

**From:** Charlie Payne <cpayne@hirschlerlaw.com>  
**Sent:** Monday, March 4, 2019 9:46 AM  
**To:** Wanda Parrish  
**Subject:** FW: Potential heat island effect for PV farms

FYI. Please note below. Should have him available on the 12th as well.

**Charles W. Payne, Jr.**  
D: 540.604.2108  
[cpayne@hirschlerlaw.com](mailto:cpayne@hirschlerlaw.com)

### Hirschler

725 Jackson Street, Suite 200 | Fredericksburg, VA 22401-5720

P: 540.604.2100 | F: 540.604.2101 | [hirschlerlaw.com](http://hirschlerlaw.com)

Hirschler Fleischer, A Professional Corporation Confidentiality Note: This e-mail and any attachments are confidential and may be protected by legal privilege. If you are not the intended recipient, be aware that any disclosure, copying, distribution or use of this e-mail or any attachment is prohibited. If you have received this e-mail in error, please notify us immediately by returning it to the sender and delete this copy from your system. Thank you for your cooperation.

---

**From:** Anthony Bell [<mailto:anthony.bell@spower.com>]  
**Sent:** Monday, March 04, 2019 9:12 AM  
**To:** Daniel Menahem; Ben Saunders; Charlie Payne  
**Cc:** Garret Bean  
**Subject:** [EXTERNAL] FW: Potential heat island effect for PV farms

See response from the another Heat Island Effect expert, below. I am currently coordinating with him on next steps and getting him lined up for the 12<sup>th</sup>.

**From:** Greg Barron-Gafford <[gregbg@email.arizona.edu](mailto:gregbg@email.arizona.edu)>  
**Sent:** Sunday, March 3, 2019 3:18 PM  
**To:** Anthony Bell <[anthony.bell@spower.com](mailto:anthony.bell@spower.com)>  
**Subject:** Re: Potential heat island effect for PV farms

Dear Mr. Bell,

Thank you for reaching out. Based on our research, your proposed 100 ft fully vegetated buffer to shield from any small temperature increases and 350ft equipment setbacks from any residence seems more than adequate. What Ricky told you is correct. We have found in subsequent studies no evidence of elevated temperatures 40 m outside the fence line. I would be willing to serve as an expert witness to offer an opinion, testimony, or review of the heat island effect and heat dissipation concerns related to the project and be willing to speak to the likely cooling effect that a

densely vegetated 100-ft buffer would have on reducing that dissipation distance.

I am actually in Nairobi, Kenya, right now on some solar and ag related work, but I leave tomorrow evening and return to Tucson very late Tuesday night. What are the next steps?

All the best,  
Greg

Greg Barron-Gafford  
Associate Professor and Associate Director  
School of Geography & Development;  
B2 Earthscience, Biosphere 2, College of Science;  
Adjunct Faculty in School of Natural Resources & the  
Environment  
University of Arizona  
Tucson, AZ 85721, USA  
website: <http://www.barrongafford.org/>  
Office: ENR2 - S439  
[520.548.0388](tel:520.548.0388)

On Fri, Mar 1, 2019 at 9:33 PM Anthony Bell <[anthony.bell@spower.com](mailto:anthony.bell@spower.com)> wrote:

Hello Dr. Barron-Gafford,

I was given your name from Parikhith Sinha at First Solar and also from Dr. Vasilis Fthenakis as someone to contact regarding potential heat island effects associated with solar arrays. My company is trying to permit and develop a [500 megawatt Solar farm in Spotsylvania county, VA](#). We're experiencing some opposition to the project from the citizens and one of their concerns is centered around potential heat

island effects. They have Dr. Fthenakis attached paper, which they've misinterpreted and are imposing 350ft setbacks all around the project in order to mitigate heat island concerns. Despite Dr. Fthenakis attempting to set the record straight through letters, emails, and even in-person testimony, they are not changing their position. For the sake of the project we've been trying to negotiate smaller buffer requirements and have proposed a 100 ft fully vegetated buffer around the entire property to shield the surrounding properties from any small temperature increases, as well as 350ft equipment setbacks from any residence.

The county supervisors still need further clarification and data however. Some of the citizens opposed to the project have your attached 2016 paper, but as Ricky has told me, you have since gathered subsequent data taken laterally from the solar array, rather than above it, which shows no elevated temperatures 40 m outside the fence line. I was wondering if you would be willing to offer an opinion, testimony, or review of the heat island effect and heat dissipation concerns related to our project, as well as the effect a densely vegetated 100-ft buffer would have on that dissipation distance. We would compensate you for your efforts and your time if you are available to provide any comment or professional witness testimony.

Thank you,

**Anthony Bell**

**Permitting & Environmental Compliance Analyst**

M: 801.557.7971

