



## Planning and Development Department

156 CHURCH STREET, HENDERSON, NC 27536

(252) 738-2080 / FAX 738-2089

### Staff Report 3/21/2013

**Owner:** Carolyn P. Adcock

**Applicant:** BearPond Solar Center, LLC

**Parcel ID:** 0546 04021

**Location:** 1589 Bearpond Road

**Current Zoning:** (A-R) Agricultural Residential

**Public Hearing:** 03/21/2013

**Prepared by:** Jordan McMillen

#### Description of Conditional Use Permit Request:

The applicant is requesting a conditional use permit to allow construction of a 4.99 MWh solar farm on land to be leased.

#### **Exhibits as follows:**

- Exhibit 1.** Cover letter and Application
- Exhibit 2.** Example site photo, site plans and design drawings
- Exhibit 3.** Power station specs and perimeter lighting specs
- Exhibit 4.** Property Deed
- Exhibit 5.** Zoning and 2010 Aerial Map
- Exhibit 6.** Solar farm regulations
- Exhibit 7.** Conditional Use Permit check sheet

#### DRAFT Findings of Fact

1. The request is for a conditional use permit to allow a 4.99 MWh solar farm on a parcel zoned (A-R) Agricultural Residential.
2. Carolyn P. Adcock is the property owner. The property is to be leased by BearPond Solar Center, LLC.
3. The property is located directly behind 1589 Bearpond Road; more specifically identified as tax parcel 0546 04021.
4. The property consists of 100 acres of which 40 acres will be the project area with the solar array footprint of 29 acres. The property includes an existing single family dwelling.
5. The lot is currently zoned (A-R) Agricultural Residential.
6. The application requesting a conditional use permit was filed on 02/15/2013.
7. The adjoining property owners were notified on March 1, and March 4, 2013.
8. The property was posted on March 1, 2013.
9. **The legal notice was run on March 12, and March 19, 2013.**

#### Staff Comments

The applicant is requesting a conditional use permit to construct a 4.99MWh solar farm. As proposed, the solar farm project area would be leased from the current property owner would cover approximately 40 acres. It is proposed to be enclosed by a 6 ft. fence with exterior security lighting located at least every 10 ft. along the perimeter. (Ordinance requires 8 ft. fencing). The solar panels will have no moving parts and will have a relatively low profile with a maximum height of 8 feet (ordinance requires less than 25 ft). The project area will be a minimum of 300 ft. from any dwelling unit, will have a minimum 30 ft. buffer on the side and rear of the property and will have a 100 ft. minimum buffer surrounding an existing pond on the property. Due to the setback location, the solar farm should have minimal visual impacts.

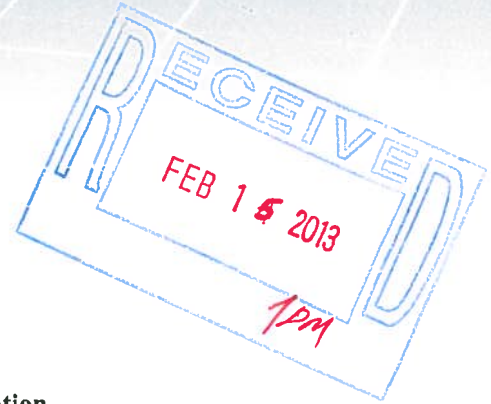
As per the zoning ordinance, screening shall be provided on all sides that front residential uses. For the most part, existing vegetated buffers surround the area, and the property is surrounded by similar A-R zoning. There may be the need to include additional buffers in the southwestern corner of the project area to separate it from the residences located on the same property to the south. Due to this being on the same property, input from the property owner may be necessary to make this determination. Any screening required shall be a compact evergreen hedge or other type of evergreen foliage reaching a height of at least (8) feet within 3 years. Overall, this development appears to have little impact on surrounding areas due to the large distance between the project area and existing dwellings.

In terms of location, the property is surrounded by A-R zoning on all sides with 1 residentially zoned parcel in the southeastern corner of the property. It appears that existing buffers are in place surrounding the residentially zoned parcel to the southwest.



# HELIO SAGE

Vance County Planning and Development  
Jordan McMillen, Director  
156 Church Street, Suite 3  
Henderson, NC 27536



**February 13, 2013**

**Re: Conditional Use Permit Application  
For a Solar Farm on  
Bear Pond Road Henderson, NC 27537**

Dear Mr. McMillen:

BearPond Solar Center, LLC is pleased to submit a complete Conditional Use Permit application for the development, construction and operation of a solar farm on Bear Pond Road in Henderson, NC 27537. HelioSage is the developer and sole member of BearPond Solar Center, LLC. HelioSage is under contract via a lease option with the landowner (Ms. Carolyn Adcock). A signature-ready lease will be executed prior to construction. If a conditional use permit is approved, BearPond Solar Center will install, own, and operate a solar farm for a minimum of 15 years on the property. Under the terms of the lease, the solar farm will be removed at the end of the lease term.

Please find included in this application package:

1. \$250 Application Fee (Check)
2. Completed and signed application
3. Photo of a typical ground mounted solar project
4. Site Plan
5. Parcel Dimension drawing
6. Equipment Spec Sheets (PowerStation, racking, and lighting)
7. Deed to property

Please note that the BearPond Solar Center has not received a DOT driveway permit. The landowner has approved of HelioSage using an existing driveway on the same leased parcel on BearPond Road. After HelioSage selects a design-build firm for this project, a DOT driveway permit application will be submitted. Having spoke with the local DOT representative, Roger Elliot, we do not anticipate changing the use of the existing driveway to be an issue or concern.

Please do not hesitate to reach me with any questions.

Andrew Foukal  
Director of Operations  
HelioSage, LLC  
[afoukal@heliosage.com](mailto:afoukal@heliosage.com) | 434 293 7589

WISDOM IN SUN

117 4th Street SE, Suite B | Charlottesville, VA 22902 | 434.293.7589 | [info@heliosage.com](mailto:info@heliosage.com)



# Vance COUNTY

NORTH CAROLINA

## Conditional Use Permit Application

Vance County Planning & Development Department

156 Church Street, Suite 3  
Henderson, NC 27536  
Ph: (252) 738-2080  
Fax: (252) 738-2089

### For Administrative Use Only:

Case #	
Fee Paid	2/18/2013 CK# 1038
BOA Date	



### Property Owner Information

Property Owner: Carolyn P. and Sherwood Lee Adcock

Mailing Address: 2612 Trifle Lane

City: Wake Forest State: NC Zip Code: 27587

Phone #: (919) 348 - 6529 Fax #: ( ) -

E-mail Address:

### Applicant Information

Applicant: BearPond Solar Center, LLC

Mailing Address: PO Box 2055

City: Charlottesville State: VA Zip Code: 22902

Phone #: (434) 293 - 7589 Fax #: (434) 293 - 4749

E-mail Address: afoukal@heliosage.com

### Property Information *For multiple properties please attach an additional sheet.*

Property Address: 1589 Bear Pond Road, Henderson, NC

Tax Map Number: 112 - Fire District PIN (parcel identification #): 0546 04021

Type of Petition: Conditional Use for Solar Farm

Existing Zoning: AR Proposed Zoning: AR

Acreage: 98.8 Road Frontage: 1930'

Existing Use: Aq

### Deed Reference

- ☐ Metes and bounds description attached
- ☐ Site plan/sketch of proposal attached



# Vance COUNTY

NORTH CAROLINA

## Conditional Use Permit Application

Vance County Planning & Development Department

### Statement of Justification

1. Application is hereby made for the following use: *Please explain below:*

Solar Energy System (Solar Farm) using photovoltaic modules and interconnecting to the existing Progress Energy distribution lines as detailed in site plan and interconnection detail.

2. The intent is to : *Check all that apply:*

- ☒ Construct a new structure for a conditional use;
- ☐ Repair the existing structure for the conditional use;
- ☐ Alter and/or expand the existing structure for the conditional use;
- ☐ Other

3. The following requirements have been provided: *Check all that apply:*

- ☒ Site plan;
- ☒ Property description;
- ☐ NC DOT entrance permit (if applicable);

4. Additional information:

DOT Driveway permit will be submitted to the Planning Dept prior to commencing construction.

**In order to issue a Conditional Use Permit, the Board shall consider each of the following conditions, and based on the evidence presented at the hearing(s) make findings in regards to each and must find that the issuance of the Conditional Use Permit is in the best interest of the county.**

A. The use requested is among those listed as an eligible conditional use in the district in which the subject property is located.

Yes ☒ No ☐

Solar Energy System, (Solar Farm) in the revised Vance County Zoning Ordinance.

B. The use or development is located, designed and proposed to be operated so as to maintain or promote the public health or safety;

Yes ☒ No ☐

The project will improve public health by creating green and clean energy. Public Safety - the site will be fenced and built to exceed building code and national electric code.



# Vance COUNTY

NORTH CAROLINA

## Conditional Use Permit Application

Vance County Planning & Development Department

- C. The use or development complies with all required regulations of the Zoning Ordinance and all applicable specific conditions and specifications;

Yes ☒ No ☐

The project will comply with all required regulations of the Zoning Ordinance and all applicable specific conditions and specifications.

- D. The use or development is located, designed and proposed to be operated so as to maintain or enhance the value of adjoining or abutting property, or that use or development is a public necessity;

Yes ☒ No ☐

The project will enhance or maintain the value of adjoining landowners by increased taxes, job creation, emissions-free energy, and no noise or aesthetic impacts.

- E. The use or development will be in harmony with the area in which it is located and will be in general conformity with the plan of development of the County.

Yes ☒ No ☐

The use will be in harmony with the area and will be in general conformity with the plan of development.

### Property Owners Signature

Catalyn P. Alcock

Please sign in blue or black ink

Date 2-13-2013

### Applicants' Signature

Andrew Foukal

Please sign in blue or black ink

Digitally signed by Andrew Foukal  
DN: cn=Andrew Foukal, o=Vance County, ou=Vance County, email=afoukal@vanceco.org, c=US  
Date: 2013.02.13 16:28:54 -0500

Date 2/13/2013

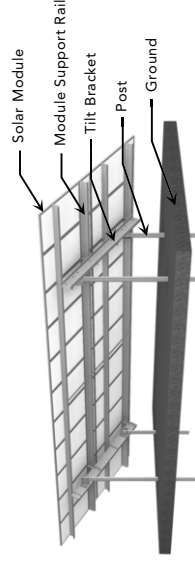




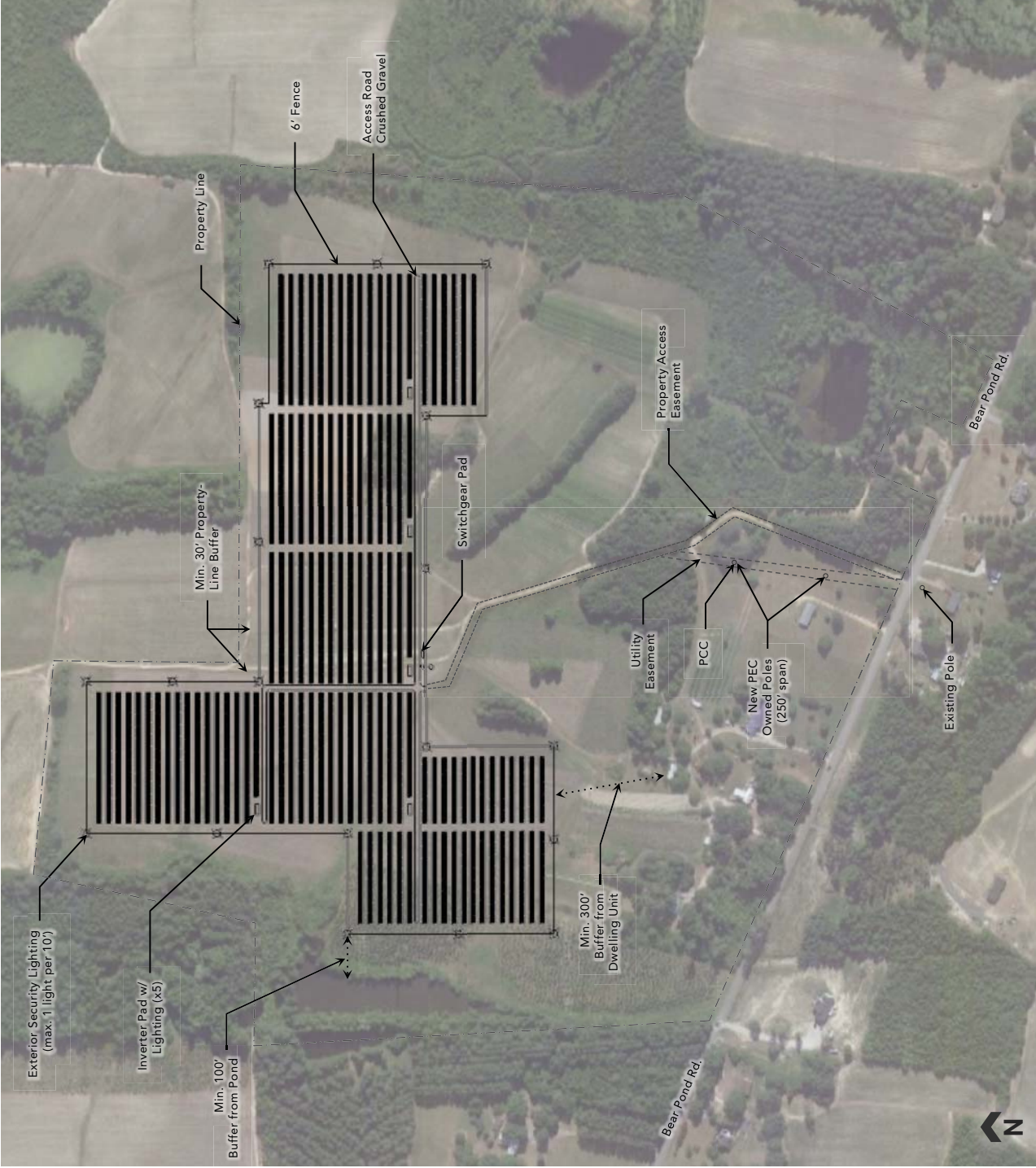
PROJECT SPECIFICATIONS

System Size DC (kW)	6,400
System Size AC (kW)	4,999
Project Area	40 Acres
Array Footprint	29 Acres
Module Information	Canadian Solar CS6X-P 290
Inverter Information	AE 500NX
Racking Information	Daetwyler Modu-Rack
Array Azimuth	180°
Array Tilt	30°
Specific Output	1,422 kWh/kW
Projected Annual Output	9,100,800 kWh

TYPICAL GROUND-MOUNT RACKING PERSPECTIVE



TYPICAL GROUND-MOUNT RACKING ELEVATION



DWG NO.	DRAWING TITLE	PROJECT	DEVELOPER	NOTES
A1.03 3/4/2013	SITE PLAN DRAWN BY: M. WALTERS	BEARPOND SOLAR CENTER BEAR POND ROAD HENDERSON, NC 27537	HELIO SAGE ENERGY 117 4TH STREET SE CHARLOTTEVILLE, VA 22902	1. Equipment is representative only and may change based on availability and market conditions. 2. This drawing is a preliminary design – not for construction. 3. All dimensions specified here are for reference only; do not scale this drawing.



#### PROJECT SPECIFICATIONS

System Size DC (kW)	6,400
System Size AC (kW)	4,999
Project Area	40 Acres
Array Footprint	29 Acres
Module Information	Suntech 290W
Inverter Information	AE Solaron 500 HE
Racking Information	Dactwyler Modu-Rack
Array Azimuth	180°
Array Tilt	30°
Specific Output	1,368 kWh/kW
Projected Annual Output	8,755,200 kWh

#### TYPICAL GROUND-MOUNT RACKING PERSPECTIVE



#### TYPICAL GROUND-MOUNT RACKING ELEVATION



#### NOTES

1. Equipment is representative only and may change based on availability and market conditions.
2. This drawing is a preliminary design - not for construction.
3. All dimensions specified here are for reference only, do not scale this drawing.

#### DEVELOPER

HELIO SAGE ENERGY  
117 4TH STREET SE CHARLOTTESVILLE, VA 22902

#### PROJECT

BEARPOND SOLAR CENTER  
BEAR POND ROAD HENDERSON, NC 27537

#### DRAWING TITLE

PARCEL DIMENSIONS  
DRAWN BY: M. WALTERS

#### DWG NO.

A1.01  
2/13/2013

CONFIDENTIAL: THIS DRAWING AND ANY DATA, DESCRIPTION AND OTHER INFORMATION CONTAINED HEREIN ARE CONSIDERED AS PROPRIETARY AND THE EXCLUSIVE PROPERTY OF HELIO SAGE, LLC. AND SHALL NOT BE PUBLISHED, REPRODUCED, COPIED, DISCLOSED OR USED IN WHOLE OR IN PART FOR ANY PURPOSE WITHOUT THE EXPRESS WRITTEN PERMISSION OF A DULY AUTHORIZED REPRESENTATIVE OF HELIO SAGE, LLC. ALL RIGHTS RESERVED.



## AE PowerStation NX

### Switchboard

- 2000 A 3-Phase
- Inverters are pre-wired to the switchboard and output to the transformer
- Optional breakers for tracker power and other on-site loads
- Optional main circuit breaker and revenue grade meter

### Service Options

- Extended 20-year warranty for inverter
- "SafeGuard" and SafeGuard Plus™ uptime program for inverters
- SiteGuard O&M program available for entire site's maintenance requirements

### Shown with (4) AE 500NX-1kV Utility Inverters

- Separate DC into each inverter
- 97.5% CEC efficiency
- 600 - 1000 Vac voltage range

### Integrated Performance Monitoring

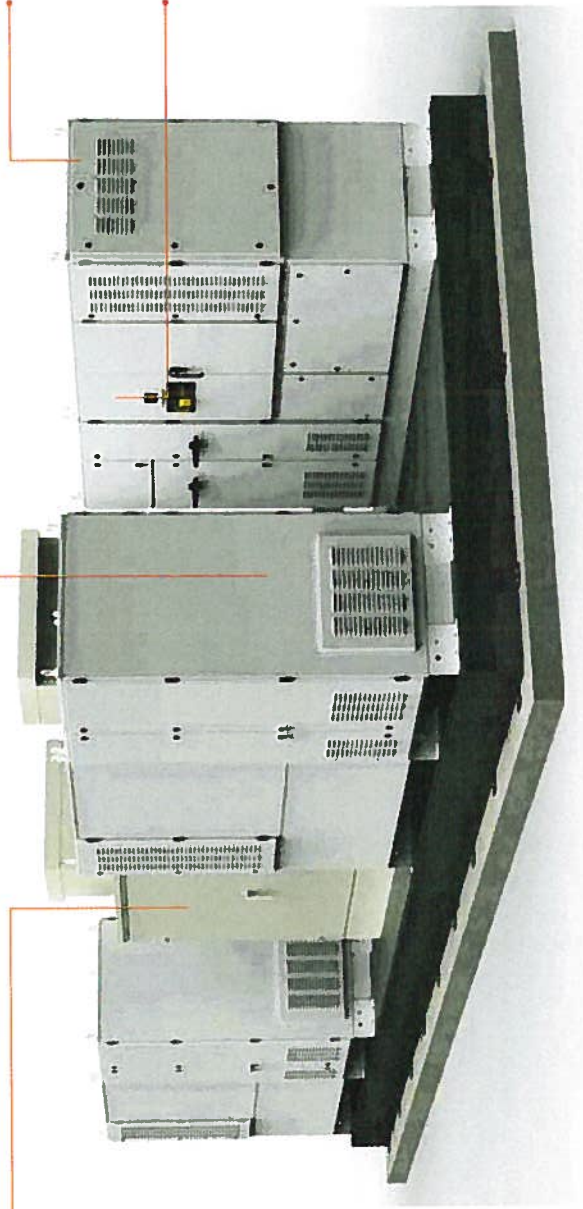
- Enables SCADA connectivity
- Utility interactive controls (UIC)
- Collect and store wide range of performance data

### Medium Voltage Transformer

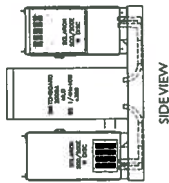
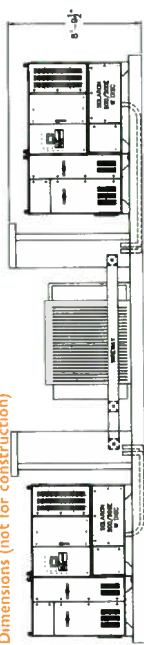
- Single-winding secondary
- Selectable output up to 35 kV AC
- Environmental FR3 fluid standard

### Pier Mount (Optional)

- Easy access to AC and DC conduits simplifies installation
- Shown on traditional concrete pad

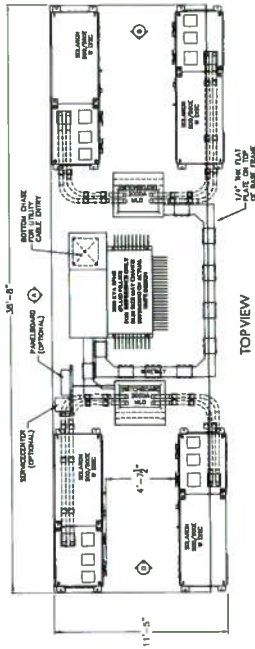


Dimensions (not for construction)



ELEVATION

SIDE VIEW



TOP VIEW

## Product Summary Specifications

Mechanical Specifications	
Model	1000NX 1500NX 2000NX
Construction	Powder-coated steel base, aluminum exterior walls and roof (endured anti-graffiti)
Mounting	Plat or concrete slab foundation
Weight (lbs) / Open	30,160 41,100 47,500
Operating Ambient Temperature Range	-20 °C to 50 °C
Storage Ambient Temperature Range	-30 °C to 70 °C
Electrical Specifications	
Model	1000NX 1500NX 2000NX
Continuous Output Power (kW)	1000 1500 2000
Weighted Efficiency	See Inverter data sheets
Maximum DC open Voltage (VOC)	600V or 1000V 600V or 1000V 600V or 1000V
MPPT Voltage Range	See Inverter data sheets
AC Nominal Voltage (Configurable with and without RTV transformer)	480V to 35kV 480V to 35kV 480V to 35kV
Operating Voltage Range	See Inverter data sheets
Frequency	60 Hz 60 Hz 60 Hz

Specifications are subject to change without notice. Refer to user manual for detailed specification.



## PowerStation™ NX 1 to 2 MW Turnkey Base Station for Multiple Inverters

Advanced Energy's PowerStation NX is a fully integrated power conversion solution for MW-scale PV projects that accepts DC inputs and provides medium voltage AC output. The PowerStation NX is built around the NX line of utility-scale inverters which offer lower levelized cost of energy (LCOE) through higher energy harvest, reduced Balance of System (BoS) cost, and minimized ongoing operations and maintenance (O&M) costs. Energy harvest is maximized and the cost of power production is minimized with the 500NX-HE or 500NX-IV inverters that have peak efficiencies over 98%.

The smallest footprint per kW and its robust, outdoor-ready design ensures the PowerStation is suitable for all climates, with or without an enclosure. Several standard PowerStation designs are available from 1MW to 2MW for urgent project schedules. Custom options are available and can be designed to suit your specific needs. Specialty, multi-winding transformers are not required with the NX line, further reducing project BoS costs.

The pre-wired PowerStation includes the inverters, distribution switchboard, integrated data monitoring solution, DC circuit re-combining, and DC disconnects. Having these components designed into convenient MW+ sized blocks reduces project engineering costs, consolidates several vendors to a single point of contact, decreases the cost of on-site labor and installation, and helps keep the complex installation schedules on time.

The inverters are backed with a complete 5-year warranty coverage ensuring there are no surprises during the warranty period. An extended 20-year warranty is available as an option. The AE warranty options provide peace of mind and are backed by the best service and support team in the business.

### Lower Operational LCOE

- Increased availability with >99% monitored fleet availability
- Legendary service and response
- Maximize energy delivered with AE NX high efficiency inverters

### Reduce BoS Component of LCOE

- Up to 2MW can be shipped on a single truck
- Outdoor ready inverters do not require enclosure
- Parallel connections to a single, medium-voltage transformer

### Minimize Ongoing O&M Component of LCOE

- Robust, outdoor-ready construction
- High, field-proven fleet availability of >99% for monitored units
- Simplify site maintenance with SiteGuard™ (available option)

### Take Control and Support the Grid

- Integrated data monitoring solution transmits inverter data for secure collection
- Integrated data monitoring solution receives and acts upon a host of utility level commands
- Follows utility-supplied VRT and FRT profiles (available option)

commercial • municipal • residential • military

**Award Winning Product**

"Most Innovative Product of the Year"

- LightFair 2012

# CAST Lighting for Security

# LED Perimeter Lighting



***Solve Your Security Problems for Pennies a Day***

## **Benefits**

- Low Cost
- Simple Installation
- Safe Low-Voltage
- Energy-Efficient
- Dark-Sky Compliant

## **Solutions**

- Commercial, Municipal, Residential Properties
- Airports, Military Installations, Power Plants
- Aid & Relief Stations, Temporary Housing
- Secure Military and Police Deployment
- Temporary Fence Providers, Construction

## **The Industry's Most Durable LED's**

Changing the way the world lights for security™



# The CAST LED Perimeter Lighting System™



## Luminaire Specifications - Model # CPL1

**Construction:** The luminaire has 4 primary components: hat, body, stem, and base.

- ▶ **Hat:** Sand-cast aluminum alloy with highly reflective white epoxy-coated underside.
- ▶ **Body:** Sand-cast aluminum alloy with LED array inset under waterproof borosilicate glass dome.
- ▶ **Stem:** Galvanized steel pipe secured with set screw at top and threads at bottom.
- ▶ **Base:** Sand-cast aluminum alloy junction box with removable cover and knockout at bottom. Junction box houses LED driver. Base also attached to stamped aluminum saddle clamp.
- ▶ **Hardware:** All hardware (including screws, nuts, and washers) are zinc-plated steel.

**Mounting Options:** Unit equipped with saddle-clamp for fence posts - other options available.

- ▶ **Pipe Mount:** Bottom knock-out can be used to secure pipe for connection to junction box.
- ▶ **Stake Mount:** Trident or standard stake can be secured to bottom knock-out for ground mount.

**Electrical:** The LED driver is a proprietary circuit designed specifically for this luminaire.

- ▶ **Input Voltage:** 12 volts to 24 volts AC or DC (polarity independent)
- ▶ **Input Current & Power:** 0.41 amps (+/- 10%); 6.2 watts (+/- 18%) (over 12-24v range)
- ▶ **Power Factor:** 0.88 (+/- 0.1) (over 12-24v range)
- ▶ **Surge and Spike Suppression:** TVS transient voltage suppressor (up to 40 volts)
- ▶ **EMI Filtering:** Inductors and capacitors for filtering to comply with FCC Class B Conducted and Radiated
- ▶ **Components:** All driver components selected for extended operation at high temperatures - no electrolytic capacitors.

### Thermal

- ▶ **Ambient Temperature Range:** -40°C to 55°C
- ▶ **LED Array:** Mounted on aluminum core board, secured to cast-aluminum alloy body with thermal grease backing. Thermal pathway includes body, hat, stem, and base.
- ▶ **LED Driver:** Fully encapsulated in thermally conductive epoxy

### Light Source

- ▶ **LED Array:** (3) Cree XPEHEW Neutral White chips
- ▶ **Lumen Depreciation (L70):** 54,400 hours (according to Cree LM-80 report)
- ▶ **Color Temperature (CCT):** 4,550°K
- ▶ **Color Rendering (CRI):** 73 (Note: Higher CRI not required for this application since illumination is primarily for security)
- ▶ **Light Output:** Lamp Lumens: 512; Luminaire Lumens: 265 (at 24v)
- ▶ **Efficiency:** Luminous Efficiency: 52%; Total Luminaire Efficiency: 37.9 lumens/watt (Note: Use of a diffuse reflector rather than a more efficient direct source was selected to reduce glare from these low-mounted luminaires.)
- ▶ **IESNA Cutoff Classification:** Full Cutoff

### Certifications and Standards

- ▶ UL listing pending (expected date 9/12), FCC Class B Conducted and Radiated, RoHS

### Sustainability and Replaceability

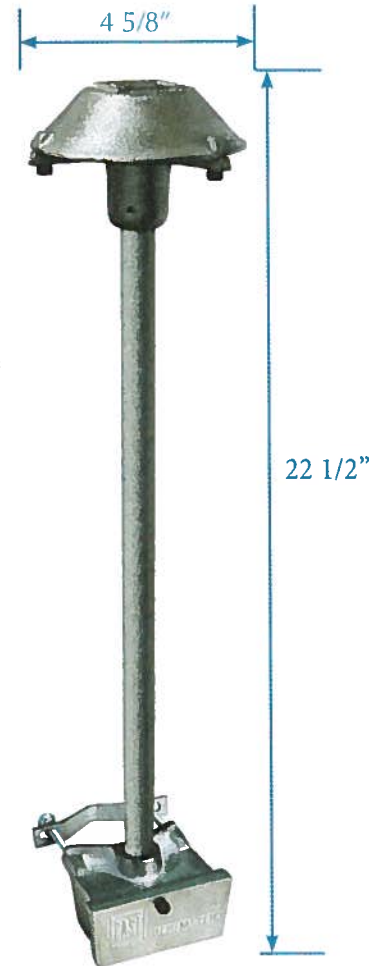
- ▶ Cast-metal components are sand-cast in CAST Lighting's own foundry in Colombia, South America. Trimmings and defective castings are re-incorporated into new product.
- ▶ All parts of the CAST LED Perimeter Light are replaceable. Should the LED array or driver fail, then the body or base can be replaced or repaired in the field without special tools or training. Returned parts are recycled in our foundry.

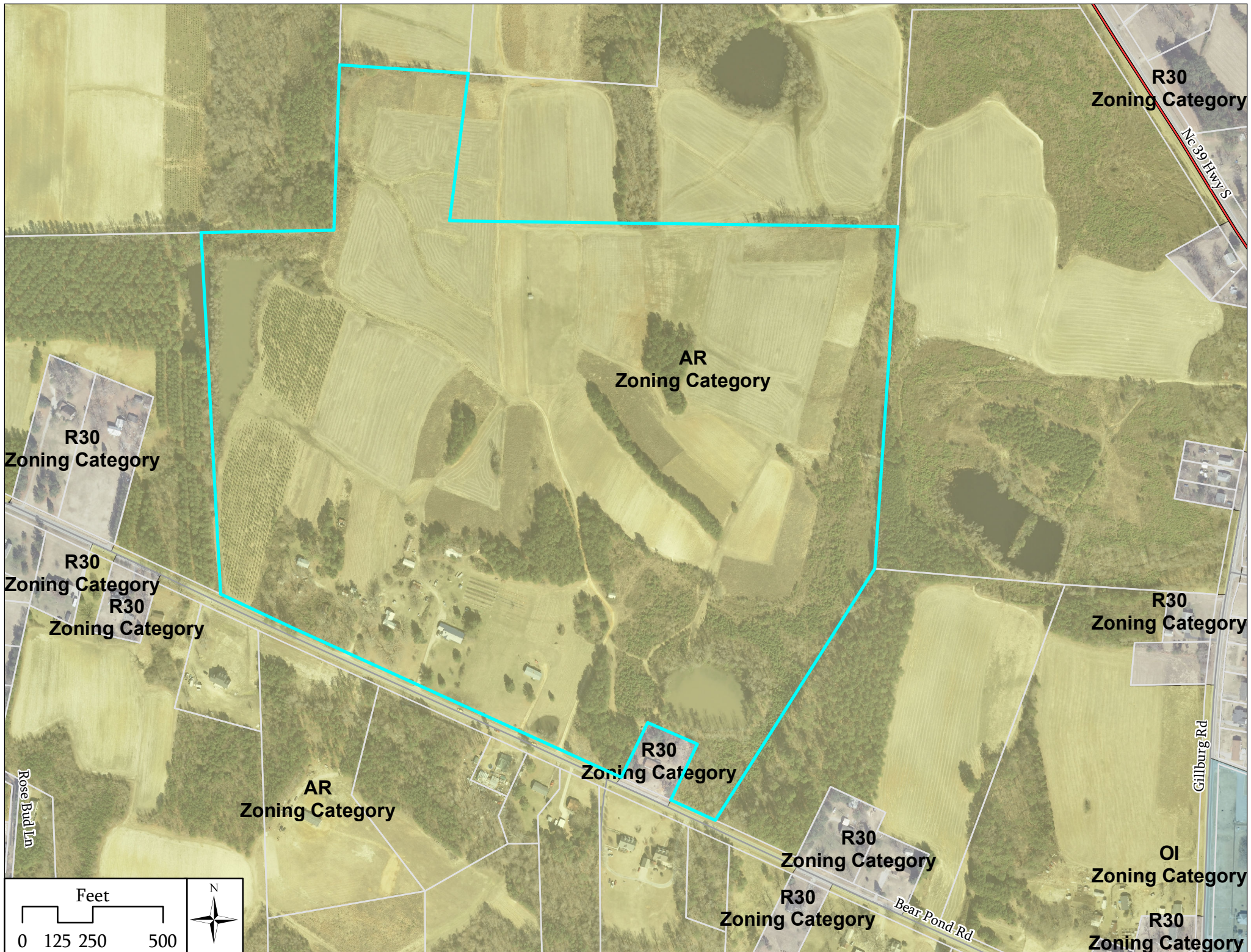
### Control and Security Options

- ▶ The 24-volt (300VA or 600VA) CAST Perimeter Lighting Transformers (CPT300 and CPT600) have built-in manual timers that can be combined with optional photocells (CTPC) or external control units to tie into existing control system.
- ▶ Optional vandal-proof hardware and hard-wired security line through conduit can deter theft of luminaires and alert owners via security system.

### Photometrics

- ▶ **Beam Angle:** 120°
- ▶ **Cutoff Designation:** Full Cutoff (0% above Nadir)
- ▶ **Spacing Criterion:** 20 ft. at 8 ft. mounting height to achieve minimum 5 lux to comply with suggested horizontal illuminance for unoccupied spaces (IESNA G-1-03). Many applications do not require this level of illuminance, and fixtures may be spaced at up to 30 ft.
- ▶ **Lumen and Efficiency Data:** Previous Page





Use Type	AR	R30	R20	R10	RMHC	HC	GC1	LI	IM	EIA	OI	OS	WOZ	Parking-Loading
Adult Establishments	X	X	X	X	X	CU	CU	CU	X	X	X	X	X	Parking: 4 per 1,000 SF Loading: N/A
Airports	CU	X	X	X	X	X	CU	CU	CU	CU	CU	X	X	Special Study Required***
Commercial Communications Towers (Cell Towers)	CU	X	X	X	X	CU	CU	CU	CU	CU	CU	CU	CU	Parking: 2 per tower Loading: 1
Cemetery (Church, Family)	P	P	P	CU	X	X	X	X	X	X	X	P	CU	N/A
Cemetery (Commercial)	P	CU	X	X	X	X	X	X	X	X	X	CU	CU	Parking: 6 per 1,000 SF of office-building Loading: 1
Shooting Ranges	CU	X	X	X	X	X	X	X	X	X	X	CU	CU	Parking: 1.5 per shooting station Loading: 1
Solar Collector (Accessory)	P	P	P	P	P	P	P	P	P	P	P	P	P	N/A
Solar Energy Systems, Large Scale (Solar Farms)	CU	X	X	X	X	X	X	CU	CU	CU	CU	X	X	Parking: 1/ every 2 employees on shift of greatest employment
<b>TEMPORARY USES</b>														
Commercial (temporary-see Definitions) Outdoor Sales	P	P	X	X	X	P	P	P	P	P	P	P	P	Parking: staff review Loading: N/A
Concrete/Asphalt Operations	X	X	X	X	X	X	X	CU	P	X	X	X	X	Parking: staff review Loading: 1 per vehicle
Contractor's Office (located at project site for duration of project)	CU	CU	X	X	X	CU	CU	CU	P	CU	CU	X	CU	Parking: 1 per 200 SF Loading: N/A
Farmstand	P	P	X	X	X	P	P	P	X	X	X	P	P	Parking: 8 spaces Loading: N/A
Manufactured Housing Unit for Office and/or Exhibition	CU	CU	CU	CU	P	P	P	P	X	X	CU	CU	CU	Parking: 1 per vehicle Loading: N/A
Manufactured Home for Hardship	CU	CU	CU	CU	P	X	X	X	X	X	X	X	CU	Parking: 2 per dwelling unit Loading: N/A
Public Interest Event and/or Special Event	CU	CU	CU	CU	CU	CU	CU	CU	CU	CU	CU	CU	CU	Parking: 1/patron Loading: 1 per vehicle
Temporary Miscellaneous Sales (see Definitions)	CU	CU	CU	CU	CU	CU	CU	CU	CU	CU	CU	CU	CU	Parking: 1 per vehicle Loading: N/A
***See Section 6.10.L														

- c. *Warning signs.* Warning signs meeting National Rifle Association (NRA) guidelines for shooting ranges shall be posted at one hundred-foot intervals along the entire perimeter of the shooting range facility and along the entire perimeter of the property lines in the same intervals.
  - d. *Distance from occupied dwelling.* All shooting stations, targets, and firing lines shall be located at least one-half (1/2) mile from any existing, occupied dwelling.
  - e. *Access to facility.* Access to the facility and shooting range shall be secured and controlled, with ingress and egress permitted only during operating hours as established below. Prior to issuance of a permit, a valid driveway permit must be obtained from North Carolina Department of Transportation.
  - f. *Written variance.* The distance requirements of this section may be varied with written permission in the form of an affidavit from all adjoining property owners and all rightful leaseholders of dwellings located within the ½ mile surrounding area affected thereby, except that written approval is not needed for any adjoining land owned by the State of North Carolina.
5. Operational Requirements:
- a. *Maintenance.* Where not otherwise specified within this ordinance, shooting range facilities shall be operated and maintained in a manner that shall meet or exceed the guidelines as specified by the Range Technical Team Advisor upon inspection going by the guidelines in the NRA's Range Source Book: A Guide to Planning and Construction, current edition.
  - b. *Best Management Practices.* Outdoor Shooting Ranges shall provide a plan outlining its Best Management Practices (BMPs) relating to lead management. Said plan shall meet or exceed the guidelines as specified by the Environmental Protection Agency's (EPA) Best Management Practices for Lead at Outdoor Shooting Ranges, current edition.
  - c. *Hours of operation.* Shooting Ranges shall be allowed to operate between sunrise and sunset Monday through Saturday, except that the hours may be extended after sunset for purposes of subdued-lighting certification of law enforcement officers, or may be extended for other purposes only when a permit allowing such activity is issued in advance by the Sheriff's Office.
  - d. *Liability insurance.* The permittee shall be required to carry a minimum of three million dollars (\$3,000,000.00) per occurrence of liability insurance. Such insurance shall name Vance County as an additional insured party and shall save and hold Vance County, its elected and appointed officials, and employees acting within the scope of their duties harmless from and against all claims, demands, and causes of action of any kind or character, including the cost of defense thereof, arising in favor of a person or group's members or employees or third parties on account of any property damage arising out of the acts or omissions of the permittee, his/her group, club, or its agents or representatives. The County shall be notified of any policy changes or lapses in coverage.
- N. Solar Energy Systems, Large Scale (Solar Farms)
- 1. Height: Systems, equipment and structures shall not exceed twenty-five (25) feet in height when ground mounted. Excluded from this height requirement, however, are

electric transmission lines and utility poles. Roof mounted systems shall not exceed the maximum height for the applicable zoning district.

2. Setback: Active solar system structures must meet the following setbacks:
  - a. Ground mounted– Ground mounted solar energy systems as part of a solar farm shall meet the minimum zoning setback for the zoning district in which it is located.
3. Screening and Fencing: Adequate fencing shall be provided along the perimeter of the area (with all entrances gated) to prevent trespassing on the property.
4. Lighting: All lighting shall be arranged and shaded so as to reflect the light away from adjoining properties and streets.
5. Noise: Noise levels measured at the property line shall not exceed fifty (50) decibels when located adjacent to an existing residence or residential district.
6. Power Transmission Lines: To the extent practical, all new power transmissions lines to any building, structure or utility connection shall be located underground. Existing above ground utility lines shall be allowed to remain in their current location.
7. Approved Solar Components: Electric solar system components must have a UL listing.
8. Compliance with Building and Electrical Codes: All solar farms shall be in conformance with the requirements of the State Building and Electrical Codes (current addition), the State of North Carolina and Vance County. All active solar systems shall be inspected by a Vance County building inspector.
9. Utility Notification: No grid tied photovoltaic system shall be installed until evidence has been given to the Planning and Development Department that the owner has been approved by the utility company to install an interconnected customer-owned generator. Off-grid systems shall be exempt from this requirement.
10. Abandonment: It is the responsibility of the owner to notify the County and to remove all obsolete or unused systems within twelve (12) months of cessation of operations. Reusable components are to be recycled whenever possible.

#### O. WIRELESS COMMUNICATIONS TOWERS (“CELL TOWERS”)

1. The purpose of the following requirements is to promote and to protect the public health, welfare, and safety by regulating existing and proposed communication towers. The requirements are intended to protect property values, create a more attractive economic and business climate, and enhance and protect the scenic and natural beauty of designated areas.
2. *General Requirements.* When allowed, such towers and associated equipment shall be subject to the following additional requirements:
  - a. Towers shall not interfere with normal radio and television reception in the vicinity. Commercial messages shall not be displayed on any tower. Violations shall be considered zoning violations and shall be corrected under the enforcement provisions.
  - b. Lighting shall not exceed the Federal Aviation Administration (FAA) minimum if lighting is required by the FAA. The lights shall be oriented so as not to project directly onto surrounding residential property, consistent with FAA requirements. Prior to issuance of a building permit, the applicant shall be required to submit documentation from the FAA that the lighting is the minimum lighting required by the FAA.
  - c. Towers shall be constructed and maintained in conformance with all applicable building code requirements.
  - d. In order to protect the public from unnecessary exposure to electromagnetic radiation, the tower owner shall provide appropriate

### Conditional Use Permit Check Sheet

1. The use requested is among those listed as an eligible conditional use in the district in which the subject property is located.

	True	False		True	False		True	False	TOTAL
Alston:	<input type="checkbox"/>	<input type="checkbox"/>	Harvin:	<input type="checkbox"/>	<input type="checkbox"/>	Stainback:	<input type="checkbox"/>	<input type="checkbox"/>	<input type="text"/>
Brummitt:	<input type="checkbox"/>	<input type="checkbox"/>	Johnson:	<input type="checkbox"/>	<input type="checkbox"/>	Alternate 1:	<input type="checkbox"/>	<input type="checkbox"/>	
Haley:	<input type="checkbox"/>	<input type="checkbox"/>	Shaw:	<input type="checkbox"/>	<input type="checkbox"/>	Alternate 2:	<input type="checkbox"/>	<input type="checkbox"/>	

2. The use or development is located, designed and proposed to be operated so as to maintain or promote the public health or safety.

	True	False		True	False		True	False	TOTAL
Alston:	<input type="checkbox"/>	<input type="checkbox"/>	Harvin:	<input type="checkbox"/>	<input type="checkbox"/>	Stainback:	<input type="checkbox"/>	<input type="checkbox"/>	<input type="text"/>
Brummitt:	<input type="checkbox"/>	<input type="checkbox"/>	Johnson:	<input type="checkbox"/>	<input type="checkbox"/>	Alternate 1:	<input type="checkbox"/>	<input type="checkbox"/>	
Haley:	<input type="checkbox"/>	<input type="checkbox"/>	Shaw:	<input type="checkbox"/>	<input type="checkbox"/>	Alternate 2:	<input type="checkbox"/>	<input type="checkbox"/>	

3. The use or development complies with all required regulations of the Zoning Ordinance and all applicable specific conditions and specifications.

	True	False		True	False		True	False	TOTAL
Alston:	<input type="checkbox"/>	<input type="checkbox"/>	Harvin:	<input type="checkbox"/>	<input type="checkbox"/>	Stainback:	<input type="checkbox"/>	<input type="checkbox"/>	<input type="text"/>
Brummitt:	<input type="checkbox"/>	<input type="checkbox"/>	Johnson:	<input type="checkbox"/>	<input type="checkbox"/>	Alternate 1:	<input type="checkbox"/>	<input type="checkbox"/>	
Haley:	<input type="checkbox"/>	<input type="checkbox"/>	Shaw:	<input type="checkbox"/>	<input type="checkbox"/>	Alternate 2:	<input type="checkbox"/>	<input type="checkbox"/>	

4. The use or development is located, designed and proposed to be operated so as to maintain or enhance the value of adjoining or abutting property, or that the use is a public necessity;

	True	False		True	False		True	False	TOTAL
Alston:	<input type="checkbox"/>	<input type="checkbox"/>	Harvin:	<input type="checkbox"/>	<input type="checkbox"/>	Stainback:	<input type="checkbox"/>	<input type="checkbox"/>	<input type="text"/>
Brummitt:	<input type="checkbox"/>	<input type="checkbox"/>	Johnson:	<input type="checkbox"/>	<input type="checkbox"/>	Alternate 1:	<input type="checkbox"/>	<input type="checkbox"/>	
Haley:	<input type="checkbox"/>	<input type="checkbox"/>	Shaw:	<input type="checkbox"/>	<input type="checkbox"/>	Alternate 2:	<input type="checkbox"/>	<input type="checkbox"/>	

5. The use or development will be in harmony with the area in which it is to be located and will be in general conformity with the plan of development of the County.

	True	False		True	False		True	False	TOTAL
Alston:	<input type="checkbox"/>	<input type="checkbox"/>	Harvin:	<input type="checkbox"/>	<input type="checkbox"/>	Stainback:	<input type="checkbox"/>	<input type="checkbox"/>	<input type="text"/>
Brummitt:	<input type="checkbox"/>	<input type="checkbox"/>	Johnson:	<input type="checkbox"/>	<input type="checkbox"/>	Alternate 1:	<input type="checkbox"/>	<input type="checkbox"/>	
Haley:	<input type="checkbox"/>	<input type="checkbox"/>	Shaw:	<input type="checkbox"/>	<input type="checkbox"/>	Alternate 2:	<input type="checkbox"/>	<input type="checkbox"/>	

**Revised Information – Submitted December 17, 2013**



## Planning and Development Department

156 CHURCH STREET, HENDERSON, NC 27536

(252) 738-2080 / FAX 738-2089

### Staff Report 01/09/2014

**Owner:** Carolyn P. Adcock

**Applicant:** BearPond Solar Center, LLC

**Parcel ID:** 0546 04021

**Location:** 1689 Bearpond Road

**Current Zoning:** (A-R) Agricultural Residential

**Public Hearing:** 03/21/2013

**Public Hearing for Revision:** 01/09/2013

**Prepared by:** Jordan McMillen

#### Description of Conditional Use Permit Request:

The applicant is requesting a conditional use permit to allow construction of a 4.99 MW solar farm on land to be leased under the use category of "Solar Energy System, Large Scale".

#### **Exhibits as follows:**

**Exhibit 1.** Revised Application

**Exhibit 2.** Revised Site Plan

#### DRAFT Findings of Fact

1. The request is for a conditional use permit to allow a 4.99 MW solar farm on a parcel zoned (A-R) Agricultural Residential.
2. Carolyn P. Adcock is the property owner. The property is to be leased by BearPond Solar Center, LLC.
3. The property is located directly behind 1589 Bearpond Road; more specifically identified as tax parcel 0546 04021.
4. The property consists of 100 acres of which 40 acres will be the project area with the solar array footprint of 29 acres. The property includes an existing single family dwelling.
5. The lot is currently zoned (A-R) Agricultural Residential.
6. The application requesting a conditional use permit was filed on 02/15/2013.
7. The adjoining property owners were notified on March 1, and March 4, 2013.
8. The property was posted on March 1, 2013.
9. The legal notice was run on March 12, and March 19, 2013.
10. A revised application and site plan was submitted on December 17, 2013.
11. The adjoining property owners were notified of the public hearing for the revision on December 30, 2013.
12. The property was posted for the revision on December 30, 2013.
13. The legal notice for the revision was run on December 26, 2013 and January 2, 2014.

#### Staff Comments

The Board provided an approval on March 21, 2013 based upon the following conditions: (1) the inclusion of a 35 ft. rear setback (2) submittal of executed interconnection agreement (3) revision of fence height to 8 ft. (4) Submittal of NC DOT driveway permit.

Since this time the solar farm ownership has changed and the site layout has changed during the design phase of the project. For the most part the has changed shape and is now closer to the front of the property. It is important to note that with the change, the farm is still 500+ feet from BearPond Road. Due to the significant change in the site layout, staff felt it necessary to have the revised and final site plan reviewed by the Board of Adjustment.

The applicant is requesting a revision to the previously approved conditional use permit to construct a 4.99MW solar farm. As proposed, the solar farm will still be leased from the current property owner would cover approximately 25 acres. The previous submittal covered approximately 29 acres. The revised submittal does include an 8 ft. fence as previously required. No discussion has taken place to determine whether lighting is proposed within the revised submittal. Previously security lighting was planned to be located at least every 10 ft. along the perimeter.

The revised plan does not change the type of solar panels. They will still have no moving parts and will have a relatively low profile with a maximum height of 8 feet (ordinance requires less than 25 ft). The project area will be a minimum of 375 ft. from any dwelling unit, and will have a minimum 35 ft. setback for the rear of the property. Due to the solar farm location, the revised plan continues to have minimal visual impacts.



# Vance COUNTY

NORTH CAROLINA

## Conditional Use Permit Application

Vance County Planning & Development Department

### For Administrative Use Only:

Case #	<del>20130321-1</del>
Fee Paid	\$250 ck # 8043
BOA Date	1/9/14

20130321-1-Rev.1

156 Church Street, Suite 3  
Henderson, NC 27536  
Ph: (252) 738-2080  
Fax: (252) 738-2089

\* Denotes Changes on Application  
\*\* Change Requiring Board of Adjustment review is the change in site plan.

### Property Owner Information

Property Owner: Carolyn P. Adcock  
Mailing Address: 2612 Trifle Lane  
City: Wake Forest State: NC Zip Code: 27587  
Phone #: (919) 562 - 3284 Fax #: ( ) -  
E-mail Address: cpadcock@gmail.com

### Applicant Information

Applicant: BearPond Solar Center, LLC  
\* Mailing Address: 700 Lavaca St. Suite 1430  
\* City: Austin State: TX Zip Code: 78701  
\* Phone #: (512) 919 - 4434 Fax #: ( ) -  
\* E-mail Address: spryor@sunedison.com

### Property Information *For multiple properties please attach an additional sheet.*

Property Address: <sup>1681</sup>~~1589~~ BearPond Rd.  
Tax Map Number: 112 - Fire District PIN (parcel identification #): 0546 04021  
Type of Petition: Conditional Use for Solar Farm  
Existing Zoning: A-R Proposed Zoning: A-R  
Acreage: 98.8 Road Frontage: 1930'  
Existing Use: Ag

### Deed Reference

- ☐ Metes and bounds description attached
- ☐ Site plan/sketch of proposal attached



# Vance COUNTY

NORTH CAROLINA

## Conditional Use Permit Application

Vance County Planning & Development Department

### Statement of Justification

1. Application is hereby made for the following use: *Please explain below:*

Solar Energy System (Solar Farm) using photovoltaic modules and interconnecting to the existing Progress Energy distribution lines as detailed in site plan and interconnection detail.

2. The intent is to : *Check all that apply:*

- ☒ Construct a new structure for a conditional use;
- ☐ Repair the existing structure for the conditional use;
- ☐ Alter and/or expand the existing structure for the conditional use;
- ☐ Other

3. The following requirements have been provided: *Check all that apply:*

- ☒ Site plan;
- ☒ Property description;
- ☐ NC DOT entrance permit (if applicable);

4. Additional information:

DOT Driveway permit will be submitted to the Planning Dept prior to commencing construction.

**In order to issue a Conditional Use Permit, the Board shall consider each of the following conditions, and based on the evidence presented at the hearing(s) make findings in regards to each and must find that the issuance of the Conditional Use Permit is in the best interest of the county.**

A. The use requested is among those listed as an eligible conditional use in the district in which the subject property is located.

Yes ☒ No ☐

Solar Energy System, (Solar Farm) in the revised Vance County Zoning Ordinance.

B. The use or development is located, designed and proposed to be operated so as to maintain or promote the public health or safety;

Yes ☒ No ☐

The project will improve public health by creating green and clean energy. Public Safety - the site will be fenced and built to exceed building code and national electric code.



# Vance COUNTY

NORTH CAROLINA

## Conditional Use Permit Application

Vance County Planning & Development Department

- C. The use or development complies with all required regulations of the Zoning Ordinance and all applicable specific conditions and specifications;

Yes ☒ No ☐

The project will comply with all required regulations of the Zoning Ordinance and all applicable specific conditions and specifications

- D. The use or development is located, designed and proposed to be operated so as to maintain or enhance the value of adjoining or abutting property, or that use or development is a public necessity;

Yes ☒ No ☐

The project will enhance and maintain the value of adjoining landowners by increased taxes, job creation, emission-free energy, and no noise impacts

- E. The use or development will be in harmony with the area in which it is located and will be in general conformity with the plan of development of the County.

Yes ☒ No ☐

The use will be in harmony with the area and will be in general conformity with the plan of development.

### Property Owners Signature

Carolyn P. Adcock  
Please sign in blue or black ink

Date 12-17-13

### Applicants' Signature

\* **Scott Pryor**

Please sign in blue or black ink

Digitally signed by Scott Pryor  
DN: cn=Scott Pryor, ou=Development, email=sprior@sunedison.com,  
o=US  
Date: 2013.12.18 12:32:50 -0800

Date 12-17-13

