

# BOARD OF COUNTY COMMISSIONERS

CHURCHILL COUNTY, NEVADA

155 N. Taylor Street, Suite 110

Fallon, Nevada 89406

(775) 423-4092

Fax: (775) 423-7069

Contact Person: Pamela D. Moore, Deputy Clerk of the Board

E-mail: [pammoore@churchillcounty.org](mailto:pammoore@churchillcounty.org) or

**\*\*\*\*NOTICE OF PUBLIC MEETING\*\*\*\***

## AGENDA

*PLEASE POST*

**PLACE OF MEETING:** Churchill County Administration Building, Conference Room #102, 155 North Taylor Street, Fallon, NV

**DATE & TIME:** November 3, 2016 at 6:00 p.m.

**TYPE OF MEETING:** Special County Commissioners' Meeting

### Notes:

- I. *These meetings are subject to the provisions of Nevada Open Meeting Law (NRS Chapter 241) except as otherwise provided for by law, these meetings are open and public.*
- II. *Action will be taken on all Agenda items, unless otherwise noted.*
- III. *The Agenda is a tentative schedule. The Board of County Commissioners may act upon Agenda items in a different order than is stated in this notice – so as to affect the people's business in the most efficient manner possible.*
- IV. *In the interest of time, the Board of County Commissioners reserves the right to impose uniformed time limits upon matters devoted to public comment.*
- V. *Any statement made by a member of the Board of County Commissioners during the public meeting is absolutely privileged.*

### Agenda:

1. **Call to Order.**
  2. **Pledge of Allegiance.**
  3. **Public Comment:** Comment upon matters not on agenda.
  4. **Verification of the Posting of the Agenda.**
  5. **Consideration and possible action re: Review and Adoption of Agenda as submitted or revised.**
  6. **Appointments:**
- 6:00 p.m. **Public Hearing** — Consideration and possible action re: Nuisance Complaint filed by Clifford and Christine Newmyer concerning glare associated with the solar field at 4637 and

4785 Lawrence Lane, Fallon, Churchill County, Nevada owned by Enel Green Power North America Inc. and adoption of Resolution 20-2016 signifying the Board of Churchill County Commissioners' decision on the matter.

7. **Public Comment:** Comment upon matters not on Agenda.

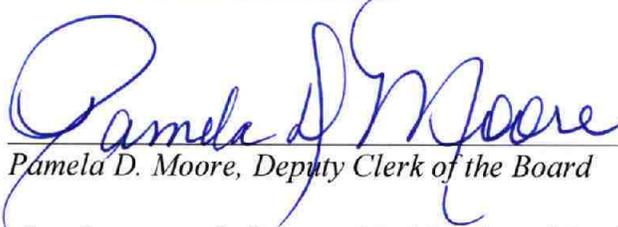
8. **Adjournment.**

9. **Affidavit of Posting:**

State of Nevada )  
 : ss  
County of Churchill )

I, Pamela D. Moore, Deputy Clerk of the Board, do hereby affirm that I posted, or caused to be posted, a copy of this notice of public meeting, on or before the **26<sup>th</sup> day of October, 2016**, between the hours of 1:00 p.m. and 5:00 p.m., at the following locations in Churchill County, Nevada and websites:

1. City Hall;
2. County Administration Building;
3. Public Library;
4. Churchill County Law Enforcement Center;
5. The Churchill County Website @ [www.churchillcounty.org](http://www.churchillcounty.org);
6. The State of Nevada Website @ <https://notice.nv.gov/>.



\_\_\_\_\_  
Pamela D. Moore, Deputy Clerk of the Board

Pamela D. Moore, who was subscribed and sworn to before me this 26th day of October, 2016.



\_\_\_\_\_  
Linda Rothery, Chief Deputy County Clerk

Endnotes:

**Disclosures:**

\*Churchill County is an equal opportunity provider and employer.

**Accommodations/Nondiscrimination:**

\*In accordance with federal civil rights law and U.S. Department of Agriculture (USDA) civil rights regulations and policies, the USDA, its agencies, offices, employees, and institutions participating in or administering USDA programs are prohibited from discriminating based on race, color, national origin, religion, sex, gender identity (including gender expression), sexual orientation, disability, age, marital

status, family/parental status, income derived from a public assistance program, political beliefs, or reprisal or retaliation for prior civil rights activity, in any program or activity conducted or funded by USDA (not all bases apply to all programs). Remedies or complaint filing deadlines vary by program or incident. Persons with disabilities who require alternative means of communication for program information (e.g. Braille, large print, audiotape, American Sign Language, etc.) should contact the responsible agency [(775)423-4092] or USDA's TARGET Center at (202)720-2600 (voice and TTY) or contact USDA through the Federal Relay Service at (800)877-8339. Additionally, program information may be available in languages other than English. To file a program discrimination complaint, complete the USDA Program Discrimination Complaint Form, AD-3027, found online at: [http://www.ascr.usda.gov/complaint\\_filing\\_cust.html](http://www.ascr.usda.gov/complaint_filing_cust.html) and at any USDA office or write a letter addressed to USDA and provide in the letter all of the information requested in the form. To request a copy of the Complaint Form, call (866)632-9992. Submit your completed form or letter to USDA by:

1. Mail: U.S. Department of Agriculture  
Office of the Assistant Secretary for Civil Rights  
1400 Independence Avenue, SW  
Washington, D.C. 20250-9410;
2. Fax: (202)690-7442; or
3. Email: [program.intake@usda.gov](mailto:program.intake@usda.gov).

**Procedures:**

\*The schedule of regular meetings of the Board of County Commissioners is provided for by Title 2, Chapter 2.04, of the Churchill County Code.

\*The public meetings may be conducted according to rules of parliamentary procedure.

\*Persons providing public comment will be asked to state their name for the record.

\*The Board of County Commissioners reserves the right to restrict participation by persons in the public meeting where the conduct of such persons is willfully disruptive to the people's business.

\*All supporting materials for this Agenda, previous Agendas, or Minutes are available by requesting a copy from the Clerk's office, 775-423-4092. During the meeting, there will be one copy available for public inspection. Additional copies are available by making the request from the Clerk's office. You are entitled to one copy of the supporting materials free of charge.

Case No. 2016-02

**BEFORE THE BOARD OF COUNTY COMMISSIONERS FOR CHURCHILL COUNTY, STATE OF NEVADA**

Clifford Newmyer  
Christine Newmyer,  
Complainant(s),

vs.

Enel Green Power  
North America Inc.  
Respondent(s).

**COMPLAINT FOR NUISANCE**

**COMES NOW,** Clifford & Christine Newmyer, and complains and alleges as to the existence of a nuisance in Churchill County, Nevada, pursuant to NRS 40.140 and Churchill County Code, Chapter 8.12 et seq. as follows:

1. That the Complainant is a resident of Churchill County, Nevada or is a property owners in Churchill County, Nevada, and presently resides at 4110 Portuguese Lane, Fallon.
2. That a nuisance exists at the location of Enel Green Power, 4637 Lawrence Lane and 4785 Lawrence Lane in Churchill County, Nevada.
3. That the property upon which the nuisance exists is owned or occupied by Enel Green Power North America, inc.
4. That the facts supporting the existence of the herein described nuisance are as follows: The solar panels located at 4637 Lawrence Lane produce glare that encroaches upon residents and their properties interfering with everyday life.  
The solar field located at 4785 Lawrence Lane produces glare that is a public safety hazard on Portuguese Lane, Jack Rabbit Road, and Freeman Lane.
5. The evidence from which the facts of the case will be established consists of the following (Such as testimony, photographs, documents, maps, etc.): Testimony, photographs and email correspondence.
6. The names and addresses of those persons who will present testimony are as follows: Clifford and Christine Newmyer.

- 7. That a nuisance complaint has/has not been filed involving the same person or persons and the same issues on a prior occasion (Describe when previous complaint was made) if applicable: Complaints have been filed with the Planning department only.
- 8. That efforts have been made to resolve this matter as follows (Described efforts toward resolution of the matter. If no such efforts have been made, briefly describe why such efforts have not been made): We have contacted the Planning Dept., County Manager, and Civil Dep. DA. Planning & the County Mgr. have, in turn, contacted Enel Green Power to have the glare nuisance mitigated. (Continued on separate sheet)
- 9. That the nuisance should be abated in the following manner (Describe how the problem may be solved): 4637 Lawrence Lane - Solid Fence or Earthen Berm (with or without vegetation on top) tall enough to block the glare. 4785 Lawrence Lane - Solid Fence taller than the highest point of the panels.

DATED this 30th day of September, 2016

[Signature]  
Complainant(s)

Christine A. Newmyer  
Complainant(s)

**VERIFICATION**

STATE OF NEVADA )  
 )  
 :s  
County of Churchill: )

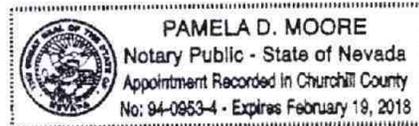
Clifford + Christine Newmyer, being first duly sworn upon an oath, subject to penalty of perjury and her state as follows:

- 1. That they (he/she/they) are (is/are) the complainant(s) in this matter;
- 2. That they (he/she/they) has read the above complaint, know(s) the contents thereof; and that the same is based of their (his/her/their) own knowledge, except as to those matters asserted upon information and belief, and as for those matters they are believed to be true.

[Signature]  
Christine A. Newmyer

SUBSCRIBED and SWORN to before me  
This 30th day of September, 2016.

Pamela D Moore  
Notary Public



8. First contact in April 2015 regarding 4637 Lawrence Lane resulted in Enel Green Power agreeing to erect a screen on their perimeter fence. This screen was ineffective for three reasons.
  1. Fence and screen not tall enough to obscure the panels themselves.
  2. Screen did not encompass the entire length of panels producing the glare.
  3. Screen material was too sheer to block the glare.

March 2016 contacted Planning Dept. with the above results. Dialog initiated by the Planning Director again with Enel Green Power. After several months, Enel offered to erect a temporary barrier consisting of hay bales. This attempt was also ineffective due to improper placement. Contacted the Planning Dept. with these results. After several months passed, Planning Director, Michael Johnson, received a letter from Enel Green Power in July 2016 stating they were going to cease mitigation of the glare.

April 2016 filed complaint with Planning Dept. and County Manager regarding 4785 Lawrence Lane. Enel was contacted and internally determined the glare was a "valid concern" and promised to "work to mitigate this concern". Currently, no action has taken place to mitigate the glare.

**Churchill County  
Agenda Report**

**Agenda Item:** # NB-J

**Date Submitted:** September 30, 2016

**Agenda Date Requested:** October 6, 2016

**To:** Board of Churchill County Commissioners  
**From:** Pamela D. Moore, Deputy Clerk of the Board  
**Subject Title:** Consideration and possible action re: Notification of the filing of a Complaint for Nuisance by Clifford and Christine Newmyer against Enel Green Power North America, Inc. and request to set public hearing thereon.

**Type of Action Requested:** (check one)

- Resolution
- Formal Action/Motion
- Ordinance
- Other – Informational Only

**Does this action require a Business Impact Statement?**

**Recommended Board Action:** Motion to set a public hearing on the Complaint for Nuisance on the 3rd day of November, 2016, commencing at the hour of 6:00 p.m.

**Discussion:** Clifford and Christine Newmyer filed a Complaint for Nuisance against Enel Green Power North America, Inc. on September 30, 2016. Pursuant to Churchill County Code 8.12.030, the Clerk must notify the board of the complaint and the board shall set a hearing not less than thirty (30) days nor more than (40) days from the date of the filing of the complaint. In this particular case, a hearing shall be held between **October 30 and November 9**. A copy of the Complaint for Nuisance has been provided to Planning Director/Code Enforcement Officer Michael Johnson, Civil Deputy District Attorney Ben Shawcroft, and Enel Green Power North America, Inc.

The Civil Deputy District Attorney has recommended that an evening meeting be devoted to this item, requiring that a special meeting be scheduled between the dates listed above.

**Prepared By:** Pamela D. Moore, Deputy Clerk

**Date:** September 30, 2016

**Reviewed By:** \_\_\_\_\_  
Eleanor Lockwood, Churchill County Manager

**Date:** \_\_\_\_\_

[Signature]  
Churchill County Deputy District Attorney

**Date:** 9/30/16

\_\_\_\_\_  
Alan Kalt, Churchill County Comptroller

**Date:** \_\_\_\_\_

The submission of this agenda report by county officials is not intended, necessarily, to reflect agreement as to a particular course of action to be taken by the board; rather, the submission hereof is intended, merely, to signify completion of all appropriate review processes in readiness of the matter for consideration and action by the board.

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Board Action Taken:

Motion: Approved

*Samela A. Moore*

\_\_\_\_\_  
(Vote Recorded By)

- 1) Carl Erquiaga
- 2) Harry Scharmann

Aye/Nay

X

X

X

The submission of this agenda report by county officials is not intended, necessarily, to reflect agreement as to a particular course of action to be taken by the board; rather, the submission hereof is intended, merely, to signify completion of all appropriate review processes in readiness of the matter for consideration and action by the board.

## Newmyer – Pictures

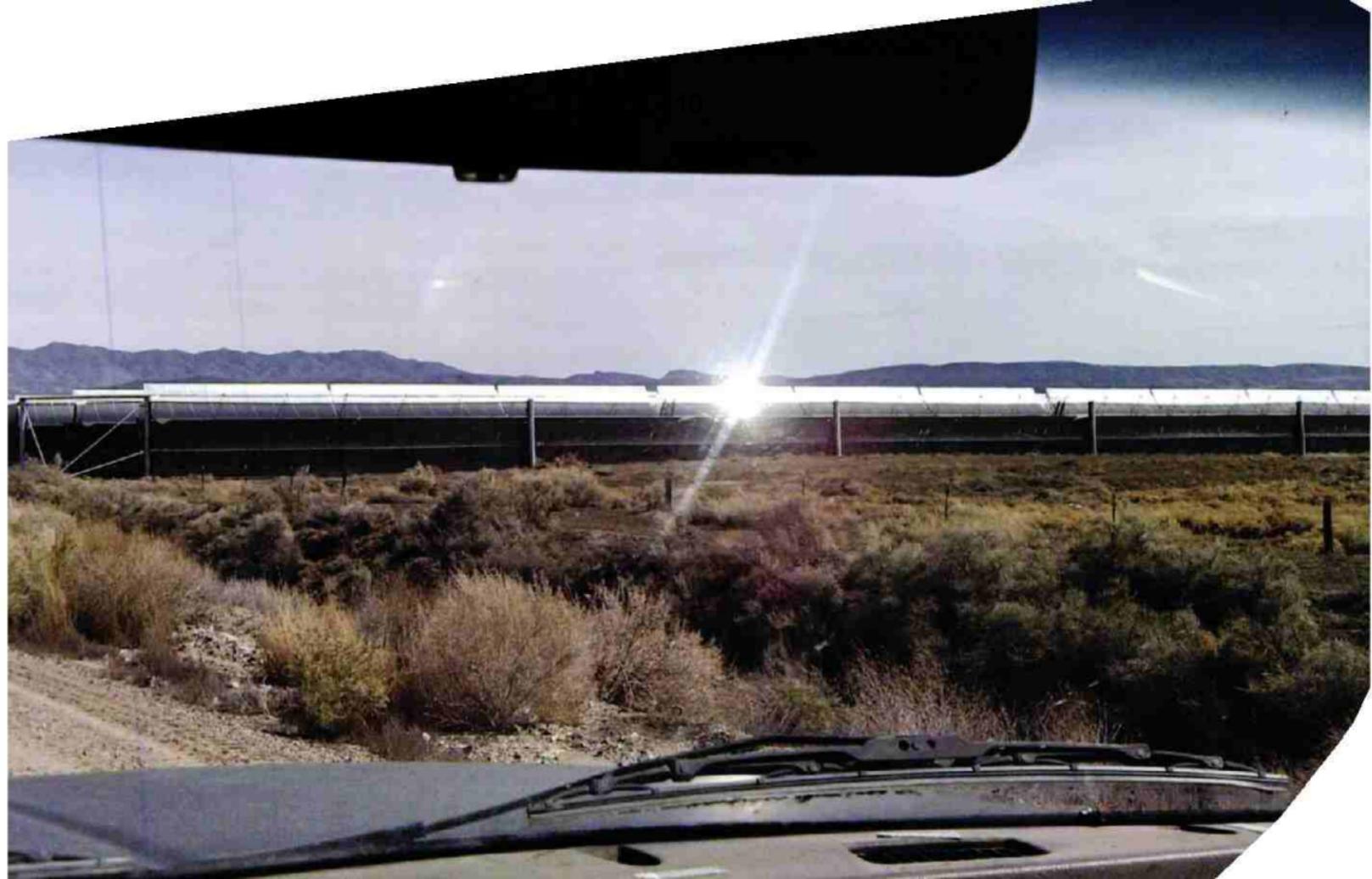
CHURCHILL COUNTY  
RECEIVED

OCT 18 2016

pdm

COMMISSIONERS

1. March 20, 2016 (2 pm) – From Jack Rabbit Road travelling east. Glare emanating from above the fence and screen. Screen ineffective, glare can be viewed through the screen.
2. March 20, 2016 (2 pm) - From Jack Rabbit Road travelling east. Glare from end of each row of panels. Screen ineffective.
3. March 20, 2016 (4 pm) – From Jack Rabbit Road travelling east.
4. March 24, 2016 (4 pm) – From Portuguese Lane. Screen ineffective.
5. March 31, 2016 (11:01am) – From Jack Rabbit Road travelling west. Screen ineffective.
6. March 31, 2016 (1:56 pm) – From Jack Rabbit Road travelling east. Screen ineffective.
7. March 31, 2016 (1:58 pm) – From Jack Rabbit Road traveling east. Screen ineffective.
8. April 26, 2016 (7:20 am) – From north side of our home. Screen only mitigation at this time and is ineffective.
9. April 26, 2016 (7:20 am) – From patio (south) side of our home. Screen ineffective.
10. April 29, 2016 (7 am hour) – From inside our home, view through dining room window. Screen ineffective.
11. May 1, 2016 (7:20 am) – From dining room window. Screen ineffective.
12. June 15, 2016 (7:39 am) – From dining room window. Berm and hay bales employed at this time. Berm/hay bales in far right of picture. Ineffective, due to sun's position in the sky.
13. June 15, 2016 (7:39 am) – From kitchen window. Berm and hay bales ineffective.
14. June 26, 2016 (7:24 am) – From patio (south) side of home. Berm/hay bales in far right of picture.
15. June 26, 2016 (7:36 am) – From kitchen window. Berm/hay bales in far right of picture.



2pm

\*NOTE GLARE THROUGH SCREEN



2 PM

\* NOTE GLARE THROUGH SCREEN

(2)



MAR 20, 2016

4pm

15

(3)

\* NOTE GLARE THROUGH SCREEN

16

01/01/2000 00:00:35



3/24

FROM PORTUGUESE LAM

\* NOTE GLARE THROUGH <sup>17</sup> SCREEN

(4)

18



31/03/2016 11:01:09

5

EAST BOUND ON JACK RABBITT

(DATE & TIME STAMPED) <sup>19</sup>

\* NOTE GLARE THROUGH SCREEN



31/03/2016 15:56:07

WOST FOUND ON STACK PAGE 21

(DATE AND TIME STAMPED)

\* NOTE GLARE THROUGH<sup>21</sup> SCREEN

(6)

22

31/03/2016 15:58:24



WEST BOUNDS ON JACKRABBIT  
(DATE & TIME STAMPED)<sup>23</sup>

⑦

\* NOTE GLARE THROUGH SCREEN



~~4/26 N~~

APR. 26, 2016

25

8

NORTH SIDE OF HOUSE

\* NOTE "SCREEN" NOT EFFECTIVE

26

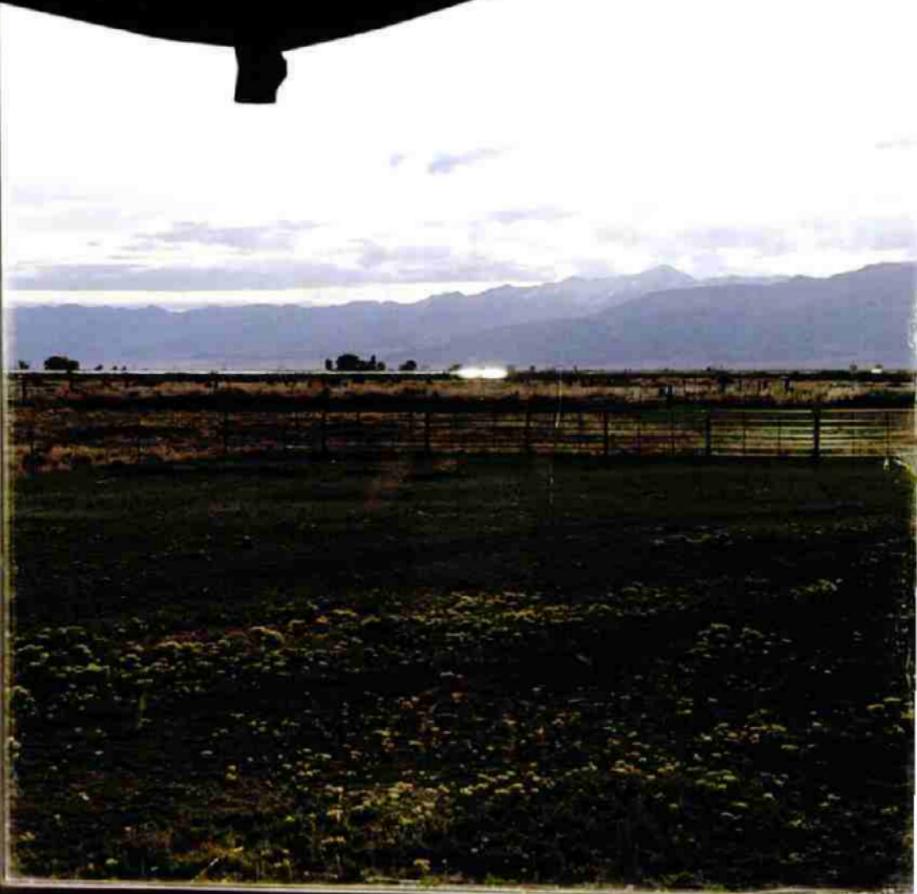
01/01/2000 00:09:50

APP. 26, 2016

PATIO (SOUTH) SIDE OF HOUSE<sup>27</sup>

9

28



Apr. 29, 2016

DINING ROOM

30



05/01/2016 07:20:19

MAY 1 ~~2016~~  
DINING ROOM

31

11

32



2016

DINING ROOM

BERM & HAY BALES INEFFECTIVE

33

34



JUNE 15, 2016 7:39 AM (CELLPHONE)  
KITCHEN

35

PERMETHYLALES INEFFECTIVE

36

06/26/2016 07:24:48

06/26/2016 07:24:48

JUNE 26, 2016

PATIO (SOUTH) SIDE OF HOUSE

BERM & HAY BALES INEFFECTIVE



JUNE 20, 2010 7:30 AM  
KITCHEN

39

15

BERMÉ HAY BALES INTERFECTIVE

----- Original Message -----

**From:** Cliff & Christine Newmyer

**To:** Fleischmann, Daniel ; [david.little@enel.com](mailto:david.little@enel.com)

**Cc:** [bryan.stankiewicz@enel.com](mailto:bryan.stankiewicz@enel.com)

**Sent:** Thursday, March 24, 2016 11:28 AM

**Subject:** Pictures from Jackrabbit Road

Daniel & David,

Attached are the photos taken from Jackrabbit Road we discussed.

These were all taken on Sunday, March 20, 2016. As noted, the first two were taken at 2pm, and the 3rd was taken at 4:30pm. PICTURES # 1, 2, 3

Thank you for your time today and we look forward to future correspondence.

Christine Newmyer

**From:** Cliff & Christine Newmyer [<mailto:pacapaca@hughes.net>]  
**Sent:** Monday, May 02, 2016 8:55 AM  
**To:** Little, David (EGP North America)  
**Cc:** Daters, Daren (EGP North America); Stankiewicz, Bryan (EGP North America); Michael Johnson  
**Subject:** RE: Follow Up to Glare Complaint Regarding Original Solar Panel Field

David,

Good Morning,

Attached are three (3) NEW photos of the morning glare. Dates and times, as noted on pictures.

PICTURES #  
8, 9

Worth noting, the screen is not even in play. It (the screen) is in the center of the brightest part of the glare. The screen/fence is too short/low.

Thanking you in advance for your assistance!

Cliff & Christine Newmyer

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----- Original Message -----

**From:** Stankiewicz, Bryan (EGP North America)  
**To:** Cliff & Christine Newmyer  
**Cc:** Daters, Daren (EGP North America) ; Michael Johnson ; Little, David (EGP North America) ; Platt, Brad (EGP North America)  
**Sent:** Tuesday, May 10, 2016 12:46 PM  
**Subject:** RE: Follow Up to Glare Complaint Regarding Original Solar Panel Field

Hello Mr. and Ms. Newmyer,

I am in receipt of the pictures you have sent. I would like to set up an appointment to review this Glare issue with you if possible the week of May 23<sup>rd</sup>. I would like to see the glare first hand from your home if this is ok with you, and during the same meeting we can discuss how this glare affects you and what we can possibly do to work with you on this issue. I understand this is important to you, and it is to us as well. So please let me know what day and time that week will possibly work for you and I will put it on my calendar. You are welcome to email me back, or call me to schedule as needed.

Also please feel free to reach out to me regarding the existing Geothermal or Solar plant at Stillwater anytime. My cell phone is the best contact number for me, and it is on 24-7. Thanks for your time in this matter.

Regards,

**Bryan Stankiewicz**  
**Sr. Operations Manager**  
**Geothermal and Solar Operations**

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----- Original Message -----

**From:** Cliff & Christine Newmyer [<mailto:pacapaca@hughes.net>]  
**Sent:** Tuesday, May 10, 2016 3:08 PM  
**To:** Stankiewicz, Bryan (EGP North America)  
**Cc:** Little, David (EGP North America); Daters, Daren (EGP North America)  
**Subject:** Re: Follow Up to Glare Complaint Regarding Original Solar Panel Field

Good Afternoon Bryan,

Thank you for your response to our email.

Tuesday, May 24th at sunrise, of course, would work for us. Please let us know if that is a good date for you.

Cliff & Christine Newmyer

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----- Original Message -----

**From:** [Stankiewicz, Bryan \(EGP North America\)](#)  
**To:** [Cliff & Christine Newmyer](#)  
**Cc:** [Little, David \(EGP North America\)](#) ; [Daters, Daren \(EGP North America\)](#) ; [Michael Johnson](#) ; [Platt, Brad \(EGP North America\)](#)  
**Sent:** Tuesday, May 10, 2016 3:22 PM  
**Subject:** RE: Follow Up to Glare Complaint Regarding Original Solar Panel Field

Thank you for the reply. I confirm this is a good day for me as well. I will meet you at your home at sunrise as requested on the 24<sup>th</sup> of May.

Have a good day.

Thanks for your time in this matter.

Regards,

**Bryan Stankiewicz**  
**Sr. Operations Manager**

**Geothermal and Solar Operations**

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----- Original Message -----

**From:** Cliff & Christine Newmyer [mailto:pacapaca@hughes.net]  
**Sent:** Tuesday, May 17, 2016 7:49 AM  
**To:** Stankiewicz, Bryan (EGP North America)  
**Subject:** Re: Follow Up to Glare Complaint Regarding Original Solar Panel Field

Bryan,

Good Morning. Just wanted to refine the time for our meeting on the 24th. With the sun's position in the sky changing, 7:15am will be more appropriate.

See you then.

Cliff & Christine Newmyer

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----- Original Message -----

**From:** Cliff & Christine Newmyer [mailto:pacapaca@hughes.net]  
**Sent:** Wednesday, May 11, 2016 9:02 AM  
**To:** Little, David (EGP North America)  
**Subject:** May 24th Meeting

Good Morning, David.

As you are aware, we have a meeting scheduled with Bryan on the 24th of this month.

We do not wish for this meeting to be contentious. We should not have to "quantify" the effects of the glare on us as seemingly requested by Bryan.

The glare exists, is invasive, and has yet to be mitigated effectively. It effects the livability of our home. Period.

Light travels in straight lines. A basic surveyor's transom and simple knowledge of solar angulations would provide a complete and workable solution to the glare issue. These are not professorial level ideas.

We bring this to your attention because we appreciate your candor and the rapport established during your visit with us.

Thanking you in advance for your time and assistance.

Sincerely,

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----- Original Message -----

**From:** Cliff & Christine Newmyer

**To:** Stankiewicz, Bryan (EGP North America)

**Cc:** David Little ; McCahan, Kevin (EGP North America) ; Daters, Daren (EGP North America) ; Platt, Brad (EGP North America) ; Michael Johnson

**Sent:** Tuesday, May 17, 2016 8:05 PM

**Subject:** Re: Follow Up to Glare Complaint Regarding Original Solar Panel Field

Bryan,

First, it is refreshing to hear that open lines of communication exist within your company. Something that is often remiss.

Yes, you are a guest in my home. However, I must disagree with your assessment. As with any conversation ALL parties involved have the ability to set the tone of the meeting.

Yes, your Safety Specialist may accompany you on Tuesday. A representative from the County may also be present, Mr. Johnson EXCLUDED, again, keeping with the idea of a non contentious meeting.

Our meeting with Mr. Little and your former associate Mr. Fleishmann, was constructive and it was during that meeting Mr. Little offered his assistance as our contact. Hence, the reason he has been our first contact and will continue to be included in our correspondence with your company.

As you may or may not be aware, there have been other issues with your plant which facilitated the filing of formal complaints with the county in order to mitigate the problem. This has been "standard operating procedure" for many residents in our neighborhood. I understand you are our contact for the existing facility and will CC you whenever I employ the above mentioned procedure. My husband and I, are hopeful that a proactive solution for the proposed new solar project will eliminate the types of issues we are discussing and we will not have to contact you at all.

Regards,  
Christine Newmyer

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----- Original Message -----

**From:** Cliff & Christine Newmyer

**To:** Stankiewicz, Bryan (EGP North America)

**Cc:** Michael Johnson ; Platt, Brad (EGP North America) ; Daters, Daren (EGP North America) ; McCahan, Kevin (EGP North America)

**Sent:** Tuesday, May 24, 2016 5:05 PM

**Subject:** Re: Follow Up to Glare Complaint Regarding Original Solar Panel Field

Bryan,

Thanks for the phone conversation, since the weather did not cooperate today.

Thought of a question regarding the hay bale barrier. When can we expect relief from the glare? What is your time frame for the barrier to be completed?

Thanks.  
Cliff

Cliff & Christine Newmyer

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----- Original Message -----

**From:** Little, David (EGP North America)  
**To:** Cliff & Christine Newmyer  
**Sent:** Wednesday, May 11, 2016 10:09 AM  
**Subject:** RE: May 24th Meeting

Hi Cliff and Christine, Thank you for sharing your thoughts. Independently of your conversations with Bryan, we are continuing to design our proposed expansion project with a feature that should address your concerns. We will have more specifics to share with you in the coming weeks. Again, thank you for including me in your discussions.

David

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----- Original Message -----

**From:** Stankiewicz, Bryan (EGP North America)  
**To:** Cliff & Christine Newmyer  
**Cc:** Michael Johnson ; Platt, Brad (EGP North America) ; Daters, Daren (EGP North America) ; McCahan, Kevin (EGP North America)  
**Sent:** Tuesday, May 17, 2016 10:25 AM  
**Subject:** RE: Follow Up to Glare Complaint Regarding Original Solar Panel Field

Good Morning,

Yes 0715 will work for me. I would also like to invite our Safety Specialist to the Meeting and the County if that is ok with you. Since the County has been involved it think it is warranted to invite them to attend so they understand what is discussed and how this will be taken care of. Please let me know if you are ok with this.

Please also be advised that I am in receipt of the email chain between you and Mr. David Little. I have included it below. We communicate cohesively as a company as this is the best way to do business. As I relayed before I am your contact for the Stillwater Facilities in operation. Mr. David Little will be your contact for any business as it relates to the Stillwater expansion. I am attempting to open a door of communication here so you can come to me with any concerns anytime.

As stated in the email I have no intentions of asking you to justify how this affects your lives, nor do I want the meeting to be contentious either as you have relayed to David. Doing business with Contention is not a good business practice. Although this is your home, and your forum so the tone of the meeting is up to you. My intent is to gather information so we can track this issue and follow procedures that I am required to follow as it relates to these types of issues. I would like to resolve this issue as quickly as possible, and if we work together and I understand the issue as much as possible, the easier it is for me to find the best resolution for you quickly. Communicating directly with you rather than through someone else allows me to breakdown any misunderstandings. I hope that you will feel the same.

I thank you for your time in this matter, look forward to working with you on it, and appreciate you allowing me to come gather information about this issue.

Regards,

**Bryan Stankiewicz**

Sr. Operations Manager

Geothermal and Solar Operations

**From:** Cliff & Christine Newmyer [<mailto:pacapaca@hughes.net>]  
**Sent:** Monday, April 04, 2016 12:52 PM  
**To:** [planning-director@churchillcounty.org](mailto:planning-director@churchillcounty.org)  
**Cc:** [countymanager@churchillcounty.org](mailto:countymanager@churchillcounty.org)  
**Subject:** Enel Stillwater - Glare COMPLAINT

Dear Michael and Eleanor,

We are writing to lodge a formal complaint regarding the glare produced by the Enel Stillwater parabolic solar field located adjacent to Jackrabbit Road. This glare is a health and safety hazard which needs to be addressed. This solar field produces glare throughout the day, year round.

Attached to this email are six (6) photos of the glare from the parabolic solar panels. The first two (2) were taken on March 20th, 2016 at 2pm. (These have been shared with Daniel Fleishmann and David Little already.) The next four (4) were taken more recently and are date stamped.

PICTURES # 1, 2, 5, 6, 7

As evidenced in the photos, the fence is not tall enough and the "screening" on the fence is not effective. The glare produces a "flash burn" in your vision that lingers for 15 to 20 minutes after exposure. Also note, these pictures were taken from inside our vehicle. Therefore, the glare is diminished slightly.

This is an example of the County's inability to hold Enel accountable and protect the residents of Churchill County from health and safety issues.

Your due diligence is needed and expected.

Sincerely,

Cliff & Christine Newmyer

4110 Portuguese Lane

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**From:** Michael Johnson [<mailto:planning-director@churchillcounty.org>]  
**Sent:** Friday, April 08, 2016 11:39 AM  
**To:** 'Cliff & Christine Newmyer'  
**Cc:** 'countymanager@churchillcounty.org'; Benjamin Shawcroft ([bshawcroft@churchillda.org](mailto:bshawcroft@churchillda.org)); Diane Moyle  
**Subject:** RE: Enel Stillwater - Glare COMPLAINT

Good Morning Mr. & Mrs. Newmyer,

I am writing to let you know that I received your Glare Complaint and I have met with the County Manager and the District

Attorney's office. I am investigating these concerns and reviewing information from when the Special Use Permit was presented to the Planning Commission on March 13, 2013. I have also placed an email with Bryan Stankiewicz who is the Enel Plant Manager to meet with him and discuss these concerns.

I hope to receive further information soon.

Have a good day.

Michael K. Johnson  
 Planning Director  
 Churchill County Planning Dept.  
 155 N. Taylor, Suite 194  
 Fallon, NV 89406  
 (775) 423-7627

---

----- Original Message -----

**From:** Michael Johnson  
**To:** Cliff & Christine Newmyer  
**Cc:** County Manager ; Diane Moyle  
**Sent:** Monday, April 25, 2016 11:17 AM  
**Subject:** FW: Enel Stillwater - Glare COMPLAINT (Follow-up)

Good Morning Mr. & Mrs. Newmyer,

This is a follow-up to the glare complaint concerning the Enel Concentrated Solar panels near Jack Rabbit Road.

I met with Bryan Stankiewicz on Monday morning April 11, 2016 and we drove around the property as I explained to him the glare concerns. I also provided Bryan a copy of the photos and section of the glare study report and mitigation measure which Enel stated that they would seek if glare was a nuisance.

Since April 11, 2016, Bryan has worked with others within Enel and have done some research into the time of day that the glare becomes an issue, along with possible ways to mitigate the situation.

Currently, Enel plans to turn the last row of CSP panels (which are the furthest west) down before glare becomes apparent. They plan to investigate this situation more to determine at approximately what time of day to turn this row of mirrors off. (When this row is turned to the down position, they should block the glare of the other rows.)

Enel is also evaluating other options, such as increasing the height of the fence and adding additional screening to the top area to reduce glare. Bryan stated that we will be seeking a cost estimate of the increase of the fence height and screening as they further evaluate how to mitigate for glare.

**Below is a portion of the email I received from Bryan on this matter dated April 22, 2016**

*Hello Michael,*

*Thanks for taking the time to talk yesterday regarding the Solar Glare Complaint.*

*As we discussed, I have conversed with our Legal Department and our Safety Department as well. Our Safety Department and I spent a considerable amount of time on Monday of this week reviewing this issue. We have taken photos and videos of our facility at different times of the day to have a good grasp on this issue. We do feel this is a valid concern. As stated in the Glare Study we will work to mitigate this concern.*

*I appreciate you sharing the vehicle count on Jackrabbit Rd. My employees travel the Road from east to west and back 2 times a day. They travel to the western most Injection Wells at the west end of Jackrabbit Rd. So technically 4 of those daily counts can be considered Enel counts.*

*We currently feel the quickest remediation to this concern is to rotate, or defocus that last row of the CSP mirrors that is producing the offsite glare during certain times of the day. This means we may lose a little production from that portion of the plant, so we will need to define the best times of the day, over different seasons to do this. Over the next few weeks we will work on finding the best time of day to rotate that last row of the CSP mirrors. We will most likely do this using a stationary camera, then performing a time lapse review of the site to ensure we can define those times of the day.*

*We appreciate Churchill County working on this with us. We will close this issue out very soon.*

*Best Regards,*

**Bryan Stankiewicz**

Sr. Operations Manager

Geothermal and Solar Operations

Mr. & Mrs. Newmyer,

If you have any further questions or concerns about the glare or the mitigation planned at this time, please contact me.

Have a good day.

Michael K. Johnson

Planning Director

Churchill County Planning Dept.

155 N. Taylor, Suite 194

Fallon, NV 89406

(775) 423-7627

---

**From:** Cliff & Christine Newmyer [mailto:pacapaca@hughes.net]

**Sent:** Wednesday, April 27, 2016 9:47 AM

**To:** Michael Johnson

**Subject:** Re: Enel Stillwater - Glare COMPLAINT (Follow-up)

Michael,

Thank you for your response regarding the CSP panels on Jack Rabbit Road. Just had one question, How are they addressing the glare reflecting from the north side of each row affecting Jack Rabbit Road? Examples of this glare can be viewed in the attached pictures. The "2pm" picture was part of the series of pictures taken on March 20, 2016. This type of glare affects Jack Rabbit Road in the morning, travelling west, and in the afternoon, travelling east.

Thank you for your assistance and look forward to your response.

Sincerely,

Cliff & Christine Newmyer

----- Original Message -----

**From:** Michael Johnson  
**To:** 'Cliff & Christine Newmyer'  
**Cc:** County Manager ; Diane Moyle  
**Sent:** Wednesday, April 27, 2016 11:28 AM  
**Subject:** RE: Enel Stillwater - Glare COMPLAINT (Follow-up)

Good Morning Mr. & Mrs. Newmyer,

I will speak with Bryan Stankiewicz about this matter as they proceed to determine how they will mitigate the glare situation. As stated previously, they are reviewing alternatives and seeking to determine what is the most effective way to mitigate the situation. They are seeking an estimate on the cost of increasing the height of the fence and screening of the CSP section of the plant.

Sincerely,

Michael K. Johnson

Planning Director

Churchill County Planning Dept.

155 N. Taylor, Suite 194

Fallon, NV 89406

(775) 423-7627

----- Original Message -----

**From:** County Manager

**To:** [pacapaca@hughes.net](mailto:pacapaca@hughes.net)

**Cc:** [bshawcroft@churchillda.org](mailto:bshawcroft@churchillda.org) ; [planning-director@churchillcounty.org](mailto:planning-director@churchillcounty.org)

**Sent:** Thursday, June 09, 2016 3:45 PM

**Subject:** Follow up on glare complaint from ENEL solar field

Good afternoon Cliff and Christine,

Following our meeting last week (June 2<sup>nd</sup>) Michael initially tried to contact Bryan Stankiewicz by phone to inform him of the formal complaint you had emailed to me and Michael and the discussion we had had during our meeting. Since Michael and Bryan played telephone tag for a day or so, Michael followed up with a letter to Bryan outlining the sequence of events since your initial complaint in May 2015 and requested an update on the steps ENEL was taking to address your past and current complaint.

Bryan has been very responsive and has indicated the following:

He has received 2 bids to raise the total length of the berm on the southern section of the Solar PV plant approximately an additional 6 feet

He anticipates receiving a bid to install a 6-foot high chain link fence with a privacy screen the full length of the berm

He is also evaluating the placement of hay bales along the berm; he implied this might be a faster response but has concerns regarding the age of the hay bales they have in their possession and the potential fire risk

Bryan has indicated that ENEL company policy requires him to utilize only authorized contractors and the budget he currently has for plant operations does not include funding for non-operational items; so he will need to follow the company process requesting additional funds as he has had to do in the past for monitoring wells that we required. Despite these company policies processes that make take time, Bryan has stated that he is committed to working through the process until a resolution is found.

Michael has also followed through with Bryan re your complaint regarding the glare on Jack Rabbit Road; he visited the site immediately after our meeting June 2<sup>nd</sup> and then sent a letter to Bryan reiterating the concern and the steps ENEL indicated they would take to address the concerns. Bryan recognizes and will mitigate the "western glare" but is still evaluating the glare on the North and east side, particularly in the early morning. He has invited Michael out to the site to evaluate their proposed mitigation once their analysis is complete.

10/15/2016 4:23 PM

---

**From:** Cliff & Christine Newmyer [mailto:pacapaca@hughes.net]  
**Sent:** Wednesday, June 15, 2016 8:10 AM  
**To:** Michael Johnson; Eleanor Lockwood; Stankiewicz, Bryan (EGP North America)  
**Cc:** Carl Erquiaga; Little, David (EGP North America)  
**Subject:** Ongoing Glare Issue

Michael, Eleanor, Bryan,

PICTURES # 12, 13

The attached photos were taken from our cell phone this morning. (7:30-7:39am) Please note, the glare is still impacting our home. The berm/hay bale barrier is once again not lengthy enough to mitigate the glare. As you can determine from the photos, the berm/hay bale barrier needs to be extended to the north as the sun's position travels to the north. Not unreasonable that this should have been taken into consideration and addressed. The existing "temporary" berm/hay bale barrier is about half as long as it needs to be.

Once again, we are left to suffer the consequences for poor planning.

Cliff & Christine Newmyer

---

----- Original Message -----

**From:** Stankiewicz, Bryan (EGP North America)  
**To:** Cliff & Christine Newmyer ; Michael Johnson ; Eleanor Lockwood  
**Cc:** Carl Erquiaga ; Platt, Brad (EGP North America) ; Beauregard, Megan (EGP North America)  
**Sent:** Wednesday, June 15, 2016 9:05 AM  
**Subject:** RE: Ongoing Glare Issue

Cliff and Christine,

Until this problem is completely resolved (which ever direction is may take from here), I would be happy to provide you some blinds for the short duration of the glare in the morning to help mitigate the issue. I would be happy to set up an appointment with a professional blind installer to install blinds on the east side of your home, in the windows that are directly affected by this glare. Please advise if this would be something that you would consider.

Regards,

**Bryan Stankiewicz**  
Sr. Operations Manager  
Geothermal and Solar Operations

----- Original Message -----

**From:** Cliff & Christine Newmyer

**To:** Stankiewicz, Bryan (EGP North America) ; Michael Johnson ; Eleanor Lockwood

**Cc:** Carl Erquiaga ; Platt, Brad (EGP North America) ; Beaugard, Megan (EGP North America)

**Sent:** Wednesday, June 15, 2016 1:06 PM

**Subject:** Re: Ongoing Glare Issue

Bryan,

No, that is NOT an option. If we wanted window dressings we would have installed them. When we refer to our "home" we are not just speaking of our house. More appropriate statement, "The glare is still impacting our property." So, blinds would NOT be an effective solution while we are outside, say feeding our horses.

The issue is with your property, your equipment, not ours. Since it seems you are having such difficulty resolving this glare issue. We would be happy to research and provide the name of an engineer who could advise you and your company of the proper method to mitigate the problem.

Cliff & Christine Newmyer

**Subject:** Letter from Michael Johnson to Enel concerning glare concern (July 29 2016)  
**From:** Michael Johnson <planning-director@churchillcounty.org>  
**Date:** 9/28/2016 1:07 PM  
**To:** Cliff & Christine Newmyer <pacapaca@hughes.net>  
**CC:** Debi Kissick <planning-dk@churchillcounty.org>, Diane Moyle <planning-businesslicense@churchillcounty.org>

Hello Cliff and Christine,

It was a pleasure talking with you this morning concerning the meeting last night and other items. I mentioned a letter which I sent to Enel back in July which I thought Eleanor or Ben had forwarded to you (attached). The letter was my last contact with Enel over the glare concern. Since then I have been out of work because of my hand injury and being out of town during August and September.

If you have any questions please let me know and have a good day.

Michael K. Johnson  
Planning Director  
Churchill County Planning Dept.  
155 N. Taylor, Suite 194  
Fallon, NV 89406  
(775) 423-7627

— Attachments: —

Lawrence Lane 4637 (009-032-30) Glare Concern from Stationary solar (2).doc

232 KB



**CHURCHILL COUNTY**  
**PLANNING**

*Planning Commission*  
*GIS Department*  
*Zoning Enforcement*  
*Business License Dept.*

APN 009-032-30  
 4637 Lawrence Lane

July 29, 2016

Bryan Stankiewicz  
 Enel Green Power North America Inc.  
 4785 Lawrence Lane  
 Fallon, Nevada 89406

Brad Platt  
 Enel Green Power North America Inc.  
 1755 East Plumb Lane, Suite 155  
 Reno, Nevada, 89502

David Little  
 Enel Green Power North America Inc.  
 3636 Nobel Drive, Suite 475  
 San Diego, California, 92122

Re: Complaint concerning glare coming from the Stationary Solar project located at 4637 Lawrence Lane in Churchill County Nevada, (APN: 009-032-30).

Dear Enel Green Power, Bryan Stankiewicz, Brad Platt, and David Little:

In May 2016, Churchill County received a complaint concerning morning glare coming from the stationary solar project located at 4637 Lawrence Lane. Over the past few months we have been discussing the situation primarily with Bryan Stankiewicz and to a lesser extent with David Little. On July 28, 2016, I received your reply to our discussion on working to mitigate the situation wherein you state that because the Planning Commission did not set forth any requirements to mitigate glare from the panels, and the Notice of Final Action (NOFA) allowed for a standard chain link fence for safety purposes and no landscaping or screening would be required, that Enel does not have any further obligation to mitigate this situation.

I have recently reviewed the EGP Stillwater Photovoltaic Solar Project Exhibit F (Glare Study) that you reference in your letter and was a part of the Special Use Permit application in 2011. It appears that section 3.2 Assessment of the Timing and Magnitude of Reflected Sunlight on residences using Ecotect Computer Simulation is missing section **3.2.2**; subsection 3.2.1. and 3.2.3. address impacts of glare to residences to the south and east of the project area. If this subsection of the report was inadvertently omitted, please provide me with a copy.

There is reference in the glare study on Page 9 #3 to glare during evening hours when the sun is on the western portion of the sky:

*"This glare occurs during evening hours when the sun is low in the western portion of the sky. Direct glare on the potentially affected residence from the incident sunlight during this time would be **significant** and may mask the adverse effects of PV glare during the short time it would occur."*

Additionally, at the May 11<sup>th</sup> 2011 Planning Commission meeting Darren Daters, representative from Enel stated:

*"Mr. Daters noted that they performed a reflectivity study and he felt the Pecks would be the most impacted. Mrs. Peck is here and she's welcome to come up and speak if she would like. Based on the study, because of where the facility is and the mountain range, at that angle there is virtually no impact to the westerly neighbors. When the sun comes up in the morning it's got to go over that mountain range. I mention the Pecks because they don't have any trees or covering between their house and where the solar field will be and their window faces that direction. As the sun sets, they will have the normal glare from the sunset but there is a small 2-3 degree angle where the sunset hits the bottom of that horizon that might send them some additional glare as it hits that bottom horizon. But it should be very little."*

I am, therefore, not so sure that your reflectivity study contains any information concerning the morning glare because it was assumed, by the firm who did the computer study, that the Stillwater Mountain Range would negate any concerns. From the statement made by Daren Daters, it appears that he felt confident that any glare would be to the east, but it should be very little. Based upon his testimony it appears that the Planning Commission did not have a reason to suspect glare to be a concern. However, a resident to the west of the project area is being impacted by glare. Therefore, while it is true that no screening was required in the NOFA, it is our opinion that the glare study and presentation to the Planning Commission was deficient; neither the firm nor Enel foresaw the impact that the plant would have on western neighbors.

There was a similar situation when the geothermal plant was granted its Special Use Permit (SUP) on October 10, 2007; it was noted that it should not be overly loud. However, once the plant was in operation there was a problem with excessive noise and Enel worked with the County to reduce the noise by installing new baffles. The County was grateful for Enel's efforts to mitigate the situation, which no one expected to be a concern at that time. Based upon that experience I am hopeful that we can come to a resolution on this current glare complaint and in so doing we can also work toward a solution to prevent any adverse impacts from the proposed solar project.

Sincerely,

Michael K Johnson  
Churchill County Planning Director/Code Enforcement Officer  
(775) 423-7627; Fax (775) 428-0259  
[planning-director@churchillcounty.org](mailto:planning-director@churchillcounty.org)

Bryan has indicated that he is committed to finding resolution; Michael will continue to communicate with Bryan so we remain abreast of any progress or hurdles and we will keep you informed.

If you have any further questions, please let us know.

Thank you

Eleanor

**Churchill County  
Agenda Report**

Date Submitted: 010/26/16

Agenda Item: # 6:00 p.m.  
Agenda Date Requested: 11/03/16

To: Board of Churchill County Commissioners  
From: Michael K Johnson, Planning Director  
Subject Title: **Consideration and possible action re:** Nuisance complaint by Clifford and Christine Newmyer, (APN: 009-032-19) 4110 Portuguese Lane related to glare from the Stationary Solar Project and also the Concentrated Solar Project located at 4637 Lawrence Lane, (APN: 009-032-30).

Type of Action Requested: (check one)

Resolution

Ordinance

Formal Action/Motion

Other – Informational Only

Does this action require a Business Impact Statement? no

Recommended Board Action:

**1. Glare from stationary panels**

- a. YES NUISANCE – Motion to adopt Resolution No. 20-2016 (A RESOLUTION FINDING THAT THE GLARE BEING CREATED BY THE SOLAR PANELS ON APN 009-032-30, CHURCHILL COUNTY, NEVADA, CONSTITUTES A NUISANCE, AND ORDERING THE LANDOWNER TO ABATE THE NUISANCE). Enel shall meet with the Planning Director to develop an abatement plan within 15 days of today's hearing. Proof of satisfactory completion of the abatement plan shall be submitted to the clerk of the Board by May 30, 2017.
- b. NO NUISANCE – Motion to adopt Resolution No. 20-2016 (A RESOLUTION FINDING THAT THE GLARE BEING CREATED BY THE SOLAR PANELS ON APN 009-032-30, CHURCHILL COUNTY, NEVADA, DOES NOT CONSTITUTE A NUISANCE).

**2. Glare on Jackrabbit Road**

- a. YES NUISANCE – Motion to adopt Resolution No. 23-2016 (A RESOLUTION FINDING THAT THE GLARE BEING CREATED BY THE CONCENTRATED SOLAR PANELS ON APN 009-032-30, CHURCHILL COUNTY, NEVADA, CONSTITUTES A NUISANCE, AND ORDERING THE LANDOWNER TO ABATE THE NUISANCE). Enel shall meet with the Planning Director to develop an abatement plan within 15 days of today's hearing. Proof of satisfactory completion of the abatement plan shall be submitted to the clerk of the Board by May 30, 2017.

The submission of this agenda report by county officials is not intended, necessarily, to reflect agreement as to a particular course of action to be taken by the board; rather, the submission hereof is intended, merely, to signify completion of all appropriate review processes in readiness of the matter for consideration and action by the board.

- b. NO NUISANCE – Motion to adopt Resolution No. 23-2016 (A RESOLUTION FINDING THAT THE GLARE BEING CREATED BY THE CONCENTRATED SOLAR PANELS ON APN 009-032-30, CHURCHILL COUNTY, NEVADA, DOES NOT CONSTITUTE A NUISANCE).
- c. Public Nuisance? If the Board receives evidence indicating the glare is a “public nuisance” it may make the following motion:

Motion to refer the matter to the Sheriff and District Attorney for the prosecution of public nuisance.

3. **Review of Special Use Permit?** If the Board wishes to review Enel’s compliance with its special use permits it may make the following motion:

Motion to set the matter for a hearing to review Enel’s compliance with the special use permits and direct the planning director to prepare a report for such hearing.

**Discussion:** The Newmyers have filed a complaint with the Board of County Commissioners against Enel Green Power concerning glare from their Stationary and Concentrated Solar Projects. Enclosed are two reports dealing with each project including timelines and actions taken since the complaints began.

**Relevant Sections of County Code:**

Churchill County Code 8.12.040(A) *the board of county commissioners shall proceed to hear the complaint and any opponents and may consider the findings presented by the authorized official. At the hearing, the board shall receive the proofs offered to establish or controvert the facts set forth in the complaint. The board may adjourn the hearing from time to time, not exceeding fourteen (14) days in all.* (B) *On the Final hearing of the complaint the board shall by resolution entered into the minutes, determine whether or not a nuisance exists and, if one does exist, order the person, or persons responsible for such nuisance to abate the same. (Bill 2002-I, 2002)*

Churchill County Code 8.12.050 ABATEMENT OF NUISANCE

*The person or persons responsible for the nuisance shall enter into abatement plan with the county commissioners or their designated representative within fifteen (15) days after the board of county commissioners renders its decision. The abatement plan shall be commenced within thirty (30) days after the board renders its decision and shall be completed at such time as the board of county commissioners, or its representative has set forth in the abatement plan. (Bill 2002-I, 2002)*

Churchill County Code 8.12.060 ABATEMENT BY THE COUNTY

*If the order is not obeyed and the person(s) responsible for the nuisance fails or neglects to remove the nuisance within the time limit specified in section 8.12.050 of this chapter, the board of county commissioners may:*

- A. *Order that the cost of abating the nuisance be a personal obligation of the property owner(s), and shall direct the district attorney to collect the costs of abating the nuisance and interest thereon by use of all appropriate remedies.*

The submission of this agenda report by county officials is not intended, necessarily, to reflect agreement as to a particular course of action to be taken by the board; rather, the submission hereof is intended, merely, to signify completion of all appropriate review processes in readiness of the matter for consideration and action by the board.

B. Order that the cost of abating the nuisance be assessed against the property, and shall confirm the assessment and have it filed with the county recorder. Thereafter, the assessment shall constitute a lien upon the property. (Bill 2002-I, 2002)

Fiscal Impact: N/A

Explanation of Impact: N/A

Funding Source: N/A

Prepared By: Michael K Johnson

Date: 10/26/16

Reviewed By: \_\_\_\_\_ Date: \_\_\_\_\_  
Eleanor Lockwood, Churchill County Manager

 \_\_\_\_\_ Date: 10/27/16  
Churchill County Deputy District Attorney

\_\_\_\_\_ Date: \_\_\_\_\_  
Alan Kalt, Churchill County Comptroller

-----  
Board Action Taken:

Motion: \_\_\_\_\_ 1) \_\_\_\_\_ Aye/Nay  
2) \_\_\_\_\_ \_\_\_\_\_  
\_\_\_\_\_

\_\_\_\_\_  
(Vote Recorded By)

The submission of this agenda report by county officials is not intended, necessarily, to reflect agreement as to a particular course of action to be taken by the board; rather, the submission hereof is intended, merely, to signify completion of all appropriate review processes in readiness of the matter for consideration and action by the board.

**NUISANCE COMPLAINT FILED BY CLIFF AND CHRISTINE NEWMYER  
CONCERNING GLARE FROM **CONCENTRATED SOLAR FIELD** LOCATED ALONG  
JACK RABBIT ROAD (APN 009-032-30)**

**Concentrated Solar project Concentrated Solar Panels along Jack-Rabbit Road**



**Overall project with Newmyers property in the southwest corner**



(Information pertaining to the issuance of the Special Use Permit in 2013 is attached in Appendix A which contains the Concentrated Solar Glare study submitted after the Planning Commission hearing, Section T of the SUP application, Notice of Final Action and minutes from the Planning Commission hearing for March 13, 2013.)

On April 8, 2016 the complainant filed a complaint regarding glare from the concentrated solar panels along Jack Rabbit Road. *(Photos at the end of this report are from the complainants in 2016).*

I (Michael Johnson) met with Bryan Stankiewicz on April 11, 2016 to discuss the complaint. Bryan Stankiewicz stated that he would review the complaint and work to mitigate the situation. I brought to Bryan's attention that the glint and glare study submitted with the SUP application indicated that a 16 foot high fence would be erected to mitigate for glare but Section T of the application showed a 20 foot high fence (Glare Study and Section T are in Appendix A). The fence currently erected is 16 feet in height.

On April 22, 2016 Bryan reported that Enel would rotate the last row of mirrors in the opposite direction to eliminate the majority of the glare which they began to do then. The complainant was informed of this action on April 25, 2016 to which they stated in an email on April 27, 2016 that they did not think that turning the last row mitigated enough of the problem. Enel is currently addressing this issue by turning the last row of panels in the opposite direction in the early morning to the east and mid-afternoon to the west. The turning of the last row blocks a majority of the glare, but the ends of each row is still possible to create glare. This problem is possibly year around, but I cannot verify this. A traffic study was completed back in May 2016, which reflected a traffic count of 105 trips in 8 days averaging 13 trips per day with the majority of them being from Enel representatives analyzing the glare throughout that particular week. A second traffic count was done in October 2016 and the traffic count was 65 trips within 14 days which averages just over 4 trips per day which is probably a more accurate daily figure. Enel has stated that their personnel do use this road approximately 4 times per day as part of their daily inspections of their geothermal plant and solar project. (Any new project will have no bearing on any glare coming from this project.)

Concentrated Solar Panel turned east to block glare from other panels



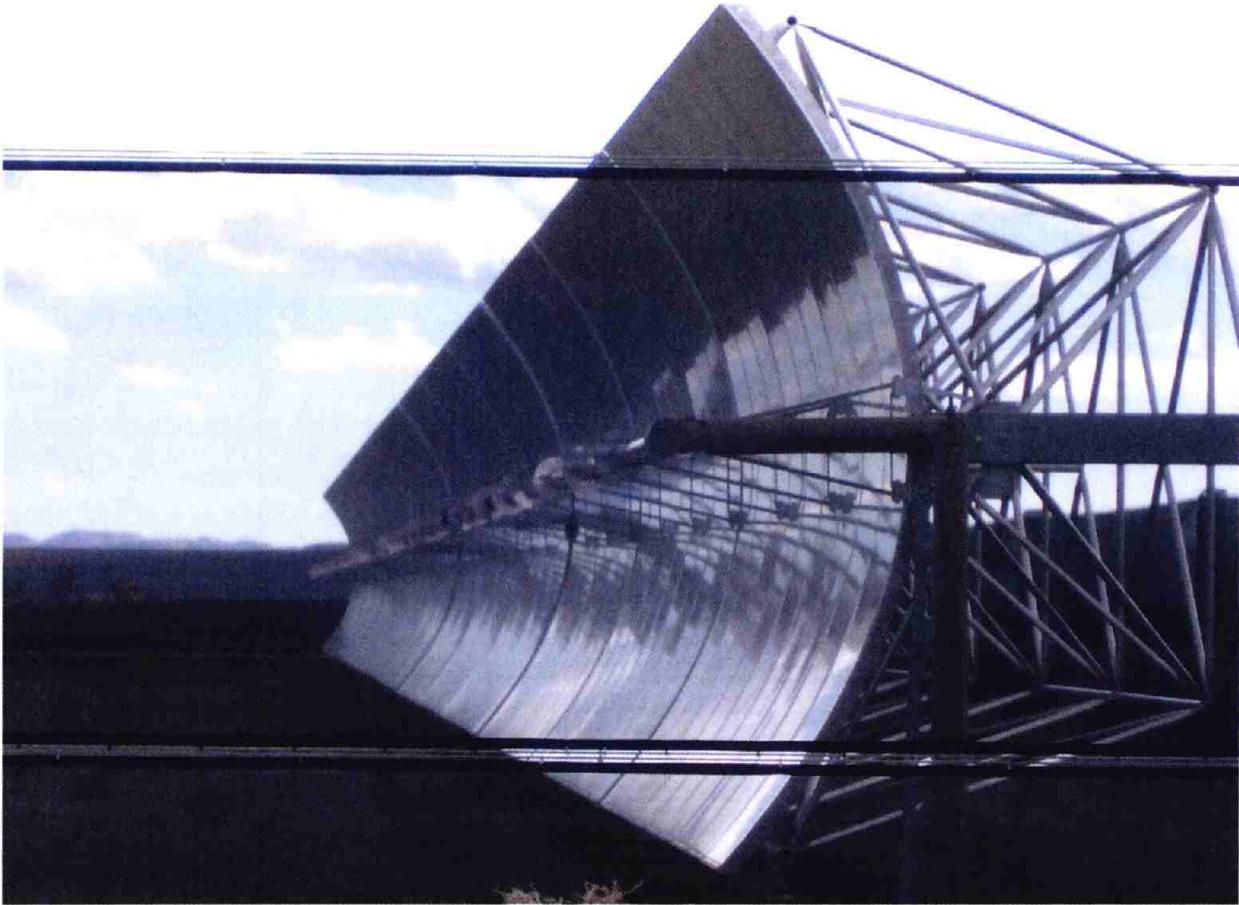
View of the western most concentrated solar panel turned east to block glare.



Close up of western most panels turned east

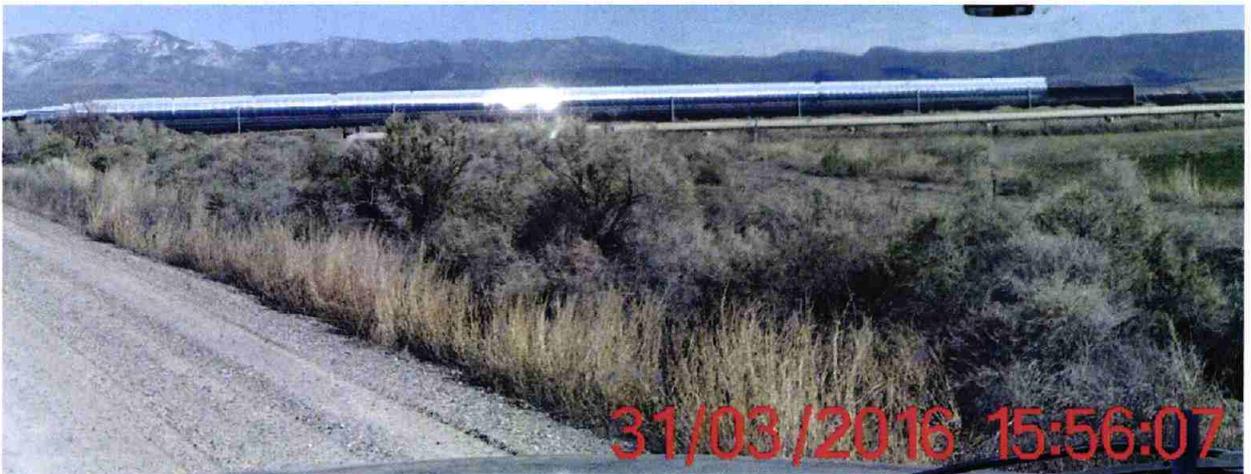
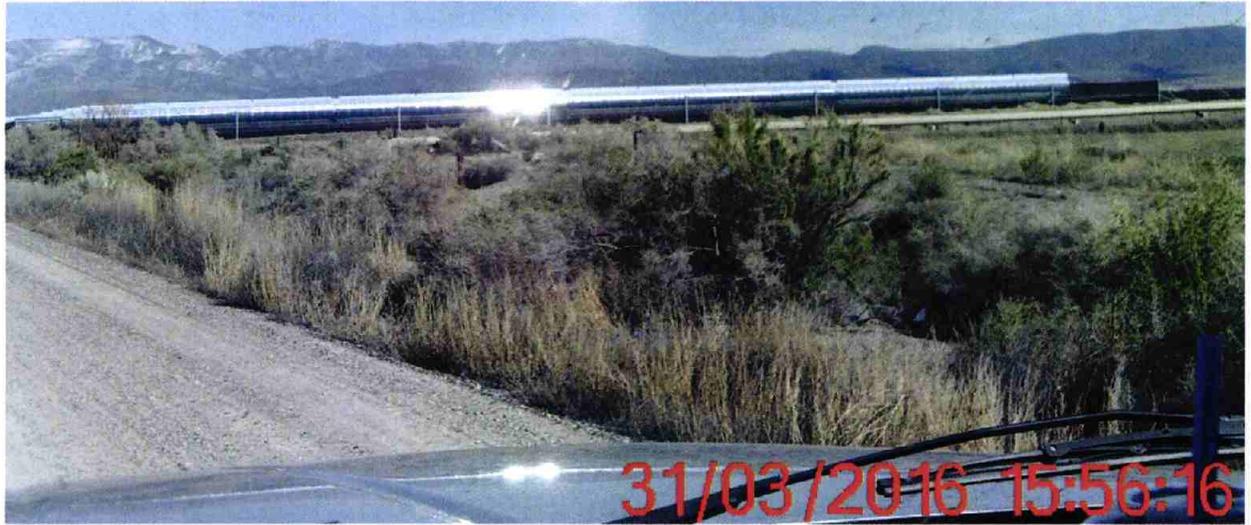


Close up of the western most panel turned east at 3:00 p.m. (October 18, 2016)



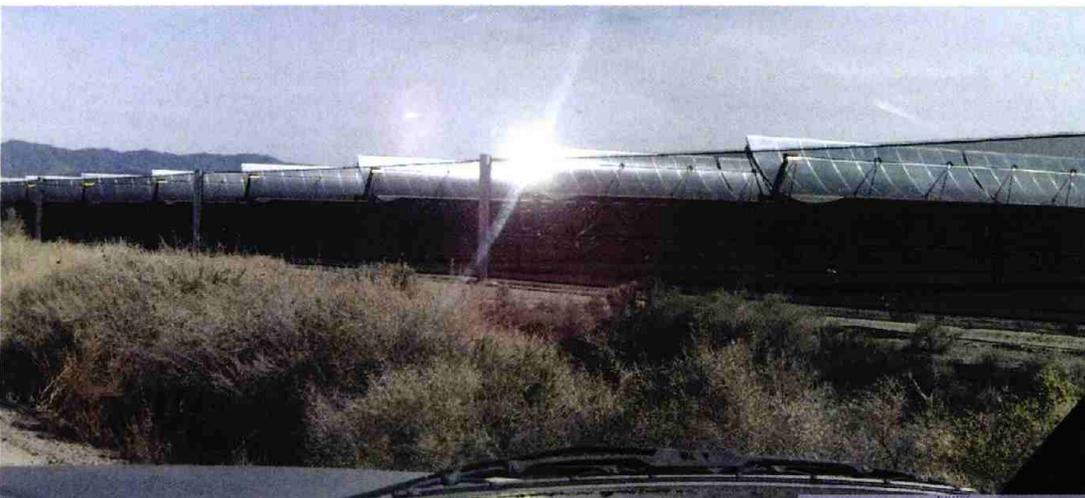
All photos below are from the Newmyer's







Both Photos below were received April 4 2016

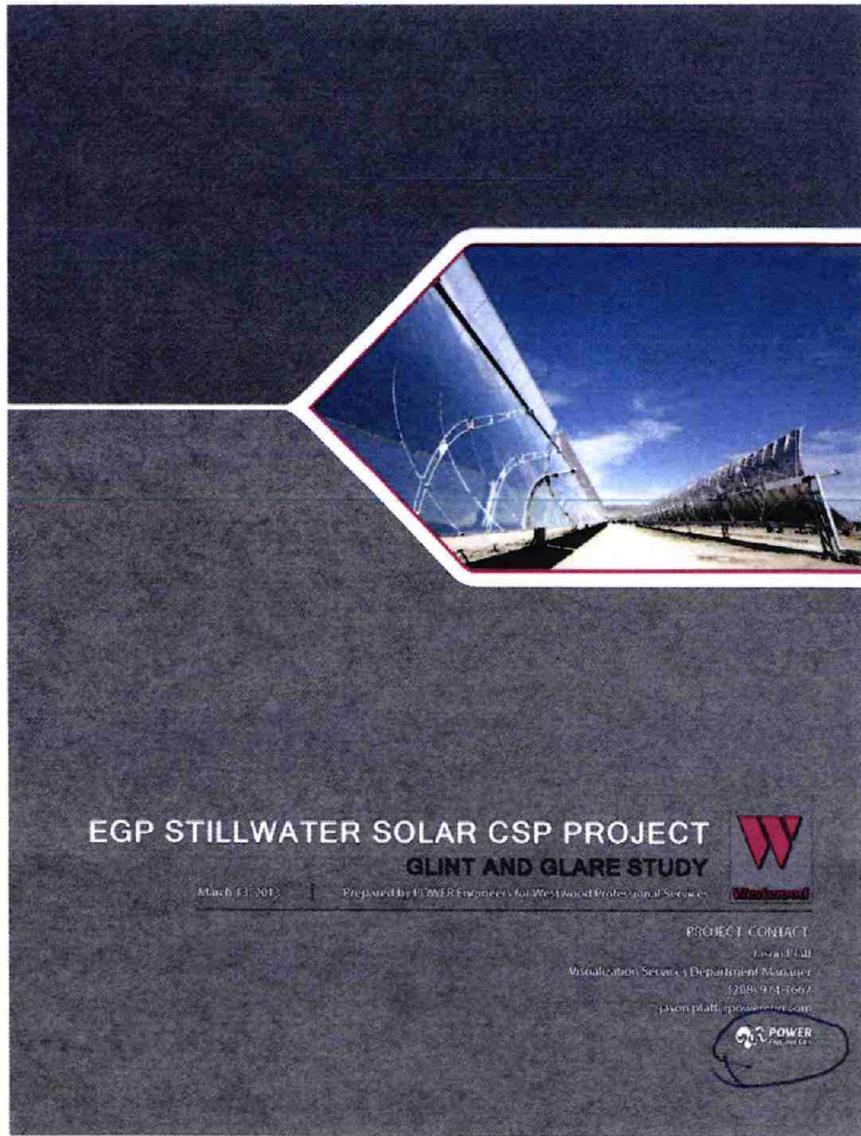


## **APPENDIX A**

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- 1: 2013 Glare Study for Concentrated Solar Project
- 2: Solar Parabolic Trough Technology
- 3: Page from Section T of the Special Use Permit Application, 2013
- 4: Minutes from the March 13, 2013 Planning Commission meeting on the Concentrated Solar Special Use Permit
- 5: Notice of Final Action

# 2013 Glare Study for Concentrated Solar Project



**EGP STILLWATER SOLAR CSP PROJECT**  
**GLINT AND GLARE STUDY**



March 13, 2013 | Prepared by POWER Engineers, Inc. for Westwood Professional Services



**PROJECT CONTACT:**

Jason P. Hill  
 Visualization Services Department Manager  
 (268) 974-1667  
 jphill@westwoodpro.com



POWER ENGINEERS, INC.  
 EGP Stillwater Solar CSP Project  
 Glint and Glare Study

EGP Stillwater Solar CSP Project  
 Glint and Glare Study

**PREPARED FOR:** WESTWOOD PROFESSIONAL SERVICES  
**PREPARED BY:** POWER ENGINEERS

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## 1.0 INTRODUCTION

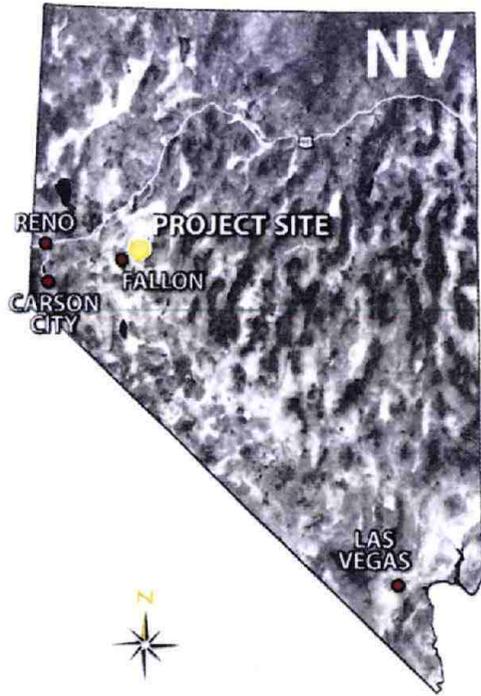
POWER Engineers, Inc. (POWER) has prepared a glint and glare study for Westwood Professional Services (Westwood PS) for the EGP Stillwater Solar CSP Project (Project). The Project is located in Churchill County, Nevada approximately 12 miles northeast from the town of Fallon, and 13 miles northeast of the Naval Air Station Fallon (NAS Fallon) (see Figure 1). This facility consists of an existing 95 acre photovoltaic (PV) solar array, a geothermal power plant, and a proposed 345-foot long by 86.25-meter wide parabolic trough array (see Figure 2 see also Appendix A - SkyTrough® product information). Once completed, this facility will boost the temperature of the geothermal brine entering the power plant, helping to increase the overall efficiency of the power plant. Specifically, this study answers the following questions:

- Will glint/glare be visible to sensitive visual receptors (see Section 3.1)?
- If glint/glare is visible, how long will it occur, where will it occur and when will it occur (see Section 4.0 - Results)?

## 2.0 DEFINITIONS AND DESCRIPTIONS

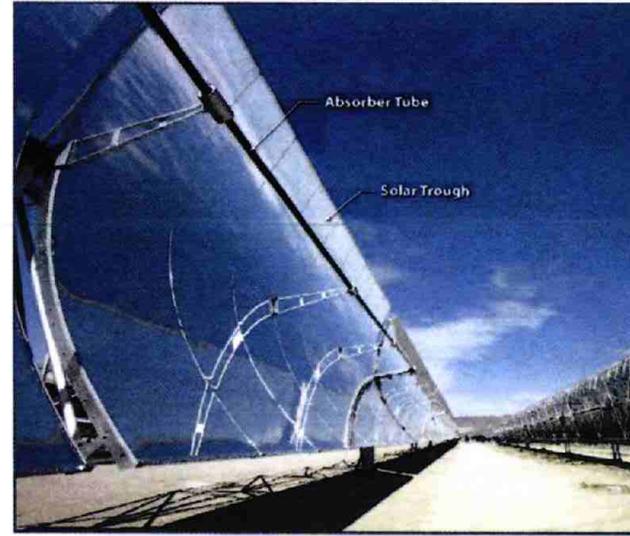
The following definitions and descriptions are important to understanding the methodology and results of the study:

- **SkyTrough® Solar Collector Assembly (SCA)** – SkyTrough® SCA is a 480 kilowatt (kW) thermal solar trough system mounted on a single-axis tracker and is designed to automatically rotate from east to west to track the sun. The parabolic mirror collects and focuses solar energy onto a metal tube heat exchanger filled with liquid which is heated to approximately 700 degrees Fahrenheit (°F). This heats and pressurizes the internal working fluid in the heat exchanger tubing and creates steam pressure (approximately 1,450 pounds per square inch absolute [psia]) which powers a turbine to create electricity (see Appendix A).
- **Glint** – A flash of light, also known as a specular reflection. Produced as a direct reflection of the sun in the parabolic mirror surface of SkyTrough®.
- **Glare** – A continuous source of brightness relative to diffuse or surface scattered lighting.
- **3D Geometric Analysis** – A computer simulation incorporating a 3-dimensional (3D) terrain model, 3D solar equipment, single-axis solar tracker behavior and a solar algorithm to determine the date, time and duration of glare which may be visible during the landing approach.
- **Key Observation Points (KOP)** – KOPs refer to viewers with potential sensitivity to glint or glare. For this study, KOPs included aircraft and adjacent residences.



EGP Stillwater Solar CSP Project  
FIG 1 - PROJECT LOCATION

PAGE 3



EGP Stillw

FIG 2 - SKYTRO

### 3.0 METHODOLOGY

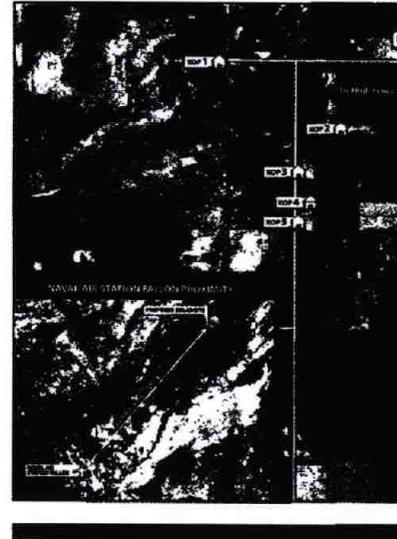
POWER used the following methodology to determine if glare will be visible to local residents or NAS Fallon pilots:

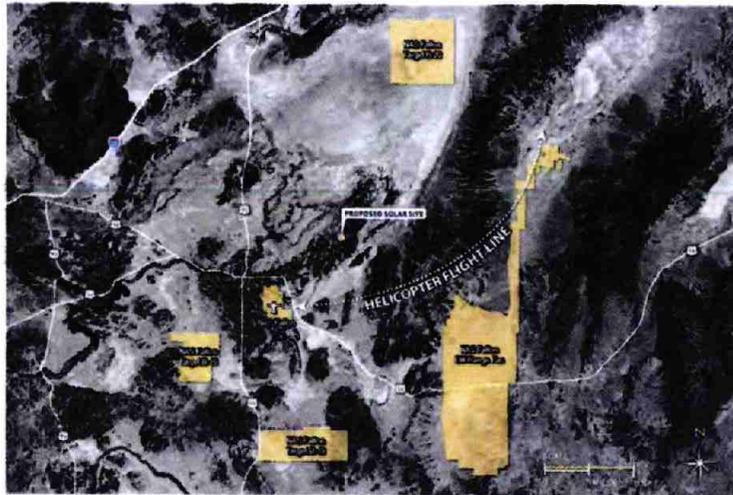
1. *Identify Potential Glare Issues* – POWER studied KOPs provided by Westwood PS. These locations included adjacent residences within one mile of the site and a review of NAS Fallon flight operations. The findings are based on these locations (see Section 3.1).
2. *Characterize Glare Behavior* – 3D simulations were developed to accurately create and study glint/glare based on the behavior of the solar equipment (see Section 3.2). 3D elements within the digital scene included terrain models, 3D solar equipment, and a 3D sun system. This information was assembled in a 3D computer program to create an accurate virtual representation of the Project and surrounding area (see Section 3.3).
3. *Evaluate* – Visual analysts studied the 3D simulations under different lighting conditions and at different times of the year. These simulations were used to evaluate and document when glare may be visible to KOPs. The results of this evaluation can be found in Section 4.0.

#### 3.1 KOPs

Solar operations were studied from 13 KOPs. These KOPs include residences within 1.0 mile of the Project Site and the NAS Fallon (see Figure 3 and Figure 4). POWER used these KOPs to perform this glare study (see Figure 2). Each KOP is described below:

- KOP 1 - The residence is located at the west end of Jackrabbit Road, approximately 3,978 feet west of the Project Site boundary. The residence elevation (3,894 feet) is equal to the Project Site elevation.
- KOP 2 - The residence is located along Portuguese Lane, approximately 1,830 feet west of the Project Site boundary. The residence elevation (3,894 feet) is equal to the Project Site elevation.
- KOP 3 - The residence is located along Portuguese Lane, approximately 2,926 feet southwest of the Project Site boundary. The residence elevation (3,894 feet) is equal to the Project Site elevation.
- KOP 4 - The residence is located along Portuguese Lane, approximately 3,193 feet southwest of the Project Site boundary. The residence elevation (3,894 feet) is equal to the Project Site elevation.
- KOP 5 - The residence is located along Portuguese Lane, approximately 3,552 feet southwest of the project site boundary. The residence elevation (3,894 feet) is equal to the Project Site elevation.





EGP Stillwater Solar CSP Project  
FIG. 4 - NAS FALLON OPERATIONS

PAGE 7

- **KOP 6** - The residence is located along Freeman Lane, approximately 4,751 feet northeast of the Project Site boundary. The residence elevation (3,888 feet) is six feet lower in elevation than the Project Site.
- **KOP 7** - The residence is located along Freeman Lane approximately 5,082 feet due east of the Project Site boundary. The residence elevation (3,889 feet) is five feet lower in elevation than the Project Site.
- **KOP 8** - The residence is located along Westside Road, approximately 2,157 feet southeast of the Project Site boundary. The residence elevation (3,894 feet) is equal in elevation to the Project Site.
- **KOP 9** - The residence is located along Westside Road, approximately 4,751 feet southeast of the Project Site boundary. The residence elevation (3,894 feet) is equal in elevation to the Project Site.
- **KOP 10** - The residence is located along Westside Road, approximately 4,785 feet southeast of the Project Site boundary. The residence elevation (3,899 feet) is five feet higher than the Project Site.
- **KOP 11** - The residence is located along Lawrence Lane, approximately 5,714 feet south of the Project Site boundary. The residence elevation (3,899 feet) is five feet higher than the Project Site.
- **KOP 12** - The residence is located along Lawrence Lane, approximately 6,974 feet south of the Project Site boundary. The residence elevation (3,902 feet) is eight feet higher than the Project Site.
- **KOP 13** - The NAS Fallon includes the airbase, training ranges, and in-route flight operations. The NAS Fallon is located approximately 11 miles southwest of the Project Site boundary (see Figure 4) and 40 feet higher than the solar facility. Aircraft may fly over the Project Site when accessing bombing ranges located north of the solar facility. According to Naval Officials, aircraft maintain a minimum altitude of 5,000 feet while in route to the training facilities. Rotary aircraft primarily access the training ranges via a southern trajectory, located over five miles away from the solar facility, near the base of the Desatoya mountain range.

### 3.2 Characterize Glare Behavior – SkyTrough® Single-Axis Tracker

In order to characterize glare behavior, POWER created a 3D representation of the site, the sun, and the SkyTrough® single-axis solar trackers. The 3D Model allowed analysts to accurately determine when and where glare may be visible to local residences and pilots. Specifically, the 3D Model incorporated the following:

- **3D Terrain Models** – Westwood PS provided POWER with 2-foot contours of the Project Site. This information was converted into a 3D surface model and used to place the proposed 3D solar arrays and a 16-foot screen fence into a 3D scene. POWER acquired spot elevations

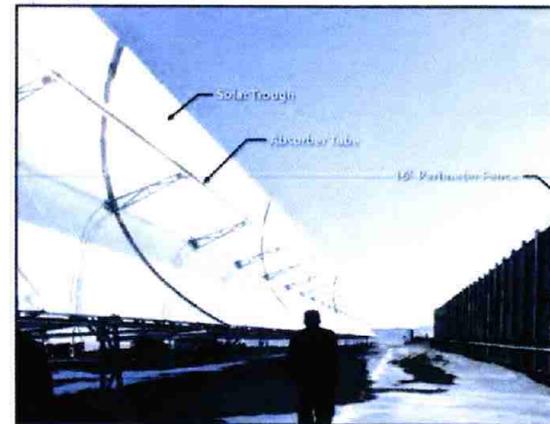
of the residences through the National Elevation Data from the United States Geologic Survey (USGS) website (USGS 2013).

- **Perimeter Screen Fencing** – the client provided 2-dimensional (2D) documentation for a proposed 16-foot screened perimeter fence which would surround the entire SkyTrough<sup>®</sup> facility (see Figure 5). POWER's analysts created a 3D model of the fence design surrounding the facility to analyze its ability to screen glare. Westwood PS reported to POWER the fence provides an approximately 70% visual screening buffer with 30% airflow porosity.
- **Solar Sun System** – The 3D computer simulations incorporated an accurate, solar algorithm based on the latitude and longitude of the actual Project. All calculations were performed using 3D software designed for calculating and animating solar cycles. Sun calculations and results were based on hours of operational daylight and solar clocks for the following times of year (see Figure 5 – Solar Sun Paths):
  - Summer Solstice (June 21<sup>st</sup>, 2012) – where the length of sunlight hours are at its peak and the sun has reached its northern most extremes.
  - Winter Solstice (December 22<sup>nd</sup>, 2012) – where the length of sunlight hours are at its lowest and the sun has reached its southernmost extremes.
  - Fall Equinox (September 23<sup>rd</sup>, 2012) – where the day and night are equal in length.
  - Spring Equinox (March 20<sup>th</sup>, 2012) – where the day and night are equal in length.
- **3D SkyTrough<sup>®</sup> Equipment** – Westwood PS provided POWER with electronic CAD data depicting the location and position of the proposed solar arrays. Additional information was provided to POWER which included panel design, panel height, panel orientation, and rotation angles. It is important to note the 3D geometric analysis does not measure the intensity of glare and is focused specifically on the location, duration, and conditions in which glare may occur.

A single-axis solar tracker has two primary positions: tracking and stow position (see Figure 7 – Trough Behavior). In addition to the two primary positions, trackers also have a 'wake up' procedure that brings the tracker out of the stow position and into alignment with the sun to begin tracking.

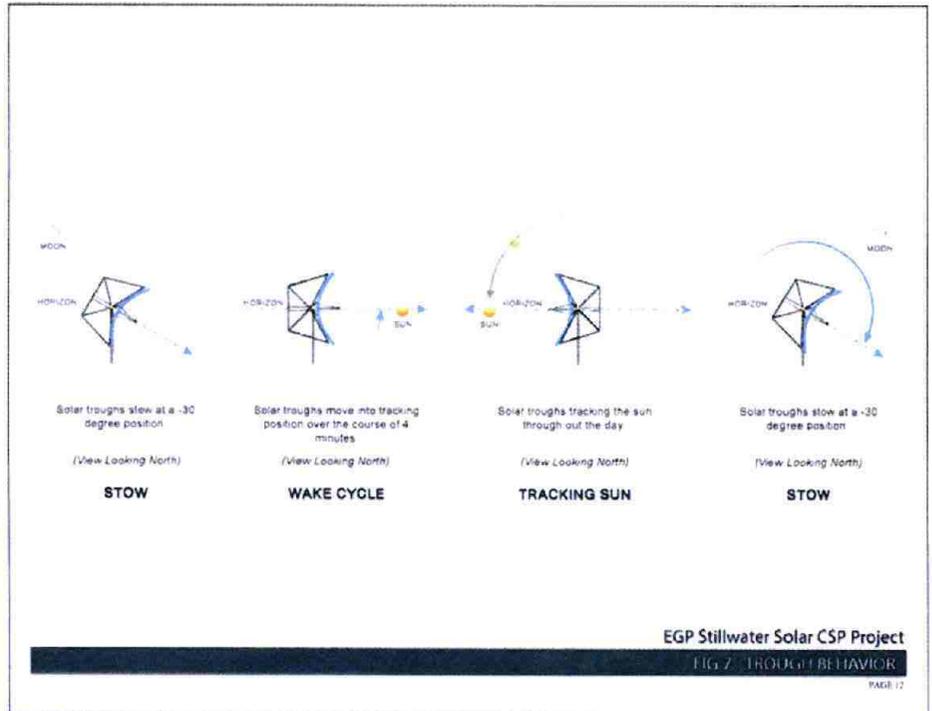
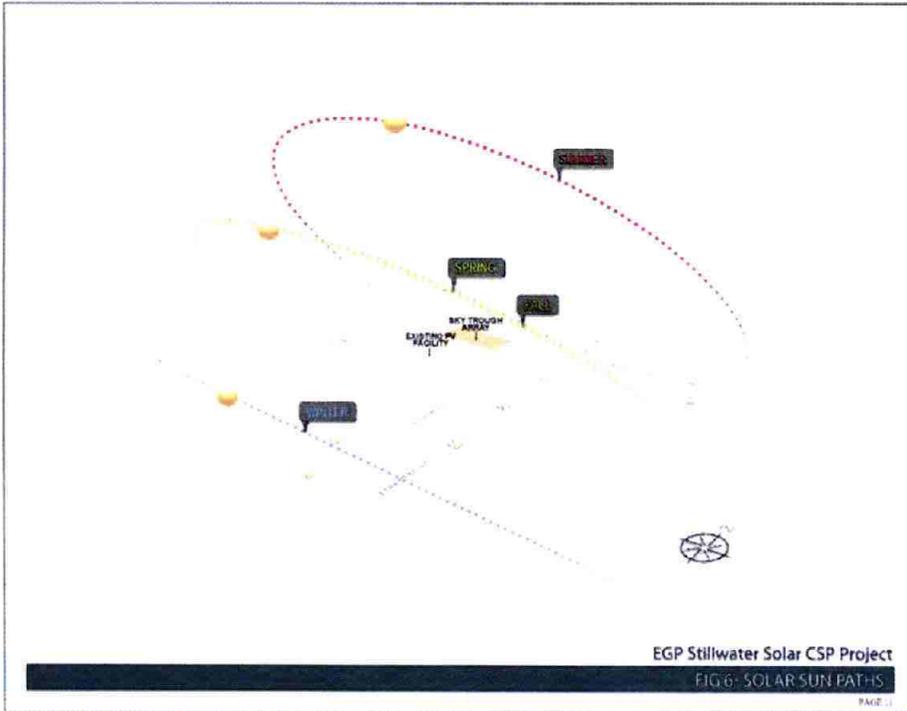
### 3.3 Glare Evaluation - 3D Geometric Analysis

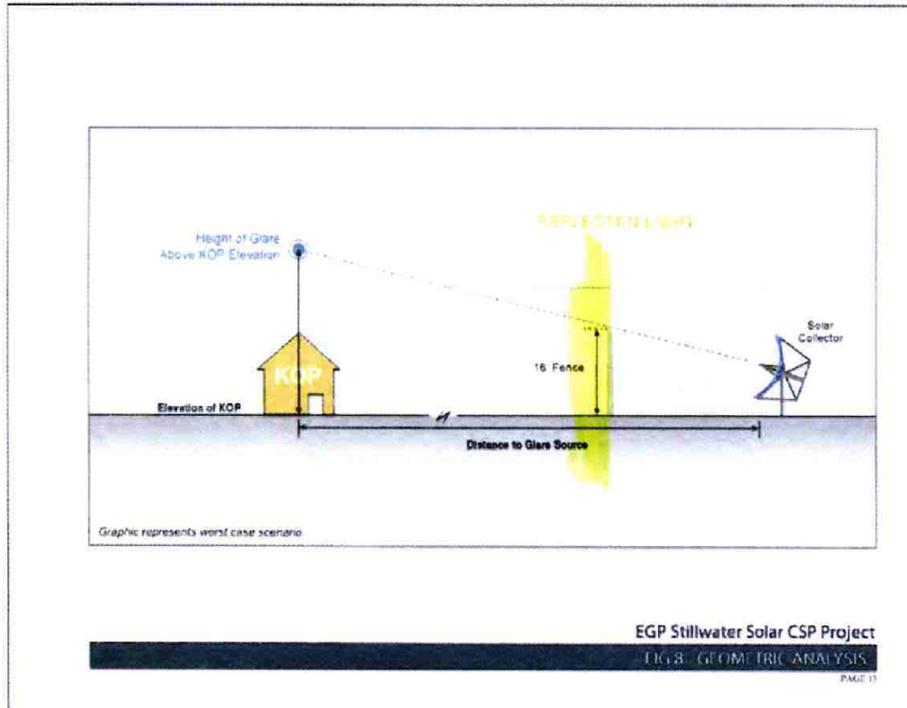
Once the 3D site was assembled, analysts animated the movement of the sun, and the behavior of the single-axis solar trackers to determine when and where glare may be visible to KOPs. Studying the occurrence of glint and glare is essentially a 3D geometric analysis, which takes into account the position of the sun in relation to the angle of the solar trackers to emit a path of glare. For purposes of this study, POWER incorporated the 16-foot screen fence in the geometric calculations as a potential visual screen (see Figure 7 – Geometric Analysis). Each KOP was evaluated during daytime hours of operation during spring, summer, fall and winter (results can be found in Section 4.0).



EGP Stillw

FIG. 5





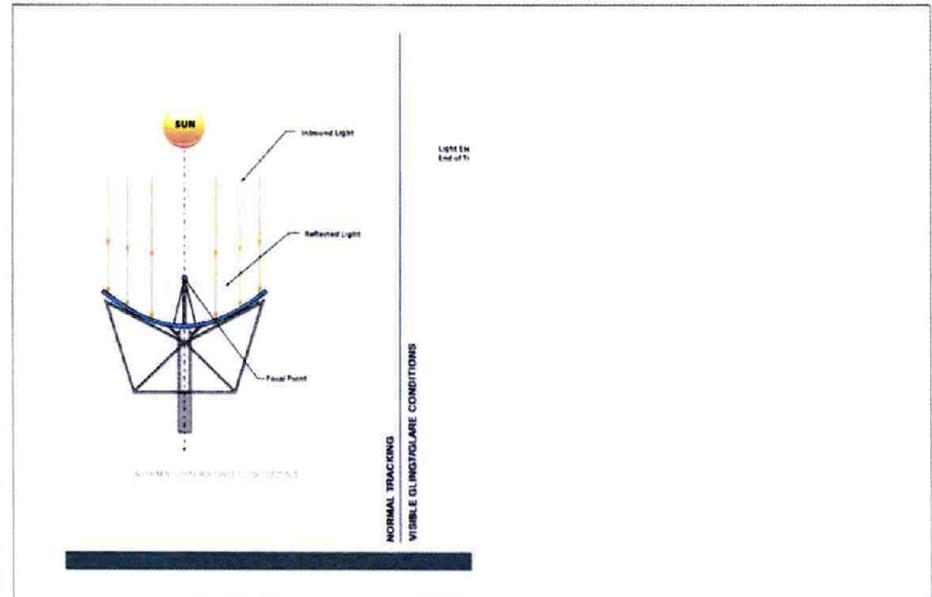
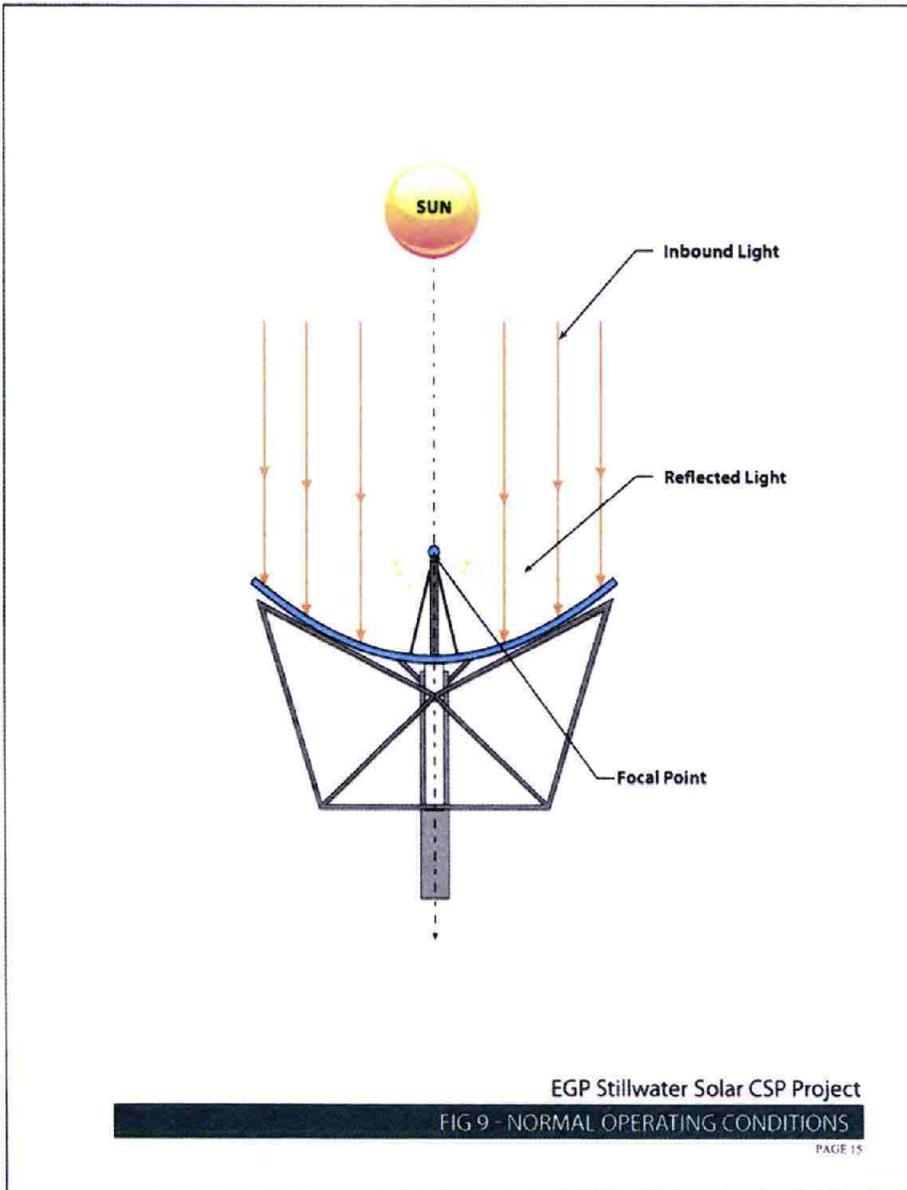
#### 4.0 RESULTS

Under normal operating conditions (tracking), when the troughs are tracking the sun's path throughout the day, the possibility for glint and glare are limited. The purpose of the parabolic trough is to focus the sun's energy directly and onto the absorber tube. Under these conditions, the absorber tube acts as a visual buffer between the sun's reflection and offsite viewers (see Figure 9). There are however, two specific instances where glare may be visible. POWER studied these conditions as the worst case scenario and they were the basis of the analysis:

- End of Trough Reflections:** As stated above, the absorber tube blocks most of the sun's reflections to offsite viewers. However, in conditions when the sun is near its southern most position during the day (typically between 10:00 a.m. and 2:00 p.m.) during the spring, fall and winter months, the low angle of the sun causes reflections to shift in a northern direction along the axis of the receiver tube. Near the ends of the troughs, reflections are no longer blocked by the absorber tube, causing reflections to be visible. These reflections only affect viewpoints north of the Project Site (see Figure 10). No residences will be impacted by these types of reflections due to the screen fence and the angle of view.
- Malfunions and Off-tracking:** Under normal operating conditions, the sun is in direct alignment with the absorber tube and the back of the mirror. This design allows the focal point of the mirrors to remain focused on the absorber tube. In rare cases, the parabolic trough may malfunction and cause the parabolic mirrors to go "off-track" from the sun. In these cases, the focal points of the parabolic mirrors shift from center to either side of the absorber tube. When this occurs, viewers may experience a long band of glint/glare running through the parabolic trough (Figure 10). No viewers will be impacted due to the screen fence.

**Glare Results:** The occurrence of glare to residences is anticipated to be low or none. Review of the 3D geometric analysis under worst case conditions (end of trough reflections and malfunction) determined all residential views analyzed for glint/glare are blocked by the 16-foot screen fence located around the Project Site. This was observed for daytime hours of operation throughout the spring, summer, winter and fall.

Glare impacts to operations associated with NAS Fallon are anticipated to be low. Pilots will not experience glare at the Fallon Airfield, due to distance, the screen fence and airfield runway orientation. The solar project is over 11 miles from NAS Fallon and pilot view orientation during takeoff and landing will be focused northwest or southwest, and directed away from the northeasterly proximity of the Project. Aircraft and rotary wing pilots may experience glint/glare while in route to training facilities located to the north, east and south of the Project. However, glint/glare will be an infrequent occurrence; if experienced, it will last only a few seconds and be observed at a height or distance in excess of 5,000 feet. At these distances, glint/glare is highly dissipated, significantly less intense than the sun, and of low occurrence even under the worst case scenarios.



The following is a detailed description of glare results. These results are considered worst case scenarios (see also Appendix B - Results):

- **KOP 1** - No glare is anticipated from proposed solar operations due to the 16-foot high perimeter fence. Any resulting glare was analyzed to occur 23.13 feet above the residence during the summer solstice, and 34.12 feet above the residence during the spring and fall equinoxes.
- **KOP 2** - No glare is anticipated from proposed solar operations due to the 16-foot high perimeter fence. Any resulting glare was analyzed to occur approximately 23.98 feet above the residence during the summer solstice.
- **KOP 3** - No glare is anticipated from proposed solar operations due to the 16-foot high perimeter fence. Any resulting glare was analyzed to occur approximately 29.26 feet during the summer solstice.
- **KOP 4** - No glare is anticipated from proposed solar operations due to the 16-foot high perimeter fence. Any resulting glare was analyzed to occur approximately 85.67 feet above the residence during the summer solstice.
- **KOP 5** - No glare is anticipated from proposed solar operations due to the 16-foot high perimeter fence. Due to KOPs orientation relative to the site, no glare is possible.
- **KOP 6** - No glare is anticipated from proposed solar operations due to the 16-foot high perimeter fence. Any resulting glare was analyzed to occur approximately 24.93 feet above the residence during the summer solstice and 37.49 feet during the spring and fall equinoxes.
- **KOP 7** - No glare is anticipated from proposed solar operations due to the 16-foot high perimeter fence. Any resulting glare was analyzed to occur approximately 36.06 feet during the summer solstice and 39.86 feet during the spring and fall equinoxes.
- **KOP 8** - Due to KOPs orientation relative to the site, no glare is possible.
- **KOP 9** - Due to KOPs orientation relative to the site, no glare is possible.
- **KOP 10** - Due to KOPs orientation relative to the site, no glare is possible.
- **KOP 11** - Due to KOPs orientation relative to the site, no glare is possible.
- **KOP 12** - Due to KOPs orientation relative to the site, no glare is possible.
- **KOP 13 - NAS Fallon** - Pilots are not anticipated to experience glare at the Fallon Airfield due to both distance and airfield orientation. Aircraft and rotary wing pilots may experience glare while in route to training facilities located to the north, east and south of the Project. However, glint/glare will be an infrequent occurrence; if experienced, it will last only seconds and be observed at a height or distance in excess of 5,000 feet.

## 5.0 DISCUSSION AND CONCLUSIONS

### 5.1 Impacts to Residences and NAS Fallon

Overall, potential glint/glare impacts resulting from the Project during normal operating conditions are anticipated to be low. When evaluated under the worst case scenarios (end of trough glare and off-track) and including the proposed 16-foot fence, impacts are anticipated to be low. The geometric analysis shows that during certain times of the year and under worst case conditions, glare may have the potential to be visible to adjacent residences. However, due to a relative flat project site and minimal elevation change surrounding the Project, the 16-foot perimeter fence will block all occurrences of glare to adjacent residences within one mile.

NAS Fallon operations should not be impacted by the Project due to the distance, orientation and relative proximity of both the Air field and training ranges. Pilots may experience glint/glare from the Project Site while in route to training facilities, but these occurrences are infrequent and very short in duration.

POWER and ENEL presented the findings to NAS Fallon on March 6, 2013. After review of the information, NAS Fallon officials determined there would be no issues with the proposed Project (see Appendix C for approval letter).

### 5.2 Mitigation

Glare impacts are anticipated to be non-existent or low in all cases analyzed. However, if any glare is reported by offsite viewers, EGP Stillwater will evaluate each situation and will provide mitigation to reduce or eliminate the occurrence. The following mitigation measures will be used to reduce the occurrence of glare if necessary.

1. If glare is visible to offsite viewers over the 16-foot screen fence, EGP Stillwater will increase the height where necessary to eliminate the occurrence.
2. If glare is visible to offsite viewers either through the 16-foot screen fence, EGP Stillwater will provide additional visual screening to reduce or eliminate the occurrence.

## 6.0 SOURCES

- Federal Aviation Administration (FAA). 2010. Technical Guidance for Evaluating Selected Solar Technologies on Airports. November 2010. Full report can be downloaded at: [http://www.faa.gov/airports/environmental/policy\\_guidance/media/airport\\_solar\\_guide.pdf](http://www.faa.gov/airports/environmental/policy_guidance/media/airport_solar_guide.pdf).
- Naval Air Station Fallon (NAS Fallon). 2013. Personal communication regarding flight operations with John Dirickson, Rowdy Yates, Steven Broyer, Todd Thelen, Jason Pfaff, Brian Lathrop and Andy Stephens on January 25, 2013.
- Solar Thermal Magazine. 2012. SkyFuel Plans Kingdom of Saudi Arabia Market Entry. Accessed January 2012 at <http://www.solarthermalmagazine.com/2012/06/23/solar-thermal-news-skyfuel-plans-kingdom-saudi-arabia-market-entry>.
- US Geological Survey (USGS). 2013. USGS National Elevation Data. Accessed January 20, 2013 at [www.ned.usgs.gov](http://www.ned.usgs.gov).

## APPENDIX A – SKYTROUGH® PRODUCT INFORMATION

Parabolic Trough Concentrator

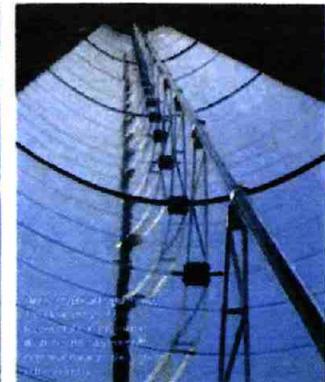
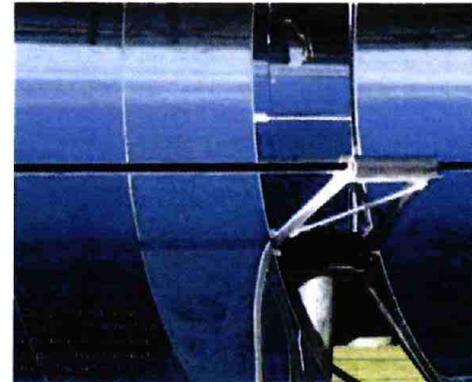
# SkyTrough®

SkyFuel 

## Product Information

### Next-Generation Solar Parabolic Trough Technology

[www.SkyFuel.com](http://www.SkyFuel.com)

Parabolic Trough Concentrator  
SkyTrough®

## Product Information

### Description

The SkyTrough® is a high-performance parabolic trough concentrating solar power collector for use in utility-scale solar thermal power plants or industrial process heat applications. Its breakthrough design is patterned after the best of the previous utility-scale parabolic trough designs with important innovations that improve performance and significantly reduce cost. SkyTrough® makes Concentrating Solar Power the affordable, dispatchable choice for today's clean power markets.

Each SkyTrough® solar collector assembly is 115 meters long with an aperture that is 6 meters in width. The collectors are modular and allow solar fields of different sizes to fit a wide variety of applications.

### Advantages

SkyTrough® collectors are designed to deliver the proven reliability of traditional glass-mirror parabolic trough systems, but with several performance and economic advantages that stem from significant design and material innovations, including the use of ReflecTech® Mirror Film in place of sagged glass mirrors, the OnSun™ rotary hydraulic drive system with advanced SkyTrakker™ Sun tracking controls, and the lightweight, fast-assembly space frame.

## SkyTrough® Advantages

- Significant Cost Reductions
- Unbreakable Mirrors
- Rapid Field Assembly
- Compact Transportation
- Low Maintenance

## Construction

The highly reflective surface of the SkyTrough® is a glass-free, silver metalized polymer film called ReflecTech® Mirror Film. This proprietary mirror film is weather resistant, easy to maintain, lightweight and commercially proven.

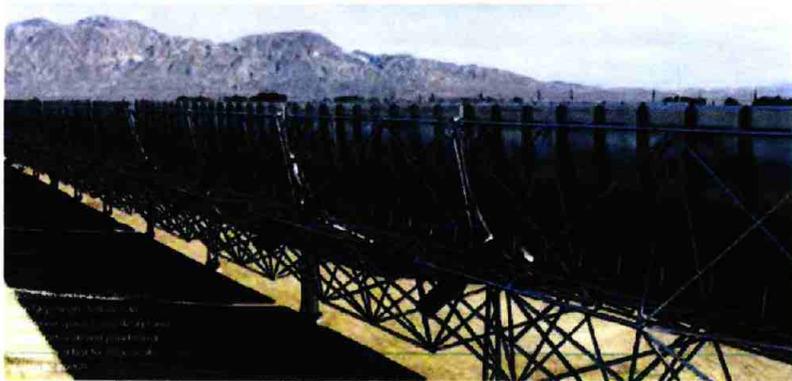
ReflecTech® Mirror Film is laminated to aluminum sheets to create a revolutionary rib-and-panel parabolic mirror which are integrated into an aluminum space frame to form the parabolic mirror surface of each module.

The space frame is made of extruded aluminum struts and other components that are precisely fabricated and it is self-aligning when joined together with fasteners, requiring no welding.

The entire assembly is mounted on pylons and attached to a self-locking rotary hydraulic drive enabling the SkyTrough® to pivot and track the Sun.

 Winner of the Prestigious 2009 R&D 100 Award

SkyFuel 



### Proven Performance of Parabolic Troughs

Parabolic trough concentrators have powered the Solar Energy Generating Systems (SEGS) in California's Mojave Desert for over 20 years, producing over 350 megawatts of electricity, and serving as crucial proving grounds for new parabolic trough designs and components, including the SkyTrough®. The newest stand-alone parabolic trough concentrating solar plant in the United States, the Nevada Solar One 64-megawatt plant located near Las Vegas, Nevada, came online in the summer of 2007. Additional parabolic trough plants are now operating in Spain and more are planned and under construction in the region.

A SkyTrough® collector loop, with ReflectTech® Mirror Film and OnSun™ tracking system, has been operating at SEGS II in Daggett, California since February 2010. Performance data collected from the operating loop confirm the 73% thermal efficiency predicted by testing at the U.S. National Renewable Energy Lab (NREL). The ReflectTech film has demonstrated optical durability of over 20 years in NREL's Ultra Accelerated Weathering System.

### Availability

The SkyTrough® is ready today for global delivery. Please contact us to learn more about the SkyTrough® and how it can become a part of your solar-thermal project. The SkyTrough® is robust and versatile, capable of delivering thermal energy to new solar power plant projects, existing power plants, or industrial process heat applications.

### SkyTrough® Innovations

The weight savings of ReflectTech® Mirror Film over glass leads to easier and more rapid reflector installation. Each ReflectTech® mirror panel is one third the weight of its sagged glass mirror equivalent. The lighter space frame uses less material, is easier to ship and requires less labor to assemble in the field.

The SkyTrough® uses a new version of the industry leading SCHOTT thermal receiver. The receiver is held along the full length of the collector's focal line. An oil-based heat transfer fluid flows through the receiver to absorb the Sun's energy and then delivers the thermal energy to a heat exchanger, where it generates steam for power generation or industrial processes.



SkyTrough® solar collectors in operation at SEGS II in Daggett, California

Parabolic Trough Concentrator  
SkyTrough®

SkyFuel 

### SkyTrough Specifications

#### Geometry

Total Solar Collector Assembly <sup>(1)</sup> Length	115m	377ft
Net Aperture Area <sup>(2)</sup>	856m <sup>2</sup>	7,061ft <sup>2</sup>
Number of Modules <sup>(3)</sup>	8 per Solar Collector Assembly <sup>(1)</sup>	
Module Aperture Length	13.9m	45.6ft
Module Aperture Width	6m	19.7ft
Receiver Type	SCHOTT PTR®80	
Absorber Tube Diameter	80mm	3.15in

(1) The Solar Collector Assembly ("SCA") length comprises the modules, pylons, control and drive, and ball joints (one at each end).  
(2) Used for any metric expressed in (XYZ)m<sup>2</sup>.

(3) A module is the parabolic mirror and receiver unit supported by a pair of pylons.

#### Mechanics

Thermal Efficiency <sup>(1)</sup>	73%
Design Point Thermal Output <sup>(1)</sup>	480kW <sub>th</sub>
Indicative Design Point Gross Electric Output <sup>(2)</sup>	180kW <sub>e</sub>
Optical Efficiency	> 77%
Typical Land Use	2ha/MW <sub>e</sub> 5 acre/MW <sub>e</sub>
Maximum Wind Speed (Slow)	135km/h      84 mph      3 second gust

(1) Defined as Gross Thermal Power/(Solar Power) at 1,000 W/m<sup>2</sup> of direct normal solar radiation and 350°C heat transfer fluid temperature.  
(2) At 31.5% net thermal-to-electric efficiency.

#### Mirrors

Structural Backing	Aluminum Sheet
Reflective Surface	ReflectTech® Mirror Film
Specular Reflectance <sup>(1)</sup>	94%

(1) At 1.4° acceptance angle measured with a Devue & Services Spectral Reflectometer.

#### SkyTracker™ Controller

Controller Communications	Network	RS485 Wired or 2.4 GHz Wireless Radio Frequency
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#### Heat Transfer Fluid System

Typical Heat Transfer Fluid <sup>(1)</sup>	Therminol® VP-1	
Typical System Operating Temperature Range	Inlet	290°C      554°F
	Outlet	391°C      735°F

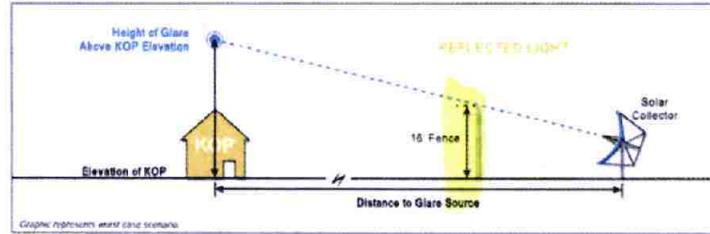
(1) Or other diphenyl (or diphenyl) blend such as DOWTHERM.

### For more information, please contact:

info@SkyFuel.com  
SkyFuel, Inc.  
18300 West Highway 72, Arvada, CO 80007, USA  
1.303.330.0276  
www.SkyFuel.com

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SkyTrough®. Document 2011.04  
Please consult the manufacturer before printing.

APPENDIX B – RESULTS



KOP #	Elevation	Height of Glare Above KOP Elevation	Distance to Glare Source
<b>KOP 1</b>	<b>Elevation: 3894'</b>		
	Summer	23.13'	5434'
	Spring/Fall	34.12'	5425'
	Winter	No Glare	
<b>KOP 2</b>	<b>Elevation: 3894'</b>		
	Summer	23.98'	3436'
	Spring/Fall	No Glare	
	Winter	No Glare	
<b>KOP 3</b>	<b>Elevation: 3894'</b>		
	Summer	29.26'	4586.25'
	Spring/Fall	No Glare	
	Winter	No Glare	
<b>KOP 4</b>	<b>Elevation: 3894'</b>		
	Summer	85.67'	4459.25'
	Spring/Fall	No Glare	
	Winter	No Glare	
<b>KOP 5</b>	<b>Elevation: 3894'</b>		
	Summer	No Glare	
	Spring/Fall	No Glare	
	Winter	No Glare	
<b>KOP 6</b>	<b>Elevation: 3888'</b>		
	Summer	24.93'	6485.5'
	Spring/Fall	37.49'	6480.2'
	Winter	No Glare	

KOP #	Elevation	Height of Glare Above KOP Elevation	Distance to Glare Source
<b>KOP 7</b>	<b>Elevation: 3859'</b>		
	Summer	36.06'	6771'
	Spring/Fall	35.86'	6766'
	Winter	No Glare	
<b>KOP 8</b>	<b>Elevation: 3894'</b>		
	Summer	23.44'	4011.75'
	Spring/Fall	No Glare	
	Winter	No Glare	
<b>KOP 9</b>	<b>Elevation: 3894'</b>		
	Summer	No Glare	
	Spring/Fall	No Glare	
	Winter	No Glare	
<b>KOP 10</b>	<b>Elevation: 3896'</b>		
	Summer	No Glare	
	Spring/Fall	No Glare	
	Winter	No Glare	
<b>KOP 11</b>	<b>Elevation: 3899'</b>		
	Summer	No Glare	
	Spring/Fall	No Glare	
	Winter	No Glare	
<b>KOP 12</b>	<b>Elevation: 3802'</b>		
	Summer	No Glare	
	Spring/Fall	No Glare	
	Winter	No Glare	

## APPENDIX C – APPROVAL LETTER

From: Dirickson, John W CIV NAVFAC SW  
To: Steven J. Broyer  
Subject: RE: Navy Review of Stillwater CSP  
Date: Thursday, March 07, 2013 4:21:31 PM

Steve,

Actually I think the light intensity dissipates faster than my previous response. As the light is diffused 7 times for every 5.66 foot of travel, the light reaching a helicopter 500 feet away would be  $(500^7)/5.66 = 618$  or  $1/618$  of a sun. This number would be for each trough. I'm not sure how many you are installing but if it were 100 the intensity would be about  $1/6$  of the sun, still not an issue.

Thanks again, John

-----Original Message-----

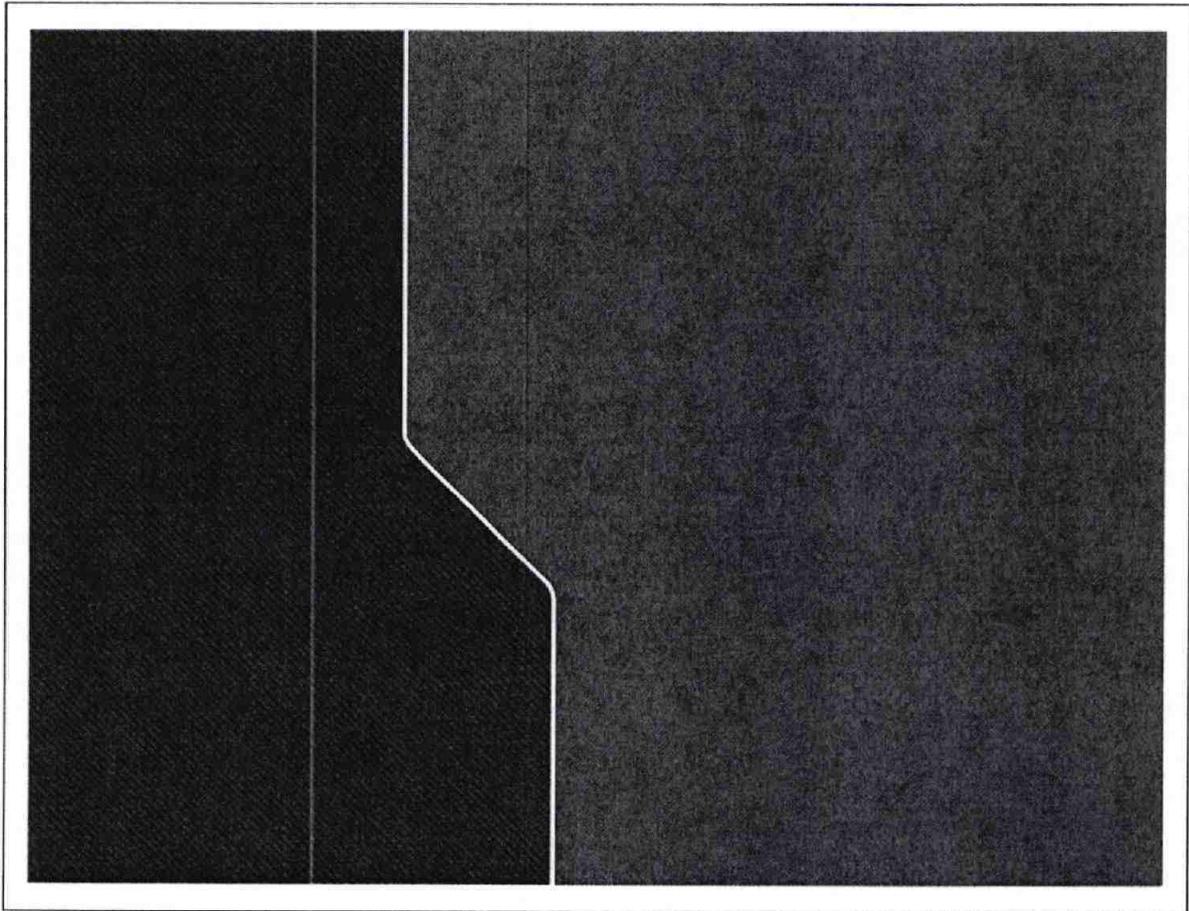
From: Steven J. Broyer  
Sent: Thursday, March 07, 2013 15:18  
To: Dirickson, John W CIV NAVFAC SW  
Cc: Yates, Rowdy CIV NAS Fallon, N32; Jason Pfaff; Smith, Ashley (EGP North America); Angelini, Lorenzo (EGP North America); Chung, Steve U CIV NAVFAC SW, ESWD; Eleanor Lockwood  
Subject: Re: Navy Review of Stillwater CSP

This is wonderful news, thank you team for coordinating this in my absence. These types of emails are great to download after a long day traveling.

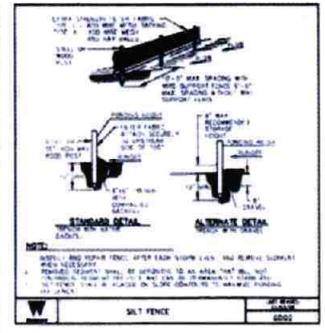
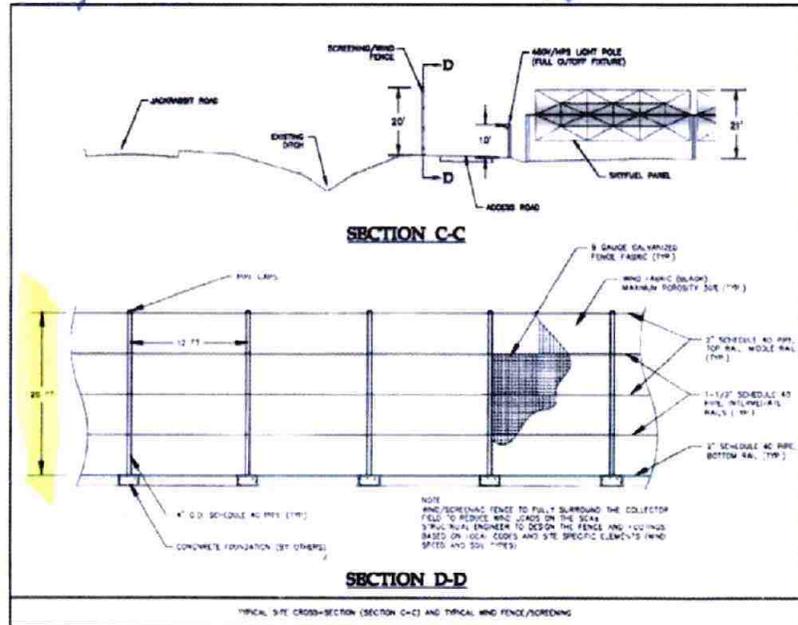
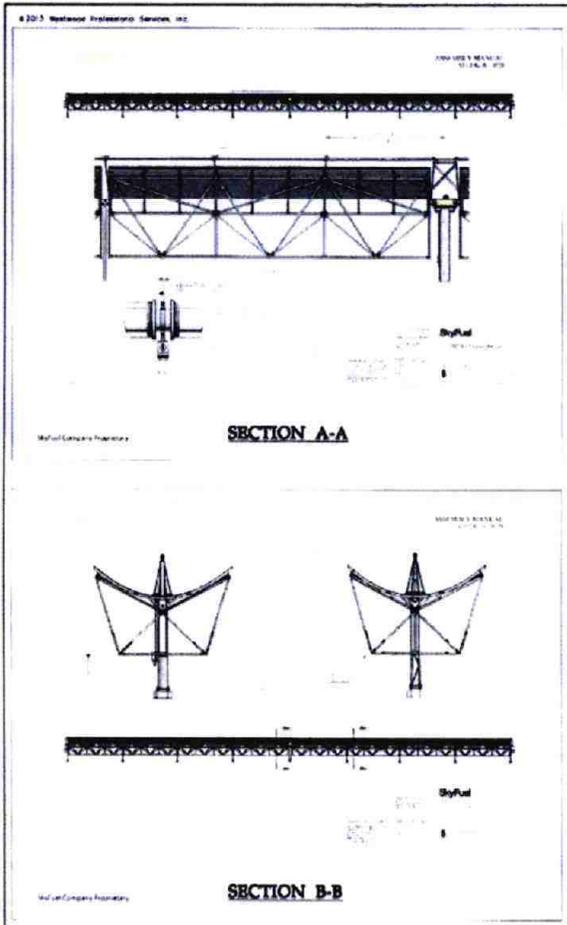
Steve

On Mar 7, 2013, at 4:36 PM, "Dirickson, John W CIV NAVFAC SW" wrote:

> Steve,  
>  
> Thank you for setting up the telecon with Power Engineers and ENEL. Based upon their explanation the subject solar trough amplifies the sun approximately 7 times through a focal length of 5.66 ft. The amplification dissipates in a linear manner, back to no amplification 5.66 ft beyond the receiver tube. Given a helicopter at 500 ft, the intensity of reflection would be less than  $1/80$  of the sun and no danger to safe passage of aircraft.  
>  
> Given these parameters of your solar trough system, NAS Fallon has no issue with its installation.  
>  
> If there are any other questions or comments please contact me at any time.  
>  
> v/r,  
>  
> John W. Dirickson P.E.  
> Community Plans & Liaison Officer  
> Naval Air Station Fallon  
> Fallon, NV 89496



a page from section (T) of the  
Special Use Permit Application 2013



TYPICAL CONCENTRATED SOLAR POWER PROJECT

Construction Details  
ISSUED FOR PERMIT

NO.	REVISIONS	DATE	ENG.	CHK.	PREPARED BY
1					

**Westwood**  
Westwood Professional Services, Inc.  
7000 Arapahoe Drive  
Boise, Idaho, 83725  
PHONE: 855-883-5130  
FAX: 855-883-8822  
TOLL FREE: 1-888-967-5130  
www.westwoodps.com

Prepared for: **Enel**  
Customer: **Enel**  
Engineering & Construction  
ENGINEERING  
U.S.

ENGINEERING REQUIRED	DATE
DESIGNED BY: HJM	01/31/11
ENGINEERED BY: SJB	01/31/11
CHECKED BY: SJB	01/31/11

ST. LAWRENCE CONCENTRATION  
SOLAR POWER  
CHURCHILL COUNTY, NEVADA

## Minutes from the March 13, 2013 Planning Commission meeting on Concentrated Solar SUP

much less than \$800/month. With the amount of farm equipment on most farms, I don't think your septic pumping truck would be out of character one bit.

4. If you didn't have all of the options available, I would be more sensitive to the points raised by Member Kohltfarber. But I think there are better places you can put the truck. I think there are better ways that you can mitigate your expenses. Talk to the people around here that you know who have dairies or farms and see if you can park your truck on their property for a certain timeframe until you can get your shop up and running on the Reno Highway.
5. Because of the potential for negative impacts on the community, I don't feel that I can support your application.

**Motion:** Based on the information provided in the application and heard tonight, it appears that the application for a special use permit for a septic business at 1777 Rice Road does not meet the criteria of Churchill County Code. The business will be detrimental to the neighborhood and adverse environmental impacts may happen. Therefore I move to deny the application for a special use permit at 1777 Rice Road, with the caveat that you may operate the office for your business from the home. **Action:** Deny, **Moved by** Vice Chairman Tom Lammel, **Seconded by** Member Charlotte Louis, **Vote:** Motion passed (summary: Yes = 5, No = 1, Abstain = 0).

**Chairman Richardson** thanked Mr. Marshall and advised him that there is a ten-day appeal period and to contact the Planning Department for further permitting procedures. Mr. Marshall asked if he would be prohibited from bringing the truck to his house to change the oil or to wash the outside of the truck; he wanted to know what he was allowed to do. **Chairman Richardson** noted that the Commission denied the request to run the business from his home and to park the truck there. If a neighbor sees you washing the truck and calls the County because they think you are running the business from his home—that is their right. You might let the neighbor know you just want to wash your truck or change the oil, and that might be alright.

**Planning Director Johnson** handed Mr. Marshall a copy of the appeal process from the Churchill County Code.

**8:03 p.m. EGP STILLWATER SOLAR, LLC** – An application for a **special use permit** for property located near 4785 Lawrence Lane, Assessor's Parcel Number 009-032-30 consisting of 234.96 acres of non-water righted property in the A-10 land use district. The applicants are applying for a special use permit under section 16.08.150(D) of the Churchill County Code to construct and operate a research and development Concentrated Solar Panel (CSP) facility for the purpose of boosting the temperature of the geothermal brine entering the existing Enel Stillwater, LLC geothermal power plant. This project will be the first of its kind, located on 27 acres adjacent to the existing Enel Stillwater LLC geothermal power plant, just north of the existing EGP Stillwater Solar, LLC Photo-voltaic (PV) facility. This solar project will utilize the existing infrastructure of the geothermal power plant and PV facility to the extent technically and economically feasible.

**Ashley Smith of Enel Green Power** at 1755 East Plumb Lane, Suite 155, Reno, NV 89502 introduced herself and **Lorenzo Angelini of Enel North America**. Basically we are proposing a research and development project right next to the existing geothermal power plant. It is a concentrated solar panel facility, it uses mirrors that track the sun and focus the sunrays onto a tube that heats the secondary fluid, which is mineral water. This is a closed loop system that goes through the heat exchanger to use the solar energy to boost the temperature of the geothermal brine entering the plant. **We don't have the final version of the Reflectivity Study, which is required.** We have the draft copy and NAS Fallon reviewed it.

**Chairman Richardson** asked for any public comments or questions.

**Candy Peck** of 4500 Freeman Lane read a prepared statement, "I'm here to protest construction of more solar panels. The County Planning Commissioners have not conducted a thorough environmental impact study on what it would do to the surrounding neighbors. The rushing in of construction on the first 200 acres of solar panels has had significant impact on me and my ranching. Contact with the County Planning Commission investigation concluded that it was no more problem than the sun's glare. But scientifically research does conclude that the sun's glare can and does cause significant problems. All parties concerned know about the different risks that can arise from the solar usage. The County should help minimize the impacts by doing a complete study before permitting further construction. Thank you." **Chairman Richardson** asked Mrs. Peck what her particular affects or concerns were that she was experiencing. **Mrs. Peck** testified, from May 18, 2012 to September 17, 2012 there is a total glare, when you're driving tractors in it, you are almost blinded. It starts at 5:50 pm and lasts until about 6:30 or 7 pm, which is a long time when you're on a tractor. Enel has had a 'blind ear' to the neighbors. They don't want to hear from us except when they want a special use permit. Your Code Enforcement Officer, Mr. Whimple said it was nothing more than a sun glare. We drove in today with a sun glare and we almost had a wreck. **Vice Chairman Lammel** asked Mrs. Peck what the glare was coming off of; **Mrs. Peck** said it was coming off of about five or six of the solar panels. We have a 500 acre ranch and every afternoon during that timeframe it goes clear down to the end of the ranch.

**Mike Weishaupt** stated that he was representing Karl and Betty Weishaupt of 3775 Lawrence Lane. You're going to heat this water. What impact will this have to our wells? We have lost water pressure, temperature and volume. We have expressed this to Enel and received no response. We are currently in the process of turning up the pressure on the well a third time and we think we're going to have to put a pump on the well. Will this heating of the water increase or change the volume of pumping? Will it change the injection? What is it going to do to the area?

**Cliff Newmyer** of 4110 Portuguese Lane said the biggest problem we have had and continue to have is with the noise. We had a huge problem with the noise from the turbines for a long time and Enel had to work and work and work to get that down. We still have a lot of evaporator fan problems and you're going to increase the temperature of the fluid. Even if it is a closed loop system as she said, you're going to have to cool, so the evaporating fans will have to run more. How much more? With the limited amount of brine they are getting in there right now it is not too bad. But when this solar plant increases the heat you're going to have more fan noise. Will they run all night now? These are not variable fans like they said they would put in. What they had to do was stack more height on the tubes on the evaporators, which kind of reduced the noise. I've got bad ears and I can still hear the plant at night. Will the parabolic mirrors be fashioned north and south or are they going to be turning? Are they going to be flashing towards my area? Am I going to have to put up with a lot of glare? It may not be anything to the Navy, but they are flying over it at 10,000 feet while I'm less than ¼ of a mile away. Are they going to use more brine? They have not provided you with an environmental impact statement. We have a lot of geese and swans that fly over out there. Has anybody looked into the effect on migratory birds? We attended many meetings over the noise from the turbines, and when we step outside it isn't beating our chest like it used to, but you still hear it. So this is important to us.

There being no further public comments, **Chairman Richardson** turned the discussion over to the Planning Commission.

**Vice Chairman Lammel** had the following questions:

1. The sun does track on these basically convex lines of mirrors with a certain point that absorbs the energy being collected by the little mirrors. What goes beyond this little point where sun is absorbed? **Mr. Angelini** explained that the shape of the receiver tube actually amplifies the concentrated beam of light; it strikes the panel and reflects exactly on one point, six feet from the panel, into a tube where the light is absorbed into heat and then transferred to the water. If you will imagine, sticking your finger out in the spot where the maximum concentration of the sunlight is, your finger intercepts the brightest portion of the beam.
2. So there is no light that reflects beyond the tube that catches the beam? **Mr. Angelini** said that some portion of the beam will pass through, almost three inches, the intensity of the beam that is reflected disperses very quickly. In recollection of discussions with the Navy, 60-feet from panels the intensity of the light beam will be so low it will not affect any human practices. **Ms. Smith** added, think of it like a magnifying glass, it is bright in that one spot where you can catch leaves on fire, and then the light around it is still there, but it is not as bright.
3. Your application states that you're going to heat the geothermal fluid. Are you going to pump the geothermal fluid through that tube or are you going to pump another medium through the tubing? Will that be the pentane that you use in the geothermal plant? **Ms. Smith** said it will be mineral water going through the tubing. Similar to the geothermal system, the mineral water acts as the secondary fluid, the pentane, and goes through the heat exchanger. **Mr. Angelini** explained, the brine system is where water is collected from the ground and routed through the plant. We are going to intercept the geothermal fluid and connect it through the heat exchanger from the solar system. With the solar system we will have the mineral water and it will always be in the liquid phase, there will not be any vapor. There will not be any electrical power produced in the solar system, just heat power collected from the sun and used through the heat exchanger for the geothermal fluid that gets sent back to the geothermal plant.
4. Somewhere in the paperwork it says that 4 MW of power will be produced. But no power will be generated from the solar. Is that just an estimate for the boost you expect it to bring to the geothermal power plant? **Mr. Angelini** agreed and said that bringing up the temperature of the brine will bring about better cycling in the geothermal plant.
5. Nothing in the reflective solar field would be explosive or be a fire danger of any type, with the exception of perhaps hydraulic fluids? **Mr. Angelini** confirmed that hydraulic engines would turn the actuators for each mirror. Every little driver will be its own system, so there is not a substantial amount of hydraulic fluid that could leak.
6. In your information I seem to remember reading something about a fire truck. Do you have your own fire truck out there? **Ms. Smith** said there was a misunderstanding, we will have a fire truck onsite during construction, but we will not have one out there for operations.
7. Do you have a fire plan for the existing section that would train people for an emergency? **Ms. Smith** said yes. **Mr. Angelini** added that the fire system for the actual plant was designed for a worst case scenario. For the solar field we specifically decided to use water because it is environmentally friendly. By doing so we also avoided using mineral oil, which brings problems with fire and disposal, etc.
8. In your information provided you have, "The Department of Defense Primary screening Tool Long Range Radar Planning Results." It says red is highly likely to take an airplane out of

space or something. Can you explain this? **Ms. Smith** said that is a preliminary tool issued by the FAA. You put in the latitude and longitude for whatever you propose to build, and it gave us a response indicating that yes, there are critical communications in the area, there are airplanes in the area that could be impacted, you need to do the secondary study where you put in the height of what you are doing and more details. The secondary study was done, which resulted that there is no issue. The Navy has a draft report and they don't have any issues with our project. The Navy received the draft report before we did, so you don't have a copy.

9. With regard to wildlife, you state that this system is brand new technology for the purpose of heating water for geothermal plants. But these types of systems are used in other areas. What are your comments in regards to the potential impacts or interference to wildlife? **Ms. Smith** clarified that the technology being used with our existing facility to boost the temperature of the geothermal brine is the first of its kind anywhere. This technology is not the first of its kind. We have met with the USFWS and they had no concern as far as wildlife, they have signed off on it and we can get a copy of that to you.

**Member Louis** had the following questions:

1. Tom touched on this, but I want to go a little further. How will these panels affect the migration of birds in the area? And, have you checked with Nevada Department of Wildlife to see what kind of impact this will have? There are a lot of rare birds that migrate into the area. **Ms. Smith** reiterated we have spoken with USFWS and they were not concerned and signed off. We have not contacted the DOW, but if that is something the Commission wants us to do, we can do so. **Member Louis** recommended that since members of the public were concerned about the migratory birds that EGP should contact DOW and get a signoff from them for this project.
2. Are these panels like the ones they had down in Barstow, Solar 1 and Solar 2? **Mr. Angelini** said it is the same technology, but different panels; these are more advanced.
3. When they rotate, how much glare is there to the surrounding neighbors? **Mr. Angelini** said the whole solar field is going to be fenced with a 16-foot tall fence, with the slats of fabric material that will block the glare from the panels. The fence is installed as wind protection for these structures. **Ms. Smith** added, the Reflectivity Study shows that closest residents to the facility, there will be a glare 33-feet above his house during the summer solstice. So during the time that we have our longest days during the summer, there will be a glare and that just increases the farther out you get.
4. How many mirrors are going to be installed in this unit? **Mr. Angelini** said it will consist of 22 rows of 14 mirrors (308).
5. Do the mirrors move? **Mr. Angelini** said yes, the mirrors are placed on a north-south axis and they will chase the sun from east to west.  
How much does this make noise? **Mr. Angelini** said they basically don't make noise because 1) they are on a hydraulic system with a very small pump inside, it is all enclosed, and 2) the speed of movement is very slow.
6. Are you familiar with the solar units at Nellis Air Force Base? The units are on the separate stands and track the sun from the east to the west, but they aren't like the kind of panels that you have. Is there a reason you are not using that same free-standing system they have? **Mr. Angelini** said he was not familiar with the system she was referring to. Those are most likely photovoltaic panels, which means they are producing electricity. For us it is an economic choice, we don't have this kind of tracking system because it would not produce enough electricity to pay the cost for such a system, our system produces thermal energy. It is true

they make more power, but not feasible for our system. It won't make that much difference as the panels need to move to ensure it places a beam on the tube.

7. One gentleman was concerned about his well. How is this system going to affect his well? **Mr. Angelini** said there is not going to be any increase on the geothermal side, not in pumping, no increase in the amount of brine that is going to be injected. We are just heating the brine up, closer to what we expected to find in the geothermal fluid. This will make the plant operate better by increasing temperature of the brine closer to that which the plant was designed to operate at.
8. **How tall are these?** **Mr. Angelini** said the support pylons are 13 feet tall and if the panels are in an inverted position they reach 18 to 21 feet tall.

**Member Hill** had the following questions and comments:

1. It appears you have a plant that has not been operating efficiently and you are trying to improve the operation of the existing plant by using the heat of the sun to heat up the geothermal brine you are already using.
2. I noticed the plans show the fence you plan to install as being 20-feet tall; earlier you said the fence would be 16-feet tall. You said that the highest the panels would reach would be 21-feet, at a 90-degree angle. So the panels will extend a little taller than the fence.
3. Are these panels with the fencing less likely to cause reflecting glares to neighbors than the existing panels that are there now? **Mr. Angelini** said that if the mirror panel is standing vertical the light that is reflected will be pointed towards the ground. The edges of the mirrors are sharp cut, they are not rounded so you have a full 360-degrees. They are thin metal sheets and the fence will interfere and catch the glare, keeping the houses from catching the heat from the glare.
4. I toured the sight and I know you have a lot invested out there. What mitigation can you do with the existing system to help the surrounding residents? If you are going to increase power output, perhaps it would be feasible to deactivate a few of the panels in the existing solar field that are causing problems for the neighbors. **Ms. Smith** said they were notified of the glare in the summer months and they would be willing to insert slots in between the fences during summer months, and we would certainly be willing to do that for Mrs. Peck as well. Since she knows which panels are causing the glare and at what time, that makes it easier for us so we can easily insert those slots for her.
5. Last, if you find any remains out there, whether they are recent or older, please notify the Sheriff's Department either way, as a courtesy.

**Member Kohltfarber** had the following questions:

1. As I understand it you want to use these parabolic mirrors to heat the mineral water to heat the geothermal brine for the power plant. What noise impacts will there be on the cooling fans? Because the brine will be hotter, it makes sense the fans will run more. **Mr. Angelini** said this will increase the temperature of the brine by four to five degrees, just a slightly higher temperature in the cycle. This brings us closer to what the plant was designed for, which means the equipment will run better and more efficiently. When the brine has completed the process, it will still come out at the same temperature, so no change there. The speed of the turbines is fixed because we need to produce the electricity at a certain frequency, so from the turbines there should not be any difference. From the air condensers with the fans, the temperature comes out at the same temperature so the fans are not going to spin any faster. They are just loud machines. We are putting in 17 MW at peak, when the sun is up vertically in the sky, and those 17 MW are less than 10% than what is actually

going in at the moment. The brine carries 250-million btu's in the plant, and we are doing 17. That is why we are doing such a small step in temperature increase.

**Member Diehl** had the following questions:

1. How will this actually affect the wells and the sediment in the wells, since a lot of people reported drops in pressure, temperature, etc? A lot of the people out there heat their homes with their geothermal wells. **Ms. Smith** noted, as Lorenzo said earlier, the temperature increase will only be four to five degrees, it will not increase flow therefore the injections will not increase, nothing else will change. Therefore it is not going to impact residents' well pressure, temperature, etc. It just changes what is coming into the plant, everything will remain the same.
2. **Earlier you addressed the concern raised about the glare from the existing facility and inserting slots into the fence. How tall is that fence? Mr. Angelini** estimated that the fence was six feet tall. We probably will install banners on top of the fence where the glare goes through and hits the neighbors. This is minor intervention. **And although that is 'minor intervention', will it take care of the glare for them? Mr. Angelini** affirmed that it would, they will install barriers to intercept the glare.

**Vice Chairman Lammel** addressed the Findings of Fact necessary for issuing a special use permit:

1. *Is compatible with the existing surrounding land uses and development*  
The surrounding land uses are a geothermal plant, a photo-voltaic facility, and large agricultural parcels.
2. *Is in substantial conformance with the master plan and policies and will be constructed and operated in full compliance of this code*  
Chapter 6 of the Master Plan includes Goal ED 6: Encourage renewable energy opportunities that expand job creation and provide revenues that support public service services provided by Churchill County. I believe Churchill County is one of the top geothermal power producers in the nation.
3. *The project will be constructed and operated in a manner that will not overburden public services and infrastructure.*
4. With the addition of two employees, public services and infrastructure will not be overburdened.
5. *Adequately mitigates road and traffic impacts generated by the construction and build-out of the project.*  
The Road Maintenance Agreement addresses the impacts and provides for mitigation. You will repair the road, if necessary if there is any damage done to it while the 280 trucks throughout construction come to the property.
6. *Does not create adverse environmental impacts, including, but not limited to, noise, glare, fumes, and odor that may be detrimental either to public health, public safety, or general welfare of the persons or property in the vicinity or the wildlife and/or natural resources.*  
I will take these one at a time. Noise – I think your evidence proves that there is so little noise that it would be impossible to hear them if you are more than a few feet away from one of the units. You have a hydraulic unit with a little hydraulic fluid going through a little cylinder.  
**Glare – If there is a glare issue anywhere, I hope you will be proactive and take care of it.**  
**Odor – There is no odor, emissions or fumes coming out of something that shines. Nothing detrimental either to public health, public safety, or general welfare of the persons or**

property in the vicinity. There are no emissions, except possibly when you change the hydraulic fluid and you would dispose of that as necessary and in a proper manner.

6. During the construction phase I understand that you will have a company that is reputable and will not create a dust hazard, and that you will control the dust during construction. All of that is in your agreement, is that correct? **Ms. Smith** agreed that was correct.

**Member Hill** suggested that a wildlife study be completed in addition to the other studies that have been done. **Vice Chairman Lammel** verified that what Doug wanted added to the motion was that the DOW do a wildlife study whereas the USFWS has already commented on that. **Member Hill** agreed that was exactly his intent. The Commission agreed that this condition could be added to the motion.

**Motion: Recommendation:** A motion for approval should include: Based on the information provided in the application and heard tonight, it appears that the application for a special use permit for a concentrated solar panel facility to be located at 4785 Lawrence Lane in the A-10 land use district meets the criteria of Churchill County Code. Therefore I move to approve the application subject to the following conditions:

- That the Nevada Division of Wildlife is notified and does a study as to the wildlife issues, if there are any;
- Acquisition of a building permit from Churchill County Building Department to include the lighting plan;
- Approval of a grading plan from Churchill County Building Department;
- Acquisition of a Surface Area Disturbance Permit from Nevada Division of Environmental Protection, Bureau of Air Quality;
- Approval of a Storm Water Pollution Prevention Plan from Nevada Division of Environmental Protection, Bureau of Water Pollution Control;
- Approval of a Road Maintenance Agreement and Traffic Plan by Churchill County Road Department;
- Approval of a fire and emergency plan by Fallon/Churchill Fire Marshal;
- Review of the glare study by NAS Fallon and comments submitted to Churchill County Planning Department; and
- Compliance with Churchill County Code.

**Action:** Approve, **Moved** by Vice Chairman Tom Lammel, **Seconded** by Member Shawn Kohltfarber. **Chairman Richardson** clarified for the applicant, what we are asking is that you get the DOW to sign off on this as well as the USFWS, and you might be able to get them to correspond and share their information. We would like to get a statement from them saying that they do not feel this will be a detriment to our wildlife.

**Member Kohltfarber** asked the applicants if this extra condition was do-able. **Ms. Smith** noted that DOW does have regulations requiring notification to them if you are building a solar facility 5MW or greater. This notification costs \$50,000 just to let them know about the project. So if we can just speak with them and let them know that the USFWS reviewed it and what they said in a less formal fashion; that would be better. But to have to pay \$50,000 for a wildlife study when we already have an existing geothermal and solar facility adjacent to it, I can't say.

**Member Kohltfarber** asked Ashley if a review by DOW was part of the requirements for the existing solar field; **Ms. Smith** indicated that it was not. **Member Kohltfarber** noted that he seconded the motion so we could get to this part of the discussion, because I need clarification from this Commission as to what exactly we are requiring of the applicants. **Chairman Richardson** stated that his interpretation is, we are asking for confirmation from NDOW that

they are comfortable with what USFWS has done and that they would sign off that this will not be a detriment to the wildlife in the area.

**Vice Chairman Lammel** amended his motion for the portion on the NDOW that comments from the NDOW will be accepted, and if they are all positive there is no reason to do a study (That the Nevada Department of Wildlife review and sign off the plans in addition to US Fish and Wildlife Service), **Action:** Amend, **Moved by** Vice Chairman Tom Lammel, **Seconded by** Member Doug Hill, **Vote:** Motion carried by unanimous roll call vote (**summary:** Yes = 6). Next Chairman Richardson called for a vote on the amended motion, **Vote:** Motion carried by unanimous roll call vote (**summary:** Yes = 6).

**Chairman Richardson** thanked Ms. Smith and advised her that there is a ten-day appeal period and to contact the Planning Department for further permitting procedures.

**Vice Chairman Lammel** advised the public from the Stillwater area and the EGP representatives that the Planning Commission holds workshop meetings on the fourth Tuesday of every month, which might be appropriate for them to share some of the situations going on out there. I would like to hear some of these situations going on out there, especially with the water, for Stillwater people to come in. **Planning Director Johnson** asked the public to call the office or email us and we can look at scheduling a time for a meeting.

**Member Kohltfarber** asked the Planning Director to please be sure to involve and notify Enel for this workshop; **Planning Director Johnson** indicated that we would.

**DISCUSSION ITEM: Thomas Gillum** – 1240 Rolling Hills Road, status update on the monitoring plan and time frame for collection of baseline data for the Patua Geothermal Project northwest of Hazen. Chris Mahannah and representatives of Gradient (Patua I) are working out details on which wells are to be included, and when the monitoring devices will be installed on which wells. When the monitoring plan was approved it was with the condition that a monitoring plan would be in place and begun before the operation of the plant, but delays in working through the plan have been stretched over the past three months without resolution. This project received a special use permit in October 2010.

**Chairman Richardson** gave a brief synopsis of what has taken place so far. Patua was granted a special use permit in October 2010 with the requirement that they have a monitoring plan. The monitoring plan was approved at our December 2012 meeting. What the plan said, albeit in a flexible manner, we were hoping we could get 12 months of data before the project opened and in an ideal world that would have happened. But due to the difficulty of coordinating with the experts used by Churchill County and Patua, we've spent the last three months working out the details of how to start the monitoring plan. We quickly realized that we are not going to get a full 12 months of data. But after many discussions, emails and conference calls, we feel that we are at an understanding now where Patua realizes the importance of getting the data measured, monitored and to us as soon as they can, and in as great of detail and quantity of detail as they can. They are on board with that and they have selected certain wells. Originally we thought they were going to monitor wells that go down 5,000 feet; they did not understand the same thing. Their feeling was that they could drill some wells, maybe only 200-feet deep and use them as monitoring wells. We have gotten past that and there are deep wells out there which we will be able to monitor as well as some individual wells in the Hazen area, and by putting devices on those wells as soon as they possibly can to start collecting and compiling the data and let our expert take a look at it. We are pushing them to put these devices on the wells as quickly as possible. Mr. Gillum has a well that he wants measured and monitored, and I understand that

DOC # 433372

04-01-2013 09:11 PM

## Official Record

Recording requested by  
CHURCHILL CO. PLANNING

Churchill County - NV

Joan Sims - Recorder

Page 1 of 2 Fee \$15.00  
Recorded By: JHS RPT

APN 009-032-30 (Special Use Permit)

**NOTICE OF FINAL ACTION, DECISION OR ORDER  
OF THE CHURCHILL COUNTY PLANNING COMMISSION**

433372

TO: Ashley Smith  
EGP Stillwater Solar LLC  
1755 East Plumb Lane, Suite 155  
Reno, NV 89502

Pursuant to NRS 278.315, notice is hereby given that on the 13<sup>th</sup> day of March, 2013, A.D., the Churchill County Planning Commission upon making the findings of fact granted a:

Special Use Permit under Section 16.08.150(D) of the Churchill County Code to construct and operate a research and development Concentrated Solar Panel (CSP) facility for the purpose of boosting the temperature of the geothermal brine entering the existing Enel Stillwater, LLC geothermal power plant. This project will be located on 27 acres adjacent to the existing Enel Stillwater LLC geothermal power plant, just north of the existing EGP Stillwater Solar, LLC Photo-voltaic (PV) facility and it will utilize the existing infrastructure of the geothermal power plant and PV facility to the extent technically and economically feasible.

as authorized by the provisions of NRS 278.010 to NRS 278.630, inclusive, with respect to the following described property: Near 4785 Lawrence Lane, on a portion of Assessor's Parcel Number 009-032-30 consisting of 234.96 acres of non-water righted property in the A-10 land use district; a parcel of land situated in a portion of the northwest 1/4 of the northeast 1/4 of Section 1, Township 19 North, Range 30 East, M.D.B.&M.

**SUBJECT TO THE FOLLOWING CONDITIONS PLACED ON THE SPECIAL USE PERMIT:**

- That comments from the Nevada Division of Wildlife will be accepted, and if they are all positive there is no reason to do study (That the Nevada Division of Wildlife review and sign off the plans in addition to US Fish and Wildlife Service);
- Acquisition of a building permit from Churchill County Building Department to include the lighting plan;
- Approval of a grading plan from Churchill County Building Department;
- Acquisition of a Surface Area Disturbance Permit from Nevada Division of Environmental Protection, Bureau of Air Quality;
- Approval of a Storm Water Pollution Prevention Plan from Nevada Division of Environmental Protection, Bureau of Water Pollution Control;
- Approval of a Road Maintenance Agreement and Traffic Plan by Churchill County Road Department;
- Approval of a fire and emergency plan by Fallon/Churchill Fire Marshal;
- Review of the glare study by NAS Fallon and comments submitted to Churchill County Planning Department; and
- Compliance with Churchill County Code.

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EGP Stillwater SUP NOFA  
Page 2 of 2

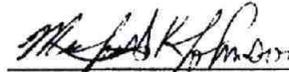
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Within twelve months of issuance of this notice, applicant must demonstrate that steps have been taken to enact this Special Use Permit. In the event that circumstances beyond the control of the applicant result in failure to complete applicable conditions and construct or commence the use prior to the expiration date, the applicant may, in writing, request one single extension for twelve (12) calendar months from the original date of inception. The applicant must submit this request to the Planning Department thirty (30) days prior to the expiration date. Failure to demonstrate enactment or submitting a written request for extension may result in termination of the special use permit.

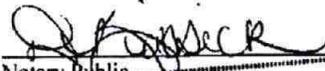
State of Nevada § County of Churchill

DATED: This 25<sup>th</sup> day of March, 2013, A.D.

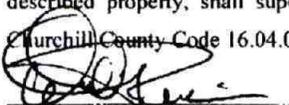
  
Michael K. Johnson, Planning Director

SUBSCRIBED and SWORN to before me

this 25<sup>th</sup> day of March, 2013, A.D.

  
Notary Public  
D. KISSICK  
Notary Public - State of Nevada  
Appointment Recorded in Churchill County  
No: 99-38138-4 - Expires April 27, 2015

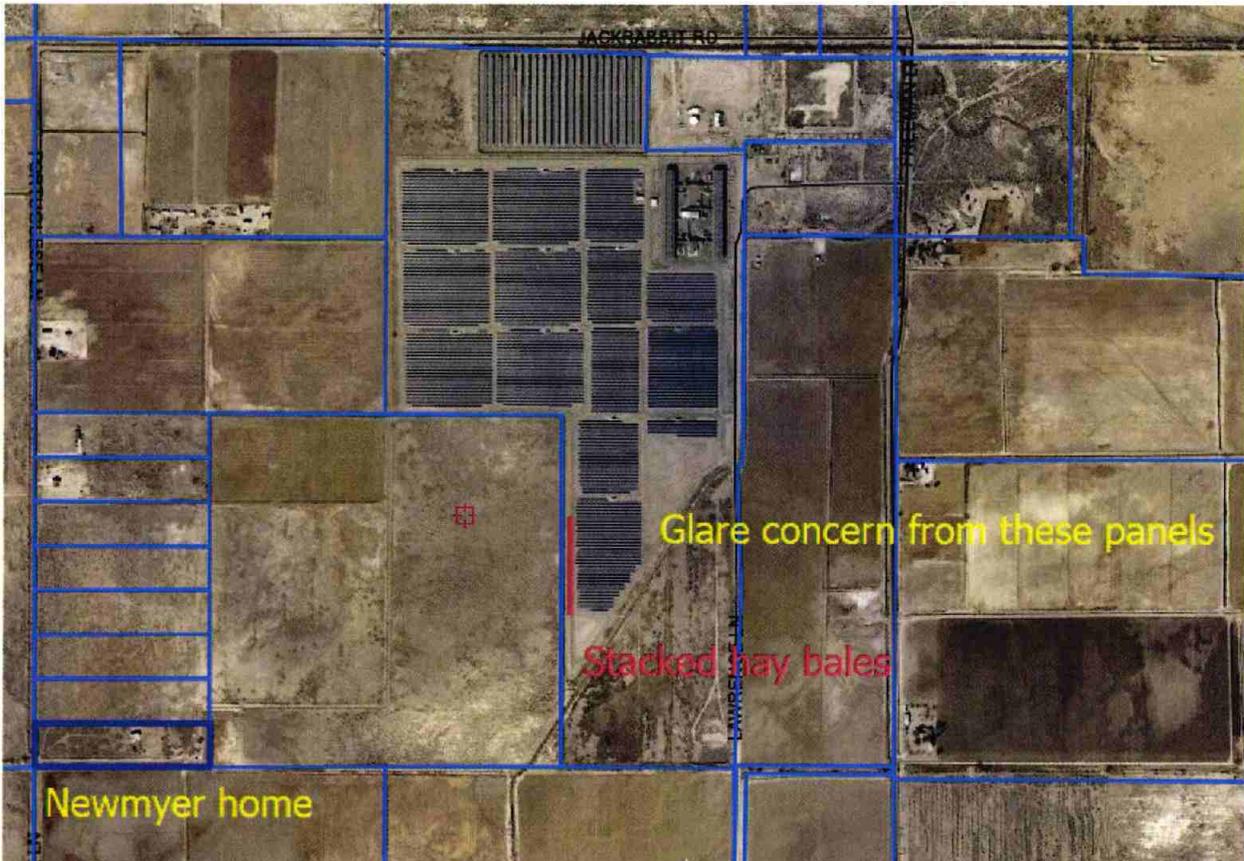
I, William C. Poice understand the conditions and terms placed on this special use permit and agree to comply with them as per this notice. Further, any/all other oaths, bonds, covenants, expectations, promises or conditions of use previously granted to the applicant pursuant to a special use permit, whether written or not, express or implied, are hereby merged with this special use permit; that this special use permit granted me, with its conditions and terms of land-use set forth herein, as applicable to the above-described property, shall supersede any/all other special use permit(s), previously granted me pursuant to Churchill County Code 16.04.020.C.

  
Signature

Date: 4/1/13

**NUISANCE COMPLAINT FILED BY CLIFF AND CHRISTINE NEWMYER  
CONCERNING GLARE FROM **STATIONARY SOLAR FIELD** LOCATED BETWEEN  
PORTUGUESE AND LAWRENCE LANES (APN 009-032-30)**

**Stationary Solar project.** Overall project with Newmyers property in the southwest corner



(Information pertaining to the issuance of the Special Use Permit in 2011 is attached in Appendix A which contains the Solar Glare study submitted with application, minutes from the Planning Commission hearing, Notice of Final Action, May 2011 Solar Glare study submitted later, letters from Enel and Churchill County's response to the letter, and draft minutes from the September 27, 2016 workshop to discuss new project glare study.)

In May 2015 the complainant contacted the Planning Department stating that glare from the stationery solar field was reflecting into their home and across their property. The complainant stated that glare was a significant issue from May-August each year. I visited the site on June 2, 2015 between the hours of 7:00 a.m. until 8:30 a.m. and observed glare from various locations on the property and in their home (photos at the end of this report are from complainants in 2016).

Following my visit, I contacted Bryan Stankiewicz and Ashley Smith of Enel North America to inform them of the complaint. On July 15, 2015, Bryan, Ashley and I drove around the facility to observe the glare and discuss potential mitigation measures.

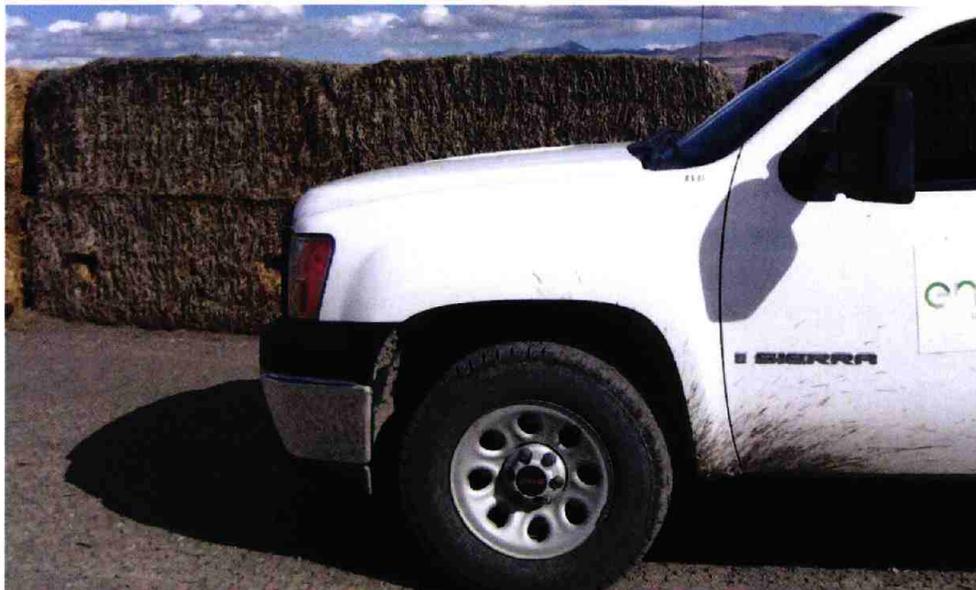
In October 2015, Bryan Stankiewicz reported to Michael Johnson that Enel had created a screened fence along the top of the maintenance road used by Enel west of the solar panels using T-posts and screening material that they hoped would rectify the situation.



The fence was approximately 4 feet tall. The complainant indicated that due to the time of year it would be impossible to tell if this mitigation measure was effective.

In May 2016 the complainant reported that the screen did not reduce the glare, and requested that something else be done. I again met with Bryan Stankiewicz in May 2016 and discussed possible ways to reduce or eliminate the glare from the Newmyer's home.

In June 2016, Enel moved a number of hay-bales, along their maintenance road between the project and the Newmyer's property.



The large hay-bales were double stacked and are high enough to mitigate the glare but Enel would need approximately 120 more hay bales to fully block the glare. The complainant stated that the glare had not been eliminated.

Enel continued to investigate other potential solutions such as acquiring more hay-bales, or creating a berm but, ultimately, informed the County in a letter received by email on July 26, 2016 that they had come to the conclusion that they would not do anything else to mitigate the glare (letter attached along with Churchill County's response letter).

During a Planning Commission workshop on September 27, 2016 to learn about the proposed solar glare study, Enel felt that the new solar project panels would block the morning glare from the existing panels based upon the fact that they track the sun. These panels begin each day at a 60 degree angle in the morning which places their height to approximately eleven feet tall. (It is expected that eleven feet would block the existing panels from view.) As the panels track the sun, they will slowly rotate until they are at 60 degrees in the other direction. If the panels are eleven feet tall as the sun comes up, they are hoping that they will block the existing panels until after 8:00 a.m. therefore eliminating the glare.

**Below are photos from the Newmyer's**

Photo received April 26, 2016



Photo received April 26, 2016 from Newmyer patio



Photo 2 received April 26, 2016 from Newmyer patio



Photo May 1, 2016 from eastside of Newmyer home



May 1, 2016 photo from inside Newmyer home



May 1, 2106 photo from outside of Newmyer home



Photo received June 15 2016 inside Newmyer home



Photo 2 received June 15, 2016 from inside the Newmyer home



**APPENDIX A****Contents**

- 1: 2011 Glare Study
- 2: Minutes from the May 11, 2011 Planning Commission meeting for the Special Use Permit application
- 3: Notice of Final Action
- 4: 2011 Glare Study (not part of the original application)
- 5: Letter from Enel Stillwater Solar
- 6: Letter from Churchill County to Enel Green Power North America
- 7: Minutes from the September 27, 2016 Planning Commission workshop held for a discussion regarding the Glint and Glare Study for EGP Stillwater Solar PVII, LLC Solar Project prepared by Westwood Professional Services

# 2011 Glare Study



Impacts of Reflected Sunlight on Potentially Sensitive Receptors  
**EGP Stillwater Photovoltaic Solar Project**  
 Churchill County, Nevada

**MARCH 22, 2011**

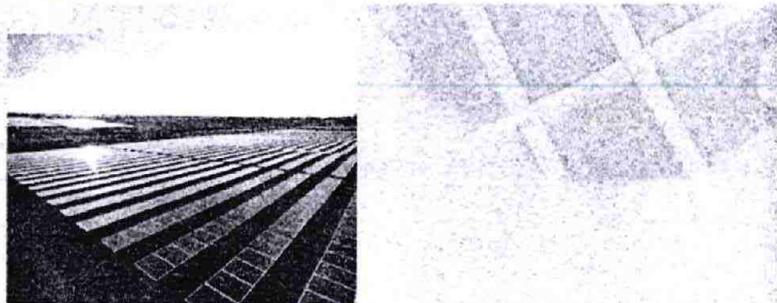


Photo-voltaic (PV) panels are specifically designed to maximize absorption of incident sunlight to efficiently convert sunlight energy to electrical energy. PV panels frequently have low reflectivity coatings and matte finishes to enhance absorption and facilitate energy conversion. At high incidence angles, some low-intensity specular reflections (glint) may occur accompanied by more diffuse reflected light (glare).

Prepared For:

EGP Stillwater Solar, LLC  
 1755 East Plum Lane, Suite 155  
 Reno, NV 89502



Westwood

Impacts of Reflected Sunlight on Potentially Sensitive Receptors  
 EGP Stillwater Photovoltaic Solar Project  
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**LIST OF EXHIBITS**

- Exhibit 1 Project Location
- Exhibit 2 Site Configuration, Sensitive Receptors

## 1 INTRODUCTION

### 1.1 Reflective Characteristics of PV Solar Panels and Infrastructure

Specular reflections (glint) and diffuse reflections (glare) of incident sunlight are associated with photovoltaic panels for utilities-scale solar facilities to varying degrees. Sunlight reflections are much more problematic with concentrating solar technologies use highly reflective mirrors in parabolic configurations to direct and concentrate the sun's rays. Glare from highly mirrored surfaces can be extremely bright and cause "flash blindness" similar to looking at the sun's reflection directly in a mirror.

However, photovoltaic solar panels employ semiconductors that react with photons in sunlight to produce electricity. PV panels maximize the absorption of sunlight to increase the conversion of solar to electrical energy. For this reason, solar panels use dark materials, and frequently employ matte surfaces, and non-reflective coatings to further reduce reflections and maximize absorption.

Reflectivity characteristics of photovoltaic panels are described in Figures 1 and 2.

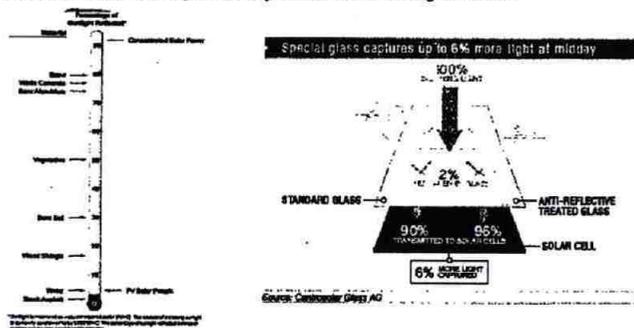


Figure 1. A. Percentage of sunlight reflected from various materials including concentrated solar and PV. B. Comparison of PV panels constructed with standard glass vs. those constructed with anti-reflective treated glass.

The data provided in Figure A show that PV panels are similarly reflective to water with very low reflected light values at high angles of incidence. The data provided in Figure B show that the reflected light at high angles of incidence can be reduced from 85 to 2% by adding an antireflective coating. Recent investigation (Protogeropoulos and Zachariou, 2002) quantitatively compared reflections from solar panels to other reflective substances in the environment. They concluded that reflections coming from PV modules are significantly less intense than reflections from surrounding construction or objects, particularly those coming from vehicles and other commonly used materials. Thus, similar to water, reflected light would only be expected to be a problem at low angles of incidence.

### 1.2 Design of PV Solar Projects

Concentrating solar projects that employ mirrored, highly reflective surfaces have known potential reflectance issues (Ho et al., 2009, 2010) that are considerably different from PV projects (Federal Aviation Administration, November 2010) and will not be discussed further because the Stillwater Solar Project employs arrays of PV panels.

To generate and supply electricity for utilities-scale solar power projects, PV panels are components of a much larger photovoltaic system called a photovoltaic array. The photovoltaic array frequently covers several acres and may be oriented to the sun's rays to maximize incident radiation for the conversion of light energy to electrical energy. Because the characteristics of sunlight vary with the locations on the earth, the optimum PV Panel orientation changes with location. PV panels are typically strung in parallel ranks or rows and are separated to ensure that one rank of PV panels does not shade adjacent ranks during periods of optimal sun intensity. PV panel designs that rotate panels to optimize incident solar radiation exist, however, it is more common to design panels with a fixed orientation and tilt to maximize incident solar radiation across the entire year.

Reflectance of sunlight from PV panels is generally thought to be a problem at lower angles of incidence because of the high demonstrated absorbance of PV panels at high solar incidence angles. Numerous reflectance studies for small to large PV solar projects associated with airports have confirmed that glint associated with PV panels does not produce problems with flash blindness to pilots and/or issues with glint and glare on airport control towers (Federal Aviation Administration, November 2010). PV solar projects have been successfully implemented at the following airports (DeVita, September 16, 2010) with minimal to no adverse effects.

- Bakersfield, CA (745 Mw)
- Boston, MA (200 kW)
- San Francisco (445 kW)
- Oakland (756 kW)
- Fresno (2 mW)
- Albuquerque (438 kW)
- Denver (3.6 mW currently, additional 2 mW planned)

### 1.3 Geometric Determination of the Characteristics of Reflected Sunlight from Sloping Surfaces

Potential adverse impacts associated with reflected sunlight associated with PV and concentrated solar projects have been evaluated using several methods summarized in Federal Aviation Administration, November 2010:

1. A qualitative analysis of potential impact in consultation with agency officials,
2. A demonstration field test with solar panels at the proposed site,
3. A geometric analysis to determine days and times when an impact is predicted.

Geometric studies are the most technical approach for reflectivity issues. Studies of glint and glare employ geometry of reflected light rays and the known path of the sun to predict when sunlight will reflect off of a fixed surface (e.g. a solar panel) and contact a fixed receptor (e.g. a residence or road intersection).

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### 1.3.1 Determining the Vector Location of Incident Sunlight

The sun's apparent path across the sky changes slightly every day in known and predictable ways depending on the location of the subject area on the earth and date of the year. At any given instant the sun's position in the sky can be described by a directional vector characterized by an azimuth and an elevation. An azimuth is defined as the angle of the sun's position from due north in a clockwise direction. For example if the sun rose exactly in the east and set exactly in the west, the azimuth of the sunrise would be 90 degrees from north, and the sunset would occur at 270 degrees from the north. The sun's elevation is defined as the degrees of the sun's orb above the horizon at any instant in time. Other azimuth conventions consider azimuth from north to south along the east half as ranging from 0-180 degrees, and along the west half as ranging from 0 to -180 degrees.

Sun path chart diagrams plot the azimuth and elevation of the sun at any instant in time for any location on the earth. A sun path chart is provided for the latitude and longitude of the Enel Stillwater Project in Figure 2.

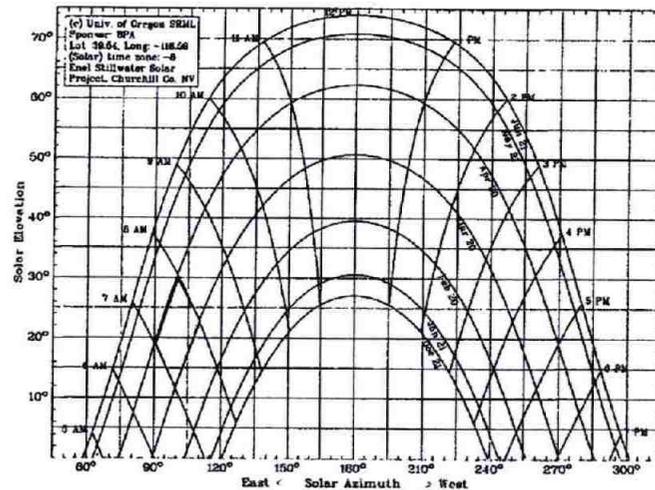


Figure 2. Solar path chart plotting solar azimuths and elevations as a function of time and date for the location of the Enel Solar Project, Churchill County, NV. The sun's path for a given date is in blue and the time during which the sun is at a specific location in the sky is in red. For the location of a given receptor such as a residence, the solar elevation and azimuth where reflections would be received at the receptor can be calculated and plotted on the solar chart. For example, for the hypothetical receptor shown in red, reflected light would only be received when the sun is between 90 and 110 degrees azimuth (from north) and at an elevation between 12 and 30 degrees

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elevations. From the chart this would occur between 7 and 8 AM between the dates March 20th to April 20<sup>th</sup>.

### 1.3.2 Sunlight geometry

The determination and characterization of the geometry of incident and reflected light is a mathematical process that based on angles and vectors in three dimensional coordinate systems. Light reflected from a surface is described in Figure 3a and shows that reflected light is symmetrical about the normal of the surface. All methods used to calculate the path of reflected rays use assume this symmetric condition.

Incident light of angle  $h_1$  and azimuth  $\Phi_1$  is reflected across the normal at angle  $h_2$  and azimuth  $\Phi_2$  where  $h_2 = -h_1$  and  $\Phi_2 = -\Phi_1$ . Note that the azimuth and angle of the reflected and incident light rays is relative to the normal of the example surface. Solar angles and azimuths from the solar path chart are based on a coordinate system that includes the plane of the earth's surface. Vector transformations are used to convert azimuths and angles from one coordinate system to another (Figure 3b).

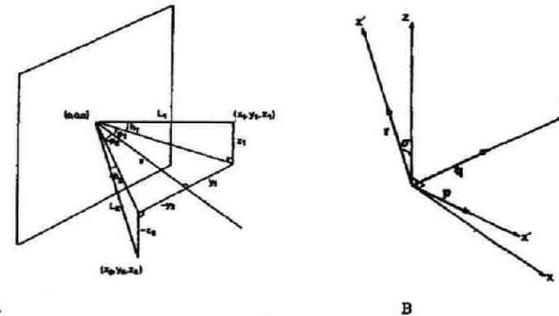


Figure 3. (A) The geometry of the reflection (L2) of an incident ray of sunlight (L1) from a vertical reflective surface showing symmetry of reflection about the surface normal. (B) reflections from a sloping reflective surface are related to the vertical by translating the vertical coordinate system to the sloping coordinate system using vectors.

Littlefair (1987) developed a geometrical method to determine the timing of solar reflections (called dazzle) from flat, sloping surfaces to a receptor that is applicable to the estimation of potential glare and glare associated with static PV panels. Littlefair selected a sloping, reflective facade and calculated the angles and azimuths of a reflected ray from the corners of the surface to a receptor, and then transformed these azimuths and angles to solar azimuths and angles present on a solar chart. When plotted, the area within the polygon outlines by the transformed azimuths provides the times and dates where reflections from the sloping surface of interest are potentially received at the receptor. Consult Littlefair (1987) for details on the method.

The methods of Littlefair (1987) are particularly appropriate for considering the period of time reflected light from a limited number of reflecting surfaces illuminates a limited number of receptors. The method becomes very cumbersome when considering a large number of reflecting surfaces and a number of

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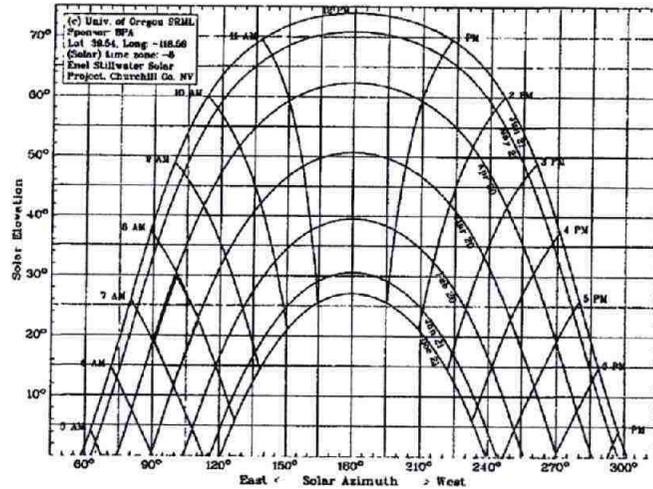


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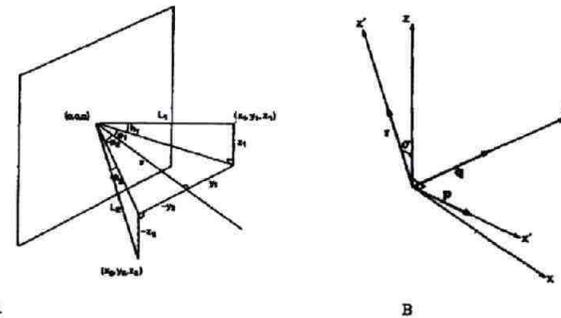


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receptors with different location. Recent reflectivity studies for PV panel arrays uses computer simulations of sunlight geometry at varying times of the year to assess reflectivity characteristics at receptors.

## 2 PHOTOVOLTAIC PANEL CHARACTERISTICS AND PROJECT CONFIGURATION: STILLWATER SOLAR PROJECT

The Project proposes to use 71,442, 6.45 by 3.25 foot CNPV-280P solar panels in ranks separated by 26.18 feet on center and arranged in a series of irregular rectangular units covering approximately 95 acres (Exhibit 1). Panels will be stacked two high (portrait configuration) and inclined 30 degrees from the horizontal in east-west oriented ranks with the panel normal oriented due south (Exhibit 1). As installed, the panels will range from 3 feet off the ground at their lowest point to approximately 9.46 feet off the ground at the highest point (Figure 4).

### 2.1 Geometric Characteristics of Photovoltaic Panel Configuration and their Influence on Perceived Glint and Glare: Stillwater Solar Project

With respect to assessing the impacts of reflected sunlight associated with the PV panels for the Stillwater Project, the following considerations apply.

1. Perceived glint and glare are based on line-of-sight from the reflective surface.
2. The magnitude and duration of glint and glare reflections will be related to the height of the observer. When the height of the observer is less than 9 feet and the landscape is flat, only one reflecting rank of PV panels will be visible at a time. Panels south of the observer will be facing the opposite direction and oriented so as not to reflect light back to the observer. The majority of panels to the north of that directly opposite from the observer will be blocked from view by the visible rank.
3. Stationary receptors that are below the top height of the PV panels will only see glint and glare from those panels whose reflective surfaces are visible from that location. The glint and glare will move as the sun moves until the azimuth and elevation of the sun's rays are such that reflections are no longer received at the stationary receptor.
4. However, because the orientation of each rank is exactly the same, each rank will reflect glint and glare at the same angle for the same time increment and given azimuth and elevation angle of the sun. Thus, if a car with the observer at a height below the highest point of the PV rank observes a solar reflection, the same reflection at the same relative location will be observed as the car proceeds parallel to the PV ranks.
5. As the height of the stationary receptor increases above the height of the PV rank, progressively more of the area of adjacent ranks can be observed. At low heights the majority of the PV panel area of successive ranks is blocked, but as heights increase progressively more of the reflective area of the full array becomes contributing.

### 3 GEOMETRIC ASSESSMENT OF POTENTIAL GLINT AND GLARE REFLECTANCE FROM PROJECT PV PANELS ON SPECIFIC RESIDENCES

Eight residences are within one mile of the proposed Stillwater Solar Project (Exhibit 2). Approximate distances of residences to the closest panels of the PV array are in Table 1.

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Table 1. Residences within 0.5 miles (1290 feet) of the project boundary.

Residence Number	Distance to nearest PV Array	Direct of Array from Residence	Notes
1	1830	East	
2	2580	East	
3	2620	East	
4	3105	East	
5	1260	North	
6	2500	North	
7	1480	West	
8	1440	West	
9	1730	West	

Residences 1 through four lie between 2000 and 2,500 feet to the west of the proposed Project, residences 5 and 6 lie between 1,000 and 2,000 feet east of the Project, and one residence lies approximately 1,500 feet to the south of the Project. Implications for residence locations relative to reflections from the project include the following:

1. Residences one through four could potentially receive reflections only in the morning because they are west of the Project area.
2. Residence five and six could receive reflections during the day because they are to the south of the PV array.
3. Residences seven through nine could potentially receive reflections only in the evening because they are east of the Project area.

### 3.1 Geometric Assessment: No reflections south and north of the PV array (Residences 5 and 6).

No residences are within 1000 feet of a PV array. When at a 30 degree incline, the PV panels appear to an observer on the ground as approximately 6.5 feet wide, or approximately the height of a tall man. At one to two thousand feet the panels would be visible as a very narrow long linear feature very close to the horizon. In terms of degrees, the angular size of the PV panels would be 0.372 degrees.

Using the methods of Littlefair (1987) described above, the data suggest that there is no realistic sun position that would place a reflection at the level of a house 1000 feet south of a PV array. This also makes sense using simple geometry. The azimuth and elevation of the sun at the summer and winter solstice and the spring and fall equinox is in Table 2.

Table 2. Sun elevation and azimuth at the summer and winter solstice and spring and autumn equinoxes.

Season	Noon Elevation (degrees from horizontal)	Noon Azimuth (degrees east of north (positive) and west of north (negative))
Summer Solstice	73.9	-176.3
Winter Solstice (December 21)	27.0	-178.0
Spring Equinox	50.2	179.4
Fall equinox	51.3	174.9

At the latitude and longitude of the Project, the sun is usually in the southern hemisphere of the sky, ranging from a maximum elevation of 73.9 degrees at noon on the summer solstice to a minimum elevation of 27 degrees at noon on the winter solstice. Given this geometry, the only way reflected sunlight could illuminate a receptor near the midpoint of the PV line would be if the sun was well into the northern hemisphere during midday, which is outside of the envelope of sun elevations and azimuths. Thus residences 5 and 6 would not receive reflections from the planned Project PV panel array.

**3.2 Assessment of the Timing and Magnitude of Reflected Sunlight on residences using Ecotect Computer Simulation**

Ecotect is a sustainable development program from Autodesk™ that has extensive solar shading and reflection assessment capability. The program takes a to-scale 3D rendering of a project area including buildings and natural features and places it in proper north-south orientation in geographic coordinates. The program then incorporates sophisticated solar ray plotting subroutines to evaluate the impact of shadows, insolation (exposure to the sun's rays), and solar reflections to optimize building design climatic considerations. Ecotect was used to evaluate potential adverse effects of a large PV solar project on the operations of the San Antonio Airport (Symphysis Staff, 2010). Figure 5 shows the Stillwater Enel Project placed into the appropriate geographic coordinates and showing the annual applicable envelope of annual variations in solar elevation and azimuth.

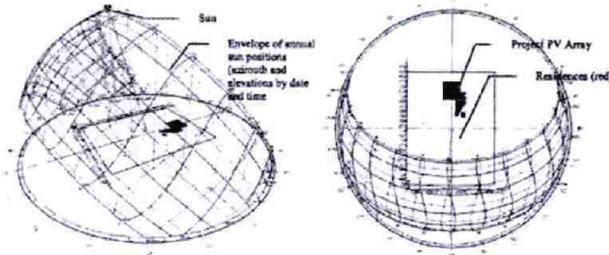
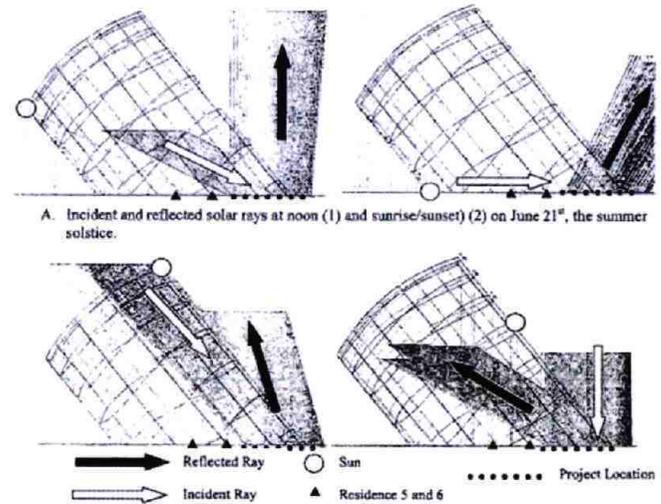


Figure 5. Plan and perspective views of the Enel Stillwater PV array and associated residences at noon on June 21<sup>st</sup> (summer solstice). Note that the annual sun path in the plan view shows the sun's elevation being in the northern quadrant from approximately 3:45 PM to sunset (7:19 PM; 3 hours, 45 minutes) and sunrise (4:31 AM) to 8:15 AM (3 hours 45 minutes) on June 21<sup>st</sup>. The sun stays entirely within the southern hemisphere (elevation < 90 degrees) between March 28<sup>th</sup> and September 20<sup>th</sup>.

**3.2.1 Residences South of the Project Area**

The observation that residences 5 and 6 that lie south of the Project would not receive reflections from the PV array (Section 3.1, above) are confirmed by the Ecotect solar simulation analysis that indicates that at no time are solar reflections at an angle that would intercept residences 5 and 6 (Figure 6, below).



A. Incident and reflected solar rays at noon (1) and sunrise/sunset (2) on June 21<sup>st</sup>, the summer solstice.

B. Incident and reflected solar rays at noon (1) and at 8:15 AM/4:10 PM (2) on December 21<sup>st</sup>, the winter solstice. Between 8:15 and 4:10 PM the sun is in the southern hemisphere and can provide reflections off of the panel surface.

Figure 6. Side view of the yearly envelope of solar radiation and PV panel reflected solar rays for the Project Area. North is to the right of the diagram. The data show that no reflected solar radiation is received at residences 5 and 6 at any time during the year.

The diagram shows that as the sun moves through the full yearly envelope of position in the sky, reflected rays are at all times well above the residences. During the winter when the sun is lowest in the sky, contained entirely in the southern sky quadrant, and days are short, the reflections are directed upwards by the PV Panels that are inclined 30 degrees to the south. During the summer, reflections that would occur late and early in the day when the sun is in the northern sky quadrant are precluded as the sunlight hits the back of the PV panels. If reflections did occur, they would be directed downwards. When the sun is in the southern quadrant, the reflected rays are again too high to illuminate residences 5 and 6.

**3.2.3 Residences East of the Project Area**

Residences 7, 8 and 9 are located east of the Project area and would only receive reflections when the sun is in the western quadrant of the sky. Reflections during the morning when the sun is in the eastern quadrant are directed to the west.

Section 3.2.2 is missing (Michael 2016)

Impacts of Reflected Sunlight on Potentially Sensitive Receptors  
EGP Stillwater Photovoltaic Solar Project  
Churchill County, Nevada

An analysis of the geometry of reflections from the PV array performed in Ecotect indicates the following important characteristics when considering glare:

1. Residences 7, 8, and 9 can receive direct illumination by light reflected off of PV Panels.
2. The illumination occurs for a very short period of approximately 10-15 minutes and always between 7:00 and 8:00 PM, regardless of the season. Glare occurs earlier (~ 5:00 PM close to the Summer Solstice, and later (~5:45 PM during mid-March and mid-September) (Figure 7).
3. This glare occurs during evening hours when the sun is low in the western portion of the sky. Direct glare on the potentially affected residences from the incident sunlight during this time would be significant and may mask the adverse effects of PV glare during the short time it would occur.
4. No reflections are possible between the middle of September to the middle of March because the reflected solar rays during daylight hours are well above the residences in question (Figure 8).
5. The azimuth angles for reflected rays illuminating residences vary and increase between March 15 to the Summer Solstice (June 21<sup>st</sup>) and then decrease from the Summer Solstice to the approximately mid-September, when glare at the residences ceases.
6. The size and width of the reflected rays at varying azimuths results in Residence 7 receiving potential reflected glare from the beginning of May to the middle of August, Residence 9 receiving glare during two periods: (1) from the middle of March to the middle of May, and (2) the beginning of August through the middle of September. Residence 8 would receive glare from the middle of March through the Middle of September (Figure 9).
7. Glare would only be received from the reflecting surfaces that are within the line of sight to the residence or receptor. Much of the reflected sunlight that could be received by the receptor would be intercepted by the adjacent PV panel strings.

Impacts of Reflected Sunlight on Potentially Sensitive Receptors  
EGP Stillwater Photovoltaic Solar Project  
Churchill County, Nevada

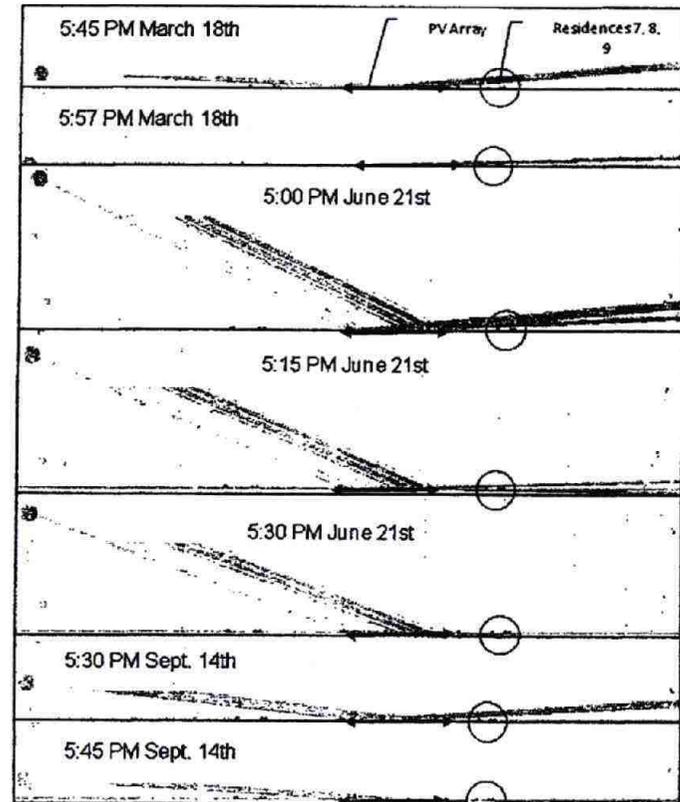


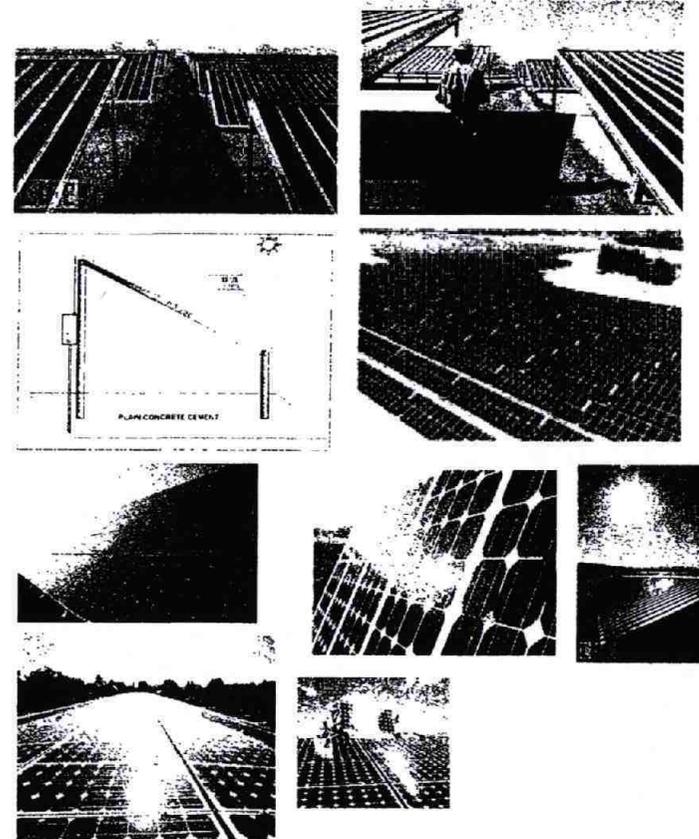
Figure 7. Ecotect analysis of the solar rays reflected off of solar panels indicates that potential reflections would occur for a short time (~ 15 minutes) between 5:00 and 6:00 PM. The viewing angle of the diagrams is due south of the project. West is to the left and east is to the right. Glare would occur for a short period at the eastern residences, and would be accompanied by direct solar glare.

Impacts of Reflected Sunlight on Potentially Sensitive Receptors  
EGP Stillwater Photovoltaic Solar Project  
Churchill County, Nevada

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Impacts of Reflected Sunlight on Potentially Sensitive Receptors  
EGP Stillwater Photovoltaic Solar Project  
Churchill County, Nevada



CHURCHILL COUNTY  
PLANNING DEPARTMENT  
155 N Taylor, Suite 194  
Fallon, Nevada 89406  
Phone (775) 423-7627  
Fax (775) 428-0259

Receipt #: 07274  
Paid By: ENEL NORTH AMERICA, INC.

Payment Date: 04/11/11  
Amount Paid 300.00

<u>Description</u>	<u>Amount</u>
ZONE CHANGE/VARIANCE	300.00

SUP APPLICATION FOR THE 5/11 PC MEETING

Payment by Check: 300.00      Check #: 14906      Bank #: 62-20

the permittee maintains Hornby Road from Milburn Lane to her gate; and the dogs will be kept indoors so there is unlikely to be excessive noise. Therefore I move to approve the application for a special use permit for a dog grooming business at 1925 Hornby Road subject to the following conditions:

- Acquisition and maintenance of a county business license.
- Maintenance by applicant of Hornby Road from Milburn Lane to the property to standards required by Fallon/Churchill Volunteer Fire Department for emergency access.
- Hours limited to Monday – Saturday, 8 am-5 pm.
- A total of two off premise directional signs may be placed on Hornby Road, Milburn Lane or Casey Road. Signs shall be no larger than 6 square feet and shall comply with Churchill County Code.
- Compliance with County Building Department regarding disposal of waste and wastewater; and
- Compliance with Churchill County Code, **Action:** Approve, **Moved by** Member Shawn Kohltfarber, **Seconded by** Member Charlotte Louis, **Vote:** Motion carried by unanimous roll call vote (**summary:** Yes = 7).

**Chairman Richardson** thanked Mrs. Morris and advised her that there is a ten-day appeal period and to contact the Planning Department for further permitting procedures.

**7:40 p.m. ENEL STILLWATER, LLC** – An application for a special use permit for property located at 4785 Lawrence Lane, Assessor's Parcel Number 009-032-30 consisting of 234.96 acres of non-water righted property in the A-10 land use district. The applicants are applying for a special use permit under section 16.08.150(D) of the Churchill County Code to construct and operate the Stillwater Solar Project, a 20 MW AC gross photo voltaic (PV) solar electrical generation facility. The facility will be located adjacent to the existing Stillwater II Geothermal Power Plant. The solar power plant will utilize the existing infrastructure of the geothermal power plant to the extent technically and economically feasible.

**Daren Daters, Compliance Manager for Enel Green Power** at 1755 E. Plumb Lane, Suite 155, Reno, Nevada said I'm mainly here just to make sure the residents that are present get any questions they may have answered. We are proposing a 20 MW solar power facility. I think our model is primarily to marry any geothermal project to solar, provided that we have the land control. It makes perfect sense to do this since we have all of the necessary infrastructure there, we own the land adjacent to the geothermal facility and it's a perfect fit to the Stillwater area. We will probably see more and more of this and I would not be surprised if we come back to do something similar at the Salt Wells geothermal facility as well.

**Chairman Richardson** asked for any public comments or questions.

**Tom Price, Green Path Renewables Development**, we're based at 241 East Ridge Street in Reno. We are in partnership with the Fallon Paiute Shoshone Tribe, who is working on developing renewable energy sources in their own area. As you know there are tremendous possibilities for renewable energy in this state and I think this is going to be a big part of Nevada's economic development. I came here straight from the Legislature today where we discussed some expanded renewable opportunities. The Tribe does not have a position on this yet, in part because the notice as I understand, was received by them very recently. Given the process by which information is discovered and decisions are made, there hasn't been the opportunity to fully review this. The intent would be to ask for a 120-day delay on this project to give them the chance to understand what the potential impact might be, because if

I'm not mistaken, this project impacts areas that are tribal lands, in the transmission aspect. This is unclear to me and I haven't had time to get my head fully around this; they contacted me about this yesterday. **Chairman Richardson** was not sure and said they would bring that out in the discussion tonight and whether or not we feel there is a justifiable reason to postpone this.

**Jutta Recktenwald** of 4995 Portuguese Lane, said my husband and I purchased land at end of Jackrabbit Road recently and the power plant was already there. We are not opposed to having the solar cells out there in addition to the power plant. For the gentleman who was up here before me, as far as I understand the technical aspect from the geothermal power plant, the infrastructure for getting the power from the geothermal plant is already in place and the geothermal plant is not producing as much power as the transmission line could transport. And adding solar cells to that will use existing infrastructure.

My concerns are how tall are these solar cells going to be? How much light will be needed for security at night? How long will the construction be? The additional traffic will impact the area during that timeframe. How many people coming in and out for maintenance of solar cells? The added traffic on Lawrence Lane or Portuguese Lane. Is the County prepared to repair those roads for us residents back there? Dust from moving that much land around is another concern. Are there any dust abatement plans? In the paperwork I received, the fence you designed around there seems to be prison fence with chain link and then barbed wire around the top. Is that really needed? When is the starting date? How long will the construction last? Will it be done in several phases? How much of the local work force will be employed to build and then maintain the facility? Do we have enough trained people in the county who can do this type of construction and maintenance? Is your company prepared to train people to do that?

**Eric Grimes** of 1335 Riverview Drive, **Executive Director of Churchill Economic Development Authority (CEDA)** said, I have to say that this project is something that I've been following and watching. I believe it is the only facility in the entire US marrying a geothermal power plant with a solar power plant, right here in Churchill County, Nevada. I think this says a lot for the technology that would be used in the renewable energy arena. And this puts us even more on the map because of companies like Enel, coming up with new methods and new technology to bring us up to the forefront in renewable energy. My biggest question is the number of jobs a facility like this will create. Where will the workers come from? Will we try to employ as many people from Churchill County as possible? I understand that any type of renewable project such as this has heavy capital investment at the onset, but once the facility is up and running it takes very few people to operate and maintain it. My concern is the local business owners have an opportunity to benefit from some of the work that will be needed. We have a lot of people in the construction industry that can pour concrete, bend and weld metal, etc. I realize we cannot force people to hire local businesses, but I would like to see the opportunity for as many local businesses as possible.

**Mike Weishaupt**, representing Karl and Betty Weishaupt who border the southern boundary of the property, asked how the solar panels would be arranged. Are they in a north-south or east-west direction? Traffic is a concern. Last time we experienced heavy traffic during the initial construction and then light traffic after that and I expect that will be the same situation for this facility. About three weeks ago an Enel vehicle almost hit me head on; he wasn't paying attention or whatever. Our little country community has been encroached upon by manmade industrialization. Another concern is regarding the alignment of those panels out there is that the drain ditches out there are becoming silted in. If the panels are going to be

taking up area like roof space and facing north-south, if they are aligned in such a way that they will have the rainwater concentrated to where it runs unto a gutter type runoff, it will cause sedimentation and silting with that southern drain. Our property is just off the edge of that. We've got issues right now with the drains getting plugged down there and the water is running off into our fields. If that drain gets plugged it runs into our field, so I want to know how that is going to be addressed. I don't want to have to deal with Enel at this point going forward on an issue like that. I would like to make a formal request that the BOR and TCID sign off on that, as far as agreeing to the project and whatever happens as far as the silting in of the drain right there.

There being no further public comments, **Chairman Richardson** turned the discussion over to the Planning Commission.

**Member Crowder** asked the following questions:

1. What will be the size and arrangement of the cells? **Mr. Daters** said the panels themselves will be faced north to south. They will be arranged roughly at a 30° angle, stacked 3 high, from the base to the top of the 30° panel will reach roughly nine-feet.
2. What about the lighting? **Mr. Daters** explained that the proposed lighting is on the perimeter fencing. There will be ten inverters spaced out in between the rows of panels that convert the DC power to AC and there will probably also be manually controlled lights at those locations that would only be turned on for maintenance, if needed.
3. How bright are the exterior lights? **Mr. Daters** said they would not be that bright, however we don't have them yet, so I don't have that information as of yet. **Chairman Richardson** asked for the neighbors, how tall the lights would be; **Mr. Daters** said they will be set up on top of the 6-foot chain link fence.
4. As far as the impact on traffic, I understand that you entered into a Maintenance Agreement with the County Road Department for Lawrence Lane during the construction. **Mr. Daters** said we did have a preliminary meeting with the Road Department to discuss the routing of the traffic, but we still need to work it out with them.
5. What will be the daily traffic after the construction is complete? **Mr. Daters** estimated 50-60 employees during construction on a daily basis. We expect the construction time to take anywhere from six to nine months.
6. When would construction start? **Mr. Daters** said we hope to start the project in August or September. We have additional permits we must first obtain from the County and the State. Before we do any dirt work we must get dust control permit from the County and the State. We also have to get a surface water/storm water prevention permit; that is part of the grading plan. We have done some preliminary geotechnical work on the site, which allows us to determine how much percolation the area and the soil will take. So to address **Mr. Weishaupt's** question, we have talked with the BOR about the drains and we absolutely cannot drain any surface water from the project into that drain. So based on the grading plan and the geotechnical report we will have a retention pond in the lowest portion of the property. The Capital Improvement Engineer for Churchill County had also requested some additional information and reporting on storm and rainfall and what we would do with that additional water. The outcome of that report was that we would need a retention pond to absorb that water or to handle the rainfall.
7. Dust impact? **Mr. Daters** said we will have a dust control plan in place and a dust control permit from County and the State.

8. Will the fence have barbed wire? **Mr. Daters** said yes, mainly for safety purposes as a deterrent to get inside the solar area so nobody gets hurt.

**Chairman Richardson** had the following questions:

1. How many additional people will be employed once the project is complete? **Mr. Daters** estimated three to four new staff once the project is constructed, in addition to the existing staff at the geothermal plant. We will eventually cross train the operator, electrician and the mechanic that we hire for the solar facility for the geothermal plant and visa versa.
2. And in response to **Mr. Grimes'** question about possibly hiring local companies to do some of the work? **Mr. Daters** indicated that he was not able to address that. We are going to hire a contractor to build the facility—I would hope that they place some adds in the local paper to hire some of these individuals from this community. But I don't have any control over that to try to address it.
3. And the employees for the maintenance of the solar field when it is up and running? **Mr. Daters** said we already have some adds on career builder, so anybody that sees that add can apply.

**Member Hill** had the following comment and questions:

1. I noticed in the information you provided to us that the Navy looked into the radar situation and the reflection from the panels and they do not see any adverse effect on Navy operations.
2. I also noticed that you are going to use the crystalline technology instead of the thin film technology—I don't know what the difference is. **Mr. Daters** explained that the polycrystalline technology is a PV or photo voltaic. The thin film is similar but it is less efficient and takes up way more surface area.
3. I know the residents enjoy their beautiful view of the moon and stars at night out there. So anything that can be done to keep the lighting to a minimum would be appreciated. Also make every effort not to shine the lights out towards the other properties.
4. I understand the panels will be fixed at a 30° tilt and facing north-south, so they will not move to follow the sun. **Mr. Daters** confirmed this to be correct. He added, from a lighting standpoint, we are very sensitive to the neighbors. We adjusted some of the lighting at the geothermal power plant and made sure they were shielded and focused down to the ground as not to impede on the neighborhood. We will probably do something similar for this area like a cap or a shroud over the light.

**Vice Chairman Lammel** addressed the findings of fact:

1. The surrounding land uses are agricultural, residential and the existing geothermal power plant. The remainder of area is farming. **Mr. Daters** concurred this was true.
2. Some of the area where you are putting this was previously in agricultural fields, but has not been farmed for a while. So some of the area has weeds that will need to be taken out and ditches filled in, is that correct? **Mr. Daters** concurred that it was. He clarified that there are some small, previous irrigation ditches and one BOR ditch that has since been abandoned and will be filled in.
3. The Master Plan promotes development of renewable energy projects and **Mr. Grimes** always says that this is the type of thing we want to do in Churchill County because it provides tax dollars and increases employment for the area.

4. As you are going to enter into an agreement with Churchill County Road Department to repair Freeman and Lawrence Lane, if you tear them up during construction. Mr. Daters confirmed that they would meet with the Road Department and will have that in place before they start.
5. The gentleman in the back asked about the transmission line and the lady stated the transmission line you will tie into is already in place. So there is no new infrastructure that way going in.
6. Is there any impact to the Tribal ground whatsoever during the construction or anything like that? **Mr. Daters** said no there would not be any impact to the tribal land, other than possibly along during Stillwater Road during the construction phase.
7. I believe the Navy has signed off that they do not see any impact from a reflective glare from the panels. From the audience John Dirickson of NAS Fallon was shaking his head no, they don't have a problem with it.
8. How about any effects or glare on commercial aircraft? I know when we were out there you said the purpose of the panels was to absorb the light, not to reflect the light somewhere else. **Mr. Daters** noted that they performed a reflectivity study and he felt the Pecks would be the most impacted. Mrs. Peck is here and she's welcome to come up and speak if she would like. **Based on the study, because of where the facility is and the mountain range, at that angle there is virtually no impact to the westerly neighbors.** When the sun comes up in the morning it's got to go over that mountain range. I mention the Pecks because they don't have any trees or covering between their house and where the solar field will be and their window faces that direction. As the sun sets, they will have the normal glare from the sunset but there is a small 2-3 degree angle where the sunset hits the bottom of that horizon that might send them some additional glare as it hits that bottom horizon. But it should be very little.
9. No noise from this whatsoever with the exception that there might be a little hum from a transformer or inverters. That should not be able to be heard from anybody out there, correct? **Mr. Daters** agreed.
10. There will be no fumes or odor associated with the solar facility after construction is complete. There may be some dust, but they will have a dust control plan and associated permits with the County and the State.

**Member Hill** noted that in the documentation submitted with the application it shows the design of PV solar projects and it states that they have a similar 745 MW solar facility in Bakersfield, CA. There is a letter from November of 2010 from the FAA stating that PV solar projects have been successfully implemented at various airports, including Bakersfield. It also says that reflective studies for small to large PV solar projects associated with airports have confirmed that glint associated with PV panels does not produce problems with flash blindness to pilots and/or problems associated with glint or glare on control towers. So based on the information that you submitted, I just wanted to add that for the record.

**Member Diehl** had the following questions:

1. As part of the application you have the best Maintenance And Practical Report For Erosion and Waste. Is that something that is done just through the construction of the solar plant or is that something that has to be done forever? **Mr. Daters** stated, as far as erosion, there will always be maintenance done to the facility so that is forever. The grading plan will be structured such that there shouldn't be much maintenance that needs to be done. There could be some minor problems that we have do some dirt work to fix during the operation of the facility. There is no hazardous waste because it is all self-

contained. There is some oil in the transformers, but it is all self-contained. It is not like the geothermal plant where we have moving parts that need lubricated all the time, such as the turbines, seals, and things of this nature. Or we might need to do some repairs to equipment and have some oil left over from this equipment that we have to dispose of in the proper manner.

2. In your report you have referenced using flocculent technology, where you talk about sediment, erosion and hazardous waste? **Mr. Daters** apologized and said he was not familiar enough with that report to answer the question.

**Dennis Hansberry** of 6560 Jacobs Road stated, I'm a retired Marine officer with some experience with FEMA and the Department of Homeland Security. Your question about barbed wire—it is necessary and you will probably have to have a 12-foot chain link fence around it. All infrastructure such as water supply and power supplies are all considered as prime targets so you need to have what we call preliminary restraint and sufficient lighting for security purposes.

**Member Kohltfarber** asked about the capacity of the transmission lines. With this additional 20 MW will it max out the capacity of the transmission lines? **Mr. Daters** guessed the capacity of the transmission lines was 60 MW as he did not have the specifics in front of him. The current geothermal facility is producing 20-24 MW. Solar power is only 20% efficient, so when we say 20 MW gross from the solar power, it only produces about 4 MW net on average. At maximum production 20 from solar power and 24 from geothermal; there is still plenty of capacity. I can get you the exact amount tomorrow.

**Member Louis** asked Daren if they would be proposing something like this at Salt Wells. **Mr. Daters** clarified, no I said, "Don't be surprised if we come to the Commission and request something similar out at Salt Wells in the future." This is our first one so we want to make sure we do it right. We might even to try some different technology out at Salt Wells, baby steps.

**Chairman Richardson** noted that all of the necessary findings had been made and called for a motion.

**Motion:** Based on the information provided in the application and heard tonight, it appears that the application for a special use permit for the construction and operation of the Stillwater Solar Project located at 4785 Lawrence Lane meets the findings of a special use permit. The project will not overburden public services provided that any deterioration of the road surfaces caused during construction will be repaired; no noise, fumes or odor detrimental to public health will be generated. Therefore I move to approve the application subject to the following conditions:

- Acquisition of building permits as required by County Building Department.
- Acquisition of a grading permit.
- Applicant shall enter into an agreement with Churchill County regarding road maintenance prior to commencement of any construction; traffic plan and routing map shall be approved by County Road Department.
- Applicant shall provide a copy to the Planning Department of the Surface Area Disturbance permit from NDEP for dust control.
- Lighting shall be limited to the level required to operate safely.
- The project area will have a standard chain link fence for safety purposes; no landscaping or screening is required.
- Weed control will be performed as needed using herbicides or other acceptable methods.

- The existing emergency action plan associated with the geothermal plant will be revised to incorporate the solar facility, a copy of which will be provided to the Fallon/Churchill Fire Marshal.
- Compliance with stormwater detention plan to prevent health and safety issues from stormwater. If water depth in detention area exceeds 1", Churchill County Mosquito, Vector and Weed Control District shall be notified and provided access to the detention area.
- Applicant shall provide Churchill County Building Department a copy of the Storm Water Pollution Prevention Plan that meets NDEP requirements and provides for erosion and sediment control.
- Hazardous materials storage and chemical containment shall meet NDEP requirements as described in the Best Management Practices Manual.
- Decommissioning activities will take place at the end of the photovoltaic system's life. After removal of all equipment, the site shall be restored to its pre-installation condition and the necessary state and county permits for grading and soil disturbance shall be acquired.
- Liability insurance shall be maintained covering all aspects of the facility operation in the amount of at least one million dollars (\$1,000,000).
- Applicant shall provide a digital copy to Churchill County of all state and federal permits.
- Compliance with Churchill County Code.

**Action:** Approve, **Moved by Member Steve Crowder, Seconded by Member Charlotte Louis.**

**Vote:** Motion carried by unanimous roll call vote (**summary:** Yes = 7).

**Chairman Richardson** thanked Mr. Daters and advised him that there is a ten-day appeal period and to contact the Planning Department for further permitting procedures.

Before the audience left the room, **Director Lockwood** clarified that two people indicated that they had not had sufficient notice of the application; the NRS requires that we send out notification 10-days prior to a public hearing. We are in compliance with the NRS's and in fact had sent these notices out one day earlier than required. Do we need to provide further notification? If the Board of County Commissioners instructs us to do so, we will.

**8:20 p.m. NEVADA IRON, LLC** – An application for a special use permit for property located within Township 24N, Range 34E, Section 5 and portions of Section 4 and 9, Assessor's parcel numbers 005-211-01, 02, 03, 05, 06 & 07 (the old Buena Vista Mine) consisting of a portion of 26,487 acres of non water righted property in the RR-20 land use district. The applicants are applying under Section 16.08.220(D) of the Churchill County Code to operate an iron ore mine and materials processing facility. The mine will be supported by an electrical transmission line and slurry pipeline to be located in T24N, R33E, Assessor's Parcel Numbers 005-191-01, 12, 13 and 25 and 005-531-01 (T25N, R33E). The transmission line originates near Oreana, in Pershing County and the new slurry pipeline will carry processed ore to a rail siding at Colado Junction in Pershing County.

**Jim Wallace, consultant for Nevada Iron** of P.O. Box 294, Courtland, CA, and **Max Nind, one of the Managers of Nevada Iron, LLC** of 204 West Spear Street, Carson City, said I think the application was complete enough to address everything that we needed to say tonight. We will answer any questions you have.

Staff Report for May 11, 2011  
 Planning Commission meeting

**EGP STILLWATER SOLAR, LLC** – Applicant is requesting a special use permit to construct and operate the Stillwater Solar Project, a 20 MW AC gross photo voltaic (PV) solar electrical generation facility. The facility will be located adjacent to the existing Stillwater II geothermal power plant located at 4785 Lawrence Lane in the A-10 land use district. The solar power plant will make use of existing infrastructure of the geothermal power plant to the extent technically and economically feasible. The surface area occupied by the solar panels will be approximately 200 acres. The panels will vary in height from 3-9.46' above ground. There are eight residences within one mile of the site but none are closer than 1000' of a proposed PV array. Proof of liability insurance was provided.

*A. Findings: In order to approve a special use permit the recommending or deciding body shall make the following findings:*

*The proposed use is compatible with the existing surrounding land uses and development. The surrounding land uses are agricultural, residential and a geothermal power plant. The three lots adjacent to the parcel, on the east, do not have houses on them. Two of the three lots immediately west of the applicant's parcel have houses on them. NAS Fallon has been consulted and they do not foresee any issues with regard to this facility.*

*The project is in substantial compliance with the master plan and policies and will be constructed and operated in full compliance of the code. The Master Plan promotes development of renewable energy projects with adequate regulation to minimize potential adverse impacts. Section 16.16.030 of the Churchill County Code provides the development standards associated with renewable energy facilities.*

*The project will be constructed and operated in a manner that will not overburden public services and infrastructure. Potential impacts may occur to County maintained roads including Freeman and Lawrence Lane, during construction. A Road Agreement shall be executed to ensure the applicant mitigates these impacts. After the facility is constructed, there will not be a significant impact to public services and infrastructure.*

*The project adequately mitigates road and traffic impacts generated by the construction and buildout of the project. The applicant will enter into an agreement with the County Road Department for maintenance of Lawrence Lane during construction. After construction is complete, there will only be an additional three or four employees for operation and maintenance of the facility which will not have a negative impact on the roads.*

*The project does not create adverse environmental impacts such as noise, glare, fumes, and odor that may be detrimental either to public health, public safety, or general welfare of the persons or property in the vicinity or the wildlife and/or natural resources. The most significant adverse impact is glare. The applicant provided a thorough discussion of the impact of reflected sunlight on the residents in the area. Per the information provided, the extent of the glare on the residences is dependent upon the location. Most houses will only receive reflections at certain times of the day and no reflection is possible from September to March, making the overall effect insignificant. There are weed control, dust control and stormwater runoff plans included in the application. There will be no fumes, odor or noise*

associated with the solar facility after construction is complete. Applicant provided information regarding stormwater runoff and has a detention plan to prevent a threat to public health or safety from stormwater runoff.

**\*\*PRIOR TO MAKING A MOTION, PLEASE REVIEW THE FINDINGS OF FACT FOR THE RECORD\*\***

**Recommendation: Motion for approval should include:** Based on the information provided in the application and heard tonight, it appears that the application for a special use permit for the construction and operation of the Stillwater Solar Project located at 4785 Lawrence Lane meets the findings of a special use permit. The project will not overburden public services provided that any deterioration of the road surfaces caused during construction will be repaired; no noise, fumes or odor detrimental to public health will be generated. Therefore I move to approve the application subject to the following conditions:

- Acquisition of building permits as required by County Building Department.
- Acquisition of a grading permit.
- Applicant shall enter into an agreement with Churchill County regarding road maintenance prior to commencement of any construction; traffic plan and routing map shall be approved by County Road Department.
- Applicant shall provide a copy to the Planning Department of the Surface Area Disturbance permit from NDEP for dust control.
- Lighting shall be limited to the level required to operate safely.
- The project area will have a standard chain link fence for safety purposes; no landscaping or screening is required.
- Weed control will be performed as needed using herbicides or other acceptable methods.
- The existing emergency action plan associated with the geothermal plant will be revised to incorporate the solar facility, a copy of which will be provided to the Fallon/Churchill Fire Marshal.
- Compliance with stormwater detention plan to prevent health and safety issues from stormwater. If water depth in detention area exceeds 1", Churchill County Mosquito, Vector and Weed Control District shall be notified and provided access to the detention area.
- Applicant shall provide Churchill County Building Department a copy of the Storm Water Pollution Prevention Plan that meets NDEP requirements and provides for erosion and sediment control.
- Hazardous materials storage and chemical containment shall meet NDEP requirements as described in the Best Management Practices Manual.
- Decommissioning activities will take place at the end of the photovoltaic system's life. After removal of all equipment, the site shall be restored to its pre-installation condition and the necessary state and county permits for grading and soil disturbance shall be acquired.
- Liability insurance shall be maintained covering all aspects of the facility operation in the amount of at least one million dollars (\$1,000,000).
- Applicant shall provide a digital copy to Churchill County of all state and federal permits.
- Compliance with Churchill County Code.

**Recommendation: Motion for denial should include:** Based on the information provided in the application and heard tonight, it appears that the application for a special use permit for the construction and operation of the Stillwater Solar Project located at 4785 Lawrence Lane does not meet the criteria of Churchill County Code. The project will have adverse impacts on the adjacent properties that cannot be mitigated. Therefore, I move to deny the application for a special use permit for the Stillwater Solar Project.

**NEVADA IRON LLC** – Applicant is requesting a special use permit to extract and process iron ore from the Buena Vista mine. The mine and mill will be located on private property in Churchill County; the water distribution system will be in Churchill County; the transmission line and slurry pipeline will start at the mine and extend into Pershing County. The property is private land and Bureau of Land Management parcels in the RR-20 land use district. The total mine area is 755.4 acres which includes two pits, the mill site, the tailings pond, the waste rock stockpile and the topsoil stockpile. The operation will employ 150 full time employees and will operate 24 hours per day, seven days per week. Water will be provided by five wells and a distribution system; Nevada Iron owns 1750 acre feet of underground water rights. Employees will be transported to the mine from Lovelock by bus; some employees will drive to the mine in their private vehicles.

*A. Findings: In order to approve a special use permit the recommending or deciding body shall make the following findings:*

*The proposed use is compatible with the existing surrounding land uses and development. The surrounding land uses are private rangeland and public lands administered by the BLM. The land uses are range, wildlife habitat, mining, and recreation.*

*The project is in substantial compliance with the master plan and policies and will be constructed and operated in full compliance of the code.*

The Master Plan encourages economic development, seeking new business opportunities. The mine will provide 150 full time employment opportunities. Churchill County Code does not specify standards for mining operations; the applicant will comply with state and federal regulations.

*The project will be constructed and operated in a manner that will not overburden public services and infrastructure.*

Nevada Iron is building its own infrastructure—transmission line, water distribution system and slurry pipeline. Roads will be improved at applicant's expense. There will not be an additional burden to public services.

*The project adequately mitigates road and traffic impacts generated by the construction and buildout of the project.*

The majority of the traffic impacts will be to Pershing County. Applicant will coordinate with Churchill County Road Department regarding upgrade and maintenance of the 1.5 miles of road in Churchill County.

*The project does not create adverse environmental impacts such as noise, glare, fumes, and odor that may be detrimental either to public health, public safety, or general welfare of the persons or property in the vicinity or the wildlife and/or natural resources.*

DOC # 420713

05/26/2011 11:35 AM

## Official Record

Recording requested By:  
CHURCHILL CO. PLANNING

Churchill County - NV

Joan Sims - Recorder

Page 1 of 2 Fee \$15.00

Recorded By: TH RPT

APN 009-032-30 (Special Use Permit)

**NOTICE OF FINAL ACTION, DECISION OR ORDER  
OF THE CHURCHILL COUNTY PLANNING COMMISSION**

TO: Enel Stillwater, LLC  
EGP Stillwater Solar, LLC  
Daren Daters, Compliance Manager  
1755 E. Plumb Lane, Suite 155  
Reno, NV 89502



RECEIVED

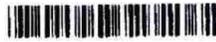
Pursuant to NRS 278.315, notice is hereby given that on the 11<sup>th</sup> day of May, 2011, A.D., the Churchill County Planning Commission upon making the findings of fact granted a:

Special Use Permit under section 16.08.150(D) of the Churchill County Code to construct and operate the Stillwater Solar Project, a 20 MW AC gross photo voltaic (PV) solar electrical generation facility. The facility will be located adjacent to the existing Stillwater II Geothermal Power Plant. The solar power plant will utilize the existing infrastructure of the geothermal power plant to the extent technically and economically feasible.

as authorized by the provisions of NRS 278.010 to NRS 278.630, inclusive, with respect to the following described property: 4785 Lawrence Lane, Assessor's Parcel Number 009-032-30 consisting of 234.96 acres of non-water righted property in the A-10 land use district; a parcel of land situated in portions of the east 1/2 of the southeast 1/4 and northeast 1/4 of Section 1, Township 19 North, Range 30 East, M.D.B.&M.

**SUBJECT TO THE FOLLOWING CONDITIONS PLACED ON THE SPECIAL USE PERMIT:**

- Acquisition of building permits as required by County Building Department.
- Acquisition of a grading permit.
- Applicant shall enter into an agreement with Churchill County regarding road maintenance prior to commencement of any construction; traffic plan and routing map shall be approved by County Road Department.
- Applicant shall provide a copy to the Planning Department of the Surface Area Disturbance permit from NDEP for dust control.
- Lighting shall be limited to the level required to operate safely.
- The project area will have a standard chain link fence for safety purposes; no landscaping or screening is required.
- Weed control will be performed as needed using herbicides or other acceptable methods.
- The existing emergency action plan associated with the geothermal plant will be revised to incorporate the solar facility, a copy of which will be provided to the Fallon/Churchill Fire Marshal.
- Compliance with stormwater detention plan to prevent health and safety issues from stormwater. If water depth in detention area exceeds 1", Churchill County Mosquito, Vector and Weed Control District shall be notified and provided access to the detention area.



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05/26/2011  
002 of 2

- Applicant shall provide Churchill County Building Department a copy of the Storm Water Pollution Prevention Plan that meets NDEP requirements and provides for erosion and sediment control.
- Hazardous materials storage and chemical containment shall meet NDEP requirements as described in the Best Management Practices Manual.
- Decommissioning activities will take place at the end of the photovoltaic system's life. After removal of all equipment, the site shall be restored to its pre-installation condition and the necessary state and county permits for grading and soil disturbance shall be acquired.
- Liability insurance shall be maintained covering all aspects of the facility operation in the amount of at least one million dollars (\$1,000,000).
- Applicant shall provide a digital copy to the Churchill County Planning Department of all state and federal permits.
- Compliance with Churchill County Code.

Within twelve months of issuance of this notice, applicant must demonstrate that steps have been taken to enact this Special Use Permit. In the event that circumstances beyond the control of the applicant result in failure to complete applicable conditions and construct or commence the use prior to the expiration date, the applicant may, in writing, request one single extension for twelve (12) calendar months from the original date of inception. The applicant must submit this request to the Planning Department thirty (30) days prior to the expiration date. Failure to demonstrate enactment or submitting a written request for extension may result in termination of the special use permit.

State of Nevada § County of Churchill

DATED: This 23<sup>rd</sup> day of May, 2011, A.D.

Eleanor Lockwood  
 Eleanor Lockwood, Director of Planning

SUBSCRIBED and SWORN to before me

this 23<sup>rd</sup> day of May, 2011, A.D.

Angela Moyle  
 Notary Public  
**ANGELA MOYLE**  
 Notary Public - State of Nevada  
 Appointment Recorded in Churchill County  
 No: 06-102261-4 - Expires January 6, 2014

I, William Price understand the conditions and terms placed on this special use permit and agree to comply with them as per this notice. Further, any/all other oaths, bonds, covenants, expectations, promises or conditions of use previously granted to the applicant pursuant to a special use permit, whether written or not, express or implied, are hereby merged with this special use permit; that this special use permit granted me, with its conditions and terms of land-use set forth herein, as applicable to the above-described property, shall supersede any/all other special use permit(s), previously granted me pursuant to Churchill County Code 1604.020.C.

William Price  
 Signature

Date: 5/23/11

2011 Glare Study (Not part of the original application)



Impacts of Reflected Sunlight on Potentially Sensitive Receptors  
**EGP Stillwater Photovoltaic Solar Project**  
 Churchill County, Nevada

MAY 9, 2011



Photo-voltaic (PV) panels are specifically designed to maximize absorption of incident sunlight to efficiently convert sunlight energy to electrical energy. PV panels frequently have low reflectivity coatings and matte finishes to enhance absorption and facilitate energy conversion. At high incidence angles, some low-intensity specular reflections (glint) may occur accompanied by more diffuse reflected light (glare).

Prepared For:

EGP Stillwater Solar, LLC  
 1755 East Plum Lane, Suite 155  
 Reno, NV 89502



Impacts of Reflected Sunlight on Potentially Sensitive Receptors  
 EGP Stillwater Photovoltaic Solar Project  
 Churchill County, Nevada

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- Exhibit 1 Project Location
- Exhibit 2 Site Configuration, Sensitive Receptors

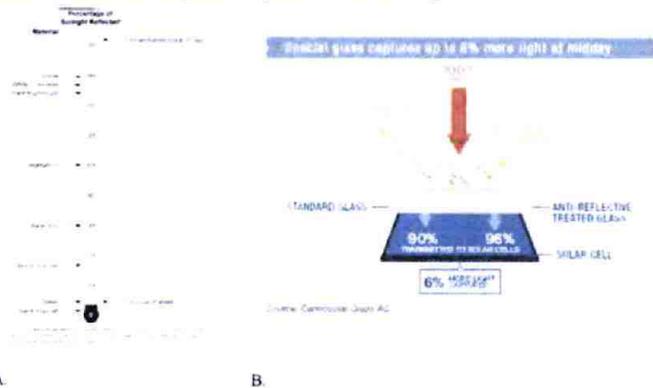
## 1 INTRODUCTION

### 1.1 Reflective Characteristics of PV Solar Panels and Infrastructure

Specular reflections (glint) and diffuse reflections (glare) of incident sunlight are associated with photovoltaic panels for utilities-scale solar facilities to varying degrees. Sunlight reflections are much more problematic with concentrating solar technologies use highly reflective mirrors in parabolic configurations to direct and concentrate the sun's rays. Glare from highly mirrored surfaces can be extremely bright and cause "flash blindness" similar to looking at the sun's reflection directly in a mirror.

Photovoltaic solar panels employ semiconductors that react with photons in sunlight to produce electricity. PV panels maximize the absorption of sunlight to increase the conversion of solar to electrical energy. For this reason, solar panels use dark materials, and frequently employ matte surfaces, and non-reflective coatings to further reduce reflections and maximize absorption.

Reflectivity characteristics of photovoltaic panels are described in Figures 1 and 2.



**Figure 1.** A. Percentage of sunlight reflected from various materials including concentrated solar and PV. B. Comparison of PV panels constructed with standard glass vs. those constructed with anti-reflective treated glass.

The data provided in Figure 1A show that PV panels are similarly reflective to water with very low reflected light values at high angles of incidence. The data provided in Figure 1B show that the reflected light at high angles of incidence can be reduced from 83 to 2% by adding an antireflective coating. Recent investigation (Protogeropoulos and Zachariou, 2002) quantitatively compared reflections from solar panels to other reflective substances in the environment. They concluded that reflections coming from PV modules are significantly less intense than reflections from surrounding construction or other man-made objects, particularly those coming from vehicles and other commonly used construction materials (e.g. aluminum). Thus, similar to water, reflected light would only be expected to be a problem at low angles of incidence.

### 1.2 Design of PV Solar Projects

Concentrating solar projects that employ mirrored, highly reflective surfaces have known potential reflectance issues (Ho et al., 2009, 2010) that are considerably different from PV projects (Federal Aviation Administration, November 2010) and will not be discussed further because the Stillwater Solar Project employs arrays of PV panels.

To generate and supply electricity for utilities-scale solar power projects, PV panels are components of a much larger photovoltaic system called a photovoltaic array. The photovoltaic array frequently covers several acres and may be specifically oriented to the sun's rays to maximize incident radiation for the conversion of light energy to electrical energy. Because the characteristics of sunlight vary with the locations on the earth, the optimum PV Panel orientation changes with location. PV panels are typically strung in parallel ranks or rows and are separated to ensure that one rank of PV panels does not shade adjacent ranks during periods of optimal sun intensity. PV panel designs that rotate panels to optimize incident solar radiation exist, however, it is more common to design panels with a fixed orientation and tilt to maximize incident solar radiation across the entire year.

Reflectance of sunlight from PV panels is generally thought to be a potential issue only at lower angles of incidence because of the high demonstrated absorbance of PV panels at high solar incidence angles. Numerous reflectance studies for small to large PV solar projects associated with airports have confirmed that glint associated with PV panels does not produce problems with flash blindness to pilots and/or issues with glint and glare on airport control towers (Federal Aviation Administration, November 2010). PV solar projects have been successfully implemented at the following airports (DeVita, September 16, 2010) with minimal to no adverse effects.

- Bakersfield, CA (745 Mw)
- Boston, MA (200 kW)
- San Francisco (445 kW)
- Oakland (756 kW)
- Fresno (2 mW)
- Albuquerque (438 kW)
- Denver (3.6 mW currently, additional 2 mW planned)

### 1.3 Geometric Determination of the Characteristics of Reflected Sunlight from Sloping Surfaces

Potential adverse impacts associated with reflected sunlight associated with PV and concentrated solar projects have been evaluated using several methods summarized in Federal Aviation Administration, November 2010:

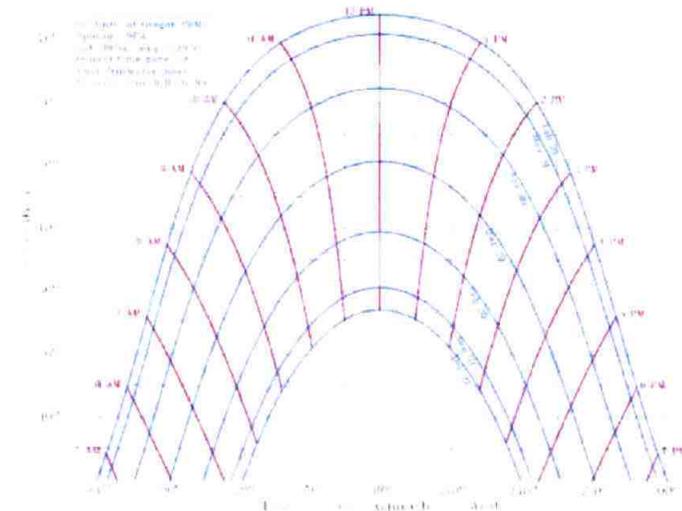
1. qualitative analysis of potential impact in consultation with agency officials,
2. demonstration field test with solar panels at the proposed site, and
3. geometric analysis to determine days and times when an impact is predicted

Geometric studies are the most technical approach for reflectivity issues. Studies of glint and glare employ geometry of reflected light rays and the known path of the sun to predict when sunlight will reflect off of a fixed surface (e.g. a solar panel) and contact a fixed receptor (e.g. a residence or road intersection).

### 1.3.1 Determining the Vector Location of Incident Sunlight

The sun's apparent path across the sky changes slightly every day in known and predictable ways depending on the location of the subject area on the earth and date of the year. At any given instant the sun's position in the sky can be described by a directional vector characterized by an **azimuth** and an **elevation**. An azimuth is defined as the angle of the sun's position from due north in a clockwise direction. For example if the sun rose exactly in the east and set exactly in the west, the azimuth of the sunrise would be 90 degrees from north, and the sunset would occur at 270 degrees from the north. The sun's elevation is defined as the degrees of the sun's orb above the horizon at any instant in time. Other azimuth conventions consider azimuth from north to south along the east half as ranging from 0-180 degrees, and along the west half as ranging from 0 to -180 degrees.

Sun path chart diagrams plot the azimuth and elevation of the sun at any instant in time for any location on the earth. A sun path chart is provided for the latitude and longitude of the Enel Stillwater Project in Figure 2.

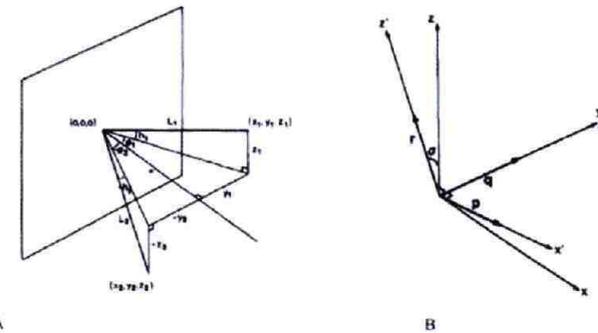


**Figure 2.** Solar path chart plotting solar azimuths and elevations as a function of time and date for the location of the Enel Solar Project, Churchill County, NV. The sun's path for a given date is in blue and the time during which the sun is at a specific location in the sky is in red. For the location of a given receptor such as a residence, the solar elevation and azimuth where reflections would be received at the receptor can be calculated and plotted on the solar chart.

### 1.3.2 Sunlight geometry

The determination and characterization of the geometry of incident and reflected light is a mathematical process that based on angles and vectors in three dimensional coordinate systems. Light reflected from a surface is described in Figure 3a and shows that reflected light is symmetrical about the normal of the surface. All methods used to calculate the path of reflected rays use assume this symmetric condition.

Incident light of angle  $h_1$  and azimuth  $\Phi_1$  is reflected across the normal at angle  $h_2$  and azimuth  $\Phi_2$  where  $h_2 = -h_1$  and  $\Phi_2 = -\Phi_1$ . Note that the azimuth and angle of the reflected and incident light rays is relative to the normal of the example surface. Solar angles and azimuths from the solar path chart are based on a coordinate system that includes the plane of the earth's surface. Vector transformations are used to convert azimuths and angles from one coordinate system to another (Figure 3b).



**Figure 3.** (A) The geometry of the reflection (L2) of an incident ray of sunlight (L1) from a vertical reflective surface showing symmetry of reflection about the surface normal. (B) reflections from a sloping reflective surface are related to the vertical by translating the vertical coordinate system to the sloping coordinate system using vectors (Lillefair, 1987).

## 2 PHOTOVOLTAIC PANEL CHARACTERISTICS AND PROJECT CONFIGURATION: STILLWATER SOLAR PROJECT

The Project proposes to use 71,442, 6.45 by 3.25 foot CNPV-280P solar panels in ranks separated by 26.18 feet on center and arranged in a series of irregular rectangular units covering approximately 95 acres (Exhibit 1). Panels will be stacked two high (portrait configuration) and inclined 30 degrees from the horizontal in east-west oriented ranks with the panel normal oriented due south (Exhibit 1). As installed, the panels will range from 3 feet off the ground at their lowest point to approximately 9.46 feet off the ground at the highest point (Figure 4).

Impacts of Reflected Sunlight on Potentially Sensitive Receptors  
EOP Stillwater Photovoltaic Solar Project  
Churchill County, Nevada

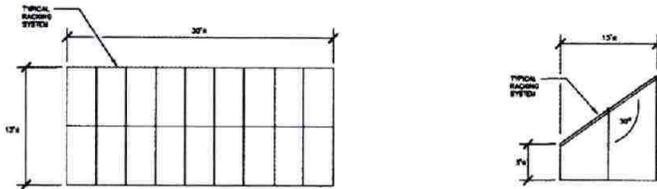


Figure 4. Typical racking system configuration. The PV panels are inclined 30 degrees and face due south, and are raised approximately 3 feet off the ground.

### 2.1 Geometric Characteristics of Photovoltaic Panel Configuration and their Influence on Perceived Glint and Glare: Stillwater Solar Project

With respect to assessing the impacts of reflected sunlight associated with the PV panels for the Stillwater Project, the following considerations apply.

1. Perceived glint and glare are based on line-of-sight from the reflective surface.
2. The magnitude and duration of glint and glare reflections will be related to the height of the observer. When the height of the observer is less than 9 feet and the landscape is flat, only one reflecting rank of PV panels will be visible at a time. Panels south of the observer will be facing the opposite direction and oriented so as not to reflect light back to the observer. The majority of panels to the north of that directly opposite from the observer will be blocked from view by the visible rank.
3. Stationary receptors that are below the top height of the PV panels will only see glint and glare from those panels whose reflective surfaces are visible from that location. The glint and glare will move as the sun moves until the azimuth and elevation of the sun's rays are such that reflections are no longer received at the stationary receptor.
4. However, because the orientation of each rank is exactly the same, each rank will reflect glint and glare at the same angle for the same time increment and given azimuth and elevation angle of the sun. Thus, if a car with the observer at a height below the highest point of the PV rank observes a solar reflection, the same reflection at the same relative location will be observed as the car proceeds parallel to the PV ranks.
5. As the height of the stationary receptor increases above the height of the PV rank, progressively more of the area of adjacent ranks can be observed. At low heights the majority of the PV panel area of successive ranks is blocked, but as heights increase progressively more of the reflective area of the full array becomes contributing.

### 3 GEOMETRIC ASSESSMENT OF POTENTIAL GLINT AND GLARE REFLECTANCE FROM PROJECT PV PANELS ON SPECIFIC RESIDENCES

Nine residences are within one mile of the proposed Stillwater Solar Project (Exhibit 2). Approximate distances of residences to the closest panels of the PV array are in Table 1.

Residences 1 through four lie between 2,000 and 2,500 feet to the west of the proposed Project, residences 5 and 6 lie between 1,000 and 2,000 feet east of the Project, and one residence lies approximately 1,500 feet to the south of the Project. Implications for residence locations relative to reflections from the project include the following:

Impacts of Reflected Sunlight on Potentially Sensitive Receptors  
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1. Residences one through four could potentially receive reflections only in the morning because they are west of the Project area.
2. Residence five and six could receive reflections during the day because they are to the south of the PV array.
3. Residences seven through nine could potentially receive reflections only in the evening because they are east of the Project area.

### 3.1 Geometric Assessment: No reflections south and north of the PV array (Residences 5 and 6).

No residences are within 1000 feet of a PV array. When at a 30 degree incline, the PV panels appear to an observer on the ground as approximately 6.5 feet high, or approximately the height of a tall man. At one to two thousand feet the panels would be visible as a very narrow long linear feature very close to the horizon. In terms of degrees, the angular size of the PV panels would be 0.372 degrees.

A simple geometric analysis indicates that there is no realistic sun position that would place a reflection at the level of a house 1000 feet south of a PV array. The azimuth and elevation of the sun at the summer and winter solstice and the spring and fall equinox is in Table 2.

Table 1. Residences within 0.5 miles (1290 feet) of the project boundary.

Residence Number	Distance to nearest PV Array	Direct of Array from Residence	Notes
1	1830	East	(Notes from Michele per site visit)
2	2580	East	
3	2620	East	
4	3105	East	
5	1260	North	
6	2500	North	
7	1480	West	
8	1440	West	
9	1730	West	

Table 2. Sun elevation and azimuth at the summer and winter solstice and spring and autumn equinoxes.

Season	Noon Elevation (degrees from horizontal)	Noon Azimuth (degrees east of north (positive) and west of north (negative))
Summer Solstice (June 21 <sup>st</sup> )	73.9	-176.3
Winter Solstice (December 21 <sup>st</sup> )	27.0	-178.0
Spring Equinox	50.2	179.4
Fall equinox	51.3	174.9

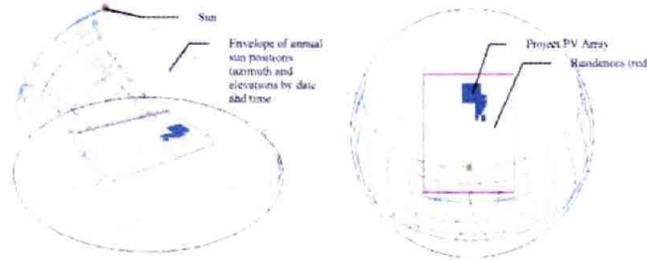
At the latitude and longitude of the Project, the sun is usually in the southern hemisphere of the sky, ranging from a maximum elevation of 73.9 degrees at noon on the summer solstice to a minimum

Impacts of Reflected Sunlight on Potentially Sensitive Receptors  
 ECP Stillwater Photovoltaic Solar Project  
 Churchill County, Nevada

elevation of 27 degrees at noon on the winter solstice. Given this geometry, the only way reflected sunlight could illuminate a receptor near the midpoint of the PV line would be if the sun was well into the northern hemisphere during midday, which is outside of the envelope of sun elevations and azimuths. Thus residences 5 and 6 would not receive reflections from the planned Project PV panel array.

### 3.2 Assessment of the Timing and Magnitude of Reflected Sunlight on residences using Ecotect Computer Simulation

Ecotect is a sustainable development program from Autodesk™ that has extensive solar shading and reflection assessment capability. The program takes a to-scale 3D rendering of a project area including buildings and natural features and places it in proper north-south orientation in geographic coordinates. The program then incorporates sophisticated solar ray plotting subroutines to evaluate the impact of shadows, insolation (exposure to the sun's rays), and solar reflections to optimize building design. Ecotect was used to evaluate potential adverse effects of a large PV solar project on the operations of the San Antonio Airport (Symphysis Staff 2010). **Figure 5** shows the Stillwater Enel Project placed into the appropriate geographic coordinates and showing the applicable envelope of annual variations in solar elevation and azimuth.



**Figure 5.** Plan and perspective views of the Enel Stillwater PV array and associated residences at noon on June 21<sup>st</sup> (summer solstice). Note that the annual sun path in the plan view shows the sun's elevation being in the northern quadrant from approximately 3:45 PM to sunset (7:19 PM, 3 hours, 45 minutes) and sunrise (4:31 AM) to 8:15 AM (3 hours 45 minutes) on June 21<sup>st</sup>. The sun stays entirely within the southern hemisphere (elevation < 90 degrees) between March 28<sup>th</sup> and September 20<sup>th</sup>.

#### 3.2.1 Residences South of the Project Area

The observation that residences 5 and 6 that lie south of the Project would not receive reflections from the PV array (Section 3.1, above) are confirmed by the Ecotect solar simulation analysis that indicates that at no time are solar reflections at an angle that would intercept residences 5 and 6 (**Figure 6**, below).

The diagram shows that as the sun moves through the full yearly envelope of position in the sky, reflected rays are at all times well above the residences. During the winter when the sun is lowest in the sky, the sun's path from sunrise to sunset is contained entirely in the southern sky quadrant, days are short, and the reflections are directed upwards by the PV Panels that are inclined 30 degrees to the south. During the summer, reflections that would occur late and early in the day when the sun is in the northern sky

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 ECP Stillwater Photovoltaic Solar Project  
 Churchill County, Nevada

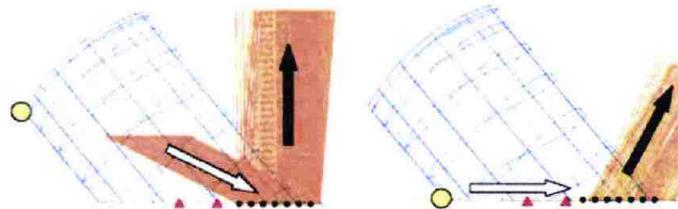
quadrant are precluded as the sunlight hits the back of the PV panels. If reflections did occur, they would be directed downwards. When the sun is in the southern quadrant, the reflected rays are again too high to illuminate residences 5 and 6.

#### 3.2.2 Residences East of the Project Area

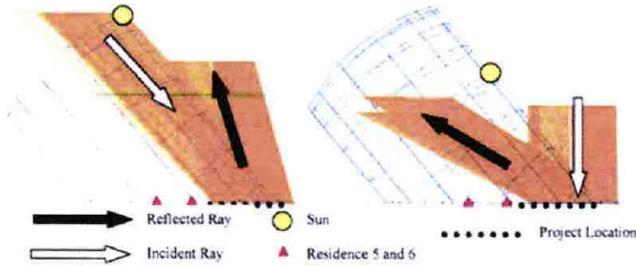
Residences 7, 8 and 9 are located east of the Project area and would only receive reflections when the sun is in the western quadrant of the sky. Reflections during the morning when the sun is in the eastern quadrant are directed to the west.

An analysis of the geometry of reflections from the PV array performed in Ecotect indicates the following important characteristics when considering glint and associated glare:

1. Residences 7, 8, and 9 can receive direct illumination by light reflected off of PV Panels.
2. The illumination occurs for a very short period of approximately 10-15 minutes and always between 7:00 and 8:00 PM, regardless of the season. Reflections that illuminate the residences occur earlier (~5:00 PM) close to the Summer Solstice, and later (~5:45 PM) during mid-March and mid-September (**Figure 7**).
3. This glint and associated glare occurs during evening hours when the sun is low in the western portion of the sky. Direct glint and glare on the potentially affected residences from the incident sunlight falling on these residences during this time would be significant and may mask the adverse effects of PV glint and glare during the short time it would occur.
4. No reflections are possible between October to the middle of March because the reflected solar rays during daylight hours are well above the residences in question (**Figure 8**).
5. The azimuth angles for reflected rays illuminating residences vary and increase between March 15 to the Summer Solstice (June 21<sup>st</sup>) and then decrease from the Summer Solstice to approximately mid-September, when glare at the residences ceases.
6. The change in the azimuth of the reflected rays at varying times results in Residence 7 receiving potential reflected glare from the beginning of May to the middle of August. Residence 9 receives glare during two periods: (1) from the middle of March to the middle of May, and (2) the beginning of August through September. Residence 8 would receive glare from the middle of March through September (**Figure 9**).
7. Glare would only be received from the reflecting surfaces that are within the line of sight to the residence or receptor. Much of the reflected sunlight that could be received by the receptor would be intercepted by the adjacent PV panel strings.

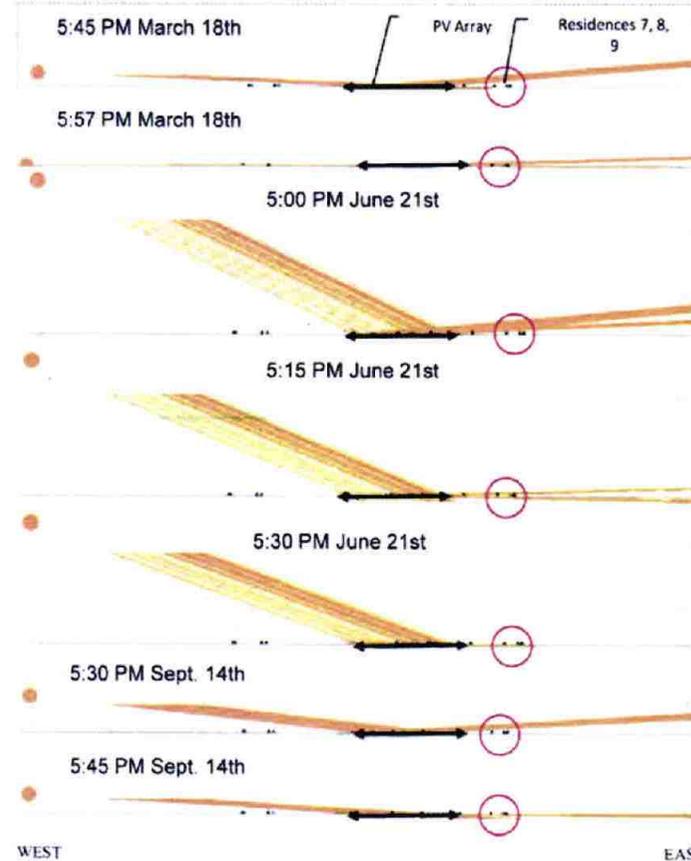


A. Incident and reflected solar rays at noon (1) and sunrise/sunset (2) on June 21<sup>st</sup>, the summer solstice.



B. Incident and reflected solar rays at noon (1) and at 8:15 AM/4:10 PM (2) on December 21<sup>st</sup>, the winter solstice. Between 8:15 and 4:10 PM the sun is in the southern hemisphere and can provide reflections off of the panel surface

**Figure 6.** Side view of the yearly envelope of solar radiation and PV panel reflected solar rays for the Project Area. North is to the right of the diagram. The data show that no reflected solar radiation is received at residences 5 and 6 at any time during the year.



**Figure 7.** Ecoteect analysis of the solar rays reflected off of solar panels indicates that potential reflections would occur for a short time (~ 15 minutes) between 5:00 and 6:00 PM. The viewing angle of the diagrams is due south of the project. West is to the left and east is to the right. Glint and glare would occur for a short period at the eastern residences, and would be accompanied by direct solar glare due to the low angle of the sun.

Impacts of Reflected Sunlight on Potentially Sensitive Receptors  
EGP Stillwater Photovoltaic Solar Project  
Churchill County, Nevada

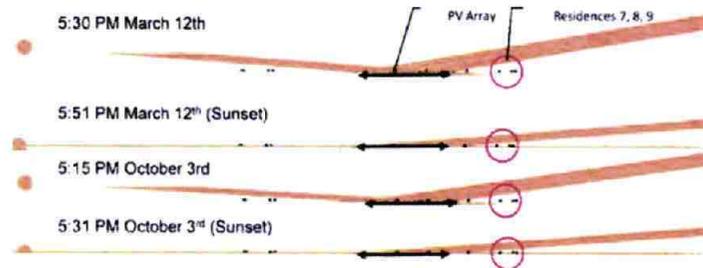


Figure 8. No glint and glare reflections are possible between October to the middle of March because the reflected solar rays during daylight hours are well above the residences in question. The Ecotect simulations show that the reflected rays, well above the residences at 5:30 PM and 5:15 PM on March 12<sup>th</sup> and October 3<sup>rd</sup>, respectively, remain above the residences at sunset. Thus no reflections and associated adverse glare will be observed at residences 7, 8, and 9 from October to mid-March.

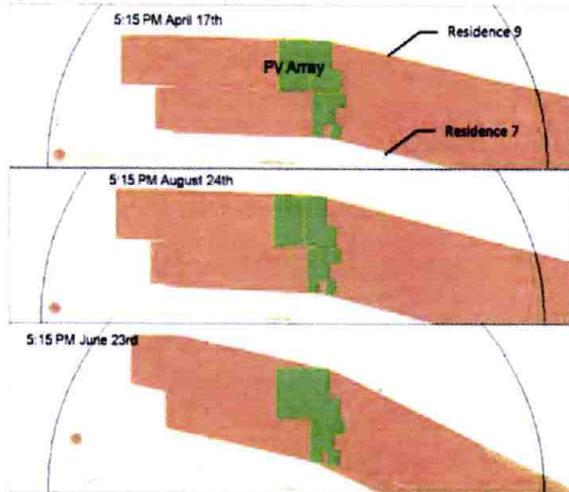


Figure 9. The change in azimuth associated with the incident solar rays and reflected rays results in residences 7 and 9 receiving glare depending on the time of year. Residence 8 receives glare for the full duration.

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Impacts of Reflected Sunlight on Potentially Sensitive Receptors  
EGP Stillwater Photovoltaic Solar Project  
Churchill County, Nevada

### 3.2.3 Residences West of the Project Area

The geometry and characteristics of reflected glint and glare for Residences 1, 2, 3, and 4 that lie west of the Project are similar to those described above for Residences 7, 8, and 9, however, the timing and magnitude of glint and glare reflections are associated with the morning hours because the sun rises in the east and would be in a position to reflect solar radiation to the western residences. An analysis of the geometry of reflections from the PV array performed in Ecotect indicates the following important characteristics when considering glare for these residences:

1. Residences 1, 2, 3, and 4 can receive direct illumination by light reflected off of PV Panels.
2. The illumination occurs for a very short period of approximately 15 minutes and always between 6:00 and 7:00 AM, regardless of the season. Glint and glare reflections will occur later between 6:30 and 6:45 AM close to the Summer Solstice, and earlier (6:00 and 6:15 AM) during mid-March and mid-September).
3. Glint and glare reflections occur during early morning hours when the sun is low in the eastern portion of the sky. Direct glint and glare on the potentially affected residences from the incident sunlight during this time would be significant and may mask the adverse effects of PV glint and glare during the short time it would occur.
4. No reflections are possible between October to the middle of March because the reflected solar rays during daylight hours are well above the residences in question.
5. The azimuth angles for reflected rays illuminating residences vary and increase between March 15 to the Summer Solstice (June 21<sup>st</sup>) and then decrease from the Summer Solstice to October, when glare at the residences ceases.
6. The change in the azimuth of the reflected rays at varying times results in Residence 1 receiving potential reflected glare from the mid-March to the mid-April and again from September to October. Residence 2 receives reflected glare from mid-March to mid-May and from mid-July to October. Residence 3 may receive reflected glare from Mid-March to October, and Residence 4 may receive reflected glare from mid-April to mid-September.
7. Glare would only be received from the reflecting surfaces that are within the line of sight to the residence or receptor. Much of the reflected sunlight that could be received by the receptor would be intercepted by the adjacent PV panel strings.

## 4 CONCLUSIONS

A detailed computer-assisted geometric analysis of potential glare from PV panels associated with the Enel Stillwater Project indicates that, while residences south of the Project would not receive any glint and associated glare, residences to the east and west of the project could receive a brief period of approximately 15 minutes of glint and glare.

Glint and glare reflections at residences to the west of the Project would occur between 6:00 AM and 7:00 AM. The times of the year during which the western residences would experience glint and glare depend on the location of the residence in relationship to the PV array (Table 3).

Glint and glare at residences to the east of the Project would occur between 5:00 and 6:00 PM. The times of the year during which the eastern residences would experience glint and glare depend on the location of the residence in relationship to the PV array (Table 3).

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**Table 3. Summary of reflected glare at residences associated with the Enel Stillwater Project.**

Residence	Location relative to Project	Expected duration, time, and dates when glint and glare could be expected at the Residence Locations <sup>1</sup>
1	West	15 minutes between 6 and 7 AM; mid-March to mid-April and September
2	West	15 minutes between 6 and 7 AM; mid-March to mid-May and mid-July to October
3	West	15 minutes between 6 and 7 AM; mid-March to October
4	West	15 minutes between 6 and 7 AM; mid-April to mid-September
5	South	No glare expected
6	South	No glare expected
7	East	15 minutes between 5 and 6 PM; May to mid-August
8	East	15 minutes between 5 and 6 PM; Mid-March to October
9	East	15 minutes between 5 and 6 PM; mid-March to mid-May; August through September

<sup>1</sup> Duration, timing, and periods where glint and glare can be expected were determined by evaluating the geometry of reflected rays using AutoDesk Ecotect™ software.

#### 4.1 Effects of Glare on Potentially Affected Residences

Glint and glare reflections associated with solar PV panels have been shown to be relatively low intensity and similar to the glint and glare associated with water and other man-made materials that commonly occur in the environment. While glint and glare can be expected for short periods of time at the locations of residences both east and west of the project area, the duration is very short, the distances from the reflecting surfaces are large on the order of 1000 to 2500 feet, and the reflections occur during early morning and late afternoon when bright incident sunlight appearing very near the glint and glare reflections is expected to be far more significant.

#### 4.2 Mitigating Factors and Assumptions

The geometric analysis was based on flat terrain and no obstructions, and assumes that the PV panels would not intercept (block) reflected rays from the residence receptors. Thus this analysis represents a worst case analysis. The presence of landscape features such as trees, ditch berms, and screening features could reduce the impacts significantly.

## 5 REFERENCES

- Federal Aviation Administration. November 2010. Technical guidance for evaluating selected solar technologies on airports. Federal Aviation Administration Office of Airports, Office of Airport Planning and Programming, Airport Planning and Environmental Division (APP-400) 800 Independence Avenue SW. Washington, D.C.
- DeVita, P. September 16, 2010. Solar guidance for airports: Information for sponsors on developing airport compatible solar projects. Presentation of the Federal Aviation Administration.
- Ho, C.K., C.M. Ghanbari, and R.B. Diver. 2009. Hazard analysis of glint and glare from concentrating solar plants. SolarPACES 2009, Berlin, Germany.
- Ho, C.K., C.M. Ghanbari, and R.B. Diver. 2010. Methodology to assess potential glint and glare hazards from concentrating solar power plants; analytical models and experimental validation. Proceedings of the 4<sup>th</sup> International Conference on Energy Sustainability ES2010, May 17-22, 2010, Phoenix, AZ.
- Littlefair, P.D. 1987. Prediction of reflected solar dazzle from sloping facades. Building and environment 22(4):285-291.
- Protogeropoulos, C. and A. Zachariou. 2002. Photovoltaic module laboratory reflectivity measurements and comparison analysis with other reflecting surfaces. Centre for Renewable Energy Sources, Department of Photovoltaic & Hybrid Systems. Report CRES-PV-002/2002.
- Symphysis Staff. 2010. Photovoltaic reflection study for San Antonio International Airport. Prepared for Lyda Swinerton Builders by Symphysis. 4719 Geary Blvd. #507, San Francisco CA 94118

Map Date: 03/22/2011 10:48:20 AM  
V:\2111 Proj\_3446



396 RACKS = 2 MW OF DC  
 TOTAL DC = 25.23 MW  
 TOTAL RACKS = 5,006



**Westwood**  
 Westwood Environmental Services, Inc.  
 2010 Westwood Drive  
 Reno, Nevada, NV 89504  
 Phone: (775) 444-1100  
 Fax: (775) 444-1122  
 E-mail: info@westwood.com  
 www.westwood.com

— 1/2 Section Lines    □ Solar Array  
 — Road                    □ Home

**Stillwater Solar Project**  
 Church & County, Nevada  
 Preliminary Layout as of 3-22-2011  
 EXHIBIT 2



Ms. Eleanor Lockwood  
Churchill County Manager  
155 N. Taylor Street Ste. 153  
Fallon, NV 89406

Re: Glare Compliant filed concerning Stillwater Solar Photovoltaic Plant at 4637  
Lawrence Ln. (APN: 009-032-30)

Dear Ms. Lockwood:

This letter is to provide Churchill County (the "County") with Enel Stillwater Solar LLC's ("ESS") response to an official Complaint filed with County on May 26<sup>th</sup>, 2016 regarding a glare from the Stillwater Solar Photovoltaic (PV) Power Plant (the "PV Plant").

The PV Plant construction was completed in December 2011. The PV Plant was commissioned in December of 2011, and it produced power for the first time upon its connection to the NV Energy grid shortly thereafter. The PV Plant then went into full time Commercial Operation in March of 2012. The power generated by the PV Plant is delivered mainly to Churchill County, and/or the city of Fallon.

Prior to the start of construction of the PV Plant, ESS filed all necessary paperwork with the County Planning Department to apply for a Special Use Permit ("SUP"). Part of this submission package was a Glare study, prepared by Westwood, a nationally recognized engineering firm. The Glare study was identified as Exhibit F in the SUP submission package. When this study was submitted as part of the SUP package, it became a public document, therefore allowing any resident of the County to review it and inform the County if they had any concern regarding construction and operation of the PV Plant. When the SUP was issued, there were no requirements set forth to mitigate glare from the panels. The PV Plant was constructed such that all 3 feet by 5 feet Solar Photovoltaic panels in the Stillwater Facility are fixed panels - they do not move at all. Please find that issued SUP accompanying this letter.

In May of 2015, a landowner on Portuguese Ln. contacted Mr. Michael Johnson, Churchill County Planning Director, to begin the complaint reporting process of what he feels is an invasive glare concern. This complaint came contemporaneous with ESS's disclosure that a potential expansion of the PV Plant was being considered and this potential expansion could bring a portion of the expansion plant closer to the complainer's home. Prior to issuing the complaint to Mr. Johnson, the landowner had never contacted any representative of ESS to discuss this matter, nor did the landowner comment on the public SUP submission filed with the County.

On July 15, 2015, a meeting was held with Mr. Johnson, Ms. Ashley Smith, and myself where the landowner's complaint was discussed, and ESS indicated that it would try, as a good neighbor, to alleviate the landowner's concern. By October 2015, ESS had installed a glare fence between the complaining landowner's home and the PV Plant which, at the time, alleviated the landowner's concern. There was some concern with the height of the fence, and a few times the fence blew over and needed some attention.

In May of 2016, the issue arose again, with the complainer stating the glare had returned. Again I reviewed the glare with Mr. Johnson. I personally reinvestigated the landowner's complaint and reviewed the glare study, and determined that the glare lasts for fifteen to twenty minutes in duration, early in the morning. Notably, the publically available glare study made this information available for the complaining landowner's review prior to construction of the PV Plant. The complaining landowner, charged with knowledge of these public documents, did not comment nor protest the PV Plant at that time, and therefore the PV Plant was constructed absent his input.

Following the May 2016 meeting and again in an effort to be a good neighbor, I requested bids from contractors to determine the costs of performing the following options:

- a. Raise the current dirt berm in place to block the glare issue. These bids came back to us for the proposed amount of \$19,000 and \$29,000.
- b. Erect a fence with a glare mitigation spanning the distance of the glare. This bid came back to us for the proposed amount of \$27,752.

ESS does not have the budget to support these amounts. ESS did however, move some old hay bales that were onsite over to attempt to block the glare. This did not work as the amount of hay bales onsite would not span a distance long enough to completely remedy the issue. ESS then solicited local bids from hay suppliers in the Churchill County area to purchase enough hay to mitigate this issue. The hay bale supply proposals came back to us around the amount of \$24,000.

On June 15<sup>th</sup>, 2016 I reached out to the complaining landowner and offered to have blinds installed in his home for any windows facing the PV Plant. In this offer I stated that I could hire a blind installation contractor to come to his home and install nice blinds to help mitigate this issue. For some reason this made the complainer very angry, and after this offer the complainer left a fairly threatening message with another ESS employee stating that this made him very angry and he may come down to see me at some point.

Going forward, ESS has decided not to continue with any further mitigation efforts. ESS had proposed several reasonable solutions, consistent with mitigating a solar glare for an extremely short duration. In reaching this conclusion, ESS considered the following aspects:

- a. When the application package for the SUP was submitted, a glare study was also submitted. Since this was a public document, if the glare study was reviewed by any parties concerned, they would have found that a glare towards the complainer's house would be noted in the early morning for a short duration, as

we have factually found there to be.

- b. The PV Plant was constructed in 2011, and went Commercial Operation in March of 2012. The Complaint was raised in May of 2015. Therefore the complainer had approximately 3 years and 2 months to raise this complaint prior to doing so, and he never did. It is clear that this complaint is only being raised to cause ESS trouble based solely on the potential expansion of the PV Plant. It is also clear that the complainer will continue to find other issues with the existing facilities, even if this problem is resolved.
- c. ESS offered complete glare mitigation for the complainer's home windows, and the offer was angrily declined.
- d. ESS does not have the budget to perform additional work to fully mitigate the minutes-long glare experienced by this landowner. Millions of dollars were invested to construct the PV Plant in order to provide clean energy to the County, and while ESS intends to fully comply with the SUP, it cannot afford to expend tens of thousands of dollars to mitigate an extremely minor inconvenience that could be mitigated for an extremely reasonable amount through blind installation.
- e. ESS is not in violation of the Special Use Permit, therefore is not required to take action according the requirements set forth by the SUP.

In conclusion, ESS understands that there has been a formal complaint filed that must be followed through on by Churchill County. We hope that Churchill County will take into consideration the aspects of our position stated above while reviewing this complaint. ESS also understands that this complaint may be considered during the SUP application process of any other potential projects in Churchill County going forward. Please feel free to contact me regarding any portions of this letter that may need clarification or for any other reason pertaining to this issue.

Best Regards,  
Bryan Stankiewicz



Sr. Operations Manager  
Geothermal and Solar Operations  
1755 East Plumb Ln. Suite 155  
Reno, NV 89502  
(775) 342-5126

CC: Brad Platt, Megan Beaurgard, Michael Johnson, Benjamin Shawcroft

DOC # 420713

05/26/2011 11:35 AM

Official Record

Recording requested By  
CHURCHILL CO PLANNING

Churchill County - NV

Joan Sims - Recorder

Page 1 of 2 Fee: \$15.00

Recorded By: TH RPTT:



420713

APN 009-032-30 (Special Use Permit)

**NOTICE OF FINAL ACTION, DECISION OR ORDER  
OF THE CHURCHILL COUNTY PLANNING COMMISSION**

TO: Enel Stillwater, LLC  
EGP Stillwater Solar, LLC  
Daren Daters, Compliance Manager  
1755 E. Plumb Lane, Suite 155  
Reno, NV 89502

Pursuant to NRS 278.315, notice is hereby given that on the 11<sup>th</sup> day of May, 2011, A.D., the Churchill County Planning Commission upon making the findings of fact granted a:

Special Use Permit under section 16.08.150(D) of the Churchill County Code to construct and operate the Stillwater Solar Project, a 20 MW AC gross photo voltaic (PV) solar electrical generation facility. The facility will be located adjacent to the existing Stillwater II Geothermal Power Plant. The solar power plant will utilize the existing infrastructure of the geothermal power plant to the extent technically and economically feasible.

as authorized by the provisions of NRS 278.010 to NRS 278.630, inclusive, with respect to the following described property: 4785 Lawrence Lane, Assessor's Parcel Number 009-032-30 consisting of 234.96 acres of non-water righted property in the A-10 land use district; a parcel of land situated in portions of the east 1/4 of the southeast 1/4 and northeast 1/4 of Section I, Township 19 North, Range 30 East, M.D.B.&M.

**SUBJECT TO THE FOLLOWING CONDITIONS PLACED ON THE SPECIAL USE PERMIT:**

- Acquisition of building permits as required by County Building Department.
- Acquisition of a grading permit.
- Applicant shall enter into an agreement with Churchill County regarding road maintenance prior to commencement of any construction; traffic plan and routing map shall be approved by County Road Department.
- Applicant shall provide a copy to the Planning Department of the Surface Area Disturbance permit from NDEP for dust control.
- Lighting shall be limited to the level required to operate safely.
- The project area will have a standard chain link fence for safety purposes; no landscaping or screening is required.
- Weed control will be performed as needed using herbicides or other acceptable methods.
- The existing emergency action plan associated with the geothermal plant will be revised to incorporate the solar facility, a copy of which will be provided to the Fallon/Churchill Fire Marshal.
- Compliance with stormwater detention plan to prevent health and safety issues from stormwater. If water depth in detention area exceeds 1", Churchill County Mosquito, Vector and Weed Control District shall be notified and provided access to the detention area.



420713

05/26/2011  
002 of 2

- Applicant shall provide Churchill County Building Department a copy of the Storm Water Pollution Prevention Plan that meets NDEP requirements and provides for erosion and sediment control.
- Hazardous materials storage and chemical containment shall meet NDEP requirements as described in the Best Management Practices Manual.
- Decommissioning activities will take place at the end of the photovoltaic system's life. After removal of all equipment, the site shall be restored to its pre-installation condition and the necessary state and county permits for grading and soil disturbance shall be acquired.
- Liability insurance shall be maintained covering all aspects of the facility operation in the amount of at least one million dollars (\$1,000,000).
- Applicant shall provide a digital copy to the Churchill County Planning Department of all state and federal permits.
- Compliance with Churchill County Code.

Within twelve months of issuance of this notice, applicant must demonstrate that steps have been taken to enact this Special Use Permit. In the event that circumstances beyond the control of the applicant result in failure to complete applicable conditions and construct or commence the use prior to the expiration date, the applicant may, in writing, request one single extension for twelve (12) calendar months from the original date of inception. The applicant must submit this request to the Planning Department thirty (30) days prior to the expiration date. Failure to demonstrate enactment or submitting a written request for extension may result in termination of the special use permit.

State of Nevada § County of Churchill

DATED: This 23<sup>rd</sup> day of May, 2011, A.D.

Eleanor Lockwood  
 Eleanor Lockwood, Director of Planning

SUBSCRIBED and SWORN to before me

this 23<sup>rd</sup> day of May, 2011, A.D.

Angela Moyle  
 Notary Public  
 ANGELA MOYLE  
 Notary Public - State of Nevada  
 Appointment Recorded in Churchill County  
 No: 06-102251-4 - Expires January 6, 2014

I, William Price understand the conditions and terms placed on this special use permit and agree to comply with them as per this notice. Further, any/all other oaths, bonds, covenants, expectations, promises or conditions of use previously granted to the applicant pursuant to a special use permit, whether written or not, express or implied, are hereby merged with this special use permit; that this special use permit granted me, with its conditions and terms of land-use set forth herein, as applicable to the above-described property, shall supersede any/all other special use permit(s), previously granted me pursuant to Churchill County Code 16.04.020.C.

William Price  
 Signature

Date: 5/23/11



## **CHURCHILL COUNTY** **PLANNING**

*Planning Commission  
Planning Department  
GIS Department  
Zoning Enforcement  
Business License Dept.*

APN 009-032-30  
4637 Lawrence Lane

July 29, 2016

Bryan Stankiewicz  
Enel Green Power North America Inc.  
4785 Lawrence Lane  
Fallon, Nevada 89406

Brad Platt  
Enel Green Power North America Inc.  
1755 East Plumb Lane, Suite 155  
Reno, Nevada, 89502

David Little  
Enel Green Power North America Inc.  
3636 Nobel Drive, Suite 475  
San Diego, California, 92122

Re: Complaint concerning glare coming from the Stationary Solar project located at 4637 Lawrence Lane in Churchill County Nevada, (APN: 009-032-30).

Dear Enel Green Power, Bryan Stankiewicz, Brad Platt, and David Little:

In May 2016, Churchill County received a complaint concerning morning glare coming from the stationary solar project located at 4637 Lawrence Lane. Over the past few months we have been discussing the situation primarily with Bryan Stankiewicz and to a lesser extent with David Little. On July 28, 2016, I received your reply to our discussion on working to mitigate the situation wherein you state that because the Planning Commission did not set forth any requirements to mitigate glare from the panels, and the Notice of Final Action (NOFA) allowed for a standard chain link fence for safety purposes and no landscaping or screening would be required, that Enel does not have any further obligation to mitigate this situation.

I have recently reviewed the EGP Stillwater Photovoltaic Solar Project Exhibit F (Glare Study) that you reference in your letter and was a part of the Special Use Permit application in 2011. It appears that section 3.2 Assessment of the Timing and Magnitude of Reflected Sunlight on residences using Ecotect Computer Simulation is missing section **3.2.2**; subsection 3.2.1. and 3.2.3. address impacts of glare to residences to the south and east of the project area. If this subsection of the report was inadvertently omitted, please provide me with a copy.

There is reference in the glare study on Page 9 #3 to glare during evening hours when the sun is on the western portion of the sky:

*"This glare occurs during evening hours when the sun is low in the western portion of the sky. Direct glare on the potentially affected residence from the incident sunlight during this time would be **significant** and may mask the adverse effects of PV glare during the short time it would occur."*

Additionally, at the May 11<sup>th</sup> 2011 Planning Commission meeting Darren Daters, representative from Enel stated:

*"Mr. Daters noted that they performed a reflectivity study and he felt the Pecks would be the most impacted. Mrs. Peck is here and she's welcome to come up and speak if she would like. Based on the study, because of where the facility is and the mountain range, at that angle there is virtually no impact to the westerly neighbors. When the sun comes up in the morning it's got to go over that mountain range. I mention the Pecks because they don't have any trees or covering between their house and where the solar field will be and their window faces that direction. As the sun sets, they will have the normal glare from the sunset but there is a small 2-3 degree angle where the sunset hits the bottom of that horizon that might send them some additional glare as it hits that bottom horizon. But it should be very little."*

I am, therefore, not so sure that your reflectivity study contains any information concerning the morning glare because it was assumed, by the firm who did the computer study, that the Stillwater Mountain Range would negate any concerns. From the statement made by Daren Daters, it appears that he felt confident that any glare would be to the east, but it should be very little. Based upon his testimony it appears that the Planning Commission did not have a reason to suspect glare to be a concern. However, a resident to the west of the project area is being impacted by glare. Therefore, while it is true that no screening was required in the NOFA, it is our opinion that the glare study and presentation to the Planning Commission was deficient; neither the firm nor Enel foresaw the impact that the plant would have on western neighbors.

There was a similar situation when the geothermal plant was granted its Special Use Permit (SUP) on October 10, 2007; it was noted that it should not be overly loud. However, once the plant was in operation there was a problem with excessive noise and Enel worked with the County to reduce the noise by installing new baffles. The County was grateful for Enel's efforts to mitigate the situation, which no one expected to be a concern at that time. Based upon that experience I am hopeful that we can come to a resolution on this current glare complaint and in so doing we can also work toward a solution to prevent any adverse impacts from the proposed solar project.

Sincerely,

Michael K Johnson  
Churchill County Planning Director/Code Enforcement Officer  
(775) 423-7627; Fax (775) 428-0259  
[planning-director@churchillcounty.org](mailto:planning-director@churchillcounty.org)

**MINUTES**  
**CHURCHILL COUNTY PLANNING COMMISSION WORKSHOP**  
**Tuesday, September 27, 2016**

**CALL TO ORDER**

 **Chairman Richardson** called the regular meeting of the Churchill County Planning Commission to order at 6:30 p.m. in the Commission Chambers, County Administrative Complex, 155 N Taylor Street, Fallon, Nevada.

**PLANNING COMMISSIONERS PRESENT:** Stuart Richardson, Chairman; Tom Lammel, Vice Chairman; Deanna Diehl; Charlotte Louis; Shelley Schaefer; and Paula Utter.

**PLANNING COMMISSIONERS ABSENT:** Eric Blakey

**PUBLIC PRESENT:** Ashley Smith—Enel Green Power North America, David Little—Enel Green Power North America, Rod Forsyth—Westwood Professional Services, Brad Norling—Westwood Professional Services, Cliff & Christine Newmyer, Wes Viera, Karl Weishaupt, and Dana & Rena Weishaupt.

**COUNTY STAFF PRESENT:** Michael Johnson, Planning Director; Terri Pereira, Associate Planner; Ben Shawcroft, Deputy District Attorney-Civil; and Diane Moyle, Recording Secretary.

**VERIFICATION OF POSTING OF THE AGENDA**

 **Chairman Richardson** verified with Recording Secretary Moyle that the agenda had been posted in accordance with NRS 241.

**REVIEW AND ADOPTION OF AGENDA**

**Chairman Richardson** asked for any changes to the agenda. Secretary Moyle stated that there were none. He then approved the agenda as submitted.

**PUBLIC COMMENT**

 **Chairman Richardson** asked for public comments on anything not on the agenda, and there were none.

**AGENDA ITEMS**

- **Presentation and discussion regarding the Glint and Glare Study for EGP Stillwater Solar PVII, LLC Solar Project prepared by Westwood Professional Services (no action will be taken on this item except possibly giving direction to staff to do certain things in preparation for the next public hearing on this special use permit application).**

 Westwood Professional Services shared a PowerPoint presentation (attached). Brad Norling worked on the study for the proposed Stillwater II Photovoltaic Solar Project. He went through the presentation and started by sharing the various types of reflection and the fundamental principles of glint and glare as they pertain to photovoltaic cells and/or other surfaces. The two fundamental types of reflection include specular and diffuse. Specular reflection occurs on objects with a smooth surface like metal, water, glass, and so forth. The sun radiates energy and it is directly reflected off of that surface. Diffuse reflection in contrast includes basically everything around us in everyday life like soil, building material, and any non-reflective surfaces. When the sunlight hits these surfaces it diffuses in multiple directions, just kind of scatters, and essentially is absorbed and falls apart. The type that he wants to focus on today is the specular reflection.

Mr. Norling talked about the relative reflectance of solar panels and what that really means. A common misconception of photovoltaic solar panels is that they have an inherent amount of glint and glare. Often that is confused with some of the parabolic mirror systems, which are

actually designed to reflect light rather than absorb light. In contrast the photovoltaic solar panels are specifically designed to absorb light, and accordingly reflect only a small amount of sunlight that falls on them as compared with other objects. As a comparison solar panels generally reflect significantly less light than water or standard window glass. Older style solar panels generally, shown in the conventional glass slide, have about 91% transmission, which is the energy coming from the sun going into the panel and being absorbed by the panel, and that energy is then converted into electricity by the panel. The conventional glass has about 4% reflection that is within the panel itself with about 1% that is actually absorbed in the panel and not converted into energy. Of that total approximately 4% is reflected off of that panel, and that is the reflection that we typically refer to when they talk about solar panel reflection—the stuff that we can physically see with our eyes. The newer style of solar panels has an anti-reflective (AR) coating on them. That increases the transmission and you get about a 5% increase in transmission of light that goes through and into the panel and is converted into energy. As a result of that you get a lot less reflection. You go from about 8% reflection to about 3% reflection, about 1.5% is actually absorbed into the panel, and about 1.5% is radiated out. He also compared the reflections of other objects such as steel, glass, and water with solar panels.

 A number of studies have been done on this subject where they measured the intensity of reflections from photovoltaic (PV) solar panels with respect to other naturally occurring man-made surfaces. The results of these studies show that reflections of the sun from solar panels are definitely possible, but the reflections produced will be roughly the intensity that is similar to or less than most other reflections produced from still water and significantly less than glass and steel. He demonstrated on a chart these reflections.

Brad Norling stated that there are some important considerations that are like fundamental laws or principles with regard to glint, glare and reflections as they pertained to receptors or observers nearby. Even if you have glare that occurs from a project unless it is directed toward and seen by an abutting property or observer the glare will not pose significant problems. It is important to understand several fundamental aspects concerning the extent to which glare might be visible to these nearby residences.

- First, for glare to appear, the observer must be able to see the tops of the PV panels. For this to occur, at a minimum, the observer would have to be at the height that is sufficient to look down on the tops of the solar modules. He gave an example in which a person standing, driving in a car, or at a residence would have to be at a minimum the same elevation or slightly higher than the ground elevation at which the solar panels are located.
- Second, glare is insignificant when the location of the sun in the sky is close to the glinting object seen by an observer. The closer the observed angle between the sun and the object from which glare is reflected comes to  $0^\circ$ , the more the glare will be masked by the direct light from the sun. In other words, the closer the sun is on the horizon and the observer potentially sees glare the sun is going to override or mask that glare when you are looking directly into it.
- Lastly, glare is avoided when you have some sort of obstacle or obstruction, including vegetation, a building, an earthen berm, or any other type of impediment which is located between the observer and the solar panels.

 Mr. Norling explained that the fundamental principle of reflected light has to do with incident and the angle at which that light is reflected. The angle of incidence under this fundamental principle is always equal to the angle of reflectance. In other words observers would experience glare only if they are located on or near the path of the blue dotted line shown

on the presentation. When you have an object like a solar panel the normal is an angle that is directly perpendicular and whatever angle the sun comes in then the reflection will be equidistant on the other side of that perpendicular line. He then shared a description of the proposed project, which is the one that his study was prepared to represent. He stated the differences between the proposed project panels and the existing panels at the same location. The proposed panels would be on a single-axis tracker, unlike the fixed array, which is part of the Stillwater I Solar Project (existing project) that are on a fixed array. The existing panels don't move and are oriented toward the south to capture the majority of the sunlight. He said that the new panels would be oriented north-south (the opposite direction of the existing panels) and they would move in an east-west motion along the axis to capture the most sun throughout the day.

 Brad Norling said that these diagrams are just relative examples of the incident angle of these solar arrays. This is an example of the shortest day of the year, winter solstice, December 21<sup>st</sup>. He said that at 9:00 a.m. they are oriented toward the east when the sun is coming up, catching all of the light. Then at 10:00 a.m. their angle is a little bit less, at noon when the sun is directly overhead they are pretty much horizontal to the ground, and then at 2:00 p.m. they are oriented toward the west.

Mr. Norling showed a map demonstrating the nearest occupied residences within a half mile radius around the proposed project array denoted as KOPs (key observation points). The chart next to the map states the distances each KOP is from the actual solar array. He pointed out that the nearest is KOP 6 that is .14 miles and the farthest away is KOP 4 that is .49 miles. He pointed out that the existing Stillwater I project panels are placed east-west and are fixed toward the south (they don't move). As the sun comes up in the east they don't intercept all of the light, but does intercept a large proportion of light. The proposed panels will be oriented north-south and track the sun from east to west, and the angle of incidence is very close or exactly 90° (total parallel). The reflection of the sun is very minimal to none going in that direction. This is one of the two key components of the differences between the two types of solar arrays (between this project and the existing project).

 Brad Norling illustrated with a diagram from the presentation to show how the angle of incidence is different with a fixed array than with the single-axis tracker. He said that incident light comes in at an almost perpendicular level and then the reflection is very minimal. It either goes straight back or depending if it is not a perfect right angle it might come up at a couple of degree angle, but for the most part there is very minimal reflected light. It just comes right back; it doesn't scatter. If you contrast that with a fixed array, what you have generally, in most incidences, the sun will not be at a perpendicular angle (it will be at a sharp or shallow angle) and you will get a larger angle of reflectance. The potential for reflected light is a lot more for a fixed array as opposed to a single-axis tracker. He shared that single-axis trackers are not without reflection totally. Reflection is substantially reduced, but where you will see some reflection is not the hour to hour, but the variation comes with the different seasons. He gave an example that with summer solstice, the longest day on June 21<sup>st</sup>, the sun is overhead or close to overhead, and if you have any reflection it will be along this path (depiction on presentation) from north to south. As far as east to west it will track the sun's movement perfectly. If you will have any glancing reflection it will be along the length of the rank. If you compare that with the spring and fall equinox when the angle of the sun will be closer to the length of the rank, you will consequently get a little larger reflection. The most extreme will be winter solstice where the sun is just off of the horizon and you get a more extreme angle. He then showed a picture where they determined at what point glare does appear for the angle of the sun and time of day.

This particular slide showed the specular reflection based upon the model that is at KOP 6, which is the one that is actually closest to the project area. What they do in the model is to determine if there was any glare. Even if the answer was no they looked at when does glare first appear at these key observation points. At what angle and at what elevation does glare appear? In this particular case glare first starts to appear at 200 feet above the residence here, and it goes up from there. This is the most extreme situation where you will have glare at 200 feet, and it will never get any lower but will definitely be higher. The first was looking at a southeast direction and the other is the opposite view looking in a general north direction. He also demonstrated with a video dramatization and other pictures where the potential for glare is shown to be according to the model they used (pictures attached). He stated that the video and still showing the reflection potential is based upon the summer solstice at 6:00 p.m. He stated that the lowest point the reflective light would be visible is at 200 feet. The sun will be coming in and the single-axis tracker is at its full extension point, which is at about a 60° angle, and it will not get any steeper than that. The sun will come in and the reflection will come back out and then when the sun gets lower the reflection will actually go back out toward the sky.

Director Johnson verified that these panels will not be able to go below 60°, and Mr. Norling concurred. That is how they are designed. Cliff Newmyer asked what their height is at maximum deflection, and Mr. Norling stated that it is at about 11 feet. He then showed pictures depicting what is called the glare cone, which shows the lowest extents of glare based upon the model throughout the entire year including summer and winter solstices. He explained that the edge here represents the point at which the actual glare starts, so that is kind of the lowest point. In reality light doesn't have a distinct sharp edge and is kind of feathered out here. The important take home point of these various slides is the angles at which reflection comes up for different parts to the east, west, south, and north. When you look at this there is no reflection on the edges here all of the way around. The glare cone is not uniform; it is kind of oblong, lopsided. The reason for that is what he mentioned earlier that you get consistent reflections on an hourly basis when the sun comes up in the east and sets in the west, but you have the seasonal variations where the sun is at a different angle throughout the season. That's the reason why you see this different glare where it is long on one side and shorter on the other. He showed with a pointer the directions on the aerial view and said that you can see on the east and west sides where the closest residences are still underneath the overall influence of the reflective light. He stated that it is kind of hard to conceptualize in three dimensional images, but these are a general representation of what is going on throughout the year around the whole proposed project area as far as glare.

 Chairman Richardson questioned what impact would putting a set of solar panels like this have on the pre-existing ones to their current glare patterns. Mr. Norling answered that what is likely to happen, highly likely, is that it will block the glare from the existing facility. So if you are on the west side and you have potential glare from the Stillwater I facility, installation of this project will block any glare from the existing facility. Chairman Richardson asked if there were any questions from those in attendance.

 Cliff Newmyer stated from the audience that he has pictures of the lack of glare, the 4% reflection. He was invited to come to the microphone so that he could be heard well. Chairman Richardson stated for clarification that the lack of glare that we are discussing tonight is from the proposed project not from the pre-existing project. Mr. Newmyer agreed; however, he said that this is the same company that prepared the models for the first two projects. Mr. Richardson said that they did it completely differently. Cliff asked how it is done differently; nothing has been

done. They have looked at all of the projects. These projects were done exactly the same way. Chairman Richardson questioned if Mr. Newmyer noticed that the panels rotate with the sun. Cliff confirmed that he understood that they are just like the ones that were said they were not going to have any glare out on Portuguese Lane that are paraboloids. He warned against this the last time, and your County Commissioner went out there and saw it. This is glare that exists that is so bad that you have a 45 minute image in your eye because one time of looking at this glare. He said that you cannot tell him that any of these reports are any good. They are all fallacious, and they are incorrectly done. The first one was not done properly, and as a matter of fact his residence was deleted suspiciously out of the whole system.

David Little said that with regards to the existing project and the proposed project he was curious with regards to the glint and glare study for the previous project because he has visited Mr. Newmyer's home and has seen multiple pictures and there is no disagreement that there is a glare. He said that he doesn't believe that Brad was the author of the original study of which Mr. Little had a copy at the meeting with him. Cliff said that he was still with the same company that produced the study. David said that with regards to the study the methodology is still the same. This is a standard methodology and computer models. He believes that these are highly reliable models. That said, he went back and looked at the study and Mr. Newmyer's home was a key observation point in the original study. Cliff begged to differ that it was not. It was actually deleted from the original study very cautiously and drawn around, so that it was not in that original study. PV1 was actually drawn around it if you look at the study. David Little said that according to the study that he is looking at for May 9, 2011 EGP Stillwater Photovoltaic Solar Project showed his residence as #4. Mr. Newmyer asked him to look at the line that was drawn around the project. He pointed out that on the study he viewed #4 was east of the project and his home is on the west. Mr. Little, looking at the previous study, said that Mr. Newmyer's home was #4 on the west and shows the expected duration time in dates when glint and glare could be expected at the residence location. The study did actually show that he would have glare 15 minutes between 6:00 and 7:00 a.m. mid-April to mid-September. David Little said that he went back to look at the previous study because he wasn't involved in the original project and wanted to look back and see the consistency between the reports. They contain the same methodologies, same company that is responsible for the report, and he cannot speak to the original project. He said that they recognize that there is glare from the original project. The point that they are making under this new scenario is that this is a completely different configuration than what they had in the first PV project. These are utilizing single-axis trackers that are oriented north and south, and from the study it is very clear that these are going to be a complete block to the existing glare that you have from the first project. It is logical that when you have glare from a panel that is locked at 60° that there will not be glare from the new project. He further stated that if the project is never built, Mr. Newmyer, then the glare will continue to exist as you experience it today. Cliff Newmyer stated that the problem with the original project is that your glare should be mitigated. You started to do it, but you did not complete it. They put some bales up to try to mitigate the problem and it was never complete, so the glare continued. Under NRS 41.40 indicates that a nuisance exists here. This is a criminal situation now. The fact that these people are omitting information is a crime based upon the definition of a crime as an act or omission. He said that they omitted him from the original project, are creating a nuisance, and you folks have not abated that. Mr. Little asked for clarification whether there were other studies that he hasn't seen or if the one he had with him was the only one. Ashley Smith said that there was a study that was done for the CSP

(Concentrated Solar Project), and she agreed that this was the only study that was done on the original facility. David Little did not understand why the study he had in his hand shows that Mr. Newmyer's residence is noted as a location to be affected by glare and yet Mr. Newmyer says that he was deleted from the study. Mr. Little asked if the study was part of the public record and it was public information. Cliff said that it was and he researched all of this because they have been complaining about this for years now, and nothing has been done.

Chairman Richardson asked Mr. Newmyer if he got from the presentation that if the new project were built, it would successfully block all of your glare and you would have no more glare. Cliff asked Mr. Richardson as an optometrist about an image that lasts in your retina for 45 minutes if it is not a damaging image. Stuart Richardson said that if you look at it, it will damage your eyes. Mr. Newmyer continued that anytime that he happens to glance up out of his window or walk outside his house and he gets damage for 6 months out of the year he asked what is happening to him. Mr. Richardson agreed that if you go outside and look directly at the sun and hold that gaze for he's not sure how many seconds it takes, and Cliff said that he's not looking at the sun; he's looking at that project outside his windows or walking outside his house. Chairman Richardson remarked that what is being stated tonight is that this glare could be eliminated, and he asked Cliff if he wouldn't be comfortable if that glare was gone. Mr. Newmyer declared that the glare needs to be gone first. That is what he would be comfortable with. He's here to say and to propose on this project that if they wish to build a berm there first, he would have no problem with it because he believes it will be shoved through anyhow. He feels that if they can build the berm and make it so that he doesn't have to see the glare from any part of it, he wouldn't have a problem with it. Chairman Richardson clarified that Cliff would like to have the glare to be eliminated during the process of the construction, and Mr. Newmyer reiterated that he wanted the berm to be built first. Stuart Richardson asked if it was not practical, if there was a better way to do that rather than build a berm, if there was a more practical and efficient manner to do that, wouldn't it be better to do that. Cliff questioned what would be more efficient; a fence like the fence in project number 2 that was supposed to mitigate the glare and did not, the 16 foot fence that they said would mitigate the glare and did not? Chairman Richardson agreed that a fence that would mitigate it would be a more effective way. Mr. Newmyer declared that the fence did not work, and he asked those in attendance if they wanted to see the pictures of the glare that he sees even with the fence. Ashley Smith stated that the fence that is for the CSP was never designed to be a fence to mitigate glare. It is a windscreen to help protect those panels from damaging winds. Cliff Newmyer asked her if she thought that the nuisance is just fine, and she said that she was just speaking on the purpose of that fence. Mr. Newmyer questioned if the damage to people's eyes, like Wes Viera, when he is driving around in his field, to his eyes that's okay. Ms. Smith reiterated that she is not saying whether it is okay or not; she just wanted it to be clear that the whole purpose for that fence to begin with was for a windscreen. It was not designed to be for visual mitigation. Cliff believes that someone should have been on the ball; you folks should have been on the ball and say that this needs to be mitigated. He said that they knew there was going to be glare, major glare, and it's not been mitigated. It's a problem; it's a serious problem. He asked that the pictures that he provided be shown on the overhead of the glare at his home.

Chairman Richardson stated that someone mentioned hay bales. He wondered if Mr. Newmyer had put up hay bales as a barrier, and Cliff declared that Enel started doing that for a while. Dana Weishaupt spoke from the audience about the hay bales being a sound barrier for the geothermal not for the glare. Cliff then corrected that they did start putting hay bales out for

the glare. Stuart Richardson asked if temporary hay bales put out there during the construction of the project, if it could be shown to you that the project was going to be effectively blocking all of his glare. Mr. Newmyer did not agree. He sees no way that he can believe anything to say that the project is going to mitigate the glare. There is no way; there is going to be glare. As a matter of fact, SGHAT (Solar Glare Hazard Analysis Tool), which is what these people use, says that there is glare from their projects. He questioned if the people from Westwood Professional Services know what SGHAT is, and Brad agreed that this is what they use to model this project. Cliff said that it says right in it that there will be glare. Mr. Norling explained that they didn't get that from the results of the model when they ran the model. Mr. Newmyer said that they ran the model wrong then because they ran the model on their computer, and guess what, it does have glare. Ms. Smith asked if he ran the model for the proposed project. Cliff Newmyer stated that anyone can run it, and then said for the original PV Project. He then surmised that stemming from that project consequently their results right now are fallacious. Chairman Richardson reiterated that the new project is a completely different system. Cliff professed that the results right now are fallacious because through the poisoned tree you cannot trust someone who does not have the first sense of reality.

David Little wanted to be clear the study that Westwood Professional Services did prepare he assumes using the same model. Brad Norling clarified that they used a different model than the one used for the first project; it wasn't the SGHAT model, but they are very similar results. Mr. Little said that the results indicate that at Mr. Newmyer's residence there will be glare on the first project. Mr. Norling further stated that this proposed project, not the existing project, but the proposed project is the one that they used the SGHAT model on. David explained that there is a difference because the first project on the modeling indicated that there would be glare during limited times and during certain months of the year. The model for the new project indicates that there will not be glare at any time for the same residence (receptor). Brad agreed that these are two different projects and the first had glare and the proposed one doesn't. Mr. Little said that it is a convenient fact that the new project would shield the glare from the first project, and Mr. Norling concurred.

Chairman Richardson said that he would like to sit down with Cliff just by ourselves to look over the models. Mr. Newmyer disagreed. He said that he is not a stupid person here. He thinks that Mr. Richardson believed these people the first time. Fool me once, shame on me, right? This is project number 3. He asked again to show the pictures he brought to the meeting, and Secretary Moyle asked which ones he would like to have displayed. He declined to bring any of them up, so she chose one at random and displayed it. David Little stated that he doesn't believe that there is any disagreement that there is glare. Chairman Richardson commented that the question here is how we mitigate this. Cliff remarked that it should have been mitigated prior to this. The county is responsible, and has been responsible for years, and has not mitigated the problem; neither has Enel. Mr. Richardson said that now they have a solution. Mr. Newmyer disagreed. Chairman Richardson expressed his desire to sit down with Cliff because he believes that there are some things that he is missing. Mr. Newmyer does not believe that he is missing anything, and Mr. Richardson remarked that there is some information that he doesn't have and he is not listening to tonight. He could show it to you. Cliff asked if Mr. Richardson was showing him something that he held up, which could not be seen by the secretary. Stuart said that it isn't that; he wants to show him some things that actually explain to you why the glare will be mitigated. Mr. Newmyer said that he disagrees, and Chairman Richardson stated that it is because he hasn't seen what he can show him. Cliff remarked that quite frankly he doesn't have

to see what Mr. Richardson is going to show him because if he gets hit a couple of times he figures that the third time when the swing is coming at him that maybe he ought to duck. Chairman Richardson thinks that Cliff should listen to him, and Cliff thinks that Mr. Richardson should listen to him. Chairman Richardson agreed that he is listening and is hearing what he is saying. He is hearing that Mr. Newmyer is upset with what happened. Cliff declared that what they need to do is get an independent person, not someone who is being paid by Enel, through the county, and do a real study on this because when they run the figures on their computer it shows glare. Chairman Richardson said that they ran the figures on the old system and not the new one. That is what the confusion is about. Cliff Newmyer avowed that is not correct. Chairman Richardson asked if he had the plans for the new system. Cliff stated that there will be glare from this project, period. Mr. Richardson questioned how much, what time, when, what part of the season, what part of the year. He then said that it will be minimal to zero because of the construction and the design. Mr. Newmyer commented that Mr. Richardson is arguing with him when he hasn't done a thing to mitigate the original problem. He has come to you for years now, and you haven't done a thing. Why should he agree to sit down with you now and you are going to convince me of something? Mr. Richardson said that he may not, but maybe. Cliff then said more than likely not; as a matter of fact I know not. They have had issue after issue after issue with this plant, and you are just not listening. Maybe because there are a lot of things that seems to be happening and you folks are being pumped by whomever around here to go along with the project. Well, the project is telling him that there is going to be more glare at his house. There is already too much glare in the area. He agreed that he is upset because for years now he has been complaining about this, just like they complained about the noise for years and you did nothing about it until it was finally rectified because there were so many people complaining.

Chairman Richardson commented that this is the opportunity to get something done, which would solve everybody's problem. He realizes that Mr. Newmyer doubts it; he's skeptical because of what has happened. He thinks that the technology that they are using and the designs indicate that there is a very high probability it would mitigate the problem and he wouldn't have any more glare. Cliff gave a prime example for trackers down in Mason Valley just like that. He goes down there to fish every once in a while, and there is so much glare from those you can't even hardly stand out and fish. David Little said that is a CSP project, which are the mirror type panels. Cliff Newmyer said that it is a PV, and Mr. Little is familiar with the facility he is talking about. Those are actually a CPV project (concentrated photovoltaic), and Mr. Newmyer cut in saying that consequently, Mr. Little is just telling him not to worry about it; you are going to get glare anyhow. Stuart Richardson said that those are special panels that actually reflect the light, and these are panels that are designed not to reflect the light.

Cliff Newmyer expressed what he believes the issue to be. All of this can be done by a berm that is put in and constructed properly; that would be 10 or 11 feet whatever the maximum deflection is which they stated is 11 feet. If that is done prior to construction, we won't have an issue with it. However, if it is not, there is an issue because there will be glare. That is just an absolute fact. Mr. Richardson agreed that this is why we are here tonight because we want to get this on the record—what your feelings about this are, and obviously your contention is that the only way that this could be resolved is to have a berm. That will go on the record tonight.

Vice Chairman Lammel questioned if they were to give these people an approval to build their plant and put the caveat on it that in 90 days after the construction of the plant and there is glare to his property that they will be required to build a berm. Mr. Newmyer said just for the record Enel has been known to promise berms. You can talk to the attorney for the

Canvasback Duck Club. He can provide him with his number. Enel said that they would construct berms; they did not, and they have not. He's requested it again and again, so, no, that is not acceptable. Build the berm first. Dana Weishaupt said that once you get the plant in there how are you going to shut something down that you already brought in? What you should do is build the berm first. He suggested that they place the solar project farther away from the residences and farmland and was then instructed to come forward to use a microphone because it was too hard to hear what he was saying and we needed to get it on the record.

Mr. Newmyer asked the representatives for Westwood Professional Services if this is the proper siting for this new project and if this is what SGHAT says is proper siting—right next to a residence. Is this proper siting? Brad Norling stated that the SGHAT model doesn't say anything, which he is aware of, about siting. Dana Weishaupt then asked him if he lives in an area that has these panels around it, and Mr. Norling stated that he does not. Mr. Weishaupt questioned why they expect them to put up with something like this if he doesn't live around this kind of stuff. You would know what goes on if you were around them. He said that the picture on the screen shows the glare, and it doesn't make much sense to him to go ahead and put in a plant and then have to put up the berm later if you see there's a problem now. Why would you guys want to put the plant in around a farming area with ditches and roads running through that property? Why not go north out into the desert where there is nobody and put your berm around there to protect the Canvasback Duck Club who is the only one you have to deal with because there is nobody else there. Cliff Newmyer commented that Enel already has easements down there with their pipes and you can run all of your equipment down there and get them out of the area. Mr. Weishaupt remarked that what makes him mad is the fact that when something like this comes in that you take up farmland to do this with. There may not be any water on it right now but there are roads, TCID easements, drain ditches, and stuff in there that would have to be maintained by the district. If you go north out there in the middle of that desert, there is nothing there, and it is right on the other side of the plant. He doesn't know why you guys, it's the same thing when they build the town they take up the farming area first, the nice level ground when they build the town. Down there you guys have a desert area that is close and north of the plant and there would be no trouble to put it down there and you could put the berms up around it to protect the people. Mr. Newmyer stated that he knows why they don't, and that's because it would take them six years to go through BOR and BLM to get it in. Right here they have an easy way of doing it because they've got a lease on it. David Little, Project Manager with Enel, said that they do believe it is an appropriate site and is a good site for the project. We are talking about expanding a project as opposed to building several miles away and cutting the project up. The fact that we have the project all together on one compact site they believe makes sense for a number of reasons. Mr. Newmyer interjected that they shouldn't have put the first project in there, so why expand it? Mr. Little said that he wasn't involved in the development of the first project, but he does not believe that they had an active open discussion like this with regards to reflectivity and view shed on the first project. It's apparent to him that although the report does show that there is reflectivity, and hind sight is 20/20. What he can tell him as he said when he met Cliff in his home is that they would work with him to minimize the effects of glare. He stands by that statement in February, when he met with him, and through today. He explained that there are a lot of moving pieces with developing a project, but he does believe it is the right thing to do with regards to developing the second PV project and work with him to mitigate the glare. They are committed to doing that. Cliff Newmyer expressed appreciation for Mr. Little coming to his house because he was one of the few people that would do so. He then questioned

if the first order of business would be earthwork, right? Consequently, a berm wouldn't be a huge jump to do, would it? Mr. Little agreed that it is one of the options that they are looking at. He doesn't believe it is appropriate for them to commit to that in this setting, but what he is committing to Cliff is to work with him to find a solution that minimizes or eliminates the glare. He stands by that. That is the right thing to do. They recognize that they are applying for another project at their Salt Wells geothermal project; same type of idea where they are combining projects with the geothermal—efficiencies, proper land use—and at that project they don't have a house for miles. Mr. Newmyer agreed that there isn't. He reiterated that this is 200 yards from his house. The existing panels are 1,000 plus yards from his house. Mr. Little continued that they do not have these issues with Salt Wells, and they recognize that they have the issue on Stillwater and are working with him to solve it. It is not perfect, but they will work with him to solve it to the best that they can. It isn't perfect, and he recognizes that Mr. Newmyer is not going to be 100% happy. He said they will work with him to minimize it and do that. For the record he stands by that.

☞ Vice Chairman Lammel wanted to go back to the idea of putting a berm there. He asked earlier if they allowed them to go ahead and put up the plant and then have a 90 day window for a berm, and Mr. Newmyer said that they wouldn't do it. He asked what about if they required them to put a bond together that they have to purchase that says they will do it. Cliff said that the berm is a project that mitigates other issues with that whole project. That is something else that Mr. Little and he discussed. There is still noise coming from that plant that is quite high. It used to be 65 decibels, which basically is like turning on a vacuum cleaner next to the microphone, and was about the same as the noise from the plant. That is what they used to deal with every day, every night. He remembers him coming out there, out close to the project but not near their house. The issue is that you need to get this done properly first. The first thing that you do is that you lay a foundation. You want a foundation of trust, build the berm first. It is that simple. He suggested that before you okay anything that you make sure that it is in the contract, in the special use permit, that the berm goes up first. Mr. Little remarked that when they spoke they talked about a berm, but they also talked about other mitigation as well. He has looked into the berm a little bit and he is not completely discounting it. It is on the table, but there may be other visual mitigations that are better such as a fence with slats in it. Mr. Newmyer said that if you look at the fence and what was done before, it is a joke. Mr. Little believes very strongly in the science on this, and he ☞ knows that Cliff is skeptical with regards to third party studies. To him it seems that Mr. Newmyer has glare from the existing study and the new study says there won't be. He explained that the technology is completely different, so if they are talking about a combination of a 60 degree angle single axis tracker with a combination of a fence or a berm he thinks that Mr. Newmyer will see a significant mitigation in glare to his home. Whether it is a fence or a berm, and he admitted that it could very well be a berm. He said that those have to be looked at because there are some issues that he has with regards to the potential berm that they could talk about off of the record. They have had their engineers look at it, and everything is easy to say that they will do this and that, but there is always the devil in the details. If they are going to do something, he wants to make sure that it is right, that it is permanent, that in two or five years that we will not be having further issues about it, and that it is solved. Cliff said that is exactly what Rick Gilmore told him to be concerned about. He is the lawyer for the club. ☞ David Little wants to look for a permanent solution, and not for a three year solution. Mr. Newmyer continued that he shouldn't have to wait for promises that don't happen because Enel promised the duck club and none of it happened. Mr.

Little stated that a hay bale is not a permanent solution, and Cliff agreed. Mr. Little responded that a berm may not be either, but he thinks that all of those issues need to be looked at and a permanent solution, one that is again not a three or five year one, but that is a twenty year solution is what he wants to find. He said that they have offered to work with him and he asks that Mr. Newmyer works with them in this as well.

Cliff Newmyer questioned Brad Norling is this proper siting and expressed frustration when he did not answer right away. Mr. Norling remarked that he thinks that it is. Cliff then asked him what the floor level of his house is, and Brad asked for clarification whether he was speaking of elevation. Cliff then questioned if he thinks it is at grade level to which Brad made a noise that could be in the affirmative. Mr. Newmyer then stated that it is not; it is five feet above grade. He asked Brad if he knew that; did he take that into effect or just do a fly over and punch it into his computer and said that it was all good? Mr. Norling declared that the model was run at 6 feet and 20 feet. Mr. Newmyer then commented that his models are wrong, obviously. He took the shrug of Mr. Norling's shoulders as an indication that they just plug it in and get paid. Chairman Richardson said that Mr. Newmyer is going back to the fact that he is looking at the old models and the new models are based upon the new system, so it shows a different amount of glare. They did run it twice to see what would happen if you were standing at 6 feet above grade and what would happen if you were running at 20 feet above grade. Mr. Norling remarked that if Cliff ran the SGHAT model on the new project, he would really like to see those results. Mr. Newmyer questioned if Brad saw the results from the last two, and then stated that Mr. Norling wasn't there. He believes that is a convenient excuse. He said that this is unrealistic; their primary study was fallacious, their secondary study was fallacious, and their third study, as far as he can see, is fallacious. Chairman Richardson interjected that Mr. Newmyer is losing credibility by saying that a study was false when they have the actual study here. Then Cliff said that the persons who are losing credibility are the commissioners because they have not done anything about it for years. He admitted that Michael Johnson has been out to his house, has seen the glare, and has tried to do something, but Enel has done nothing about it. Mr. Richardson commented that they are now here at the table saying that they can do something about it to fix it. Mr. Newmyer is saying that the way to fix it is either with a berm or some kind of complete mitigation prior to any advance on the project. Stuart Richardson agreed that they are going to take that into consideration because they are not making any decisions tonight and are just collecting the information, but that is important-that is why they were invited here this evening. Cliff expressed his belief that the reason that he was invited here is because he has been pushing it. He knows what is going on, he has heard what is going on, and Mr. Richardson knows that he has been all over the place on people. Chairman Richardson said that he doesn't get paid much to do this job, but he loves it because he thinks that it is important that everybody in this county gets to come here and tell them exactly what they think, and they are going to listen to it. He admitted that they are also going to listen to Enel and look at those results and are going to think about this to decide what the best way is to accomplish things so that it works for everyone. That is what they want to do, but they have to listen. They've given them a chance to make their presentation, and they understand why Cliff is skeptical and the difficulties that he has had with them. Mr. Newmyer pointed to the picture of the glare and explained that is why he is skeptical. Chairman Richardson continued that what they are telling him is that this is some new technology, which could make this a lot better, and if the new technology works the way that the study says it will, it could mitigate things and make things so that he had no glare.

Cliff invited his wife, Christine Newmyer, to come forward and speak. She stated that Mr. Richardson just mentioned that he wanted to make things better for everybody, and she does want him to understand that this is not just them being complainers and being selfish and just because they don't like something that they want to get something done. That is not the case. She shared a photo of the glare from the existing project and said that this picture shows a parabolic array, and they are like the ones that in 2013 that they approved on Jackrabbit Road. That is a public road; those are public roads—Portuguese on the west side, Jackrabbit on the north, and then Freeman on the east. All of the residences are affected, whether it be Wes, Dana, them, or whomever is driving in that neighborhood, or any of the people who go out to the Canvasback Club, and there are a lot of members and their guests. She admitted that they are asking to have this mitigated for them, but they also want that mitigated too. Christine said that the county should be asking Enel to mitigate that problem before you give them the okay to do something else. It is only reasonable, logical to think that that maybe this time they will think ahead and be proactive and maybe take care of business and not have some foreseeable problem, which they know could happen very easily because studies show that glare is a problem. She begged to differ with his other studies and commented that they have copies of both of the previous studies. She stated that their house was omitted. If you go back in the studies to the exhibits and mapping, they went purposefully around their home and did not include them in the first solar panel project. In the second project, where Ms. Smith earlier stated the fencing was just for wind, she can find it in the glare study that says that 70% of the glare was supposed to be mitigated by the screening; by that 16 foot fence and the screening. She remarked that Mr. Richardson stated that her husband was losing credibility, but she's not sure that he's the person who is losing credibility. Yes, he is upset, but she has their studies too; the commissioners have their studies. They obtained the copies from the records kept at the Planning Department; she didn't get them out of thin air. It is up to the Planning Commission to do something ahead of time, so that they don't have to come in here and be upset and scream at them. She doesn't like to do that, and they don't like having to talk with Ben Shawcroft all of the time about this.

Chairman Richardson stated that they have brought up some really good points. He believes what they are going to do is go back and actually look at those. They will also have Enel take a look at all of the potential ways to mitigate this. Then they will look at the sequence of things and what they feel, if they decide to approve it, because it hasn't been approved yet. He admitted that they are coming at the right time. The right time to be here is now and to tell them all of their concerns; they are all on the record. They will look at all of those and then they will take a look at this and see if this project could go forward, what would be the best way so that they could get the maximum mitigation. He agreed that they understand why the Newmyers want that mitigation. He said that he is an eye doctor and the last thing he wants is to have them looking at some bright light. The last thing that he is going to tell you to do is to go out and look at the sun. If they can do this and fix this, so that it is good for everybody, that is what they need to do. They need to look at these things and look at what they did—the type of fencing before—and come together with a conclusion that will work. He expressed appreciation for them coming. It is a little bit hard having someone chewing you out, but it is what they are here for; this is how the Planning Commission works. Mrs. Newmyer further stated that part of their concern is that it appears that in the past maybe they took advantage of you; maybe they tried to get you off in the weeds with the calculus formulas that they show with the glare and all of the other things with angles and so forth. She shared an article that is written by Clifford Ho, who was one of the engineers who works at Sandia, who developed the SGHAT tool that they have

used to go ahead and do this glare study. She thinks that they might find it interesting. Again, you do not need to have three years of calculus in high school and college to understand what it says. It might give you an idea of what you are looking at and what kind of decision you are making. Chairman Richardson said that they would love to see it; anything that they can give to them that will add to the information that they have to look over before they come to any decision.

 Dana Weishaupt asked from the audience how long a person would have to look at that light before it would blind them. Mr. Richardson asked which one, and Dana pointed to the glare in the picture on the overhead. Mr. Richardson said that the one on the screen could be looked at all night; however, if he was there looking at the actual glare, he didn't really know. He has never really studied how long it takes to burn somebody's eyes with a laser. Cliff interjected that this takes about two seconds for it to make an image in your eye for 30 minutes. It is hard to hold a camera up to take the picture. This glare is through their low E windows—double paned, low E windows.

Mr. Weishaupt questioned how tall of a fence would be required to mitigate this (he was also asked to move forward to a microphone so that his questions and comments could be heard and recorded better), and Chairman Richardson answered that he thought it would need to be a 12 foot fence. He asked Enel, and Mr. Little wasn't sure until they did some engineering of it, but agreed that 12 foot would be a good estimate. Mr. Richardson said that if you could get a solid fence that blocked it in some way, that might be one of the things that they consider as a condition if they were to consider granting this permit. Dana, still from the audience without a microphone, said something about having a natural fence on the south side, and again was instructed to move forward to a microphone. He then said that they would have a natural fence down there if they would put that project on the north side of that plant that they have down there now out in the desert. He doesn't like them, or anybody, starting to put these projects into a farm area. He knows that they have been approached down there to lease their property to put the solar plants on, and he is going to tell them no. He doesn't want that stuff around. It influences the duck hunting, the goose hunting, and the bird habitat around there. He thinks that where they are going to put that down there it is going to cause trouble. He asked what would happen if that ditch that runs through the middle of that place there breaks. Who is going to be responsible if that ditch breaks? TCID? He expressed his belief that they are putting it in the wrong place. He said that they have that power plant out there in the desert on the Austin Highway not hurting anybody out there. If they put that plant down here north of the one that is down there now, some of that is privately owned ground down there—Ted DeBraga owns some of that. It's so much easier to put those plants where there are no problems with the people. He pointed out that Cliff Newmyer has told them what happens over at his place. He admitted that he doesn't have time to stand and look at this stuff all of the time, but he will be watching for it now. If he sees that glare down there, then he will know not to look at it. If they know it is a problem and having a 12 foot fence around a project where you don't have to have it if you moved it all to the north. He said that they leased that land and it is going to have more problems with more people farther up the valley now. It will take in them, Ward Viera, and others. He wouldn't know that the glare was going to hurt him if he looked at it, but from what these people have said it isn't worth taking a chance. A 12 foot fence around it is going to help some of it, but if you get up the valley farther, he doesn't believe the 12 foot fence would do much good.

 Chairman Richardson asked for any other comments. Vice Chairman Lammel questioned Enel if they were to require somebody review their proposal here, would they have

any objection to that. David Little answered that they would not. Tom stated that another option they have is that Enel provide the information to another private company, not associated with Enel or with the county, to review it and come back with their findings. Mr. Lammel didn't believe that they could make that decision tonight. Ben Shawcroft, Deputy District Attorney—Civil, stated that actually it was agendaized so that if the board wanted to give some kind of direction to the Planning Department, such as that which was anticipated that might happen, they can take that action tonight, such as go out there and find some independent firm to take a look at this and provide an opinion. 

**Motion: Vice Chairman Lammel made a motion to direct the Planning Director, Michael Johnson, to go find a company that would review their information and come back with a report at Enel's expense.** Director Johnson interjected that the code allows for a \$50,000 deposit that is to be used for hiring an outside agency for any reason that they need specialized help to be submitted by Enel. He suggested looking at the company that was used by Cyrq Energy for their solar project in Hazen. It is a different company that does the same type of engineering work. David Little commented that there are a number of very reputable engineering firms that are capable of doing this, and he said that the county can make that decision. He expressed concern that they are selecting a highly reputable firm. Mr. Johnson said that this company he is recommending just recently went through a project about six months ago in the county, so it would be a firm similar to Westwood Professional Services but they just worked for a different geothermal company. Member Schafer questioned if Enel already had one of these facilities going in another location that they could look at. David Little said that they have a project five times the size of this one that is currently under construction in Minnesota. Cliff Newmyer asked if it was right next to a house, and Mr. Little remarked that there are actually residences nearby. He admitted that they are having a similar discussion with those people. This is not unique. With solar projects many projects are located in areas that do not have receptors, but there are many that are located in areas that do have residences. Someone commented that there is plenty of room to put that project elsewhere, not next to the housing, not in farmland. Cliff Newmyer declared that they have a year and a half left on their contract for this land. They have not made a long-term commitment on the contract, so there is no reason for them to have this. This does not have to go through. This project does not have to go through there. **Member Utter seconded the motion. Chairman Richardson restated that it has been moved and seconded that we contract with a company to look at this study and evaluate it independently, and it was passed unanimously.**

 Chairman Richardson stated that they get a group at Michael Johnson's discretion to take a look at it and verify the results or find out if they are not correct. He then asked Enel if in the meantime there were no other single-axis installations here in Nevada that they could look at. David Little is aware that there is a project of a competitor of theirs in Luning, but it is under construction and he believes that it is the same type of single-axis tracker, but he is not 100% sure. He would do a little investigative work before he would take a field trip. Michael Johnson remarked that the project that was approved for Cyrq Energy is in a way similar to this. It is 70 feet long, oriented north and south, and rotates according to the sun, so the project that they are doing is similar to this one. Cliff Newmyer asked where that project is going to be located, and

Mr. Johnson stated it is in Hazen near the Patua geothermal facility. Mr. Newmyer pointed out that it is across the road and not near any residences. Mr. Johnson said that he thinks that it is just north of the actual geothermal plant there. He just mentioned it because it is similar in the respect that it is like 75 feet long and rotates with the sun like these. He pointed out that they lay basically flat to the earth; however, he noted that sometimes the earth isn't exactly flat and so there could be a little angle. Cliff Newmyer restated his question that it isn't 200 feet from somebody's house.

 Dana Weishaupt asked if this study that the county will have done will be from now until March, or will it be year round study so that they can get all of the seasons in on their study. Director Johnson explained that as he understood from what Vice Chairman Lammel said is that we choose a company and they would get the data from Westwood Professional Services to run the model, and then the new company could state whether they agree with the findings or that they do not agree with their report. Mr. Weishaupt commented that we have the hottest times during the summer and the sun is directly over us, so if they don't want to take their study in the wintertime when the sun is going to be down further. Mr. Johnson said that he is not referring to them coming out and actually putting things here. What they would be doing is taking their model examples (SGHAT) and their information, and the new company would run it through the models and either share that they agree or they do not agree with the findings of the study, or with which points they do not agree. He didn't understand that anyone would need to come out for a year and conduct any kind of study onsite. Cliff Newmyer remarked that it is just like a computer; garbage in, garbage out. Whatever you put in, you can get anything out of it that you want to get out of it as long as you tweak the parameters. The reality of it is onscreen. Mr. Weishaupt said that this is the same thing when the base went in down there. He heard through the grapevine that the commander had to live underneath the runway. Then the people that are putting the plant in down there don't live here, and when you don't live here then you are only relying on what somebody else has told you, and your studies that you have already done. You need to live here to see what is going on and what is happening or be here at the time when it is going on so that you understand what these guys are going through. He's all over the valley; he's not in one place enough time to see what is going on, but if he looked at that light and saw that, he would probably stand there and wonder what in the world that light down there is. It would be too late by then because he doesn't know how long it takes to blind you or hurt your eyesight, but there are not that many people around there. It is a good place to put the plant in, but you're doing it without anybody's knowledge on what can happen to them if they look at that light. **Vice Chairman Lammel remarked that his motion was to review their paperwork, not to start over and reinvent the wheel. It was to check it out and see if it makes sense or if it contains errors. The company needs to be someone that is not connected to either party.** Cliff Newmyer encouraged the commissioners to read the handout that Mrs. Newmyer handed out. This does give information about glare, what kind of damage it does to you—not only to your retina but psychological damage to you. He thinks that he is having psychological damage because he has to fight this thing so much. He believes that he has to put on a good show or otherwise they won't listen.

 Chairman Richardson stated that they have listened; everything is on record. He said that they will take everything into consideration, and hopefully when they come back to the table they will have a lot more information. He pointed out that Mr. Newmyer has raised some incredibly important questions, and they are going to consider them all. Cliff Newmyer mentioned that his wife has had several eye operations and is very susceptible to the light, and

these are serious operations. He shared the types of operations that she has undergone, and said that basically her doctor said that it was like scraping paint off of a wall is about what the tissue was like on her retina. She's very susceptible to these kinds of things. He thought it might give them a little more understanding why he is so irritated about this problem. Chairman Richardson agreed that they are going to take everything under consideration, and when they come back to the table they will, hopefully, have a lot more information.

Member Diehl asked for the people from Enel to introduce themselves and explain what their positions are. Ashley Smith is the Permitting Specialist for Enel; David Little is the Senior Director of Business Development and manages the western region for all business development for Enel, which includes Texas to California; Rod Forsyth is with Westwood Professional Services, Civil Engineer; and Brad Norling is with Westwood Professional Services and performed the Glint and Glare study on the Stillwater II photovoltaic solar project. Chairman Richardson thanked everyone for coming.

**PUBLIC COMMENT**

**Chairman Richardson** asked for any other public comments, and there were none.

**UPDATES AND FUTURE AGENDA ITEMS**

None.

**ADJOURNMENT**

**Chairman Richardson** thanked everyone for coming to participate. There were no further comments or questions, so he adjourned the meeting at 7:56 p.m.

Respectfully Submitted,

Diane Moyle  
Recording Secretary



## Glare Nuisance Compliant Hearing

3<sup>rd</sup> of November 2016 at 18:00



### Background

All necessary paperwork along with the Application for SUP to build the Stillwater PV plant was submitted to Churchill County, and then approved by Churchill County on **11 of May, 2011**. The SUP was recorded as an official document on **26 of May, 2011**. This Application package is a public document, allowing anyone to review it during the application process. Any resident at that time could have brought forth any concerns at that time.

Part of that application package was a reflectivity study known as Exhibit F. Please note this study at the time was labelled as (Preliminary). There were grammatical errors and numbering errors that needed to be corrected before the final version was published.

The Newmyer home was considered as part of this Reflectivity Study. This preliminary study states in **Section 3 that "residences 1-4 to the west of the project could potentially receive glare in the morning because they lie west of the project area."**



Scanned copy of Exhibit F cover page from SUP submittal.



EXHIBIT F

IMPACTS OF REFLECTED SUNLIGHT ON  
POTENTIALLY SENSITIVE RECEPTORS  
(Preliminary)

3

## Background cont...



Inter company records state the following:

Preliminary Study was provided to Enel Stillwater LLC on **22 of March, 2011.**

Comments were submitted by Enel Stillwater LLC to Westwood Engineering on **3<sup>rd</sup> of May, 2011.**

Special Use Permit Hearing was held and SUP approved on **11 of May, 2011.**

Enel Stillwater LLC received final Revised Study from Westwood Engineering on **13 of May, 2011.**

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## Background cont...



SUP was approved with the Preliminary Reflectivity Study by the Planning Commission with no requirement concerning the submission of additional Reflectivity Study. Further the Planning Commission imposed no requirement concerning offsite Glare.

So the Stillwater Solar LLC Photovoltaic Plant was constructed in December of 2011 and went Commercial Operations Declared in March of 2012. This means all Panels were in service and producing electricity, providing power to the City of Fallon and Churchill County through NV Energy by March of 2012.

The Photovoltaic panels do not move, they are completely fixed. Nothing changes with the panels at all, and they have not since the plant was constructed in December of 2011.

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## Complaint



In **May of 2015** Mr. Cliff Newmyer, who resides on Portuguese Ln., contacted Mr. Michael Johnson, Churchill County Planning Director, to begin the complaint reporting process of what he feels is an invasive Glare Concern. **Please bear in mind this is 3 years and 2 months after this facility was fully operational.**

This Complaint came contemporaneous to the disclosure that we could potentially expand the Stillwater Photovoltaic Plant.

Mr. Newmyer never reached out to Enel representatives regarding his concerns, but went straight to the County. Nor did Mr. Newmyer ever bring this up at any other Planning Commission meetings prior to the complaint.

Most of our Neighbors come to us with issues, and we do our best to resolve them before bothering any Regulatory Agency. Part of being a good neighbor is communicating with each other, and working with each other to resolve issues. The communication must be mutual for this to happen. Being a good neighbor cannot be a one way communication.

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## Complaint cont...



On **15 of July, 2015** a meeting was held with Mr. Johnson, Ms. Ashley Smith, and myself where this complaint was discussed and Enel Stillwater Solar indicated that it would try, **as a good neighbor**, to alleviate the Newmyer concern.

In **October of 2015** Enel Stillwater Solar LLC erected a glare fence between the Solar Plant and the Newmyer home, which at the time helped to alleviate the landowners concern. There were some issues with the height of the fence. Also a few times the fence blew over. This made it hard to maintain, and time consuming for plant employees.

In **May of 2016** the issue arose again, and we revisited with Mr. Johnson. At this time after investigating the issue, we found confirmation of the analysis provided reflectivity study, **that the glare only lasts 15 to 20 minutes in duration for only 5 months out of the year.**

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## Good Neighbor Attempts



Following the meeting in May of 2016, in an effort to be a Good Neighbor and looking for a quick resolution, we moved some hay bales to try and help alleviate the concern. These hay bales were not enough to span the distance and completely remedy the issue year round.

To continue to be a Good Neighbor and try alleviate the concern, Enel Stillwater Solar solicited bids from local suppliers and contractors as follows:

Raise a dirt berm high enough to block the Concern – Bids came back at amounts of **\$19,000 & \$29,000.**

Erect a fence with Glare mitigation – Bid came back at **\$27,752.**

Purchase enough Hay Bales to finish blocking the concern – **\$24,000.**

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## Good Neighbor Attempts cont...



Enel Stillwater Solar did not have funds budgeted to support these bid amounts.

In an effort to continue being a good neighbor, Bryan Stankiewicz reached out to Cliff Newmyer on **16 June, 2016** to offer to have blinds professionally installed in his home to help alleviate the concern.

This offer was angrily declined by Mr. Newmyer, and Mr. Newmyer left a very angry, threatening voicemail with a representative of Enel. In light of this development it was decided at the minimum to discontinue any further communication with Mr. Newmyer.

(Share Audio Clip)

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## Conclusion on PV Glare



In conclusion concerning Glare from the Enel Stillwater Solar PV Plant:

- a. We feel a reasonable solution was proposed to help mitigate this Glare for what's considered an extremely short duration. That offer still stands.
- b. When the SUP application was submitted, this application was a public document. If reviewed in its entirety, it would have been found that a glare towards the Newmyer home would be seen for a short duration in the early morning for approximately 5 months annually.
- c. The PV plant was constructed in **2011**, went into commercial operations in **March of 2012**. The Complaint was brought up in **March of 2015**. This is **3 years and 2 months after the plant was completed**.
- d. Enel Stillwater Solar offered a suitable glare mitigation for the short duration of the glare by offering to have blinds installed in the Newmyer home.

10

## Conclusion cont...



e. Enel Stillwater Solar did not have the budgeted funds to perform work to fully mitigate this issue, and feels that putting monies into this issue is irrelevant when the current proposed expansion would completely mitigate this concern. Millions of dollars were invested to construct the Photovoltaic facility in order to provide clean energy to the County. While Enel Stillwater Solar intends to fully comply with the SUP stipulations, it cannot afford to expend tens of thousands of dollars to mitigate an extremely minor inconvenience that we feel could be mitigated for a reasonable amount such as blind installation.

f. Enel Stillwater Solar feels that we are not in violation of the Special Use Permit in any way, therefore do not feel we are required to take action. History shows that if Enel feels we are any way in violation of any permit we will take action. This has shown to be true with the noise concern with the Geothermal Plant, as well as with the Ground Water Monitoring Program most recently where Enel voluntarily drilled several independent water monitoring wells. To remain compliant with SUPs in those cases, Enel has spent close to \$1,000,000.

11

## Concentrated Solar Glare



The Concentrated Solar addition to the Stillwater Facility has been found to produce a significant Glare late in the afternoon facing Portuguese Rd.

This Glare issue was brought to our attention by the County on 4 of April, 2016. Mr. Newmyer previously informed the County of the issue.

**Mr. Newmyer had to go out of his way to discover this issue.**

12

## Concentrated Solar Glare



13

## Concentrated Solar Glare cont...



We found the majority of this Glare to be a possible safety hazard. We took action to mitigate the impact of the majority of this Glare. By doing this please let it be known that we take a **Generation Loss daily** by rotating the west most row, known as Row 22, of the Concentrated Solar plant back towards the east. We will continue this protocol until a better solution can be found.

We also understand the concern about the Glare encountered while traveling Eastbound Jack Rabbit Rd. North of the CSP Plant.

While traveling down Jack Rabbit Rd., from West to East, a small glint can be seen, by **removing your eyes from the roadway**, and looking south towards the panels. This Glint has been found to reduce in concentration later in the year, as the sun moves south.

Churchill County has found the traffic count on Jack Rabbit Rd. to be minimal. 4 of those counts belonging to Enel employees daily.

14

## Concentrated Solar Conclusion



Although we feel the North most glint is not as issue, we will work to resolve the issue and have closure on this by the end of September of 2017.

Most likely the remedy for this will be to increase the height and thickness of the current wind screen in place only along Jack Rabbit Rd.



Office of the  
CHURCHILL COUNTY COMMISSIONERS

Carl Erquiaga  
 Pete Olsen  
 Bus Scharma

October 12, 2016

Bryan Stankiewicz and Brad Platt  
 Enel Green Power North America, Inc.  
 1755 East Plumb Lane #155  
 Reno, NV 89502

Via Certified Mail, Return Receipt Requested 7006 0100 0006 1035 0115

RE: Nuisance Complaint filed by Clifford & Christine Newmyer against Enel Green Power North America, Inc. at 4785 Lawrence Lane, Fallon, Nevada.

Dear Mr. Little and Ms. Smith:

Please accept this official notification that the Nuisance Complaint filed against you by Clifford and Christine Newmyer for glare associated with the solar field at 4785 Lawrence Lane, Fallon, Nevada has been set for hearing in the Churchill County Commission Chambers at **155 N. Taylor Street, Conference Room #102, Fallon, Nevada, for Thursday, November 3<sup>rd</sup>, at 6:00 p.m.**

If you have documentation to provide, please get that to me as soon as possible but before **October 21st.**

Please contact me if you have any questions.

Sincerely,

Pamela D. Moore  
 Deputy Clerk of the Board

7006 0100 0006 1035 0115

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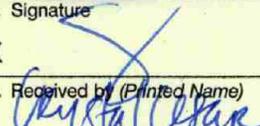
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**Bryan Stankiewicz and Brad Platt**  
**Enel Green Power North America, Inc.**  
**1755 East Plumb Lane #155**  
**Reno, NV 89502**

See Reverse for Instructions

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<p style="text-align: center;">   <b>Bryan Stankiewicz and Brad Platt</b>  <b>Enel Green Power North America, Inc.</b>  <b>1755 East Plumb Lane #155</b>  <b>Reno, NV 89502</b> </p>	<p>3. Service Type</p> <table style="width: 100%; font-size: small;"> <tr> <td><input type="checkbox"/> Adult Signature</td> <td><input type="checkbox"/> Priority Mail Express®</td> </tr> <tr> <td><input type="checkbox"/> Adult Signature Restricted Delivery</td> <td><input type="checkbox"/> Registered Mail™</td> </tr> <tr> <td><input checked="" type="checkbox"/> Certified Mail®</td> <td><input type="checkbox"/> Registered Mail Restricted Delivery</td> </tr> <tr> <td><input type="checkbox"/> Certified Mail Restricted Delivery</td> <td><input type="checkbox"/> Return Receipt for Merchandise</td> </tr> <tr> <td><input type="checkbox"/> Collect on Delivery</td> <td><input type="checkbox"/> Signature Confirmation™</td> </tr> <tr> <td><input type="checkbox"/> Collect on Delivery Restricted Delivery</td> <td><input type="checkbox"/> Signature Confirmation Restricted Delivery</td> </tr> <tr> <td><input type="checkbox"/> Insured Mail Restricted Delivery (over \$500)</td> <td></td> </tr> </table>	<input type="checkbox"/> Adult Signature	<input type="checkbox"/> Priority Mail Express®	<input type="checkbox"/> Adult Signature Restricted Delivery	<input type="checkbox"/> Registered Mail™	<input checked="" type="checkbox"/> Certified Mail®	<input type="checkbox"/> Registered Mail Restricted Delivery	<input type="checkbox"/> Certified Mail Restricted Delivery	<input type="checkbox"/> Return Receipt for Merchandise	<input type="checkbox"/> Collect on Delivery	<input type="checkbox"/> Signature Confirmation™	<input type="checkbox"/> Collect on Delivery Restricted Delivery	<input type="checkbox"/> Signature Confirmation Restricted Delivery	<input type="checkbox"/> Insured Mail Restricted Delivery (over \$500)	
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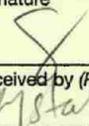
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1

David Little and Ashley Smith  
 Enel Green Power North America, Inc.  
 1755 East Plumb Lane #155  
 Reno, NV 89502

PS Form 3800, June 2002 See Reverse for Instructions

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<p>David Little and Ashley Smith              Enel Green Power North America, Inc.              1755 East Plumb Lane #155              Reno, NV 89502</p>															
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Office of the  
CHURCHILL COUNTY COMMISSIONERS

Carl Erquiaga  
 Pete Olsen  
 Bus Scharma

October 12, 2016

Clifford & Christine Newmyer  
 4110 Portuguese Lane  
 Fallon, NV 89406

Via Certified Mail, Return Receipt Requested 7006 0100 0006 1035 0139

RE: Nuisance Complaint filed by Clifford & Christine Newmyer against Enel Green Power North America, Inc. at 4785 Lawrence Lane, Fallon, Nevada.

Dear Mr. and Mrs. Newmyer:

Please accept this official notification that the Nuisance Complaint you filed against Enel Green Power North America, Inc. for glare associated with solar field at 4785 Lawrence Lane has been set for hearing in the Churchill County Commission Chambers at **155 N. Taylor Street, Conference Room #102, Fallon, Nevada, for Thursday, November 3rd, at 6:00 p.m.** The conference room is located at the north end of the building by the parking lot. You will need to enter at the north end and turn right and go down about half way down the hall to the conference room on the right.

If you have further documentation to provide, please get that to me as soon as possible but before **October 21st.**

Please contact me if you have any questions.

Sincerely,

Pamela D. Moore  
 Deputy Clerk of the Board

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Street or P.O. Box		
City, State, and ZIP+4		

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<p><b>Clifford &amp; Christine Newmyer</b>  <b>4110 Portuguese Lane</b>  <b>Fallon, NV 89406</b></p>													
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Office of the  
**CHURCHILL COUNTY COMMISSIONERS**

Carl Erquiaga  
 Pete Olsen  
 Bus Schwartz

October 12, 2016

Clifford & Christine Newmyer  
 4110 Portuguese Lane  
 Fallon, NV 89406

Via Certified Mail, Return Receipt Requested 7006 0100 0006 1035 0108

RE: Nuisance Complaint filed by Clifford & Christine Newmyer against Enel Green Power North America, Inc. at 4785 Lawrence Lane, Fallon, Nevada.

Dear Mr. and Mrs. Newmyer:

Please accept this official notification that the Nuisance Complaint you filed against Enel Green Power North America, Inc. for glare associated with solar field at 4785 Lawrence Lane has been set for hearing in the Churchill County Commission Chambers at **155 N. Taylor Street, Conference Room #102, Fallon, Nevada, for Thursday, November 3rd, at 6:00 p.m.** The conference room is located at the north end of the building by the parking lot. You will need to enter at the north end and turn right and go down about half way down the hall to the conference room on the right.

If you have further documentation to provide, please get that to me as soon as possible but before September 23<sup>rd</sup>.

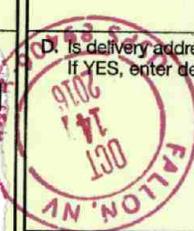
Please contact me if you have any questions.

Sincerely,

Pamela D. Moore  
 Deputy Clerk of the Board

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 <b>Clifford &amp; Christine Newmyer</b> <b>4110 Portuguese Lane</b> <b>Fallon, NV 89406</b>	D. Is delivery address different from item 1? <input type="checkbox"/> Yes If YES, enter delivery address below: <input type="checkbox"/> No 
 9590 9403 0801 5215 1383 31	3. Service Type <input type="checkbox"/> Adult Signature <input type="checkbox"/> Priority Mail Express® <input type="checkbox"/> Adult Signature Restricted Delivery <input type="checkbox"/> Registered Mail™ <input checked="" type="checkbox"/> Certified Mail® <input type="checkbox"/> Registered Mail Restricted Delivery <input type="checkbox"/> Certified Mail Restricted Delivery <input type="checkbox"/> Return Receipt for Merchandise <input type="checkbox"/> Collect on Delivery <input type="checkbox"/> Signature Confirmation™ <input type="checkbox"/> Collect on Delivery Restricted Delivery <input type="checkbox"/> Signature Confirmation Restricted Delivery
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Office of the  
**CHURCHILL COUNTY COMMISSIONERS**

*Carl Erquiaga  
Pete Olsen  
Bus Scharmann*

October 12, 2016

AMP RESOURCES (STILLWATER) LLC  
c/o ENEL NORTH AMERICA INC  
1 TECH DR STE #220  
ANDOVER MA 01810-2452

RE: Nuisance Complaint filed by Clifford and Christine Newmyer against Enel Green Power North America, Inc. at 4785 Lawrence Lane, Fallon, Nevada

Dear AMP RESOURCES (STILLWATER) LLC:

Please be advised that a Nuisance Complaint was filed against Enel Green Power North America, Inc. for glare associated with 4785 Lawrence Lane by Clifford and Christine Newmyer and a public hearing has been set in the Churchill County **Conference Room #102** at **155 N. Taylor Street, Fallon, Nevada, for Thursday, November 3rd, at 6:00 p.m.**

Please contact me if you have any questions.

Sincerely,

Pamela D. Moore  
Deputy Clerk of the Board



Office of the  
CHURCHILL COUNTY COMMISSIONERS

*Carl Erquiaga  
 Pete Olsen  
 Bus Scharmann*

October 12, 2016

BUREAU OF LAND MANAGEMENT  
 5665 MORGAN MILL RD  
 CARSON CITY NV 89701-1448

RE: Nuisance Complaint filed by Clifford and Christine Newmyer against Enel Green Power North America, Inc. at 4785 Lawrence Lane, Fallon, Nevada

Dear BUREAU OF LAND MANAGEMENT:

Please be advised that a Nuisance Complaint was filed against Enel Green Power North America, Inc. for glare associated with 4785 Lawrence Lane by Clifford and Christine Newmyer and a public hearing has been set in the Churchill County **Conference Room #102 at 155 N. Taylor Street, Fallon, Nevada, for Thursday, November 3rd, at 6:00 p.m.**

Please contact me if you have any questions.

Sincerely,

Pamela D. Moore  
 Deputy Clerk of the Board



Office of the  
CHURCHILL COUNTY COMMISSIONERS

*Carl Erquiaga  
 Pete Olsen  
 Bus Scharmann*

October 12, 2016

CARSON SINK FARMS LLC  
 c/o WESLEY F & E WARD VIERA  
 4750 PORTUGUESE LN  
 FALLON NV 89406-9005

RE: Nuisance Complaint filed by Clifford and Christine Newmyer against Enel Green Power North America, Inc. at 4785 Lawrence Lane, Fallon, Nevada

Dear CARSON SINK FARMS LLC:

Please be advised that a Nuisance Complaint was filed against Enel Green Power North America, Inc. for glare associated with 4785 Lawrence Lane by Clifford and Christine Newmyer and a public hearing has been set in the Churchill County **Conference Room #102** at **155 N. Taylor Street, Fallon, Nevada, for Thursday, November 3rd, at 6:00 p.m.**

Please contact me if you have any questions.

Sincerely,

Pamela D. Moore  
 Deputy Clerk of the Board



Office of the  
CHURCHILL COUNTY COMMISSIONERS

*Carl Erquiaga  
Pete Olsen  
Bus Scharmann*

October 12, 2016

CHANDLER LESLIE J  
2100 TARZYN RD  
FALLON NV 89406-7401

RE: Nuisance Complaint filed by Clifford and Christine Newmyer against Enel Green Power North America, Inc. at 4785 Lawrence Lane, Fallon, Nevada

Dear CHANDLER LESLIE J:

Please be advised that a Nuisance Complaint was filed against Enel Green Power North America, Inc. for glare associated with 4785 Lawrence Lane by Clifford and Christine Newmyer and a public hearing has been set in the Churchill County **Conference Room #102** at **155 N. Taylor Street, Fallon, Nevada, for Thursday, November 3rd, at 6:00 p.m.**

Please contact me if you have any questions.

Sincerely,

Pamela D. Moore  
Deputy Clerk of the Board



Office of the  
CHURCHILL COUNTY COMMISSIONERS

Carl Erquiaga  
Pete Olsen  
Bus Scharmann

October 12, 2016

DE BRAGA LYLE ET AL CO-TRUSTEE  
11050 FITZ LN  
FALLON NV 89406-9016

RE: Nuisance Complaint filed by Clifford and Christine Newmyer against Enel Green Power North America, Inc. at 4785 Lawrence Lane, Fallon, Nevada

Dear DE BRAGA LYLE ET AL CO-TRUSTEE:

Please be advised that a Nuisance Complaint was filed against Enel Green Power North America, Inc. for glare associated with 4785 Lawrence Lane by Clifford and Christine Newmyer and a public hearing has been set in the Churchill County **Conference Room #102** at **155 N. Taylor Street, Fallon, Nevada, for Thursday, November 3rd, at 6:00 p.m.**

Please contact me if you have any questions.

Sincerely,



Pamela D. Moore  
Deputy Clerk of the Board



175

Office of the  
CHURCHILL COUNTY COMMISSIONERS

Carl Erquiaga  
Pete Olsen  
Bus Scharmann

October 12, 2016

DE BRAGA TED & LOIS CO-TRUSTEES  
2300 SWOPE LN  
FALLON NV 89406-9015

RE: Nuisance Complaint filed by Clifford and Christine Newmyer against Enel Green Power North America, Inc. at 4785 Lawrence Lane, Fallon, Nevada

Dear DE BRAGA TED & LOIS CO-TRUSTEES:

Please be advised that a Nuisance Complaint was filed against Enel Green Power North America, Inc. for glare associated with 4785 Lawrence Lane by Clifford and Christine Newmyer and a public hearing has been set in the Churchill County **Conference Room #102** at **155 N. Taylor Street, Fallon, Nevada, for Thursday, November 3rd, at 6:00 p.m.**

Please contact me if you have any questions.

Sincerely,

Pamela D. Moore  
Deputy Clerk of the Board



Office of the  
CHURCHILL COUNTY COMMISSIONERS

*Carl Erquiaga  
Pete Olsen  
Bus Scharmann*

October 12, 2016

ERICKSON ROGER & JOYCE TRUSTEES  
1548 DIAMOND COUNTRY DR  
RENO NV 89521-6150

RE: Nuisance Complaint filed by Clifford and Christine Newmyer against Enel Green Power North America, Inc. at 4785 Lawrence Lane, Fallon, Nevada

Dear ERICKSON ROGER & JOYCE TRUSTEES:

Please be advised that a Nuisance Complaint was filed against Enel Green Power North America, Inc. for glare associated with 4785 Lawrence Lane by Clifford and Christine Newmyer and a public hearing has been set in the Churchill County **Conference Room #102** at **155 N. Taylor Street, Fallon, Nevada, for Thursday, November 3rd, at 6:00 p.m.**

Please contact me if you have any questions.

Sincerely,

Pamela D. Moore  
Deputy Clerk of the Board



Office of the  
**CHURCHILL COUNTY COMMISSIONERS**

*Carl Erquiaga  
Pete Olsen  
Bus Scharmann*

October 12, 2016

GRAHAM PEGGY STAUP ET AL  
340 S BAILEY ST  
FALLON NV 89406-3243

RE: Nuisance Complaint filed by Clifford and Christine Newmyer against Enel Green Power North America, Inc. at 4785 Lawrence Lane, Fallon, Nevada

Dear GRAHAM PEGGY STAUP ET AL:

Please be advised that a Nuisance Complaint was filed against Enel Green Power North America, Inc. for glare associated with 4785 Lawrence Lane by Clifford and Christine Newmyer and a public hearing has been set in the Churchill County **Conference Room #102** at **155 N. Taylor Street, Fallon, Nevada, for Thursday, November 3rd, at 6:00 p.m.**

Please contact me if you have any questions.

Sincerely,

Pamela D. Moore  
Deputy Clerk of the Board



Office of the  
CHURCHILL COUNTY COMMISSIONERS

Carl Erquiaga  
Pete Olsen  
Bus Scharmann

October 12, 2016

JEFFRESS J B & M P TRUSTEES  
2808 S DENALI PL  
MERIDAN ID 83642-8103

RE: Nuisance Complaint filed by Clifford and Christine Newmyer against Enel Green Power North America, Inc. at 4785 Lawrence Lane, Fallon, Nevada

Dear JEFFRESS J B & M P TRUSTEES:

Please be advised that a Nuisance Complaint was filed against Enel Green Power North America, Inc. for glare associated with 4785 Lawrence Lane by Clifford and Christine Newmyer and a public hearing has been set in the Churchill County **Conference Room #102** at **155 N. Taylor Street, Fallon, Nevada, for Thursday, November 3rd, at 6:00 p.m.**

Please contact me if you have any questions.

Sincerely,

Pamela D. Moore  
Deputy Clerk of the Board



Office of the  
CHURCHILL COUNTY COMMISSIONERS

Carl Erquiaga  
Pete Olsen  
Bus Scharmann

October 12, 2016

KENT BRUCE K & JAMIE TRUSTEES  
12425 STILLWATER RD  
FALLON NV 89406-9010

RE: Nuisance Complaint filed by Clifford and Christine Newmyer against Enel Green Power North America, Inc. at 4785 Lawrence Lane, Fallon, Nevada

Dear KENT BRUCE K & JAMIE TRUSTEES:

Please be advised that a Nuisance Complaint was filed against Enel Green Power North America, Inc. for glare associated with 4785 Lawrence Lane by Clifford and Christine Newmyer and a public hearing has been set in the Churchill County **Conference Room #102** at **155 N. Taylor Street, Fallon, Nevada, for Thursday, November 3rd, at 6:00 p.m.**

Please contact me if you have any questions.

Sincerely,

Pamela D. Moore  
Deputy Clerk of the Board



Office of the  
CHURCHILL COUNTY COMMISSIONERS

*Carl Erquiaga  
Pete Olsen  
Bus Scharmann*

October 12, 2016

KENT ROBERT & MURIEL TRUSTEES  
55 E CENTER ST  
FALLON NV 89406-3465

RE: Nuisance Complaint filed by Clifford and Christine Newmyer against Enel Green Power North America, Inc. at 4785 Lawrence Lane, Fallon, Nevada

Dear KENT ROBERT & MURIEL TRUSTEES:

Please be advised that a Nuisance Complaint was filed against Enel Green Power North America, Inc. for glare associated with 4785 Lawrence Lane by Clifford and Christine Newmyer and a public hearing has been set in the Churchill County **Conference Room #102** at **155 N. Taylor Street, Fallon, Nevada, for Thursday, November 3rd, at 6:00 p.m.**

Please contact me if you have any questions.

Sincerely,

Pamela D. Moore  
Deputy Clerk of the Board



Office of the  
CHURCHILL COUNTY COMMISSIONERS

*Carl Erquiaga  
Pete Olsen  
Bus Scharmann*

October 12, 2016

KING NORMAN O  
2707 E EL MORO AVE  
MESA AZ 85204-4626

RE: Nuisance Complaint filed by Clifford and Christine Newmyer against Enel Green Power North America, Inc. at 4785 Lawrence Lane, Fallon, Nevada

Dear KING NORMAN O:

Please be advised that a Nuisance Complaint was filed against Enel Green Power North America, Inc. for glare associated with 4785 Lawrence Lane by Clifford and Christine Newmyer and a public hearing has been set in the Churchill County **Conference Room #102** at **155 N. Taylor Street, Fallon, Nevada, for Thursday, November 3rd, at 6:00 p.m.**

Please contact me if you have any questions.

Sincerely,

Pamela D. Moore  
Deputy Clerk of the Board



Office of the  
**CHURCHILL COUNTY COMMISSIONERS**

*Carl Erquiaga  
Pete Olsen  
Bus Scharmann*

October 12, 2016

LAWRENCE RONALD DUANE  
8700 STILLWATER RD  
FALLON NV 89406-9074

RE: Nuisance Complaint filed by Clifford and Christine Newmyer against Enel Green Power North America, Inc. at 4785 Lawrence Lane, Fallon, Nevada

Dear LAWRENCE RONALD DUANE:

Please be advised that a Nuisance Complaint was filed against Enel Green Power North America, Inc. for glare associated with 4785 Lawrence Lane by Clifford and Christine Newmyer and a public hearing has been set in the Churchill County **Conference Room #102** at **155 N. Taylor Street, Fallon, Nevada, for Thursday, November 3rd, at 6:00 p.m.**

Please contact me if you have any questions.

Sincerely,

Pamela D. Moore  
Deputy Clerk of the Board



Office of the  
CHURCHILL COUNTY COMMISSIONERS

Carl Erquiaga  
Pete Olsen  
Bus Scharmann

October 12, 2016

LAWSON TIMOTHY J & KAREN ELAINE  
1100 SWOPE LN  
FALLON NV 89406-9019

RE: Nuisance Complaint filed by Clifford and Christine Newmyer against Enel Green Power North America, Inc. at 4785 Lawrence Lane, Fallon, Nevada

Dear LAWSON TIMOTHY J & KAREN ELAINE:

Please be advised that a Nuisance Complaint was filed against Enel Green Power North America, Inc. for glare associated with 4785 Lawrence Lane by Clifford and Christine Newmyer and a public hearing has been set in the Churchill County **Conference Room #102** at **155 N. Taylor Street, Fallon, Nevada, for Thursday, November 3rd, at 6:00 p.m.**

Please contact me if you have any questions.

Sincerely,

Pamela D. Moore  
Deputy Clerk of the Board



Office of the  
CHURCHILL COUNTY COMMISSIONERS

Carl Erquiaga  
 Pete Olsen  
 Bus Scharmann

October 12, 2016

MARION HARRY S & DEBORAH L  
 4724 BERRY CT  
 KEYSTONE HEIGHTS FL 32656-8290

RE: Nuisance Complaint filed by Clifford and Christine Newmyer against Enel Green Power North America, Inc. at 4785 Lawrence Lane, Fallon, Nevada

Dear MARION HARRY S & DEBORAH L:

Please be advised that a Nuisance Complaint was filed against Enel Green Power North America, Inc. for glare associated with 4785 Lawrence Lane by Clifford and Christine Newmyer and a public hearing has been set in the Churchill County **Conference Room #102** at **155 N. Taylor Street, Fallon, Nevada, for Thursday, November 3rd, at 6:00 p.m.**

Please contact me if you have any questions.

Sincerely,

Pamela D. Moore  
 Deputy Clerk of the Board



Office of the  
CHURCHILL COUNTY COMMISSIONERS

*Carl Erquiaga  
Pete Olsen  
Bus Scharmann*

October 12, 2016

MORT K K & PECK C K CO-TRUSTEES  
4500 FREEMAN LN  
FALLON NV 89406-9006

RE: Nuisance Complaint filed by Clifford and Christine Newmyer against Enel Green Power North America, Inc. at 4785 Lawrence Lane, Fallon, Nevada

Dear MORT K K & PECK C K CO-TRUSTEES:

Please be advised that a Nuisance Complaint was filed against Enel Green Power North America, Inc. for glare associated with 4785 Lawrence Lane by Clifford and Christine Newmyer and a public hearing has been set in the Churchill County **Conference Room #102** at **155 N. Taylor Street, Fallon, Nevada, for Thursday, November 3rd, at 6:00 p.m.**

Please contact me if you have any questions.

Sincerely,

Pamela D. Moore  
Deputy Clerk of the Board



Office of the  
CHURCHILL COUNTY COMMISSIONERS

*Carl Erquiaga  
 Pete Olsen  
 Bus Scharmann*

October 12, 2016

RECKTENWALD DIETHER J & JUTTA M  
 P O BOX 13282  
 RENO NV 89507-3282

RE: Nuisance Complaint filed by Clifford and Christine Newmyer against Enel Green Power North America, Inc. at 4785 Lawrence Lane, Fallon, Nevada

Dear RECKTENWALD DIETHER J & JUTTA M:

Please be advised that a Nuisance Complaint was filed against Enel Green Power North America, Inc. for glare associated with 4785 Lawrence Lane by Clifford and Christine Newmyer and a public hearing has been set in the Churchill County **Conference Room #102** at **155 N. Taylor Street, Fallon, Nevada, for Thursday, November 3rd, at 6:00 p.m.**

Please contact me if you have any questions.

Sincerely,

Pamela D. Moore  
 Deputy Clerk of the Board



Office of the  
**CHURCHILL COUNTY COMMISSIONERS**

*Carl Erquiaga  
Pete Olsen  
Bus Scharmann*

October 12, 2016

RONNOW GORDON & SHARON TRUSTEES  
7640 PALOS VERDES CIRCLE  
RENO NV 89502-9740

RE: Nuisance Complaint filed by Clifford and Christine Newmyer against Enel Green Power North America, Inc. at 4785 Lawrence Lane, Fallon, Nevada

Dear RONNOW GORDON & SHARON TRUSTEES:

Please be advised that a Nuisance Complaint was filed against Enel Green Power North America, Inc. for glare associated with 4785 Lawrence Lane by Clifford and Christine Newmyer and a public hearing has been set in the Churchill County **Conference Room #102 at 155 N. Taylor Street, Fallon, Nevada, for Thursday, November 3rd, at 6:00 p.m.**

Please contact me if you have any questions.

Sincerely,

A handwritten signature in blue ink that reads 'Pamela D. Moore'. The signature is fluid and cursive, with the first letters of each word being capitalized and prominent.

Pamela D. Moore  
Deputy Clerk of the Board



Office of the  
CHURCHILL COUNTY COMMISSIONERS

Carl Erquiaga  
Pete Olsen  
Bus Scharmann

October 12, 2016

STAUB J & WEISHAAPT R & R  
3575 PORTUGUESE LN  
FALLON NV 89406-9003

RE: Nuisance Complaint filed by Clifford and Christine Newmyer against Enel Green Power North America, Inc. at 4785 Lawrence Lane, Fallon, Nevada

Dear STAUB J & WEISHAAPT R & R:

Please be advised that a Nuisance Complaint was filed against Enel Green Power North America, Inc. for glare associated with 4785 Lawrence Lane by Clifford and Christine Newmyer and a public hearing has been set in the Churchill County **Conference Room #102** at **155 N. Taylor Street, Fallon, Nevada, for Thursday, November 3rd, at 6:00 p.m.**

Please contact me if you have any questions.

Sincerely,

Pamela D. Moore  
Deputy Clerk of the Board



Office of the  
CHURCHILL COUNTY COMMISSIONERS

*Carl Erquiaga  
Pete Olsen  
Bus Scharmann*

October 12, 2016

STEPHENS DONALD & DESIREE  
4470 PORTUGUESE LN  
FALLON NV 89406-9005

RE: Nuisance Complaint filed by Clifford and Christine Newmyer against Enel Green Power North America, Inc. at 4785 Lawrence Lane, Fallon, Nevada

Dear STEPHENS DONALD & DESIREE:

Please be advised that a Nuisance Complaint was filed against Enel Green Power North America, Inc. for glare associated with 4785 Lawrence Lane by Clifford and Christine Newmyer and a public hearing has been set in the Churchill County **Conference Room #102** at **155 N. Taylor Street, Fallon, Nevada, for Thursday, November 3rd, at 6:00 p.m.**

Please contact me if you have any questions.

Sincerely,

Pamela D. Moore  
Deputy Clerk of the Board



Office of the  
CHURCHILL COUNTY COMMISSIONERS

*Carl Erquiaga  
Pete Olsen  
Bus Scharmann*

October 12, 2016

STILLWATER FARMS INC  
P O BOX 12984  
RENO NV 89510-2984

RE: Nuisance Complaint filed by Clifford and Christine Newmyer against Enel Green Power North America, Inc. at 4785 Lawrence Lane, Fallon, Nevada

Dear STILLWATER FARMS INC:

Please be advised that a Nuisance Complaint was filed against Enel Green Power North America, Inc. for glare associated with 4785 Lawrence Lane by Clifford and Christine Newmyer and a public hearing has been set in the Churchill County **Conference Room #102** at **155 N. Taylor Street, Fallon, Nevada, for Thursday, November 3rd, at 6:00 p.m.**

Please contact me if you have any questions.

Sincerely,

Pamela D. Moore  
Deputy Clerk of the Board



Office of the  
**CHURCHILL COUNTY COMMISSIONERS**

*Carl Erquiaga  
Pete Olsen  
Bus Scharmann*

October 12, 2016

UNITED STATES OF AMERICA  
c/o U S FISH & WILDLIFE SERVICE  
1020 NEW RIVER PARKWAY #305  
FALLON NV 89406-7811

RE: Nuisance Complaint filed by Clifford and Christine Newmyer against Enel Green Power North America, Inc. at 4785 Lawrence Lane, Fallon, Nevada

Dear UNITED STATES OF AMERICA:

Please be advised that a Nuisance Complaint was filed against Enel Green Power North America, Inc. for glare associated with 4785 Lawrence Lane by Clifford and Christine Newmyer and a public hearing has been set in the Churchill County **Conference Room #102** at **155 N. Taylor Street, Fallon, Nevada, for Thursday, November 3rd, at 6:00 p.m.**

Please contact me if you have any questions.

Sincerely,

Pamela D. Moore  
Deputy Clerk of the Board



Office of the  
CHURCHILL COUNTY COMMISSIONERS

*Carl Erquiaga  
Pete Olsen  
Bus Scharmann*

October 12, 2016

VAN DYKE JOHN & JESSIE TRUSTEES  
1287 GREEN VALLEY DR  
FALLON NV 89406-8432

RE: Nuisance Complaint filed by Clifford and Christine Newmyer against Enel Green Power North America, Inc. at 4785 Lawrence Lane, Fallon, Nevada

Dear VAN DYKE JOHN & JESSIE TRUSTEES:

Please be advised that a Nuisance Complaint was filed against Enel Green Power North America, Inc. for glare associated with 4785 Lawrence Lane by Clifford and Christine Newmyer and a public hearing has been set in the Churchill County **Conference Room #102** at **155 N. Taylor Street, Fallon, Nevada, for Thursday, November 3rd, at 6:00 p.m.**

Please contact me if you have any questions.

Sincerely,

Pamela D. Moore  
Deputy Clerk of the Board



Office of the  
CHURCHILL COUNTY COMMISSIONERS

*Carl Erquiaga  
 Pete Olsen  
 Bus Scharmann*

October 12, 2016

WALKER JAMES R & SALLY N  
 4530 PORTUGUESE LN  
 FALLON NV 89406-9005

RE: Nuisance Complaint filed by Clifford and Christine Newmyer against Enel Green Power North America, Inc. at 4785 Lawrence Lane, Fallon, Nevada

Dear WALKER JAMES R & SALLY N:

Please be advised that a Nuisance Complaint was filed against Enel Green Power North America, Inc. for glare associated with 4785 Lawrence Lane by Clifford and Christine Newmyer and a public hearing has been set in the Churchill County **Conference Room #102** at **155 N. Taylor Street, Fallon, Nevada, for Thursday, November 3rd, at 6:00 p.m.**

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Sincerely,

Pamela D. Moore  
 Deputy Clerk of the Board



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**CHURCHILL COUNTY COMMISSIONERS**

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Bus Scharmann*

October 12, 2016

WEBB RANDY & DAVELYNN  
3175 FREEMAN LN  
FALLON NV 89406-9043

RE: Nuisance Complaint filed by Clifford and Christine Newmyer against Enel Green Power North America, Inc. at 4785 Lawrence Lane, Fallon, Nevada

Dear WEBB RANDY & DAVELYNN:

Please be advised that a Nuisance Complaint was filed against Enel Green Power North America, Inc. for glare associated with 4785 Lawrence Lane by Clifford and Christine Newmyer and a public hearing has been set in the Churchill County **Conference Room #102** at **155 N. Taylor Street, Fallon, Nevada, for Thursday, November 3rd, at 6:00 p.m.**

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Sincerely,

Pamela D. Moore  
Deputy Clerk of the Board



Office of the  
CHURCHILL COUNTY COMMISSIONERS

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Pete Olsen  
Bus Scharmann*

October 12, 2016

WEISHAAPT K D & B J TRUSTEES  
3775 LAWRENCE LN  
FALLON NV 89406-9007

RE: Nuisance Complaint filed by Clifford and Christine Newmyer against Enel Green Power North America, Inc. at 4785 Lawrence Lane, Fallon, Nevada

Dear WEISHAAPT K D & B J TRUSTEES:

Please be advised that a Nuisance Complaint was filed against Enel Green Power North America, Inc. for glare associated with 4785 Lawrence Lane by Clifford and Christine Newmyer and a public hearing has been set in the Churchill County **Conference Room #102** at **155 N. Taylor Street, Fallon, Nevada, for Thursday, November 3rd, at 6:00 p.m.**

Please contact me if you have any questions.

Sincerely,

Pamela D. Moore  
Deputy Clerk of the Board



Office of the  
CHURCHILL COUNTY COMMISSIONERS

*Carl Erquiaga  
Pete Olsen  
Bus Scharmann*

October 12, 2016

WEISHAAPT MAUREEN J  
4750 FREEMAN LN  
FALLON NV 89406-9006

RE: Nuisance Complaint filed by Clifford and Christine Newmyer against Enel Green Power North America, Inc. at 4785 Lawrence Lane, Fallon, Nevada

Dear WEISHAAPT MAUREEN J:

Please be advised that a Nuisance Complaint was filed against Enel Green Power North America, Inc. for glare associated with 4785 Lawrence Lane by Clifford and Christine Newmyer and a public hearing has been set in the Churchill County **Conference Room #102** at **155 N. Taylor Street, Fallon, Nevada, for Thursday, November 3rd, at 6:00 p.m.**

Please contact me if you have any questions.

Sincerely,



Pamela D. Moore  
Deputy Clerk of the Board



Office of the  
CHURCHILL COUNTY COMMISSIONERS

*Carl Erquiaga  
Pete Olsen  
Bus Scharmann*

October 12, 2016

WISNEFSKI MARJORIE L  
10500 RESERVATION RD  
FALLON NV 89406-9001

RE: Nuisance Complaint filed by Clifford and Christine Newmyer against Enel Green Power North America, Inc. at 4785 Lawrence Lane, Fallon, Nevada

Dear WISNEFSKI MARJORIE L:

Please be advised that a Nuisance Complaint was filed against Enel Green Power North America, Inc. for glare associated with 4785 Lawrence Lane by Clifford and Christine Newmyer and a public hearing has been set in the Churchill County **Conference Room #102** at **155 N. Taylor Street, Fallon, Nevada, for Thursday, November 3rd, at 6:00 p.m.**

Please contact me if you have any questions.

Sincerely,

Pamela D. Moore  
Deputy Clerk of the Board