.

5. INTERIM RECLAMATION

5.1 Recontouring

Interim reclamation actions will be completed no later than 12 months from commencement of operation, weather permitting. The portions of the cleared site not needed for active operational and safety purposes will be recontoured to the original contour if feasible, or if not feasible, to an interim contour that blends with the surrounding topography as much as possible. Sufficient semi-level area will remain for setup of a workover rig and to park equipment. In some cases, rig anchors may need to be pulled and reset after recontouring to allow for maximum interim reclamation.

Roads and production equipment, such as tanks, treaters, separators, vents, electrical boxes, and equipment associated with operation, will be placed on location so as to permit maximum interim reclamation of disturbed areas. If equipment is found to interfere with the proper interim reclamation of disturbed areas, the equipment will be moved so proper recontouring and revegetation can occur.

5.2 Application of Topsoil & Revegetation:

Topsoil will be evenly respread and aggressively revegetated over the entire disturbed area not needed for all-weather operations including road cuts & fills and to within a few feet of the production facilities, unless an all-weather, surfaced, access route or small “teardrop” turnaround is needed.

In order to inspect and operate the project or complete workover operations, it may be necessary to drive, park, and operate equipment on restored, interim vegetation within the previously disturbed area. Damage to soils and interim vegetation will be repaired and reclaimed following use. To prevent soil compaction, under some situations, such as the presence of moist, clay soils, the vegetation and topsoil will be removed prior to workover operations and restored and reclaimed following workover operations.

5.3 Visual Resources Mitigation

To provide roadside screening, trees or cactus, if present, and tall vegetation will be left along the edges of the roads whenever feasible.

6. EVAPORATION POND RECLAMATION

The preliminary closure activities for the evaporation ponds include the following processes:

- Removal of Wastewater;
- Removal of Solids / sludge;
- Removal of any hard surface / protective layer and granular fill;
- Removal of high density polyethylene (HDPE) liners, drainage layers and leak detection system; then
- Site restoration, including soil rehabilitation as necessary.

Further information on each process is provided in the following sections.

Details concerning soil rehabilitation are presented below.

The evaporation ponds will be backfilled with native soil to match the existing surrounding grade and restore drainage function. The berm surrounding each evaporation pond will be the primary backfill material. The upper 6 inches of soil will be decompacted as necessary to prepare the soil for revegetation.

6.1 Closure Strategy

The Final Closure Maintenance Plan will outline in detail how each major task will be performed, however the overall closure strategy shall contain the following major elements:

- Conducting pre-closure activities, such as final closure and restoration planning, that addresses the “as-found” site conditions at the start of the Project;
- Documenting and establishing health and safety procedures;
- Use industry standard demolition methods, which shall allow personnel to efficiently undertake demolition activities, minimizing the environmental safety exposures;
- Demolishing the aboveground structures, liner materials, and leak detection and recovery system (dismantling and removing of improvements and materials) in a phased approach while still using some items until the end of the Project.
- Demolishing and removing of belowground facilities (underground utilities) as needed to meet the closure goals;
- Sealing any underground utilities to be left in place with grout;
- Cleaning up of soils, if needed, to ensure that clean closure is achieved;
- Disposing of materials in appropriate facilities for treatment/disposal or recycling; and
- Re-contouring lines and grades to match the natural gradient and function.
- Evaluate the execution of the decommissioning and restoration plan through project oversight and quality assurance; and

- Document implementation of the plan and compliance with environmental requirements.

The Final Closure Plan will be for clean closure of the evaporation ponds, by completely removing all residue wastes, including sludges and liner materials and discharging them to an approved Unit.

6.1.1 WASTEWATER DISPOSAL/USE

Wastewater will be consolidated into one evaporation pond or until that one pond is full, as the minimum two feet of freeboard must be maintained. Wastewater remaining in the other evaporation ponds will be allowed to evaporate to the atmosphere. As long as liquids remain in the evaporation ponds, the monitoring and reporting requirements included in the permit requirements will be followed.

TSE may obtain permission to use the consolidated wastewater for dust control during removal activities of the other two evaporation ponds (within the containments). Any wastewater that is not evaporated or utilized for dust control will be characterized for off-site disposal then loaded into containers/trucks, handled, and transported by a licensed waste hauler to an approved disposal facility following all federal, state, and local requirements.

6.1.2 Solids Removal

Samples of the precipitated solids/sludge shall be collected from each evaporation pond for characterization in accordance with EPA SW-846 and the receiving facility requirements, and profiled for disposal. The characterized solids/sludge will then be loaded into trucks and handled as appropriate by a licensed waste hauler and transported to an approved disposal facility, following all federal, state and local requirements.

6.1.3 HARD SURFACE/PROTECTIVE LAYER

The ramp, which may be constructed of a hard protective layer of roller compacted concrete or approved equivalent, will be removed using best engineering practices. Three samples of concrete will be collected from each evaporation pond to determine if the concrete can be recycled. If recyclable, the concrete will be crushed on site and transported to construction site(s) for use, such as road base material or used as backfill material at depths of greater than three feet below final grade. Handling and disposition of the material will abide by all federal, state and local requirements.

The granular fill beneath the hard surface protective layer will be removed. The material will be transported to an on-site facility to be washed. Water generated from the washing activities will be loaded in appropriate containers, handled, and transported by a licensed waste hauler to an approved disposal facility following all federal, state, and local requirements. The washed material will be reused on site as granular fill.

6.1.4 HDPE LINERS, DRAINAGE LAYERS AND MONITORING EQUIPMENT

In each evaporation pond, the HDPE liners, drainage layers and leak detection, collection and recovery sumps will be removed. The materials will be sent to a disposal facility. Handling and disposition of the material will abide by all federal, state and local requirements.

6.1.5 Base layer

Confirmation sampling will be conducted on the soil base layer of the evaporation pond liner system after the removal of the 40 mil HDPE geomembrane. If a GCL is used in the final design, the native materials below the GCL will be sampled after the removal of the overlying GCL. Samples will be collected from each of the former pond footprints on 100-foot by 100-foot grid spacing. Laboratory analysis will include Title 22 metals, biphenyl, diphenyl oxide, and general chemistry.

6.2 Site Restoration

The evaporation ponds will be backfilled with native soil to match the existing surrounding grade and restore drainage function. The berm surrounding each evaporation pond and the washed granular material will be the primary backfill material. The upper 6 inches of soil will be decompacted as necessary and remediated to the accepted conditions.

6.3 Evaporation Pond Closure Schedule

A closure schedule and final closure date will be determined at a future date and provided in the Final Closure Maintenance Plan.

It is assumed that closure would begin 30 to 50 years after the commercial operation date of the Project. It is also assumed that closure of the facility would occur in a phased sequential manner. Closure work would commence at the first pond, followed by similar work at the second pond, which would be followed by work on the third pond.

6.4 SITE SECURITY

There will be existing security measures on site which restrict public access during operations, including closure of the evaporation ponds. The entire site will have chain-link security fencing around the site perimeter, power block and other areas requiring controlled access. Controlled access gates will be located at the entrances to the facility and access through the main gate will require an electronic swipe card, preventing unaccompanied visitors from accessing the Facility. All Facility personnel, contractors and visitors will be logged in and out of the Facility at the main office during normal business hours. Visitors and non-TSE employees will be allowed entry only with approval from a staff member at the Facility.

In addition, at each point of access from a public road, an easily visible sign shall be posted indicating the facility name and other pertinent information as required.

Removal of the site security will be undertaken as a separate process to the evaporation ponds, however will not occur until the evaporation ponds are completely closed and certified.

7. GENERAL PROVISIONS

7.1 Housekeeping

A site-specific Health and Safety Plan will be prepared to specify requirements for establishing and maintaining a safe working environment during the implementation of the planned decommissioning and reclamation activities.

Immediately upon completion of each phase, the target location and surrounding areas(s) will be cleared of, and maintained free of, all debris, materials, trash, and equipment not required for decommissioning or reclamation.

No hazardous substances, trash, or litter will be buried or placed on the site.

7.2 Vegetation Clearing

Vegetation removal and the degree of surface disturbance will be minimized wherever possible. During vegetation clearing activities, woody vegetation removed from the power block and access road will be moved aside prior to any soil disturbing activities. Care will be taken to avoid mixing soil with the woody vegetation.

7.3 Topsoil Management

Operations will disturb the minimum amount of surface area necessary to conduct safe and efficient operations. When possible, equipment will be stored and operated on top of vegetated ground to minimize surface disturbance. In areas to be heavily disturbed, the top [eight (8)] inches of soil material, will be stripped and stockpiled around the perimeter of the power block and along the perimeter of the access road to control run-on and run-off, and to make redistribution of topsoil more efficient during interim reclamation. Stockpiled topsoil may include vegetative material. Topsoil will be clearly segregated and stored separately from subsoils.

Earthwork for interim and final reclamation will be completed within 12 months of completion unless a delay is approved in writing by the BLM authorized officer. Salvaging and spreading topsoil will not be performed when the ground or topsoil is frozen or too wet to adequately support construction equipment. If such equipment creates ruts in excess of four (4) inches deep, the soil will be deemed too wet. No major depressions will be left that would trap water and cause ponding unless the purpose is to trap runoff and sediment.

7.4 Seeding

After recontouring, the Site would be revegetated using native plant seeds where appropriate. This would be conducted with a native seed collection company. Initial seedbed preparation will consist of recontouring to the appropriate interim or final reclamation standard. All compacted areas to be seeded will be ripped to a minimum depth of 18 inches with a minimum furrow spacing of 2 feet, followed by recontouring the surface and then evenly spreading the stockpiled topsoil. Prior to seeding, the seedbed will be scarified and left with a rough surface. If broadcast seeding is to be used and is delayed, final seedbed preparation will consist of contour cultivating to a depth of 4 to 6 inches within

24 hours prior to seeding, dozer tracking, or other imprinting in order to loosen up the soil and create seed germination micro-sites.

Seeding will be conducted no more than 24 hours following completion of final seedbed preparation. A certified weed-free seed mix designed by BLM to meet reclamation standards will be used.

7.5 Erosion Control and Mulching

Site preparation in general and soil development prior to planting can optimize the site conditions for establishment of the native plant community and minimization of effects of erosion (i.e. sediment loss and water runoff). Natural, overall drainage and specific drainage for washes will be restored to the original condition by re-contouring disturbed areas. Erosion and sediment control will be monitored during closure activities. Temporary erosion and sediment control measures may be necessary such as applying weed-free mulch or soil stabilizers as needed.

Construction of the project would also be subject to requirements of the state National Pollutant Discharge Elimination System (NPDES) General Permit for Stormwater Discharges Associated with Construction Activities. A Construction Stage Stormwater Pollution Prevention Plan (SWPPP) will be produced and incorporated into the construction documents for construction of the facility. After construction is complete, an Operational Stormwater Pollution Prevention Plan (SWPPP), in accordance with the NPDES General Permit for Stormwater Discharges associated with Operational Activities, will be developed. Best Management Practices will be included in each plan and implemented to provide an effective combination of erosion and sediment controls.

Activities during closure and decommissioning which are considered construction activities and create soil disturbance to stabilized surface areas or have the potential to cause water pollution to stormwater facilities, are subject to the state National Pollutant Discharge Elimination System (NPDES) General Permit for Stormwater Discharges Associated with Construction Activities and require a Construction Stormwater Pollution Prevention Plan to be developed and implemented prior to the commencement of activities. It is expected that the SWPPP plans developed for the construction and operation of the project will form the basis of a SWPPP plan to be implemented for the closure and decommissioning activities, and a Project Closure SWPPP will be developed based on the schedule, actual conditions, facilities and activities to be conducted at the time of closure, decommissioning and reclamation.

7.6 Management of Invasive, Noxious, and Non-Native Species

Weed management for the project during construction and operation will be detailed in a Weed Management Plan filed separately for the project. Similar measures would be applied to reclamation activities, namely to ensure that populations of existing weed species do not increase due to the project closure, and if possible will be suppressed below current levels.

General measures to prevent the spread of weed propagules and inhibit their germination applied during decommissioning and reclamation activities include the following:

- Limiting disturbance areas during closure activities to the minimum required to perform work,
- Limiting ingress and egress to defined routes,
- Maintaining vehicle wash and inspection stations to minimize the potential for weed introduction.

A weed management survey will be conducted at the completion of closure, decommissioning, and reclamation activities to summarize the weed status at the site. The results of this report will be used to determine if additional monitoring or control measures are necessary.

Long-term monitoring reports are required for evaluating monitoring results to determine if revegetation and weed control are successful. Annual monitoring reports will document the success of the weed control and revegetation. Monitoring of ecosystem function could include soil moisture, soil strength using penetrometer measurements, soil organic matter, insect activity measurements (e.g., count of ant mounds), mycorrhizae assays, litter decomposition rates, establishment rates of cryptobiotic crusts, and establishment of native versus invasive species. Ecosystem structure includes factors such as density, diversity, richness, cover, and seedling establishment.

Field monitoring should be conducted using line transect and quadrat techniques. Line transects provide effective cover data, while data from quadrats more effectively evaluate density and reflect the species richness of the plant community. The transect length and quadrat area should be representative of the plant community and large enough to capture 90 percent of the species that are present. A minimum of three 100-foot transects and three 100-square-foot quadrats, equally spaced across each revegetated area, should be identified. These permanent monitoring locations within the restoration area would be recorded using GPS and will be staked in the field. A map will be created, using an aerial photograph as a base layer, showing each monitoring site and photo documentation locations within the sites.

Monitoring will be conducted for a period of 4 years from the date of reclamation and revegetation, except at sites where revegetation is not proceeding satisfactorily. In that case, monitoring may be extended on a year-by-year basis until success criteria are met. Monitoring will be performed annually during the first 2 years following revegetation, and biannually thereafter. Monitoring sessions will occur between March 15 and April 15.

7.7 Recontouring

Re-contouring of the Site will be conducted using standard grading equipment to return the land to match within reason the previously existing surface and surrounding alluvial fan grade and function. Grading activities will be limited to previously disturbed areas that require recon touring. Efforts will be made to disturb as little of the natural drainage and vegetation as possible. Concrete rubble, crushed to approximately 2-inch minus size will be placed in the lower portions of fills, at depths at least 3 feet below final grade. Fills will be compacted to approximately 85 percent relative compaction by wheel or track rolling to avoid over-compaction of the soils. To the extent feasible, efforts will be made to place a layer of coarser materials at the ground surface to add stability.

8. RECLAMATION MONITORING

Reclaimed areas will be monitored annually. Actions will be taken to ensure that reclamation standards are met as quickly as reasonably practical and are maintained during the life of the permit. Reclamation monitoring will be documented in an annual reclamation report submitted to the authorized officer by July 1. The report will document compliance with all aspects of the reclamation objectives and standards, identify whether the reclamation objectives and standards are likely to be achieved in the near future without additional actions, and identify actions that have been or will be taken to meet the objectives and standards. The report will also include acreage figures for: Initial Disturbed Acres; Successful Interim Reclaimed Acres; Successful Final Reclaimed Acres. Annual reports will not be submitted for sites approved by the authorized officer in writing as having met interim or final reclamation standards. Monitoring and reporting continues annually until interim or final reclamation is approved. Any time 30% or more of a reclaimed area is redisturbed, monitoring will be reinitiated.

The authorized officer will be informed when reclamation has been completed, appears to be successful, and the site is ready for final inspection

9. FINANCING OF DECOMMISSIONING AND RESTORATION ACTIVITIES

9.1 Cost Estimate

The Reclamation Cost Estimate (RCE), presented to BLM under separate cover, is an effort to demonstrate the costs associated with demolition and restoration of the project solar field, infrastructure and administration facilities following 30 years of operations. The estimated valuations were derived utilizing RS Means, California construction costs databases and historically accurate cost data and production rates used for the demolition industry at current capture rates. This cost estimate was completed under the accepted standards of an order of magnitude engineers cost estimate.

As applicable, cost estimate indices from the Nevada Standardized Cost Estimator database were incorporated to generate portions of the RCE. This database reflects the approved BLM estimating guidelines and unit costs used primarily for mining operations. *See IM- 2011-003.*

For decommissioning, the cost estimate addresses the pre-decommissioning activities; the dismantling of equipment and demolition of aboveground structures; removal of belowground facilities and utilities; debris management and disposal/hauling; recontouring of the land; and hazardous waste management. For restoration, the cost estimate addresses cost of site preparation; plant and soil management; testing and monitoring; and site revegetation. Salvage value or re-sale value of equipment is not included in the cost estimate (for example re-sale of an emergency generator with very low run hours, or re-sale of pumps or other plant components). However, the raw products used for construction, such as structural steel, aluminum, copper, stainless steel, and other materials that are directly recyclable and the value of which is normally credited to demolition projects will be included in a separate report provided to the BLM.

No “time value of money” adjustments were made to this estimate. Only present value costs are included. As with any work conducted after 30 years of operation, the misapplication or misunderstanding of any escalation or inflation adjustments can far outweigh any precision thought to be included with the estimate. By leaving foundations at greater than 3 feet below final grade, approximately 40% of the concrete used in the demolition effort is saved. Otherwise an appreciable increase in demolition and concrete processing costs will be incurred. Likewise, if the option to leave clean concrete rubble buried on site (at greater than 3 feet deep and not interfering with re-vegetation) is not permitted, transport and disposal of this low value/high mass waste stream will increase the cost of the project. As such, it is assumed that approximately 40% of the mass of the poured concrete at the Site will be left in situ, i.e., not broken up, since it will ultimately be covered by greater than three feet of native soils in the recontouring process to place the land in its near-original condition.

9.2 Statement of Responsibility

As required by BLM, TSE will purchase a performance bond, which will be issued either by an insurance company or a financial institution to guarantee the satisfactory decommissioning and reclamation of the project site. The bond will be obtained prior to start of construction and will be structured so the funds will be returned to the project owner upon completion of the decommissioning and reclamation activities (with an amount held in reserve until the reclamation monitoring is

completed). It will also be structured in such a manner that BLM will be able to access those funds to pay for the decommissioning and reclamation of the site, in the event that the project owner becomes insolvent, or that the duration of a temporary closure continues long enough that the closure is considered permanent.

Figures

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CRESCENT DUNES SOLAR ENERGY PROJECT
TONOPAH SOLAR ENERGY, LLC
BLM CASE NO. N86292

WorleyParsons
resources & energy

CRESCENT DUNES
NYE COUNTY, NV
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Appendix E: BLM Wildlife Mitigation and Monitoring Plan

Wildlife Mitigation and Monitoring for Crescent Dunes Solar Energy Project

- During construction, all food and trash shall be placed in closed containers. Workers shall not feed wildlife or bring pets to the project site. Road-killed wildlife on the project site shall be reported to the Nevada Department of Wildlife and promptly removed.

- During all project phases, debris should not be allowed to accumulate under heliostat mirrors. Any debris found will be removed and appropriately disposed or recycled.

- At the end of each work day, excavation areas that may trap wildlife should be inspected for wildlife before backfilling. If backfilling is not feasible, all excavations shall be sloped at the ends to provide wildlife escape ramps or covered to completely prevent wildlife access.

- To reduce the likelihood of avian species frequenting horizontal surfaces of electrical components and transmission infrastructure for perching and nesting and to decrease the chances of electrocutions and collisions, transmission lines and all electrical components shall be designed, installed, and maintained in accordance with the Avian Power Line Interaction Committee's (APLIC) Suggested Practices for Avian Protection on Power Lines (APLIC 2006). Deterrents shall be installed and maintained on horizontal surfaces to deter avian predators to decrease predation risks for the pale kangaroo mouse and dune scarabs present in the vicinity of the solar facility and transmission alignment (Slater and Smith 2008, Prather and Messmer 2010).

- Avian and wildlife mortality monitoring of transmission lines and power poles, at the central receiving tower, and around the solar heliostats shall be conducted under the same frequency guidelines as the monitoring for the evaporation ponds.

- TSE will provide basic training to their onsite workforce to increase awareness of and ability to identify sensitive wildlife species, such as golden eagles. A wildlife reporting system shall be put in place for TSE workforce to record wildlife species, their locations, activities, and use of facilities.

- All ground-disturbing activities will be conducted outside the migratory bird nesting season (March 15 – July 31). If ground-disturbing activities cannot be avoided during this time period, pre-construction nest surveys shall be conducted by a BLM-approved biologist with the following guidelines:
    - Surveys shall cover all potential nesting habitat in and within 300 feet of the area to be disturbed.
    - Surveys must be conducted between sunrise and 3 hours post-sunrise when birds are most active.
    - Surface-disturbing activity must be conducted within 10 days of surveys or additional surveys may be required to "re-clear" the area.

- If active nests are detected, a no-disturbance buffer zone (as determined by USFWS, NDOW, and BLM) will be established. Nest locations shall be mapped and submitted to the BLM as needed.

Evaporation Pond Mitigation

- To discourage all terrestrial wildlife, including small mammals, amphibians, and reptiles from accessing the ponds. Evaporation ponds will be fenced to the below mentioned standards unless the entirety of the project area is fenced to meet those standards.
    - The minimum standard fence around the project area shall be 8 feet high, the bottom 4 feet of which shall be composed of woven or mesh wire not greater than 2-inch mesh on the bottom 2 feet and a maximum of 8-inch mesh on the top. The bottom shall be placed tight to the ground to prevent animals from gaining access under the fence. The remainder of the fence above the woven or mesh wire shall be smooth or barbed wire with a spacing of 10 inches, 12 inches, 12 inches, and 14 inches beginning from the top of the woven or mesh wire. If cyclone or chain-link fence is to be used then the only conditions to be met are the 8-foot height and tight to the ground.
    - Gates shall remain closed when not in use.
    - Monthly inspections of fences shall be required and immediate maintenance must be completed to address any breaches in the fence.
- Ponds will be constructed with interior side slopes of 3:1 (horizontal:vertical) to discourage utilization of the ponds by avian species but to also allow escape ramps for wildlife (T. Kipke, NDOW, personal communication). Pond linings will have textured surfaces to aid wildlife in attaining traction during escape.
- Ponds will be designed and operated to maintain a minimum freeboard of 2 feet at all times.
- Anti-perching devices will be installed around the edge of ponds to prevent bireds from accessing the water for drinking.
- Ponds will be surveyed for avian species *at least* once every two week starting with the first month of operation of the ponds, and once per week during expected high peak migration months (April – May, August – October). Monitoring at a higher frequency of visitations may also be coordinated with other pond monitoring Tonopah Solar Energy (TSE) may have in place.
    - If after 24 months of visits, no bird or wildlife issues are reported, monitoring may be reduced to monthly visits.
    - If after 12 months of monthly visits, no bird or wildlife deaths have occurred, visits may be reduced to quarterly surveys for one year.
    - After one year of quarterly visits with no wildlife deaths, visits may be reduced to 2 per year during peak migration months.
    - All reductions in survey effort remain contingent on no bird or wildlife deaths occurring. If bird or wildlife deaths occur, monitoring frequency will need to be increased again at a rate to be determined at the time of the incident.

        - Surveyors need to be experienced with bird identification and survey techniques. A report of findings should be submitted to TSE, NDOW, and the BLM that includes dates, times, species seen, and activity. If bird mortality is discovered or other anomalies observed, guidance for responding to the situation would be sought from sources such as NDOW's Industrial Artificial Pond Program and/or the U.S. Fish and Wildlife Service.
    - Visual deterrents shall be installed at all ponds. These deterrents should initially include suspended milar strips and at least one other visual type, like pyrotechnic-based deterrent (e.g. cracker shells). Evaluation of deterrents will be made during monthly surveys to determine effectiveness and to ensure they are still in working order. Non-functioning deterrents shall be replaced. If deterrents are evaluated as ineffective, alternative efforts and methods to deter birds shall be implemented as necessary to attain effectiveness.
    - Water quality at the ponds should be monitored quarterly and should include Profile I parameters, salinity, and total sodium using the methods and standards that meet Nevada Department of Environmental Protection requirements (T. Kipke, NDOW, personal communication).

Golden Eagle Nest Monitoring (Pagel et al. 2010)

- Monitoring of the known golden eagle nest will be required during construction and at least 5 years post-construction.
    - Monitoring can and should be done from the main road.
    - At least 2 observation periods per season shall be completed between March – June. Observation periods will last at least 4 hours, or until nest occupancy can be confirmed. Observation periods will be at least 30 days apart.
    - Surveyors need to be experienced with raptor identification and survey techniques. A report of findings should be submitted to TSE, NDOW, and the BLM that includes dates, times, species seen, activity, etc.

Pale Kangaroo Mouse Habitat Research

In coordination with NDOW, the BLM has considered multiple options to mitigate for the loss of known pale kangaroo mouse habitat. Based on feasibility, effectiveness, and fiscal responsibility, it is the BLM Tonopah Field Office's determination that the most effective mitigation approach would be to establish a fund to further the data needs for supporting management decisions regarding the pale kangaroo mouse.

TSE will provide $200,000 in funding for a phased study that will provide information to allow the BLM and NDOW to make timely, informed management and land use decisions related to the long-term management and conservation of the pale kangaroo mouse. TSE will place the first year's funding requirement of $75,000 in a joint TSE/BLM account prior to the execution of the right-of-way grant and temporary use permit. The required funding balance will be paid over the

following 2 years in payments of $62,500, for a grand total of $200,000 over 3 years. Each payment will be placed in a joint TSE/BLM account annually to the date of the first payment. Fees incurred in setting up and maintaining this account and all interest accumulated by this account will be the responsibility and property of TSE. All disbursement of funds will be at the discretion of the BLM.

At a minimum, TSE's funding would contribute to the following phases: 1) compile and summarize existing information and data regarding the pale kangaroo mouse such that it can be used to develop methodologies for later habitat mapping, surveying, and sampling distribution; this would result in GIS-usable data, and 2) using information from phase one, conduct surveys to determine habitat needs, distribution, and relative abundance of the pale kangaroo mouse, with study efforts occurring primarily in the Lower Smoky Valley area identified in the EIS. These efforts must tie directly back to data needs for supporting management decisions.

Implementation of the research would need to be conducted by a governmental agency, an accredited college or university, or by a private party with accredited wildlife biologists in the field of small mammal biology. All interested groups must submit a detailed research proposal that includes objectives and research design to address the previously outlined phases and management needs (see *Management Needs* attachment), not academic interests of those submitting proposals. Each proposal will be reviewed by a technical review committee comprised of the BLM, the NDOW, and TSE. The Tonopah Field Office Authorizing Officer will make the final decision on which proposal will be awarded the contract. Subsequent research phases will be identified as data is collected and analyzed and may focus on fine-tuning pale kangaroo mouse distribution and abundance, long-term population monitoring, and genetics analyses. The synthesis of this data collection process will contribute to the BLM and NDOW's evaluation of the taxonomic status of the pale kangaroo mouse, and the rarity of and risk of the species needing further protection through listing under the ESA. Additional resources to contribute to this phased research will also be sought by the BLM and NDOW.

Pale Kangaroo Mouse (*Microdipodops pallidus*) Management Needs

The current state of knowledge regarding this species is sparse (see references). Managers need the information and perspective for making informed decisions in the rapidly changing land-use environment. This is particularly germane to assessing effects from developments with large footprints, such as renewable energy developments. The following outline is the BLM's and NDOW's recommendation for better positioning the agencies in making decisions on future projects that are sited within potential habitat of populations of the pale kangaroo mouse local to the Crescent Dunes Solar Energy Project. Mitigation funds donated by the Crescent Dunes Solar Energy Project would provide keystone funding for initiating the work needed to attain information for the management of the pale kangaroo mouse.

Information needs:

- An evaluation of habitat and soil associations of pale kangaroo mice to produce a map and GIS data that depicts the known and potential habitat of the species.
- A detail of the species' habitat requirements, including the differences in habitat quality, by using information from but not limited to the Natural Resources Conservation Service's soil surveys and ecological site descriptions.
- A determination of population abundance for the Lower Smoky Valley, Nye and Esmerelda Counties, Nevada.
- Recommendations that will aid in management and land-use decisions related to the long-term management and conservation of the species.
- Genetic analysis to evaluate the taxonomic status of the species.

Anticipated work:

- Multiple live-trapping seasons to determine local distribution and construct habitat requirements
- Development of a map and model to depict the potential distribution and habitat requirements of the species in Nevada that can be incorporated into a GIS
- A report of findings suitable for publication to include a discussion of habitat threats
- Collection of genetic material for future genetic analysis as funds are acquired

Desired Contractor:

- A firm, educational institution, government agency (such as USGS) or individual with expertise in small mammal biology in the desert southwest or with this species
- The lead researcher should have a PhD or demonstrable equivalent expertise to manage such a project

Anticipated costs:

- A multi-year study (approximately 3 field seasons and one year report preparation)
- A grand total of $200,000 provided by TSE with an initial payment of $75,000 and two additional payments of $62,500 over the following 2 years.

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Appendix F: Groundwater Monitoring Plan

GROUNDWATER MONITORING PLAN FOR THE CRESCENT DUNES PRODUCTION WELL

I. INTRODUCTION

The Crescent Dunes Concentrated Solar Project located in Nye County, Nevada thirteen miles north of Tonopah will get its operational water supply from one of two ground water wells (one of the two wells will serve as a backup well should the primary source fail for some reason.) See pages 2-37, 38 of the Draft Environmental Impact Statement (DEIS) dated September 3, 2010 for more details.

In order to address the potential impacts of the water use over the life of the project (three [3] years of construction and a 30 year operational life cycle) the Bureau of Land Management used a numeric water model (see Section 4.5 of the DEIS for a complete analysis of the impacts projected to occur as a result of pumping the Project's production well). Numeric water models, like all models, are computer estimations of potential impacts to surrounding resources. In order to ensure the modeling predictions are accurate, a monitoring plan, based on model predictions is a requisite part of the modeling effort.

II. MONITORING PLAN

The following monitoring plan is required of TSE in order to ensure the predicted impacts are correct; or if further modeling and potential future mitigation would be required should the current impact analysis prove inaccurate.

TSE will implement a monitoring plan that will include collecting groundwater elevations and groundwater quality samples at selected wells. Water quality samples will be analyzed for major cations and anions. The monitoring will be conducted on a quarterly basis. Depending on the results of monitoring while the plant is in operation, the schedule may be modified to sampling semiannually, in the early spring and the late fall.

Groundwater samples and water measurements will be collected on the project site using well TW 1 and, if granted access, RO Livestock, Nevada Well Log 5115 and Truckee River Ranch, Nevada Well Log 98680. If access is not granted to Truckee River Ranch, then the Nevada Department of Transportation, Millers Rest Area, Nevada Well Log 9972 will be used.

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Appendix G: Weed Management Plan

Weed Management Plan

Crescent Dunes Solar Energy Project (N-86292)

Nye County, Nevada

Tonopah Solar Energy, LLC

04 November 2010

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Appendix A

Weed Risk Assessment Form

1. INTRODUCTION

1.1 Background

The Bureau of Land Management (BLM) defines a noxious weed as: "A plant that interferes with management objectives for a given area of land at a given point in time." Nevada Revised Statute (NRS) 555.005, says noxious weeds are: "… any species of plant which is, or is likely to be, detrimental or destructive and difficult to control or eradicate." In 2010, 47 species were on the Nevada Noxious Weed List, which is in Nevada Administrative Code (NAC) 555.010. It is the responsibility of the Project Proponent and/or the Construction Contractor(s), working with the Construction Inspection Compliance (CIC) Contractor, and BLM Project Manager, to ensure that noxious weeds are identified and controlled during the construction of project facilities and that all federal, state, county, and other local requirements are satisfied, with respect to noxious weeds.

1.2 Plan Purpose

The purpose of this Noxious Weed Management Plan is to implement early detection, containment, and control of noxious weeds during project construction, operation and decommissioning and reclamation. Information gathered during preconstruction surveys and provided by the BLM, will be used to monitor and control the spread of noxious weeds that may pose a potential infestation threat during the construction and operation of the Project. These preventative and treatment measures are described below. An evaluation of the effectiveness of the prescribed control measures also will be implemented during the operational phase of the Project.

1.3 Project Description

The proposed solar power project is based on concentrating solar power (CSP) technology. The proposed CSP technology utilizes heliostats/reflecting mirrors to redirect sunlight on a receiver erected in the center of the solar field (the power tower or central receiver). Liquid salt, which has the viscosity and appearance similar to water when heated, is circulated through tubes in the receiver, collecting the energy gathered from the sun. The heated salt is then routed to an insulated storage tank where it can be stored with minimal energy losses. When electricity is to be generated, the hot salt is routed to a heat exchanger (or steam generator) and used to produce steam. The steam is then used to power a conventional Rankine cycle steam turbine/generator, which produces electricity. The exhaust steam from the turbine is condensed and returned via feedwater pumps to the heat exchangers where the high-pressure superheated steam is generated again.

The overall site layout for the proposed facility includes the following components:

- Solar Collecting Tower – The concrete tower would be approximately 538 feet tall and would house a 100-foot-tall cylindrical solar receiver and a 15-foot maintenance crane. The total height would be approximately 653 feet, and would have appropriate lighting for aviation safety and lightning protection.
- Solar Array – The array would consist of a circular field encompassing an area with a radius of 4,300 feet (approximately 1,330 acres) where the heliostats (or mirrors) would be located.

- Power Block - The power block, in a circular area with a radius of about 400 feet, would house the central receiver tower, storage tanks, steam turbine, cooling tower, ACC, transformers, heat exchangers, power block buildings, and other ancillary equipment.
- Reverse Osmosis Water Treatment System and Evaporation Ponds – These facilities would purify the groundwater to be used in the production of electricity and be used as the means for industrial wastewater disposal.
- Hybrid Cooling System – The system would include an evaporative cooling tower and ACC.
- Thermal Storage System – The storage system would include two large, insulated storage tanks and associated piping for the liquefied salt, one “hot” tank for the storage of the materials prior to use in generating the steam, and a “cool” tank for storing salt prior to resending it to the central tower for heating.

2. SITE CONDITIONS

2.1 Location

The proposed project site is located in south-central Nevada, approximately 13.5 miles northwest of Tonopah, in Nye County. The project is located within the southern portion of the Big Smoky Valley, north of US Highway 95/6 along Poleline Road (State Highway 89). The proposed project would be built on lands administered by BLM.

The proposed project site, transmission line (TL), and borrow pit (temporary during construction) are located in south-central Nevada, west of Tonopah, in Nye County. The proposed project encompasses approximately 2,950 acres (**Figure 1**), as located in the lands described by aliquot parts in the below table. While the proposed project encompasses approximately 2,950 acres, the project is expected be constructed on and disturb only a portion of this area. The reclamation cost estimate included in **Attachment A** is based upon the actual estimated site impacts.

Proposed Project Site (N-86292)	
Township 4 North, Range 41 East:	Western half of Sections 12 and 13
	Sections 11 and 14
	Northwestern, northeastern, and southeastern quarters of Section 15
	Southwestern, northeastern, and southeastern quarters of Section 10
	Southern half of the northwestern quarter of Section 10
	Eastern half of the southwestern quarter of Section 15
TL and Substation (N-87933)	
Township 4 North, Range 41 East:	Eastern half of Section 9
	Northwestern, southwestern, and southeastern quarters of Section 4
Township 5 North, Range 41 East:	Northwestern, southwestern, and northeastern quarters of Section 33
	Eastern half of Section 28
	Section 22
	Southeastern quarter of Section 15
	Western half of Section 14
	Southwestern, southeastern, and northeastern quarters of Section 11
	Eastern half of Section 2
	Northwestern quarter of Section 27

Borrow/Gravel Pit	
Township 5 North, Range 41 East:	Northeastern quarter of Section 19
	Western half of the northwestern quarter of Section 20
	Southern half of the southeastern quarter of Section 18

2.2 Land Use

Existing land use conditions in the area of analysis are characterized primarily by open desert, utility corridors and facilities, grazing allotment, recreation, and transportation and access. BLM administers the vast majority of land in the proposed project area through the BLM Tonopah Field Office (TFO). According to the Tonopah Resource Management Plan (RMP) (BLM 1997), the area of analysis for the proposed project is subject to the following authorizations or restrictions:

• San Antone grazing allotment (covers entire area of analysis)

• A ROW avoidance area (Classification 2—other),

• Off-highway vehicle restriction (limited to existing roads and trails and closed to competitive events)

• Visual resource management (Class 4) (covers entire area of analysis)

• A utility corridor

• Mineral leasing restrictions (no surface occupancy)

• Avoidance of Crescent Sand Dunes (Special Resource Management Area [SRMA])

In addition, based on a data search within BLM's GeoCommunicator (BLM 2010b), the area of analysis is contained within a DOD Airspace Consultation Area.

2.3 Topography

The topography of the Proposed Area is generally flat with elevations ranging from approximately 5,000–5,060 feet. Steeply sloping elevations in the background distances range between 9,100 and 11,000 feet. The topography in the borrow pit area is generally flat, with an elevation of approximately 4,881– 4,972 feet. The topography along the TL and substation corridor rises slightly from the valley floor to the location of the substation, with an elevation of approximately 4,880–5,200 feet.

3. NOXIOUS WEED INVENTORY

In 2009 and 2010, JBR Environmental Consultants, Inc. conducted botanical and wildlife surveys at the Crescent Dunes Solar Energy Project in Nye County, Nevada. Although the main purpose of the surveys was to identify the presence of any listed or BLM sensitive plants and animals, noxious weeds were recorded during the surveys.

No federal or state listed noxious weeds were observed in the study area. However, invasive species such as Russian thistle and halogeton were present in the study area. No noxious weeds were found in the Proposed Area; however, two invasive nonnative species were observed in the Proposed Area: halogeton (*Halogeton gomeratus*) and Russian thistle (*Salsola* sp.). Halogeton was observed infrequently throughout the proposed project area. However, Russian thistle was prevalent, especially in sandier soils throughout the proposed project area. Cheatgrass was not observed in the detailed study area. Three tamarisk (*Tamarisk* sp.) plants were observed in the proposed borrow pit area along an ephemeral channel. Tall whitetop (*Lepidium latifolium*) was observed in a wash outside the southwest boundary of the proposed borrow pit area. No noxious weeds were found in the TL and Anaconda Moly Substation corridor; however, two invasive nonnative species were observed in the TL and Anaconda Moly Substation corridor: halogeton and Russian thistle.

3.1 State Listed Noxious Weeds

Category ”A”: Weeds not found or limited in distribution throughout the state; actively excluded from the state and actively eradicated wherever found; actively eradicated from nursery stock dealer premises; control required by the state in all infestations

Category "B": Weeds established in scattered populations in some counties of the state; actively excluded where possible, 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

Category "C": Weeds currently established and generally widespread in many counties of the state; actively eradicated from nursery stock dealer premises; abatement at the discretion of the state quarantine officer.

Table 1: Noxious Weed Species of Potential Concern

Common Name	**Scientific Name**	
Category A Weeds:		
African Rue	*Peganum harmala*	
Austrian fieldcress	*Rorippa austriaca*	
Austrian peaweed	*Sphaerophysa salsula / Swainsona salsula*	
Black henbane	*Hyoscyamus niger*	
Camelthorn	*Alhagi camelorum*	
Common crupina	*Crupina vulgaris*	
Dalmation Toadflax	*Linaria dalmatica*	
Dyer’s woad	*Isatis tinctoria*	
Eurasian water-milfoil	*Myriophyllum spicatum*	
Giant Reed	*Arundo donax*	
Giant Salvinia	*Salvinia molesta*	
Goats rue	*Galega officinalis*	

Green Fountain grass	*Pennisetum setaceum*	
Houndstongue	*Cynoglossum officinale*	
Hydrilla	*Hydrilla verticillata*	
Iberian Starthistle	*Centaurea iberica*	
Klamath weed	*Hypericum perforatum*	
Malta Star thistle	*Centaurea melitensis*	
Mayweed chamomile	*Anthemis cotula*	
Mediterranean sage	*Salvia aethiopis*	
Purple loosestrife	*Lythrum salicaria, L.virgatum and their cultivars*	
Purple Star thistle	*Centaurea calcitrapa*	
Rush skeletonweed	*Chondrilla juncea*	
Sow Thistle	*Sonchus arvensis*	
Spotted Knapweed	*Centaurea masculosa*	
Squarrose knapweed	*Centaurea virgata*	
Sulfur cinquefoil	*Potentilla recta*	
Syrian Bean Caper	*Zygophyllum fabago*	
Yellow Starthistle	*Centaurea solstiltialis*	
Yellow Toadflax	*Linaria vulgaris*	
Category B Weeds:		
Carolina Horse-nettle	*Solanum carolinense*	
Diffuse Knapweed	*Centaurea diffusa*	
Leafy spurge	*Euphorbia esula*	
Medusahead	*Taeniatherum caput-medusae*	
Musk Thistle	*Carduus nutans*	
Russian Knapweed	*Acroptilon repens*	
Sahara Mustard	*Brassica tournefortii*	
Scotch Thistle	*Onopordum acanthium*	
White Horse-nettle	*Solanum elaeagnifolium*	
Category C Weeds:		
Canada Thistle	*Cirsium arvense*	
Hoary cress	*Cardaria draba*	
Johnson grass	*Sorghum halepense*	
Perennial pepperweed	*Lepidium latifolium*	
Poison Hemlock	*Conium maculatum*	
Puncture vine	*Tribulus terrestris*	
Salt cedar (tamarisk)	*Tamarix spp*	
Water Hemlock	*Cicuta maculata*	
[Dep't of Agriculture, No. 55.11, eff.5-25-62; A 5-1-68]--(NAC A by St. Quarantine Officer, 8-9-94; R191-99, 8-7-2000; R097-01m 5-1-2002; R003-03, 9-24-2003)		

3.2 Noxious Weed Assessment

As part of the analysis of effects to vegetation, a noxious weed assessment was conducted in accordance with BLM Manual 9015 (Appendix A). The first step in this analysis was to assign a numerical rating for Factor 1, which is the likelihood of noxious weed species spreading to the project area. Factor 2, which is the consequence of noxious weed establishment in the project area, was also given a numerical rating. These two factors were then multiplied and that value used to identify a risk rating for the project. The risk rating then identified guidelines for noxious weed control in the project area. Table 2 summarizes the results of the Noxious Weed Risk Assessment and the value assigned to the two risk factors.

Table 2. BLM noxious weed risk assessment factors and rating risk assessment factors worksheet (BLM 1992)

Factor	Rating for the Proposed Action	Value
Factor 1 – Likelihood of Noxious Weed Species Spreading to Project Area	Low: Noxious weed species present in areas adjacent to but not within the project area. Project activities can be implemented and prevent the spread of noxious weeds into the project area.	1
Factor 2 – Consequence of Noxious Weed Establishment in Project Area	Possible adverse effects on site and possible expansion of infestation within project area. Cumulative effects on native plant community are likely but limited.	5
Total Risk Rating (Factor 1 Rating Value * Factor 2 Rating Value)		**5**

As presented in Table 2, the total risk rating for the proposed project is less than 10, resulting in a low risk rating. For this rating, BLM recommends proceeding with the project as planned.

3.3 Weed Management Areas

The Proponent would be required to initiate control treatment on noxious weed populations if they become established anywhere in the project area.

4. NOXIOUS WEED MANAGEMENT

4.1 Identification of Problem Areas

Prior to the initiation of construction activities, all construction personnel will be instructed on the importance of controlling noxious weeds. As part of start-up activities, the Construction Contractor will provide information and training regarding noxious weed management. The importance of preventing the spread of noxious weeds in areas not infested, and controlling the proliferation of weeds already present will be emphasized. Prior to construction, areas of concern previously identified will be flagged by the Construction Contractor and reviewed by the CIC. This flagging will alert construction personnel and prevent access into areas until noxious weed management control measures, as described below, have been implemented.

4.2 Preventive Measures

The following preventative measures are to be applied on a case-by-case basis, where applicable and necessary, at the discretion of the BLM and CIC. Prior to ground disturbing activities a qualified weed specialist will survey the proposed disturbance area. The weed specialist working in conjunction with the BLM and CIC will identify areas where the following measures shall be implemented.

- Where feasible, construction will begin in weed-free areas before operating in weed infested areas. All movement of construction vehicles outside of the right-of-way will be restricted to pre-designated access, contractor-acquired access, or public roads. All construction sites and access roads shall be clearly marked or flagged at the outer limits prior to the onset of any surface-disturbing activity. All personnel shall be informed that their activities must be confined within the marked or flagged areas.
- Construction personnel will be trained to inspect, remove, and dispose of weed seed and plant parts found on their clothing and equipment. Disposal methods will be approved by the BLM Project Manager.
- The Contractor, with CIC oversight, will ensure that vehicles and equipment are free of soil and debris capable of transporting noxious weed seeds, roots, or rhizomes before the vehicles and equipment are allowed use of access roads on the right-of-way.
- In areas where infestations are identified or noted, the Contractor will stockpile cleared vegetation and salvaged topsoil adjacent to the area, to eliminate the transport of soilborne noxious weed seeds, roots, or rhizomes.
- Where necessary, during reclamation, the Contractor will return topsoil and vegetative material from infestation sites. The Contractor will use compressed air to remove seeds, roots, and rhizomes from the equipment before transport off-site.
- The Contractor will ensure that straw or hay bales used for sediment barrier installations or mulch distribution are obtained from state-cleared sources that are certified free of primary noxious weeds.

- Immediately following construction, the Contractor will implement the reclamation of disturbed land. Continuing revegetation efforts will ensure adequate vegetative cover, preventing the invasion of noxious weeds.

4.3 Treatment Methods

The Construction Contractor and/or Project Proponent will implement noxious weed control measures in accordance with existing regulations and BLM requirements. Before construction, only pesticides that are approved by the BLM will be applied to the identified weed infestations on BLM land, to reduce the spread or proliferation of weeds. Post-construction control measures can include one or more of the following methods (that may be implemented during restoration activities):

- Treatment methods will be based on species-specific and area-specific conditions (e.g., proximity to water or riparian areas, agricultural areas, and time of year) and will be coordinated with the BLM Project Manager. If areas are not seeded until the following spring, because of weather or scheduling constraints, all undesirable vegetation will be eradicated before seeding.
- Mechanical methods rely on equipment that can be used to mow or disc weed populations. If such a method is used in areas to be restored, subsequent seeding will be conducted to re-establish a desirable vegetative cover that will stabilize the soils and slow the potential re-invasion of noxious weeds.
- Discing or other mechanical treatments that would disturb the soil surface within native habitats will be avoided in favor of pesticide application, which is an effective means of reducing the size of noxious weed populations, as well as preventing the establishment of new colonies.
- Seed selection will be based on site-specific conditions and the appropriate seed mix identified for those conditions**. Any seed mix shall be selected in accordance with BLM guidelines and approved by the BLM.**
- Pesticide applications will be controlled, as described in Section 5, to minimize the impacts on the surrounding vegetation. In areas of dense infestation, a broader application will be used and a follow-up seeding program will be implemented.
- Supplemental seeding will be coordinated with the BLM.

4.4 Agency Specific Requirements

The Nevada State Department of Agriculture regulates noxious weeds under NRS 555, which mandates that “every landowner or occupier, whether private, city, county, or federal shall cut, destroy, or eradicate all noxious weeds as required by the state quarantine officer.” Through the implementation of this Weed Management Plan and in conjunction with the BLM (as described below), the project will be in compliance with NRS 555.

4.4.1 Bureau of Land Management Land

Pesticides approved for use on the Project site will be reviewed and approved by the BLM prior to initiation of construction. Guidelines for the use of chemical control of vegetation on BLM lands are

presented in the Chemical Pest Control Manual. These guidelines require submittal of a Pesticide Use Proposal which will be prepared by the Contractor and submitted to the BLM for review and approval prior to initiation of construction activities. Once approved any use of pesticides will require Pesticide Application Records (PARs) that detail the use and application. The PARs will then be submitted to the BLM in a timely manner.

The occurrence of noxious weeds within the Project site will be reported to the BLM district (Tonopah field) office. The appropriate weed control procedures, including target species, timing of control, and method of control, will be determined in consultation with the BLM by the Contractor, based on the procedures outlined in this Noxious Weed Plan.

4.4.2 Personnel Requirements

Weed management actions shall be carried out by a weed management specialist with qualifications approved by the BLM Tonopah Field Office.

5. MONITORING

5.1 Reclamation Monitoring

General measures to prevent the spread of weed propagules and inhibit their germination applied during decommissioning and reclamation activities include the following:

- Limiting disturbance areas during closure activities to the minimum required to perform work,
- Limiting ingress and egress to defined routes,
- Maintaining vehicle wash and inspection stations to minimize the potential for weed introduction.

A weed management survey will be conducted at the completion of closure, decommissioning, and reclamation activities to summarize the weed status at the site. The results of this report will be used to determine if additional monitoring or control measures are necessary.

5.2 Ongoing Monitoring

Long-term monitoring reports are required for evaluating monitoring results to determine if revegetation and weed control are successful. Annual monitoring reports will document the success of the weed control and revegetation. Monitoring of ecosystem function could include soil moisture, soil strength using penetrometer measurements, soil organic matter, insect activity measurements (e.g., count of ant mounds), mycorrhizae assays, litter decomposition rates, establishment rates of cryptobiotic crusts, and establishment of native versus invasive species. Ecosystem structure includes factors such as density, diversity, richness, cover, and seedling establishment.

Field monitoring should be conducted using line transect and quadrat techniques. Line transects provide effective cover data, while data from quadrats more effectively evaluate density and reflect the species richness of the plant community. The transect length and quadrat area should be representative of the plant community and large enough to capture 90 percent of the species that are present. A minimum of three 100-foot transects and three 100-square-foot quadrats, equally spaced across each revegetated area, should be identified. These permanent monitoring locations within the restoration area would be recorded using GPS and will be staked in the field. A map will be created, using an aerial photograph as a base layer, showing each monitoring site and photo documentation locations within the sites.

Monitoring will be conducted for a period of 4 years from the date of reclamation and revegetation, except at sites where revegetation is not proceeding satisfactorily. In that case, monitoring may be extended on a year-by-year basis until success criteria are met. Monitoring will be performed annually during the first 2 years following revegetation, and biannually thereafter. Monitoring sessions will occur between March 15 and April 15.

6. PESTICIDE APPLICATION, HANDLING, SPILLS, AND CLEANUP

6.1 Pesticide Application and Handling

The list of pesticides to be used will be reviewed and approved by the BLM, and pesticide application will be based on information gathered from the BLM. Before application, all required permits from the local authorities will be obtained. Permits may contain additional terms and conditions that go beyond the scope of this management plan.

A certified pesticide applicator, approved in the state of Nevada, will perform the application using BLM selected and approved pesticides in accordance with applicable laws, regulations, and permit stipulations. All pesticide applications must follow United States Environmental Protection Agency label instructions. Application of pesticides will be suspended when any of the following conditions exist:

- Wind velocity exceeds 6 miles per hour (mph) during application of liquids
- Wind velocity exceeds 15 mph during application of granular pesticides
- Snow or ice covers the foliage of noxious weeds
- Precipitation is occurring or is imminent

Vehicle-mounted sprayers (e.g., handgun, boom, and injector) may be used in open areas that are readily accessible by vehicle. Hand application methods (e.g., backpack spraying), that target individual plants, will be used to treat small or scattered weed populations in rough terrain. Calibration checks of equipment will be conducted at the beginning of spraying and periodically during spraying, to ensure that proper application rates are achieved. Pesticides will be transported to the project site daily with the following provisions:

- Only the quantity needed for that day's work will be transported.

The list of pesticides to be used will be reviewed and approved by the BLM and pesticide application will be based on information gathered from the BLM. Before application, all required permits from the BLM will be obtained. Permits may contain additional terms and conditions that go beyond the scope of this management plan.

The list of pesticides to be used will be reviewed and approved by the BLM, and pesticide application will be based on information gathered from the BLM. Before application, all required permits from the local authorities will be obtained. Permits may contain additional terms and conditions that go beyond the scope of this management plan.

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- Only the quantity needed for that day's work will be transported.
- Concentrate will be transported in approved containers only and in a manner that will prevent tipping or spilling, and in a location that is isolated from the vehicle's driving compartment, food, clothing, and safety equipment.
- Mixing will be done off-site, over a drip catching device, and at a distance greater than 200 feet from open or flowing water, wetlands, or other sensitive resources. No pesticides will be applied at these areas unless authorized by appropriate regulatory agencies.
- All pesticide equipment and containers will be inspected for leaks daily.
- Disposal of spent containers will be in accordance with the pesticide label.

6.2 Pesticide Spills and Cleanup

All reasonable precautions will be taken to avoid pesticide spills. In the event of a spill, cleanup will be immediate. Contractors will keep spill kits in their vehicles and in pesticide storage areas to allow for quick and effective response to spills. Items to be included in the spill kit are:

- protective clothing and gloves
- absorptive clay, "kitty litter," or other commercial absorbents
- plastic bags and a bucket
- shovel
- fiber brush and screw-in handle
- dust pan
- caution tape
- highway flares (use on established roads only)
- detergent

The response to a pesticides spill will vary with the size and location of the spill, but general procedures include:

- CIC and BLM notification
- traffic control
- dressing the clean-up team in protective clothing
- stopping any leaks

- containing spilled material
- cleaning up and removing spilled pesticide and contaminated absorptive material and soil
- transporting spilled pesticide and contaminated material to an authorized disposal site

6.3 Worker Safety and Spill Reporting

Pesticide contractors will be state certified to apply pesticides and obtain and have readily available copies of the appropriate material safety data sheets for the pesticides used. All pesticide spills will be reported in accordance with applicable laws and requirements.

Appendix A

Weed Risk Assessment Form

RISK ASSESSMENT FOR NOXIOUS & INVASIVE WEEDS

Project Name
Location

Date of assessment, summary of project, site, noxious and invasive weed populations in the area, how it interlaces w/ proposed action. MORE THAN JUST THE PROJECT AREA SHOULD BE INVENTORIED. Any pertinent surrounding areas should also be included in this assessment such as: roads (especially dirt ones) leading to the site, upstream in any washes or riparian areas that flow through the site, a buffer around the project site, etc. It is the same as assessing impacts to wildlife. Say you survey just the project area for mule deer and none are found. It would be incorrect to then assume that no mule deer will be impacted by the project. Weeds work in basically the same manner. The project is creating a disturbance and weeds can spread to that disturbance in several different ways (humans, wind, water, wildlife, etc.), so the assessment must address weed species in neighboring areas as well as any directly at the project site.

Factor 1 assesses the likelihood of noxious/invasive weed species spreading to the project area.

None (0)	Noxious/invasive weed species are not located within or adjacent to the project area. Project activity is not likely to result in the establishment of noxious/invasive weed species in the project area.
Low (1-3)	Noxious/invasive weed species are present in the areas adjacent to but not within the project area. Project activities can be implemented and prevent the spread of noxious/invasive weeds into the project area.
Moderate (4-7)	Noxious/invasive weed species located immediately adjacent to or within the project area. Project activities are likely to result in some areas becoming infested with noxious/invasive weed species even when preventative management actions are followed. Control measures are essential to prevent the spread of noxious/invasive weeds within the project area.
High (8-10)	Heavy infestations of noxious/invasive weeds are located within or immediately adjacent to the project area. Project activities, even with preventative management actions, are likely to result in the establishment and spread of noxious/invasive weeds on disturbed sites throughout much of the project area.

Which level was chosen and why. Don't just repeat what is listed in the table; tell the reader why for this particular project this rating was chosen. Take into account that weeds spread by many methods. For example if the project area is located downwash from a weed infestation or adjacent to a weed species that has wind-born seed then the factor level should be higher. Also take into account the invasiveness of the weed species.

Factor 2 assesses the consequences of noxious/invasive weed establishment in the project area.

Low to Nonexistent (1-3)	None. No cumulative effects expected.
Moderate (4-7)	Possible adverse effects on site and possible expansion of infestation within the project area. Cumulative effects on native plant communities are likely but limited.
High (8-10)	Obvious adverse effects within the project area and probable expansion of noxious/invasive weed infestations to areas outside the project area. Adverse cumulative effects on native plant communities are probable.

Which level was chosen and <u>why</u>. Don't just repeat what is listed in the table; tell the reader why for this particular project this rating was chosen. This factor should be evaluated separately from factor #1. For example if a site is considered totally weed free

then this factor should be evaluated as relatively high regardless of the fact that it might be incredibly unlikely that weeds would spread to the site. Another way to look at it: assume that weeds are going to infest the site, what would the consequences be and rate accordingly.

The Risk Rating is obtained by multiplying Factor 1 by Factor 2.

None (0)	Proceed as planned.
Low (1-10)	Proceed as planned. Initiate control treatment on noxious/invasive weed populations that get established in the area.
Moderate (11-49)	Develop preventative management measures for the proposed project to reduce the risk of introduction of spread of noxious/invasive weeds into the area. Preventative management measures should include modifying the project to include seeding the area to occupy disturbed sites with desirable species. Monitor the area for at least 3 consecutive years and provide for control of newly established populations of noxious/invasive weeds and follow-up treatment for previously treated infestations.
High (50-100)	Project must be modified to reduce risk level through preventative management measures, including seeding with desirable species to occupy disturbed site and controlling existing infestations of noxious/invasive weeds prior to project activity. Project must provide at least 5 consecutive years of monitoring. Projects must also provide for control of newly established populations of noxious/invasive weeds and follow-up treatment for previously treated infestations.

What is the risk rating and what actions will be taken: prevention, monitoring, treatment, etc.

Reviewed by: _____ _____

Michael Vermeys Date
Battle Mountain District
Weed Management Specialist

Appendix H: Updated List of Preparers

Table 6-1. List of BLM Reviewers.

Resource/Responsibility	BLM Team Member	Degree and Experience	BLM Office Location
Compliance Lead National Environmental Policy Act	Dave Davis	BS Forest Resources & Conservation, Wildlife, Range 30+ years experience	Battle Mountain District Office
Native American Traditional Values	Gerald Dixon	BS Cultural Anthropology 14 years experience	Battle Mountain District Office
Hydrology - Water Quality (Surface and Ground) and Water Use	Jon Sherve	MS Hydrology/Hydrogeology BA Biological Sciences 16 years experience	Battle Mountain District Office
	Tom Olsen	PhD Geology, Engineering, MS, BS Geology 28 years experience	Nevada State Office
Recreation/VRM/Wilderness	Barb Kelleher	BS Recreation 20 + years experience	Nevada State Office
Floodplains/Wetlands/Riparian	Robert Hassmiller	BS Resource Conservation (emphasis in Terrestrial Systems and Hydrology) 5 years experience	Battle Mountain District Office
Hazmat	Daniel Tecca	BS Chemistry 19 years experience	Battle Mountain District Office
Migratory Birds, Wildlife, Threatened and Endangered Species (Plants and Animals), Special Status Species	Susan Cooper	MS Zoology 10 years experience	Mount Lewis Field Office
Recreation/VRM/Wilderness	Todd Neville	MBA 10 years Parks and Recreation Experience	Mount Lewis Field Office
Recreation/VRM/Wilderness	John Lockenvitz	BA Spanish 3 years experience	Mount Lewis Field Office – Great Basin Institute
Project Manager	Timothy Coward	31 years project management experience	Battle Mountain District Office (RECO)

Resource/Responsibility	BLM Team Member	Degree and Experience	BLM Office Location
BLM Project Lead Access and Land Use	Wendy Seley	BA Business Management (emphasis Outdoor Recreation) 25 years experience	Battle Mountain District Office (RECO)
GIS	William Coyle	MS GIS/Cartography BS Park and Resource Management 1 year experience	Battle Mountain District Office (RECO)
Hydrologist	Larry Grey	MS Hydrology/Hydrogeology 30 years experience	Battle Mountain District Office (RECO)
Cultural Resources, Paleontological Resources, Native American Traditional Values	Scott Stadler	MS Anthropology 18 years experience	Tonopah Field Office
	Susan Rigby	MA Anthropology BS Biology BS Geology 16 years experience	Tonopah Field Office
Migratory Birds, Wildlife, Threatened and Endangered Species (Plants and Animals), Special Status Species	Devin Englestead	BS Wildlife Science 7 years experience	Tonopah Field Office
Minerals	Alan Buehler	BS Geology 30 years experience	Tonopah Field Office
	Duane Bays	MS Environmental Science BS Environmental Science BS Geology 9 years experience	Tonopah Field Office
Range	Sheryl Post	BS Range Science 15 years experience	Tonopah Field Office
Noxious Weeds, Invasive, Non-native species	Sheryl Post	BS Range Science 15 years experience	Tonopah Field Office
Vegetation	Sheryl Post	BS Range Science 15 years experience	Tonopah Field Office
Threatened and Endangered Species (Plants), Special Status Species	Marc Pointel	BS Range Science/ Wildlife Science 35 years experience	Tonopah Field Office

Resource/Responsibility	BLM Team Member	Degree and Experience	BLM Office Location
Soils	Marc Pointel	BS Range Science/ Wildlife Science 35 years experience	Tonopah Field Office
Wild Horse and Burros	Dustin Hollowell	BS Forestry, Wildlife Mgmt MS Range/Wildlife Science	Tonopah Field Office
Renewable Energy Coordinator	Erin Eastvedt	J.D. (Law) 1 year experience	Nevada State Office
Planning and Environmental Coordinator	Brian Amme	BA Cultural Anthropology 22 years experience	Nevada State Office
Hydrologist	Sarah Peterson	MS Hydrology 11 years experience	Nevada State Office
State Lead Travel Management	Leo Drumm	BS Recreation 31 years experience	Nevada State Office

Table 6-2. Environmental Impact Statement Contractor and Subcontractors

Role/Responsibility	Name/Firm	Degree(S)	Years of Exp.
Project Manager, NEPA Compliance, Hazardous Materials/Waste	Henrik Christensen HDR	B.S. Environmental Mgmt	20
Assistant Project Manager, Vegetation, Wildlife, Special Status Species, Visual, Recreation, and Wilderness	Stephanie Locke HDR	M.S. Biology B.S. Biology	6
Range Resources, Biological Resources	Danny Rakestraw HDR	M.S. Wildlife Ecology B.S. Wildlife Ecology	21
Land Use, Recreation	Sherri McMahon HDR	M.A. Business Admin/Mgmt	19
GIS Support	Preston Kessinger HDR	B.S. Geography	11
Environmental Justice	Audrey Unger HDR	MEP. Environmental Policy and Management B.S. Environmental Sciences/Studies	8
Geology, Soils, Paleontology	Gregg Mitchell HDR	B.S. Environmental Technology A.A. Liberal Arts/Sciences	22
Air Quality, Noise	Dustin Watson HDR	MEP Environmental Sciences/Studies BS Planning	19
Socio/Economic Resources	Amy Edwards HDR	M.S. Civil Engineering B.S. Civil Engineering	19
Water Resources, Wetlands/Riparian Habitats	Scott Mars HDR	M.S. Environmental Engineering B.S. Environmental Engineering	22
Transportation/Traffic	Laycee Kolkman, PE HDR	M.S. Civil Engineering B.S. Civil Engineering	7
Visual Resources	Pam Cecere HDR	M.S. Community/Reg. Planning B.A. Political Science/Government	6
Cultural Resources	Marc Brodbeck HDR	M.A. Anthropology B.A. Anthropology	24
Native American Consultation	Ginny Bengston Bengston Consulting	M.A Anthropology B.S. Anthropology	21

Table 6-3. Technical Studies and Design Contractor(s)

Role/Responsibility	Name/Firm	Degree(S)	Years of Exp.
Engineering Manager, Project Description, Figures	Bob Anders, WorleyParsons	B.S. Civil Engineering	26
Environmental Manager	Deborah Builder, WorleyParsons	J.D. Law M.S. Environmental Studies B.S. Biology	12
Groundwater Resources - impact evaluation preparation and technical peer review	Mike Tietze, WorleyParsons	B.S. Geology	26
Air Quality Review	Joel Reisman, WorleyParsons	M.S. Mechanical Engineering B.S. Mechanical Engineering	42 total; 30 in air quality
Wastewater Plan which included design of the evaporation ponds	Janine Forrest, WorleyParsons	B.S. Environmental Engineering	7
Groundwater modeling, GER report review, GER work planning assistance	Dennis Jamison, WorleyParsons	M.S. Engineering Science B.S. Geology	31
Groundwater modeling, GER report review, GER work planning assistance	Andie Gehlhausen, WorleyParsons	B.A. Geology, M.S. Hydrogeology,	7
Groundwater Basin Profile	Miles Kenney, WorleyParsons	B.S. Geological Science & Chemistry Ph.D Geological Sciences	20
Civil Engineer re: Site Design (survey coordination, drainage design, grading design, roadways and utilities, etc.)	Dave Alcoa, WorleyParsons	B.S. Engineering M.S. Civil Engineering Professional licenses in NV & CA	45
Project Manager - Test Well Program	Ed Baquerizo	B.S. Environmental Biology M.S. Water Resource Engineering	25
Senior Technical Specialist	Richard Antoline	B.S. Chemical Engineering	10

Table 6-4. Project Proponent(s)

Role/Responsibility	Name/Firm	Degree(S)	Years of Exp.
Project Director	Rob Howe SolarReserve	B.S. Mechanical Engineering; B.S Foreign Service M. A. International Economics	22
Consultant (former Project Director)	Julie Way SolarReserve (consultant)	B.S. Mechanical Engineering; M.B.A.	25
Senior Engineer (Technical/System Review Air Quality Review)	Charles Diep SolarReserve	B.S. Chemical Engineering P.E. Mechanical Engineering	21
Project Engineer	David De Andrade SolarReserve	M.S. Electrical Engineering; P.E. license in Control Systems (registered in CA)	7.5
Project Engineer	Scott Kaminski SolarReserve	B.S. Human Resources Management	25
Development Manager	Vaughan Johnson SolarReserve	B.S. Civil Engineering; P.E. license in Civil Engineering (registered in NJ, CA)	13
VP Development	Tom Georgis SolarReserve	B.A. International Studies; M.B.A.	20