

Case No. 2022-00262
Pine Grove Solar, LLC
Responses to Siting Board Staff's First Request for Information

SITING BOARD DR 1-1:

Various places in the application and exhibits list different acreages for the project. Provide the total leased acreage for the project, the total fenced acreage, and the total acreage that will contain project components.

Response: Pine Grove Solar has acquired a total acreage of 485.44 acres for the project. If built, the total fenced area for the project would be about 230.6 acres and the total acreage of the project that will contain project components would be about 248.0 acres. The total acreage of the project that will contain project components includes the total fenced-in area plus the areas that contain medium voltage collection lines and access roads.

Witness: David Stimson

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SITING BOARD DR 1-2:

Provide a schedule for the project, starting from the receipt of the proposed certificate for construction to the completion of the project, and including the length of each construction phase.

Response: A preliminary project schedule is attached as Exhibit 1-2 "Preliminary Project Schedule," which outlines the remaining project milestones, construction phases, and their expected durations.

Witness: David Stimson

Pine Grove Solar – Preliminary Project Schedule			
	Activity Name	Start	Finish
PROJECT MILESTONES		10/11/23	11/20/26
MIL1100	On-Site PV Mobilizations/Physical Construction Start	12/02/24	
MIL1070	Notice to Proceed (NTP)	12/02/24	
MIL1240	Project Mechanical Completion		04/28/26
MIL1280	Project Substantial Completion		07/30/26
MIL1290	Project COD		07/30/26
MIL1310	Project Completion		11/20/26
CONSTRUCTION			
PV CONSTRUCTION		12/02/24	08/27/26
CONPV1000	Construction Contractor Mobilization	12/02/24	12/13/24
PV01	PV Construction & Testing	12/13/24	04/28/26
PV CONSTRUCTION MILESTONES		04/28/26	08/27/26
CONPVMS1000	PV Mechanical Completion		04/28/26
CONPVMS1010	PV Substantial Completion		07/30/26
CONPVMS1020	PV Final Completion		08/27/26
SUBSTATION		01/22/25	08/05/26
SUB01	HV Mobilization and Construction	01/22/25	12/10/25
SUBSTATION CONSTRUCTION MILESTONES		11/25/25	08/05/26
CONSSMS1000	HV Mechanical Completion		12/10/25
CONSSMS1070	HV Substantial Completion		07/15/26
CONSSMS1090	HV Final Completion		08/05/26
COMMUNICATION/GEN-TIE/SCADA		10/30/23	12/10/25
GEN-TIE01	Gen-Tie Construction	11/25/25	12/10/25
SCADA01	SCADA Installation	03/05/24	12/04/25
COMMISSIONING		04/16/25	07/30/26
COMM01	PV Commissioning	03/24/26	07/30/26
COMM02	AES Supported Commissioning	04/01/26	07/16/26
COMM03	SCADA Commissioning	04/16/25	07/09/26



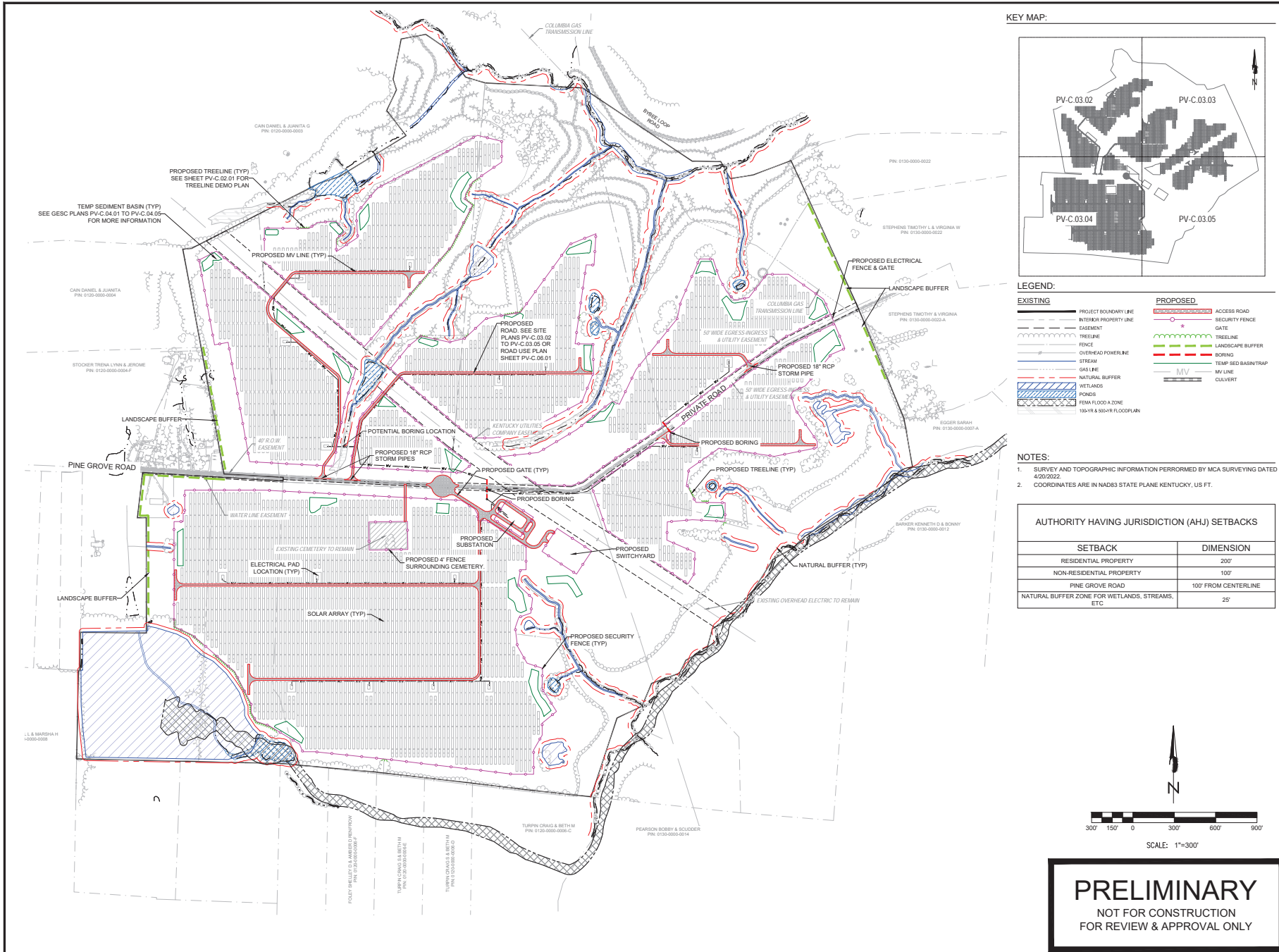
Case No. 2022-00262
Pine Grove Solar, LLC
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SITING BOARD DR 1-3:

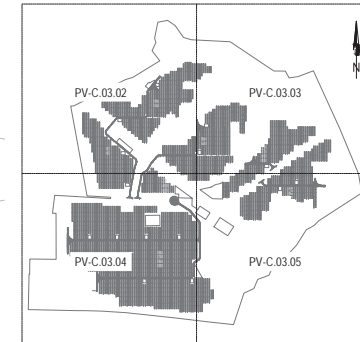
Refer to the Application, Attachment I, Site Assessment Report (SAR), Appendix B, Preliminary Site Layout. Labels cover the southeast portion of the site as depicted on the Site Layout. Provide a Site Layout without the labeling covering the site area.

Response: An updated Site Layout with adjusted labels is attached as Exhibit 1-3 "Overall Civil Site Plan."

Witness: David Stimson



KEY MAP:



LEGEND:

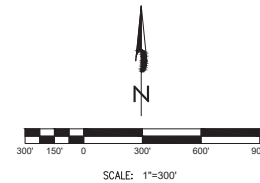
EXISTING	PROPOSED
PROJECT BOUNDARY LINE	ACCESS ROAD
INTERIOR PROPERTY LINE	SECURITY FENCE
EASEMENT	GATE
TREELINE	TREELINE
FENCE	LANDSCAPE BUFFER
OVERHEAD POWERLINE	BORING
STREAM	TEMP SED BASIN/TRAP
GAZELINE	MV LINE
NATURAL BUFFER	CULVERT
WETLANDS	
PONDS	
FIRM FLOOD ZONE	
100-YR & 500-YR FLOODPLAIN	

NOTES:


1. SURVEY AND TOPOGRAPHIC INFORMATION PERFORMED BY MCA SURVEYING DATED 4/20/2022.
2. COORDINATES ARE IN NAD83 STATE PLANE KENTUCKY, US FT.

AUTHORITY HAVING JURISDICTION (AHJ) SETBACKS


SETBACK	DIMENSION
RESIDENTIAL PROPERTY	20'
NON-RESIDENTIAL PROPERTY	10'
PINE GROVE ROAD	100' FROM CENTERLINE
NATURAL BUFFER ZONE FOR WETLANDS, STREAMS, ETC.	25'



PRELIMINARY
 NOT FOR CONSTRUCTION
 FOR REVIEW & APPROVAL ONLY



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ELECTRIC POWER ENGINEERING, INC.
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 (303) 431-7895 www.neieng.com

PE STAMP:

KEY PLAN:

REVISIONS:

NO.	DATE	DESCRIPTION
A	1/10/23	ISSUE FOR REVIEW
**	**	**

PROJECT TITLE:

PINE GROVE SOLAR

PROJECT LOCATION:

MADISON COUNTY, KENTUCKY

SHEET TITLE & DESCRIPTION:

OVERALL CIVIL SITE PLAN

CIVIL

PROJ. NO.	4001.001
DES.	BFL
DWN.	BFL
CHK.	VEC
APP.	VEC
DATE:	1/10/23
SCALE AT 24" x 36":	

SHEET NO.	PV-C.03.01	REV.	A
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Case No. 2022-00262
Pine Grove Solar, LLC
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SITING BOARD DR 1-4:

State whether a power purchase agreement has been made. If so, provide.

Response: Pine Grove Solar has not signed a power purchase agreement.

Witness: David Stimson

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SITING BOARD DR 1-5:

List the company that will employ the individuals that are or will be responsible for ensuring compliance with the statements in the application and any conditions imposed by the Siting Board during construction and operations of the project.

Response: The AES Corporation, the parent company of Pine Grove Solar, LLC, will dedicate an Environmental Compliance Manager to Pine Grove Solar. The AES Compliance Manager will oversee and coordinate with the EPC and any third parties to ensure compliance with local, state, and federal regulations and any conditions the Kentucky Siting Board, the Madison County Board of Adjustments, or the United States Army Corps of Engineers may impose. The EPC will also have environmental compliance staff dedicated to the project.

Witness: Madeleine Ray

SITING BOARD DR 1-6:

Provide a map of any karst features within the project boundaries and within the 2-mile radius. Also provide any mitigation measures proposed for karst features during construction.

Response: Pine Grove Solar performed a search for karst features and potential sinkhole areas using GIS data from the Kentucky Geological Survey. Please see the attached Exhibit 1-6 “Karst Features Map” for a map of all karst features and sinkholes within the project area and within a 2-mile radius of the project boundary. The results of this search indicated that no karst features are within the project site or within a 2-mile radius of the project. No sinkholes were identified within the project boundary, while four sinkholes were identified within a 2-mile radius of the project boundary.

If Pine Grove Solar encounters an unexpected karst feature during construction, it will evaluate the void for the presence of karst invertebrate habitat and the general stability of the impacted area, based on how and when the void is encountered during the construction process. Pine Grove Solar will evaluate a void that is: greater than six inches across in any direction, greater than one square foot along any plane, blows air, continually receives water during a rain event, or has water flowing through or out of it.

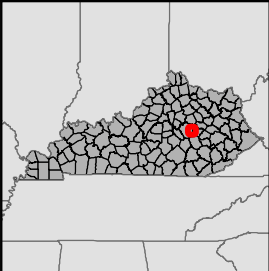





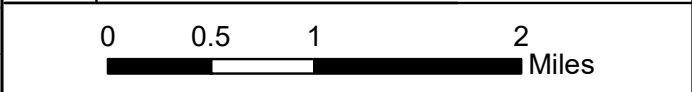
If Pine Grove Solar discovers a void during construction, the following protocol will be followed:

1. All activity within a 50-foot radius of the void will immediately stop and construction equipment will be prohibited from driving near the void.
2. The void will be covered using tarps and plywood, or similar appropriate and available materials, to prevent contamination and changes in ambient conditions, and an erosion control log will wrap the surface perimeter of the void.

3. Pine Grove Solar will provide for the evaluation of the void by a qualified geoscientist.
4. Work will cease in the area until assessment of the void can be completed.
5. Temporary protections will remain in place until final mitigation and protection measures are approved by the state and the feature is closed.

Witness: Joshua O'Connor



Madison Co, KY	Map Details		Map Description	
		<ul style="list-style-type: none">  Sinkholes  Project Parcels  2 mi buffer from Project Boundary 	<p>Pine Grove is located in Madison Co, KY</p> 	<p>Author: TA Date: 1/26/2023 Version: 1.0 Type: Exhibit</p> <p>Pine Grove</p>
				

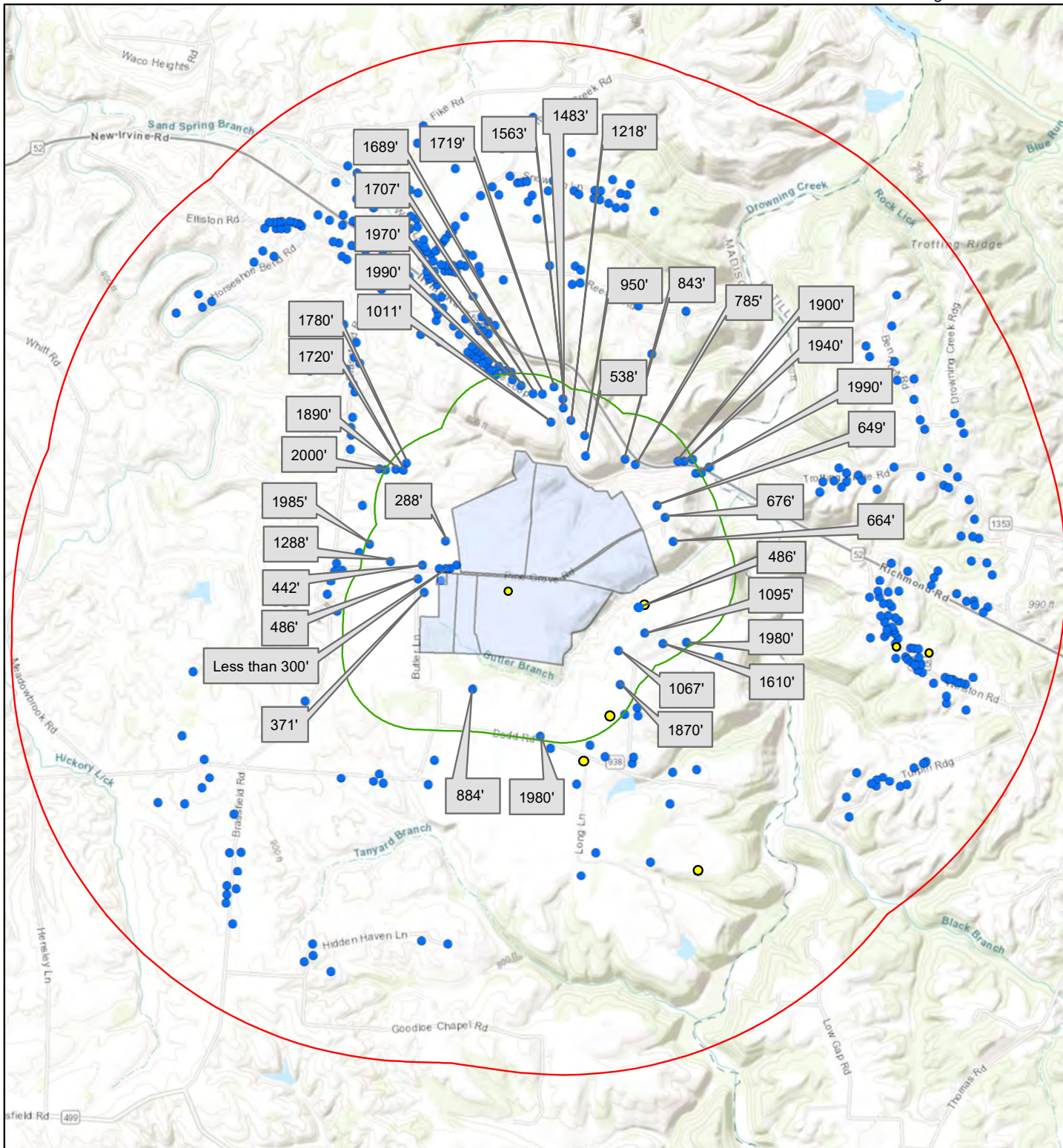
Case No. 2022-00262
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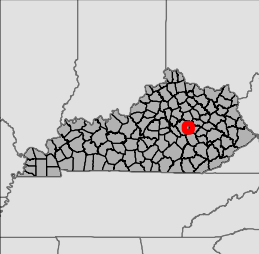



SITING BOARD DR 1-7:

Refer to the Application, Attachment A. Provide an updated Context Map that delineates the 2,000-foot radius around the proposed project.

Response: An updated Context Map with a 2,000-foot radius around the proposed project is attached as Exhibit 1-7 "Updated Context Map."

Witness: David Stimson



Madison Co, KY	Map Details		Map Description		
		<ul style="list-style-type: none"> ● Residences ● Schools ● Public Parks ● Private Parks ● Cemeteries 	<ul style="list-style-type: none"> Project Parcels 2000 ft buffer from Project Boundary 2 mi buffer from Project Boundary 	<p>Pine Grove is located in Madison Co, KY</p>	<ul style="list-style-type: none"> Author: TA Date: 1/26/2023 Version: 1.0 Type: Exhibit
				<p>Pine Grove</p>	

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SITING BOARD DR 1-8:

Provide the distance from the project footprint to residences within the 2,000-foot project radius.

Response: An updated Context Map that shows distances from the proposed project footprint to residences within the 2,000-foot project radius is attached as Exhibit 1-7 "Updated Context Map."

Witness: David Stimson

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Pine Grove Solar, LLC
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SITING BOARD DR 1-9:

Refer to the Application, Attachment A, Context Map. Also refer to the Application, Attachment I, SAR, Appendix B. Explain why the Hubbard Cemetery is not located on the Context Map even though it is within the 2-mile project radius. Also, provide the proposed setbacks that will be used for the Hubbard Cemetery.

Response: An updated Context Map that includes the Hubbard Cemetery is attached as Exhibit 1-7 "Updated Context Map." During the preliminary site studies for the project, Pine Grove Solar found no headstones or marked gravesites for the Hubbard Cemetery. A ground-penetrating-radar survey located potential unmarked gravesites. The cultural consultant provided an exclusionary buffer of 80 meters by 55 meters (260 feet by 180 feet) that Pine Grove Solar applied to the perimeter of the presumed gravesites. This exclusionary buffer includes the area where the anomalies were located (suggesting the location of the Hubbard Cemetery) and an area where precontact Native American artifacts were located during the pedestrian survey of the area. Additional coordination with the Kentucky Heritage Council is in process and an Unanticipated Discovery Plan will be prepared in the unlikely event that construction activities reveal any historical artifacts.

Witness: Madeleine Ray

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SITING BOARD DR 1-10:

Refer to the Application, Attachment I, SAR, Appendix F, page 3. Provide the number and approximate weight classes of the heavy and light duty trucks anticipated on site per day during the construction phase.

Response: Please see Table 1 on page 4 of the Application, Attachment I, SAR, Appendix F. Pine Grove Solar expects about 20 heavy duty trucks on site per day during the construction phase and about 5 light duty trucks per day. The heavy trucks will be Class 8, while the light duty trucks will range between Class 3 to 7. This range is due to the vast number of different commodities, equipment, and services required to build the project.

Witness: David Stimson

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SITING BOARD DR 1-11:

Provide the estimated weight of the project's required substation transformer and the truck class necessary for its delivery.

Response: The substation transformer for Pine Grove Solar has not been ordered or procured yet. AES estimates the shipping weight will be around 100,000 to 120,000 pounds, which would likely require a class 8 truck with an overweight permit.

Witness: David Stimson

Case No. 2022-00262
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SITING BOARD DR 1-12:

Provide a summary of any communication between Pine Grove Solar and the Kentucky Transportation Cabinet District Engineer regarding road weights ratings for heavy deliveries to the site and any required mitigation measures by the Kentucky Transportation Cabinet.

Response: Pine Grove Solar and the Kentucky Transportation Cabinet District Engineer have not yet had any communication.

Witness: David Stimson

Case No. 2022-00262
Pine Grove Solar, LLC
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SITING BOARD DR 1-13:

Provide a summary of any communication between Pine Grove Solar and the Madison County Road Department regarding the proposed project, traffic impacts, and heavy deliveries to site.

Response: To date, no meaningful communication has taken place between Pine Grove Solar and the Madison County Road Department. Condition 12 of the Conditional Use Permit (Application Attachment D) requires that the Madison County Road Supervisor approve any solar facility access points. Condition 13 requires that Pine Grove Solar conduct a road survey prior to the start of construction and provide it to Madison County. This survey will map and log the conditions of the county roads that will be used during the construction of the project. At the conclusion of construction, Pine Grove Solar is required to return all roads to their pre-construction conditions or better. As part of this survey, Pine Grove Solar is required to post a bond with the Madison County Fiscal Court in an amount the Madison County Road Supervisor determines to be sufficient to guarantee any and all necessary repair or maintenance work. In addition, included within the Agreement of Good Will (Confidential Exhibit 1-37), Pine Grove Solar has agreed to construct a cul-de-sac at the terminal point of the public portion of Pine Grove Road. This cul-de-sac will be designed to the standards of the Madison County Road Department and will allow the general public, delivery trucks, school buses, County maintenance vehicles, and emergency services a place to safely turn around.

Witness: Madeleine Ray

Case No. 2022-00262
Pine Grove Solar, LLC
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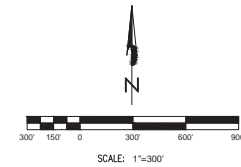
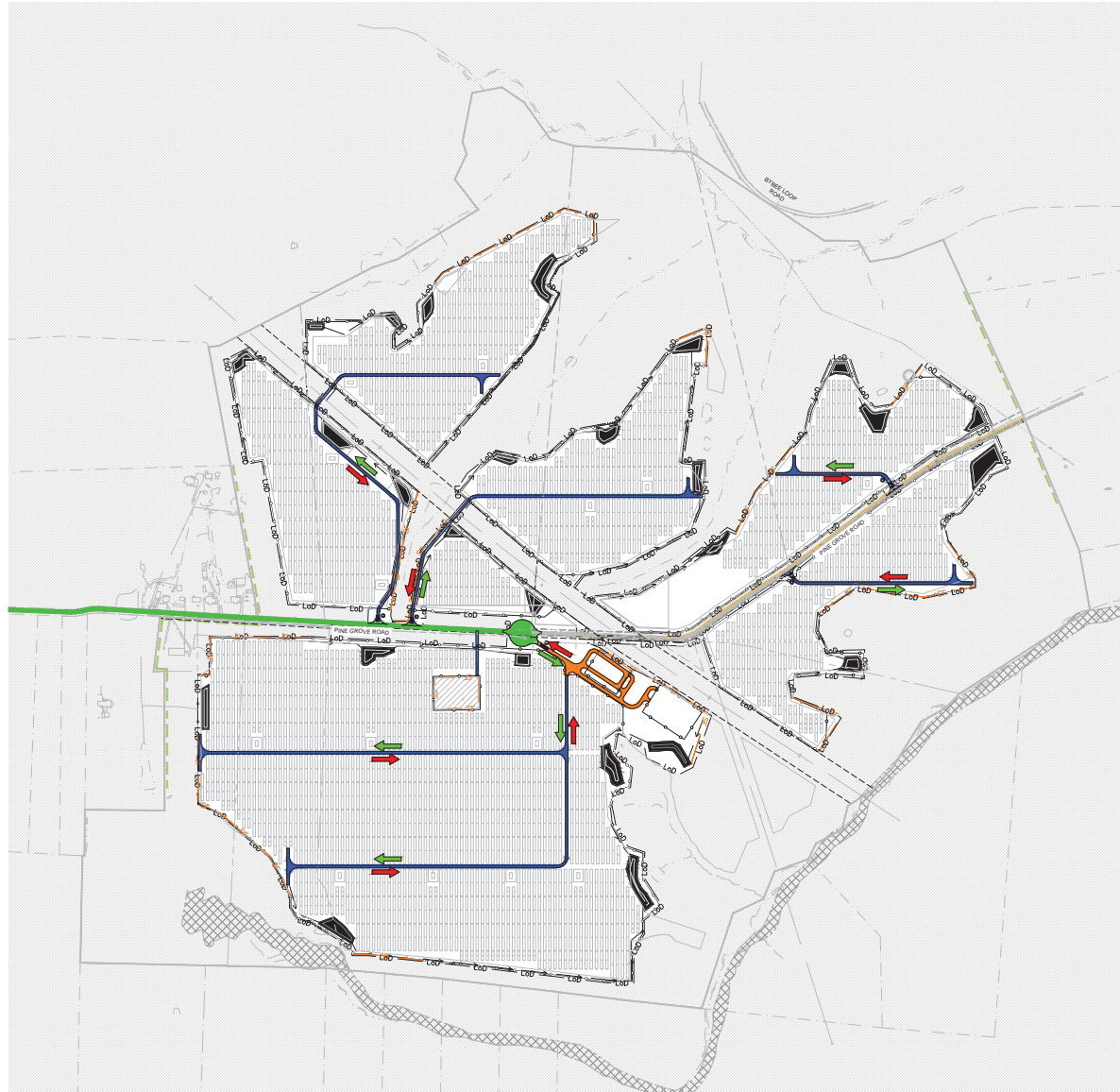
SITING BOARD DR 1-14:

Refer to the Application, Attachment I, SAR, Appendix F. Provide a map showing what roads construction traffic will use to gain access to the entrances on Pine Grove Road. Also show what roads will be utilized by construction employees to get to Pine Grove Road.

Response: Please see attached Exhibit 1-14a "Road Use Plan" that shows what roads construction traffic will use to gain access to the project entrances. For access to Pine Grove Road, construction employees will approach from the east and west on Highway 52 (New Irvine Road) and will primarily travel south on Brassfield Road. Please see Exhibit 1-14b "Pine Grove Solar Roads" for a map of the routes that construction employees will use to get to Pine Grove Road.

Witness: David Stimson

- LEGEND:**
- PROPOSED FEATURES**
- COUNTY ROAD
 - PRIVATE ROAD
 - 15' SOLAR ACCESS ROAD
 - 20' SOLAR ACCESS ROAD
 - PROPOSED EGRESS
 - PROPOSED INGRESS



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2180 South 1300 East, Suite 600
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nei
ELECTRIC POWER ENGINEERING, INC.
12400 W. COLFAX AVE. STE. C500
LAKEWOOD, CO 80015
(303) 431-7895 www.nieeng.com

PE STAMP:

KEY PLAN:

REVISIONS:

NO.	DATE	DESCRIPTION
A	1/10/23	ISSUE FOR REVIEW

PROJECT TITLE:
PINE GROVE SOLAR

PROJECT LOCATION:
MADISON COUNTY,
KENTUCKY

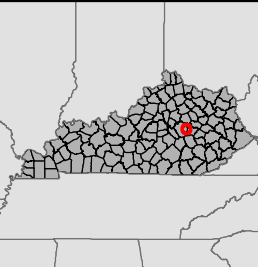


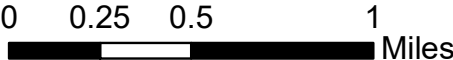

SHEET TITLE & DESCRIPTION:
ROAD USE PLAN

CIVIL

PROJ. NAME	4001.001
DES.	SFL
DRAWN	SFL
CHEK.	VEC
APPV.	VEC
DATE:	1/10/23
SCALE AT 24" x 36"	

SHEET NO. PV-C.06.01 REV. A



Madison Co, KY	Map Details		Map Description	
		 Proposed Solar Site	Pine Grove is located in Madison Co, KY	Author: TA
				Date: 1/31/2023
				Version: 1.0
		Type: Exhibit Pine Grove		

Case No. 2022-00262
Pine Grove Solar, LLC
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SITING BOARD DR 1-15:

Refer to the Application, Attachment B, Impact Studies, page 9. A recommendation was made to consult with the United States Department of Fish and Wildlife regarding an Endangered Species Assessment (ESA). Provide an update on this consultation. Provide the ESA when it is completed.

Response: Pine Grove Solar has not initiated consultation with the USFWS given the project's construction timeline and the ongoing design phase. Pine Grove Solar expects to coordinate with the USFWS in the second quarter of 2023.

Witness: Madeleine Ray

Case No. 2022-00262
Pine Grove Solar, LLC
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SITING BOARD DR 1-16:

Refer to the Application, page 4. Also refer to the Application, Attachment I, SAR, Appendix B. The Application states the project is 50 MW. The SAR states the project is 45 MW. Provide the complete MW for the project.

Response: The most recent design slates the project to be 50MW. The SAR reference to 45MW was written before the most current design iterations. The anticipated 50MW design is subject to small changes as Pine Grove Solar continues to refine the project design. In no event will the project exceed 50MW, pursuant to Pine Grove Solar's Large Generator Interconnection Agreement (LGIA).

Witness: David Stimson

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Pine Grove Solar, LLC
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SITING BOARD DR 1-17:

Refer to the Application, Attachment I, SAR, Appendix B, Preliminary Site Layout. The map shows one gate in the proposed electrical fence at the northeast end of Pine Grove Road. Explain whether there is only one entrance at the northeast end of Pine Grove Road. If other entrances are planned, identify those and explain how the entrances will be secured.

Response: The gate and proposed electrical fence at the northeast end of Pine Grove Road will allow access to the private portion of Pine Grove Road for the two neighboring properties to the east of the project. This is not an entrance into the solar facility. Entrances into the solar facility off of Pine Grove Road are clearly demarcated in Exhibit 1-14a "Road Use Plan." Each entrance to the facility will be controlled by chain link fencing and a locked gate with a padlock.

Witness: David Stimson

Case No. 2022-00262
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SITING BOARD DR 1-18:

Refer to the Application, Exhibit I, SAR, page 7. Refer to the Application, Exhibit I, SAR, Appendix B. Also refer to the Application, Exhibit I, SAR, Appendix F, Figure 1. All have a different number of site entrances. Provide the correct number of site entrances and provide a map showing the entrances.

Response: Pine Grove Solar is proposing five (5) site entrances. These site entrances are all shown in the attached Exhibit 1-14a "Road Use Plan."

Witness: David Stimson

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SITING BOARD DR 1-19:

Refer to the Application, Attachment I, SAR, Appendix B. Provide an updated site layout that shows the point where Pine Grove Road turns into a private access road. Also identify and label the project inverters and the three-phase-pad-mounted transformers.

Response: For an updated site layout that shows where Pine Grove Road changes to private ownership, please see Exhibit 1-14a "Road Use Plan." At the end of the publicly owned portion of Pine Grove Road, the project will construct a cul-de-sac as shown on the Exhibit 1-14a. For a map that identifies and labels the project inverters and three-phase-pad-mounted transformers, please see the attached Exhibit 1-19 "Electrical Site Plan."

Witness: David Stimson



PE STAMP:

KEY PLAN:

REVISIONS:

NO.	DATE	DESCRIPTION
A	11/14/2022	ISSUED FOR 30% REVIEW
B	12/23/2022	ISSUED FOR 30% REVIEW
C	1/10/2023	ISSUED FOR 30% REVIEW
D	1/24/2023	ISSUED FOR 30% REVIEW

PROJECT TITLE:

PINE GROVE SOLAR

PROJECT LOCATION:

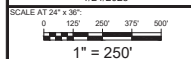
MADISON COUNTY,
 KENTUCKY

SHEET TITLE & DESCRIPTION:

ELECTRICAL SITE PLAN

MVAC SITE PLAN -
 OVERALL

PROJ. NO.	4001.001
DES.	JO
DWN.	JO
CHK.	TAD
APV.	TAD
DATE:	1/24/2023

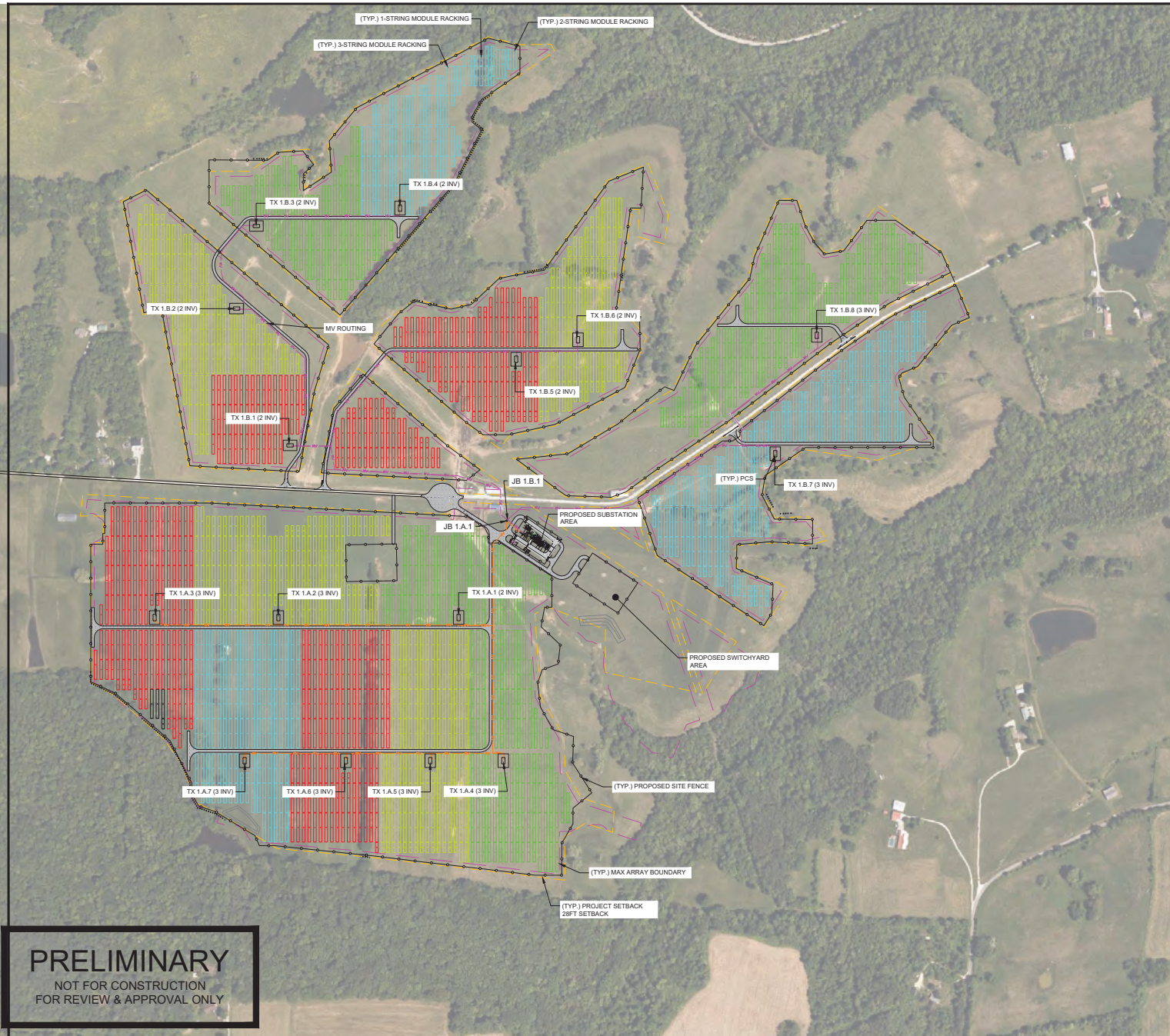


SHEET NO.	PV-E.01.02	REV.	D
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- GENERAL NOTES:
- INSTALLATION AND METHODS SHALL COMPLY WITH THE MOST CURRENT VERSION OF THE NATIONAL ELECTRICAL SAFETY CODE (NEC), AND NATIONAL ELECTRICAL CODE (NEC), AS ADOPTED BY THE AUTHORITY HAVING JURISDICTION (AHJ).
 - UTILITY LOCATIONS SHOWN ARE APPROXIMATE AND ARE BASED ON OWNER PROVIDED DOCUMENTATION.
 - CABLES INTO THE SUBSTATION WILL BE COORDINATED WITH THE SUBSTATION CONTRACTOR.

LEGEND

	PROJECT BOUNDARY
	MAX ARRAY BOUNDARY
	PROPOSED SITE FENCE
	PROPOSED ACCESS ROAD
	MV CIRCUIT 1A
	MV CIRCUIT 1B
	PCS
	JUNCTION BOX



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SITING BOARD DR 1-20:

Refer to the Application, Attachment H. Provide a copy of the work papers supporting the economic impact study.

Response: The California solar study referenced in footnote 1 is attached as Exhibit 1-20a “Environmental and Economic Benefits of Building Solar” and is also available at <https://laborcenter.berkeley.edu/pdf/2014/building-solar-ca14.pdf>. Footnote 3 provides a link to data regarding average wages and salaries for applicable jobs in Madison County in 2020. As this link may be difficult to navigate, a copy of the table and detailed link are attached as Exhibit 1-20b “CAINC30 Economic Profile.” See the boldface red numbers near the bottom of the Exhibit. The reader will notice a slight change from what was shown in Dr. Coomes’ report for the average wage in 2020. The latest table shows an average wage of \$42,515, compared to the original statement of \$42,363. This is because the US Bureau of Economic Analysis has subsequently published estimates for 2021, and slightly revised their estimate from 2020.

Witness: Paul Coomes, Ph.D.

Environmental and Economic Benefits of Building Solar in California

Quality Careers – Cleaner Lives



DONALD VIAL CENTER ON EMPLOYMENT IN THE GREEN ECONOMY
Institute for Research on Labor and Employment
University of California, Berkeley

November 10, 2014

By Peter Philips, Ph.D.
Professor of Economics, University of Utah
Visiting Scholar, University of California, Berkeley, Institute for Research on Labor and Employment

Environmental and Economic Benefits of Building Solar in California

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Visiting Scholar, University of California, Berkeley, Institute for Research on Labor and Employment

About the Author

Peter Philips (B.A. Pomona College, M.A., Ph.D. Stanford University) is a Professor of Economics and former Chair of the Economics Department at the University of Utah. Philips is a leading economic expert on the U.S. construction labor market. He has published widely on the topic and has testified as an expert in the U.S. Court of Federal Claims, served as an expert for the U.S. Justice Department in litigation concerning the Davis-Bacon Act (the federal prevailing wage law), and presented testimony to state legislative committees in Ohio, Indiana, Kansas, Oklahoma, New Mexico, Utah, Kentucky, Connecticut, and California regarding the regulations of construction labor markets. His academic work on the construction labor market over the last 20 years can be found at http://faculty.utah.edu/u0035312-PETER_W_PHILIPS,_Labor_Economist/bibliography/index.html

He is currently a Visiting Scholar at the UC Berkeley Institute for Research on Labor and Employment.

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12	Method
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Executive Summary

Introduction

On November 1, 2014, the U.N. Intergovernmental Panel on Climate Changeⁱ warned:

Continued emission of greenhouse gases will cause further warming and long-lasting changes in all components of the climate system, increasing the likelihood of severe, pervasive and irreversible impacts for people and ecosystems.ⁱⁱ

In summarizing this study, the *Washington Post* reported:

The planet faces a future of extreme weather, rising sea levels and melting polar ice from soaring levels of carbon dioxide and other gases, the U.N. panel said. Only an unprecedented global effort to slash emissions within a relatively short time period will prevent temperatures from crossing a threshold that scientists say could trigger far more dangerous disruptions, the panel warned.ⁱⁱⁱ

And the *New York Times* reported:

Failure to reduce emissions, the group of scientists and other experts found, could threaten society with food shortages, refugee crises, the flooding of major cities and entire island nations, mass extinction of plants and animals, and a climate so drastically altered it might become dangerous for people to work or play outside during the hottest times of the year.... The gathering risks of climate change are so profound that they could stall or even reverse generations of progress against poverty and hunger if greenhouse emissions continue at a runaway pace, according to a major new United Nations report.^{iv}

Yet the world is moving only slowly to meet this increasingly clear and present danger.

However, in California over the last five years, dramatic action has taken place addressing greenhouse gas emissions through an ongoing transition from fossil fuel generated electricity to renewable energy electricity generation. While currently in California natural gas accounts for 44% of the total system's electrical power and coal accounts for 8%, renewable energy sources account for 19%, up from 11% in 2008. The fastest growing segment of California's renewable energy portfolio over the last five years has been solar energy. In-state, utility-scale solar generated electricity has quadrupled since 2010.

In this report, *Environmental and Economic Benefits of Building Solar in California*, we provide a case study where federal, state, and construction industry policies and practices are cutting through the Gordian Knott of economic, political, and policy paralysis in the face of impending, irreversible, and destructive climate change. Describing California's leadership in the expansion of renewable energy electricity generation, we first discuss the current boom in utility-scale solar farms in California and the emissions averted by California's renewable energy generated electricity.

The study also examines the employment effects of having built 4,250 MW of utility-scale solar powered electricity generating facilities in California over the last five years. We calculate the new construction, maintenance, and operations jobs created by California's boom in utility-scale solar plants plus the upstream and downstream jobs stimulated by this construction. We estimate the income and health and pension benefits of these new construction and plant operations jobs.

Because the vast majority of construction jobs in California's recent utility-scale solar boom have been organized under collective bargaining, these contracts have required payments into apprenticeship training programs for each hour worked building these solar power plants. Reflecting this, we calculate the new monies that have gone into the training of the next generation of construction workers who will be called upon to build a more climate-friendly infrastructure over the coming decades.

This new human capital not only raises the productive capacity of California's construction labor force but also transforms the lives of newly trained workers. We estimate how this training affects the lifetime earnings of these new workers, and we provide personal case studies of four new apprentices as they consider their past and look into their future.

Finally, we look at the federal, state, and industry policies that have made this solar boom possible. We conclude that there is a synergy between good jobs and green energy projects. Smart government policies and high-road construction practices are a foundation for addressing climate change, and, in turn, good jobs and clean energy projects reinforce the policies and practices that stimulated these jobs and practices in the first place.

Global warming is a clear, present, and serious threat but it is not intractable. California's recent solar boom is an example of how politics and economics can work together to untie the knot of inaction in the face of the gathering risks of climate change.

The Environment

In the first half of 2014 in the United States, 42% of the new utility-scale electricity generation capacity put in place was from solar and wind power plants. Solar alone accounted for 26% of the new power plant generation. According to industry sources, when rooftop solar is added to the mix, solar accounted for about half of all new electricity generation put in place in the U.S. during this time period. Government data on power plants show that, comparing the first half of 2013 to the first half of 2014, new additions to natural gas and coal fired power plants fell while both wind and solar new utility-scale generation capacity almost doubled.

This boom in renewable energy electricity generation has been given a substantial boost from federal policy and legislative action. The Obama Administration's American Recovery and Reinvestment Act (ARRA) of 2009 earmarked more funds for clean energy than had been done at any time in our nation's history. Loan guarantees helping first movers introducing new technologies in the face of technological and business cycle uncertainties allowed for solar energy to take off in the depths of the Great Recession. Similarly, the Federal Business Energy Investment Tax Credit, which provides a 30% credit to residential, commercial, and utility-scale solar systems, was renewed in 2008 for eight additional years. While these policies and, in the case of ARRA, legislative action have stimulated renewable energy electricity generation across the nation, they have been especially successful in boosting solar electricity generation in California, a state with rich solar resources in close proximity to population centers where the electricity demand primarily resides.

Just as federal action has driven a national expansion of the renewable energy sector, California has pioneered policies that have been critical in making it the renewable energy capital of the United States. The Global Warming Solutions Act (AB 32), passed in 2006, requires a steep reduction in greenhouse gas emissions, and in 2011 Governor Brown signed Senate Bill X1-2, which expanded California's Renewables Portfolio Standard (RPS) to a 33% target by 2020. The state's aggressive climate change policies, abundant photovoltaic (PV) solar resources, large population centers, and need to conserve water used to cool thermal power plants have coalesced to make California the country's leading user of PV-generated electricity. Among the top ten states, California accounts for fully half of all installed PV electricity generation capacity. California is on track to install in 2014 almost ten times more new PV generating capacity than any other state.

Within California, renewable energy technologies have recently come to dominate the growth in overall electrical generation capacity and usage. Subsequent to the passage of ARRA and California's SBX1-2, California's use of electricity from renewable energy sources almost doubled its share of overall California electricity generation, moving from around 11% in 2008 to 19% in 2013.

The National Renewable Energy Laboratory (NREL) estimates that a 16.5% penetration of wind power combined with a 16.5% penetration of solar power, for a total of 33% Western Grid reliance on these two renewable

energy sources, would reduce carbon emissions from electricity generation by about one-third. Currently 19% of California's power grid is fed by biomass, geothermal, wind, solar, and small hydroelectric renewable energy sources. While the emissions impact of each of these renewable resources varies, California is moving toward a level of renewable energy reliance and emission reduction similar to the scenario envisioned by the NREL study.

The Solar Energy Industry Association estimates that solar-powered electricity generating facilities in California (both rooftop and utility-scale), with roughly 5,000 MW of collective capacity, have per year reduced carbon dioxide (CO₂) emissions by about 4.4 million tons, nitrogen oxides (NO_x) emissions by about 6.3 million tons, and sulfur dioxide (SO₂) emissions by about 700,000 tons. At this time, recently installed utility-scale solar farms in California account for approximately 75% of the state's solar power-generated electricity. Thus, utility-scale solar power in California has effectuated an overall reduction of about 4.8 million tons of nitrogen oxides, 3.3 million tons in carbon dioxide, and 525 thousand tons of sulfur dioxide.

Job Creation

Over the last five years, 10,200 well-paying construction jobs were created in California during the expansion of California's solar-based, utility-scale electrical generating facilities. These jobs pay, on average, \$78,000 per year and offer solid health and pension benefits. In addition, 136 permanent operations and maintenance jobs have been created and will last for the lifetime of these facilities. These operations and maintenance jobs pay an average of \$69,000 per year, usually with solid benefits. In addition to the jobs created on the construction projects, about 1,600 jobs have been created to handle increased business up and down the supply chain and to perform other new business activities associated with these projects. These newly-created construction, maintenance, and business-related jobs have boosted consumer spending, which in turn has induced the creation of over 3,700 additional California jobs aimed at meeting increased consumer demand. In total, more than 15,000 new jobs have been created by the solar farm construction boom in California over the last five years.¹

Career Development and Human Capital Formation

Utility-scale solar construction in California over the last five years built 4,250 MW of renewable energy generating capacity in California. Because most of the construction was organized under collectively bargained contracts or project labor agreements, contractors have agreed to contribute training money for apprenticeship training based on each hour of work for every blue-collar worker on the site. This has provided \$17.5 million in new money to help finance the training of construction apprentices and pre-apprentices. This infusion into California construction apprenticeship and pre-apprenticeship training includes \$8.3 million into electrician training, \$3.1 million into the training of construction craft laborers, \$2.6 million into training ironworkers, \$1.7 million to train carpenters and piledrivers, and \$1.9 million dollars to train operating engineers.

This new human capital formation will generate a stream of higher income over decades, reflecting the greater skill set and higher productivity of these trained California construction workers. For instance, over the lifetime of electrical apprentices, as they become journeyworkers, their income in today's dollars will be higher by about \$1 million compared to what their income would have been absent this training. In addition, these workers not only earn while they learn but they also participate in family-supportive health insurance programs, promoting family formation and stable child-rearing, and they begin building savings for their retirement. By the time these electrical apprentices retire as journeyworkers at age 65, they will have amassed a retirement nest egg of about \$525,000 in defined contribution and defined benefit programs sponsored by their contractors and unions. This is substantially more than what the median single or married worker at age 65 today has for retirement.

¹ Here jobs are understood to be job-years, or 2,080 hours of work, though in many cases a construction worker will not be on a job for a full year. Construction apprentices are often rotated off jobs to get experience in other types of construction and therefore one job-year may be spread across two or more construction workers. In contrast, the 136 operations and maintenance jobs are 25 job-years, each lasting the expected lifetime of a newly-built solar electrical generation plant.

The California solar boom has not only prepared California for a future of energy independence, it is preparing a new generation of California blue-collar workers for a future of skilled and productive work and a life of financial security.

Policy Leads the Way

Policy and legislative action at both the federal and state levels has stimulated the boom in California's renewable energy electricity generation over the last five years, enabling California to become the national model in demonstrating how to generate new economic opportunity through aggressive climate change action. Key federal policies include the American Recovery and Reinvestment Act (ARRA) of 2009 and the Federal Business Energy Investment Tax Credit (ITC). California's policies include the Global Warming Solutions Act (AB 32), Senate Bill XI-2, and AB 327, which passed in 2013 and established the 33% Renewables Portfolio Standard (RPS) goal set forth in SB XI-2 as a floor to be achieved and not a ceiling to reach for. The California Environmental Quality Act has also played an important role in promoting California's renewable energy growth. Collectively, these policies helped marshal the needed investment capital, helped create the market certainty needed to turn financial capital into specific investment plans, and helped provide the business, worker, and public incentives that brought these players together.

The synergy between building green, utility-scale power plants and quality construction career development has also benefited from federal and state policies. Utility-scale solar projects that receive federal subsidies fall under the Davis-Bacon Act, which requires that prevailing wages and benefits be paid. Furthermore, California is not a right-to-work state and as a result prevailing wages in construction tend to be the collectively bargained rate that includes good wages with decent benefits and contributions to apprenticeship training.

On some federally-subsidized solar projects in western right-to-work states, nonunion rates prevail. In these cases, workers are often obtained from temporary labor agencies; they earn low wages with limited benefits and they have little access to training or career advancement. In California, by contrast, strong unions and strong prevailing wage laws combine to create green construction projects that also build the skills of the local construction labor force and improve the career opportunities of many new entrants into the industry.

For 200 years, government has promoted, subsidized, incentivized, and encouraged canals, railroads, schools, highways, the internet and other infrastructure foundational to economic growth and prosperity. In the 21st Century, energy and the environment are key infrastructure for future economic growth and prosperity. But neither green energy projects that create dead-end jobs nor projects that degrade the environment but provide good jobs are sustainable building blocks for the future. Legislation, regulation, and policy are key to creating a synergy between electricity generation, the environment, and the labor market. Four key policy actions that should be taken in the near-term to continue building on California's leadership in creating high-quality jobs while decarbonizing the energy sector are:

- **Renewing the Federal Business Energy Investment Tax Credit so it remains at 30% after December 2016.**
- **Expanding California's statewide renewable energy mandate beyond 33%.**
- **Protecting AB 32 from implementation delays or weakening.**
- **Supporting policies that promote collective bargaining and the use of joint labor-management apprenticeship programs on energy projects during construction, operations, and maintenance.**

Scope, Methodology, and Limitations of this Study

Scope

This study focuses on the environmental and economic impact of utility-scale solar electricity generation in California since 2010. Between utility-scale thermal and photovoltaic (PV) solar electricity generation, this report focuses more on PV energy. The reasons for this focus on solar power plants emphasizing PV are ones of empirical importance, methodological approach, and research practicality.

Empirically, over the last five years, utility-scale renewable energy construction in California has centered on solar energy, which has primarily been PV solar energy. Of the approximately 4,250 megawatts (MW) of new utility-scale solar electricity generation capacity coming online or currently under construction in California over the last five years, about 3,350 MW were PV electricity and 900 MW were solar thermal generated electricity. From an empirical perspective, therefore, this report focuses on the leading sector in California's march towards cleaner electrical generation.

Nonetheless, wind, geothermal, small hydroelectric, energy-storage, ocean-wave energy, and emerging technologies, along with energy conservation, all have important roles to play in moving California toward a cleaner environment. Further research is needed to measure and analyze the environmental and employment impacts of these important forms of renewable energy generation and conservation.

We focus on utility-scale solar electricity generation even though rooftop (or distributed) solar electricity generation is also an important and growing form of green energy in California. This limitation is partly borne of practicality: due to the size and prevalence of utility-scale solar, it is just easier to get information on its whereabouts, construction methods, and progress.

Methodological reasons also lead us to limit this study to utility-scale solar. We rely on the research of others to calculate the number of construction job-years per MW of electrical capacity put-in-place, as well as the upstream and downstream off-site employment impacts of solar construction. These are key steps in measuring the employment impact from the expansion of solar electricity generation in California. Currently, the literature on construction employment per MW of solar energy installed for California is limited to utility-scale PV electricity generation, partly because this research stems from permitting processes and partly because there is a greater heterogeneity of construction practices on rooftop solar installations.

More research needs to be done on both the technical and economic dimensions of rooftop solar construction in order to provide an analysis similar to the one done here on utility-scale solar electricity generation. Additionally, more employment-related research needs to be done on the other green electricity generating technologies, energy-storage, and conservation that together with solar comprise the set of approaches that will move California towards a cleaner environment.

Examination of renewable energy electricity generation and the jobs it creates is a new and exciting field of research. This report's focus on California's recent utility-scale solar boom is simply a first step in the research needed to understand the importance of this sector and the policies and practices needed to reinforce the synergy between building green and developing good construction careers.

Method

Methodologically, our calculation of the employment impact of utility-scale solar construction and operations goes as follows. First, we identify the electricity generation capacity of new utility-scale solar projects that have been built or are currently under construction in California. Second, from studies done by others, we take the average number of job-years required per MW installed from three recent large PV projects built in central and southern California. We multiply the total MW of utility-scale solar power installed over the last five years in all of California by this estimate of job-years required per photovoltaic utility-scale MW to obtain our estimate of the number of job-years created by this recent solar boom.

We also average the multipliers developed in these other studies to calculate the upstream and downstream jobs that new jobs in solar farm construction stimulate, and also average the estimates from these other studies to estimate the income and health and pension benefits paid on solar farm construction sites.

Limitations

This approach has several limitations. First, as mentioned above, about 900 MW of recent utility-scale solar electricity generation has been thermal (also called concentrating) solar power. Thermal solar construction requires more workers per MW installed and a different crew mix (e.g., fewer electricians, more welders). Our estimate of job-years created by the recent California solar boom is probably an undercount due to treating all of the megawatts installed as if they were PV solar.

The recent utility-scale solar boom in California has not only created new job-years of work directly building these facilities, but also new job-years were created upstream and downstream of these projects as suppliers fed the ongoing work, and those directly employed in the construction of these projects spent their income on consumer goods and services. As mentioned above, we do not calculate the multipliers from this direct construction work ourselves. Rather we rely upon the research of others who have calculated these upstream and downstream indirect and induced jobs analyzing the aforementioned three large PV solar projects in central and southern California.

Our reliance on the work of others has a benefit and a drawback. The benefit is that we are able to average the multipliers of more optimistic and more conservative analyses done by others thus obtaining a middle-ground estimate of the ripple effects in the overall labor market from these new construction jobs. The limitation is that all of these other studies were focused on county employment multipliers. Our focus is on the entire state. Because California is a larger economy compared to any one of its counties, California's overall economy is better positioned to meet the indirect and induced demands created by the solar construction boom. In pooling estimates of county employment multipliers to get an average of more optimistic and more conservative views, we have inevitably used conservative employment multipliers for California as a whole. Both our measures of direct employment in the construction of utility-scale solar plants and the multiplied indirect and induced employment from this work are probably undercounts.

Our measure of new jobs created by the utility-scale solar boom is a measure of new job-years but not a measure of *net* new job-years. Net new jobs are the number of jobs that were created by the solar boom minus the number of jobs that would have been created had there not been a solar boom. The computation of net new jobs is quite complex, and involves the construction of a counterfactual hypothesis describing what would have happened absent the growth of utility-scale solar farms in California. Would other forms of zero-emission, renewable energy generating capacity in California have substituted for the hypothetically absent solar farms? Would renewable energy have been imported from out of state? Would gas-fired plants have substituted for solar despite current renewable portfolio standards? Would regulatory requirements have been altered? Given the difficult character of these questions, this study limits its analysis to a calculation of the *new* jobs created by the recent utility-scale solar boom in California and leaves the question of *net new* jobs for another day.

The construction jobs created by the California utility-scale solar boom have been good jobs paying decent wages, providing good benefits, and creating career ladders for upward mobility within blue-collar construction work. However, solar farm construction does not necessarily provide good jobs. In neighboring Arizona, much of the PV solar construction work is nonunion with low-paid, unskilled workers being provided by temporary labor companies. These workers face limited upward mobility and little access to apprenticeship training. While this report touches on the policies and practices that bend construction work toward high-skilled careers or alternatively low-wage casual labor, this is a large topic which is for the most part beyond the scope of this report. Further research is required to better understand the policies and practices that create synergy between construction career development and green energy construction.

California Leads the Way in Building Solar

Section Summary

In the first half of 2014 in the United States, 42% of the new utility-scale electricity generation capacity put in place was from solar and wind power plants. Solar alone accounted for 26% of the new power plant generation. According to industry sources, when rooftop solar is added to the mix, solar accounted for about half of all new electricity generation put in place in the U.S. during this time period. Government data on power plants show that, comparing the first half of 2013 to the first half of 2014, new additions to natural gas and coal fired power plants fell while both wind and solar new utility-scale generation capacity almost doubled. This boom in renewable energy electricity generation has been given a substantial boost from federal policy. The Obama Administration's American Recovery and Reinvestment Act of 2009 earmarked more funds for clean energy than had been done at any time in our nation's history. Similarly, the Federal Business Energy Investment Tax Credit, which provides a 30% credit to residential, commercial, and utility-scale solar systems, was renewed in 2008 for an additional eight years to 2016.

While these policies and, in the case of ARRA, legislative action have stimulated renewable energy electricity generation across the nation, they have been especially successful in boosting solar electricity generation in California, a state with rich solar resources in close proximity to population centers where the electricity demand primarily resides. Just as federal action has driven a national expansion of the renewable energy sector, California has pioneered policies that have been critical in making it the renewable energy capital of the United States. The Global Warming Solutions Act (AB 32), passed in 2006, requires a steep reduction in greenhouse gas emissions, and in 2011 Governor Brown signed Senate Bill X1-2, which expanded California's Renewable Portfolio Standard (RPS) to a 33% target by 2020. The state's aggressive climate change policies, abundant photovoltaic (PV) solar resources, large population centers, and need to conserve water used to cool thermal power plants have coalesced to make California the country's leading user of PV-generated electricity. Among the top ten states, California accounts for fully half of all installed PV electricity generation capacity. California is on track to install in 2014 almost ten times more new PV generating capacity than any other state.

Within California, renewable energy technologies have recently come to dominate the growth in overall electrical generation capacity and usage. Subsequent to the passage of ARRA and California's SBX1-2, California's use of electricity from renewable energy sources almost doubled its share of overall California electricity generation, moving from around 11% in 2008 to 19% in 2013.

The National Renewable Energy Laboratory (NREL) estimates that a 16.5% penetration of wind power combined with a 16.5% penetration of solar power, for a total of 33% Western Grid reliance on these two renewable energy sources, would reduce carbon emissions from electricity generation by about one-third. Currently 19% of California's power grid is fed by biomass, geothermal, wind, solar, and small hydroelectric renewable energy

sources. While the emissions impact of each of these renewable resources varies, California is moving toward a level of renewable energy reliance and emission reduction similar to the scenario envisioned by the NREL study.

The Solar Energy Industry Association estimates that solar-powered electricity generating facilities in California (both rooftop and utility-scale), with roughly 5,000 MW of collective capacity, have per year reduced carbon dioxide (CO₂) emissions by about 4.4 million tons, nitrogen oxides (NO_x) emissions by about 6.3 million tons, and sulfur dioxide (SO₂) emissions by about 700,000 tons. At this time, recently installed utility-scale solar farms in California account for approximately 75% of the state's solar power-generated electricity. Thus, utility-scale solar power in California has effectuated an overall reduction of about 4.8 million tons of nitrogen oxides, 3.3 million tons in carbon dioxide, and 525 thousand tons of sulfur dioxide.

This section describes the growth and environmental impact of renewable energy electricity generation focusing on utility-scale solar energy in California.

California Leads in the Expansion of Electrical Generation with Renewable Energy

Solar and Wind Energy Are Increasingly Important Sources of Electricity Nationally

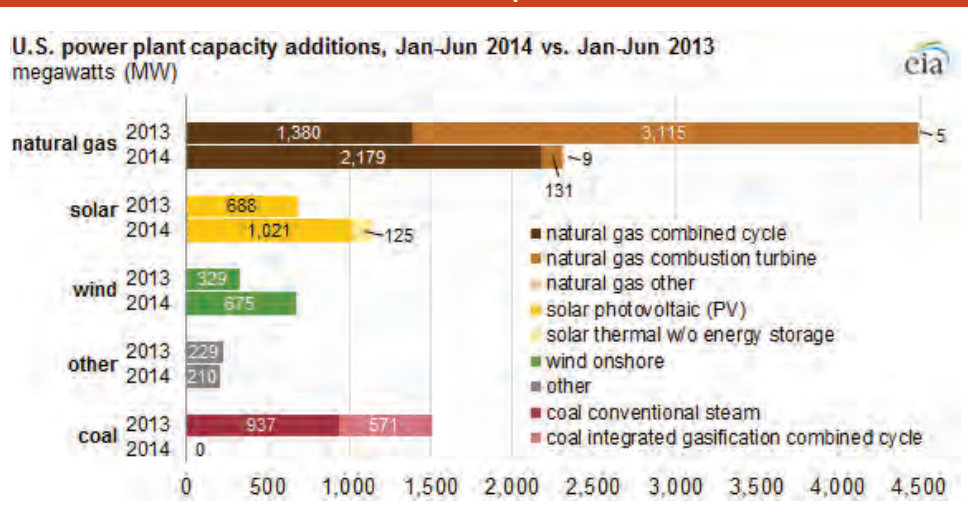
When rooftop (or distributed) and utility scale electricity generation are combined, according to the Solar Energy Industry Association (SEIA), currently the fastest growing segment of electricity generation in the United States is electricity generated from renewable resources—solar, wind, geothermal, small hydroelectric and biomass. SEIA figures show that in the first half of 2014, over half of the new U.S. electrical generating capacity came from photovoltaic and thermal solar power plants and facilities. Another 14% came from wind-generated electricity. Together, SEIA figures indicate that utility-scale and distributed solar and wind accounted for two-thirds of all new electrical generating capacity while natural gas accounted for almost one-third. Coal is not currently an important part of the expansion of electrical generating capacity in the United States.^v

When considering utility-scale power plants only and excluding rooftop electricity generation, wind and solar plants accounted for 42% of new utility capacity in the first half of 2014, and their share is growing. Comparing

the first half of 2013 to the first half of 2014, natural gas remains the largest single source of new utility-scale electricity generation. But as U.S. Energy Information Administration data in **Exhibit 1** show, new natural gas utility-scale generating capacity in 2014 was about half of what it had been in 2013. In contrast, new utility-scale solar capacity in the first half of 2014 almost doubled compared to 2013, and new wind generation capacity did double. There was no new addition to coal electricity generation in 2014. Of the 4,350 MW of

Exhibit 1

New Utility-Scale U.S. Electrical Generating Capacity Put in Place, First Half of 2013 and First Half of 2014 Compared^{vi}



new utility-scale electricity generation put in place in the first half of 2014, natural gas accounted for 2,319 MW (53%) while utility-scale solar and wind together accounted for 1,821 MW (42%). In short, utility-scale solar and wind shares of new utility-scale capacity rose compared to 2013 while both natural gas and coal shares of new power plant capacity fell compared to 2013.

Federal Policies Supporting Renewable Energy Track with Dramatic National Expansion of this Sector

The central role of policy in stimulating the recent expansion of renewable energy will be discussed in further detail later in this report. However, it is worth noting here that the growth in renewable energy was given a substantial boost from the Obama Administration's American Recovery and Reinvestment Act of 2009, which provided more funding for clean energy than had been the case at any time in our nation's history, as well as the 2008 renewal for eight years of the solar Investment Tax Credit, which provides a 30% credit to residential, commercial, and utility-scale solar systems. The timing of these two policies is consistent with expanded renewable energy growth not just in California over the past five years, the focus of our study, but also in many states across the nation.

Statewide Climate Action Policies Have Positioned California to Lead in Solar Growth

Just as federal policy was instrumental in driving a national expansion of the renewable energy sector, particularly in providing access to capital, state policies pioneered by California have been critical in making it the renewable energy capital of the United States. The Global Warming Solutions Act (AB 32) was passed in 2006, and in 2011 Governor Brown signed Senate Bill X1-2 expanding California's Renewable Portfolio Standard to a 33% target by 2020. The focus of these policies is to combat climate change by reducing statewide greenhouse gas emissions. However, they have also given California an edge in insuring national investment in renewable energy projects flow to California first. This policy connection will be discussed in further detail later in this report.

California Is Rich in Photovoltaic and Thermal Solar Resources

Two types of Solar Power: Photovoltaic and Thermal

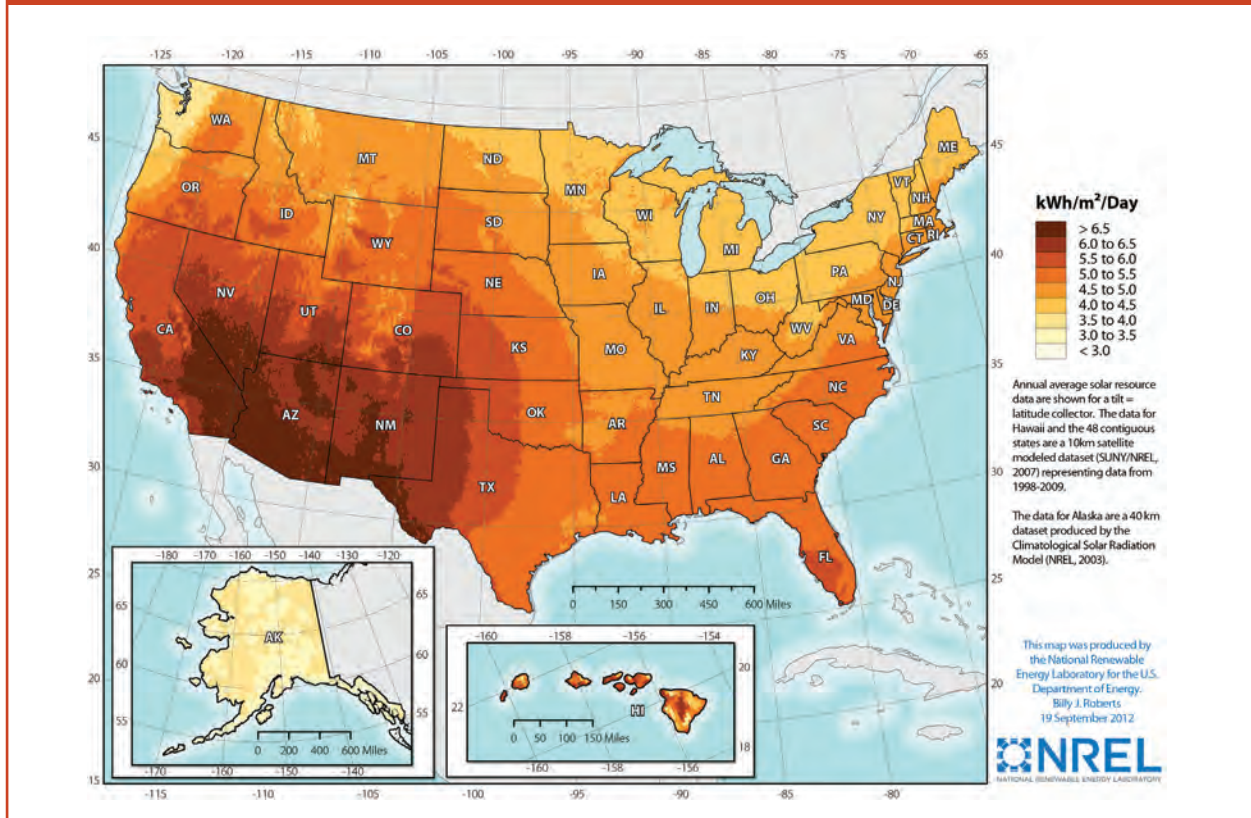
There are two basic forms of solar-generated electrical power: photovoltaic and thermal (also known as concentrating) solar power.

Photovoltaic:

Photovoltaic (PV) devices generate electricity directly from sunlight via an electronic process that occurs naturally in certain types of material, called semiconductors. Electrons in these materials are freed by solar energy and can be induced to travel through an electrical circuit, powering electrical devices or sending electricity to the grid.^{vii}

Exhibit 2 shows that California, like much of the southwest United States, is richly endowed with photovoltaic solar resources. California is further blessed by the proximity of solar resources to population centers where the electricity demand primarily resides. Furthermore, photovoltaic solar resources, unlike most electrical generating technologies, do not require significant amounts of water. Because the sun often is where water is not, photovoltaic solar resources are doubly valuable as a clean *and* dry form of energy creation.

Exhibit 2
U.S. Photovoltaic (PV) Resources^{viii}



California Leads the Nation in Photovoltaic (PV) Electricity Generating Capacity

Not surprisingly, the combination of abundant PV solar resources, aggressive climate change policies, large population centers, and the need to conserve water have coalesced to make California the leading user of PV generated electricity. **Exhibit 3** shows that California accounts for fully half of the PV electrical generating capacity among the top ten states, with the next closest state (Arizona) following with a 15% share.

California Also Leads in Newly Installed PV Solar Electrical Generation

California also leads in the growth of new PV electrical generating capacity. **Exhibit 4** shows that in 2014 alone, California is predicted to install 3,213 MW of new rooftop and utility-scale photovoltaic electrical generating capacity, approximately 10 times more than any other state. Indeed, the map in **Exhibit 4** does not draw California to scale because doing so would have dwarfed the contributions to PV electrical generation in all the other states. About two-thirds of this new California PV capacity in 2014 is utility-scale, while residential accounts for about 20% and non-residential accounts for about 10% of the new PV capacity.

Comparing PV solar resources shown in **Exhibit 2** with overall generating capacity in **Exhibit 3** and new generating capacity in **Exhibit 4**, it is apparent that solar resources alone do not account for the location of PV generated electricity. Population proximity to PV solar resources is also important, as is public policy supporting the transition to renewable, clean energy generation.

Exhibit 3

Distribution of Total PV Electrical Generating Capacity Among Top 10 States, December 2013^{ix}

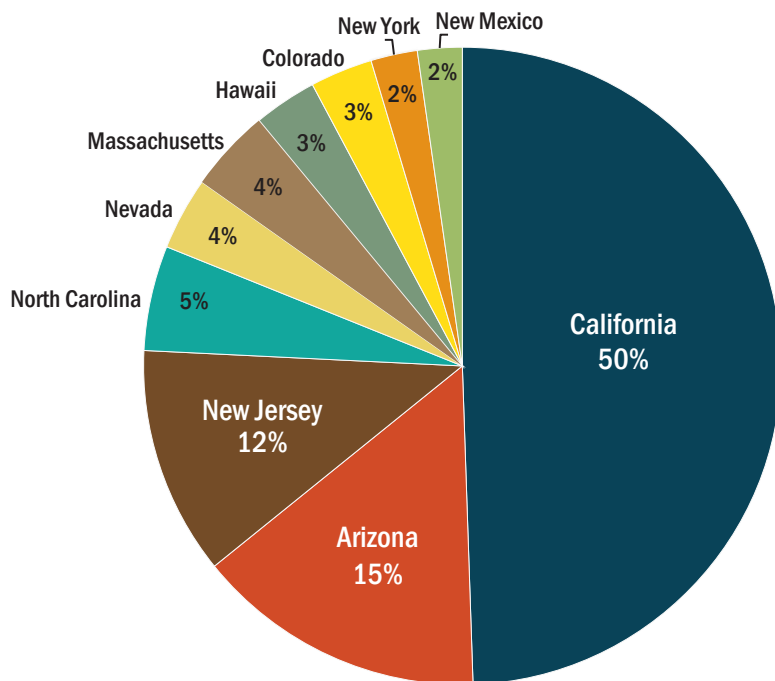
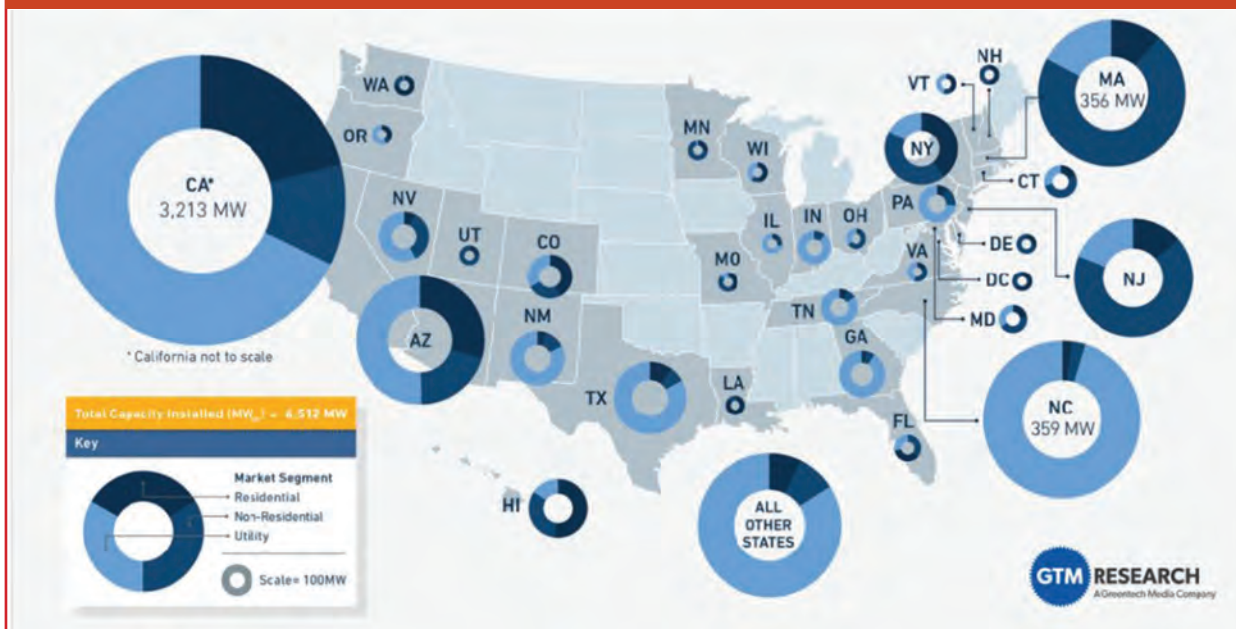


Exhibit 4

Forecasted New Photovoltaic (PV) Solar Energy Generating Capacity to be Put in Place by State and by Residential, Non-Residential, and Utility-Scale Generation During 2014^x



California Leads in Thermal Solar Power Capacity and New Installation

While PV solar relies on chemical reactions, thermal solar power relies upon the heat of the sun to generate electricity.

Concentrating Solar Power:

Thermal solar power plants, often called concentrating solar power (CSP) plants, use mirrors or lenses to concentrate sunlight, creating temperatures high enough to drive traditional steam turbines or engines that in turn create electricity. The most cost-effective CSP plants are hundreds of megawatts (MW) in size, making them attractive as wholesale energy suppliers to utilities.^{xi}

A key feature of concentrating solar power is that the heat generated by the sun can be stored to generate electricity when the sun is not shining or not shining brightly. This feature creates an important advantage for thermal power compared to most other renewable energy sources including PV solar. When the wind does not blow, water does not flow, or the sun does not shine, renewable energy generation flags.

Currently fossil fuel electricity generation along with large hydroelectricity are the offsets used to handle the irregularity of solar and wind energy generation. Thus, a primary advantage of concentrating solar power and another type of thermal energy, geothermal power, is that both rely upon heat which can be stored, lengthening the diurnal renewable generation of electricity. Emerging technologies in electricity generation, power storage, and conservation may reduce the need for fossil fuel backup to zero-emission-electricity generation in the future. Solar thermal and geothermal power generation are first steps in a future that promises additional new, cleaner energy generation, as well as storage and conservation technologies to handle the variability in solar electricity generation.

Exhibit 5

U.S. Concentrating (or Thermal) Solar Power Resources^{xii}

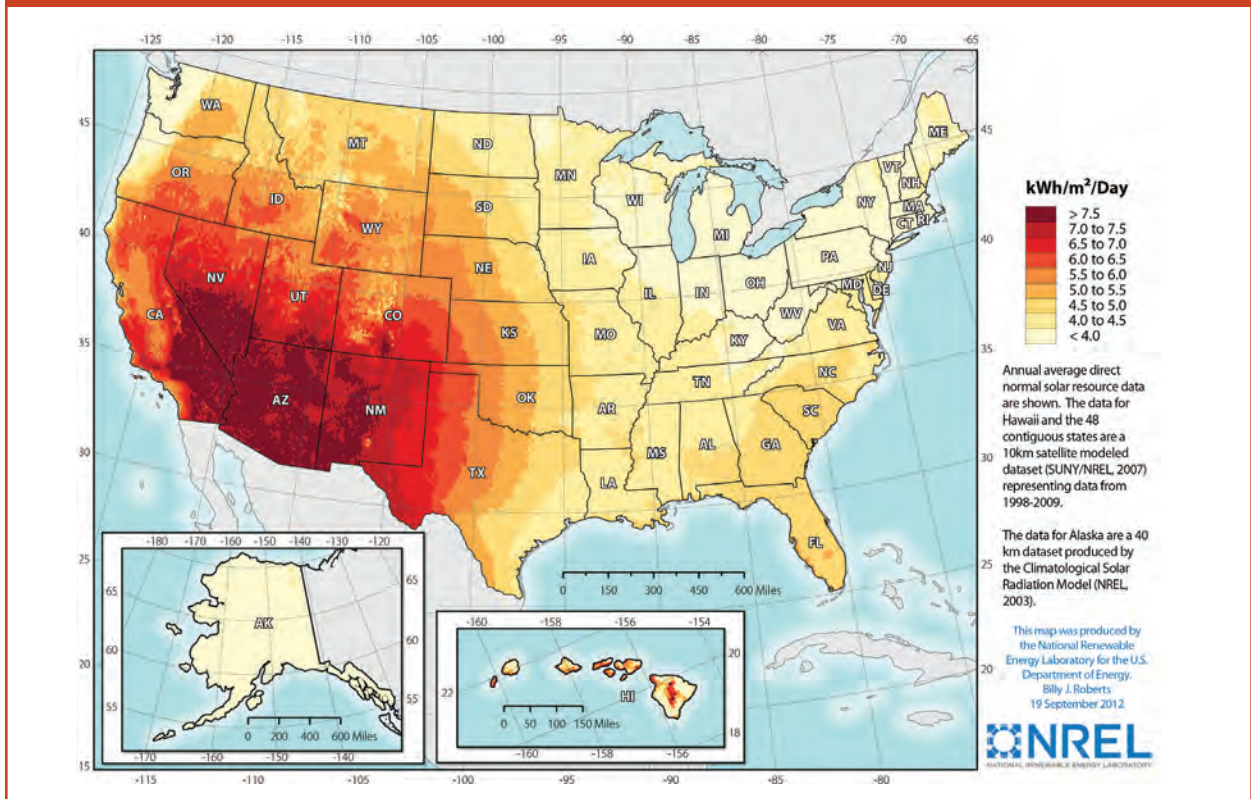


Exhibit 6

List of U.S. Solar Concentrating (Solar Thermal) Plants in Operation or Under Construction in 2014^{xiii}

MW	Project	Location	Technology
IN OPERATION			
392	Ivanpah Solar Power Facility	San Bernardino Co., CA	solar power tower
354	Solar Energy Generating Systems (SEGS)	Mojave Desert, CA	parabolic trough
280	Solana Generating Station	Gila Bend, AZ	parabolic trough
250	Genesis Solar Energy Project	Blythe, CA	parabolic trough
75	Martin Next Generation Solar Energy Center	Indiantown, FL	ISCC with parabolic trough
64	Nevada Solar One	Boulder City, NV	parabolic trough
5	Kimberlina Solar Thermal Energy Plant	Bakersfield, CA	fresnel reflector
5	Sierra SunTower	Lancaster, CA	solar power tower
2	Keahole Solar Power	Hawaii	parabolic trough
1	Saguaro Solar Power Station	Red Rock, AZ	parabolic trough
UNDER CONSTRUCTION			
280	Mojave Solar Project	Barstow, CA	parabolic trough
110	Crescent Dunes Solar Energy Project	Nye County, NV	solar power tower
17	Stillwater	Nevada	parabolic trough
5	Sundt Power Plant	Arizona	fresnel reflector
1.5	Tooele Army Depot	Tooele, UT	dish
1,841.5	Total Generating Capacity		
1,286	California Generating Capacity		
70%	California's Share of Total Generating Capacity		

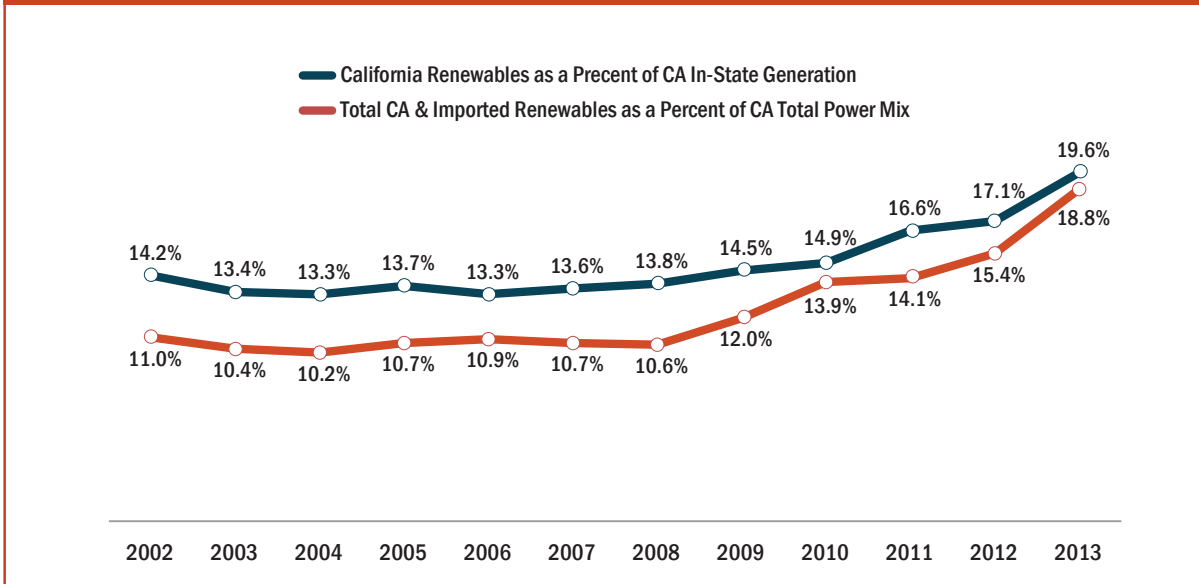
California is rich in valuable thermal solar resources as well as PV solar resources. **Exhibit 5** shows that the California desert and much of the Central Valley and other parts of Southern and Central California are blessed with abundant concentrating solar power resources. Not surprisingly, California leads the nation in thermal solar utility-scale electricity generation as well as leading in new concentrating solar electrical generation capacity coming on line. **Exhibit 6** shows that California accounts for 70% of the thermal solar generating capacity in-place and coming-on-line.

Renewable Energy Has Recently Come to Dominate the Growth in California Electricity Generation Capacity

California is not only the leader among states in adopting renewable energy generation technologies: within California, renewable energy has recently come to dominate the growth in electrical generation capacity and electricity usage. **Exhibit 7** shows that in the first decade of this century, renewable energy electricity generation grew apace with other forms of electricity generation within the state. This was also true of electricity imported from outside California. But about five years ago, with the passage of the 2009 American Recovery and Reinvestment Act and SBX1-2, the importance of renewable energy relative to other sources started to grow dramatically. In-state generation of electricity from renewable energy sources jumped from around 14% in 2008 to about 20% in 2013. The role of renewables in overall energy usage also grew from about 11% in 2008 to about 19% in 2013.

Exhibit 7

Growth of Renewable Energy as a Share of All California Electricity System Generation, 2002 to 2013^{xiv}

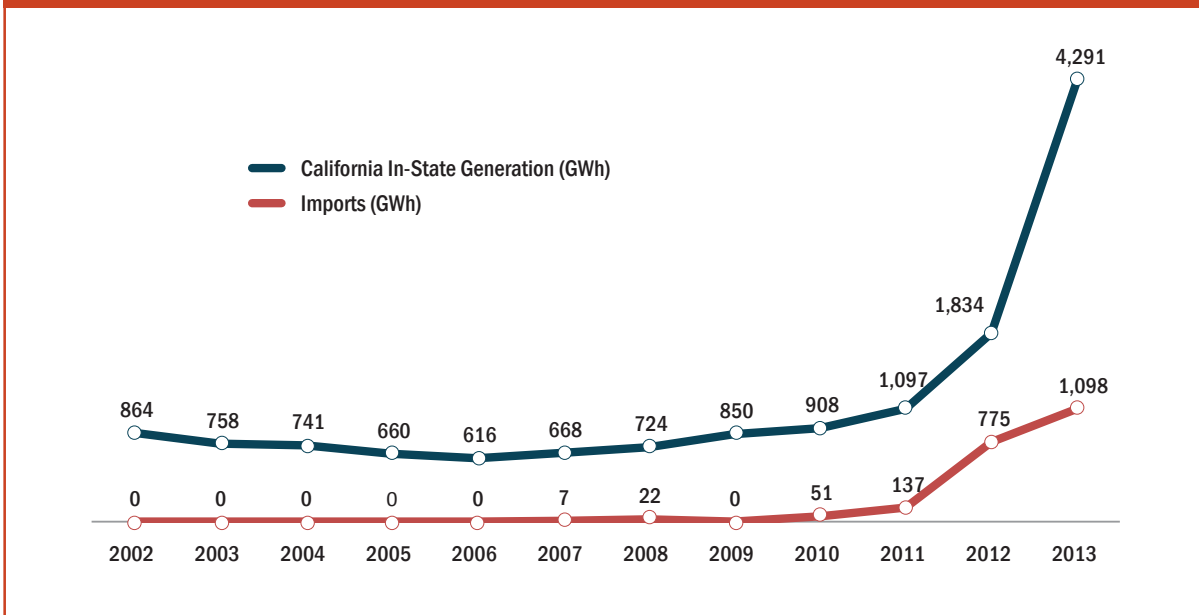


Solar Energy, both PV and Thermal, Dominate the Growth in California Renewable Energy Electricity Generation

Solar renewable energy, both photovoltaic and concentrating solar power, is a growing share of all renewable energy used in California. **Exhibit 8** shows that solar power took off around 2010 and now generates more than four times the electricity that solar power generated in the first decade of this century. Imported solar power also shot up around 2011 and currently accounts for roughly 20% of the solar power on the California electricity system.

Exhibit 8

California Usage of Solar Electricity Generated in California and Imported, 2002 to 2013^{xv}



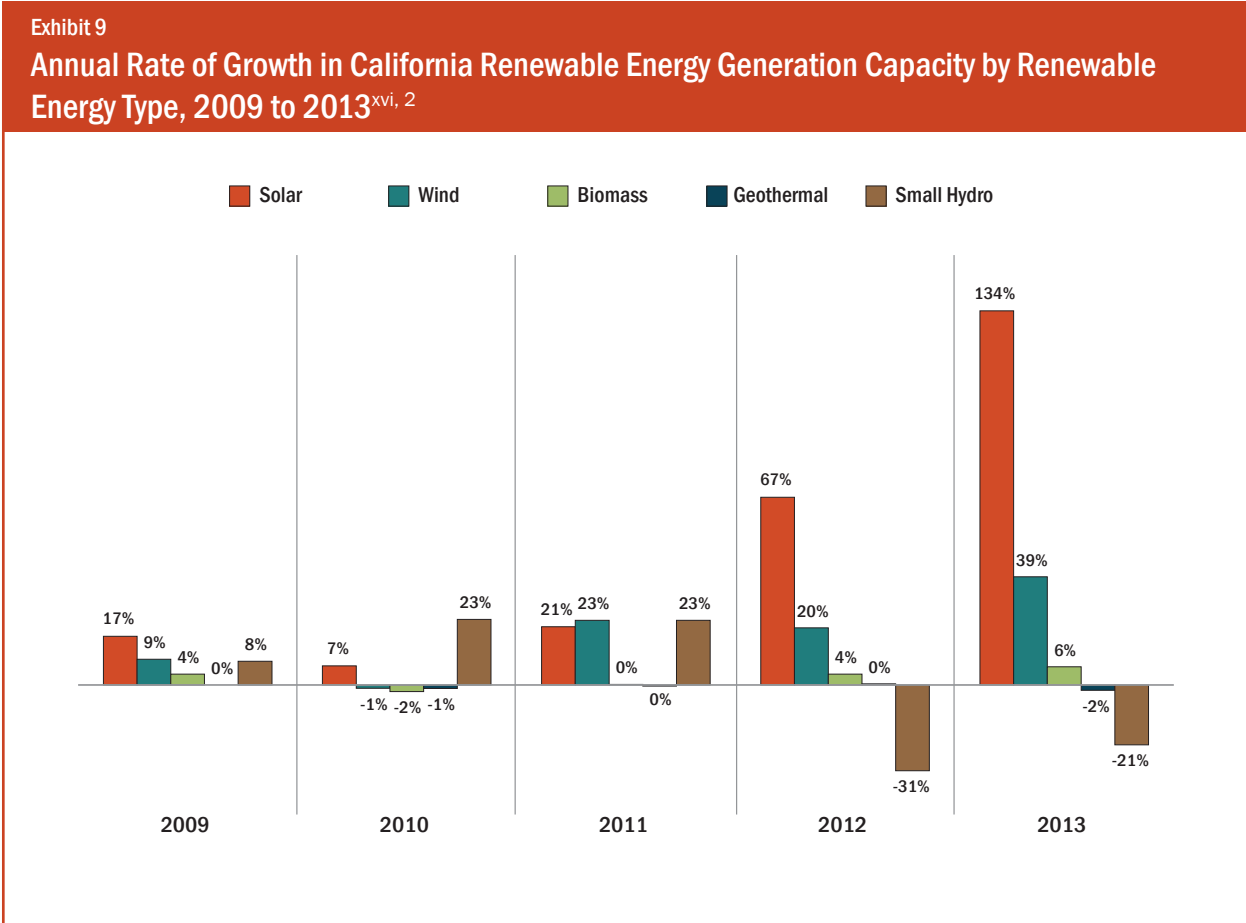


Exhibit 9 shows the annual rate of growth in renewable energy by source for California from 2009 to 2013. In three of the last five years, solar power grew faster than biomass, geothermal, small hydro, and wind power. Overall, the rate of solar power growth is accelerating.

Distributed Generation: Another Source of Clean Energy and Economic Growth

While not the focus of this report, distributed generation such as rooftop solar and small-scale dedicated field solar is playing an important role in helping California tackle climate change while creating jobs. Spurred by the California Solar Initiative, the state has a rapidly expanding base of rooftop/distributed solar electrical generating capacity.^{xvii} Rooftop systems are not only popular in the residential sector but are seen by industrial users, nonprofits, campuses, and municipal agencies as a smart strategy to reduce electricity bills, meet sustainability goals, and free up capital that can then be reallocated. This distributed generation trend is only expected to continue as technology enables the growth of micro grids and energy storage.

² The 33% Renewable Portfolio Standard SBX1-2 passed in early 2011.

Air Pollution and Greenhouse Gas Emissions Have Been Reduced through the Construction of Renewable Energy Capacity

Coal is the dirtiest form of electricity generation. Natural gas is cleaner than coal, but, like all fossil fuel reliant technologies, natural gas electricity generation creates greenhouse gases. Renewable energy electricity generation can also create greenhouse gases, primarily in the building of the materials that go into solar panels, wind turbines, and the other materials that make up a renewable energy electrical generation facility. Nonetheless, as shown in **Exhibit 10**, even when taking into consideration the full lifecycle carbon footprints of various electrical generation technologies, renewable resource electricity generation is fundamentally less pollutive than fossil fuel based technologies.

Some critics of renewable energy argue that a full accounting of the carbon footprint of wind and solar electrical energy must take into consideration the effect of these technologies on the smokestack emissions of fossil fuel electrical generation plants. Fossil fuel powered plants are at their most efficient and emit less pollution per MW of electricity generated when they operate steadily near full capacity. As coal and gas powered plants cycle up and down in order to back up the supply of solar or wind generated electricity, there can be greater wear on those fossil-fuel facilities and a greater generation of emissions. However, the extent of emissions due to cycling are relatively small compared to the savings in emissions from switching to wind and solar power generation. The National Renewable Energy Laboratory (NREL) examined this problem in their study “The Western Wind and Solar Integration, Phase II.”^{xviii} They found that their “high” wind and solar scenario—a hypothetical case with a 16.5% penetration of wind power combined with a 16.5% penetration of solar power,

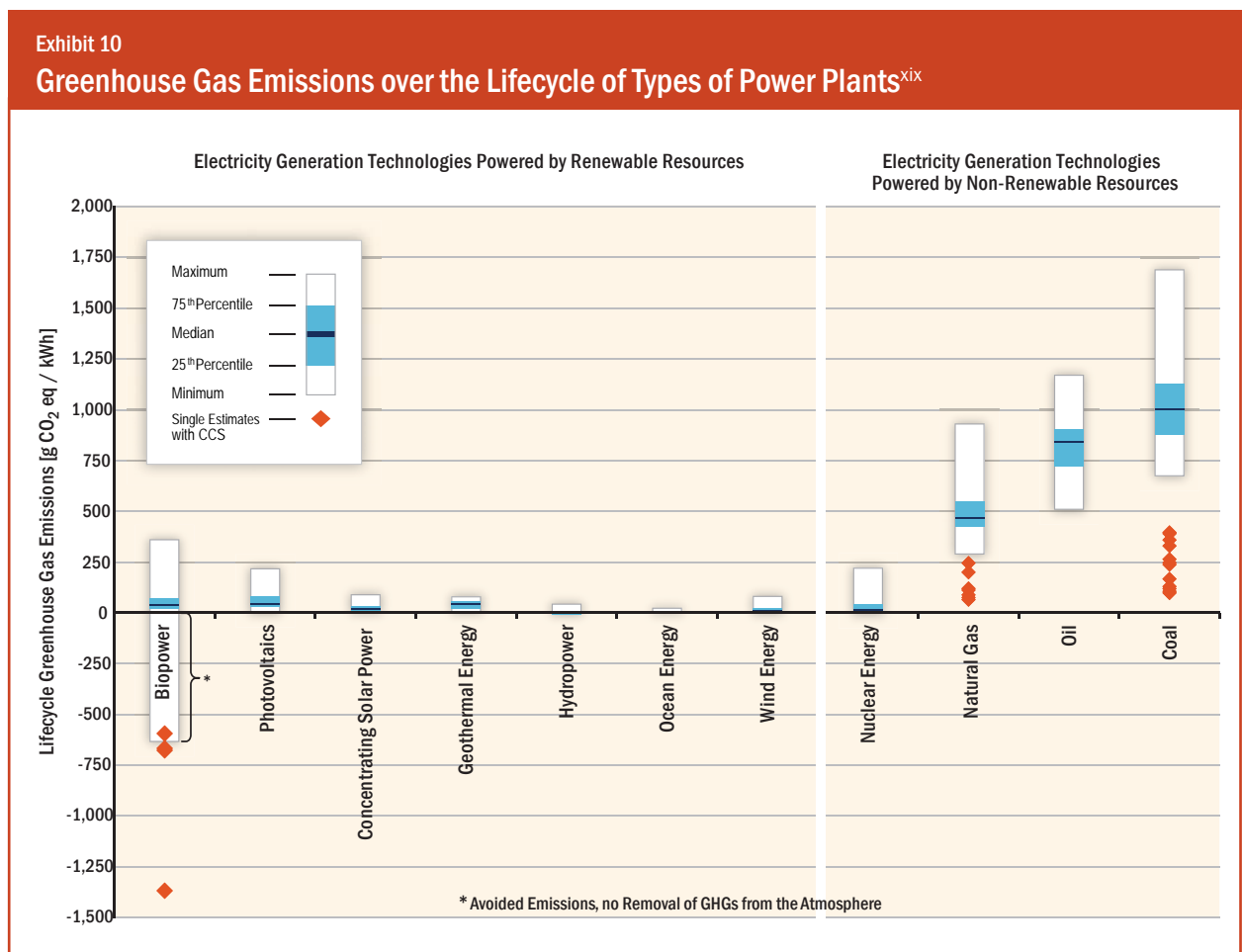








Exhibit 11

Emission Reduced by a 33% Penetration of Wind and Solar Energy onto the Western Grid^{xx}

Emission Impacts of Cycling Are Relatively Small Compared to Emission Reductions Due to Renewables

	Emission Reduction Due to Renewables	Cycling Impact
CO₂	260–300 billion lbs  29%–34%	Negligible Impact 
NO_x	170–230 million lbs  16%–22%	3–4 million lbs 
SO₂	80–140 million lbs  14%–24%	3–4 million lbs 

The increase in plant emissions from cycling to accommodate variable renewables are more than offset by the overall reduction in CO₂, NO_x, and SO₂.

for a total of 33% Western Grid reliance on these two renewable energy sources^{xxi}—would induce a decline in CO₂ of from around 29% to 34% (see **Exhibit 11**). NO_x would fall by 16% to 22% and SO₂ would fall by 14% to 24%. Increases in these pollutants due to the cycling demands on fossil fuel plants stemming from the timing of renewable energy electricity generation in this scenario were negligible. NREL concluded:

The increase in plant emissions from cycling to accommodate variable renewables are more than offset by the overall reduction in CO₂, NO_x, and SO₂. In the high wind and solar scenario [which entailed a hypothetical increase on the Western electrical grid to a 16.5% usage of wind power and a 16.5% usage of solar power], net carbon emissions were reduced by one third.^{xxii}

“The Western Wind and Solar Integration, Phase II” study considered only the effects of solar and wind—the currently fastest growing segments of renewable energy in California. In considering all forms of renewable energy, as one can see from **Exhibit 7**, California is already at 19.6% renewables as a percent of in-state electricity generation, with about half from wind and solar resources. The remaining half currently comes from biomass, geothermal, and small hydro.^{xxiii} Furthermore, as energy storage and other renewable integration solutions expand, the need for fossil fuels as a backup for clean energy generation will decline and emissions will decrease even further.

The Environmental Protection Agency’s Avoided Emissions and Generation Tool (AVERT) can be used to calculate the annually saved emissions from energy efficiency (EE) and renewable energy (RE) policies and programs. The Solar Energy Industries Association used AVERT to calculate the effect of the currently installed utility-scale and rooftop solar generation on carbon emissions from electricity generation in United States regions (see **Exhibit 12**). California and Utah are in the same AVERT region due to the role of the Intermountain Power Plant, a 1,900 MW coal-fired power plant owned by the Intermountain Power Agency and operated by the Los Angeles Department of Water and Power.^{xxiv} The 5,171 MW capacity of solar-powered electrical generating facilities in these two states, including both rooftop and utility-scale facilities, have reduced carbon dioxide (CO2) emissions by 4,433,300 tons, nitrogen oxides (NOx) emissions by 6,340,000 tons, and sulfur dioxide (SO2) emissions by 705,700 tons, all per year.

In this study we will examine the employment effects of building 4,250 MW of utility-scale solar powered electricity generating facilities in California. This utility-scale solar capacity represents about 75% of the total solar electrical generating capacity for California presented in **Exhibit 12**. Our primary focus will be the jobs created in building and running these facilities and the upstream and downstream jobs stimulated by this new construction in California. But we should not forget that these facilities have also reduced air pollution in California. The approximate effect has been a reduction of 4.8 million tons of nitrogen oxides, 3.3 million tons in carbon dioxide and 525 thousand tons of sulfur dioxide.^{xxv}

Exhibit 12
Estimated Tons of Carbon Emissions Averted through the Solar Generation of Electricity by Region, 2014^{xxvi}

AVERT Region	States within AVERT Region	Cumulative Capacity (MW)	CO2 Emissions Reduced (Tons)	SO2 Emissions Reduced (Pounds)	NOx Emissions Reduced (Pounds)
California	CA, UT	5171.70	4,433,300	705,700	6,340,000
Great Lakes/ Mid-Atlantic	DE, IL, IN, KY, MD, MI, NJ, OH, PA, VA, WI, WV	1241.90	1,325,700	6,069,800	2,406,700
Lower Midwest	AR, KS, LA, MO, NM, OK, TX	141.48	180,800	418,300	394,800
Northeast	CT, MA, ME, NH, NJ, NY, RI, VT	1408.35	1,113,600	1,972,900	1,574,000
Northwest	ID, MT, NV, OR, UT, WA, WY	312.70	329,800	389,800	785,200
Rocky Mountains	CO, SD, WY	331.50	464,000	647,900	899,300
Southeast	AL, AR, FL, GA, KY, LA, MO, MS, NC, OK, SC, TN, TX, VA, WV	927.03	959,800	2,975,400	1,486,000
Southwest	AZ, CA, NM, NV, TX	1850.40	2,070,300	977,800	2,987,300
Texas	TX, OK	201.20	203,600	408,800	236,800
Upper Midwest	IA, IL, MI, MN, MO, MT, ND, NE, SD, WI	72.43	94,500	286,000	170,800

Responsible Project Siting is Essential to Maximize Environmental Benefits of Utility-Scale Renewable Energy Electrical Generation

To maximize the environmental benefits of utility-scale electrical generation projects, reducing emissions is a top consideration, and here renewables lead the way. Equally as important to maximizing environmental benefits of these projects, though, is ensuring that electrical generation facilities are sited to minimize impacts on sensitive lands, water, and species. This is particularly critical for projects harnessing renewable resources in remote areas. Locating projects on previously disturbed private land with low habitat value for sensitive plant and animal species and in proximity to existing transmission or distribution lines is the gold standard of environmentally-responsible project siting. Projects must be carefully evaluated on a case-by-case basis to ensure irreplaceable habitat is not being permanently sacrificed in the race to combat climate change. The California Energy Commission for solar thermal facilities and local county governments for private-land PV projects can play a central role as lead agencies in analyzing and mitigating environmental impacts in accordance with the California Environmental Quality Act. The Bureau of Land Management is the lead agency under the National Environmental Protection Act for projects on public land. Both the environment and economics must be analyzed and regulated holistically. Neither green projects that create dead-end jobs nor great jobs that degrade the environment are sustainable answers. These regulators and regulations are one way-station on the road to an energy synergy between the environment and the labor market

Jobs Created in the Solar Boom

Section Summary

Over the last five years, 10,200 well-paying construction jobs were created in California during the expansion of California's solar-based, utility-scale electrical generating facilities. These jobs pay, on average, \$78,000 per year and offer solid health and pension benefits. In addition, 136 permanent operations and maintenance jobs have been created and will last for the lifetime of these facilities. These operations and maintenance jobs pay an average of \$69,000 per year, usually with solid benefits. In addition to the jobs created on the construction projects, about 1,600 jobs have been created to handle increased business up and down the supply chain and to perform other new business activities associated with these projects. These newly-created construction, maintenance, and business-related jobs have boosted consumer spending, which in turn has induced the creation of over 3,700 additional California jobs aimed at meeting increased consumer demand. In total, more than 15,000 new jobs have been created by the solar farm construction boom in California over the last five years.³

Approximately 4,250 MW of PV and Thermal Solar Power were Built in the Last Five Years

Exhibit 13 shows the list of utility-scale solar power projects built or under construction in California since 2010 as of the summer of 2014. Two completed projects (Ivanpah Solar Power Facility and Genesis Solar Energy Center) and one under construction (Abengoa Mojave Solar Power Plant) are solar thermal projects accounting for almost 900 MW while the remaining are photovoltaic solar projects accounting for about 3,350 MW of nameplate generating capacity. We will estimate the employment impact of this construction using PV projects

³ Here jobs are understood to be job-years, or 2,080 hours of work, though in many cases a construction worker will not be on a job for a full year. Construction apprentices are often rotated off jobs to get experience in other types of construction and therefore one job-year may be spread across two or more construction workers. In contrast, the 136 operations and maintenance jobs are 25 job-years, each lasting the expected lifetime of a newly-built solar electrical generation plant.

Exhibit 13

List of Solar Projects Completed or Under Construction, 2010–2014^{xxvii, 4}

Project	Type	County	MW
COMPLETED			
Alpine (First Solar)	PV	Los Angeles	92
Antelope Valley (First Solar)	PV	Los Angeles	230
Borrego Solar NRG	PV	San Diego	26
California Valley Solar Ranch (Fluor)	PV	San Luis Obispo	250
Campo Verde (First Solar)	PV	Imperial	139
Catalina Solar (enXco)	PV	Kern	110
Centinela (Fluor)	PV	Imperial	275
Corcoran Irrigation District (EDF-enXco)	PV	Kings	20
First Solar Blythe	PV	Riverside	21
Genesis Solar Energy Center	CSP (thermal)	Riverside	250
Ivanpah (Bechtel)	CSP (thermal)	San Bernardino	392
McHenry (SunPower)	PV	Stanislaus	25
Mt. Signal Solar (Cupertino Electric)	PV	Imperial	200
Recurrent Kansas South	PV	Kings	35
Recurrent Rio Grande	PV	Kern	5
Recurrent Rosamond 1 and 2	PV	Kern	40
SDSU Sol Orchard Brawley	PV	Imperial	5
SMUD McKenzie, Kammerer, Bruceville, Dillard	PV	Sacramento	69
Sol Orchard (Isolux)	PV	Imperial	20
SunEdison Adobe	PV	Kern	20
SunEdison Orion	PV	Kern	20
TA-High Desert	PV	Los Angeles	20
Tenaska CSolar South (First Solar)	PV	Imperial	200
White River (SPS)	PV	Tulare	20
TOTAL COMPLETED			2,484
UNDER CONSTRUCTION			
Abengoa Mojave (Abengoa)	CSP (thermal)	San Bernardino	250
Acacia Solar (White Construction)	PV	Los Angeles	20
Agincourt and Marathon (Lincoln)	PV	San Bernardino	30
Desert Sunlight (First Solar)	PV	Riverside	550
Pioneer Green (Phoenix)	PV	Kern	125
Recurrent Old River 1 and 2	PV	Kern	25
Solar Gen 2 (First Solar)	PV	Imperial	150
SunEdison Regulus	PV	Kern	75
Topaz (First Solar)	PV	San Luis Obispo	550
TOTAL IN PROGRESS			1,775
TOTAL COMPLETED AND IN PROGRESS			4,259

⁴ Reported MW at new utility-scale solar facilities can vary in part because PV projects can come on-line in stages. Thus, the 4,259 MW in this table should be viewed as a current best estimate of the generating capacity of these facilities.

as our model because PV work has accounted for and will likely continue to account for the majority of the utility-scale solar projects in California for the near future.⁵

Previous Studies of Specific Projects

Previous research has yielded four economic impact reports covering three large photovoltaic solar projects in California with a total photovoltaic nameplate capacity of 1,350 MW:

1. As part of the Environmental Impact Report (EIR) for the California Valley Solar Ranch (CVSR) project (nameplate capacity of 250 MW), Stephen F. Hamilton, Chair of the Economics Department at California Polytechnic State University at San Luis Obispo, along with Darin Smith and Tepa Banda of Economic & Planning Systems, Inc., released in December, 2010, a study of the local employment and fiscal impact of the CVSR.^{xxiii}
2. Stephen Hamilton again, along with Mark Berkman of the Brattle Group, released a similar report for the nearby Topaz Solar Farm (nameplate capacity of 550 MW) in March, 2011.^{xxix}
3. In January, 2011, the Aspen Group, also as part of the CVSR EIR, released a study that combined the impacts of CVSR and Topaz (aggregate nameplate capacity of 800 MW) because these two projects would occur in the same county at approximately the same time. The Aspen Group provided two impact assessments, one assuming a lower set of wages for construction workers and a second assuming a higher set of wages.^{xxx}
4. Finally, Wesley Ahlgren of the Coachella Valley Economic Partnership and Mark Berkman of the Brattle Group released an economic impact study of the Desert Sunlight Solar Farm (nameplate capacity of 550) to be built in eastern Riverside County.^{xxxi}

The four reports thus covered three large photovoltaic solar farms, in two counties, and ranging in nameplate capacity from 250 MW to 550 MW, for a total MW of 1,350. The two central California projects (CVSR and Topaz) were combined in one study for an analysis of the construction of 800 MW. In that case a high-wage and a low-wage scenario for construction workers were developed. The utility-scale generating capacity from the three projects researched in these four studies accounts for roughly one-third of all the PV solar generating capacity put in place or under construction in California over the last five years.

These four studies and five scenarios are available for us to use. Rather than developing our own assumptions regarding the number of direct jobs, wages, and benefits created by this type of construction, we will use the average set of facts developed in these other reports to guide us. These parameters, their averages, and our consequent results are shown in **Exhibit 14**.

The authors drew information from the developers, SunPower and First Solar, upon which they based their a) local input purchase, b) employment, and c) wage assumptions. In the two-scenario case, the Aspen Group provided two sets of wage assumptions, one based on the builder's information and another based on state wage surveys.

In terms of perspective, three reports were done in association with the developer while the Aspen Group's report was done on behalf of the County for the EIR. The three developer-sponsored studies might be more optimistic regarding the beneficial impacts of these projects, and the Aspen study, with its two scenarios, might

⁵ Technical note: utility-scale PV solar farms can range widely in MW without fundamentally altering the labor required per MW. Therefore, the range of sizes from small (around 20 MW) to huge (over 500 MW) does not present a major obstacle in calculating the jobs created by this type of work. Solar thermal utility-scale electrical generation tends to focus on large-scale facilities (250 MWs or more) to exploit economies of scale in traditional heat-generated electricity.

Exhibit 14

Analysts' Assumptions for Various Photovoltaic Solar Projects in San Luis Obispo and Riverside Counties and Assumptions for California as a Whole^{xxxii}

A	B	C	D	E	F	G	H
Project	CA Valley Solar Ranch	Topaz Solar Farm	CA Valley & Topaz Combined	CA Valley & Topaz Combined	Desert Sunlight	Average	All CA Solar Projects Last 5 yrs
Scenario			Low Wage	High Wage			
Analysts	Hamilton, Smith & Banda	Hamilton & Berkman	Aspen Environmental Group	Aspen Environmental Group	Berkman, Tran & Ahlgren		
County	San Luis Obispo	San Luis Obispo	San Luis Obispo	San Luis Obispo	Riverside		
Nameplate Size (MW)	250	550	800	800	550	590	4,250
Company	SunPower	First Solar	SunPower + First Solar	SunPower + First Solar	First Solar		
Construction	32 months	36 months	36 months	36 months	26 months	33.2 months	60 months
Operation	25 years	25 years	25 years	25 years	25 years	25 years	25 Years
CONSTRUCTION							
Construction FTE Job Years	681	1,200	1,842	1,842	1,353	1,384	10,200
FTE Construction Jobs per MW	2.7	2.2	2.3	2.3	2.5	2.4	2.4
Total Wages (Millions)	\$46	\$115	\$97	\$176		\$108.6	\$796
Total Benefits (Millions)	\$25	\$52	\$44	\$80		\$50.3	\$376
Total Compensation (Millions)	\$72	\$167	\$142	\$256	\$197	\$166.5	\$1,172
Annual Wage	\$68,135	\$95,500	\$52,769	\$95,603		\$78,002	\$78,002
Annual Benefits	\$37,004	\$43,250	\$24,104	\$43,160		\$36,880	\$36,880
Total Annual Compensation	\$105,140	\$138,750	\$76,873	\$138,762	\$145,602	\$114,881	\$114,881
OPERATIONS							
Permanent Operations FTE Jobs	12	15	26	26	15	19	136
MW per Operations FTE Jobs	21	37	31	31	37	31.1	31.1
Operations FTE Job Years	300	375	650	650	375	470.0	3,412
Total Wages (Millions)	\$20	\$24	\$36	\$36	\$27		\$236
Total Benefits (Millions)	\$11		\$16	\$16			\$113
Total Compensation (Millions)	\$31		\$52	\$52	\$27		\$350
Annual Wage	\$66,667	\$63,200	\$72,192	\$72,192	\$72,000	\$69,250	\$69,250
Annual Benefits	\$36,333		\$31,654	\$31,654		\$33,214	\$33,214
Total Annual Compensation	\$103,000		\$103,846	\$103,846		\$102,464	\$102,464

Notes for column H, Exhibit 14:

- total FTE construction job-years = 10,200 = 4,250 MW x 2.4 job-years per MW; a job-year is 2,080 hours of work which may involve one or multiple workers and may involve both straight and overtime hours
- construction total wages and benefits = average wages and benefits for other projects in Exhibit 14 x 10,200 (FTE jobs for California as a whole)
- average annual permanent operation jobs = 136 = 4250 MW/31.1 where 31.1 = average MW per operation job on other projects
- operation job-years = 3,412 = 136 x 25 years
- operation average annual wage income = average for other projects in Exhibit 14
- operation average annual benefits = average for other projects in Exhibit 14
- total annual compensation including payroll taxes = annual wages + benefits
- total wages = annual average wage x FTE job-years
- total benefits = annual average wage x total FTE job-years

be somewhat more skeptical. We therefore have a rough balance of three potentially more optimistic and two potentially more conservative estimates of the employment impact of building utility-scale PV solar farms.

Exhibit 14 shows the relevant assumptions used in these studies to assess the economic and fiscal impacts of building these three photovoltaic projects in the near future. In column B, for the 250-MW California Valley Solar Ranch in San Luis Obispo County, based on information provided by SunPower, Hamilton, Smith, and Banda assumed 681 full-time equivalent (FTE) construction, supervisory, on-site engineering, and other personnel would be employed over the life of the project.⁶ On average, these workers would earn \$68,135 per year in wages and an additional \$37,004 in benefits. Total wages from these new jobs would amount to \$72 million in new wages (681 x \$68,135) and total benefits would add up to an additional \$25.2 million (681 x \$37,004).

Hamilton, Smith, and Banda do not explicitly consider overtime wages that may be earned on this project. We will ignore the possibility of overtime in our estimates of economic impact as well.⁷

In addition to these 681 construction job-years in column B for CVSR, Hamilton, Smith, and Banda assumed that there would be 12 permanent FTE jobs in operating and maintaining the 250-MW facility after it was constructed. They assumed a 25-year worklife for the facility, thus creating 300 FTE operations and maintenance job-years over the life of the facility (12 jobs x 25 years). On this project, Hamilton, Smith, and Banda assumed operations and maintenance workers would receive, on average, \$66,667 in wages (in today's dollars) and \$36,333 in benefits (including payroll taxes) for an annual total compensation of \$103,000. Over 25 years, these new jobs would inject into the economy \$20 million in wages (300 FTE job-years x \$66,667) and \$11 million in benefits (300 FTE job-years x \$36,333) for a total of \$31 million in new dollars from new jobs.^{xxxiii}

Hamilton, Smith, and Banda do not consider how many of the construction workers on this project would be new apprentices or pre-apprentices. Nor do they consider the economic impact over their career of pre-apprentices or apprentices becoming journeyworkers, gaining new skills and earning more than they otherwise would have if the opportunities of investment in training had not been created by this facility.

Thus, while we will see that in aspects such as jobs created per MW installed the Hamilton, Smith, and Banda study is perhaps the most optimistic among the reports under review, on the key issue of human capital formation these optimists understate one of the most significant benefits of the CVSR project. If apprenticeship training is offered, the benefit of substantial human capital investment in a local apprentice on a project such as this is both immediate and lifelong. And it is a benefit that accrues not only to the apprentice-turned-journeyworker but to the community that enjoys the long term economic development advantages of more human capital in their labor market and more spending over a lifetime in their consumer market.^{xxxiv, 8}

⁶ A full-time equivalent (FTE) worker is 2,080 hours of work, though this work may be done by one, two, or more individuals splitting the 2,080 hours. In impact studies, jobs are counted in terms of "job years": one FTE worker = 2,080 hours of work = one job-year. Using the term and concept "FTE jobs" is standard in employment impact studies and all the reports under review do so.

⁷ Overtime is not uncommon in industrial construction, particularly when a contractor is seeking to accelerate towards the project's final completion, or the contractor at various points in the construction process tries to avoid bottlenecks along the critical construction path by using overtime to complete strategic tasks. Furthermore, contractors intending to accelerate construction from the outset may include scheduled overtime in their initial planning. While overtime is common in industrial construction, it is often ignored in analyses like the ones under review here.

⁸ Solar farm construction involves pre-apprentices, apprentices, and journeyworkers within each craft. Pre-apprentices are new to construction and receive safety and basic-skills training. Through their job performance and work ethic, many, but not all, transition from pre-apprentice to apprentice. Apprenticeship programs entail substantial off-the-job classroom training and supervised on-the-job training lasting typically four or five years. Upon graduation, apprentices turn out as journeyworkers qualified to do the work of their craft across a multitude of different kinds of construction projects. Because no one utility-scale solar farm construction project lasts as long as four or five years, and because the range of skills an apprentice needs to learn span a wider scope than the skills required on solar farm work, apprentices will be rotated off solar work into other work in their craft. This potentially opens up spots for pre-apprentices on the solar work to move into an apprenticeship position. The purpose of apprenticeship training is to build human capital within the industry, to provide the rounded skills so that as journeyworkers each individual can tackle most or all of the jobs in the craft, and to provide each worker with more steady work despite the volatility of construction by qualifying the worker for any job that comes up within the craft.

In column C of **Exhibit 14**, for the Topaz project in San Luis Obispo County, Hamilton and Berkman use information from First Solar to assume that an annual average of 400 construction workers over 36 months are required to build this 550-MW solar facility. This amounts to 1,200 FTE job-years over 36 months with average annual wages of \$95,000 and benefits of \$43,250. These jobs would inject \$167 million in wages into the local economy, which the authors define as San Luis Obispo County plus adjacent Kern County.

Looking at operations and maintenance jobs, Hamilton and Berkman assume 15 FTE-jobs per year over 25 years, with an annual average wage of \$63,200. The authors do not provide an assumption regarding operations workers' benefits. Similarly, in column F for the Desert Sunlight project in Riverside County, Berkman, along with co-authors Tran and Ahlgren, again does not provide a benefit estimate for operations personnel.

While in terms of total compensation for construction workers the two Berkman reports are the more optimistic of the four reports under review, this assumption of zero benefits and no payroll taxes for operations and maintenance workers downplays the positive benefits of these new facilities.

The combined CVSR and Topaz study with the high-wage and low-wage scenarios was based on information from two separate developers, SunPower and First Solar. These two developers provided substantially different construction worker annual average FTE total compensation including payroll taxes. SunPower indicated a total compensation of \$105,140 while First Solar planned for \$138,750. It appears that First Solar was planning to schedule substantial overtime: with a disproportionately low number of additional workers, the 550-MW Topaz project was scheduled to be built in about the same amount of time as the 250-MW CVSR project. The CVSR project assumes 32 months to put in place 250 MW while the Topaz project assumes 36 months to put in more than twice the nameplate capacity (550 MW vs. 250 MW) with only 1.5 times as many workers (400 vs. 264). Therefore, it's fair to assume that the total compensation discrepancy between these two projects is likely due to differences in scheduled overtime on the bigger Topaz project.

The Aspen Environmental Group was asked to provide an additional, separate assessment of the economic and fiscal impact of the CVSR project. Part of the reason Aspen chose to combine CVSR with Topaz was to get a sense of what the full impact of 800 MW of photovoltaic solar construction, scheduled for about the same time in about the same location, would be on the local economy.^{xxxv} Reflecting a more conservative approach, Aspen defined "local" as San Luis Obispo County, and did not include Kern or any other adjoining counties.

Aspen presents a low-wage scenario (column D) with wages based on government wage survey data and a high-wage scenario (column E) based on First Solar data. Aspen's low-wage scenario is inapt for two reasons.

First, the government survey of construction wages they relied upon yielded average wages lower than those paid on industrial construction. This is because it included both industrial and residential construction workers in the same average wage. Industrial construction requires greater skills than traditional residential construction, and therefore averaging the two sets of wages puts apples and oranges together yielding an estimated wage significantly lower than those typical of industrial construction projects. Second, in the case of the CVSR project, a project labor agreement was signed based on wages reflecting industrial construction wage rates and not the lower average wage rates of government surveys. Aspen's presentation of this low-wage scenario reflects its skeptical or conservative stance relative to the more optimistic reports under review.

In any case, Aspen assumes 1,842 FTE job-years in both their high-wage and low-wage scenarios for the CVSR and Topaz projects taken together. This is very close to the assumptions of the other analysts in considering each job separately ($681 + 1200 = 1881$ FTE job-years). The Aspen low-wage scenario is only applied to construction workers. They have just one scenario for maintenance and operations personnel, and their estimate of total compensation is very much in line with those of the other reports at about \$103,000 per year including benefits and payroll taxes.

Berkman, Tran, and Ahlgren (column F) analyze the impact of the 550-MW Desert Sunlight project in eastern Riverside County. They assume 1,353 FTE job-years to put this facility into place over 26 months.^{xxxvi} The San Luis Obispo Topaz and Riverside Desert Sunlight projects are both 550-MW jobs. They are roughly comparable in expected construction FTE job-years (1,200 over 36 months for Topaz vs. 1,311 over 26 months for Desert Sunlight). The higher Desert Sunlight construction FTE manpower requirements may be due to the planned accelerated schedule (26 vs. 36 months). Differences in planned overtime probably explain the differences in estimates of construction worker total compensation across all three projects: Desert Sunlight, with the fastest schedule, has the highest total compensation (\$145,602); Topaz, with a slower schedule but fewer workers per MW, has a total compensation in the middle (\$138,750); and the smaller CVSR project, with a slower schedule and more planned workers per MW, has the lowest total compensation (\$105,140).

Developers and contractors on large industrial projects sometimes have strong economic interests in accelerating construction to get to market faster, even if it means a considerable increase in construction labor costs either through scheduled overtime or overmanning the job. Much of the variation in total compensation for construction workers found in **Exhibit 14** may well reflect variations in developer/contractor strategies regarding the use of overtime in building the project.

Overall California Employment Boost from Utility-Scale Solar Power Construction

Our assumptions are shown in column G of **Exhibit 14**. We have taken a middle road between more optimistic and more conservative approaches by taking the average across all reports for the relevant assumptions regarding wages, benefits, and FTE workers per MG put in place. The only novel information in our scenario is the total amount of MW put in place (4,250) based on all the utility-scale solar projects built in the last five years or currently under construction in California.⁹

Calculating the Direct, Indirect, and Induced Jobs Created by California Solar Farm Construction Over the Last Five Years

To provide a standard estimate of the upstream and downstream jobs created off the solar farm construction sites, we use the average estimate of what are called “indirect” and “induced” jobs from the previous recent studies reviewed in this report. **Exhibit 15** summarizes the total job-years of direct construction employment, indirect supply-chain employment, and induced consumer-chain employment found by the other studies for the CVSR, Topaz, and Desert Sunlight photovoltaic solar farms.

Line 1 in **Exhibit 15** shows the direct construction worker job-years and other construction-site personnel required for the building of these various projects (it is the same as the row “Construction FTE Job Years” in **Exhibit 14**). The predicted total within-county indirect supply chain job-years and induced consumer chain job-years are shown in lines 2 and 3 of **Exhibit 15**. Total direct, indirect, and induced job-years from construction (but not subsequent solar farm operations or maintenance) are shown in line 4.

To compare across previous reports, lines 5 through 8 divide job-years for each type of job creation (i.e., direct, indirect, induced) by the nameplate capacity of the project or combined projects. As stated, our job-year calculation is based on averaging the jobs-multipliers of these former reports, and this is shown in column F.

⁹ Three projects in our sample accounting for 900 MW out of our total are solar thermal rather than photovoltaic solar projects. Solar thermal projects require more workers per megawatt to build. Nonetheless, we have conservatively assumed a worker-per-MG for these two projects equivalent to PV projects, which understates the full employment impact of building this solar generating capacity.

Exhibit 15

A Comparison of the Total Job-Years of Direct Employment, Indirect Supply Chain Employment, and Induced Consumer Chain Employment Effects of Photovoltaic Construction in this and other Recent Reports^{xxxvii}

A	B	C	D	E	F	G	H
Project	CA Valley Solar Ranch	Topaz Solar Farm	CA Valley & Topaz Combined	CA Valley & Topaz Combined	Desert Sunlight	Average	All CA Solar Projects Last 5 yrs
Scenario			Low Wage	High Wage			
County	San Luis Obispo	San Luis Obispo	San Luis Obispo	San Luis Obispo	Riverside		
Nameplate Size (MW)	250	550	800	800	550		
TOTAL WORKERS							
Direct	681	1,200	1,842	1,842	1,353		10,200
Indirect	230	225	190	180	121		1,609
Induced	480	746	330	340	324		3,762
Total	1,391	2,171	2,362	2,362	1,798		15,572
WORKERS PER MW OF NAMEPLATE CAPACITY							
Direct	2.7	2.2	2.3	2.3	2.5		2.4
Indirect	0.9	0.4	0.2	0.2	0.2		0.4
Induced	1.9	1.4	0.4	0.4	0.6		0.9
Total	5.6	3.9	3.0	3.0	3.3		3.7

In addition to the direct 10,200 FTE jobs in solar farm construction that were created in California over the last five years (shown in both **Exhibits 14 and 15**), **Exhibit 15** shows that approximately 1,600 FTE jobs were created indirectly in the California construction supply chain and related business activity. Furthermore, more than 3,700 jobs were induced by consumer spending¹⁰ from the wages paid to construction workers on these projects and subsequent ripple effects from this new consumer spending. Thus, overall, 15,572 FTE jobs-years have been created over the past five years from the work on solar farm construction in California. In addition, 136 FTE operations jobs lasting roughly 25 years each have been created. In general round terms, more than 15,000 jobs have been created by the recent California solar boom.

¹⁰ This is actually an underestimate because the previous studies were primarily focused on the supply chains and consumer activity within the county of the project. When we zoom out to the California economy as a whole, as we do in our analysis, the indirect and induced effects become larger due to longer supply chains and more widespread consumer activity.

Creating High-Quality Construction Careers

Section Summary

Utility-scale solar construction in California over the last five years built 4,250 MW of renewable energy generating capacity in California. Because most of the construction was organized under collectively bargained contracts or project labor agreements, contractors have agreed to contribute training money for apprenticeship training based on each hour of work for every blue-collar worker on the site. This has provided \$17.5 million in new money to help finance the training of construction apprentices and pre-apprentices. This infusion into California construction apprenticeship and pre-apprenticeship training includes \$8.3 million into electrician training, \$3.1 million into the training of construction craft laborers, \$2.6 million into training ironworkers, \$1.7 million to train carpenters and piledrivers, and \$1.9 million dollars to train operating engineers.

This new human capital formation will generate a stream of higher income over decades, reflecting the greater skill set and higher productivity of these trained California construction workers. For instance, over the lifetime of electrical apprentices, as they become journeyworkers, their income in today's dollars will be higher by about \$1 million compared to what their income would have been absent this training. In addition, these workers not only earn while they learn but they also participate in family-supportive health insurance programs, promoting family formation and stable child-rearing, and they begin building savings for their retirement. By the time these electrical apprentices retire as journeyworkers at age 65, they will have amassed a retirement nest egg of about \$525,000 in defined contribution and defined benefit programs sponsored by their contractors and unions. This is substantially more than what the median single or married worker at age 65 today has for retirement.

The California solar boom has not only prepared California for a future of energy independence, it is preparing a new generation of California blue-collar workers for a future of skilled and productive work and a life of financial security.

Building Clean Energy with Good Jobs

New ways of generating electricity require not only new technologies but also new worker skills. Skilled scientists and technicians are needed to develop and perfect renewable energy technologies, and skilled engineers, project managers, and construction workers are needed to put these new technologies in place in buildings and in the field. In California, new workers on solar projects have not been treated as disposable labor but have in many cases been put on a path to become skilled craft workers through pre-apprenticeship and apprenticeship training. And because of the classroom and on-the-job training that this solar boom is financing, human capital in construction is being built alongside the physical capital of utility-scale and distributive solar power that is rising in the deserts and on the rooftops of California.

The PV panels being installed in the California desert not only catch the sun but also serve as launch pads for skills development beyond the desert. Because these apprenticeship programs prepare workers for the broad range of skills needed in their craft, these new entrants into construction are positioning themselves to work on the entire extent of green technologies as well as skill-demanding work across the full sweep of the construction industry. Apprentices beginning on a PV solar project will later rotate off to work on hospitals, industrial facilities, rooftop solar, or other projects within their craft. Entry work on solar farms helps construction workers get through their early apprenticeship stage, and it also helps finance their further training farther afield.

The California construction industry as a whole is getting an infusion of new, young workers with the career-building, rounded skills that will allow owners, contractors, and public agencies to build into the future the whole array of structures and infrastructure needed to help make California's physical plant, public buildings, highways, schools, and universities world-competitive facilities.

This means that the current solar boom is a gift that will keep on giving in multiple ways. The workers who bootstrap solar work into multiyear training both on and off solar projects are becoming the next generation of skilled California construction workers earning decent paying incomes with family-friendly benefits for the rest of their construction careers. Almost universally, utility-scale solar workers have received family-friendly health benefits that promote family formation and stability.¹¹ The public-at-large benefits by having construction workers in California become the secure families and responsible citizens that make for good neighbors and a solid middle class.

Construction develops along a knife edge. There is a high-road construction path which trains workers to master all the skills of a craft. But poor policies and exploitive practices can push construction off the high road and mire it in low-wage, low-skilled, low-road construction work. Fortunately, due to policies and regulatory decisions within the state, the high road has general been taken during the California solar boom.

A Solar Boom Becomes a Skilled Training Boom

The boom in utility-scale solar construction in California has set in motion a related boom in apprenticeship and other forms of training for electricians, operating engineers, ironworkers, carpenters, millwrights, piledrivers, and laborers. The gold standard of training in construction is apprenticeship training, and about 30% of all the workers on these solar projects have been apprentices. Also significantly represented on solar construction projects are pre-apprentices, whose exposure to construction and basic safety and skills training is preparing them to enter apprenticeship programs.^{xxxviii}

Apprentices learn a full range of skills in their craft enabling them not only to construct solar farms but also to build other green electrical facilities and other industrial and commercial facilities more quickly, efficiently, and in good order. For instance, an electrical apprenticeship program includes the skills needed for traditional construction as well as the skills required to build green energy projects. Electricians use a variety of green technologies including energy efficient lighting, systems, and appliances; motion and occupancy sensors, dimmers, timers, and smart power strips; and PVC free cables. They install wireless switches for remodeling, electrical consumption economizers— devices that reduce energy use of AC units—and programmable thermostats, as well as daylight harvesting systems, which use photosensors to detect light levels in a room. In addition to these energy efficient technologies, electricians are knowledgeable about different types of renewable energy such as solar, wind, and geothermal, and are able to integrate these sources into a comprehensive energy efficiency system. In addition to working on commercial and residential building retrofits, they also work on wind turbine installations, parking lot electrical outlets, electrical vehicles, mass transit and light rail projects, and smart electrical grid transmission systems.^{xxxix}

California has a growing need for green skills associated with the building of both centralized (utility-scale) and distributed (rooftop) green electrical generating facilities, including the installation and retrofitting of green technologies on industrial, commercial, public, and residential buildings. The work that has taken place in constructing renewable energy generation facilities is positioning the California construction labor force to go forward with a widening and deepening of both utility-scale and distributed renewable energy generating infrastructure, as well as energy efficiency. This has been done in part because of multiemployer/union commitments to training.

¹¹ Typically, workers who are new to a union have to work 90 days or 720 hours before qualifying for collectively bargained health insurance. These hours may be accumulated across multiple jobsites and permit breaks in work as workers move from job to job. In most cases, one utility-scale PV project will provide the 90 days of work needed to enter the health care program. In some jurisdictions, while individual coverage is paid for completely by the contractor, family coverage may require a worker co-payment. For instance in Imperial County, where there is considerable PV utility-scale work, IBEW workers do not have a family co-pay, but in San Diego, where there is limited utility-scale PV work, family health coverage does require a co-payment.

Solar Boom Stimulates Investment in Apprenticeship Training Programs

All collectively bargained agreements in California construction require contractors to pay into registered apprenticeship programs. We can estimate the effects of these contributions on training investment by looking at a large photovoltaic solar farm built in San Luis Obispo County for which we have labor force data broken down by craft. **Exhibit 16** shows the hourly training contribution by trade for the 2014 collectively bargained agreements in San Luis Obispo County applicable to the building of the California Valley 250 MW Solar Ranch (CVSR) in that county.

The apprenticeship contributions on this project ranged from 47 cents per hour of work for carpenters, millwrights, and piledrivers to 86 cents per hour for electricians. Column c in **Exhibit 16** shows the approximate percent of all the work done on CVSR by each craft, based on the force curve¹² provided by SunPower for the project.^{x1} Total project hours were calculated by multiplying 2,080 hours (52 weeks x 40 hours per week) against the 680 FTE blue- and white-collar workers projected by SunPower to build this 250 MW facility. Column D multiplies total hours by each craft's share of these total hours; this result is then multiplied by each craft's hourly apprenticeship contribution. Thus, column D shows an estimate of the apprenticeship training investment resulting from the building of the California Valley Solar Ranch. Column E multiplies these training investment sums by 17 to scale up apprenticeship training investment from a 250 MW facility to the roughly 4,250 MW of solar generating capacity that has been put in place over the last five years or that is under construction currently.¹³ Basically, we estimate that the renewable-energy utility-scale generation capacity put in place in California over the last five years has also led to an additional \$17.5 million investment in apprenticeship and other training for young workers entering the construction industry.^{xii}

Exhibit 16

Investment in Worker Training by Craft from the Construction of California Valley Solar Farm 250 MW Project and Scaled Up to 4,250 MW of Solar Generating Capacity^{xlii}

A Occupation	B Training Contribution per Hour	C Share of Total Hours	D Training Investment from a 250 MW Project = Total Hours for a 250 MW Project * Share * Training Contribution	E Total Investment in Training from 4,250 MW of PV Solar Work = 250 MW Investment * 17
Carpenters, Millwrights & Piledrivers	\$0.47	15%	\$99,715	\$1,695,158
Operating Engineers	\$0.80	10%	\$113,152	\$1,923,584
Ironworkers	\$0.72	15%	\$152,755	\$2,596,838
Laborers	\$0.64	20%	\$181,043	\$3,077,734
Electricians	\$0.86	40%	\$486,554	\$8,271,411
Total		100%	\$1,033,219	\$17,564,726

¹² A force curve shows the growth and decline of employment by craft over the lifetime of a construction project.

¹³ (4,250 MW)/(250 mw)=17

Apprentices on Solar Work in the Imperial Valley

From the 4,250 MW of new solar generating capacity put in place or under construction over the last five years, about \$8.3 million was invested in the training of electrical apprentices and pre-apprentices, and about \$2.5 went to the training of ironworker apprentices and pre-apprentices. Here we describe these two apprenticeship programs and present four brief stories of current apprentices who got their start on solar farms in the Imperial Valley.

Electrical Apprenticeship

In San Diego and Imperial Counties, every union electrical contractor puts in 89 cents into apprenticeship training for every hour worked by every electrician on every job in those two counties.^{xliii} With part of these funds, in August of 2009, at the bottom of the Great Recession, the National Electrical Contractors Association (NECA) and the International Brotherhood of Electrical Workers (IBEW) Local 569 opened an apprenticeship training facility in Imperial County, at a time when the county had lost 60% of its construction jobs.^{xliiv} This doubling down on the future of Imperial County at the worst of times reflected not only the prospects for solar resource development in the county, and state and federal policies promoting solar power, but also NECA's and the IBEW's long-term commitment to the construction industry and the development of a skilled electrician labor force.



IBEW TRAINING CENTER, EL CENTRO.
PHOTO BY MICAH MITROSKY

The IBEW-NECA electricians' apprenticeship program lasts five years and involves 1,020 hours of classroom training and 8,000 hours of on-the-job training. IBEW-NECA describe this program as follows:

During the first three years of apprenticeship, [electrician] apprentices go through [a] compressed and vigorous curriculum two nights a week—one night for lecture and one night for hands-on applications of their skills. Apprentices are required to pass various competency assessments to successfully complete their classes. In the last two years of apprenticeship, apprentices have the choice of selecting a “career path” or specialty field. Each career path is comprised of several continuing education and skill improvement classes. Typical “career path” classes consists of the following: AutoCAD, Advanced Motor Controls, Low Voltage, Electrical Certification Prep, Electronics (Analog and Digital), Fire Alarm Systems, Instructional Leadership, Service Equipment, Test Equipment, Photovoltaics, Job/Project Management, Programmable Logic Controllers.^{xliv}

By setting up a training facility in El Centro, NECA-IBEW made it possible for locals to get to and through their rigorous class schedule while working in the Central Valley. In short, the union and their contractors brought training to the valley in the hope and anticipation that work would come back from the depths of the Great Recession.

Ironworker Apprenticeship

Since the end of World War II, the Southern California Ironworkers Union and signatory contractors have also been betting smartly on the Southern California economy. The multiemployer–union SoCal Ironworkers Fund has overseen training for Southern California ironworkers since 1946. In 2013, about 300 union contractors employing about 9,000 journeyworker and 700 apprentice ironworkers put in 72 cents to the fund for every hour worked by every ironworker in Southern California.^{xlvi} The fund operates a 29,600-square foot training center in La Palma, servicing most of Southern California, but also operates a smaller training facility in San Diego for San Diego County and Imperial County pre-apprentices and apprentices. In San Diego, first-year apprentices

start out at \$16.75 per hour, half the journeyworker wage. Over the four years of their apprenticeship, their wages rise to 90 percent of the journeyworker wage of \$33.50 per hour. Apprentices also receive health and pension benefits, and in addition \$3.92 for every hour they work is put into a vacation fund to help them take time off or handle the periodic unemployment that is inevitable in construction.^{xlvii} In 2012, the Fund graduated 222 ironworker apprentices, most of whom started their training during the bottom of the Great Recession three or four years earlier.^{xlviii} In ironwork:

Apprentices are required to receive at least 204 hours of classroom and shop instruction during every year of training. The subjects taken in the shop and classroom complement the hands-on training received in the field. The subjects include blueprint reading, care and safe use of tools, mathematics, safety issues, welding and oxy-acetylene flame cutting.^{xlix}



PRE-APPRENTICESHIP WOMEN'S GLADIATOR
GRADUATING CLASS 2014, BENECIA, CA
PHOTO: UNIVERSITY OF IRON
[HTTP://WWW.UNIVERSITYOFIRON.ORG/](http://www.universityofiron.org/)

Apprentices are required to demonstrate:

- Complete cooperation and willingness to learn
- Regular school attendance
- Dependability on the job
- The ability to work as part of a team
- The development of safe work habits
- Perform a day's work for a day's pay
- Be drug and alcohol free¹

These solid work habits instilled in the ironworkers apprenticeship program are typical of all registered union apprenticeship programs including the IBEW-NECA program described above. The result of instilling a solid work ethic, conveying broad and deep career skills, and developing safe work habits raises the productivity of California construction labor force, and is transformative for the workers themselves as well.^{li}

Impact of a Union Construction Apprenticeship on Workers' Lives

Thus far, Imperial County has had more solar farm construction than any other county in California. The Over a worklife, the value to a young Imperial County worker of obtaining five years of on-the-job supervised electrical training and employer–union paid-for classroom training is enormous. Because of the skills developed through extensive formal apprenticeship training, apprentices who turn out as union electricians earn substantially more than they would absent that training.

The current hourly wage rate in Imperial County for union electricians is \$39.25, which at 2,000 yearly work hours amounts to an annual individual income of \$78,500. In addition, union journeyworkers currently receive \$6.63 per hour in health insurance contributions and \$4.35 in pension contributions.^{lii} Again at 2,000 work hours per year, this adds up to about \$13,000 in health insurance coverage and \$8,700 in pension investment. With a median *family* income in Imperial County of \$41,255,^{lii-vi} this *individual* income of \$78,500 plus benefits amounts to a substantial annual economic gain compared to a worklife without the upfront human capital investment in apprenticeship classroom training plus five years of supervised on-the-job training.

In rough terms, in Imperial County the annual average difference between the skilled worklife of an electrician and an individual without this human capital investment amounts to about \$37,245 per year (\$78,500 minus \$41,255), *plus* additional pension and health benefits.¹⁴ Assuming that an apprentice becomes a skilled journey-worker electrician at age 25 and works for 40 years until age 65, and using an inflation-adjusted real discount rate of 2%, the net present value in today's dollars of that additional income is just over \$1 million for each new electrician's worklife.¹⁵ This does not include the top notch health insurance and pension benefits the apprenticed electrician receives.

With an hourly pension contribution of \$4.35, a newly trained electrician working 2,000 hours a year would receive \$8,700 in pension contributions. Assuming a 40-year worklife and a conservative 2% return, this annual contribution of \$8,700 would yield a pension nest egg of about \$525,000. Having a half-million dollars in a retirement nest egg at age 65 is substantial. In 2010, the median net worth of the family of a 65-year old, married head of household was \$300,000.^{liv, 16}

A similar story can be told for the other trades on solar projects in Imperial County. For instance, after they turn out from their apprentices, ironworkers earn \$33.50 per hour with \$8.87 going into health insurance and \$12.32 going into pension. As the reader will see in the stories below, the skills acquired in construction over four and five years of schooling and on-the-job training confer wages and benefits that are life changing.^{lv}

The apprenticeship training and human capital investment dimensions of the renewable energy construction boom that has taken place in California is a gift that keeps on giving to multiple recipients: the workers themselves, the employers that will need their skills, and the business community that will find business opportunities in serving them.

One direct beneficiary of this investment is the energy-efficiency side of the emerging green economy. Despite the Great Recession, enlightened government policy has stimulated the harvesting of California's solar, wind, and geothermal energy-generation resources. This renewable energy electricity generation is developing alongside the development of better ways of baking into newly built structures greater energy efficiency and conservation. Because apprenticeship training financed in power plant construction is broad-based craft training, this human capital investment will also train much of the skilled labor force needed to build more energy efficient structures across the entire spectrum of California construction.

In addition, these newly skilled workers, rather than posing a potential burden on public services as low-wage, unskilled labor, instead become mainstays of the local health delivery system and other local public services due to their health insurance contributions and tax contributions to the local economy. Building solar capacity thus also builds the healthcare delivery system through private health care insurance contributions. It also builds the local tax base to the tune of roughly \$1 million more in taxable income per newly trained worker over the 40-year period of their worklives.

¹⁴ In some ways this is a conservative estimate because we are comparing the *individual* income of a newly trained electrician in Imperial County against the average *family* income in the county. But in other ways, this estimate may not be conservative. We are assuming 2,000 hours of work for this electrician, and while it may be more hours in a construction boom it could be considerably less in a recession. Also, in other California counties, average family income is often higher than in Imperial County.

¹⁵ While $40 \text{ years} \times \$37,245 = \$1,489,800$, the present value of this future stream of income is less because the value of \$37,245 40 years from now is less than the value of \$37,245 today. Discounting for the time value of money at 2% per year yields a present value of this future stream of income = \$1,019,128.

¹⁶ Construction joint labor-management pension contributions typically go partially into defined contribution and partially into defined benefit programs. So workers get some guaranteed retirement income through their defined benefit pension and some retirement income will fluctuate associated with their defined contribution program. The estimated \$525,000 in contributions is spread between these two types of programs. The comparison of this "nest egg" with family net worth is only an approximate measure of the relative importance of a full worklife participation in these multiemployer-union pension programs.

Apprentice Success Stories

Evangeline McDonald Lives in Holtville, CA Electrician Apprentice

Imperial County has been a center of solar farm construction in California, and electricians have been a big part of that work. In 2009, at the bottom of the Great Recession, the International Brotherhood of Electrical Workers Local 569 (IBEW) and the local chapter of the National Association of Electrical Contractors (NECA) opened a new training facility in Imperial County. There were no new IBEW 569 apprentices in Imperial at that time. By 2011, eleven new apprentices enrolled with the IBEW 569-NECA apprenticeship program serving Imperial County. Twenty enrolled in 2012 and 47 more enrolled in 2013. Evangeline McDonald is one of these apprentices, now in her fourth year.



PHOTO BY MICAH MITROSKY

Evangeline grew up on a reservation in New Mexico. After graduating high school, she joined the Navy and became an aviation electrician. Evangeline served in the Navy for five years and also earned a B.A. in psychology. Her husband was in the Navy as well and was stationed at the Naval Air Station in El Centro. When they moved to Imperial County, Evangeline was a stay-at-home mom but she decided to go back to work to help support the family.

Evangeline spoke with the Veterans Assistance service providers at the local Employment Development Department in Imperial County, who referred her to a representative from IBEW 569. Evangeline attended a presentation and was particularly attracted to the health insurance benefits although, she admits, she initially wasn't sure what she was getting into. Green energy wasn't really on her radar screen, and when she thought of the IBEW she pictured power plants and commercial work. That impression changed when she arrived on her first job site, the SunPeak solar project in Niland. Evangeline remembers thinking at that time, "Wow, renewable energy is going to be big. It is the future."

Since then, Evangeline has also worked building the Pattern Energy wind project in Ocotillo, the Desert Center project in Riverside, and LS Power's Centinela solar project in Imperial County.

Because of her new career in the IBEW, Evangeline and her husband were able to buy a home in Holtville a couple of years ago. She thinks Imperial is a great place to stay and will be a great place for her kids to grow up. She is proud of her career and feels her kids can look up to her and think, "Wow, my mom is an electrician."

Evangeline says that taking on a craft career has shown her kids the value of education, particularly math which is a bigger part of her electrical work than kids would think.

Despite her busy schedule, she tries to stay as active as possible in her community of Holtville. Her daughter just entered the Junior Princess Carrot Festival contest and is also in Girl Scouts. Evangeline was recently able to refer a friend's husband to the IBEW. He was accepted and is now working. Evangeline said it feels good to be able to have helped someone change their life.

Evangeline hopes to someday work at a geothermal or other power plant. One of the things she likes best about her new career in the IBEW is the pride she takes in her work. "When I see the finished project, I think, 'Wow, I did that. I was part of that team.' I love what I do."

Alfonso Carmona-Jimenez Lives in Calexico area Electrician Apprentice



PHOTO BY MICAH MITROSKY

Alfonso Carmona-Jimenez grew up in Mexicali, Mexico, and moved to Las Vegas when he was 19. He worked a variety of jobs: driving a cab, doing deliveries, managing a flower shop, and installing fences for a fence company. It was not until he joined IBEW Local 357 in Las Vegas as a Maintenance Wireman, a sub-journeyman classification, working at one of the casinos, that he found a true career. He eventually became the shop steward there. A few years ago he moved his family to Calexico to be close to his sick mother, and at that time he was referred to IBEW Local 569. He joined the local as a pre-apprentice trainee about three years ago and eventually, because of all of the renewable energy work, was accepted into the IBEW 569-NECA five-year apprenticeship program.

Alfonso really enjoys the apprenticeship program and is learning a lot more about the trade as he works towards becoming an IBEW Journeyman Wireman.

Since becoming an IBEW 569 member, Alfonso has primarily worked on renewable energy projects: the Sunora NRG solar project in Borrego Springs, a water treatment facility in Heber, the 8minutenergy Mount Signal solar project, the Pattern Energy Ocotillo Express wind project, and the Sol Orchard Community Solar project on San Diego State University's Brawley campus. Rotating across jobs and among signatory union contractors has allowed Alfonso to learn the full range of skills required on solar and wind projects.

Alfonso has also been called out on other types of projects and is becoming a skilled and well-rounded electrician. Favorite projects of his include a water treatment plant because of the control work; the wind farm, he says, "blew his mind." It took him about a week to get used to scaling up and down the towers which are hundreds of feet tall.

The things Alfonso likes best about his career in the IBEW are the camaraderie, friendship, and brotherhood, the benefits and security for his family, the challenges of the work, and the quality of life his work affords him. He notes the IBEW has "so many things to offer" and says that once he found the IBEW, "I found my path and my path was working union."

Alfonso has been a very active member of the local, for example, joining other IBEW 569 members on a Saturday volunteering time and skills to help beautify and repair the Ward Swarthout Park in El Centro. Alfonso hopes to work towards becoming a foreman someday and feels the "sky is the limit" in terms of his career opportunities.

According to Alfonso, renewable energy projects in Imperial County have helped sustain his career and support his family over the past few years. The projects are making an impact on people's lives, creating a growing economy in a place where there hasn't really been one. He is happy to see people paying their bills and starting to get ahead. "So many people didn't have work for so long, and can now pay their mortgage two and three months ahead."

Alfonso is excited for what's next in green technology and looks forward to continuing his apprenticeship training. He especially likes the fact that green energy projects are helping the environment and future generations. "That's what it's all about."

Maria Gradilla Lives in Brawley, CA Ironworker Apprentice

Maria joined Ironworkers Local 229 in November 2013 as a pre-apprentice. Before joining the Ironworkers, Maria was working in a warehouse doing packaging for pharmaceutical supplies. She had dreamed about working in construction and when the ironworkers union started recruiting local people for the Solar Gen 2 project, a 150-MW First Solar project in Imperial County, she decided to seize the opportunity.

After being accepted into the pre-apprenticeship, she proved herself and her dedication to the trade, and was subsequently accepted into the Ironworker apprenticeship program. She is now on track to becoming a journeyman after she completes her four years of apprenticeship training.

With two children—a 12-year old boy and a 10-year old girl—Maria really values being able to help support her family and especially the good-quality medical insurance she is getting as a union member. She says that, though a lot of people in Imperial County rely on social services, people who are working in minimum wage jobs often do not qualify for state medical aid but do not make enough money to be able to afford quality healthcare.

Maria really enjoyed the work she did on the Solar Gen 2 project, the fact that it is eco-friendly, and especially that she was working close to home and family. After the project was completed she was rotated out to work on a hospital project in San Diego, where she is now getting new exposure to different skills within the ironworker trade. She sees her career as “having no limits” and is especially interested in welding, which requires numerous certifications.

Maria notes that there is a lot of poverty in Imperial Valley and it is a little bit of a “forgotten area.” These union jobs with the skills they confer allow people to earn twice what they would earn working in the harvest fields or doing other types of work. In her view, her Ironworker Union apprenticeship has also given both men and women an equal opportunity to make a good living and earn a good wage.



PHOTO BY JOHNNY SWANSON

Laura Lizarraga Lives in Calexico, CA Ironworker Apprentice

Laura joined Ironworkers Local 229 in November 2013. She started out in a pre-apprenticeship classification and has since been accepted into the four-year Ironworker apprentice program.

Before joining the Ironworkers, Laura was working at a gas station, after which she was out of work for two years. She learned about the Ironworkers program from a friend who had heard that the Ironworkers were recruiting local people for a project. Laura was very interested in the opportunity to grow, learn, earn more money, and advance.

During her initial eight weeks of training, Laura attended Saturday school, driving two hours one way to San Diego to train at the Ironworkers Hall. Now, she will be doing one week of classroom training every three months.

Laura's first job site was the Solar Gen 2 project in Imperial County, a 150-MW solar project. After this she was rotated onto a hospital job in San Diego where she was able to continue working and learning. On this project she was exposed to a different facet of the trade. She learned new skills and was also able to log a lot of valuable overtime hours.

One of the things Laura is enjoying most about the apprenticeship is the challenge of the work and advancing her skill set and her career. Laura is hoping to have an opportunity to work on another solar project in Imperial County that has recently broken ground and is just getting underway.

Laura's family in Imperial County has traditionally worked out in the farm fields and she noted, "I never thought in a million years I'd be working in this type of industry." Laura hopes to stay in construction, graduate as an ironworker journeyman, and support her family. She is thrilled to have this opportunity to offer her two-year old daughter a better future than what most families are facing in the Imperial Valley. This is a unique opportunity and she is working hard to make the most of it.

She notes that in the Imperial County there is a lot of poverty and unemployment. Good-paying jobs offering skill enhancement and career advancement are dearly needed. "These jobs create a lot of opportunity for a lot of people."



PHOTO BY JOHNNY SWANSON

Policy's Role in Creating Good Jobs and a Cleaner Environment

Section Summary

Policy and legislative action at both the federal and state levels has stimulated the boom in California's renewable energy electricity generation over the last five years, enabling California to become the national model in demonstrating how to generate new economic opportunity through aggressive climate change action. Key federal policies include the American Recovery and Reinvestment Act (ARRA) of 2009 and the Federal Business Energy Investment Tax Credit (ITC). California's policies include the Global Warming Solutions Act (AB 32), Senate Bill X1-2, and AB 327, which passed in 2013 and established the 33% Renewable Portfolio Standard (RPS) goal set forth in SB X1-2 as a floor to be achieved and not a ceiling to reach for. California's Environmental Quality Act has also played an important role in promoting California's renewable energy growth. Collectively, these policies helped marshal the needed investment capital, helped create the market certainty needed to turn financial capital into specific investment plans, and helped provide the business, worker, and public incentives that brought these players together.

The synergy between building green, utility-scale power plants and quality construction career development has also benefited from federal and state policies. Utility-scale solar projects that receive federal subsidies fall under the Davis-Bacon Act, which requires that prevailing wages and benefits be paid. Furthermore, California is not a right-to-work state and as a result prevailing wages in construction tend to be the collectively bargained rate that includes good wages with decent benefits and contributions to apprenticeship training.

On some federally-subsidized solar projects in western right-to-work states, nonunion rates prevail. In these cases, workers are often obtained from temporary labor agencies; they earn low wages with limited benefits and they have little access to training or career advancement. In California, by contrast, strong unions and strong prevailing wage laws combine to create green construction projects that also build the skills of the local construction labor force and improve the career opportunities of many new entrants into the industry.

Federal Policies and Legislation Supporting Renewable Energy Growth

The election of President Barack Obama in 2008 ushered in a new era for renewable energy that was unprecedented in our country's history. Shortly after taking office, President Obama spearheaded and signed the American Recovery and Reinvestment Act (ARRA) of 2009 which contained "more than \$31 billion to support a wide range of clean energy projects across the nation" according to the Department of Energy.^{lvii} Funds were disbursed through grants, loans, tax assistance, and contracts supporting a wide variety of clean energy activities.^{lviii} Besides providing direct financial support, ARRA also sent a clear message from the highest office in the nation that renewable energy was a priority for the new Administration.

Perhaps most importantly, ARRA monies provided business certainty for "first movers" at a doubly uncertain time. New technologies are inherently risky. The first businesses to move into a new industry face risk levels that followers do not. The bottom of the Great Recession made the risks faced by companies moving into utility-scale solar electricity generation exponentially more daunting. Through the ARRA loan guarantees to selected PV and solar thermal projects during the depths of the Great Recession, a take-off in guaranteed solar projects, and subsequently solar projects without loan guarantees, occurred. Had it been left alone, the market would have done little in the face of first-mover uncertainty and severe business cycle risks.

All three California solar thermal projects listed in **Exhibit 13**—Ivanpah, Genesis, and Mojave—received loan guarantees that together amounted to about \$3.7 billion. Three of the California PV projects also received loan

guarantees—California Valley Solar Ranch, Antelope Valley, and Desert Sunlight—that amounted to about \$3.5 billion.^{lix} Under current technologies, solar thermal is more risky than PV. As *MIT Technology Review* pointed out in 2011:

Solar panels are established technology—banks have a pretty good idea how long they'll last and what the return on investment will be [making it easier to get private financing.] Much of the solar thermal technology being deployed now hasn't been tested on a large scale for long periods of time, which can make financing harder.... But solar thermal stands a chance, especially in light of a series of DOE loan guarantees announced in recent weeks....^{lx}

It may be that in the end solar thermal (also called concentrating solar power, or CSP) is an unworkable technology. But should it succeed, the value of utility-scale solar thermal is that it provides greater diversification in the portfolio of green energy generation by its ability to store heat past daylight hours. Solar thermal when combined with heat storage allows for solar energy generation to be dispatchable—that is, provided upon demand. Thus, solar thermal is one way of backing up photovoltaic solar electricity generation.

2014 has been a milestone year for utility-scale solar thermal power. The DOE reports:

Through sustained, long-term investments by the United States Department of Energy (DOE) and committed industry partners, some of the most innovative CSP plants in the world connected to the United States electricity grid in 2013, and five plants of this kind are expected to be fully operational by the end of 2014. One of them is the largest CSP plant in the world; another represents a first-of-its-kind in energy storage technology at commercial scale in the United States. Collectively, these five CSP plants will nearly quadruple the preexisting capacity in the United States, creating a true CSP renaissance in America.^{lxi}

The DOE has supported solar energy not only through loan guarantees for first movers but also through a research and development program called SunShot Initiative, begun in 2011 with the goal of developing solar technologies to become fully market competitive with traditional energy generation by 2020.

The SunShot Initiative's investments support innovation in solar energy technologies that are aimed at improving efficiency and reducing the cost of materials, as well as making it easier, faster, and cheaper for homeowners, businesses, and state, local, and tribal governments to “go solar.”^{lxii}

Thus two key DOE supports for the development of solar energy are loans for selected projects to reduce first-mover risks and basic research-and-development to reduce the costs of these new technologies. What these policies actually do is release an untapped energy resource—the abundant photovoltaic and solar thermal energy reserves of a sun-rich America.

In addition to loan guarantees from the ARRA for first movers facing adverse business cycle conditions and DOE-led research and development, the Federal Business Energy Investment Tax Credit (ITC) has helped and continues to help offset the startup costs of this emerging industry at a critical time: when technology is reaching economies of scale and prices are beginning to fall. Originally created in 2005, the ITC applies to residential as well as commercial and utility-scale solar systems; it provides a 30% tax credit.^{lxiii} The ITC was renewed in 2008 for an additional eight years. Under current law, after 2016, the 30% credit will fall to 10%.

The ITC is one of the most important federal policies in promoting clean energy generation at both rooftop and utility scales. As a stable, multiyear incentive, the ITC provides the business certainty needed to reduce risk and promote capital investment on utility-scale solar projects.

The ITC has been recognized by solar industry leaders as the “cornerstone”^{lxiv} policy enabling a rapid acceleration of renewable energy development. For example, in referencing a recent project announcement in June of

this year, a leading solar industry developer noted, “it was one of a number of projects 8minutenergy planned to get online before expiration of the United States’ solar Investment Tax Credit (ITC) in December 2016.”^{lxv}

The federal policies and legislation promoting green energy generation including solar energy follow a long American history of government directly and indirectly supporting the development of the foundational infrastructure that underlies private economic development and community prosperity. From the Erie Canal to the transcontinental railroad to the Hoover Dam to the interstate highway system to the Internet, government has provided some of the underlying research and development, direct capital investment, and private incentives to allow these risky endeavors to proceed and in their development make other market investments and innovations attractive and profitable. Energy and the environment are as much part of the American infrastructure today as canals and roads have been in the past. Federal legislation and policies providing loan guarantees for first movers who invest in new energy technologies, as well as basic research and development in these emerging technologies and investment tax credits boosting takeoff of the green energy industry, have all been pivotal in setting the stage for future American economic development, job and career growth, and a healthy environment.

State Policies Supporting Renewable Energy Growth

In 2006, California passed The Global Warming Solutions Act (AB 32). At the time, this legislation was groundbreaking in its scope, vision, and goal of reducing greenhouse gas emissions in California to 1990 levels by 2020. AB 32 created a legal foundation for the state to enact future policies targeting greenhouse gas reductions in broad sectors of the economy, especially those most responsible for greenhouse gas emissions such as transportation and energy.

Arguably one of the most effective policy drivers influencing the rapid growth of utility-scale renewable energy projects in California is the state’s Renewable Portfolio Standard (RPS). In 2011, Governor Jerry Brown signed Senate Bill X1-2, expanding the RPS to require 33% of electricity retail sales to be from renewable resources by 2020.^{lxvi} Even today, California’s RPS is viewed as one of the most aggressive and effective in the country, and is only expected to expand as the 2013 passage of AB 327 established the 33% goal as a floor and not a ceiling.^{lxvii} Since the passage of the 33% RPS, renewable energy growth in California has dramatically accelerated.

Policies and Practices that Tie Green Energy to Career Development

Prevailing Wages and Right-to-Work Regulations

Jobs building utility-scale solar electricity generating facilities are not inevitably good jobs paying decent wages and benefits and providing career training within construction. Under some labor market conditions, many solar farm jobs can be bad jobs paying low wages, with limited benefits or none at all, working for temporary labor agencies with no prospect for training, job rotation, or career development. In California, this low-road approach to utility-scale solar construction is uncommon for several reasons. First, when any federal funds are involved, the project is governed by federal prevailing wage regulations mandating that, for each occupation on the project, the wage in the local area that prevails for that occupation, based on Davis-Bacon surveys, must be paid. All states are covered by the federal Davis-Bacon Act, but in some states, such as Arizona, for some construction crafts, nonunion rates prevail in many counties, meaning that prevailing wage jobs can be paid low wages with limited benefits. In California, union strength has meant that in most cases on prevailing wage solar projects, workers will get paid good wages with good benefits. State right-to-work laws play a role in determining union strength. By undercutting union strength, Arizona’s right-to-work law plays a role in determining the low-road practices found on some solar farm construction in that state. In contrast, California’s resistance to right-to-work regulations reinforces federal Davis-Bacon wage mandates, thereby helping lead California’s solar farm work along a high-road approach to construction.

Project Labor Agreements

Many solar farm projects are not subject to prevailing wage regulations. In the absence of prevailing wages, project labor agreements (PLAs) have often played a role in solar farm construction. PLAs are multi-craft, pre-hire labor agreements negotiated between building and construction trades unions as a group, on one hand, and owners, developers, construction managers, and/or general contractors on the other. PLAs govern labor relations and terms and conditions of employment on an entire construction project. They have been used on both private and public projects in California since at least the 1930s.^{lxviii} These include industrial facilities, large commercial projects, large residential projects, public buildings, schools, dams, highways, and other forms of infrastructure.

From the perspective of the owner, project labor agreements are a construction management tool. They can standardize work rules and other conditions on a construction project (e.g., shift schedules, holidays, break times, travel pay, drug testing), thus eliminating the potentially conflicting practices of different contractors and potentially conflicting terms of different craft-specific collective bargaining agreements. PLAs also almost universally provide a no-strike/no-lockout guarantee for the life of the project. Instead of strikes or lockouts, PLAs put in place grievance procedures to settle all disputes. PLA agreements may also provide for local hire, and pre-apprenticeship and apprenticeship opportunities for local or disadvantaged workers. PLAs can lead to union support for bonding, permitting, or financing of projects. Unions agree to these concessions and sweeteners in exchange for a PLA that will cover the specific work at issue.

In California on utility-scale solar construction, PLAs have played a very important role in insuring that some of the money going into building these facilities goes towards apprenticeship training, some goes to paying for health care, and some goes into retirement benefits. This is the tie-in between green construction and construction career development. When solar farms are built without these provisions, the training of the next generation of skilled construction workers does not take place, the retention of this generation of experienced construction workers is undercut by the absence of family-friendly benefits, and the paying for the retirement of the last generation of skilled construction workers gets jettisoned. PLAs and prevailing wage regulations are mechanisms that create a synergy between construction careers and green energy.

Conclusions, Policy Recommendations, and Next Steps

As California demonstrates, complementary policy action at the state and federal levels is a critical factor in driving swift, successful, renewable, clean-energy growth that in turn benefits both the economy and the environment by creating good jobs and new careers while reducing greenhouse gas emissions.

This is exemplified in the comments of one industry source in describing a package of renewable projects in Kern County, California, in 2012 as being:

.... the direct result of California's renewable energy mandate, as well as the federal production tax credit and the investment tax credit. The PTC [federal Renewable Energy Production Tax Credit] for wind, and more recently the ITC for solar, assist renewable resources in leveling the playing field against fossil fuels, which have decades of government incentives behind them.^{lxix}

As this study has demonstrated, the old myth that we must choose between good jobs and a clean environment proves itself to be a false choice. In 21st Century California, sound environmental policy is building middle-class jobs, and economic policy that creates these green skilled career opportunities is good environmental policy.

To keep this positive momentum going, however, will require ongoing state and federal leadership. Four key policy actions that should be taken in the near-term to continue building on California's leadership in creating high-quality jobs while decarbonizing the energy sector are:

- **Renewing the Federal Business Energy Investment Tax Credit so it remains at 30% after December 2016.**
- **Expanding California's statewide renewable energy mandate beyond 33%.**
- **Protecting AB 32 from implementation delays or weakening.**
- **Supporting policies that promote collective bargaining and the use of joint labor-management apprenticeship programs on energy projects during construction, operations, and maintenance.**

Beyond 33%: Diverse Energy Portfolio—A Win-Win for Workers and the Environment

For the many reasons discussed in this report, utility-scale solar thermal and particularly photovoltaic solar energy generation in California have experienced unprecedented growth while playing key roles in creating good, middle-class jobs. This solar energy expansion has helped the state meet the goals of reducing greenhouse gas (GHG) emissions and achieving the 33% targets outlined in California's Renewable Portfolio Standard.

The statewide conversation regarding renewable, emission-free electricity generation, however, has now shifted to "beyond 33%." Issued in September 2013, the Governor's draft Environmental Goals and Policy Report entitled "California @ 50 Million" states that California is "committed to reduce economy-wide GHG emissions 80% below 1990 levels by the middle of this century."^{xxx} The report goes on to highlight decarbonizing the state's energy systems through the growth of non-GHG energy sources as a key action to achieving this 2050 target.

Certainly solar power will continue to play a key role as a non-GHG energy source in California's energy future. However, to truly meet the challenges of 2050 will require a diverse mix of non-GHG energy sources such as geothermal and wind that tap a variety of renewable resources and technologies to create a balanced, non-GHG energy portfolio.

The scope of this report has focused on the environmental and economic benefits of the solar boom in California over the past five years. However the "high road" career lessons learned from the California utility-scale solar industry can, and should, be applied to the growth of other non-GHG energy industry sectors including wind, geothermal, and emerging technologies such as ocean waves/tides and others. The current growth in a new generation of apprenticeship-trained craft labor in construction will provide the first wave of new, highly skilled labor to assume the task of building the next generation of green technologies. In turn, if the next generation of green technologies is built with high-road construction practices, the synergy of green construction will continue to be a gift that keeps on giving. This will enable California to sustain skilled, middle-class careers in the construction industry across multiple trade sectors while tackling climate change, a model that is truly economically and environmentally sustainable.

Endnotes

- ⁱ For a description of this panel see: Wikipedia, Intergovernmental Panel on Climate Change, http://en.wikipedia.org/wiki/Intergovernmental_Panel_on_Climate_Change
- ⁱⁱ U.N., IPCC Fifth Assessment Synthesis Report, CLIMATE CHANGE 2014, SYNTHESIS REPORT, November 1, 2014, p. 40, http://www.ipcc.ch/pdf/assessment-report/ar5/syr/SYR_AR5_SPM.pdf
- ⁱⁱⁱ Joby Warrick and Chris Mooney, “Effects of climate change ‘irreversible,’ U.N. panel warns in report,” Washington Post, November 2, 2014, http://www.washingtonpost.com/national/health-science/effects-of-climate-change-irreversible-un-panel-warns-in-report/2014/11/01/2d49aeec-6142-11e4-8b9e-2ccdac31a031_story.html
- ^{iv} Justin Gillis, “U.N. Panel Issues Its Starkest Warning Yet on Global Warming,” New York Times, November 2, 2014, http://www.nytimes.com/2014/11/03/world/europe/global-warming-un-intergovernmental-panel-on-climate-change.html?_r=0
- ^v Solar Energy Industries Association (SEIA), “Solar Market Insight Report,” <http://www.seia.org/research-resources/solar-market-insight-report-2014-q2>
- ^{vi} US Energy Information Administration, “Natural gas, solar, and wind lead power plant capacity additions in first-half 2014,” September 9, 2014, <http://www.eia.gov/todayinenergy/detail.cfm?id=17891>. Note: Underlying source: U.S. Energy Information Administration, Electric Power Monthly, August 2014 edition with June 2014 data. Data include facilities with a net summer capacity of 1 MW and above only.
- ^{vii} SEIA, “Photovoltaic Solar Electric,” <http://www.seia.org/policy/solar-technology/photovoltaic-solar-electric>
- ^{viii} National Renewable Energy Laboratory (NREL), “Dynamic Maps, Solar maps,” <http://www.nrel.gov/gis/solar.html> and http://www.nrel.gov/gis/images/map_pv_national_hi-res_200.jpg
- ^{ix} Solar Energy Industries Association (SEIA), “Cutting Carbon Emissions Under 111(d): The case for expanding solar energy in America,” <http://www.seia.org/research-resources/cutting-carbon-emissions-under-111d-case-expanding-solar-energy-america>
- ^x Solar Energy Industries Association (SEIA), “Solar Market Insight Report,” <http://www.seia.org/research-resources/solar-market-insight-report-2014-q2>
- ^{xi} SEIA, “Concentrating Solar Power,” <http://www.seia.org/policy/solar-technology/concentrating-solar-power>
- ^{xii} National Renewable Energy Laboratory (NREL), “Dynamic Maps, Solar maps,” <http://www.nrel.gov/gis/solar.html> and http://www.nrel.gov/gis/images/map_csp_national_hi-res.jpg
- ^{xiii} Wikipedia, “List of Solar Thermal Power Stations,” http://en.wikipedia.org/wiki/List_of_solar_thermal_power_stations
- ^{xiv} California, Energy Almanac, “Total Electricity System Power, 2013 and Previous Total System Power (2002-2006 called Gross System Power),” http://energyalmanac.ca.gov/electricity/total_system_power.html
- ^{xv} California, Energy Almanac, “Total Electricity System Power, 2013 and Previous Total System Power (2002-2006 called Gross System Power),” http://energyalmanac.ca.gov/electricity/total_system_power.html
- ^{xvi} California, Energy Almanac, “Total Electricity System Power, 2013 and Previous Total System Power (2002-2006 called Gross System Power),” http://energyalmanac.ca.gov/electricity/total_system_power.html
- ^{xvii} <http://californiasolarstatistics.ca.gov/>
- ^{xviii} National Renewable Energy Laboratory (NREL), “The Western Wind and Solar Integration, Phase II,” <http://www.nrel.gov/docs/fy13osti/57874.pdf>
- ^{ixx} Special Report of the Intergovernmental Panel on Climate Change, “Renewable Energy Sources and Climate Change Mitigation,” Cambridge University Press, 2012, Figure SPM.8, p. 19, http://srren.ipcc-wg3.de/report/IPCC_SRREN_Full_Report.pdf
- ^{xx} National Renewable Energy Laboratory (NREL), “The Western Wind and Solar Integration, Phase II,” <http://www.nrel.gov/docs/fy13osti/57874.pdf> and “Transmission Grid Integration,” http://www.nrel.gov/electricity/transmission/western_wind.html
- ^{xxi} J. King, S.A. Lefton, N. Kumar, and D. Agan, G. Jordan and S. Venkataraman, The Western Wind and Solar Integration Study Phase 2, Technical Report, NREL/TP-5500-55588, September 2013, p. xii <http://www.nrel.gov/docs/fy13osti/55588.pdf>
- ^{xxii} National Renewable Energy Laboratory (NREL), “The Western Wind and Solar Integration, Phase II,” <http://www.nrel.gov/docs/fy13osti/57874.pdf>

^{xxiii} California Energy Almanac, “2013 Total System Power in Gigawatt Hours,” http://energyalmanac.ca.gov/electricity/total_system_power.html

^{xxiv} Wikipedia, “Intermountain Power Plant,” http://en.wikipedia.org/wiki/Intermountain_Power_Plant

^{xxv} This allocates 75% in the total reduction in emissions to reductions associated with the 75% of the total generating capacity currently put in place that is utility-scale solar.

^{xxvi} Solar Energy Industries Association (SEIA), “Cutting Carbon Emissions Under 111(d): The case for expanding solar energy in America,” <http://www.seia.org/research-resources/cutting-carbon-emissions-under-111d-case-expanding-solar-energy-america> and <http://www.seia.org/sites/default/files/avert-regions.png>

^{xxvii} Reference for these projects in the order found in the table:

http://en.wikipedia.org/wiki/List_of_photovoltaic_power_stations
http://en.wikipedia.org/wiki/List_of_photovoltaic_power_stations
<http://www.nrg.com/renew/projects/solar/borrego/>
http://en.wikipedia.org/wiki/List_of_photovoltaic_power_stations
http://en.wikipedia.org/wiki/List_of_photovoltaic_power_stations
http://en.wikipedia.org/wiki/List_of_photovoltaic_power_stations
http://en.wikipedia.org/wiki/List_of_photovoltaic_power_stations
<http://finance.yahoo.com/news/edf-renewable-energy-sell-cid-160000585.html>
http://en.wikipedia.org/wiki/Blythe_Photovoltaic_Power_Plant
<http://www.nexteraenergy.com/news/contents/2014/042414.shtml>
http://en.wikipedia.org/wiki/Ivanpah_Solar_Power_Facility
http://article.wn.com/view/2012/10/30/K_Road_And_SunPower_Complete_25Megawatt_McHenry_Solar_Plant__0/
http://en.wikipedia.org/wiki/List_of_photovoltaic_power_stations
<http://recurrentenergy.com/projects/kansas-south/>
<http://recurrentenergy.com/projects/rio-grande/>
<http://recurrentenergy.com/portfolio/rosamond-one-and-two/>
<http://www.sddt.com/Green/article.cfm?Sourcecode=20140613tqa&t=Solar+facility+opens+in+Brawley#.VEbtDBar-rY>
<http://recurrentenergy.com/portfolio/smud/>
<http://www.thedesertreview.com/iid-board-tours-sol-orchard-solar-project/>
http://www.pv-tech.org/news/sunedison_completes_20mw_adobe_solar_sale
http://www.sunedison.com/wps/wcm/connect/96fd8da5-0bc3-4e34-bfdc-e2e445eaaca2/se_orion_flyer_final-web.pdf?MOD=AJPERES&CACHEID=96fd8da5-0bc3-4e34-bfdc-e2e445eaaca2
<http://recurrentenergy.com/projects/ta-high-desert/>
http://en.wikipedia.org/wiki/Imperial_Solar_Energy_Center_South
<http://www.quantapower.net/white-river-solar-project>
http://en.wikipedia.org/wiki/Mojave_Solar_Project
<http://file.lacounty.gov/bos/supdocs/87151.pdf>
<http://www.lucernevalleyleader.com/node/985>
http://en.wikipedia.org/wiki/List_of_photovoltaic_power_stations
<http://www.pioneerenergy.com/projects.html>
http://www.pgecorp.com/sustainability/Renewable_Portfolio_Standard_2013.pdf
<http://investor.firstsolar.com/releasedetail.cfm?ReleaseID=791600>
http://www.sunedison.com/wps/wcm/connect/660fdc8f-6c39-40a2-b3d1-d4f9464bbc0a/se_regul-web.pdf?MOD=AJPERES&CACHEID=660fdc8f-6c39-40a2-b3d1-d4f9464bbc0a
http://en.wikipedia.org/wiki/List_of_photovoltaic_power_stations

^{xxviii} Stephen F. Hamilton, Darin Smith and Tapa Banda, “Economic Impact to San Luis Obispo County of the California Valley Solar Ranch,” Appendix 14B, December, 2010 http://www.sloplanning.org/EIRs/CaliforniaValleySolarRanch/feir/apps/Ap14B_Economic_Impacts.pdf

^{xxix} Stephen F. Hamilton, Mark Berkman and Michelle Tran, Economic and Fiscal Impacts of the Topaz Solar Farm, March, 2011, <http://topaz.firstsolar.com/downloads/TopazEconomicStudy.pdf>

^{xxx} Aspen Group, "Socioeconomic and Fiscal Impacts of the California Valley Solar Ranch and Topaz Solar Farm Projects on San Luis Obispo County," Appendix 14A http://www.sloplanning.org/EIRs/CaliforniaValleySolarRanch/feir/apps/Ap14A_Fiscal_Impacts_Study.pdf both from County of San Luis Obispo, Department of Planning and Building, California Valley Solar Ranch Conditional Use Permit, and Twisselman Reclamation Plan and Conditional Use Permit, <http://www.sloplanning.org/EIRs/CaliforniaValleySolarRanch/index.htm>

^{xxxi} Mark Berkman and Wesley Ahlgren, "Economic and Fiscal Impacts of the Desert Sunlight Solar Farm," The Brattle Group, www.brattle.com, personal communication with Wesley Ahlgren, June 13, 2011, wes@cvep.com.

^{xxxii} Ibid.

^{xxxiii} For underlying data see Hamilton, Smith, and Banda, Part II, tables 1, 3 and 4. Rounding led the authors to sometimes present their assumption as 680 and sometimes 681 FTE construction jobs.

^{xxxiv} Hamilton, Smith, and Banda do touch on a related point of the possible synergies between Cal Poly San Luis Obispo and the development of new technologies associated with photovoltaic power. This too would be a long term advantage that could well outlast the life of the construction job, itself.

^{xxxv} They also did separate analyses of each project. For simplicity, in Exhibit 14, we present their combined results.

^{xxxvi} This include 25 FTE workers spending 20 months (or 42 FTE job-years) constructing tie-in transmission lines.

^{xxxvii} Stephen F. Hamilton, Darin Smith, and Tapa Banda, "Executive Summary," Economic Impact to San Luis Obispo County of the California Valley Solar Ranch, December, 2010 Part II, Table 1, p. 4 http://www.sloplanning.org/EIRs/CaliforniaValleySolarRanch/feir/apps/Ap14B_Economic_Impacts.pdf; Aspen Group, "Socioeconomic and Fiscal Impacts of the California Valley Solar Ranch and Topaz Solar Farm Projects on San Luis Obispo County," Appendix 14A p. Ap.14A-12 Tables 4-1 and 4-2 http://www.sloplanning.org/EIRs/CaliforniaValleySolarRanch/feir/apps/Ap14A_Fiscal_Impacts_Study.pdf; Stephen F. Hamilton, Mark Berkman, and Michelle Tran, Economic and Fiscal Impacts of the Topaz Solar Farm, March, 2011, Table 4.3 p. 11 <http://topaz.firstsolar.com/downloads/TopazEconomicStudy.pdf>; Mark Berkman and Wesley Ahlgren, "Economic and Fiscal Impacts of the Desert Sunlight Solar Farm," The Brattle Group, Tables 4.1 and 4.2 pp. 9-10, www.brattle.com, personal communication with Wesley Ahlgren, June 13, 2011, wes@cvep.com.

^{xxxviii} This estimate of the percent apprentices on solar projects in California comes from interviews with industry practitioners. Currently there are no precise data on the mix of journeymen, apprentices, and pre-apprentices on solar work. More research is required on this topic.

^{xxxix} CA Employment Development Department, Detailed Guide for Electricians in California, Green Electricians; <http://www.labormarketinfo.edd.ca.gov/OccGuides/Detail.aspx?Soccode=472111&Geography=0601000000> (accessed October 7, 2014)

^{xl} Table A-3, "Detailed Construction Wages California Valley Solar Ranch Economic Impact Analysis; EPS #20133," footnote 3, Stephen F. Hamilton, Darin Smith, and Tapa Banda, Economic Impact to San Luis Obispo County of the California Valley Solar Ranch, December, 2010. http://www.californiavalleysolarranch.com/pdfs/Economic_Impact_to_SLO_Final1.pdf

^{xli} There are two minor qualifications to this conclusion. First, on the two thermal solar plants, Ivanpah and Mojave, the craft mix would be different and the job-years per MW would also differ due to the technical differences between PV and thermal solar technologies. Apprenticeship training contributions would be somewhat different than the estimated \$17.5 million due to these differences. Second, two of the projects list in Exhibit 13, the SMUD and TA-High Desert projects, may have had nonunion contractors doing some of the work and not paying into apprenticeship training programs. To the extent that solar work is done nonunion by contractors that do not have apprenticeship programs, the funding of training from solar work would be less.

^{xlii} Sources: training contribution rates <http://www.dir.ca.gov/dlsr/pwd/index.htm>; total and share of hours on project http://www.californiavalleysolarranch.com/pdfs/Economic_Impact_to_SLO_Final1.pdf

^{xliii} <http://www.dir.ca.gov/OPRL/PWD/index.htm>

^{xliv} Bureau of Labor Statistics, Quarterly Census of Employment and Wages, <http://www.bls.gov/cew/> and "IBEW and NECA to Strengthen Imperial County Green Energy Economy with New Electrical Training Center," <http://www.ibew569.org/absolutenm/templates/ibewpressreleasedisplay.aspx?articleid=79&zzoneid=3>

^{xlv} National Electrical Contractors Association-International Brotherhood of Electrical Workers, San Diego and Imperial County, Inside Wireman Apprenticeship Program, <http://www.sdet.org/careerinsidewireman.asp>

^{xlvi} <http://www.dir.ca.gov/OPRL/PWD/index.htm>

^{xlvii} <http://www.universityofiron.org/trainingcenters/sandiegoca.html>

- ^{xlviii} California Field Ironworkers Apprenticeship Training and Journeyworker Retraining Fund of Southern California, January 25, 2013, <http://etp.ca.gov/packet/Ironworkers%20JATC%20130.pdf>
- ^{xlix} <http://www.ironworkers.org/training/about-training>
- ¹ <http://www.ironworkers.org/training/about-training>
- ^{li} See: Michael Hiltzik, "Ironworkers union gives skills to members, public safety to all," September 2, 2012 <http://www.universityofiron.org/events.html>
- ^{lii} <http://www.dir.ca.gov/OPRL/pwd/index.htm>
- ^{liii} US Census State and County Quickfacts <http://quickfacts.census.gov/qfd/states/06000.html>
- ^{liv} John J. Topoleski, "U.S. Household Savings for Retirement in 2010," Congressional Research Service, Figure 1, p. 5 <http://fas.org/sgp/crs/misc/R43057.pdf>
- ^{lv} <http://www.dir.ca.gov/OPRL/PWD/Determinations/Statewide/C-020-X-1.pdf>
- ^{lvi} IBEW and NECA to Strengthen Imperial County Green Energy Economy with New Electrical Training Center, August 21, 2009 <http://www.ibew569.org/absolutenm/templates/ibewpressreleasedisplay.aspx?articleid=79&zoneid=3>
- ^{lvii} <http://www.energy.gov/recovery-act>
- ^{lviii} <http://www.recovery.gov/arra/Transparency/fundingoverview/Pages/fundingbreakdown.aspx>
- ^{lix} Energy.gov, Loan Program Office, Projects, <http://energy.gov/lpo/projects>
- ^{lx} Kevin Bullis, "Solar Thermal Plants Losing out to Photovoltaics," MIT Technology Review, July 1, 2011, <http://www.technologyreview.com/view/424567/solar-thermal-plants-losing-out-to-photovoltaics/>
- ^{lxi} DOE, "The Year of Concentrating Solar Power," May 2014, p. 2 http://energy.gov/sites/prod/files/2014/05/f15/2014_csp_report.pdf
- ^{lxii} DOE, "The Year of Concentrating Solar Power," May 2014, p. 2 http://energy.gov/sites/prod/files/2014/05/f15/2014_csp_report.pdf
- ^{lxiii} <http://www.seia.org/research-resources/case-solar-investment-tax-credit-itc>
- ^{lxiv} <http://www.seia.org/policy/finance-tax/solar-investment-tax-credit>
- ^{lxv} http://m.pv-magazine.com/news/details/beitrag/8minutenergy-renewables--macquarie-capital-raise-30-million-for-california-solar-project_100015424/
- ^{lxvi} <http://www.energy.ca.gov/portfolio/>
- ^{lxvii} <http://energy.gov/savings/renewables-portfolio-standard>
- ^{lxviii} U.S. Gen. Accounting Office Project Labor Agreements: The Extent of Their Use and Related Information (GAO Report), GAO/GGD-98-82 (May 1998), at p. 4; see also See Final Rule, Federal Acquisition Regulation; FAR Case 2009-005, Use of Project Labor Agreements for Federal Construction Projects, Federal Register Volume 75, Number 70 (Tuesday, April 13, 2010), at pp. 19168-19179 (summarizing history of project labor agreements)
- ^{lxix} http://www.edf-re.com/about/press/edf_renewable_energy_dedicates_the_pacific_wind_project_and_catalina_solar/
- ^{lxx} California, Governor's Office of Planning and Research, "California at 50 Million: The Governor's Goals and Policy Report," p. 5 September, 2013, http://opr.ca.gov/docs/EGPR_ReviewDraft.pdf

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Case No. 2022-00262
Pine Grove Solar, LLC
Responses to Siting Board Staff's First Request for Information

SITING BOARD DR 1-21:

Refer to the Application, Attachment H, page 4. Confirm that the indirect effect for Madison County for the construction phase of the project would be 45 new jobs with a payroll of \$3 million (calculated by subtracting direct effect from total effect).

Response: Confirmed. Please see table below. These are the actual results from the IMPLAN simulation for the construction of the Pine Grove Solar facility, given the assumptions on direct jobs and payroll. The spinoff impacts are summarized in the last line and correspond to the numbers asked for in this question.

	Employment	Labor Income
Direct Effect	120.0	\$8,606,224
Indirect Effect	18.0	\$1,525,604
Induced Effect	27.0	\$1,485,966
Total Effect	165.1	\$11,617,792
Total Effect minus Direct Effect	45.1	\$3,011,568

Witness: Paul Coomes, Ph.D.

Case No. 2022-00262
Pine Grove Solar, LLC
Responses to Siting Board Staff’s First Request for Information

SITING BOARD DR 1-22:

Refer to the Application, Attachment H, page 5. Provide a table(s) showing the number of direct, indirect, induced, and total jobs for the three models: Madison County, the six-county region and Kentucky during the project construction and operational phases of the project.

Response: See the table below for the estimated employment impacts of the construction phase.

IMPLAN is empty of data and multipliers for the operations phase – due to the historical absence of solar activity in Kentucky. As discussed in Application Attachment H “Economic Analysis,” there are likely to be only one or two jobs related to ongoing operations.

	Madison only	6-County Region	State of Kentucky
Direct Effect	120.0	120.0	120.0
Indirect Effect	18.0	24.6	24.0
Induced Effect	27.0	43.7	43.6
Total Effect	165.1	188.3	187.7

Witness: Paul Coomes, Ph.D.

SITING BOARD DR 1-23:

Refer to the Application, Attachment H, page 6-7. For each of the three models referenced above, provide a table(s) showing both the occupational and income tax revenues during both the construction and operational phases of the project. Provide the tax estimates both for Madison County and for Kentucky.

Response: Dr. Coomes estimated the occupational taxes associated with the construction phase in Madison County using a straightforward calculation: one percent times the \$11.6 million in predicted total payroll impact in the County, totaling \$116,000. There would be very minor occupational tax impacts in some surrounding counties, such as Fayette, probably a few thousand dollars, but this would be impossible to predict with any precision.

There is no income tax in Madison County. The issue of new Kentucky income (and sales) tax revenues is complicated. An estimate of Kentucky income and sales taxes *associated* with the construction is included in the table below.

Using effective tax rates averaged over a recent five-year period, the construction payroll would be associated with about \$566,000 in state income taxes and \$464,000 in state sales taxes. The effective tax rates are calculated by dividing state tax receipts by state wages and salaries, as shown in the table below. These rates, shown in the bottom right corner of the table, were applied to the \$11.62 million total estimated payroll impact of construction in Madison County.

Calculation of Effective Tax Rates, Kentucky Individual Income and Kentucky Sales Taxes						
	2016	2017	2018	2019	2020	5-year average
Fiscal Year (millions)						
Individual Income Tax	\$4,282	\$4,394	\$4,604	\$4,545	\$4,765	
Sales and Use Tax	\$3,463	\$3,485	\$3,606	\$3,938	\$4,071	
Calendar Year (thousands)						
Wages and Salaries	\$87,705,340	\$90,433,299	\$93,234,914	\$96,606,011	\$96,172,951	
Effective Rates on wages and salaries						
Individual Income Tax	4.88%	4.86%	4.94%	4.70%	4.95%	4.87%
Sales and Use Tax	3.95%	3.85%	3.87%	4.08%	4.23%	4.00%

Source: state government revenues from Office of State Budget Director; wages and salaries from US Bureau of Economic Analysis

Witness: Paul Coomes, Ph.D.

Case No. 2022-00262
Pine Grove Solar, LLC
Responses to Siting Board Staff's First Request for Information

SITING BOARD DR 1-24:

Refer to the Application, Attachment H, page 7. Explain whether the Madison County 1.0 percent net profits tax was applied to the project. If it was applied, explain how it affected the analysis.

Response: Dr. Coomes did not attempt to estimate the net profit tax revenues from the project. Profit from operations may be highly variable and is notoriously difficult to forecast.

Witness: Paul Coomes, Ph.D.

Case No. 2022-00262
Pine Grove Solar, LLC
Responses to Siting Board Staff's First Request for Information

SITING BOARD DR 1-25:

Refer to the Application, Attachment H, page 7. Explain whether the Madison County net profits tax and the state corporate income tax apply equally to the project.

Response: A correlation between local net profits tax revenues and state corporate income tax revenues no doubt exists, but neither of these tax schemes were applied to the project in Application, Attachment H due to a lack of a profit projection.

Witness: Paul Coomes, Ph.D.

Case No. 2022-00262
Pine Grove Solar, LLC
Responses to Siting Board Staff's First Request for Information

SITING BOARD DR 1-26:

Refer to the Application, Attachment H, page 7. Explain whether Pine Grove Solar intends to apply for an Industrial Revenue Bond (IRB) and a Payment in Lieu of Taxes (PILOT) agreement with Madison County.

Response: Currently Pine Grove Solar does not intend to apply for an Industrial Revenue Bond (IRB) or a Payment in Lieu of Taxes (PILOT) agreement with Madison County. Pine Grove Solar has reached out to Madison County to gauge its interest in either agreement, but no additional conversations or agreements have taken place.

Witness: David Stimson

Case No. 2022-00262
Pine Grove Solar, LLC
Responses to Siting Board Staff's First Request for Information

SITING BOARD DR 1-27:

Refer to the Application, Attachment I, SAR, Appendix D, Noise Analysis Report, Figure 1. Figure 1 indicates 13 noise-sensitive receptors differing from the Context Map. Indicate which is correct, Figure 1 or the Context Map.

Response: The noise-sensitive receptor locations in Figure 1 of Exhibit 1-27 "Updated Acoustic Analysis Report" have been updated to fit Exhibit 1-7 "Updated Context Map."

Witness: Madeleine Ray

Acoustic Assessment Report for the Pine Grove Solar Project

Madison County, Kentucky

January 2023

Prepared for:



Pine Grove Solar, LLC.

Prepared by:

Tetra Tech, Inc.
4101 Cox Road, Suite 120
Glen Allen, VA 23060



TETRA TECH

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ACRONYMS AND ABBREVIATIONS

Acronym/Abbreviation	Definition
%	percent
μPa	microPascal
BESS	Battery Energy Storage System
dB	decibel
dBA	A-weighted decibel
dB L	decibel (unweighted)
DOH	Department of Health
FHWA	Federal Highway Administration
ft	feet
hp	horsepower
Hz	Hertz
ISO	International Organization for Standardization
kV	kilovolt
L ₁₀	the sound level exceeded 10% of the time
L ₉₀	the sound level exceeded 90% of the time
L _{dn}	day-night sound level
L _{eq}	equivalent sound level
L _{max}	maximum sound level
L _p	sound pressure level
L _w	sound power level
m	meter
MW	megawatt
MWh	megawatt-hour
NSR	noise sensitive receptor
PCS	Power Conversion Station
Project	Pine Grove Solar Project
pW	picowatt
SWPPP	stormwater pollution prevention plan
Tetra Tech	Tetra Tech, Inc.
USGS	United States Geological Survey
W	watt

1.0 INTRODUCTION

Pine Grove Solar, LLC [a subsidiary of AES Corporation (AES)] proposes to construct and operate the Pine Grove Solar Project (Project), a solar photovoltaic power generation facility which will consist of an up to 50 megawatt (MW) ground-mounted solar photovoltaic system, a substation and switchyard, and related interconnection and ancillary facilities located in Madison County, Kentucky. The proposed Project is located approximately 1.5 miles southeast of the unincorporated community of Bybee, Kentucky.

A series of solar photovoltaic panels will be mounted on a racking system arranged in evenly spaced rows throughout the Project area. Power Conversion Stations (PCS) will be distributed throughout the Project area, comprised of one distribution transformer and a variable number of power inverters. This equipment will connect via underground electrical wiring with a Project substation and switchyard. The substation and switchyard will be located near the center of the Project area abutting an existing 161 kilovolt (kV) Kentucky Utilities transmission line.

On behalf of Pine Grove Solar, LLC, Tetra Tech, Inc. (Tetra Tech) prepared an acoustic assessment for the Project, evaluating the sound contribution of the Project to the surrounding noise-sensitive receptors (NSR). An acoustic modeling analysis was conducted simulating sound produced during both construction and operation. Operational sound sources consisted primarily of the inverters, distribution transformers, and the main transformer at the onsite collector substation. The overall objectives of this assessment were to: 1) identify Project sound sources and estimate sound propagation characteristics; 2) computer-simulate sound levels using internationally accepted calculation standards; and 3) determine whether the Project will operate in compliance with the applicable noise regulations.

2.0 ACOUSTIC METRICS AND TERMINOLOGY

This section outlines some of the relevant concepts in acoustics to help non-specialist readers better understand the acoustic modeling assessment and results as presented in this report.

Sound is described as a rapid fluctuation or oscillation of air pressure above and below atmospheric pressure creating a sound wave. Sound energy is characterized by the properties of sound waves, which include frequency, wavelength, period, amplitude, and velocity. A sound source is defined by a sound power level (L_w), which is independent of any external factors. Sound power is the rate at which acoustical energy is radiated outward and is expressed in units of watts (W). Sound energy propagates through a medium where it is sensed and then interpreted by a receiver. A sound pressure level (L_p) is a measure of this fluctuation at a given receiver location and can be obtained using a microphone or calculated from information about the source L_w and the surrounding environment. Sound power, however, cannot be measured directly. It is calculated from measurements of sound intensity or sound pressure at a given distance from the source.

While the concept of sound is defined by the laws of physics, the term 'noise' has further qualities, such as being excessive or loud. The perception of sound as noise is influenced by several technical factors as intensity, sound quality, tonality, duration, and the existing background levels. Sound levels are presented on a logarithmic scale to account for the large range of acoustic pressures that the human ear is exposed to and is expressed in units of decibels (dB). A dB is defined as the ratio between a measured value and a reference value, usually corresponding to the lower threshold of human hearing defined as 20 microPascals (μPa). Conversely, sound power is referenced to 1 picowatt (pW).

Broadband sound includes sound energy summed across the frequency spectrum. In addition to broadband sound pressure, analysis of the various frequency components of the sound spectrum is completed to determine tonal characteristics. The unit of frequency is Hertz (Hz), measuring the cycles per second of the sound pressure waves; the frequency analysis typically examines 11 octave bands ranging from 16 Hz (low) to 16,000 Hz (high), encompassing the entire human audible frequency range. Since the human ear does not perceive every frequency with equal loudness, spectrally varying sounds are often adjusted with a weighting filter. The A-weighted filter is applied to compensate for the frequency response of the human auditory system and sound exposure in acoustic assessments is designated in A-weighted decibels (dBA). Unweighted sound levels are referred to as linear. Linear decibels (dBL) are used to determine a sound's tonality and to engineer solutions to reduce or control noise as techniques are different for low- and high-frequency noise.

Sound can be measured, modeled, and presented in various formats, with the most common metric being the equivalent sound level (L_{eq}). The L_{eq} value is the energy-averaged sound level over a given measurement period. It is further defined as the steady, continuous sound level, over a specified time that has the same acoustic energy as the actual varying sound levels. Levels of many sounds change from moment to moment. Some impulses last 1 second or less, while others rise and fall over much longer periods of time. The equivalent sound level has been shown to provide both an effective and uniform method for comparing time-varying sound levels. Another commonly used sound metric is maximum sound level (L_{max}), which can be used to quantify the maximum instantaneous sound pressure level. The day-night sound level (L_{dn}) is used to describe sound levels over the course of a 24-hour period, with a 10-dB correction to reflect the increased noise-sensitivity of nighttime (10 PM to 7 AM). Sound levels can also be described using statistical levels (L_n). This descriptor identifies the sound level that is exceeded "n" percent of the time over a measurement period (e.g., L_{90} = sound level exceeded 90 percent of the time). The sound level exceeded for a small percent of the time, L_{10} , closely corresponds to short-term, higher-level, intrusive noises (such as vehicle pass-by noise near a roadway). The sound level exceeded for a large percent of the time, L_{90} , closely corresponds to continuous, lower-level background noise (such as continuous noise from a distant industrial facility). L_{50} is the level exceeded 50 percent of the time and is typically referred to the median sound level over a given period. Typical

sound levels associated with various activities and environments are presented in Table 1. **Table 1.** Sound Pressure Levels of Typical Noise Sources and Acoustic Environments

Noise Source or Activity	Sound Level (dBA)	Subjective Impression
Jet aircraft takeoff from carrier (50 feet [ft])	140	Threshold of pain
50-horsepower (hp) siren (100 ft)	130	
Loud rock concert near stage Jet takeoff (200 ft)	120	Uncomfortably loud
Crop dusting plane takeoff (100 ft)	110	
Jet takeoff (2,000 ft)	100	Very loud
Heavy truck or motorcycle (25 ft)	90	
Garbage disposal Food blender (2 ft) Pneumatic drill (50 ft)	80	Loud
Vacuum cleaner (10 ft)	70	Moderate
Passenger car at 65 miles per hour (25 ft)	65	
Large store air-conditioning unit (20 ft)	60	
Large office household refrigerator	55	Quiet
Light auto traffic (100 ft)	50	
Quiet rural residential area with no activity	45	
Bedroom or quiet living room, bird calls	40	Faint
Typical wilderness area	35	
Quiet library, soft whisper (15 ft)	30	Very quiet
Wilderness with no wind or animal activity	25	Extremely quiet
High-quality recording studio	20	
Acoustic test chamber	10	Just audible
	0	Threshold of human hearing

3.0 NOISE REGULATIONS

A review was conducted of noise regulations applicable to the Project at the federal, state, county, and local levels. There are no federal, state, county, or local environmental noise requirements specific to this Project.

In 1974 the U.S. EPA published "Information on Levels of Environmental Noise Requisite to Protect Public Health and Welfare with an Adequate Margin on Safety". In this publication, the U.S. EPA evaluated the effects of environmental noise with respect to health and safety and determined an L_{dn} of 55 dBA to be the maximum sound level that will not adversely affect public health and welfare by interfering with speech or other activities in outdoor areas.

In the absence of relevant environmental noise requirements, received sound levels at nearby NSRs were calculated and compared to the U.S. EPA level of 55 dBA L_{dn} . Sound levels resulting from the Project at all identified NSRs located in the vicinity of the Project are absolute and independent of the existing acoustic environment; therefore, a baseline sound survey is not required.

4.0 PROJECT CONSTRUCTION

Construction of the Project is expected to be typical of other solar power generating facilities in terms of schedule, equipment, and activities.

4.1 NOISE CALCULATION METHODOLOGY

Acoustic emission levels for activities associated with Project construction were based upon typical ranges of energy equivalent noise levels at construction sites, as documented by the United States Environmental Protection Agency ("USEPA" 1971) and the USEPA's "Construction Noise Control Technology Initiatives" (USEPA 1980), as well as equivalent noise levels for construction equipment provided by AES. The USEPA methodology distinguishes between type of construction and construction stage. Using those energy equivalent noise levels as input to a basic propagation model, construction noise levels were calculated at a series of set reference distances.

The basic model assumed spherical wave divergence from a point source located at the closest point of the Project site. Furthermore, the model conservatively assumed that all pieces of construction equipment associated with an activity will operate simultaneously for the duration of that activity at their L_{max} . An additional level of conservatism was built into the construction noise model by excluding potential shielding effects due to intervening structures and buildings along the propagation path from the site to receiver locations.

4.2 PROJECTED NOISE LEVELS DURING CONSTRUCTION

summarizes the projected noise levels due to Project construction, organized into the following work stages: (1) Stormwater Pollution Prevention Plan (SWPPP) Install/Basin Install, (2) Grading, (3) Pile Install, (4) Racking, and (5) Underground and Above Ground Wiring. Periodically, sound levels may be higher or lower than those presented in ; however, the overall sound levels should generally be lower due to excess attenuation and the trend toward quieter construction equipment in the intervening decades since the USEPA data were developed. The calculated noise impacts from the loudest construction phase, pile install, are shown below in Table 3. The calculated noise impacts from all construction phases at individual noise sensitive receptors (NSR) are presented in Table A-1.

The construction of the Project may cause short-term, but unavoidable, noise impacts that could be loud enough at times to temporarily interfere with speech communication outdoors and indoors with windows open. Noise levels resulting from the construction activities will vary significantly depending on several factors such as the type and age of equipment, specific equipment manufacturer and model, the operations being performed, and the overall condition of the equipment and exhaust system mufflers.

Project construction will generally occur during the day, Monday through Sunday, with pile driving being restricted to Monday through Friday. Furthermore, all reasonable efforts will be made to minimize the impact of noise resulting from construction activities including implementation of standard noise reduction measures. Due to the infrequent nature of loud construction activities at the site, the limited hours of construction and the implementation of noise mitigation measures, the temporary increase in noise due to construction is considered to be a less than significant impact.

Table 2. Projected Construction Noise Levels by Phase (dBA L_{max})

Phase No.	Construction Phase	Construction Equipment	Quantity	Usage Factor %	Maximum (L _{max}) Equipment Noise Level at 10 ft, dBA
1	SWPPP Install/Basin Install	Dozers	3	40	90
		Scrapers	2	40	90
		Front Loaders	1	40	90
		Dump Trucks	2	40	90
2	Grading	Dozers	3	40	90
		Scrapers	3	40	90
		Excavators	2	40	90
		Water Trucks	2	40	80
3	Pile Install	Pile Machines	6	20	110
		Buggies	8	40	80
		Forklifts	4	40	90
4	Racking	Forklifts	8	40	90
		Buggies	12	40	80
		Skidsteers	4	40	90
5	Underground and Above Ground Wiring	Trenching Machines	2	40	90
		Excavators	4	40	90
		Buggies	6	40	80

Table 3. Projected Construction Noise Levels for Pile Install (dBA L_{max})

NSR ID	UTM Coordinates (meters)		Distance to Construction (feet)	Received L _{max} (dBA)
	Easting	Northing		
1	754513.5	4178961	1483	79
2	754564.8	4178875	1218	81
3	754412.3	4178848	1012	82
4	754672	4178600	538	88
5	753589.3	4177576	(Barn within Project Boundary)	90
6	753448.9	4177481	371	91
7	755005.7	4177055	1068	82
8	755196	4177222	1096	82
9	755183.9	4177427	486	89
10	753853.3	4176741	885	83
11	755397.9	4177951	664	86
12	755330.9	4178139	676	86
13	754109.8	4177515	(Cemetery within Project Boundary)	90

NSR ID	UTM Coordinates (meters)		Distance to Construction (feet)	Received L _{max} (dBA)
	Easting	Northing		
14	755270.4	4178223	649	86
15	753425.7	4177699	442	90
16	753604.1	4177897	289	93
17	753563.9	4177678	95	103
18	753619.8	4177677	102	102
19	753646.6	4177679	113	101
20	753702.5	4177707	72	105
21	753397.1	4177593	487	89
22	753164.1	4177717	1288	80
23	754683.5	4178756	951	83
24	754999	4178583	843	84
25	755083.6	4178542	786	85

4.3 CONSTRUCTION NOISE MITIGATION

Project construction consists of (1) SWPPP Install/Basin Install, (2) Grading, (3) Pile Install, (4) Racking, and (5) Underground and Above Ground Wiring . Work associated with these phases may overlap. Equipment used for construction includes heavy equipment (e.g., bulldozers, loaders, dump trucks), which involve diesel engines that produce mechanical and exhaust noise with the latter typically the predominant sound source. Noise from construction equipment will vary depending on a variety of factors including the number and class of equipment operating at a location at a given time. Received sound levels will also fluctuate, depending on the construction activity, equipment type, and distance between noise source and noise-sensitive receptors. Construction will occur between the hours of 6:00 a.m. and 6:00 p.m. seven days per week (Monday through Sunday) at the request of local agencies and in compliance with local ordinances. Pile driving will occur between the hours of 7:00 a.m. and 5:00 p.m. five days per week (Monday through Friday) at the request of local agencies.

Construction noise will be temporary in nature and, as such, no long term or significant noise impacts due to construction are anticipated. Regardless, reasonable efforts may be made to minimize the impact of noise resulting from construction activities. Following is a list of recommended best management practices and noise mitigation measures:

- Construction equipment should be well-maintained and vehicles using internal combustion engines equipped with mufflers will be routinely checked to ensure they are in good working order;
- A noise/dust fence should be constructed along all boundaries facing residential houses;
- Noisy equipment will be located as far from possible from sensitive areas; and
- A noise complaint hotline and local representative will be made available to address any noise-related issues.

Implementing the listed measures will aid in reducing offsite construction noise impacts. Project construction noise may periodically exceed levels that currently characterize the area. Due to the temporary nature of construction noise, no long-term impacts are anticipated.

5.0 OPERATIONAL NOISE

This section describes the model and input assumptions used to calculate noise levels due to the Project's normal operation, and the results of the noise impact analysis.

5.1 OPERATIONAL NOISE PROPAGATION MODEL

The acoustic modeling for the Project operation was conducted with the Cadna-A® sound model from DataKustik GmbH (2023). The outdoor noise propagation model is based on Organization for International Standardization (ISO) 9613, Part 1: "Calculation of the absorption of sound by the atmosphere," (1993) and Part 2: "General method of calculation," (1996). It is used by acoustic engineers to accurately describe sound emission and propagation from complex facilities and in most cases yields conservative results of operational sound levels in the surrounding community. Model predictions are accurate to within 1 dB of calculations based on the ISO 9613 standard.

ISO 9613 was used to calculate propagation and attenuation of sound energy with distance, surface and building reflection, and shielding effects by equipment, buildings, and ground topography. Offsite topography was determined using United States Geological Survey (USGS) digital elevation data. The sound model propagation calculation parameters are summarized in Table .

Table 4. Acoustic Model Setup Parameters

Model Input	Parameter Value
Standards	ISO 9613-2, Acoustics – Attenuation of sound during propagation outdoors. ¹
Engineering Design	30% Project Layout Design dated 01/28/2023
Reflection Loss	2 dB – indicates reduction in acoustic energy due to reflection
Grid Spacing	10 m
Terrain Description	USGS topography
Ground Absorption	0.5 (semi-reflective)
Receiver Characteristics	1.52 m (5 ft) above ground level
Meteorological Factors	Omnidirectional downwind propagation / mild to moderate atmospheric temperature inversion
Temperature	70°F
Relative Humidity	70%
Search radius	1 mile

¹ Propagation calculations under the ISO 9613 standard incorporate the effects of downwind propagation from facility to receptor) with wind speeds of 1 to 5 m per second (3.6 to 18 kilometers per hour) measured at a height of 3 to 11 m above the ground.

The Project's general arrangement was directly imported into the acoustic model so that onsite equipment could be easily identified, structures could be added, and sound emissions ratings could be assigned to sources as appropriate. Cadna-A® allows for three basic types of sound sources to be introduced into the model: point, line, and area sources. Each noise-radiating element was modeled based on its noise emission pattern. Larger dimensional sources, such as the transformer walls, were modeled as area sources. Transformers were modeled as solid structures because diffracted paths around and over structures tend to reduce noise levels in certain directions. The interaction between sound sources and structures was also considered with reflection loss. The reflective characteristic of the structure is quantified by its reflection loss, which is typically defined as smooth façade from which the reflected sound energy is 2 dB less than the incident sound energy.

Ground absorption rates are described by a numerical coefficient. For pavement and water bodies, the absorption coefficient is defined as $G = 0$ to account for reduced sound attenuation and higher reflectivity. In contrast, ground covered in vegetation, including suburban lawns, are acoustically absorptive and aid in sound attenuation, i.e., $G = 1.0$. For the acoustic modeling analysis, a conservative semi-reflective value of $G = 0.5$ was used to represent the Project area. The portions of the Project area containing solar panels were represented with a reflective value of $G = 0.0$.

5.2 OPERATIONAL SOUND SOURCE INFORMATION

The Project site layout was directly imported into the acoustic model and includes 15 PCS and one 53 MVA substation transformer; eight PCS include three power inverters and one 4.2-MVA distribution transformer, and seven PCS include two power inverters and one 2.8-MVA distribution transformer. The principal sources of noise are the cooling fans on the inverters and transformers, the electrical components of the inverters, the distribution transformer associated with each PCS, and the main power transformer at the substation. The distribution transformers and inverters are mounted on pads at grade level. Distribution transformers and power inverters like the ones proposed for the Project are considered a low-level source of sound.

Substations have switching, protection, and control equipment, as well as a main power transformer, which generate the sound generally described as a low humming. There are three chief noise sources associated with a transformer: core noise, load noise, and noise generated by the operation of the cooling equipment. The core is the principal noise source and does not vary significantly with electrical load. The load noise is primarily caused by the load current in the transformer's conducting coils (or windings) and consequently the main frequency of this sound is twice the supply frequency: 120 Hz for 60 Hz transformers. The cooling equipment (fans and pumps) may also be an important noise component, depending on fan design. During air forced cooling method, cooling fan noise is produced in addition to the core noise. The resulting audible sound is a combination of the humming and the broadband fan noise. Breaker noise is a sound event of very short duration, expected to occur only a few times throughout the year. Just as horsepower ratings designate the power capacity of an electric motor, a transformer's megavolt amperes rating indicates its maximum power output capacity.

Table summarizes the equipment LW data used as inputs to the modeling analysis. Sound power level values of operational equipment were calculated based on typical equipment of similar type. It is assumed that installed equipment will have similar sound power profiles as those used in the acoustic modeling analysis; however, it is possible that the final manufacturer warranty values may vary.

Table 5. Modeled Octave-Band Sound Power Levels for Project Equipment

Operational Sound Sources	UTM Coordinates (meters)									L _w , dBA
	31.5	63	125	250	500	1000	2000	4000	8000	
PCS: 3-Inverters/4.2-MVA Transformer	40	61	77	86	90	90	87	79	70	95
PCS: 2-Inverters/2.8-MVA Transformer	41	62	79	88	92	92	88	81	72	97
Main Power Transformer at Substation	48	68	80	82	88	85	81	76	67	91

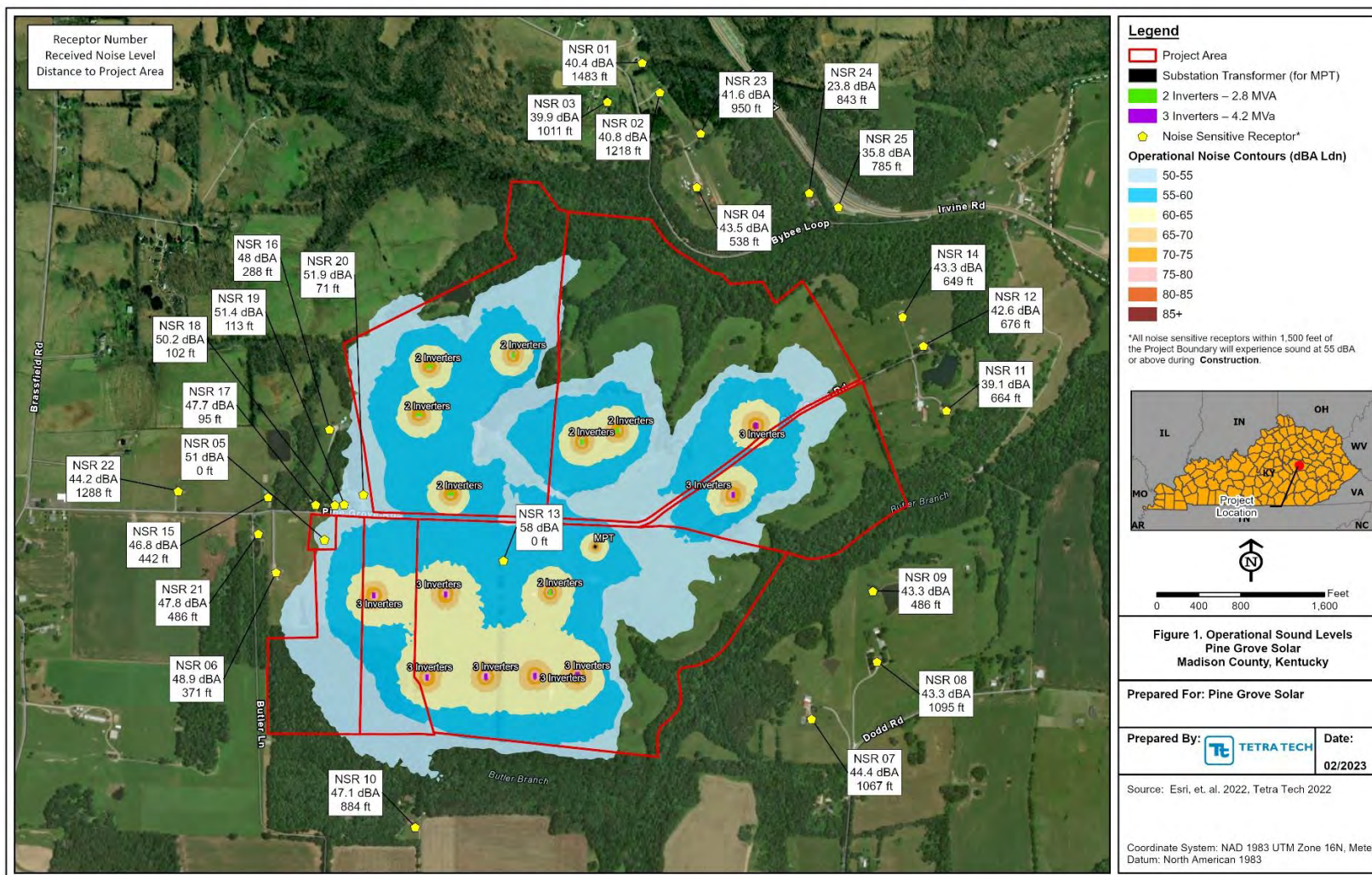
Transmission lines generate sound referred to as corona. The level of corona noise generated by a transmission line is highly dependent on weather conditions (i.e., foul weather), electrical gradient, altitude, and condition of the conductor wires. The corona effect is initiated where the conductor's electric field is concentrated by imperfections in the conductor surface such as nicks or scratches, or by substances on the lines such as water droplets, dirt or dust, and/or bird droppings. Corona activity increases with increasing altitude, and with increasing voltage in the line, but is generally not affected by system loading. As the Project gen-tie line is rated at 161-kV and does not pass over any NSRs, it is not included in this analysis.

5.3 PROJECTED SOUND LEVELS DURING OPERATION

Broadband (dBA) sound pressure levels were calculated for expected normal Project operation assuming that all components identified previously are operating continuously and concurrently at the representative manufacturer-rated sound levels. The sound energy was then summed and weighted to determine the Leq and Ldn at a point of reception. A sound contour plot displaying broadband (dBA) sound levels (Ldn) presented as color-coded isopleths is provided in Figure 1. The sound contours are graphical representations of the cumulative noise associated with full operation of the equipment and show how operational noise will be distributed over the surrounding area. Results from acoustic modeling are projected 5-dBA increments on scaled Project aerial. Results are independent of the existing acoustic environment, representative of Project-generated sound levels only. The sound contour isopleths are plotted at a height of 1.52 m above ground level, about the height of the ears of a standing person. The contour isopleths are analogous to elevation contours on a topographic map, i.e., the noise contours are continuous lines of equal noise level around some source, or sources, of noise.

Modeling results show that noise levels resulting from Project operations will be under the U.S. EPA level of 55 dBA Ldn. Tabulated modeling results are provided in Appendix A showing the received Leq and Ldn at each NSR.

Figure 1. Operational Sound Levels (L_{dn})



Not for Construction

6.0 CONCLUSIONS

Tetra Tech completed a detailed acoustic assessment of the proposed Pine Grove Solar Project, located in Madison County, Kentucky. The assessment included an evaluation of Project sound contribution to the surrounding area during construction and operation phases.

The construction noise assessment indicated that construction noise will be periodically audible at offsite locations; however, that noise will be temporary and minimized to the extent practicable through implementation of best management practices and noise mitigation measures as identified in section 4.3. Traffic noise generated during construction on and offsite will also add to overall sound levels but will be intermittent and short-term.

Operational sound levels were modeled and evaluated at NSRs in the Project area. Anticipated Project sound sources consist of the collector substation main power transformer and inverters and distribution transformers located at the power conversion stations.

Modeling results show that noise levels resulting from Project operations will be under the U.S. EPA level of 55 dBA Ldn. Overall, sound emissions associated with the Project are expected to remain at a low level, consistent with other solar energy facilities of similar size and design sited in the State of Kentucky.

7.0 REFERENCES

DataKustik GmbH 2020. Computer-Aided Noise Abatement Model Cadna-A®, Version 2017 [64 Bit] build 157.4702. Munich, Germany, 2017.

Federal Highway Administration. FHWA Roadway Construction Noise Model User's Guide, FHWA-HEP-05-054, January 2006.

ISO 1993. Standard ISO 9613-1 Acoustics – Attenuation of Sound during Propagation Outdoors. Part 1 General Calculation of the Absorption of Sound by the Atmosphere. Geneva, Switzerland.

ISO 1996. Standard ISO 9613-2 Acoustics – Attenuation of Sound during Propagation Outdoors. Part 2 General Method of Calculation. International Organization for Standardization. Geneva, Switzerland.

U.S. EPA Office of Noise Abatement and Control. Information On Levels of Environmental Noise Requisite To Protect Public Health and Welfare With An Adequate Margin Of Safety, March 1974

APPENDIX A. DETAILED ACOUSTIC MODELING RESULTS

Table A-1. Detailed Acoustic Modeling Results

NSR ID	UTM Coordinates (meters)		Distance to Project (feet)	Operations		Construction				
	Easting	Northing		Received L _{dn} (dBA)	Received L _{eq} (dBA)	SWPPP Install/Install Received L _{max} (dBA)	Grading Received L _{max} (dBA)	Pile Install Received L _{max} (dBA)	Racking Received L _{max} (dBA)	Wiring Received L _{max} (dBA)
1	754513.5	4178961	1483	40	34	60	60	79	62	59
2	754564.8	4178875	1218	41	34	62	62	81	64	61
3	754412.3	4178848	1012	40	33	64	64	82	66	63
4	754672	4178600	538	44	37	69	69	88	71	68
5	753589.3	4177576	(Barn within Project Boundary)	52	45	90	90	90	90	90
6	753448.9	4177481	371	49	42	72	72	91	74	71
7	755005.7	4177055	1068	44	38	63	63	82	65	62
8	755196	4177222	1096	43	36	63	63	82	65	62
9	755183.9	4177427	486	43	36	70	70	89	72	69
10	753853.3	4176741	885	47	40	65	65	83	67	64
11	755397.9	4177951	664	39	32	67	67	86	69	66
12	755330.9	4178139	676	43	36	67	67	86	69	66
13	754109.8	4177515	(Cemetery within Project Boundary)	58	51	90	90	90	90	90
14	755270.4	4178223	649	43	37	67	68	86	70	67
15	753425.7	4177699	442	47	40	71	71	90	73	70
16	753604.1	4177897	289	48	41	74	75	93	77	74
17	753563.9	4177678	95	48	41	84	84	103	86	83
18	753619.8	4177677	102	50	43	83	84	102	86	83
19	753646.6	4177679	113	51	45	83	83	101	85	82
20	753702.5	4177707	72	52	45	87	87	105	89	86
21	753397.1	4177593	487	48	41	70	70	89	72	69
22	753164.1	4177717	1288	44	37	61	62	80	64	61

NSR ID	UTM Coordinates (meters)		Distance to Project (feet)	Operations		Construction				
	Easting	Northing		Received L _{dn} (dBA)	Received L _{eq} (dBA)	SWPPP Install/Basin Install Received L _{max} (dBA)	Grading Received L _{max} (dBA)	Pile Install Received L _{max} (dBA)	Racking Received L _{max} (dBA)	Wiring Received L _{max} (dBA)
23	754683.5	4178756	951	42	35	64	64	83	66	63
24	754999	4178583	843	24	17	65	65	84	67	64
25	755083.6	4178542	786	36	29	66	66	85	68	65

Case No. 2022-00262
Pine Grove Solar, LLC
Responses to Siting Board Staff's First Request for Information

SITING BOARD DR 1-28:

Refer to the Application, Attachment I, SAR, Appendix D, Noise Analysis Report, Figure 1, and Table A-1. Provide an updated Figure 1 that shows the noise sensitive receptors that are listed in Table A-1 with identification labels.

Response: Please see Figure 1 and Table A-1 of Exhibit 1-27 "Updated Acoustic Analysis Report." This updated figure shows the locations of all the noise sensitive receptors listed in table A-1 with identification labels.

Witness: Madeleine Ray

Case No. 2022-00262
Pine Grove Solar, LLC
Responses to Siting Board Staff's First Request for Information

SITING BOARD DR 1-29:

Refer to the Application, Attachment I, SAR, Appendix D, Noise Analysis Report, Table 2, page 6. Explain the meaning of the number in parentheses beside each type of equipment.

Response: The number in parentheses beside each type of equipment in Table 2 of the Application, Attachment I, SAR, Appendix D, Noise Analysis Report indicates the quantity of that equipment. The quantity of equipment has been moved to its own column in Table 2 of Exhibit 1-27 "Updated Acoustic Analysis Report."

Witness: Madeleine Ray

Case No. 2022-00262
Pine Grove Solar, LLC
Responses to Siting Board Staff's First Request for Information

SITING BOARD DR 1-30:

Explain how the Maximum Equipment Noise Level (Lmax) and the Composite Equipment Noise Level (Leq) are defined and the calculation to arrive at the numbers.

Response: The terms and definitions of Lmax and Leq have been added to page 2, Section 2.0 of Exhibit 1-27 "Updated Acoustic Analysis Report." The Lmax number resulting from construction was calculated at each receptor using the inverse-square law while taking into account the quantity, usage factor, and Lmax level of the equipment provided by AES.

Witness: Madeleine Ray

Case No. 2022-00262
Pine Grove Solar, LLC
Responses to Siting Board Staff's First Request for Information

SITING BOARD DR 1-31:

Provide a chart with the noise levels of pile-driving within 1,500 feet of a noise sensitive receptor.

Response: Table 3 of Exhibit 1-27 "Updated Acoustic Analysis Report" has been added to the assessment showing calculated noise levels at all receptors within 1,500 feet of pile-driving. It is worth noting that the Lmax values for construction activities listed in Table 3 are conservative assumptions as Pine Grove Solar does not know how the construction equipment will be distributed throughout the project site. In this case, Pine Grove Solar assumed all of the construction equipment is operating at the closest project boundary to the noise sensitive receptors.

Witness: Madeleine Ray

Case No. 2022-00262
Pine Grove Solar, LLC
Responses to Siting Board Staff's First Request for Information

SITING BOARD DR 1-32:

Refer to the Application, Attachment I, SAR, Appendix D, Noise Analysis Report, page 7. The proposed mitigation measures for construction noise mitigation include a fence. Confirm that Pine Grove Solar will be using a fence for construction noise mitigation.

Response: Pine Grove Solar does not propose to use temporary or permanent fence as a noise mitigation measure. Pine Grove Solar has proposed to ring the site with a security fence of wire mesh, and a sediment control fence during the construction phase. Any sound mitigation benefit of those fences is unintended and is not categorized specifically.

Witness: Joshua O'Connor

Case No. 2022-00262
Pine Grove Solar, LLC
Responses to Siting Board Staff's First Request for Information

SITING BOARD DR 1-33:

If Pine Grove Solar does not intend to use fencing as noise mitigation, explain what construction noise mitigation is intended.

Response: Pine Grove Solar proposes mitigating noise impact through construction timing. Pine Grove Solar will conduct the most noise-intensive operations (driving piles) during the hours of 7:00 a.m. through 5:00 p.m. on Monday through Friday to mitigate noise disturbance. In addition, pile driving operation will only occur for a few months of the project's construction, while the rest of the project will be constructed with common equipment such as forklifts, skidsteers, etc. In addition, as construction noise generating activities will progressively move across the development site during the duration of the construction phase, the highest noise levels would not be expected to be experienced at a single receptor for more than a day or two, as construction equipment and activities would only be in a single area for a short period of time. A phone number for a member of the construction team will be made available to the neighboring community who may be able to address noise complaints and other construction-related concerns with heightened mitigation measures identified above.

Witness: Joshua O'Connor

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SITING BOARD DR 1-34:

Provide a description of any conversations, or complaints, from residents concerned about construction noise.

Response: A small number of nearby residents have expressed concern over construction noise, especially during the pile driving phase of construction. Pile driving is only a short portion of the construction timeline. Pine Grove Solar worked with concerned neighbors and the Madison County Board of Adjustments to set reasonable construction hours for the project (listed in the Application, Attachment D). To that end, construction on Pine Grove Solar will only occur between the hours of 6:00 a.m. and 6:00 p.m. seven days per week (Monday through Sunday) at the request of local agencies and in compliance with local ordinances. Pile driving will occur between the hours of 7:00a.m. and 5:00p.m. five days per week (Monday through Friday) at the request of local stakeholders.

Witness: David Stimson

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Pine Grove Solar, LLC
Responses to Siting Board Staff's First Request for Information

SITING BOARD DR 1-35:

Refer to the Application, Attachment I, SAR, Appendix D, Noise Analysis Report, Figure 1, page 11 and Appendix A, Table A-1, pages 14-17.

a. Provide an update to Figure 1 identifying each noise sensitive receptor listed in Table A-1 and the sound level it will experience during the project operational phase.

b. Provide an update to Figure 1 identifying each noise sensitive receptor listed in Table A-1 within the 1,500-foot sound contour boundary that will experience sound at 55 dBA during construction.

c. Provide an update to Table A-1 to include the distance of each noise sensitive receptor from nearest construction activity and the associated maximum noise level during the project's construction phase.

Response:

- a. Figure 1 of Exhibit 1-27 "Updated Acoustic Analysis Report" has been updated to include all noise sensitive receptors listed in Table A-1 with their received operational sound level, identification label, and distance to the project boundary.
- b. Figure 1 of Exhibit 1-27 "Updated Acoustic Analysis Report" has been updated to indicate all receptors within 1,500 feet of the Project Boundary may experience a sound level at 55 dBA or above during construction. During operations, it is not expected that any of the noise sensitive receptors experience noise above 55 dBA with the exception of the cemetery located within the project boundary. It is worth noting that the Lmax values for construction activities listed in Figure 1 are conservative assumptions as Pine Grove Solar does not know how the construction equipment will be distributed throughout the

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project site. In this case, Pine Grove Solar assumed all of the construction equipment is operating at the closest project boundary to the noise sensitive receptors.

- c. Table A-1 has been updated to include the distance of each noise sensitive receptor from the nearest project boundary and the associated maximum noise level during the project's construction phases.

Witness: Madeleine Ray

Case No. 2022-00262
Pine Grove Solar, LLC
Responses to Siting Board Staff's First Request for Information

SITING BOARD DR 1-36:

Submit a copy of the leases or purchase agreements, including options, separate agreements, or deeds which Pine Grove Solar has entered into in connection with the proposed solar facility, including the agreements for each of the parcels of the Project.

Response: Please see the attached confidential purchase agreements which Pine Grove Solar has entered into in connection with the proposed solar facility under Exhibit 1-36 "Purchase Agreements." These agreements are submitted in conjunction with a Petition for Confidential Treatment.

Witness: David Stimson

REAL ESTATE PURCHASE OPTION AGREEMENT

THIS REAL ESTATE PURCHASE OPTION AGREEMENT (this "Agreement") is made as of the Effective Date (as defined below), by and between **ROBERT B. CONGLETON AND KATHY L. CONGLETON**, husband and wife as joint tenants ("Seller"), and **SUSTAINABLE PROPERTY HOLDINGS, LLC**, a Delaware limited liability company ("Purchaser"). The latest date indicated on the signature page of this instrument shall be the "Effective Date" of this Agreement.

1. Grant of Option. For and in consideration of Purchaser's agreement to make to Seller the payments set forth in Section 3 below (the "Option Payments"), Seller hereby grants to Purchaser an exclusive and irrevocable option (the "Option") to purchase approximately [REDACTED] of real property legally described on Exhibit A attached hereto and made a part hereof, in the county of Madison, State of Kentucky (the "Property"), on the terms and conditions set forth in this Agreement.

2. Term of Option. The term of the Option (the "Term") shall be for a [REDACTED] period beginning on the Effective Date, together with Purchaser's option to extend said Term for an additional [REDACTED] upon written notice provided to Seller prior to the expiration of the initial Term, provided however, that Purchaser shall have the right at any time prior to exercising the Option to terminate this Agreement as to all or any portion of the Property by giving written notice to Seller. Upon termination of this Agreement for any reason, Purchaser's obligations to Seller hereunder (including but not limited to Purchaser's obligations to make any remaining Option Payments) shall become null and void and of no further force or effect.

3. Option Payments. In consideration of the rights granted hereunder, Purchaser will pay to Seller the Option Payments set forth in the table below, on the payment dates set forth in such table. If any scheduled payment date falls on a day which is not a business day in the State of Utah, then the due date for such payment shall be extended to the next succeeding business day. The Option Payments shall be non-refundable to Purchaser in the event that this Agreement is terminated, unless Seller is in default or breach of this Agreement. The amount of all Option Payments made by Purchaser shall be applied against the Purchase Price at the Closing.

<u>Option Payment Due Date</u>	<u>Amount of Option Payment Due on Such Date</u>
Effective Date	[REDACTED]
[REDACTED] following Effective Date	[REDACTED]
[REDACTED] following Effective Date	[REDACTED]
[REDACTED] following Effective Date	[REDACTED]
[REDACTED] following Effective Date	[REDACTED]
[REDACTED] following Effective Date	[REDACTED]
[REDACTED] following Effective Date	[REDACTED]
[REDACTED] following Effective Date	[REDACTED]

██████████ following Effective Date	██████████
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██████████ following Effective Date	██████████
██████████ following Effective Date	██████████
██████████ following Effective Date	██████████
██████████ following Effective Date	██████████
In the event Purchaser extends initial Term, Option Payments are scheduled as follows:	
██████████ following Effective Date	██████████
██████████ following Effective Date	██████████
██████████ following Effective Date	██████████
██████████ following Effective Date	██████████

It is acknowledged and understood that the table set forth above reflects that the period commencing on the Effective Date and continuing for ██████████ shall constitute a due diligence period for Purchaser (“Due Diligence Period”). The initial payment of ██████████ (the “Deposit”) shall be deposited into an escrow account with Escrow Holder (as defined below) along with a signed copy of this Agreement. Nothing contained in this Section shall in any way limit or otherwise affect Purchaser’s right to terminate this Agreement at any time pursuant to Section 2. If Purchaser terminates this Agreement prior to the expiration of the Due Diligence Period, the Deposit, less an amount equal to ██████████ (the “Independent Consideration”), shall be immediately returned to Purchaser by Escrow Holder. If this Agreement is not so terminated, the Deposit shall be released to Seller from escrow upon expiration of the Due Diligence Period. Future Option Payments shall be made by Purchaser to Escrow Holder for credit to Seller, and Escrow Holder shall forward such future Option Payments to Seller promptly following Escrow Holder’s receipt thereof. Purchaser’s obligation to make the applicable Option Payment to Seller shall be considered complete when such payment has been made to Escrow Holder. The “Escrow Holder” shall be McBrayer Firm, 201 East Main Street, Suite 900, Lexington, Kentucky 40507, Attention: James H. Frazier, III, Telephone: (859) 231-8780, ext. 1303, E-mail: jfrazier@mcbrayerfirm.com. Escrow Holder shall execute a joinder to this Agreement evidencing Escrow Holder’s agreement to act as Escrow Holder in accordance with the provisions hereof. Concurrently with execution of this Agreement, Seller and Purchaser will execute a memorandum in the form of Exhibit B attached hereto and made a part hereof by reference, or any other reasonable form of memorandum, and Purchaser shall cause such memorandum to be recorded in the public records.

4. Method of Exercising Option. Purchaser may exercise the Option at any time during the Term by giving written notice to Seller (the “Exercise Notice”). Upon the timely and proper exercise of the Option, Seller agrees to sell and convey, and Purchaser agrees to purchase, the Property, in accordance with and subject to the terms and conditions of this Agreement.

5. Inspections; Use of Property. From and after the Effective Date, Purchaser or its designated agents may enter upon the Property upon reasonable prior notice to Seller to conduct, at Purchaser’s sole cost and expense, any inspections, tests, surveys, engineering, environmental, and/or market and economic feasibility studies, and due diligence matters related thereto, concerning the

Property. Any activities of Purchaser on the Property shall be conducted in such a manner so as to not cause any material damage to the Property and so as to not unreasonably interfere with the current use of the Property. Purchaser shall be responsible for any material damage to the Property caused by Purchaser in connection with Purchaser's activities on the Property, which damage shall be assessed immediately upon occurrence, or by a third-party consultant as soon as possible after occurrence. Purchaser shall indemnify Landowner for any loss, costs, claims, actions or damages caused by activities of Purchaser on the Property except those caused by Seller's gross negligence or willful behavior. Subject to the foregoing rights of Purchaser, prior to the Closing (as defined in Section 9 below), Seller, or its affiliated or contracted parties, shall be permitted to continue to use the Property in a manner consistent with its existing use, including but not limited to cattle grazing. Seller shall provide Purchaser, prior to the expiration of the Due Diligence Period, with copies of all field tiling surveys, plans and other geotechnical and other site assessments, surveys, plans, entitlement-related studies, environmental assessments, reports, test results, correspondence to or from any governmental agency, and other such records of Seller relating to the Property. Seller represents and warrants to Purchaser that, to the best of Seller's knowledge, all information contained in any such materials provided by Seller to Purchaser shall be accurate and complete.

6. Purchase Price. The price (the "Purchase Price") to be paid by Purchaser to Seller for the Property shall be

[REDACTED]

[REDACTED]

7. Costs; Prorations; Credits.

7.1.

[REDACTED]

7.2.

[REDACTED]

7.3. [REDACTED]

8. Title.

8.1. At Closing, Seller shall convey to Purchaser marketable and insurable fee simple title to the Property, free from any (i) mortgage, deed to secure debt, deed of trust, security agreement, judgment, lien or claim of lien, or any other title exception or defect that is monetary in nature, Seller hereby agreeing to pay and satisfy of record any such title defects or exceptions prior to or at Closing at Seller's expense, (ii) lease, rental agreement, or other right of occupancy of any kind, whether written or oral (it being acknowledged and understood that any lease, rental agreement or right of occupancy in existence as of the date hereof shall be fully and completely terminated by Seller prior to Closing), (iii) recorded or unrecorded right or interest first attaching subsequent to the Effective Date, or (iv) matter encompassed by any standard exception under the Title Commitment (other than as to matters of survey), including the standard "gap" exception, the standard mechanic's lien exception and the standard parties in possession exception (the "Non-Permitted Exceptions").

8.2. Prior to Closing, Purchaser shall obtain a current title commitment (the "Title Commitment") applicable to the Property, from the Title Company (as defined below), whereby the Title Company agrees to issue at Closing an ALTA Owner's Policy of Title Insurance (the "Title Policy"), in the amount of the Purchase Price, insuring Purchaser's marketable fee simple title to the Property, including all appurtenances thereto and improvements thereon, and including such additional title endorsements in form and content as Purchaser may reasonably request. Notwithstanding anything to the contrary contained in this Agreement, it shall be a condition precedent to Purchaser's obligation to close the transaction herein described that the Title Company shall have unconditionally indicated in writing that upon recording of the Deed and payment of its premiums (at ordinary rates), the Title Company will issue the Title Policy to Purchaser as herein required, insuring that fee simple title shall be vested in Purchaser, without exception for the Non-Permitted Exceptions. If the parties are unable to cause the satisfaction of the aforesaid condition precedent, Purchaser, in its discretion, may elect, by written notice to Seller, either to accept such title as Seller is capable of delivering or to terminate this Agreement. If this Agreement is so terminated, Seller shall immediately return to Purchaser all Option Payments previously made by Purchaser. The "Title Company" shall be McBrayer Firm, 201 East Main Street, Suite 900, Lexington, Kentucky 40507, Attention: James H. Frazier, III, Telephone: (859) 231-8780, ext. 1303, E-mail: jfrazier@mcbrayerfirm.com.

9. Closing. The closing of the transaction contemplated by this Agreement ("Closing") shall occur through escrow at the offices of the Escrow Holder within [REDACTED] following Purchaser's delivery of the Exercise Notice on such date as Purchaser may select by advance written notice to Seller or on such other date or at such other location as the parties may mutually agree. If the Escrow Holder requires the execution of an escrow agreement, Seller and Purchaser will promptly execute and deliver the same in such form as the Title Company or such escrow agent may reasonably request.

10. Closing Deliveries. At Closing, the following shall occur:

10.1. Seller shall deliver actual possession of the Property to Purchaser and Seller shall deliver or cause to be delivered to Purchaser such documents as are reasonably required by Purchaser to close the transaction that is the subject of this Agreement, all fully executed by Seller and acknowledged as necessary, including the following enumerated documents, all of which documents shall be subject to the reasonable approval of Purchaser:

10.1.1. Counterpart of closing statement;

10.1.2. Grant Deed (the "Deed"), conveying to Purchaser the Property, including any and all water rights, and warranting title against the Non-Permitted Exceptions and against all persons whomsoever;

10.1.3. Certificate of Non-Foreign Status, evidencing that Purchaser shall not be liable for transfer liability under Section 1445 of the Internal Revenue Code, as amended;

10.1.4. A general assignment (the "General Assignment") assigning to Purchaser all of Seller's right, title and interest in, to and under any or all of the following intangible property relating to the Property (the "Intangible Property"), as determined by Purchaser in its sole discretion: (i) all licenses, permits, certificates of occupancy, approvals, dedications, subdivision maps and entitlements issued, approved or granted by governmental authorities or otherwise in connection with the Property, including any water rights or permits; (ii) all licenses, consents, easements, rights of way and approvals required from private parties to make use of utilities and to insure vehicular and pedestrian ingress and egress to the Property; and (iii) any and all service contracts, agreements, maintenance contracts and like contracts and agreements relating to the Property, together with all supplements, amendments and modifications thereto;

10.1.5. Real Estate Withholding Certificate, if applicable;

10.1.6. Title affidavits and indemnities in form and content as may be reasonably required by Purchaser and the Title Company to delete all of the Title Commitment's standard exceptions (other than as to matters of survey), including the standard "gap" exception, the standard mechanic's lien exception, and the standard parties in possession exception and any exceptions for judgment, state or federal tax, environmental, broker, or other liens;

10.1.7. Instruments reasonably satisfactory to Purchaser and the Title Company reflecting the proper power, good standing, and authorization for the sale of the Property from Seller to Purchaser and the execution and delivery of all documents hereunder;

10.1.8. Such corrective instruments as may be required to deliver marketable and insurable title as required hereunder;

10.1.9. Seller certification confirming that all representations and warranties stated herein are in full force and effect as of Closing; and

10.1.10. Such other instruments as may be reasonably necessary to effect the conveyance of the Property in accordance with, and effectuate the other provisions of, this Agreement.

10.2. Purchaser shall deliver or cause to be delivered to Seller such documents as are reasonably required by Seller to close the transaction that is the subject of this Agreement, all fully executed by Purchaser and acknowledged as necessary, including the following enumerated documents, all of which documents shall be subject to the reasonable approval of Seller:

10.2.1. Counterpart of closing statement;

10.2.2. An acceptance of the General Assignment, if Purchaser has elected to receive assignment of any of the Intangible Property; and

10.2.3. Such other instruments as may be reasonably necessary to effect the conveyance of the Property in accordance with, and effectuate the other provisions of, this Agreement.

11. Road Maintenance. Purchaser understands and agrees that the gravel portion of Pine Grove Road that abuts the Property shall be Purchaser's responsibility to maintain, unless the portion of the road is under the jurisdiction of local city or county governance and maintenance. Maintenance shall include keeping the road in passable condition, including keeping potholes filled if required.

12. Brokers. Seller and Purchaser each warrant and represent to the other that neither has employed or dealt with a real estate broker or agent in connection with the transaction contemplated hereby. Seller and Purchaser covenant and agree, each to the other, to indemnify the other against any loss, liability, costs, claims, demands, damages, actions, causes of action, and suits arising out of, or in any manner related to, the alleged employment, engagement or use by the indemnifying party of any real estate broker or agent. The foregoing obligation shall survive Closing.

13. Seller Representations, Warranties, and Covenants. Seller represents, warrants, and covenants, as follows:

13.1. Seller holds the fee simple interest in and has the exclusive right to purchase and sell the Property as of the Effective Date. Seller shall not enter into, permit, or suffer, nor purport to enter into or permit, any encumbrance of the Property that is not subordinate to the Option and Purchaser's rights under this Agreement and the title conveyed to Purchaser at Closing. There are no leases, rental agreements, or other rights of occupancy of any kind, whether written or oral, currently affecting the Property, except as follows: _____ **[to be completed by Seller]**. Seller shall terminate any leases, rental agreements or other rights of occupancy (whether such leases, rental agreements or rights of occupancy are presently in existing or are hereafter created) prior to Closing.

13.2. No condemnation proceeding is pending or, to Seller's knowledge, threatened with respect to any part of the Property.

13.3. Seller has not used, generated, treated, stored, released, discharged, or disposed of Hazardous Substances on or from the Property at any time; nor, to the knowledge of Seller, has any such event occurred upon or within the Property. To the knowledge of Seller, no notification of release of a Hazardous Substance has been filed as to the Property, nor is the Property listed or formally proposed for listing on the National Priority List promulgated pursuant to federal law or on any state list of hazardous substance sites requiring investigation or clean-up. Seller has complied with all reporting requirements under any applicable federal, state, or local environmental laws and there are no existing violations by Seller of any such environmental laws. To the knowledge of Seller, there are no claims, actions, suits, proceedings, or investigations related to the presence,

release, discharge, spillage, or disposal of any Hazardous Substance or contamination of soil or water by any Hazardous Substance pending or threatened with respect to the Property or otherwise against Seller in any court or before any state, federal, or other governmental agency or private arbitration tribunal. To the knowledge of Seller, no PCB, PCB-contaminated, friable asbestos, or formaldehyde-based insulation items are present at the Property. Seller shall indemnify and hold harmless Purchaser from and against any and all losses arising from or related to the breach by Seller of any warranties or representations contained in this subsection. "Hazardous Substance" shall refer to any hazardous or toxic substance or waste as those terms are defined by any applicable federal or state law or regulation, including, without limitation, the Comprehensive Environmental Recovery Compensation and Liability Act, 42 U.S.C. 9601 et seq. and the Resource Conservation and Recovery Act, 42 U.S.C. 6901 et seq., and petroleum, petroleum products, and oil.

13.4. Seller has no knowledge, nor has Seller received any notice of any actual or pending litigation or proceeding by any organization, person, individual, or governmental agency against Seller with respect to the Property or any portion thereof or with respect thereto, nor does Seller know of any basis for any such action; and Seller has no knowledge, nor has Seller received any notice, of any violations of law, municipal or county ordinances, or other legal requirements with respect to the Property (or any part thereof) or with respect to the use or occupancy of the Property nor does Seller know of any basis for such violations.

13.5. No assessments have been made against the Property (or any part thereof) that are unpaid (except property taxes or special assessments which will be paid in full or prorated as an adjustment to the Purchase Price at the time of Closing in accordance with this Agreement), whether or not they have become liens.

13.6. Seller shall cooperate with Purchaser in Purchaser's efforts to seek governmental approvals desired by Purchaser for Purchaser's intended use and acquisition of the Property including (i) the granting to Purchaser of full authority to seek any and all permits, entitlements, licenses, and approvals (collectively, "Approvals") necessary or convenient for the development of the Property for Purchaser's intended use thereof (including, as necessary, rezoning, general plan amendment, environmental permit, building permit, variance, and/or vacation applications) and for the division (whether by certified survey map or otherwise) of the Property so as to cause the Property to be recognized as a single lawfully subdivided parcel, and (ii) the execution of consents and applications in connection with Purchaser attempting to obtain such Approvals. Without limiting the generality of the foregoing, Seller shall not oppose, in any way, whether directly or indirectly, and shall fully cooperate with Purchaser in connection with any application by Purchaser for any Approvals at any administrative, judicial, legislative, or other level. It is acknowledged and agreed by Seller that Purchaser intends to utilize the Property (if Purchaser acquires the Property pursuant to Purchaser's exercise of the Option) as a solar energy generation facility, and for uses related and incidental thereto. Purchaser shall pay all fees and costs in connection with Purchaser's applications for any Approvals. Purchaser will obtain Seller's prior written consent to any all submittals to be made by Purchaser in connection with the process of obtaining any Approvals, which consent shall not be unreasonably withheld, conditioned or delayed. In the event that Seller unreasonably withholds, conditions or delays its consent to any such submittals desired to be made by Purchaser, then Purchaser shall have the right, in its sole discretion, to terminate this Agreement upon written notice to Seller, and upon any such termination pursuant to this sentence, Seller shall immediately refund to Purchaser any Option Payments previously made by Purchaser to Seller hereunder. If this Agreement is terminated pursuant to the provisions hereof, Seller may withdraw or terminate any applications for Approvals.

13.7. Seller agrees that Purchaser shall not and does not assume any of the following liabilities, and Seller shall promptly pay and perform, and indemnify and hold Purchaser harmless from and against: any liability or obligation of Seller in respect of any state, local, federal, or foreign taxes (whether in the nature of income, transfer, sales, withholding, employee, excise, property, customs, gross receipts, or other taxes or other duties of any kind whatsoever), or penalties, interest, and fines in respect thereof, or any reporting requirement or estimated tax payable with respect thereto, relating to events or transactions occurring on or prior to Closing involving Seller or the transactions contemplated hereby; any litigation, investigation, or other proceeding pending or threatened with respect to Seller or the Property on or prior to Closing, or subsequently asserted, which is attributable to facts existing, or events, or omissions occurring on or prior to Closing; and all liabilities or claims of any nature relating directly or indirectly to the Property, whether accrued, absolute, contingent, or otherwise arising out of or relating to (or alleged to arise out of or relate to) any state of facts, omissions, or events existing or occurring on or before Closing (whether known or unknown to Purchaser or Seller).

13.8. Seller shall not enter into any transaction, take any action, or by inaction, permit any event to occur, which would result in any of the representations, warranties, and covenants of Seller herein contained not being true, correct, and satisfied at and as of the time immediately after the occurrence of such transaction or event.

13.9. If as of the Effective Date the Property is subject to any mortgage or deed of trust, then concurrently with the execution of this Agreement, Seller shall obtain from the holder of such mortgage or deed of trust and deliver to Purchaser, the written agreement of such holder ("Subordination Agreement") in recordable form subordinating such mortgage or deed of trust to this Agreement. Any such Subordination Agreement shall be in form and substance reasonably acceptable to Purchaser.

Seller agrees to take such actions at its expense as may be necessary to cause the representations, warranties, and covenants in this Agreement to be true, correct, and satisfied as of the date of Closing; provided, however, if an event or circumstance which is neither caused by Seller nor within the reasonable control of Seller causes any such representation, warranty, or covenant to be untrue as of the date of Closing, Seller shall not be required to take any action with respect to such event or occurrence. Subject to the preceding sentence, Seller shall affirm the foregoing representations, warranties, and covenants at (and as of the date of) Closing, all of which shall survive Closing. Notwithstanding the foregoing, or anything to the contrary contained in this Agreement, it shall be a condition precedent to Purchaser's obligation to close the transaction herein described that all of Seller's representations, warranties, and covenants under this Agreement be true, correct, and satisfied, in all material respects, as of the date of Closing, and shall survive closing.

14. Purchaser's Representations, Warranties and Covenants. Purchaser warrants, represents and covenants to and with Seller that the following are true and correct on the date hereof and the Closing:

14.1. Purchaser has the requisite power and authority to enter into and to perform the terms of this Agreement. To Purchaser's actual knowledge, Purchaser is not subject to any law, order, decree, restriction, or agreement which prohibits or would be violated by this Agreement or the consummation of the transactions contemplated hereby.

14.2. To Purchaser's actual knowledge, neither the execution, delivery and performance of this Agreement nor the consummation of the transactions contemplated hereby is prohibited by, or requires Purchaser to obtain any consent, authorization, approval or registration under any law, statute, rule, regulation, judgment, order, writ, injunction or decree which is binding upon Purchaser.

14.3. To Purchaser's actual knowledge, there are no judgments, orders, or decrees of any kind against Purchaser unpaid or unsatisfied of record, nor any actions, suits or other legal or administrative proceedings pending or, to the best of Purchaser's actual knowledge, threatened against Purchaser, which would have any material adverse effect on the business or assets or the condition, financial or otherwise, of Purchaser or the ability of Purchaser to consummate the transactions contemplated by this Agreement.

15. Eminent Domain. If, after the Effective Date and prior to Closing, Seller receives notice of the commencement or threatened commencement of eminent domain or other like proceedings against the Property or any portion thereof, Seller shall immediately give written notice thereof to Purchaser, in which event Purchaser, in its discretion (whether or not Purchaser has then exercised the Option), may elect, by written notice to Seller, either to (i) terminate this Agreement or (ii) keep this Agreement in effect and, if applicable, close the transaction contemplated hereby in accordance with its terms, but subject to such proceedings, in which event the Purchase Price shall not be reduced but Seller shall assign to Purchaser Seller's rights in any condemnation award or proceeds, as they pertain to this Agreement or the Property.

16. Damage to Property. Except as provided in this section and except as otherwise provided in Section 5, the risk of loss or damage to the Property and all liability to third parties until the Closing shall be borne by Seller. If, after the Effective Date and prior to Closing, all or any part of the Property is damaged by flood or other casualty, Seller shall immediately give written notice to Purchaser of such damage and of Seller's insurance coverage with respect to such damage, if any, in which event Purchaser, in its discretion (whether or not Purchaser has then exercised the Option), may elect, by written notice to Seller, either to (i) terminate this Agreement, or (ii) keep this Agreement in effect and, if applicable, close the transaction contemplated hereby in accordance with its terms, in which event the Purchase Price shall not be reduced but Seller shall assign to Purchaser Seller's rights in any insurance proceeds, as they pertain to this Agreement or the Property.

17. Notices. All notices or other communications required or permitted hereunder shall, unless otherwise provided herein, be in writing, and shall be personally delivered, delivered by reputable overnight courier, or sent by registered or certified mail, return receipt requested and postage prepaid, addressed as follows:

If to Seller:

Robert B. and Kathy L. Congleton

[REDACTED]
[REDACTED]
[REDACTED]
[REDACTED]

If to Purchaser:

Sustainable Property Holdings, LLC

Attn: Land Manager

2180 South 1300 East, Suite 600

Salt Lake City, UT 84106

Phone: (801) 679-3500

Email: Land@spower.com

Notices personally delivered shall be deemed given the day so delivered. Notices given by overnight

courier shall be deemed given on the first business day following the mailing date. Notices mailed as provided herein shall be deemed given on the third business day following the mailing date. Any party may change its address for purposes of this section by giving written notice of such change to the other party in the manner provided in this section.

18. Default Remedies.

[REDACTED]

19. Entire Agreement, Amendments and Waivers. This Agreement contains the entire agreement and understanding of the parties in respect to the subject matter hereof, supersedes all prior agreements in respect to the subject matter hereof, if any, between the parties, and the same may not be amended, modified, or discharged nor may any of its terms be waived except by an instrument in writing signed by the parties. Nothing herein shall be construed to supersede any ongoing lease or easement agreement between the parties.

20. Further Assurances. The parties each agree to do, execute, acknowledge, and deliver all such further acts, instruments, and assurances, and to take all such further action before or after Closing as shall be necessary or desirable to fully carry out this Agreement and to fully consummate and effect the transactions contemplated hereby. The foregoing covenant shall survive Closing.

21. No Third-Party Benefits. This Agreement is for the sole and exclusive benefit of the parties hereto and their respective successors and assigns, and no third party is intended to or shall have any rights hereunder.

22. Assignment, Successors. Purchaser may freely assign its rights under this Agreement on written notice to Seller. This Agreement shall be binding upon and inure to the benefit of the parties hereto and their respective heirs, successors, and assigns. Seller may not assign any rights under this Agreement to any other person or party without consent of Purchaser.

23. Governing Law. This Agreement shall be governed by and construed in accordance with the laws of the State of Kentucky.

24. Mandatory and Binding Arbitration. Any dispute arising between the parties to this Agreement, which cannot be settled amicably by the parties, concerning the Property, any provision of this Agreement, or the rights and duties of the parties in regard thereto, including any alleged breach of this Agreement, shall be resolved by arbitration as provided in this section. All such disputes shall be settled exclusively and finally through arbitration conducted by the American Arbitration Association (the "AAA") before a single arbitrator in Madison County, Kentucky in

accordance with the Commercial Arbitration Rules of the AAA (the “Rules”), as such Rules are in effect on the date of delivery of a Demand for Arbitration, provided, however, that notwithstanding anything contained in the Rules, the arbitrator shall not have the power to authorize more than ten (10) document requests. Further, no interrogatories shall be allowed during the course of the arbitration proceeding, and each party shall be allowed only one deposition absent a showing of good cause. “Good cause” in this context shall mean that despite the fact that the parties are agreeing to arbitration as an alternative to judicial proceedings because arbitration is intended to be a quicker, less expensive, more efficient dispute resolution mechanism, the party cannot establish its *prima facie* case without taking more than one deposition. In no case does the arbitrator have the power to authorize more than three (3) depositions per party. The arbitration proceedings provided hereunder are hereby declared to be self-executing, and it shall not be necessary to petition a court to compel arbitration. The expedited arbitration will be concluded within [REDACTED] of the date of the Demand for Arbitration. The arbitrator shall determine all questions of fact and law relating to any controversy, claim or dispute hereunder, including but not limited to whether or not such controversy, claim or dispute is subject to the arbitration provisions contained herein. The arbitrator shall have the power to issue an injunction or require specific performance as the arbitrator finds necessary. Should arbitration result in a monetary award to either party, the party owing the award shall have [REDACTED] to pay such award. The arbitrator may apportion the costs and expenses of the arbitration proceeding, including attorneys’ fees and arbitrators’ fees, between the parties in any manner deemed reasonable by the arbitrator. The arbitrator is required, under the Agreement between the parties, to strictly construe this Agreement and may not grant an award or any relief to a party that is inconsistent with the express terms of this Agreement. The determinations of the arbitrator shall be subject to judicial review to the maximum extent allowed by federal law or the law of the state in which the arbitration occurs. Any award or determination rendered by the arbitrator may be entered and enforced in any court of competent jurisdiction. Any party shall have the right to apply to a court of competent jurisdiction for an injunction to protect its interests under this Agreement only if: (a) one of the parties has already filed a demand for arbitration under this section; and (b) no arbitrator has yet been appointed by the AAA.

25. Waiver of Jury Trial. **EACH PARTY HERETO HEREBY WAIVES ANY AND ALL RIGHTS IT MAY HAVE TO DEMAND THAT ANY ACTION, PROCEEDING, CLAIM, COUNTERCLAIM OR CAUSE OF ACTION ARISING OUT OF OR IN ANY WAY RELATED TO THIS AGREEMENT OR THE RELATIONSHIP OF THE PARTIES HEREUNDER BE TRIED BY JURY. THE SCOPE OF THIS WAIVER IS INTENDED TO BE ALL ENCOMPASSING OF ANY AND ALL DISPUTES THAT MAY BE FILED IN ANY COURT. EACH PARTY HEREBY ACKNOWLEDGES THAT IT IS KNOWINGLY AND VOLUNTARILY WAIVING THE RIGHT TO DEMAND TRIAL BY JURY.**

26. Enforcement Expense. In the event that either party hereto commences an enforcement action against the other to enforce its rights hereunder, the prevailing party in such enforcement action shall be entitled to recover from the other its reasonable attorney's fees and expenses incidental to such enforcement action, whether incurred before or after a final decision on such enforcement action.

27. Severability. If any clause or provision of this Agreement is held by a court having jurisdiction to be illegal, invalid or unenforceable under any present or future law, the remainder of this Agreement will not be affected thereby. It is the intention of the parties that if any such provision is held to be illegal, invalid, or unenforceable, there will be added in lieu thereof a provision as similar in terms to such provision as is possible and be legal, valid, and enforceable.

28. Time. Time is the essence of each provision of this Agreement.
29. Gender. Words of any gender used in this Agreement shall be held and construed to include any other gender, and words in the singular shall be held to include the plural.
30. Captions. The captions in this Agreement are inserted for convenience of reference and are not intended to define, describe or limit the scope of any provision of this Agreement.
31. Counterpart Execution. This Agreement may be executed in counterparts, each of which will be deemed an original document, but all of which will constitute a single document.
32. Confidentiality. Seller will (i) treat this Agreement and all oral discussions related hereto in strict confidence and (ii) except to the extent included in any memorandum recorded in the public records, shall not disclose any of the particulars hereof to any third parties without the prior written consent of Purchaser; provided, however, that Seller may disclose such information to (x) Seller's personal advisors, (y) any prospective purchaser of the Property, or (z) pursuant to lawful process, subpoena, or court order; so long as in making such disclosure Seller advises the person receiving the information of the confidentiality thereof and obtains the agreement of said person not to disclose such information. Excluded from the foregoing is any information that is in the public domain by reason of prior publication through no act or omission of Seller.

[The remainder of this page is intentionally left blank.]

IN WITNESS WHEREOF, the undersigned parties have set their hands and seals hereto as of the day and year indicated next to their signatures.

SELLER:

Dated: _____

Robert B. Congleton
Robert B. Congleton, Husband

Dated: _____

Kathy L. Congleton
Kathy L. Congleton, wife

PURCHASER:

**SUSTAINABLE PROPERTY HOLDINGS,
LLC**
a Delaware limited liability company

Dated: _____

By: _____
Name: _____
Title: _____

IN WITNESS WHEREOF, the undersigned parties have set their hands and seals hereto as of the day and year indicated next to their signatures.

SELLER:

Dated: _____
Robert B. Congleton, Husband

Dated: _____
Kathy L. Congleton, wife

PURCHASER:

**SUSTAINABLE PROPERTY HOLDINGS,
LLC**
a Delaware limited liability company

Dated: [REDACTED]
By: 
Name: Sean McBride
Title: Authorized Person

EXHIBIT A

LEGAL DESCRIPTION OF THE PROPERTY

APN 0120-0000-0005-2 in Madison County, Kentucky



EXHIBIT B

FORM OF MEMORANDUM

[the remainder of this page intentionally left blank]

Recording requested by and
when recorded mail to:

Sustainable Property Holdings, LLC
Attn: Land Manager
2180 South 1300 East, Suite 600
Salt Lake City, UT 84106

(space above this line for recorder's use)

MEMORANDUM OF REAL ESTATE PURCHASE OPTION AGREEMENT

THIS MEMORANDUM OF REAL ESTATE PURCHASE OPTION AGREEMENT (this "Memorandum") is made, dated and effective as of [REDACTED] (the "Effective Date"), between **ROBERT B. CONGLETON AND KATHY L. CONGLETON**, husband and wife as joint tenants ("Seller"), and **SUSTAINABLE PROPERTY HOLDINGS, LLC**, a Delaware limited liability company ("Purchaser"), in light of the following facts and circumstances:

RECITALS:

WHEREAS, Seller and Purchaser have entered a Real Estate Purchase Option Agreement dated as of the Effective Date with respect to property more specifically described herein (as heretofore or hereinafter amended, restated, or supplemented from time to time, the "Option Agreement"); and

WHEREAS, Seller and Purchaser desire to set forth certain terms and conditions of the Option Agreement in a manner suitable for recording in the Official Records of Madison County, Kentucky in order to provide record notice of the Option Agreement and Purchaser's rights in and to the land subject to the Option Agreement, as provided herein.

NOW, THEREFORE, in consideration of the mutual covenants contained in the Option Agreement, and other good and valuable consideration, the receipt and sufficiency of which are hereby acknowledged, the parties hereto agree and stipulate as follows:

1. Description of Property. The land subject to the Option Agreement is described on Exhibit A attached hereto, and by this reference made a part hereof (the "Property").

2. Grant of Option. Seller hereby grants to Purchaser, pursuant to the Option Agreement, an exclusive and irrevocable option (the "Option") to purchase [REDACTED] of real property within the Property on the terms and conditions set forth in the Option Agreement. The entire Option Agreement is hereby incorporated into this Memorandum by reference. Notwithstanding anything to the contrary contained herein, the provisions of this Memorandum do not in any way alter, amend, supplement, change, or affect the terms, covenants, or conditions of the Option Agreement, all of which terms, covenants,

and conditions shall remain in full force and effect. In the event of any conflict between the terms of this Memorandum and the Option Agreement, the terms of the Option Agreement shall prevail.

3. Term of Option Agreement. Unless extended or earlier terminated, as provided in the Option Agreement, the term of the Option shall be for a [REDACTED] period beginning on the Effective Date, with an option to extend an additional [REDACTED]. Closing of the transaction contemplated by the Option Agreement shall occur within [REDACTED] following Purchaser's exercise of the Option, in accordance with the Option Agreement, or as the parties may otherwise mutually agree.

4. Names and Addresses of Parties. The names and addresses of the parties to the Option Agreement are as follows:

Seller:

Robert B. and Kathy L. Congleton

[REDACTED]
[REDACTED]
[REDACTED]
[REDACTED]

Purchaser:

Sustainable Property Holdings, LLC

Attn: Land Manager

2180 South 1300 East, Suite 600

Salt Lake City, UT 84106

Phone: (801) 679-3500

Email: Land@spower.com

5. Successors and Assigns. The terms of this Memorandum and the Option Agreement are covenants running with the land and inure to the benefit of, and are binding upon, the parties and their respective successors and assigns, including all subsequent owners of all or any portion of the Property. References to Seller and Purchaser include their respective successors and assigns. References to the Option Agreement includes any amendments thereto.

6. Miscellaneous. This Memorandum is executed for the purpose of recording in the Official Records of Madison County, Kentucky, in order to provide public record notice of the Option Agreement and Purchaser's rights in and to the land subject to the Option Agreement. All persons are hereby put on notice of and shall have a duty to inquire regarding the Option Agreement and all of the provisions thereof and the rights, title, interests, and claims of Purchaser in and to the Property. Any right, estate, claim, or interest in the Property first attaching to the Property and recorded from and after the Effective Date shall be subordinate to the terms of the Option Agreement. If Purchaser acquires fee simple title to any portion of the Property, Purchaser shall have the right, at Purchaser's option, to terminate any such subordinate right, estate, claim, or interest, at no cost or liability to Purchaser, or to accept title subject thereto. This instrument may for convenience be executed in any number of original counterparts, each of which shall be an original and all of which taken together shall constitute one instrument.

[The remainder of this page is intentionally left blank.]

IN WITNESS WHEREOF, Seller and Purchaser, acting through their duly authorized representatives, have made and entered into this Memorandum as of the Effective Date.

SELLER:

Robert B. Congleton
Robert B. Congleton, Husband

Kathy L. Congleton
Kathy L. Congleton, wife

PURCHASER:

SUSTAINABLE PROPERTY HOLDINGS, LLC
a Delaware limited liability company

By: _____
Name: _____
Title: _____

IN WITNESS WHEREOF, Seller and Purchaser, acting through their duly authorized representatives, have made and entered into this Memorandum as of the Effective Date.


SELLER:

Robert B. Congleton, Husband

Kathy L. Congleton, wife

PURCHASER:

SUSTAINABLE PROPERTY HOLDINGS, LLC
a Delaware limited liability company

By: 

Name: Sean McBride
Title: Authorized Person

ACKNOWLEDGEMENT OF SELLER

STATE OF Kentucky }
COUNTY OF Madison } S.S

On [REDACTED], [REDACTED] before me, Cherie Tracy Notary Public, personally appeared, Robert + Kathy Congleton, who proved to me on the basis of satisfactory evidence to be the person(s) whose name(s) is/are subscribed to the within instrument and acknowledged to me that he/she/they executed the same in his/her/their authorized capacity(ies), and that by his/her/their signature(s) on the instrument the person(s), or the entity upon behalf of which the person(s) acted, executed the instrument.

I certify under PENALTY OF PERJURY under the laws of the State of Kentucky that the foregoing paragraph is true and correct.

WITNESS my hand and official seal.

Signature: Cherie Tracy
Notary ID # 634358
Commission Expires 10/28/23



(Notary Seal)

ACKNOWLEDGEMENT OF PURCHASER

STATE OF UTAH)
 §
COUNTY OF SALT LAKE)

On [REDACTED], before me, Sabrina Fuller, personally appeared Sean McBride who proved to me on the basis of satisfactory evidence to be the person whose name is subscribed to the within instrument and acknowledged to me that he executed the same in his authorized capacity, and that by his signature on the instrument, the person, or the entity upon behalf of which the person acted, executed the instrument.

I certify under PENALTY OF PERJURY under the laws of the State of Utah that the foregoing paragraph is true and correct.

WITNESS my hand and official seal.



Signature *Sabrina Fuller* (seal)

EXHIBIT A

LEGAL DESCRIPTION

APN 0120-0000-0005-2 in Madison County, Kentucky



REAL ESTATE PURCHASE OPTION AGREEMENT

THIS REAL ESTATE PURCHASE OPTION AGREEMENT (this "Agreement") is made as of the Effective Date (as defined below), by and between **ROBERT B. CONGLETON AND KATHY L. CONGLETON**, husband and wife as joint tenants ("Seller"), and **SUSTAINABLE PROPERTY HOLDINGS, LLC**, a Delaware limited liability company ("Purchaser"). The latest date indicated on the signature page of this instrument shall be the "Effective Date" of this Agreement.

1. Grant of Option. For and in consideration of Purchaser's agreement to make to Seller the payments set forth in Section 3 below (the "Option Payments"), Seller hereby grants to Purchaser an exclusive and irrevocable option (the "Option") to purchase approximately [REDACTED] of real property legally described on Exhibit A attached hereto and made a part hereof, in the county of Madison, State of Kentucky (the "Property"), on the terms and conditions set forth in this Agreement.

2. Term of Option. The term of the Option (the "Term") shall be for a [REDACTED] period beginning on the Effective Date, together with Purchaser's option to extend said Term for an additional [REDACTED] upon written notice provided to Seller prior to the expiration of the initial Term, provided however, that Purchaser shall have the right at any time prior to exercising the Option to terminate this Agreement as to all or any portion of the Property by giving written notice to Seller. Upon termination of this Agreement for any reason, Purchaser's obligations to Seller hereunder (including but not limited to Purchaser's obligations to make any remaining Option Payments) shall become null and void and of no further force or effect.

3. Option Payments. In consideration of the rights granted hereunder, Purchaser will pay to Seller the Option Payments set forth in the table below, on the payment dates set forth in such table. If any scheduled payment date falls on a day which is not a business day in the State of Utah, then the due date for such payment shall be extended to the next succeeding business day. The Option Payments shall be non-refundable to Purchaser in the event that this Agreement is terminated, unless Seller is in default or breach of this Agreement. The amount of all Option Payments made by Purchaser shall be applied against the Purchase Price at the Closing.

<u>Option Payment Due Date</u>	<u>Amount of Option Payment Due on Such Date</u>
Effective Date	[REDACTED]
[REDACTED] following Effective Date	[REDACTED]
[REDACTED] following Effective Date	[REDACTED]
[REDACTED] following Effective Date	[REDACTED]
[REDACTED] following Effective Date	[REDACTED]
[REDACTED] following Effective Date	[REDACTED]
[REDACTED] following Effective Date	[REDACTED]
[REDACTED] following Effective Date	[REDACTED]

██████████ following Effective Date	██████████
██████████ following Effective Date	██████████
██████████ following Effective Date	██████████
██████████ following Effective Date	██████████
██████████ following Effective Date	██████████
██████████ following Effective Date	██████████
In the event Purchaser extends initial Term, Option Payments are scheduled as follows:	
██████████ following Effective Date	██████████
██████████ following Effective Date	██████████
██████████ following Effective Date	██████████
██████████ following Effective Date	██████████

It is acknowledged and understood that the table set forth above reflects that the period commencing on the Effective Date and continuing for ██████████ shall constitute a due diligence period for Purchaser (“Due Diligence Period”). The initial payment of ██████████ (the “Deposit”) shall be deposited into an escrow account with Escrow Holder (as defined below) along with a signed copy of this Agreement. Nothing contained in this Section shall in any way limit or otherwise affect Purchaser’s right to terminate this Agreement at any time pursuant to Section 2. If Purchaser terminates this Agreement prior to the expiration of the Due Diligence Period, the Deposit, less an amount equal to ██████████ (the “Independent Consideration”), shall be immediately returned to Purchaser by Escrow Holder. If this Agreement is not so terminated, the Deposit shall be released to Seller from escrow upon expiration of the Due Diligence Period. Future Option Payments shall be made by Purchaser to Escrow Holder for credit to Seller, and Escrow Holder shall forward such future Option Payments to Seller promptly following Escrow Holder’s receipt thereof. Purchaser’s obligation to make the applicable Option Payment to Seller shall be considered complete when such payment has been made to Escrow Holder. The “Escrow Holder” shall be McBrayer Firm, 201 East Main Street, Suite 900, Lexington, Kentucky 40507, Attention: James H. Frazier, III, Telephone: (859) 231-8780, ext. 1303, E-mail: jfrazier@mcbrayerfirm.com. Escrow Holder shall execute a joinder to this Agreement evidencing Escrow Holder’s agreement to act as Escrow Holder in accordance with the provisions hereof. Concurrently with execution of this Agreement, Seller and Purchaser will execute a memorandum in the form of Exhibit B attached hereto and made a part hereof by reference, or any other reasonable form of memorandum, and Purchaser shall cause such memorandum to be recorded in the public records.

4. Method of Exercising Option. Purchaser may exercise the Option at any time during the Term by giving written notice to Seller (the “Exercise Notice”). Upon the timely and proper exercise of the Option, Seller agrees to sell and convey, and Purchaser agrees to purchase, the Property, in accordance with and subject to the terms and conditions of this Agreement.

5. Inspections; Use of Property. From and after the Effective Date, Purchaser or its designated agents may enter upon the Property upon reasonable prior notice to Seller to conduct, at Purchaser’s sole cost and expense, any inspections, tests, surveys, engineering, environmental, and/or market and economic feasibility studies, and due diligence matters related thereto, concerning the

Property. Any activities of Purchaser on the Property shall be conducted in such a manner so as to not cause any material damage to the Property and so as to not unreasonably interfere with the current use of the Property. Purchaser shall be responsible for any material damage to the Property caused by Purchaser in connection with Purchaser's activities on the Property, which damage shall be assessed immediately upon occurrence, or by a third-party consultant as soon as possible after occurrence. Purchaser shall indemnify Landowner for any loss, costs, claims, actions or damages caused by activities of Purchaser on the Property except those caused by Seller's gross negligence or willful behavior. Subject to the foregoing rights of Purchaser, prior to the Closing (as defined in Section 9 below), Seller, or its affiliated or contracted parties, shall be permitted to continue to use the Property in a manner consistent with its existing use, including but not limited to cattle grazing. Seller shall provide Purchaser, prior to the expiration of the Due Diligence Period, with copies of all field tiling surveys, plans and other geotechnical and other site assessments, surveys, plans, entitlement-related studies, environmental assessments, reports, test results, correspondence to or from any governmental agency, and other such records of Seller relating to the Property. Seller represents and warrants to Purchaser that, to the best of Seller's knowledge, all information contained in any such materials provided by Seller to Purchaser shall be accurate and complete.

6. Purchase Price. The price (the "Purchase Price") to be paid by Purchaser to Seller for the Property shall be [REDACTED]

[REDACTED]

[REDACTED]

7. Costs; Prorations; Credits.

7.1. [REDACTED]

7.2. [REDACTED]

7.3. [REDACTED]

8. Title.

8.1. At Closing, Seller shall convey to Purchaser marketable and insurable fee simple title to the Property, free from any (i) mortgage, deed to secure debt, deed of trust, security agreement, judgment, lien or claim of lien, or any other title exception or defect that is monetary in nature, Seller hereby agreeing to pay and satisfy of record any such title defects or exceptions prior to or at Closing at Seller's expense, (ii) lease, rental agreement, or other right of occupancy of any kind, whether written or oral (it being acknowledged and understood that any lease, rental agreement or right of occupancy in existence as of the date hereof shall be fully and completely terminated by Seller prior to Closing), (iii) recorded or unrecorded right or interest first attaching subsequent to the Effective Date, or (iv) matter encompassed by any standard exception under the Title Commitment (other than as to matters of survey), including the standard "gap" exception, the standard mechanic's lien exception and the standard parties in possession exception (the "Non-Permitted Exceptions").

8.2. Prior to Closing, Purchaser shall obtain a current title commitment (the "Title Commitment") applicable to the Property, from the Title Company (as defined below), whereby the Title Company agrees to issue at Closing an ALTA Owner's Policy of Title Insurance (the "Title Policy"), in the amount of the Purchase Price, insuring Purchaser's marketable fee simple title to the Property, including all appurtenances thereto and improvements thereon, and including such additional title endorsements in form and content as Purchaser may reasonably request. Notwithstanding anything to the contrary contained in this Agreement, it shall be a condition precedent to Purchaser's obligation to close the transaction herein described that the Title Company shall have unconditionally indicated in writing that upon recording of the Deed and payment of its premiums (at ordinary rates), the Title Company will issue the Title Policy to Purchaser as herein required, insuring that fee simple title shall be vested in Purchaser, without exception for the Non-Permitted Exceptions. If the parties are unable to cause the satisfaction of the aforesaid condition precedent, Purchaser, in its discretion, may elect, by written notice to Seller, either to accept such title as Seller is capable of delivering or to terminate this Agreement. If this Agreement is so terminated, Seller shall immediately return to Purchaser all Option Payments previously made by Purchaser. The "Title Company" shall be McBrayer Firm, 201 East Main Street, Suite 900, Lexington, Kentucky 40507, Attention: James H. Frazier, III, Telephone: (859) 231-8780, ext. 1303, E-mail: jfrazier@mcbrayerfirm.com.

9. Closing. The closing of the transaction contemplated by this Agreement ("Closing") shall occur through escrow at the offices of the Escrow Holder within [REDACTED] following Purchaser's delivery of the Exercise Notice on such date as Purchaser may select by advance written notice to Seller or on such other date or at such other location as the parties may mutually agree. If the Escrow Holder requires the execution of an escrow agreement, Seller and Purchaser will promptly execute and deliver the same in such form as the Title Company or such escrow agent may reasonably request.

10. Closing Deliveries. At Closing, the following shall occur:

10.1. Seller shall deliver actual possession of the Property to Purchaser and Seller shall deliver or cause to be delivered to Purchaser such documents as are reasonably required by Purchaser to close the transaction that is the subject of this Agreement, all fully executed by Seller and acknowledged as necessary, including the following enumerated documents, all of which documents shall be subject to the reasonable approval of Purchaser:

10.1.1. Counterpart of closing statement;

10.1.2. Grant Deed (the "Deed"), conveying to Purchaser the Property, including any and all water rights, and warranting title against the Non-Permitted Exceptions and against all persons whomsoever;

10.1.3. Certificate of Non-Foreign Status, evidencing that Purchaser shall not be liable for transfer liability under Section 1445 of the Internal Revenue Code, as amended;

10.1.4. A general assignment (the "General Assignment") assigning to Purchaser all of Seller's right, title and interest in, to and under any or all of the following intangible property relating to the Property (the "Intangible Property"), as determined by Purchaser in its sole discretion: (i) all licenses, permits, certificates of occupancy, approvals, dedications, subdivision maps and entitlements issued, approved or granted by governmental authorities or otherwise in connection with the Property, including any water rights or permits; (ii) all licenses, consents, easements, rights of way and approvals required from private parties to make use of utilities and to insure vehicular and pedestrian ingress and egress to the Property; and (iii) any and all service contracts, agreements, maintenance contracts and like contracts and agreements relating to the Property, together with all supplements, amendments and modifications thereto;

10.1.5. Real Estate Withholding Certificate, if applicable;

10.1.6. Title affidavits and indemnities in form and content as may be reasonably required by Purchaser and the Title Company to delete all of the Title Commitment's standard exceptions (other than as to matters of survey), including the standard "gap" exception, the standard mechanic's lien exception, and the standard parties in possession exception and any exceptions for judgment, state or federal tax, environmental, broker, or other liens;

10.1.7. Instruments reasonably satisfactory to Purchaser and the Title Company reflecting the proper power, good standing, and authorization for the sale of the Property from Seller to Purchaser and the execution and delivery of all documents hereunder;

10.1.8. Such corrective instruments as may be required to deliver marketable and insurable title as required hereunder;

10.1.9. Seller certification confirming that all representations and warranties stated herein are in full force and effect as of Closing; and

10.1.10. Such other instruments as may be reasonably necessary to effect the conveyance of the Property in accordance with, and effectuate the other provisions of, this Agreement.

10.2. Purchaser shall deliver or cause to be delivered to Seller such documents as are reasonably required by Seller to close the transaction that is the subject of this Agreement, all fully executed by Purchaser and acknowledged as necessary, including the following enumerated documents, all of which documents shall be subject to the reasonable approval of Seller:

10.2.1. Counterpart of closing statement;

10.2.2. An acceptance of the General Assignment, if Purchaser has elected to receive assignment of any of the Intangible Property; and

10.2.3. Such other instruments as may be reasonably necessary to effect the conveyance of the Property in accordance with, and effectuate the other provisions of, this Agreement.

11. Property Improvements. Any improvements, either personal or affixed to the Property, that Seller wishes to retain must be removed prior to Closing. If any personal property or structure remains after Closing, it shall become the property of Purchaser.

12. Road Maintenance. Purchaser understands and agrees that the gravel portion of Pine Grove Road that abuts the Property shall be Purchaser's responsibility to maintain, unless the portion of the road is under the jurisdiction of local city or county governance and maintenance. Maintenance shall include keeping the road in passable condition, including keeping potholes filled if required.

13. Brokers. Seller and Purchaser each warrant and represent to the other that neither has employed or dealt with a real estate broker or agent in connection with the transaction contemplated hereby. Seller and Purchaser covenant and agree, each to the other, to indemnify the other against any loss, liability, costs, claims, demands, damages, actions, causes of action, and suits arising out of, or in any manner related to, the alleged employment, engagement or use by the indemnifying party of any real estate broker or agent. The foregoing obligation shall survive Closing.

14. Seller Representations, Warranties, and Covenants. Seller represents, warrants, and covenants, as follows:

14.1. Seller holds the fee simple interest in and has the exclusive right to purchase and sell the Property as of the Effective Date. Seller shall not enter into, permit, or suffer, nor purport to enter into or permit, any encumbrance of the Property that is not subordinate to the Option and Purchaser's rights under this Agreement and the title conveyed to Purchaser at Closing. There are no leases, rental agreements, or other rights of occupancy of any kind, whether written or oral, currently affecting the Property, except as follows: _____ **[to be completed by Seller]**. Seller shall terminate any leases, rental agreements or other rights of occupancy (whether such leases, rental agreements or rights of occupancy are presently in existing or are hereafter created) prior to Closing.

14.2. No condemnation proceeding is pending or, to Seller's knowledge, threatened with respect to any part of the Property.

14.3. Seller has not used, generated, treated, stored, released, discharged, or disposed of Hazardous Substances on or from the Property at any time; nor, to the knowledge of Seller, has any such event occurred upon or within the Property. To the knowledge of Seller, no notification of release of a Hazardous Substance has been filed as to the Property, nor is the Property listed or formally proposed for listing on the National Priority List promulgated pursuant to federal

law or on any state list of hazardous substance sites requiring investigation or clean-up. Seller has complied with all reporting requirements under any applicable federal, state, or local environmental laws and there are no existing violations by Seller of any such environmental laws. To the knowledge of Seller, there are no claims, actions, suits, proceedings, or investigations related to the presence, release, discharge, spillage, or disposal of any Hazardous Substance or contamination of soil or water by any Hazardous Substance pending or threatened with respect to the Property or otherwise against Seller in any court or before any state, federal, or other governmental agency or private arbitration tribunal. To the knowledge of Seller, no PCB, PCB-contaminated, friable asbestos, or formaldehyde-based insulation items are present at the Property. Seller shall indemnify and hold harmless Purchaser from and against any and all losses arising from or related to the breach by Seller of any warranties or representations contained in this subsection. "Hazardous Substance" shall refer to any hazardous or toxic substance or waste as those terms are defined by any applicable federal or state law or regulation, including, without limitation, the Comprehensive Environmental Recovery Compensation and Liability Act, 42 U.S.C. 9601 et seq. and the Resource Conservation and Recovery Act, 42 U.S.C. 6901 et seq., and petroleum, petroleum products, and oil.

14.4. Seller has no knowledge, nor has Seller received any notice of any actual or pending litigation or proceeding by any organization, person, individual, or governmental agency against Seller with respect to the Property or any portion thereof or with respect thereto, nor does Seller know of any basis for any such action; and Seller has no knowledge, nor has Seller received any notice, of any violations of law, municipal or county ordinances, or other legal requirements with respect to the Property (or any part thereof) or with respect to the use or occupancy of the Property nor does Seller know of any basis for such violations.

14.5. No assessments have been made against the Property (or any part thereof) that are unpaid (except property taxes or special assessments which will be paid in full or prorated as an adjustment to the Purchase Price at the time of Closing in accordance with this Agreement), whether or not they have become liens.

14.6. Seller shall cooperate with Purchaser in Purchaser's efforts to seek governmental approvals desired by Purchaser for Purchaser's intended use and acquisition of the Property including (i) the granting to Purchaser of full authority to seek any and all permits, entitlements, licenses, and approvals (collectively, "Approvals") necessary or convenient for the development of the Property for Purchaser's intended use thereof (including, as necessary, rezoning, general plan amendment, environmental permit, building permit, variance, and/or vacation applications) and for the division (whether by certified survey map or otherwise) of the Property so as to cause the Property to be recognized as a single lawfully subdivided parcel, and (ii) the execution of consents and applications in connection with Purchaser attempting to obtain such Approvals. Without limiting the generality of the foregoing, Seller shall not oppose, in any way, whether directly or indirectly, and shall fully cooperate with Purchaser in connection with any application by Purchaser for any Approvals at any administrative, judicial, legislative, or other level. It is acknowledged and agreed by Seller that Purchaser intends to utilize the Property (if Purchaser acquires the Property pursuant to Purchaser's exercise of the Option) as a solar energy generation facility, and for uses related and incidental thereto. Purchaser shall pay all fees and costs in connection with Purchaser's applications for any Approvals. Purchaser will obtain Seller's prior written consent to any all submittals to be made by Purchaser in connection with the process of obtaining any Approvals, which consent shall not be unreasonably withheld, conditioned or delayed. In the event that Seller unreasonably withholds, conditions or delays its consent to any such submittals desired to be made by Purchaser, then Purchaser shall have the right, in its sole discretion,

to terminate this Agreement upon written notice to Seller, and upon any such termination pursuant to this sentence, Seller shall immediately refund to Purchaser any Option Payments previously made by Purchaser to Seller hereunder. If this Agreement is terminated pursuant to the provisions hereof, Seller may withdraw or terminate any applications for Approvals.

14.7. Seller agrees that Purchaser shall not and does not assume any of the following liabilities, and Seller shall promptly pay and perform, and indemnify and hold Purchaser harmless from and against: any liability or obligation of Seller in respect of any state, local, federal, or foreign taxes (whether in the nature of income, transfer, sales, withholding, employee, excise, property, customs, gross receipts, or other taxes or other duties of any kind whatsoever), or penalties, interest, and fines in respect thereof, or any reporting requirement or estimated tax payable with respect thereto, relating to events or transactions occurring on or prior to Closing involving Seller or the transactions contemplated hereby; any litigation, investigation, or other proceeding pending or threatened with respect to Seller or the Property on or prior to Closing, or subsequently asserted, which is attributable to facts existing, or events, or omissions occurring on or prior to Closing; and all liabilities or claims of any nature relating directly or indirectly to the Property, whether accrued, absolute, contingent, or otherwise arising out of or relating to (or alleged to arise out of or relate to) any state of facts, omissions, or events existing or occurring on or before Closing (whether known or unknown to Purchaser or Seller).

14.8. Seller shall not enter into any transaction, take any action, or by inaction, permit any event to occur, which would result in any of the representations, warranties, and covenants of Seller herein contained not being true, correct, and satisfied at and as of the time immediately after the occurrence of such transaction or event.

14.9. If as of the Effective Date the Property is subject to any mortgage or deed of trust, then concurrently with the execution of this Agreement, Seller shall obtain from the holder of such mortgage or deed of trust and deliver to Purchaser, the written agreement of such holder ("Subordination Agreement") in recordable form subordinating such mortgage or deed of trust to this Agreement. Any such Subordination Agreement shall be in form and substance reasonably acceptable to Purchaser.

Seller agrees to take such actions at its expense as may be necessary to cause the representations, warranties, and covenants in this Agreement to be true, correct, and satisfied as of the date of Closing; provided, however, if an event or circumstance which is neither caused by Seller nor within the reasonable control of Seller causes any such representation, warranty, or covenant to be untrue as of the date of Closing, Seller shall not be required to take any action with respect to such event or occurrence. Subject to the preceding sentence, Seller shall affirm the foregoing representations, warranties, and covenants at (and as of the date of) Closing, all of which shall survive Closing. Notwithstanding the foregoing, or anything to the contrary contained in this Agreement, it shall be a condition precedent to Purchaser's obligation to close the transaction herein described that all of Seller's representations, warranties, and covenants under this Agreement be true, correct, and satisfied, in all material respects, as of the date of Closing, and shall survive closing.

15. Purchaser's Representations, Warranties and Covenants. Purchaser warrants, represents and covenants to and with Seller that the following are true and correct on the date hereof and the Closing:

15.1. Purchaser has the requisite power and authority to enter into and to perform the terms of this Agreement. To Purchaser's actual knowledge, Purchaser is not subject to any law, order, decree, restriction, or agreement which prohibits or would be violated by this Agreement or the consummation of the transactions contemplated hereby.

15.2. To Purchaser's actual knowledge, neither the execution, delivery and performance of this Agreement nor the consummation of the transactions contemplated hereby is prohibited by, or requires Purchaser to obtain any consent, authorization, approval or registration under any law, statute, rule, regulation, judgment, order, writ, injunction or decree which is binding upon Purchaser.

15.3. To Purchaser's actual knowledge, there are no judgments, orders, or decrees of any kind against Purchaser unpaid or unsatisfied of record, nor any actions, suits or other legal or administrative proceedings pending or, to the best of Purchaser's actual knowledge, threatened against Purchaser, which would have any material adverse effect on the business or assets or the condition, financial or otherwise, of Purchaser or the ability of Purchaser to consummate the transactions contemplated by this Agreement.

16. Eminent Domain. If, after the Effective Date and prior to Closing, Seller receives notice of the commencement or threatened commencement of eminent domain or other like proceedings against the Property or any portion thereof, Seller shall immediately give written notice thereof to Purchaser, in which event Purchaser, in its discretion (whether or not Purchaser has then exercised the Option), may elect, by written notice to Seller, either to (i) terminate this Agreement or (ii) keep this Agreement in effect and, if applicable, close the transaction contemplated hereby in accordance with its terms, but subject to such proceedings, in which event the Purchase Price shall not be reduced but Seller shall assign to Purchaser Seller's rights in any condemnation award or proceeds, as they pertain to this Agreement or the Property.

17. Damage to Property. Except as provided in this section and except as otherwise provided in Section 5, the risk of loss or damage to the Property and all liability to third parties until the Closing shall be borne by Seller. If, after the Effective Date and prior to Closing, all or any part of the Property is damaged by flood or other casualty, Seller shall immediately give written notice to Purchaser of such damage and of Seller's insurance coverage with respect to such damage, if any, in which event Purchaser, in its discretion (whether or not Purchaser has then exercised the Option), may elect, by written notice to Seller, either to (i) terminate this Agreement, or (ii) keep this Agreement in effect and, if applicable, close the transaction contemplated hereby in accordance with its terms, in which event the Purchase Price shall not be reduced but Seller shall assign to Purchaser Seller's rights in any insurance proceeds, as they pertain to this Agreement or the Property.

18. Notices. All notices or other communications required or permitted hereunder shall, unless otherwise provided herein, be in writing, and shall be personally delivered, delivered by reputable overnight courier, or sent by registered or certified mail, return receipt requested and postage prepaid, addressed as follows:

If to Seller:

Robert B. and Kathy L. Congleton

[REDACTED]
[REDACTED]
[REDACTED]
[REDACTED]

If to Purchaser:

Sustainable Property Holdings, LLC

Attn: Land Manager
2180 South 1300 East, Suite 600
Salt Lake City, UT 84106
Phone: (801) 679-3500
Email: Land@spower.com

Notices personally delivered shall be deemed given the day so delivered. Notices given by overnight courier shall be deemed given on the first business day following the mailing date. Notices mailed as provided herein shall be deemed given on the third business day following the mailing date. Any party may change its address for purposes of this section by giving written notice of such change to the other party in the manner provided in this section.

19. Default Remedies. [REDACTED]

[REDACTED]

20. Entire Agreement, Amendments and Waivers. This Agreement contains the entire agreement and understanding of the parties in respect to the subject matter hereof, supersedes all prior agreements in respect to the subject matter hereof, if any, between the parties, and the same may not be amended, modified, or discharged nor may any of its terms be waived except by an instrument in writing signed by the parties. Nothing herein shall be construed to supersede any ongoing lease or easement agreement between the parties.

21. Further Assurances. The parties each agree to do, execute, acknowledge, and deliver all such further acts, instruments, and assurances, and to take all such further action before or after Closing as shall be necessary or desirable to fully carry out this Agreement and to fully consummate and effect the transactions contemplated hereby. The foregoing covenant shall survive Closing.

22. No Third-Party Benefits. This Agreement is for the sole and exclusive benefit of the parties hereto and their respective successors and assigns, and no third party is intended to or shall have any rights hereunder.

23. Assignment, Successors. Purchaser may freely assign its rights under this Agreement on written notice to Seller. This Agreement shall be binding upon and inure to the benefit of the

parties hereto and their respective heirs, successors, and assigns. Seller may not assign any rights under this Agreement to any other person or party without consent of Purchaser.

24. Governing Law. This Agreement shall be governed by and construed in accordance with the laws of the State of Kentucky.

25. Mandatory and Binding Arbitration. Any dispute arising between the parties to this Agreement, which cannot be settled amicably by the parties, concerning the Property, any provision of this Agreement, or the rights and duties of the parties in regard thereto, including any alleged breach of this Agreement, shall be resolved by arbitration as provided in this section. All such disputes shall be settled exclusively and finally through arbitration conducted by the American Arbitration Association (the "AAA") before a single arbitrator in Madison County, Kentucky in accordance with the Commercial Arbitration Rules of the AAA (the "Rules"), as such Rules are in effect on the date of delivery of a Demand for Arbitration, provided, however, that notwithstanding anything contained in the Rules, the arbitrator shall not have the power to authorize more than ten (10) document requests. Further, no interrogatories shall be allowed during the course of the arbitration proceeding, and each party shall be allowed only one deposition absent a showing of good cause. "Good cause" in this context shall mean that despite the fact that the parties are agreeing to arbitration as an alternative to judicial proceedings because arbitration is intended to be a quicker, less expensive, more efficient dispute resolution mechanism, the party cannot establish its *prima facie* case without taking more than one deposition. In no case does the arbitrator have the power to authorize more than three (3) depositions per party. The arbitration proceedings provided hereunder are hereby declared to be self-executing, and it shall not be necessary to petition a court to compel arbitration. The expedited arbitration will be concluded within [REDACTED] of the date of the Demand for Arbitration. The arbitrator shall determine all questions of fact and law relating to any controversy, claim or dispute hereunder, including but not limited to whether or not such controversy, claim or dispute is subject to the arbitration provisions contained herein. The arbitrator shall have the power to issue an injunction or require specific performance as the arbitrator finds necessary. Should arbitration result in a monetary award to either party, the party owing the award shall have [REDACTED] to pay such award. The arbitrator may apportion the costs and expenses of the arbitration proceeding, including attorneys' fees and arbitrators' fees, between the parties in any manner deemed reasonable by the arbitrator. The arbitrator is required, under the Agreement between the parties, to strictly construe this Agreement and may not grant an award or any relief to a party that is inconsistent with the express terms of this Agreement. The determinations of the arbitrator shall be subject to judicial review to the maximum extent allowed by federal law or the law of the state in which the arbitration occurs. Any award or determination rendered by the arbitrator may be entered and enforced in any court of competent jurisdiction. Any party shall have the right to apply to a court of competent jurisdiction for an injunction to protect its interests under this Agreement only if: (a) one of the parties has already filed a demand for arbitration under this section; and (b) no arbitrator has yet been appointed by the AAA.

26. Waiver of Jury Trial. **EACH PARTY HERETO HEREBY WAIVES ANY AND ALL RIGHTS IT MAY HAVE TO DEMAND THAT ANY ACTION, PROCEEDING, CLAIM, COUNTERCLAIM OR CAUSE OF ACTION ARISING OUT OF OR IN ANY WAY RELATED TO THIS AGREEMENT OR THE RELATIONSHIP OF THE PARTIES HEREUNDER BE TRIED BY JURY. THE SCOPE OF THIS WAIVER IS INTENDED TO BE ALL ENCOMPASSING OF ANY AND ALL DISPUTES THAT MAY BE FILED IN ANY COURT. EACH PARTY HEREBY ACKNOWLEDGES THAT IT IS KNOWINGLY AND VOLUNTARILY WAIVING THE RIGHT TO DEMAND TRIAL BY JURY.**

27. Enforcement Expense. In the event that either party hereto commences an enforcement action against the other to enforce its rights hereunder, the prevailing party in such enforcement action shall be entitled to recover from the other its reasonable attorney's fees and expenses incidental to such enforcement action, whether incurred before or after a final decision on such enforcement action.

28. Severability. If any clause or provision of this Agreement is held by a court having jurisdiction to be illegal, invalid or unenforceable under any present or future law, the remainder of this Agreement will not be affected thereby. It is the intention of the parties that if any such provision is held to be illegal, invalid, or unenforceable, there will be added in lieu thereof a provision as similar in terms to such provision as is possible and be legal, valid, and enforceable.

29. Time. Time is the essence of each provision of this Agreement.

30. Gender. Words of any gender used in this Agreement shall be held and construed to include any other gender, and words in the singular shall be held to include the plural.

31. Captions. The captions in this Agreement are inserted for convenience of reference and are not intended to define, describe or limit the scope of any provision of this Agreement.

32. Counterpart Execution. This Agreement may be executed in counterparts, each of which will be deemed an original document, but all of which will constitute a single document.

33. Confidentiality. Seller will (i) treat this Agreement and all oral discussions related hereto in strict confidence and (ii) except to the extent included in any memorandum recorded in the public records, shall not disclose any of the particulars hereof to any third parties without the prior written consent of Purchaser; provided, however, that Seller may disclose such information to (x) Seller's personal advisors, (y) any prospective purchaser of the Property, or (z) pursuant to lawful process, subpoena, or court order; so long as in making such disclosure Seller advises the person receiving the information of the confidentiality thereof and obtains the agreement of said person not to disclose such information. Excluded from the foregoing is any information that is in the public domain by reason of prior publication through no act or omission of Seller.

[The remainder of this page is intentionally left blank.]

IN WITNESS WHEREOF, the undersigned parties have set their hands and seals hereto as of the day and year indicated next to their signatures.

SELLER:

Dated: [REDACTED]

Robert B Congleton
Robert B. Congleton, Husband

Dated: [REDACTED]

Kathy L. Congleton
Kathy L. Congleton, wife

PURCHASER:

**SUSTAINABLE PROPERTY HOLDINGS,
LLC**
a Delaware limited liability company

Dated: _____

By: _____
Name: _____
Title: _____

IN WITNESS WHEREOF, the undersigned parties have set their hands and seals hereto as of the day and year indicated next to their signatures.

SELLER:

Dated: _____
_____ **Robert B. Congleton, Husband**

Dated: _____
_____ **Kathy L. Congleton, wife**

PURCHASER:

**SUSTAINABLE PROPERTY HOLDINGS,
LLC**
a Delaware limited liability company

Dated: [REDACTED]

By: 

Name: Sean McBride
Title: Authorized Person

EXHIBIT A

LEGAL DESCRIPTION OF THE PROPERTY

APN 0120-0000-0005 in Madison County, Kentucky

TRACT #2: A certain tract or parcel of land located in Madison County, Kentucky, on the waters of Drowning Creek, and on the dirt road leading from Brassfield Pike to the Harold Rice Farm and bounded and described by survey made June 24, 1954:

BEGINNING at the northeast corner of the tract herein described, said corner being in the center of a county road and being a corner of Hubert Jones and Evans Mason in a line of W. L. and F. A. Clark, brothers, thence leaving the road with the two lines (fenced) of Jones and Mason as follows: S 29° 22' E 1,716 feet to Jones and Mason's

corner in Mrs. Monroe Turpin's line; thence with Mrs. Turpin's line (fenced) N 82° 29' W 1,355 feet to Turpin's corner in W. L. and F. A. Clark's line; thence with said Clark line N 2° 00' E 2,070 feet to the center of the above mentioned county road; thence with the center of said road and said Clark brother's line S 86° 09' E 1,144 feet to the BEGINNING, **containing 66.07 acres, more or less.**

TRACT #3: A certain tract or parcel of land situated in Madison County, Kentucky, on the waters of Drowning Creek and being known as part of the B. F. Hubbard Farm, BEGINNING at a point in the road at a gate corner to the Alexander Farm, thence with the Alexander Farm's Southeast to corner at Dozier, thence with the Dozier line in an Eastern direction with Dozier, Hardy, and Pearson to a stone in the Pearson line, thence leaving Pearson, a new line North to a point, a stone set twenty (20) feet west of the barn; thence still in a Northwest direction a new line to the point of BEGINNING, **containing eighty (80) acres, more or less.**

There is **EXCLUDED** from the above described property, title to that portion of the property, within the bounds of Pine Grove Road and/or Brassfield Road, which was conveyed to Madison County, by deed dated July 5, 1950, from Hubert Jones and Hazel Jones, his wife; and Evans Mason and Myrtle Lee Mason, his wife, and recorded in Deed Book 147 at page 34; and by deed dated May 19, 1986, from Evans Mason and Myrtle Mason, to the Madison County Fiscal Court, and recorded in Deed Book 376 at page 627, in the office of the Madison County Clerk, references to which are hereby made for a more particular description of said property.

AND BEING A PART of the same property conveyed to Wendell E. Combs, Richard Christopher Clark, and Robert B. Congleton, all married men, by deed dated March 15, 2006, from Myrtle Mason (a/k/a Myrtle P. Mason, Myrtle Pitcher Mason, and Myrtle Lee Mason), individually and as Attorney-in-Fact for her husband, Evans Mason (a/k/a Evans ToJo Mason), and recorded in Deed Book D604 at page 165, in the office of the Madison County Clerk, Richmond, Kentucky.

EXHIBIT B

FORM OF MEMORANDUM

[the remainder of this page intentionally left blank]

Recording requested by and
when recorded mail to:

Sustainable Property Holdings, LLC
Attn: Land Manager
2180 South 1300 East, Suite 600
Salt Lake City, UT 84106

(space above this line for recorder's use)

MEMORANDUM OF REAL ESTATE PURCHASE OPTION AGREEMENT

THIS MEMORANDUM OF REAL ESTATE PURCHASE OPTION AGREEMENT (this "Memorandum") is made, dated and effective as of [REDACTED] (the "Effective Date"), between **ROBERT B. CONGLETON AND KATHY L. CONGLETON**, husband and wife as joint tenants ("Seller"), and **SUSTAINABLE PROPERTY HOLDINGS, LLC**, a Delaware limited liability company ("Purchaser"), in light of the following facts and circumstances:

RECITALS:

WHEREAS, Seller and Purchaser have entered a Real Estate Purchase Option Agreement dated as of the Effective Date with respect to property more specifically described herein (as heretofore or hereinafter amended, restated, or supplemented from time to time, the "Option Agreement"); and

WHEREAS, Seller and Purchaser desire to set forth certain terms and conditions of the Option Agreement in a manner suitable for recording in the Official Records of Madison County, Kentucky in order to provide record notice of the Option Agreement and Purchaser's rights in and to the land subject to the Option Agreement, as provided herein.

NOW, THEREFORE, in consideration of the mutual covenants contained in the Option Agreement, and other good and valuable consideration, the receipt and sufficiency of which are hereby acknowledged, the parties hereto agree and stipulate as follows:

1. Description of Property. The land subject to the Option Agreement is described on Exhibit A attached hereto, and by this reference made a part hereof (the "Property").

2. Grant of Option. Seller hereby grants to Purchaser, pursuant to the Option Agreement, an exclusive and irrevocable option (the "Option") to purchase [REDACTED] of real property within the Property on the terms and conditions set forth in the Option Agreement. The entire Option Agreement is hereby incorporated into this Memorandum by reference. Notwithstanding anything to the contrary contained herein, the provisions of this Memorandum do not in any way alter, amend, supplement, change, or affect the terms, covenants, or conditions of the Option Agreement, all of which terms, covenants, and conditions shall remain in full force and effect.

In the event of any conflict between the terms of this Memorandum and the Option Agreement, the terms of the Option Agreement shall prevail.

3. Term of Option Agreement. Unless extended or earlier terminated, as provided in the Option Agreement, the term of the Option shall be for a [REDACTED] period beginning on the Effective Date, with an option to extend an additional [REDACTED]. Closing of the transaction contemplated by the Option Agreement shall occur within [REDACTED] following Purchaser's exercise of the Option, in accordance with the Option Agreement, or as the parties may otherwise mutually agree.

4. Names and Addresses of Parties. The names and addresses of the parties to the Option Agreement are as follows:

Seller:

Robert B. and Kathy L. Congleton

[REDACTED]
[REDACTED]
[REDACTED]

Purchaser:

Sustainable Property Holdings, LLC
Attn: Land Manager
2180 South 1300 East, Suite 600
Salt Lake City, UT 84106
Phone: (801) 679-3500
Email: Land@spower.com

5. Successors and Assigns. The terms of this Memorandum and the Option Agreement are covenants running with the land and inure to the benefit of, and are binding upon, the parties and their respective successors and assigns, including all subsequent owners of all or any portion of the Property. References to Seller and Purchaser include their respective successors and assigns. References to the Option Agreement includes any amendments thereto.

6. Miscellaneous. This Memorandum is executed for the purpose of recording in the Official Records of Madison County, Kentucky, in order to provide public record notice of the Option Agreement and Purchaser's rights in and to the land subject to the Option Agreement. All persons are hereby put on notice of and shall have a duty to inquire regarding the Option Agreement and all of the provisions thereof and the rights, title, interests, and claims of Purchaser in and to the Property. Any right, estate, claim, or interest in the Property first attaching to the Property and recorded from and after the Effective Date shall be subordinate to the terms of the Option Agreement. If Purchaser acquires fee simple title to any portion of the Property, Purchaser shall have the right, at Purchaser's option, to terminate any such subordinate right, estate, claim, or interest, at no cost or liability to Purchaser, or to accept title subject thereto. This instrument may for convenience be executed in any number of original counterparts, each of which shall be an original and all of which taken together shall constitute one instrument.

[The remainder of this page is intentionally left blank.]

IN WITNESS WHEREOF, Seller and Purchaser, acting through their duly authorized representatives, have made and entered into this Memorandum as of the Effective Date.

SELLER:

Robert B. Congleton
Robert B. Congleton, Husband

Kathy L. Congleton
Kathy L. Congleton, wife

PURCHASER:

SUSTAINABLE PROPERTY HOLDINGS, LLC
a Delaware limited liability company

By: _____
Name: _____
Title: _____

IN WITNESS WHEREOF, Seller and Purchaser, acting through their duly authorized representatives, have made and entered into this Memorandum as of the Effective Date.

SELLER:

Robert B. Congleton, Husband

Kathy L. Congleton, wife

PURCHASER:

SUSTAINABLE PROPERTY HOLDINGS, LLC
a Delaware limited liability company

By: 
Name: Sean McBride
Title: Authorized Person

ACKNOWLEDGEMENT OF SELLER

STATE OF Kentucky }
COUNTY OF Madison } S.S

On [REDACTED], [REDACTED] before me, Cherie Tracy Notary Public, personally appeared, Robert + Kathy Congleton, who proved to me on the basis of satisfactory evidence to be the person(s) whose name(s) is/are subscribed to the within instrument and acknowledged to me that he/she/they executed the same in his/her/their authorized capacity(ies), and that by his/her/their signature(s) on the instrument the person(s), or the entity upon behalf of which the person(s) acted, executed the instrument.

I certify under PENALTY OF PERJURY under the laws of the State of Kentucky that the foregoing paragraph is true and correct.

WITNESS my hand and official seal.

Signature: Cherie Tracy
Notary ID# 634358
Commission expires 10/28/23



(Notary Seal)

ACKNOWLEDGEMENT OF PURCHASER

STATE OF UTAH)
 §
COUNTY OF SALT LAKE)

On [REDACTED], before me, Sabrina Fuller, personally appeared Sean McBride who proved to me on the basis of satisfactory evidence to be the person whose name is subscribed to the within instrument and acknowledged to me that he executed the same in his authorized capacity, and that by his signature on the instrument, the person, or the entity upon behalf of which the person acted, executed the instrument.

I certify under PENALTY OF PERJURY under the laws of the State of Utah that the foregoing paragraph is true and correct.

WITNESS my hand and official seal.



Signature Sean Fuller (seal)

EXHIBIT A

LEGAL DESCRIPTION

APN 0120-0000-0005 in Madison County, Kentucky

TRACT #2: A certain tract or parcel of land located in Madison County, Kentucky, on the waters of Drowning Creek, and on the dirt road leading from Brassfield Pike to the Harold Rice Farm and bounded and described by survey made June 24, 1954:

BEGINNING at the northeast corner of the tract herein described, said corner being in the center of a county road and being a corner of Hubert Jones and Evans Mason in a line of W. L. and F. A. Clark, brothers, thence leaving the road with the two lines (fenced) of Jones and Mason as follows: S 29° 22' E 1,716 feet to Jones and Mason's

corner in Mrs. Monroe Turpin's line; thence with Mrs. Turpin's line (fenced) N 82° 29' W 1,355 feet to Turpin's corner in W. L. and F. A. Clark's line; thence with said Clark line N 2° 00' E 2,070 feet to the center of the above mentioned county road; thence with the center of said road and said Clark brother's line S 86° 09' E 1,144 feet to the BEGINNING, **containing 66.07 acres, more or less.**

TRACT #3: A certain tract or parcel of land situated in Madison County, Kentucky, on the waters of Drowning Creek and being known as part of the B. F. Hubbard Farm, BEGINNING at a point in the road at a gate corner to the Alexander Farm, thence with the Alexander Farm's Southeast to corner at Dozier, thence with the Dozier line in an Eastern direction with Dozier, Hardy, and Pearson to a stone in the Pearson line, thence leaving Pearson, a new line North to a point, a stone set twenty (20) feet west of the barn; thence still in a Northwest direction a new line to the point of BEGINNING, **containing eighty (80) acres, more or less.**

There is **EXCLUDED** from the above described property, title to that portion of the property, within the bounds of Pine Grove Road and/or Brassfield Road, which was conveyed to Madison County, by deed dated July 5, 1950, from Hubert Jones and Hazel Jones, his wife; and Evans Mason and Myrtle Lee Mason, his wife, and recorded in Deed Book 147 at page 34; and by deed dated May 19, 1986, from Evans Mason and Myrtle Mason, to the Madison County Fiscal Court, and recorded in Deed Book 376 at page 627, in the office of the Madison County Clerk, references to which are hereby made for a more particular description of said property.

AND BEING A PART of the same property conveyed to Wendell E. Combs, Richard Christopher Clark, and Robert B. Congleton, all married men, by deed dated March 15, 2006, from Myrtle Mason (a/k/a Myrtle P. Mason, Myrtle Pitcher Mason, and Myrtle Lee Mason), individually and as Attorney-In-Fact for her husband, Evans Mason (a/k/a Evans ToJo Mason), and recorded in Deed Book D604 at page 165, in the office of the Madison County Clerk, Richmond, Kentucky.

REAL ESTATE PURCHASE OPTION AGREEMENT

THIS REAL ESTATE PURCHASE OPTION AGREEMENT (this "Agreement") is made as of the Effective Date (as defined below), by and between **THOMAS J. CONGLETON, TRUSTEE, OF THE THOMAS J. CONGLETON REVOCABLE TRUST** and **DARNETTA W. CONGLETON, TRUSTEE, OF THE DARNETTA W. CONGLETON REVOCABLE TRUST** (collectively "Seller"), and **SUSTAINABLE PROPERTY HOLDINGS, LLC**, a Delaware limited liability company ("Purchaser"). The latest date indicated on the signature page of this instrument shall be the "Effective Date" of this Agreement.

1. **Grant of Option.** For and in consideration of Purchaser's agreement to make to Seller the payments set forth in **Section 3** below (the "Option Payments"), Seller hereby grants to Purchaser an exclusive and irrevocable option (the "Option") to purchase approximately [REDACTED] [REDACTED] acres of real property legally described on **Exhibit A** attached hereto and made a part hereof, in the county of Madison, State of Kentucky (the "Property"), on the terms and conditions set forth in this Agreement.

2. **Term of Option.** The term of the Option (the "Term") shall be for a [REDACTED] [REDACTED] period beginning on the Effective Date, together with Purchaser's option to extend said Term for an additional [REDACTED] upon written notice provided to Seller prior to the expiration of the initial Term, provided however, that Purchaser shall have the right at any time prior to exercising the Option to terminate this Agreement as to all or any portion of the Property by giving written notice to Seller. Upon termination of this Agreement for any reason, Purchaser's obligations to Seller hereunder (including but not limited to Purchaser's obligations to make any remaining Option Payments) shall become null and void and of no further force or effect.

3. **Option Payments.** In consideration of the rights granted hereunder, Purchaser will pay to Seller the Option Payments set forth in the table below, on the payment dates set forth in such table. If any scheduled payment date falls on a day which is not a business day in the State of Utah, then the due date for such payment shall be extended to the next succeeding business day. The Option Payments shall be non-refundable to Purchaser in the event that this Agreement is terminated, unless Seller is in default or breach of this Agreement. The amount of all Option Payments made by Purchaser shall be applied against the Purchase Price at the Closing.

<u>Option Payment Due Date</u>	<u>Amount of Option Payment Due on Such Date</u>
Effective Date	[REDACTED]
[REDACTED] following Effective Date	[REDACTED]
[REDACTED] following Effective Date	[REDACTED]
[REDACTED] following Effective Date	[REDACTED]
[REDACTED] following Effective Date	[REDACTED]
[REDACTED] following Effective Date	[REDACTED]
[REDACTED] following Effective Date	[REDACTED]
[REDACTED] following Effective Date	[REDACTED]

██████████ following Effective Date	██████████
██████████ following Effective Date	██████████
██████████ Effective Date	██████████
██████████ following Effective Date	██████████
██████████ following Effective Date	██████████
██████████ following Effective Date	██████████
In the event Purchaser extends initial Term, Option Payments are scheduled as follows:	
██████████ following Effective Date	██████████
██████████ following Effective Date	██████████
██████████ following Effective Date	██████████
██████████ following Effective Date	██████████

It is acknowledged and understood that the table set forth above reflects that the period commencing on the Effective Date and continuing for ██████████ shall constitute a due diligence period for Purchaser (“Due Diligence Period”). The initial payment of ██████████ (the “Deposit”) shall be deposited into an escrow account with Escrow Holder (as defined below) along with a signed copy of this Agreement. Nothing contained in this Section shall in any way limit or otherwise affect Purchaser’s right to terminate this Agreement at any time pursuant to Section 2. If Purchaser terminates this Agreement prior to the expiration of the Due Diligence Period, the Deposit, less an amount equal to ██████████ (the “Independent Consideration”), shall be immediately returned to Purchaser by Escrow Holder. If this Agreement is not so terminated, the Deposit shall be released to Seller from escrow upon expiration of the Due Diligence Period. Future Option Payments shall be made by Purchaser to Escrow Holder for credit to Seller, and Escrow Holder shall forward such future Option Payments to Seller promptly following Escrow Holder’s receipt thereof. Purchaser’s obligation to make the applicable Option Payment to Seller shall be considered complete when such payment has been made to Escrow Holder. The “Escrow Holder” shall be McBrayer Firm, 201 East Main Street, Suite 900, Lexington, Kentucky 40507, Attention: James H. Frazier, III, Telephone: (859) 231-8780, ext. 1303, E-mail: jfrazier@mcbrayerfirm.com. Escrow Holder shall execute a joinder to this Agreement evidencing Escrow Holder’s agreement to act as Escrow Holder in accordance with the provisions hereof. Concurrently with execution of this Agreement, Seller and Purchaser will execute a memorandum in the form of Exhibit B attached hereto and made a part hereof by reference, or any other reasonable form of memorandum, and Purchaser shall cause such memorandum to be recorded in the public records.

4. Method of Exercising Option. Purchaser may exercise the Option at any time during the Term by giving written notice to Seller (the “Exercise Notice”). Upon the timely and proper exercise of the Option, Seller agrees to sell and convey, and Purchaser agrees to purchase, the Property, in accordance with and subject to the terms and conditions of this Agreement.

5. Inspections: Use of Property. From and after the Effective Date, Purchaser or its designated agents may enter upon the Property upon reasonable prior notice to Seller to conduct, at Purchaser’s sole cost and expense, any inspections, tests, surveys, engineering, environmental, and/or market and economic feasibility studies, and due diligence matters related thereto, concerning the

Property. Any activities of Purchaser on the Property shall be conducted in such a manner so as to not cause any material damage to the Property and so as to not unreasonably interfere with the current use of the Property. Purchaser shall be responsible for any material damage to the Property caused by Purchaser in connection with Purchaser's activities on the Property, which damage shall be assessed immediately upon occurrence, or by a third-party consultant as soon as possible after occurrence. Purchaser shall indemnify Landowner for any loss, costs, claims, actions or damages caused by activities of Purchaser on the Property except those caused by Seller's gross negligence or willful behavior. Subject to the foregoing rights of Purchaser, prior to the Closing (as defined in Section 9 below), Seller, or its affiliated or contracted parties, shall be permitted to continue to use the Property in a manner consistent with its existing use, including but not limited to cattle grazing. Seller shall provide Purchaser, prior to the expiration of the Due Diligence Period, with copies of all field tiling surveys, plans and other geotechnical and other site assessments, surveys, plans, entitlement-related studies, environmental assessments, reports, test results, correspondence to or from any governmental agency, and other such records of Seller relating to the Property. Seller represents and warrants to Purchaser that, to the best of Seller's knowledge, all information contained in any such materials provided by Seller to Purchaser shall be accurate and complete.

6. Purchase Price. The price (the "Purchase Price") to be paid by Purchaser to Seller for the Property shall be [REDACTED]

[REDACTED]

[REDACTED]

7. Costs; Prorations; Credits.

7.1. [REDACTED]

7.2. [REDACTED]

7.3. [REDACTED]

8. Title.

8.1. At Closing, Seller shall convey to Purchaser marketable and insurable fee simple title to the Property, free from any (i) mortgage, deed to secure debt, deed of trust, security agreement, judgment, lien or claim of lien, or any other title exception or defect that is monetary in nature, Seller hereby agreeing to pay and satisfy of record any such title defects or exceptions prior to or at Closing at Seller's expense, (ii) lease, rental agreement, or other right of occupancy of any kind, whether written or oral (it being acknowledged and understood that any lease, rental agreement or right of occupancy in existence as of the date hereof shall be fully and completely terminated by Seller prior to Closing), (iii) recorded or unrecorded right or interest first attaching subsequent to the Effective Date, or (iv) matter encompassed by any standard exception under the Title Commitment (other than as to matters of survey), including the standard "gap" exception, the standard mechanic's lien exception and the standard parties in possession exception (the "Non-Permitted Exceptions").

8.2. Prior to Closing, Purchaser shall obtain a current title commitment (the "Title Commitment") applicable to the Property, from the Title Company (as defined below), whereby the Title Company agrees to issue at Closing an ALTA Owner's Policy of Title Insurance (the "Title Policy"), in the amount of the Purchase Price, insuring Purchaser's marketable fee simple title to the Property, including all appurtenances thereto and improvements thereon, and including such additional title endorsements in form and content as Purchaser may reasonably request. Notwithstanding anything to the contrary contained in this Agreement, it shall be a condition precedent to Purchaser's obligation to close the transaction herein described that the Title Company shall have unconditionally indicated in writing that upon recording of the Deed and payment of its premiums (at ordinary rates), the Title Company will issue the Title Policy to Purchaser as herein required, insuring that fee simple title shall be vested in Purchaser, without exception for the Non-Permitted Exceptions. If the parties are unable to cause the satisfaction of the aforesaid condition precedent, Purchaser, in its discretion, may elect, by written notice to Seller, either to accept such title as Seller is capable of delivering or to terminate this Agreement. If this Agreement is so terminated, Seller shall immediately return to Purchaser all Option Payments previously made by Purchaser. The "Title Company" shall be McBrayer Firm, 201 East Main Street, Suite 900, Lexington, Kentucky 40507, Attention: James H. Frazier, III, Telephone: (859) 231-8780, ext. 1303, E-mail: jfrazier@mcbrayerfirm.com.

9. Closing. The closing of the transaction contemplated by this Agreement ("Closing") shall occur through escrow at the offices of the Escrow Holder within [REDACTED] following Purchaser's delivery of the Exercise Notice on such date as Purchaser may select by advance written notice to Seller or on such other date or at such other location as the parties may mutually agree. If the Escrow Holder requires the execution of an escrow agreement, Seller and Purchaser will promptly execute and deliver the same in such form as the Title Company or such escrow agent may reasonably request.

10. Closing Deliveries. At Closing, the following shall occur:

10.1. Seller shall deliver actual possession of the Property to Purchaser and Seller shall deliver or cause to be delivered to Purchaser such documents as are reasonably required by Purchaser to close the transaction that is the subject of this Agreement, all fully executed by Seller and acknowledged as necessary, including the following enumerated documents, all of which documents shall be subject to the reasonable approval of Purchaser:

10.1.1. Counterpart of closing statement;

10.1.2. Grant Deed (the "Deed"), conveying to Purchaser the Property, including any and all water rights, and warranting title against the Non-Permitted Exceptions and against all persons whomsoever;

10.1.3. Certificate of Non-Foreign Status, evidencing that Purchaser shall not be liable for transfer liability under Section 1445 of the Internal Revenue Code, as amended;

10.1.4. A general assignment (the "General Assignment") assigning to Purchaser all of Seller's right, title and interest in, to and under any or all of the following intangible property relating to the Property (the "Intangible Property"), as determined by Purchaser in its sole discretion: (i) all licenses, permits, certificates of occupancy, approvals, dedications, subdivision maps and entitlements issued, approved or granted by governmental authorities or otherwise in connection with the Property, including any water rights or permits; (ii) all licenses, consents, easements, rights of way and approvals required from private parties to make use of utilities and to insure vehicular and pedestrian ingress and egress to the Property; and (iii) any and all service contracts, agreements, maintenance contracts and like contracts and agreements relating to the Property, together with all supplements, amendments and modifications thereto;

10.1.5. Real Estate Withholding Certificate, if applicable;

10.1.6. Title affidavits and indemnities in form and content as may be reasonably required by Purchaser and the Title Company to delete all of the Title Commitment's standard exceptions (other than as to matters of survey), including the standard "gap" exception, the standard mechanic's lien exception, and the standard parties in possession exception and any exceptions for judgment, state or federal tax, environmental, broker, or other liens;

10.1.7. Instruments reasonably satisfactory to Purchaser and the Title Company reflecting the proper power, good standing, and authorization for the sale of the Property from Seller to Purchaser and the execution and delivery of all documents hereunder;

10.1.8. Such corrective instruments as may be required to deliver marketable and insurable title as required hereunder;

10.1.9. Seller certification confirming that all representations and warranties stated herein are in full force and effect as of Closing; and

10.1.10. Such other instruments as may be reasonably necessary to effect the conveyance of the Property in accordance with, and effectuate the other provisions of, this Agreement.

10.2. Purchaser shall deliver or cause to be delivered to Seller such documents as are reasonably required by Seller to close the transaction that is the subject of this Agreement, all fully executed by Purchaser and acknowledged as necessary, including the following enumerated documents, all of which documents shall be subject to the reasonable approval of Seller:

10.2.1. Counterpart of closing statement;

10.2.2. An acceptance of the General Assignment, if Purchaser has elected to receive assignment of any of the Intangible Property; and

10.2.3. Such other instruments as may be reasonably necessary to effect the conveyance of the Property in accordance with, and effectuate the other provisions of, this Agreement.

11. Road Maintenance. Purchaser understands and agrees that the gravel portion of Pine Grove Road that abuts the Property shall be Purchaser's responsibility to maintain, unless the portion of the road is under the jurisdiction of local city or county governance and maintenance. Maintenance shall include keeping the road in passable condition, including keeping potholes filled if required.

12. Property Improvements. Any improvements affixed to the Property, including the large barn, will be included in the purchase of the Property. The Seller may at its own discretion remove the metal hut, trough, water tanks, fence posts, gates, or fencing material prior to selling the Property. After Closing, title to any personal property or items affixed to the Property shall pass to Purchaser and Seller shall retain no rights thereto, with the exception of fencing material. After Closing, Purchaser shall contact Seller prior to any fencing material removal. Seller shall have the option to keep any fencing material removed from the Property, including posts and gates, if Seller wishes. Any fencing removed and received by Seller shall be at no charge to Seller, but must be taken from the Property immediately.

13. Timber Removal (Timber Damages). Seller may harvest and remove any timber prior to Closing in a manner that comports with Kentucky and all local laws and regulations. After Closing, Purchaser shall obtain rights to all timber on the Property.

14. Brokers. Seller and Purchaser each warrant and represent to the other that neither has employed or dealt with a real estate broker or agent in connection with the transaction contemplated hereby. Seller and Purchaser covenant and agree, each to the other, to indemnify the other against any loss, liability, costs, claims, demands, damages, actions, causes of action, and suits arising out of, or in any manner related to, the alleged employment, engagement or use by the indemnifying party of any real estate broker or agent. The foregoing obligation shall survive Closing.

15. Seller Representations, Warranties, and Covenants. Seller represents, warrants, and covenants, as follows:

15.1. Seller holds the fee simple interest in and has the exclusive right to purchase and sell the Property as of the Effective Date. Seller shall not enter into, permit, or suffer, nor purport to enter into or permit, any encumbrance of the Property that is not subordinate to the Option and Purchaser's rights under this Agreement and the title conveyed to Purchaser at Closing. There are no leases, rental agreements, or other rights of occupancy of any kind, whether written or oral, currently affecting the Property, except as follows: _____ **[to be completed by Seller]**. Seller

shall terminate any leases, rental agreements or other rights of occupancy (whether such leases, rental agreements or rights of occupancy are presently in existing or are hereafter created) prior to Closing.

15.2. No condemnation proceeding is pending or, to Seller's knowledge, threatened with respect to any part of the Property.

15.3. Seller has not used, generated, treated, stored, released, discharged, or disposed of Hazardous Substances on or from the Property at any time; nor, to the knowledge of Seller, has any such event occurred upon or within the Property. To the knowledge of Seller, no notification of release of a Hazardous Substance has been filed as to the Property, nor is the Property listed or formally proposed for listing on the National Priority List promulgated pursuant to federal law or on any state list of hazardous substance sites requiring investigation or clean-up. Seller has complied with all reporting requirements under any applicable federal, state, or local environmental laws and there are no existing violations by Seller of any such environmental laws. To the knowledge of Seller, there are no claims, actions, suits, proceedings, or investigations related to the presence, release, discharge, spillage, or disposal of any Hazardous Substance or contamination of soil or water by any Hazardous Substance pending or threatened with respect to the Property or otherwise against Seller in any court or before any state, federal, or other governmental agency or private arbitration tribunal. To the knowledge of Seller, no PCB, PCB-contaminated, friable asbestos, or formaldehyde-based insulation items are present at the Property. Seller shall indemnify and hold harmless Purchaser from and against any and all losses arising from or related to the breach by Seller of any warranties or representations contained in this subsection. "Hazardous Substance" shall refer to any hazardous or toxic substance or waste as those terms are defined by any applicable federal or state law or regulation, including, without limitation, the Comprehensive Environmental Recovery Compensation and Liability Act, 42 U.S.C. 9601 et seq. and the Resource Conservation and Recovery Act, 42 U.S.C. 6901 et seq., and petroleum, petroleum products, and oil.

15.4. Seller has no knowledge, nor has Seller received any notice of any actual or pending litigation or proceeding by any organization, person, individual, or governmental agency against Seller with respect to the Property or any portion thereof or with respect thereto, nor does Seller know of any basis for any such action; and Seller has no knowledge, nor has Seller received any notice, of any violations of law, municipal or county ordinances, or other legal requirements with respect to the Property (or any part thereof) or with respect to the use or occupancy of the Property nor does Seller know of any basis for such violations.

15.5. No assessments have been made against the Property (or any part thereof) that are unpaid (except property taxes or special assessments which will be paid in full or prorated as an adjustment to the Purchase Price at the time of Closing in accordance with this Agreement), whether or not they have become liens.

15.6. Seller shall cooperate with Purchaser in Purchaser's efforts to seek governmental approvals desired by Purchaser for Purchaser's intended use and acquisition of the Property including (i) the granting to Purchaser of full authority to seek any and all permits, entitlements, licenses, and approvals (collectively, "Approvals") necessary or convenient for the development of the Property for Purchaser's intended use thereof (including, as necessary, rezoning, general plan amendment, environmental permit, building permit, variance, and/or vacation applications) and for the division (whether by certified survey map or otherwise) of the Property so as to cause the Property to be recognized as a single lawfully subdivided parcel, and (ii) the execution of consents and applications in connection with Purchaser attempting to obtain such

Approvals. Without limiting the generality of the foregoing, Seller shall not oppose, in any way, whether directly or indirectly, and shall fully cooperate with Purchaser in connection with any application by Purchaser for any Approvals at any administrative, judicial, legislative, or other level. It is acknowledged and agreed by Seller that Purchaser intends to utilize the Property (if Purchaser acquires the Property pursuant to Purchaser's exercise of the Option) as a solar energy generation facility, and for uses related and incidental thereto. Purchaser shall pay all fees and costs in connection with Purchaser's applications for any Approvals. Purchaser will obtain Seller's prior written consent to any all submittals to be made by Purchaser in connection with the process of obtaining any Approvals, which consent shall not be unreasonably withheld, conditioned or delayed. In the event that Seller unreasonably withholds, conditions or delays its consent to any such submittals desired to be made by Purchaser, then Purchaser shall have the right, in its sole discretion, to terminate this Agreement upon written notice to Seller, and upon any such termination pursuant to this sentence, Seller shall immediately refund to Purchaser any Option Payments previously made by Purchaser to Seller hereunder. If this Agreement is terminated pursuant to the provisions hereof, Seller may withdraw or terminate any applications for Approvals.

15.7. Seller agrees that Purchaser shall not and does not assume any of the following liabilities, and Seller shall promptly pay and perform, and indemnify and hold Purchaser harmless from and against: any liability or obligation of Seller in respect of any state, local, federal, or foreign taxes (whether in the nature of income, transfer, sales, withholding, employee, excise, property, customs, gross receipts, or other taxes or other duties of any kind whatsoever), or penalties, interest, and fines in respect thereof, or any reporting requirement or estimated tax payable with respect thereto, relating to events or transactions occurring on or prior to Closing involving Seller or the transactions contemplated hereby; any litigation, investigation, or other proceeding pending or threatened with respect to Seller or the Property on or prior to Closing, or subsequently asserted, which is attributable to facts existing, or events, or omissions occurring on or prior to Closing; and all liabilities or claims of any nature relating directly or indirectly to the Property, whether accrued, absolute, contingent, or otherwise arising out of or relating to (or alleged to arise out of or relate to) any state of facts, omissions, or events existing or occurring on or before Closing (whether known or unknown to Purchaser or Seller).

15.8. Seller shall not enter into any transaction, take any action, or by inaction, permit any event to occur, which would result in any of the representations, warranties, and covenants of Seller herein contained not being true, correct, and satisfied at and as of the time immediately after the occurrence of such transaction or event.

15.9. If as of the Effective Date the Property is subject to any mortgage or deed of trust, then concurrently with the execution of this Agreement, Seller shall obtain from the holder of such mortgage or deed of trust and deliver to Purchaser, the written agreement of such holder ("Subordination Agreement") in recordable form subordinating such mortgage or deed of trust to this Agreement. Any such Subordination Agreement shall be in form and substance reasonably acceptable to Purchaser.

Seller agrees to take such actions at its expense as may be necessary to cause the representations, warranties, and covenants in this Agreement to be true, correct, and satisfied as of the date of Closing; provided, however, if an event or circumstance which is neither caused by Seller nor within the reasonable control of Seller causes any such representation, warranty, or covenant to be untrue as of the date of Closing, Seller shall not be required to take any action with respect to such event or occurrence. Subject to the preceding sentence, Seller shall affirm the foregoing representations,

warranties, and covenants at (and as of the date of) Closing, all of which shall survive Closing. Notwithstanding the foregoing, or anything to the contrary contained in this Agreement, it shall be a condition precedent to Purchaser's obligation to close the transaction herein described that all of Seller's representations, warranties, and covenants under this Agreement be true, correct, and satisfied, in all material respects, as of the date of Closing, and shall survive closing.

16. Purchaser's Representations, Warranties and Covenants. Purchaser warrants, represents and covenants to and with Seller that the following are true and correct on the date hereof and the Closing:

16.1. Purchaser has the requisite power and authority to enter into and to perform the terms of this Agreement. To Purchaser's actual knowledge, Purchaser is not subject to any law, order, decree, restriction, or agreement which prohibits or would be violated by this Agreement or the consummation of the transactions contemplated hereby.

16.2. To Purchaser's actual knowledge, neither the execution, delivery and performance of this Agreement nor the consummation of the transactions contemplated hereby is prohibited by, or requires Purchaser to obtain any consent, authorization, approval or registration under any law, statute, rule, regulation, judgment, order, writ, injunction or decree which is binding upon Purchaser.

16.3. To Purchaser's actual knowledge, there are no judgments, orders, or decrees of any kind against Purchaser unpaid or unsatisfied of record, nor any actions, suits or other legal or administrative proceedings pending or, to the best of Purchaser's actual knowledge, threatened against Purchaser, which would have any material adverse effect on the business or assets or the condition, financial or otherwise, of Purchaser or the ability of Purchaser to consummate the transactions contemplated by this Agreement.

17. Eminent Domain. If, after the Effective Date and prior to Closing, Seller receives notice of the commencement or threatened commencement of eminent domain or other like proceedings against the Property or any portion thereof, Seller shall immediately give written notice thereof to Purchaser, in which event Purchaser, in its discretion (whether or not Purchaser has then exercised the Option), may elect, by written notice to Seller, either to (i) terminate this Agreement or (ii) keep this Agreement in effect and, if applicable, close the transaction contemplated hereby in accordance with its terms, but subject to such proceedings, in which event the Purchase Price shall not be reduced but Seller shall assign to Purchaser Seller's rights in any condemnation award or proceeds, as they pertain to this Agreement or the Property.

18. Damage to Property. Except as provided in this section and except as otherwise provided in Section 5, the risk of loss or damage to the Property and all liability to third parties until the Closing shall be borne by Seller. If, after the Effective Date and prior to Closing, all or any part of the Property is damaged by flood or other casualty, Seller shall immediately give written notice to Purchaser of such damage and of Seller's insurance coverage with respect to such damage, if any, in which event Purchaser, in its discretion (whether or not Purchaser has then exercised the Option), may elect, by written notice to Seller, either to (i) terminate this Agreement, or (ii) keep this Agreement in effect and, if applicable, close the transaction contemplated hereby in accordance with its terms, in which event the Purchase Price shall not be reduced but Seller shall assign to Purchaser Seller's rights in any insurance proceeds, as they pertain to this Agreement or the Property.

19. Notices. All notices or other communications required or permitted hereunder shall, unless otherwise provided herein, be in writing, and shall be personally delivered, delivered by reputable overnight courier, or sent by registered or certified mail, return receipt requested and postage prepaid, addressed as follows:

If to Seller:

Thomas J. and Darnetta W. Congleton

[REDACTED]
[REDACTED]
[REDACTED]

If to Purchaser:

Sustainable Property Holdings, LLC

Attn: Land Manager

2180 South 1300 East, Suite 600

Salt Lake City, UT 84106

Phone: (801) 679-3500

Email: Land@spower.com

Notices personally delivered shall be deemed given the day so delivered. Notices given by overnight courier shall be deemed given on the first business day following the mailing date. Notices mailed as provided herein shall be deemed given on the third business day following the mailing date. Any party may change its address for purposes of this section by giving written notice of such change to the other party in the manner provided in this section.

20. Default Remedies

[REDACTED]

21. Entire Agreement, Amendments and Waivers. This Agreement contains the entire agreement and understanding of the parties in respect to the subject matter hereof, supersedes all prior agreements in respect to the subject matter hereof, if any, between the parties, and the same may not be amended, modified, or discharged nor may any of its terms be waived except by an instrument in writing signed by the parties. Nothing herein shall be construed to supersede any ongoing lease or easement agreement between the parties.

22. Further Assurances. The parties each agree to do, execute, acknowledge, and deliver all such further acts, instruments, and assurances, and to take all such further action before or after Closing as shall be necessary or desirable to fully carry out this Agreement and to fully consummate and effect the transactions contemplated hereby. The foregoing covenant shall survive Closing.

23. No Third-Party Benefits. This Agreement is for the sole and exclusive benefit of the parties hereto and their respective successors and assigns, and no third party is intended to or shall have any rights hereunder.

24. Assignment, Successors. Purchaser may freely assign its rights under this Agreement on written notice to Seller. This Agreement shall be binding upon and inure to the benefit of the parties hereto and their respective heirs, successors, and assigns. Seller may not assign any rights under this Agreement to any other person or party without consent of Purchaser.

25. Governing Law. This Agreement shall be governed by and construed in accordance with the laws of the State of Kentucky.

26. Mandatory and Binding Arbitration. Any dispute arising between the parties to this Agreement, which cannot be settled amicably by the parties, concerning the Property, any provision of this Agreement, or the rights and duties of the parties in regard thereto, including any alleged breach of this Agreement, shall be resolved by arbitration as provided in this section. All such disputes shall be settled exclusively and finally through arbitration conducted by the American Arbitration Association (the "AAA") before a single arbitrator in Madison County, Kentucky in accordance with the Commercial Arbitration Rules of the AAA (the "Rules"), as such Rules are in effect on the date of delivery of a Demand for Arbitration, provided, however, that notwithstanding anything contained in the Rules, the arbitrator shall not have the power to authorize more than ten (10) document requests. Further, no interrogatories shall be allowed during the course of the arbitration proceeding, and each party shall be allowed only one deposition absent a showing of good cause. "Good cause" in this context shall mean that despite the fact that the parties are agreeing to arbitration as an alternative to judicial proceedings because arbitration is intended to be a quicker, less expensive, more efficient dispute resolution mechanism, the party cannot establish its *prima facie* case without taking more than one deposition. In no case does the arbitrator have the power to authorize more than three (3) depositions per party. The arbitration proceedings provided hereunder are hereby declared to be self-executing, and it shall not be necessary to petition a court to compel arbitration. The expedited arbitration will be concluded within [REDACTED] of the date of the Demand for Arbitration. The arbitrator shall determine all questions of fact and law relating to any controversy, claim or dispute hereunder, including but not limited to whether or not such controversy, claim or dispute is subject to the arbitration provisions contained herein. The arbitrator shall have the power to issue an injunction or require specific performance as the arbitrator finds necessary. Should arbitration result in a monetary award to either party, the party owing the award shall have [REDACTED] to pay such award. The arbitrator may apportion the costs and expenses of the arbitration proceeding, including attorneys' fees and arbitrators' fees, between the parties in any manner deemed reasonable by the arbitrator. The arbitrator is required, under the Agreement between the parties, to strictly construe this Agreement and may not grant an award or any relief to a party that is inconsistent with the express terms of this Agreement. The determinations of the arbitrator shall be subject to judicial review to the maximum extent allowed by federal law or the law of the state in which the arbitration occurs. Any award or determination rendered by the arbitrator may be entered and enforced in any court of competent jurisdiction. Any party shall have the right to apply to a court of competent jurisdiction for an injunction to protect its interests under this Agreement only if: (a) one of the parties has already filed a demand for arbitration under this section; and (b) no arbitrator has yet been appointed by the AAA.

27. Waiver of Jury Trial. **EACH PARTY HERETO HEREBY WAIVES ANY AND ALL RIGHTS IT MAY HAVE TO DEMAND THAT ANY ACTION, PROCEEDING,**

CLAIM, COUNTERCLAIM OR CAUSE OF ACTION ARISING OUT OF OR IN ANY WAY RELATED TO THIS AGREEMENT OR THE RELATIONSHIP OF THE PARTIES HEREUNDER BE TRIED BY JURY. THE SCOPE OF THIS WAIVER IS INTENDED TO BE ALL ENCOMPASSING OF ANY AND ALL DISPUTES THAT MAY BE FILED IN ANY COURT. EACH PARTY HEREBY ACKNOWLEDGES THAT IT IS KNOWINGLY AND VOLUNTARILY WAIVING THE RIGHT TO DEMAND TRIAL BY JURY.

28. Enforcement Expense. In the event that either party hereto commences an enforcement action against the other to enforce its rights hereunder, the prevailing party in such enforcement action shall be entitled to recover from the other its reasonable attorney's fees and expenses incidental to such enforcement action, whether incurred before or after a final decision on such enforcement action.

29. Severability. If any clause or provision of this Agreement is held by a court having jurisdiction to be illegal, invalid or unenforceable under any present or future law, the remainder of this Agreement will not be affected thereby. It is the intention of the parties that if any such provision is held to be illegal, invalid, or unenforceable, there will be added in lieu thereof a provision as similar in terms to such provision as is possible and be legal, valid, and enforceable.

30. Time. Time is the essence of each provision of this Agreement.

31. Gender. Words of any gender used in this Agreement shall be held and construed to include any other gender, and words in the singular shall be held to include the plural.

32. Captions. The captions in this Agreement are inserted for convenience of reference and are not intended to define, describe or limit the scope of any provision of this Agreement.

33. Counterpart Execution. This Agreement may be executed in counterparts, each of which will be deemed an original document, but all of which will constitute a single document.

34. Confidentiality. Seller will (i) treat this Agreement and all oral discussions related hereto in strict confidence and (ii) except to the extent included in any memorandum recorded in the public records, shall not disclose any of the particulars hereof to any third parties without the prior written consent of Purchaser; provided, however, that Seller may disclose such information to (x) Seller's personal advisors, (y) any prospective purchaser of the Property, or (z) pursuant to lawful process, subpoena, or court order; so long as in making such disclosure Seller advises the person receiving the information of the confidentiality thereof and obtains the agreement of said person not to disclose such information. Excluded from the foregoing is any information that is in the public domain by reason of prior publication through no act or omission of Seller.

[The remainder of this page is intentionally left blank.]

IN WITNESS WHEREOF, the undersigned parties have set their hands and seals hereto as of the day and year indicated next to their signatures.

SELLER:

**THE THOMAS J. CONGLETON
REVOCABLE TRUST**

Dated: _____


Thomas J. Congleton, Trustee

**THE DARNETTA W. CONGLETON
REVOCABLE TRUST**

Dated: _____


Darnetta W. Congleton, Trustee

PURCHASER:

SUSTAINABLE PROPERTY HOLDINGS, LLC

a Delaware limited liability company

Dated: _____

By: _____

Name: _____

Title: _____

IN WITNESS WHEREOF, the undersigned parties have set their hands and seals hereto as of the day and year indicated next to their signatures.

SELLER:

**THE THOMAS J. CONGLETON
REVOCABLE TRUST**

Dated: _____

Thomas J. Congleton, Trustee

**THE DARNETTA W. CONGLETON
REVOCABLE TRUST**

Dated: _____

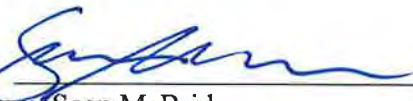
Darnetta W. Congleton, Trustee

PURCHASER:

SUSTAINABLE PROPERTY HOLDINGS, LLC

a Delaware limited liability company

Dated: [REDACTED]

By: 

Name: Sean McBride
Title: Authorized Person

EXHIBIT A

LEGAL DESCRIPTION OF THE PROPERTY

APN 0130-0000-0002 in Madison County, Kentucky

Parcel F:

Tract No. 1:

A certain Tract of land located in Madison County, Kentucky at the end of Pine Grove Road approximately nine/tenths of a mile east of the Bybee-Brassfield Road, and shown as Tract No. 1 on a Plat of Subdivision for Miller-Patton Auction Co., Inc., recorded in Plat Book 8, Page 332 of the Madison County Clerk's Records at Richmond, Kentucky, and being more particularly described as follows:

Beginning at a point in the center of Pine Grove Road where the blacktop ends approximately nine/tenths of a mile east of the Bybee-Brassfield Road, and running thence South 88 degrees 51 minutes 00 seconds East a distance of 887.40 feet to a point in the center of gravel road; thence North 69 degrees 29 minutes 00 seconds East a distance of 97.86 feet to a point in the center of gravel road; thence North 53 degrees 09 minutes 00 seconds East a distance of 220.40 feet to a point in the center of gravel road; thence North 55 degrees 11 minutes 00 seconds East a distance of 473.22 feet to a point in the center of gravel road, a corner to Tract No. 4; thence North 14 degrees 04 minutes 05 seconds West a distance of 2560.61 feet to a point for a corner; thence North 86 degrees 30 minutes 00 seconds West a distance of 742.50 feet to a point; thence South 03 degrees 24 minutes 14 seconds West a distance of 2458.16 feet to a point; thence South 03 degrees 57 minutes 58 seconds West a distance of 495.36 feet to the point of beginning, and containing 3344502.515 square feet or 76.7792 acres of land, more or less.

Tract No. 2:

A certain tract of land located in Madison County, Kentucky at the end of Pine Grove Road approximately nine/tenths of a mile east of the Bybee-Brassfield Road, and shown as Tract No. 4 on a Plat of Subdivision for Miller-Patton Auction Co., Inc., recorded in Plat Book 8, Page 332 of the Madison County Clerk's Records at Richmond, Kentucky, and being more particularly described as follows:

Beginning at a point in the center of a 50 foot wide egress-ingress and utility easement, said point also being a common corner to Tract No. 1 and Tract No. 4, and running thence North 51 degrees 54 minutes 00 seconds East a distance of 707.54 feet to a point in the center of a 50 foot easement; thence North 54 degrees 45 minutes 00 seconds East a distance of 396.70 feet to a point in the center of a 50 foot easement; thence north 62 degrees 26 minutes 00 seconds East a distance of

577.94 feet to a point in the line dividing Tract No. 3 and Tract No. 4; thence North 25 degrees 20 minutes 22 seconds West a distance of 1157.44 feet to a point a corner to Tract No. 3 and Tract No. 4; thence South 68 degrees 30 minutes 00 seconds West a distance of 297.01 feet to a point; thence South 80 degrees 00 minutes 00 seconds West a distance of 165.00 feet to a point; thence North 29 degrees 56 minutes 22 seconds West a distance of 142.16 feet to a point; thence South 89 degrees 55 minutes 02 seconds West a distance of 207.90 feet to a point; thence North 57 degrees 05 minutes 18 seconds West a distance of 955.85 feet to a point, a corner to Tract No. 1 and Tract No. 4; thence South 14 degrees 04 minutes 05 seconds East a distance of 2560.61 feet to the point of beginning and containing 2400383.621 square feet or 55.1052 acres of land, more or less.

Being the same property conveyed to Tommy J. Congleton and Darnetta W. Congleton, husband and wife, by deed dated the 23rd day of December, 1988, and of record in Deed Book 396, Page 427, in the Madison County Clerk's Office.

EXHIBIT B

FORM OF MEMORANDUM

[the remainder of this page intentionally left blank]

Recording requested by and
when recorded mail to:

Sustainable Property Holdings, LLC
Attn: Land Manager
2180 South 1300 East, Suite 600
Salt Lake City, UT 84106

(space above this line for recorder's use)

MEMORANDUM OF REAL ESTATE PURCHASE OPTION AGREEMENT

THIS MEMORANDUM OF REAL ESTATE PURCHASE OPTION AGREEMENT (this "Memorandum") is made, dated and effective as of [REDACTED] (the "Effective Date"), between **THOMAS J. CONGLETON, TRUSTEE, OF THE THOMAS J. CONGLETON REVOCABLE TRUST** and **DARNETTA W. CONGLETON, TRUSTEE, OF THE DARNETTA W. CONGLETON REVOCABLE TRUST** (collectively "Landowner"), and **SPOWER DEVELOPMENT COMPANY, LLC**, a Delaware limited liability company ("Seller"), and **SUSTAINABLE PROPERTY HOLDINGS, LLC**, a Delaware limited liability company ("Purchaser"), in light of the following facts and circumstances:

RECITALS:

WHEREAS, Seller and Purchaser have entered a Real Estate Purchase Option Agreement dated as of the Effective Date with respect to property more specifically described herein (as heretofore or hereinafter amended, restated, or supplemented from time to time, the "Option Agreement"); and

WHEREAS, Seller and Purchaser desire to set forth certain terms and conditions of the Option Agreement in a manner suitable for recording in the Official Records of Madison County, Kentucky in order to provide record notice of the Option Agreement and Purchaser's rights in and to the land subject to the Option Agreement, as provided herein.

NOW, THEREFORE, in consideration of the mutual covenants contained in the Option Agreement, and other good and valuable consideration, the receipt and sufficiency of which are hereby acknowledged, the parties hereto agree and stipulate as follows:

1. Description of Property. The land subject to the Option Agreement is described on Exhibit A attached hereto, and by this reference made a part hereof (the "Property").

2. Grant of Option. Seller hereby grants to Purchaser, pursuant to the Option Agreement, an exclusive and irrevocable option (the "Option") to purchase [REDACTED] of real property within the Property on the terms and conditions set forth in the Option Agreement. The entire Option Agreement is hereby incorporated

into this Memorandum by reference. Notwithstanding anything to the contrary contained herein, the provisions of this Memorandum do not in any way alter, amend, supplement, change, or affect the terms, covenants, or conditions of the Option Agreement, all of which terms, covenants, and conditions shall remain in full force and effect. In the event of any conflict between the terms of this Memorandum and the Option Agreement, the terms of the Option Agreement shall prevail.

3. Term of Option Agreement. Unless extended or earlier terminated, as provided in the Option Agreement, the term of the Option shall be for a [REDACTED] period beginning on the Effective Date, with an option to extend an additional [REDACTED]. Closing of the transaction contemplated by the Option Agreement shall occur within [REDACTED] following Purchaser's exercise of the Option, in accordance with the Option Agreement, or as the parties may otherwise mutually agree.

4. Names and Addresses of Parties. The names and addresses of the parties to the Option Agreement are as follows:

Seller:

Thomas J. and Darnetta W. Congleton
[REDACTED]
[REDACTED]
[REDACTED]

Purchaser:

Sustainable Property Holdings, LLC
Attn: Land Manager
2180 South 1300 East, Suite 600
Salt Lake City, UT 84106
Phone: (801) 679-3500
Email: Land@spower.com

5. Successors and Assigns. The terms of this Memorandum and the Option Agreement are covenants running with the land and inure to the benefit of, and are binding upon, the parties and their respective successors and assigns, including all subsequent owners of all or any portion of the Property. References to Seller and Purchaser include their respective successors and assigns. References to the Option Agreement includes any amendments thereto.


6. Miscellaneous. This Memorandum is executed for the purpose of recording in the Official Records of Madison County, Kentucky, in order to provide public record notice of the Option Agreement and Purchaser's rights in and to the land subject to the Option Agreement. All persons are hereby put on notice of and shall have a duty to inquire regarding the Option Agreement and all of the provisions thereof and the rights, title, interests, and claims of Purchaser in and to the Property. Any right, estate, claim, or interest in the Property first attaching to the Property and recorded from and after the Effective Date shall be subordinate to the terms of the Option Agreement. If Purchaser acquires fee simple title to any portion of the Property, Purchaser shall have the right, at Purchaser's option, to terminate any such subordinate right, estate, claim, or interest, at no cost or liability to Purchaser, or to accept title subject thereto. This instrument may for convenience be executed in any number of original counterparts, each of which shall be an original and all of which taken together shall constitute one instrument.

[The remainder of this page is intentionally left blank.]

IN WITNESS WHEREOF, Seller and Purchaser, acting through their duly authorized representatives, have made and entered into this Memorandum as of the Effective Date.

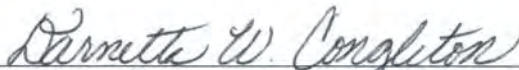
SELLER:

**THE THOMAS J. CONGLETON
REVOCABLE TRUST**



Thomas J. Congleton, Trustee

**THE DARNETTA W. CONGLETON
REVOCABLE TRUST**



Darnetta W. Congleton, Trustee

PURCHASER:

SUSTAINABLE PROPERTY HOLDINGS, LLC
a Delaware limited liability company

By: _____
Name: _____
Title: _____

IN WITNESS WHEREOF, Seller and Purchaser, acting through their duly authorized representatives, have made and entered into this Memorandum as of the Effective Date.

SELLER:

**THE THOMAS J. CONGLETON
REVOCABLE TRUST**


Thomas J. Congleton, Trustee

**THE DARNETTA W. CONGLETON
REVOCABLE TRUST**

Darnetta W. Congleton, Trustee

PURCHASER:

SUSTAINABLE PROPERTY HOLDINGS, LLC
a Delaware limited liability company

By: 
Name: Sean McBride
Title: Authorized Person

ACKNOWLEDGEMENT OF SELLER

STATE OF KENTUCKY }
COUNTY OF MADISON } S.S

On [REDACTED], [REDACTED] before me, STEVEN W. BURGESS II Notary Public, personally appeared, DARNETTA W. CONGLETON, TRUSTEE, who proved to me on the basis of satisfactory evidence to be the person(s) whose name(s) is/are subscribed to the within instrument and acknowledged to me that he/she/they executed the same in his/her/their authorized capacity(ies), and that by his/her/their signature(s) on the instrument the person(s), or the entity upon behalf of which the person(s) acted, executed the instrument.

I certify under PENALTY OF PERJURY under the laws of the State of Kentucky that the foregoing paragraph is true and correct.

WITNESS my hand and official seal.

Signature: *Steven W. Burgess II*



(Notary Seal)



ACKNOWLEDGEMENT OF PURCHASER

STATE OF UTAH)
 §
COUNTY OF SALT LAKE)

On [REDACTED], before me, Sabrina Fuller, personally appeared Sean McBride who proved to me on the basis of satisfactory evidence to be the person whose name is subscribed to the within instrument and acknowledged to me that he executed the same in his authorized capacity, and that by his signature on the instrument, the person, or the entity upon behalf of which the person acted, executed the instrument.

I certify under PENALTY OF PERJURY under the laws of the State of Utah that the foregoing paragraph is true and correct.

WITNESS my hand and official seal.



Signature *Sabrina Fuller* (seal)

EXHIBIT A

LEGAL DESCRIPTION

APN 0130-0000-0002 in Madison County, Kentucky

Parcel F:

Tract No. 1:

A certain Tract of land located in Madison County, Kentucky at the end of Pine Grove Road approximately nine/tenths of a mile east of the Bybee-Brassfield Road, and shown as Tract No. 1 on a Plat of Subdivision for Miller-Patton Auction Co., Inc., recorded in Plat Book 8, Page 332 of the Madison County Clerk's Records at Richmond, Kentucky, and being more particularly described as follows:

Beginning at a point in the center of Pine Grove Road where the blacktop ends approximately nine/tenths of a mile east of the Bybee-Brassfield Road, and running thence South 88 degrees 51 minutes 00 seconds East a distance of 887.40 feet to a point in the center of gravel road; thence North 69 degrees 29 minutes 00 seconds East a distance of 97.86 feet to a point in the center of gravel road; thence North 53 degrees 09 minutes 00 seconds East a distance of 220.40 feet to a point in the center of gravel road; thence North 55 degrees 11 minutes 00 seconds East a distance of 473.22 feet to a point in the center of gravel road, a corner to Tract No. 4; thence North 14 degrees 04 minutes 05 seconds West a distance of 2560.61 feet to a point for a corner; thence North 86 degrees 30 minutes 00 seconds West a distance of 742.50 feet to a point; thence South 03 degrees 24 minutes 14 seconds West a distance of 2458.16 feet to a point; thence South 03 degrees 57 minutes 58 seconds West a distance of 495.36 feet to the point of beginning, and containing 3344502.515 square feet or 76.7792 acres of land, more or less.

Tract No. 2:

A certain tract of land located in Madison County, Kentucky at the end of Pine Grove Road approximately nine/tenths of a mile east of the Bybee-Brassfield Road, and shown as Tract No. 4 on a Plat of Subdivision for Miller-Patton Auction Co., Inc., recorded in Plat Book 8, Page 332 of the Madison County Clerk's Records at Richmond, Kentucky, and being more particularly described as follows:

Beginning at a point in the center of a 50 foot wide egress-ingress and utility easement, said point also being a common corner to Tract No. 1 and Tract No. 4, and running thence North 51 degrees 54 minutes 00 seconds East a distance of 707.54 feet to a point in the center of a 50 foot easement; thence North 54 degrees 45 minutes 00 seconds East a distance of 396.70 feet to a point in the center of a 50 foot easement; thence north 62 degrees 26 minutes 00 seconds East a distance of

577.94 feet to a point in the line dividing Tract No. 3 and Tract No. 4; thence North 25 degrees 20 minutes 22 seconds West a distance of 1157.44 feet to a point a corner to Tract No. 3 and Tract No. 4; thence South 68 degrees 30 minutes 00 seconds West a distance of 297.01 feet to a point; thence South 80 degrees 00 minutes 00 seconds West a distance of 165.00 feet to a point; thence North 29 degrees 56 minutes 22 seconds West a distance of 142.16 feet to a point; thence South 89 degrees 55 minutes 02 seconds West a distance of 207.90 feet to a point; thence North 57 degrees 05 minutes 18 seconds West a distance of 955.85 feet to a point, a corner to Tract No. 1 and Tract No. 4; thence South 14 degrees 04 minutes 05 seconds East a distance of 2560.61 feet to the point of beginning and containing 2400383.621 square feet or 55.1052 acres of land, more or less.

Being the same property conveyed to Tommy J. Congleton and Darnetta W. Congleton, husband and wife, by deed dated the 23rd day of December, 1988, and of record in Deed Book 396, Page 427, in the Madison County Clerk's Office.

REAL ESTATE PURCHASE OPTION AGREEMENT

THIS REAL ESTATE PURCHASE OPTION AGREEMENT (this "Agreement") is made as of the Effective Date (as defined below), by and between **THOMAS J. CONGLETON, TRUSTEE, OF THE THOMAS J. CONGLETON REVOCABLE TRUST** and **DARNETTA W. CONGLETON, TRUSTEE, OF THE DARNETTA W. CONGLETON REVOCABLE TRUST** (collectively "Seller"), and **SUSTAINABLE PROPERTY HOLDINGS, LLC**, a Delaware limited liability company ("Purchaser"). The latest date indicated on the signature page of this instrument shall be the "Effective Date" of this Agreement.

1. Grant of Option. For and in consideration of Purchaser's agreement to make to Seller the payments set forth in Section 3 below (the "Option Payments"), Seller hereby grants to Purchaser an exclusive and irrevocable option (the "Option") to purchase approximately [REDACTED] of real property legally described on Exhibit A attached hereto and made a part hereof, in the county of Madison, State of Kentucky (the "Property"), on the terms and conditions set forth in this Agreement.

2. Term of Option. The term of the Option (the "Term") shall be for a [REDACTED] period beginning on the Effective Date, together with Purchaser's option to extend said Term for an additional [REDACTED] upon written notice provided to Seller prior to the expiration of the initial Term, provided however, that Purchaser shall have the right at any time prior to exercising the Option to terminate this Agreement as to all or any portion of the Property by giving written notice to Seller. Upon termination of this Agreement for any reason, Purchaser's obligations to Seller hereunder (including but not limited to Purchaser's obligations to make any remaining Option Payments) shall become null and void and of no further force or effect.

3. Option Payments. In consideration of the rights granted hereunder, Purchaser will pay to Seller the Option Payments set forth in the table below, on the payment dates set forth in such table. If any scheduled payment date falls on a day which is not a business day in the State of Utah, then the due date for such payment shall be extended to the next succeeding business day. The Option Payments shall be non-refundable to Purchaser in the event that this Agreement is terminated, unless Seller is in default or breach of this Agreement. The amount of all Option Payments made by Purchaser shall be applied against the Purchase Price at the Closing.

<u>Option Payment Due Date</u>	<u>Amount of Option Payment Due on Such Date</u>
Effective Date	[REDACTED]
[REDACTED] following Effective Date	[REDACTED]
[REDACTED] following Effective Date	[REDACTED]
[REDACTED] following Effective Date	[REDACTED]
[REDACTED] following Effective Date	[REDACTED]
[REDACTED] following Effective Date	[REDACTED]
[REDACTED] following Effective Date	[REDACTED]
[REDACTED] following Effective Date	[REDACTED]

██████████ following Effective Date	██████████
██████████ following Effective Date	██████████
██████████ following Effective Date	██████████
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██████████ following Effective Date	██████████
In the event Purchaser extends initial Term, Option Payments are scheduled as follows:	
██████████ following Effective Date	██████████
██████████ following Effective Date	██████████
██████████ following Effective Date	██████████
██████████ following Effective Date	██████████

It is acknowledged and understood that the table set forth above reflects that the period commencing on the Effective Date and continuing for ninety (90) days shall constitute a due diligence period for Purchaser (“Due Diligence Period”). The initial payment of ██████████ (the “Deposit”) shall be deposited into an escrow account with Escrow Holder (as defined below) along with a signed copy of this Agreement. Nothing contained in this Section shall in any way limit or otherwise affect Purchaser’s right to terminate this Agreement at any time pursuant to Section 2. If Purchaser terminates this Agreement prior to the expiration of the Due Diligence Period, the Deposit, less an amount equal to ██████████ (the “Independent Consideration”), shall be immediately returned to Purchaser by Escrow Holder. If this Agreement is not so terminated, the Deposit shall be released to Seller from escrow upon expiration of the Due Diligence Period. Future Option Payments shall be made by Purchaser to Escrow Holder for credit to Seller, and Escrow Holder shall forward such future Option Payments to Seller promptly following Escrow Holder’s receipt thereof. Purchaser’s obligation to make the applicable Option Payment to Seller shall be considered complete when such payment has been made to Escrow Holder. The “Escrow Holder” shall be McBrayer Firm, 201 East Main Street, Suite 900, Lexington, Kentucky 40507, Attention: James H. Frazier, III, Telephone: (859) 231-8780, ext. 1303, E-mail: jfrazier@mcbrayerfirm.com. Escrow Holder shall execute a joinder to this Agreement evidencing Escrow Holder’s agreement to act as Escrow Holder in accordance with the provisions hereof. Concurrently with execution of this Agreement, Seller and Purchaser will execute a memorandum in the form of Exhibit B attached hereto and made a part hereof by reference, or any other reasonable form of memorandum, and Purchaser shall cause such memorandum to be recorded in the public records.

4. Method of Exercising Option. Purchaser may exercise the Option at any time during the Term by giving written notice to Seller (the “Exercise Notice”). Upon the timely and proper exercise of the Option, Seller agrees to sell and convey, and Purchaser agrees to purchase, the Property, in accordance with and subject to the terms and conditions of this Agreement.

5. Inspections; Use of Property. From and after the Effective Date, Purchaser or its designated agents may enter upon the Property upon reasonable prior notice to Seller to conduct, at Purchaser’s sole cost and expense, any inspections, tests, surveys, engineering, environmental, and/or market and economic feasibility studies, and due diligence matters related thereto, concerning the

Property. Any activities of Purchaser on the Property shall be conducted in such a manner so as to not cause any material damage to the Property and so as to not unreasonably interfere with the current use of the Property. Purchaser shall be responsible for any material damage to the Property caused by Purchaser in connection with Purchaser's activities on the Property, which damage shall be assessed immediately upon occurrence, or by a third-party consultant as soon as possible after occurrence. Purchaser shall indemnify Landowner for any loss, costs, claims, actions or damages caused by activities of Purchaser on the Property except those caused by Seller's gross negligence or willful behavior. Subject to the foregoing rights of Purchaser, prior to the Closing (as defined in Section 9 below), Seller, or its affiliated or contracted parties, shall be permitted to continue to use the Property in a manner consistent with its existing use, including but not limited to cattle grazing. Seller shall provide Purchaser, prior to the expiration of the Due Diligence Period, with copies of all field tiling surveys, plans and other geotechnical and other site assessments, surveys, plans, entitlement-related studies, environmental assessments, reports, test results, correspondence to or from any governmental agency, and other such records of Seller relating to the Property. Seller represents and warrants to Purchaser that, to the best of Seller's knowledge, all information contained in any such materials provided by Seller to Purchaser shall be accurate and complete.

6. Purchase Price. The price (the "Purchase Price") to be paid by Purchaser to Seller for the Property shall be [REDACTED]

[REDACTED]

7. Costs; Prorations; Credits.

7.1. [REDACTED]

[REDACTED]

7.2. [REDACTED]

[REDACTED]

7.3. [REDACTED]

8. Title.

8.1. At Closing, Seller shall convey to Purchaser marketable and insurable fee simple title to the Property, free from any (i) mortgage, deed to secure debt, deed of trust, security agreement, judgment, lien or claim of lien, or any other title exception or defect that is monetary in nature, Seller hereby agreeing to pay and satisfy of record any such title defects or exceptions prior to or at Closing at Seller's expense, (ii) lease, rental agreement, or other right of occupancy of any kind, whether written or oral (it being acknowledged and understood that any lease, rental agreement or right of occupancy in existence as of the date hereof shall be fully and completely terminated by Seller prior to Closing), (iii) recorded or unrecorded right or interest first attaching subsequent to the Effective Date, or (iv) matter encompassed by any standard exception under the Title Commitment (other than as to matters of survey), including the standard "gap" exception, the standard mechanic's lien exception and the standard parties in possession exception (the "Non-Permitted Exceptions").

8.2. Prior to Closing, Purchaser shall obtain a current title commitment (the "Title Commitment") applicable to the Property, from the Title Company (as defined below), whereby the Title Company agrees to issue at Closing an ALTA Owner's Policy of Title Insurance (the "Title Policy"), in the amount of the Purchase Price, insuring Purchaser's marketable fee simple title to the Property, including all appurtenances thereto and improvements thereon, and including such additional title endorsements in form and content as Purchaser may reasonably request. Notwithstanding anything to the contrary contained in this Agreement, it shall be a condition precedent to Purchaser's obligation to close the transaction herein described that the Title Company shall have unconditionally indicated in writing that upon recording of the Deed and payment of its premiums (at ordinary rates), the Title Company will issue the Title Policy to Purchaser as herein required, insuring that fee simple title shall be vested in Purchaser, without exception for the Non-Permitted Exceptions. If the parties are unable to cause the satisfaction of the aforesaid condition precedent, Purchaser, in its discretion, may elect, by written notice to Seller, either to accept such title as Seller is capable of delivering or to terminate this Agreement. If this Agreement is so terminated, Seller shall immediately return to Purchaser all Option Payments previously made by Purchaser. The "Title Company" shall be McBrayer Firm, 201 East Main Street, Suite 900, Lexington, Kentucky 40507, Attention: James H. Frazier, III, Telephone: (859) 231-8780, ext. 1303, E-mail: jfrazier@mcbayerfirm.com.

9. Closing. The closing of the transaction contemplated by this Agreement ("Closing") shall occur through escrow at the offices of the Escrow Holder within [REDACTED] following Purchaser's delivery of the Exercise Notice on such date as Purchaser may select by advance written notice to Seller or on such other date or at such other location as the parties may mutually agree. If the Escrow Holder requires the execution of an escrow agreement, Seller and Purchaser will promptly execute and deliver the same in such form as the Title Company or such escrow agent may reasonably request.

10. Closing Deliveries. At Closing, the following shall occur:

10.1. Seller shall deliver actual possession of the Property to Purchaser and Seller shall deliver or cause to be delivered to Purchaser such documents as are reasonably required by Purchaser to close the transaction that is the subject of this Agreement, all fully executed by Seller and acknowledged as necessary, including the following enumerated documents, all of which documents shall be subject to the reasonable approval of Purchaser:

10.1.1. Counterpart of closing statement;

10.1.2. Grant Deed (the "Deed"), conveying to Purchaser the Property, including any and all water rights, and warranting title against the Non-Permitted Exceptions and against all persons whomsoever;

10.1.3. Certificate of Non-Foreign Status, evidencing that Purchaser shall not be liable for transfer liability under Section 1445 of the Internal Revenue Code, as amended;

10.1.4. A general assignment (the "General Assignment") assigning to Purchaser all of Seller's right, title and interest in, to and under any or all of the following intangible property relating to the Property (the "Intangible Property"), as determined by Purchaser in its sole discretion: (i) all licenses, permits, certificates of occupancy, approvals, dedications, subdivision maps and entitlements issued, approved or granted by governmental authorities or otherwise in connection with the Property, including any water rights or permits; (ii) all licenses, consents, easements, rights of way and approvals required from private parties to make use of utilities and to insure vehicular and pedestrian ingress and egress to the Property; and (iii) any and all service contracts, agreements, maintenance contracts and like contracts and agreements relating to the Property, together with all supplements, amendments and modifications thereto;

10.1.5. Real Estate Withholding Certificate, if applicable;

10.1.6. Title affidavits and indemnities in form and content as may be reasonably required by Purchaser and the Title Company to delete all of the Title Commitment's standard exceptions (other than as to matters of survey), including the standard "gap" exception, the standard mechanic's lien exception, and the standard parties in possession exception and any exceptions for judgment, state or federal tax, environmental, broker, or other liens;

10.1.7. Instruments reasonably satisfactory to Purchaser and the Title Company reflecting the proper power, good standing, and authorization for the sale of the Property from Seller to Purchaser and the execution and delivery of all documents hereunder;

10.1.8. Such corrective instruments as may be required to deliver marketable and insurable title as required hereunder;

10.1.9. Seller certification confirming that all representations and warranties stated herein are in full force and effect as of Closing; and

10.1.10. Such other instruments as may be reasonably necessary to effect the conveyance of the Property in accordance with, and effectuate the other provisions of, this Agreement.

10.2. Purchaser shall deliver or cause to be delivered to Seller such documents as are reasonably required by Seller to close the transaction that is the subject of this Agreement, all fully executed by Purchaser and acknowledged as necessary, including the following enumerated documents, all of which documents shall be subject to the reasonable approval of Seller:

10.2.1. Counterpart of closing statement;

10.2.2. An acceptance of the General Assignment, if Purchaser has elected to receive assignment of any of the Intangible Property; and

10.2.3. Such other instruments as may be reasonably necessary to effect the conveyance of the Property in accordance with, and effectuate the other provisions of, this Agreement.

11. Road Maintenance. Purchaser understands and agrees that the gravel portion of Pine Grove Road that abuts the Property shall be Purchaser's responsibility to maintain, unless the portion of the road is under the jurisdiction of local city or county governance and maintenance. Maintenance shall include keeping the road in passable condition, including keeping potholes filled if required.

12. Property Improvements. Any improvements affixed to the Property, including the large barn, will be included in the purchase of the Property. The Seller may at its own discretion remove the metal hut, trough, water tanks, fence posts, gates, or fencing material prior to selling the Property. After Closing, title to any personal property or items affixed to the Property shall pass to Purchaser and Seller shall retain no rights thereto, with the exception of fencing material. After Closing, Purchaser shall contact Seller prior to any fencing material removal. Seller shall have the option to keep any fencing material removed from the Property, including posts and gates, if Seller wishes. Any fencing removed and received by Seller shall be at no charge to Seller, but must be taken from the Property immediately.

13. Timber Removal. Seller may harvest and remove any timber prior to Closing in a manner that comports with Kentucky and all local laws and regulations. After Closing, Purchaser shall obtain rights to all timber on the Property.

14. Brokers. Seller and Purchaser each warrant and represent to the other that neither has employed or dealt with a real estate broker or agent in connection with the transaction contemplated hereby. Seller and Purchaser covenant and agree, each to the other, to indemnify the other against any loss, liability, costs, claims, demands, damages, actions, causes of action, and suits arising out of, or in any manner related to, the alleged employment, engagement or use by the indemnifying party of any real estate broker or agent. The foregoing obligation shall survive Closing.

15. Seller Representations, Warranties, and Covenants. Seller represents, warrants, and covenants, as follows:

15.1. Seller holds the fee simple interest in and has the exclusive right to purchase and sell the Property as of the Effective Date. Seller shall not enter into, permit, or suffer, nor purport to enter into or permit, any encumbrance of the Property that is not subordinate to the Option and Purchaser's rights under this Agreement and the title conveyed to Purchaser at Closing. There are no leases, rental agreements, or other rights of occupancy of any kind, whether written or oral, currently affecting the Property, except as follows: _____ **[to be completed by Seller]**. Seller

shall terminate any leases, rental agreements or other rights of occupancy (whether such leases, rental agreements or rights of occupancy are presently in existing or are hereafter created) prior to Closing.

15.2. No condemnation proceeding is pending or, to Seller's knowledge, threatened with respect to any part of the Property.

15.3. Seller has not used, generated, treated, stored, released, discharged, or disposed of Hazardous Substances on or from the Property at any time; nor, to the knowledge of Seller, has any such event occurred upon or within the Property. To the knowledge of Seller, no notification of release of a Hazardous Substance has been filed as to the Property, nor is the Property listed or formally proposed for listing on the National Priority List promulgated pursuant to federal law or on any state list of hazardous substance sites requiring investigation or clean-up. Seller has complied with all reporting requirements under any applicable federal, state, or local environmental laws and there are no existing violations by Seller of any such environmental laws. To the knowledge of Seller, there are no claims, actions, suits, proceedings, or investigations related to the presence, release, discharge, spillage, or disposal of any Hazardous Substance or contamination of soil or water by any Hazardous Substance pending or threatened with respect to the Property or otherwise against Seller in any court or before any state, federal, or other governmental agency or private arbitration tribunal. To the knowledge of Seller, no PCB, PCB-contaminated, friable asbestos, or formaldehyde-based insulation items are present at the Property. Seller shall indemnify and hold harmless Purchaser from and against any and all losses arising from or related to the breach by Seller of any warranties or representations contained in this subsection. "Hazardous Substance" shall refer to any hazardous or toxic substance or waste as those terms are defined by any applicable federal or state law or regulation, including, without limitation, the Comprehensive Environmental Recovery Compensation and Liability Act, 42 U.S.C. 9601 et seq. and the Resource Conservation and Recovery Act, 42 U.S.C. 6901 et seq., and petroleum, petroleum products, and oil.

15.4. Seller has no knowledge, nor has Seller received any notice of any actual or pending litigation or proceeding by any organization, person, individual, or governmental agency against Seller with respect to the Property or any portion thereof or with respect thereto, nor does Seller know of any basis for any such action; and Seller has no knowledge, nor has Seller received any notice, of any violations of law, municipal or county ordinances, or other legal requirements with respect to the Property (or any part thereof) or with respect to the use or occupancy of the Property nor does Seller know of any basis for such violations.

15.5. No assessments have been made against the Property (or any part thereof) that are unpaid (except property taxes or special assessments which will be paid in full or prorated as an adjustment to the Purchase Price at the time of Closing in accordance with this Agreement), whether or not they have become liens.

15.6. Seller shall cooperate with Purchaser in Purchaser's efforts to seek governmental approvals desired by Purchaser for Purchaser's intended use and acquisition of the Property including (i) the granting to Purchaser of full authority to seek any and all permits, entitlements, licenses, and approvals (collectively, "Approvals") necessary or convenient for the development of the Property for Purchaser's intended use thereof (including, as necessary, rezoning, general plan amendment, environmental permit, building permit, variance, and/or vacation applications) and for the division (whether by certified survey map or otherwise) of the Property so as to cause the Property to be recognized as a single lawfully subdivided parcel, and (ii) the execution of consents and applications in connection with Purchaser attempting to obtain such

Approvals. Without limiting the generality of the foregoing, Seller shall not oppose, in any way, whether directly or indirectly, and shall fully cooperate with Purchaser in connection with any application by Purchaser for any Approvals at any administrative, judicial, legislative, or other level. It is acknowledged and agreed by Seller that Purchaser intends to utilize the Property (if Purchaser acquires the Property pursuant to Purchaser's exercise of the Option) as a solar energy generation facility, and for uses related and incidental thereto. Purchaser shall pay all fees and costs in connection with Purchaser's applications for any Approvals. Purchaser will obtain Seller's prior written consent to any all submittals to be made by Purchaser in connection with the process of obtaining any Approvals, which consent shall not be unreasonably withheld, conditioned or delayed. In the event that Seller unreasonably withholds, conditions or delays its consent to any such submittals desired to be made by Purchaser, then Purchaser shall have the right, in its sole discretion, to terminate this Agreement upon written notice to Seller, and upon any such termination pursuant to this sentence, Seller shall immediately refund to Purchaser any Option Payments previously made by Purchaser to Seller hereunder. If this Agreement is terminated pursuant to the provisions hereof, Seller may withdraw or terminate any applications for Approvals.

15.7. Seller agrees that Purchaser shall not and does not assume any of the following liabilities, and Seller shall promptly pay and perform, and indemnify and hold Purchaser harmless from and against: any liability or obligation of Seller in respect of any state, local, federal, or foreign taxes (whether in the nature of income, transfer, sales, withholding, employee, excise, property, customs, gross receipts, or other taxes or other duties of any kind whatsoever), or penalties, interest, and fines in respect thereof, or any reporting requirement or estimated tax payable with respect thereto, relating to events or transactions occurring on or prior to Closing involving Seller or the transactions contemplated hereby; any litigation, investigation, or other proceeding pending or threatened with respect to Seller or the Property on or prior to Closing, or subsequently asserted, which is attributable to facts existing, or events, or omissions occurring on or prior to Closing; and all liabilities or claims of any nature relating directly or indirectly to the Property, whether accrued, absolute, contingent, or otherwise arising out of or relating to (or alleged to arise out of or relate to) any state of facts, omissions, or events existing or occurring on or before Closing (whether known or unknown to Purchaser or Seller).

15.8. Seller shall not enter into any transaction, take any action, or by inaction, permit any event to occur, which would result in any of the representations, warranties, and covenants of Seller herein contained not being true, correct, and satisfied at and as of the time immediately after the occurrence of such transaction or event.

15.9. If as of the Effective Date the Property is subject to any mortgage or deed of trust, then concurrently with the execution of this Agreement, Seller shall obtain from the holder of such mortgage or deed of trust and deliver to Purchaser, the written agreement of such holder ("Subordination Agreement") in recordable form subordinating such mortgage or deed of trust to this Agreement. Any such Subordination Agreement shall be in form and substance reasonably acceptable to Purchaser.

Seller agrees to take such actions at its expense as may be necessary to cause the representations, warranties, and covenants in this Agreement to be true, correct, and satisfied as of the date of Closing; provided, however, if an event or circumstance which is neither caused by Seller nor within the reasonable control of Seller causes any such representation, warranty, or covenant to be untrue as of the date of Closing, Seller shall not be required to take any action with respect to such event or occurrence. Subject to the preceding sentence, Seller shall affirm the foregoing representations,

warranties, and covenants at (and as of the date of) Closing, all of which shall survive Closing. Notwithstanding the foregoing, or anything to the contrary contained in this Agreement, it shall be a condition precedent to Purchaser's obligation to close the transaction herein described that all of Seller's representations, warranties, and covenants under this Agreement be true, correct, and satisfied, in all material respects, as of the date of Closing, and shall survive closing.

16. Purchaser's Representations, Warranties and Covenants. Purchaser warrants, represents and covenants to and with Seller that the following are true and correct on the date hereof and the Closing:

16.1. Purchaser has the requisite power and authority to enter into and to perform the terms of this Agreement. To Purchaser's actual knowledge, Purchaser is not subject to any law, order, decree, restriction, or agreement which prohibits or would be violated by this Agreement or the consummation of the transactions contemplated hereby.

16.2. To Purchaser's actual knowledge, neither the execution, delivery and performance of this Agreement nor the consummation of the transactions contemplated hereby is prohibited by, or requires Purchaser to obtain any consent, authorization, approval or registration under any law, statute, rule, regulation, judgment, order, writ, injunction or decree which is binding upon Purchaser.

16.3. To Purchaser's actual knowledge, there are no judgments, orders, or decrees of any kind against Purchaser unpaid or unsatisfied of record, nor any actions, suits or other legal or administrative proceedings pending or, to the best of Purchaser's actual knowledge, threatened against Purchaser, which would have any material adverse effect on the business or assets or the condition, financial or otherwise, of Purchaser or the ability of Purchaser to consummate the transactions contemplated by this Agreement.

17. Eminent Domain. If, after the Effective Date and prior to Closing, Seller receives notice of the commencement or threatened commencement of eminent domain or other like proceedings against the Property or any portion thereof, Seller shall immediately give written notice thereof to Purchaser, in which event Purchaser, in its discretion (whether or not Purchaser has then exercised the Option), may elect, by written notice to Seller, either to (i) terminate this Agreement or (ii) keep this Agreement in effect and, if applicable, close the transaction contemplated hereby in accordance with its terms, but subject to such proceedings, in which event the Purchase Price shall not be reduced but Seller shall assign to Purchaser Seller's rights in any condemnation award or proceeds, as they pertain to this Agreement or the Property.

18. Damage to Property. Except as provided in this section and except as otherwise provided in Section 5, the risk of loss or damage to the Property and all liability to third parties until the Closing shall be borne by Seller. If, after the Effective Date and prior to Closing, all or any part of the Property is damaged by flood or other casualty, Seller shall immediately give written notice to Purchaser of such damage and of Seller's insurance coverage with respect to such damage, if any, in which event Purchaser, in its discretion (whether or not Purchaser has then exercised the Option), may elect, by written notice to Seller, either to (i) terminate this Agreement, or (ii) keep this Agreement in effect and, if applicable, close the transaction contemplated hereby in accordance with its terms, in which event the Purchase Price shall not be reduced but Seller shall assign to Purchaser Seller's rights in any insurance proceeds, as they pertain to this Agreement or the Property.

19. Notices. All notices or other communications required or permitted hereunder shall, unless otherwise provided herein, be in writing, and shall be personally delivered, delivered by reputable overnight courier, or sent by registered or certified mail, return receipt requested and postage prepaid, addressed as follows:

If to Seller:

Thomas J. and Darnetta W. Congleton

[REDACTED]
[REDACTED]
[REDACTED]

If to Purchaser:

Sustainable Property Holdings, LLC

Attn: Land Manager

2180 South 1300 East, Suite 600

Salt Lake City, UT 84106

Phone: (801) 679-3500

Email: Land@spower.com

Notices personally delivered shall be deemed given the day so delivered. Notices given by overnight courier shall be deemed given on the first business day following the mailing date. Notices mailed as provided herein shall be deemed given on the third business day following the mailing date. Any party may change its address for purposes of this section by giving written notice of such change to the other party in the manner provided in this section.

20. Default Remedies

[REDACTED]

21. Entire Agreement, Amendments and Waivers. This Agreement contains the entire agreement and understanding of the parties in respect to the subject matter hereof, supersedes all prior agreements in respect to the subject matter hereof, if any, between the parties, and the same may not be amended, modified, or discharged nor may any of its terms be waived except by an instrument in writing signed by the parties. Nothing herein shall be construed to supersede any ongoing lease or easement agreement between the parties.

22. Further Assurances. The parties each agree to do, execute, acknowledge, and deliver all such further acts, instruments, and assurances, and to take all such further action before or after Closing as shall be necessary or desirable to fully carry out this Agreement and to fully consummate and effect the transactions contemplated hereby. The foregoing covenant shall survive Closing.

23. No Third-Party Benefits. This Agreement is for the sole and exclusive benefit of the parties hereto and their respective successors and assigns, and no third party is intended to or shall have any rights hereunder.

24. Assignment, Successors. Purchaser may freely assign its rights under this Agreement on written notice to Seller. This Agreement shall be binding upon and inure to the benefit of the parties hereto and their respective heirs, successors, and assigns. Seller may not assign any rights under this Agreement to any other person or party without consent of Purchaser.

25. Governing Law. This Agreement shall be governed by and construed in accordance with the laws of the State of Kentucky.

26. Mandatory and Binding Arbitration. Any dispute arising between the parties to this Agreement, which cannot be settled amicably by the parties, concerning the Property, any provision of this Agreement, or the rights and duties of the parties in regard thereto, including any alleged breach of this Agreement, shall be resolved by arbitration as provided in this section. All such disputes shall be settled exclusively and finally through arbitration conducted by the American Arbitration Association (the "AAA") before a single arbitrator in Madison County, Kentucky in accordance with the Commercial Arbitration Rules of the AAA (the "Rules"), as such Rules are in effect on the date of delivery of a Demand for Arbitration, provided, however, that not withstanding anything contained in the Rules, the arbitrator shall not have the power to authorize more than ten (10) document requests. Further, no interrogatories shall be allowed during the course of the arbitration proceeding, and each party shall be allowed only one deposition absent a showing of good cause. "Good cause" in this context shall mean that despite the fact that the parties are agreeing to arbitration as an alternative to judicial proceedings because arbitration is intended to be a quicker, less expensive, more efficient dispute resolution mechanism, the party cannot establish its *prima facie* case without taking more than one deposition. In no case does the arbitrator have the power to authorize more than three (3) depositions per party. The arbitration proceedings provided hereunder are hereby declared to be self-executing, and it shall not be necessary to petition a court to compel arbitration. The expedited arbitration will be concluded within [REDACTED] of the date of the Demand for Arbitration. The arbitrator shall determine all questions of fact and law relating to any controversy, claim or dispute hereunder, including but not limited to whether or not such controversy, claim or dispute is subject to the arbitration provisions contained herein. The arbitrator shall have the power to issue an injunction or require specific performance as the arbitrator finds necessary. Should arbitration result in a monetary award to either party, the party owing the award shall have [REDACTED] to pay such award. The arbitrator may apportion the costs and expenses of the arbitration proceeding, including attorneys' fees and arbitrators' fees, between the parties in any manner deemed reasonable by the arbitrator. The arbitrator is required, under the Agreement between the parties, to strictly construe this Agreement and may not grant an award or any relief to a party that is inconsistent with the express terms of this Agreement. The determinations of the arbitrator shall be subject to judicial review to the maximum extent allowed by federal law or the law of the state in which the arbitration occurs. Any award or determination rendered by the arbitrator may be entered and enforced in any court of competent jurisdiction. Any party shall have the right to apply to a court of competent jurisdiction for an injunction to protect its interests under this Agreement only if: (a) one of the parties has already filed a demand for arbitration under this section; and (b) no arbitrator has yet been appointed by the AAA.

27. Waiver of Jury Trial. **EACH PARTY HERETO HEREBY WAIVES ANY AND ALL RIGHTS IT MAY HAVE TO DEMAND THAT ANY ACTION, PROCEEDING,**

CLAIM, COUNTERCLAIM OR CAUSE OF ACTION ARISING OUT OF OR IN ANY WAY RELATED TO THIS AGREEMENT OR THE RELATIONSHIP OF THE PARTIES HEREUNDER BE TRIED BY JURY. THE SCOPE OF THIS WAIVER IS INTENDED TO BE ALL ENCOMPASSING OF ANY AND ALL DISPUTES THAT MAY BE FILED IN ANY COURT. EACH PARTY HEREBY ACKNOWLEDGES THAT IT IS KNOWINGLY AND VOLUNTARILY WAIVING THE RIGHT TO DEMAND TRIAL BY JURY.

28. Enforcement Expense. In the event that either party hereto commences an enforcement action against the other to enforce its rights hereunder, the prevailing party in such enforcement action shall be entitled to recover from the other its reasonable attorney's fees and expenses incidental to such enforcement action, whether incurred before or after a final decision on such enforcement action.

29. Severability. If any clause or provision of this Agreement is held by a court having jurisdiction to be illegal, invalid or unenforceable under any present or future law, the remainder of this Agreement will not be affected thereby. It is the intention of the parties that if any such provision is held to be illegal, invalid, or unenforceable, there will be added in lieu thereof a provision as similar in terms to such provision as is possible and be legal, valid, and enforceable.

30. Time. Time is the essence of each provision of this Agreement.

31. Gender. Words of any gender used in this Agreement shall be held and construed to include any other gender, and words in the singular shall be held to include the plural.

32. Captions. The captions in this Agreement are inserted for convenience of reference and are not intended to define, describe or limit the scope of any provision of this Agreement.

33. Counterpart Execution. This Agreement may be executed in counterparts, each of which will be deemed an original document, but all of which will constitute a single document.

34. Confidentiality. Seller will (i) treat this Agreement and all oral discussions related hereto in strict confidence and (ii) except to the extent included in any memorandum recorded in the public records, shall not disclose any of the particulars hereof to any third parties without the prior written consent of Purchaser; provided, however, that Seller may disclose such information to (x) Seller's personal advisors, (y) any prospective purchaser of the Property, or (z) pursuant to lawful process, subpoena, or court order; so long as in making such disclosure Seller advises the person receiving the information of the confidentiality thereof and obtains the agreement of said person not to disclose such information. Excluded from the foregoing is any information that is in the public domain by reason of prior publication through no act or omission of Seller.

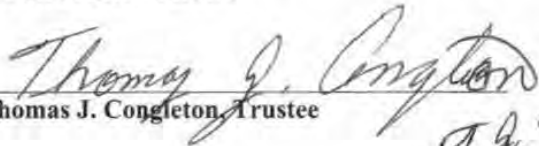
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IN WITNESS WHEREOF, the undersigned parties have set their hands and seals hereto as of the day and year indicated next to their signatures.

SELLER:

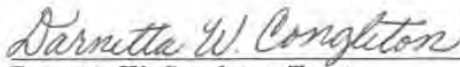
**THE THOMAS J. CONGLETON
REVOCABLE TRUST**

Dated: _____


Thomas J. Congleton, Trustee

**THE DARNETTA W. CONGLETON
REVOCABLE TRUST**

Dated: _____


Darnetta W. Congleton, Trustee

PURCHASER:

SUSTAINABLE PROPERTY HOLDINGS, LLC

a Delaware limited liability company

Dated: _____

By: _____
Name: _____
Title: _____

EXHIBIT A

LEGAL DESCRIPTION OF THE PROPERTY

APN 0130-0000-0002-A in Madison County, Kentucky

Parcel C:

TRACT NO. 1: A certain tract or parcel of land lying and being in the County of Madison and State of Kentucky, and bounded as follows: BEGINNING at a stone on the line of Ab. Stivers tract and corner to the 125 acres sold to M. Edwards thence N 62-1/2 deg. E. 30 poles, to a stake in the branch below a big spring, thence down the branch N 71-1/2 deg. E 9 poles to a stake, thence N 58 deg. E 34.6 poles to a stake in said branch at (4) (see plat) thence leaving the branch N 38 W 14 poles to a stake on the side of a cliff of rocks, thence N 25 E 10 poles to a stake in a chasm between the rocks that have fallen apart, at 6 thence N 18 W 5 poles to a stake, thence leaving the cliff N 11 E 18 poles down a steep hill to a stake in the branch at 8, thence down the branch as it meanders N 79 E 11 poles, to a stake, S 56 E 10 poles, S 35-1/2 E 16 poles to the forks of the branch at 11, thence S 74 E 9 poles to a stake corner to the lands of Jason Walker at 12, thence with his line, S 4-1/2 W 178 poles to a black locust post or stob in the ground near a gate, thence along the road N 87 W 74 poles to a stone corner to Edwards 125 acres at 14, thence with a line of the said Edwards tract N 4-1/2 W 114 poles to the beginning, containing 82-1/4 acres, more or less.

TRACT NO. 2: A certain tract or parcel of land in Madison County, Kentucky, on the waters of Muddy Creek and bounded and described as follows: BEGINNING on a stone near a stump on the south edge of a dirt road known as the Big Road a

corner in W. L. Clarke's line, thence with his line and along the edge of the road S 85 E 6.08 chains to a stake opposite Clarke's corner thence crossing the road and with Clarke's line N 2-3/4 W 29.12 to a stake a corner of rail fence a corner to said Clarke and Joseph Alexander thence with Alexander line along a fence S 64-1/4 W 8.34 chains to a small walnut about 8 inches in diameter S 87-1/4 W 0.93 chains to a stone thence leaving the fence with new lines with Chambers home tract S 8-3/4 E 13.74 chains to a stake in a line fence 15 inches from a marked post on the north side of a small pond thence S 8-1/2 E 11.54 chains to the beginning, containing 19.82 acres.

Being the same property conveyed to Tommy J. Congleton and Darnetta W. Congleton, husband and wife, by Master Commissioner's Deed dated the 2nd day of May, 1988, and of record in Deed Book 392, Page 475, in the Madison County Clerk's Office.

EXHIBIT B

FORM OF MEMORANDUM

[the remainder of this page intentionally left blank]

Recording requested by and
when recorded mail to:

Sustainable Property Holdings, LLC
Attn: Land Manager
2180 South 1300 East, Suite 600
Salt Lake City, UT 84106

(space above this line for recorder's use)

MEMORANDUM OF REAL ESTATE PURCHASE OPTION AGREEMENT

THIS MEMORANDUM OF REAL ESTATE PURCHASE OPTION AGREEMENT (this "Memorandum") is made, dated and effective as of [REDACTED] (the "Effective Date"), between **THOMAS J. CONGLETON, TRUSTEE, OF THE THOMAS J. CONGLETON REVOCABLE TRUST** and **DARNETTA W. CONGLETON, TRUSTEE, OF THE DARNETTA W. CONGLETON REVOCABLE TRUST** (collectively "Landowner"), and **SPOWER DEVELOPMENT COMPANY, LLC**, a Delaware limited liability company ("Seller"), and **SUSTAINABLE PROPERTY HOLDINGS, LLC**, a Delaware limited liability company ("Purchaser"), in light of the following facts and circumstances:

RECITALS:

WHEREAS, Seller and Purchaser have entered a Real Estate Purchase Option Agreement dated as of the Effective Date with respect to property more specifically described herein (as heretofore or hereinafter amended, restated, or supplemented from time to time, the "Option Agreement"); and

WHEREAS, Seller and Purchaser desire to set forth certain terms and conditions of the Option Agreement in a manner suitable for recording in the Official Records of Madison County, Kentucky in order to provide record notice of the Option Agreement and Purchaser's rights in and to the land subject to the Option Agreement, as provided herein.

NOW, THEREFORE, in consideration of the mutual covenants contained in the Option Agreement, and other good and valuable consideration, the receipt and sufficiency of which are hereby acknowledged, the parties hereto agree and stipulate as follows:

1. Description of Property. The land subject to the Option Agreement is described on Exhibit A attached hereto, and by this reference made a part hereof (the "Property").

2. Grant of Option. Seller hereby grants to Purchaser, pursuant to the Option Agreement, an exclusive and irrevocable option (the "Option") to purchase [REDACTED] of real property within the Property on the terms and conditions set forth in the Option Agreement. The entire Option Agreement is hereby incorporated into this

Memorandum by reference. Notwithstanding anything to the contrary contained herein, the provisions of this Memorandum do not in any way alter, amend, supplement, change, or affect the terms, covenants, or conditions of the Option Agreement, all of which terms, covenants, and conditions shall remain in full force and effect. In the event of any conflict between the terms of this Memorandum and the Option Agreement, the terms of the Option Agreement shall prevail.

3. Term of Option Agreement. Unless extended or earlier terminated, as provided in the Option Agreement, the term of the Option shall be for a [REDACTED] period beginning on the Effective Date, with an option to extend an additional [REDACTED]. Closing of the transaction contemplated by the Option Agreement shall occur within [REDACTED] following Purchaser's exercise of the Option, in accordance with the Option Agreement, or as the parties may otherwise mutually agree.

4. Names and Addresses of Parties. The names and addresses of the parties to the Option Agreement are as follows:

Seller:	Purchaser:
Thomas J. and Darnetta W. Congleton [REDACTED] [REDACTED] [REDACTED]	Sustainable Property Holdings, LLC Attn: Land Manager 2180 South 1300 East, Suite 600 Salt Lake City, UT 84106 Phone: (801) 679-3500 Email: Land@spower.com

5. Successors and Assigns. The terms of this Memorandum and the Option Agreement are covenants running with the land and inure to the benefit of, and are binding upon, the parties and their respective successors and assigns, including all subsequent owners of all or any portion of the Property. References to Seller and Purchaser include their respective successors and assigns. References to the Option Agreement includes any amendments thereto.

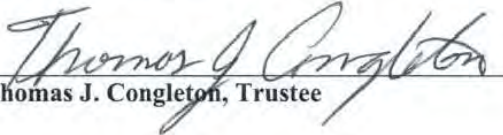
6. Miscellaneous. This Memorandum is executed for the purpose of recording in the Official Records of Madison County, Kentucky, in order to provide public record notice of the Option Agreement and Purchaser's rights in and to the land subject to the Option Agreement. All persons are hereby put on notice of and shall have a duty to inquire regarding the Option Agreement and all of the provisions thereof and the rights, title, interests, and claims of Purchaser in and to the Property. Any right, estate, claim, or interest in the Property first attaching to the Property and recorded from and after the Effective Date shall be subordinate to the terms of the Option Agreement. If Purchaser acquires fee simple title to any portion of the Property, Purchaser shall have the right, at Purchaser's option, to terminate any such subordinate right, estate, claim, or interest, at no cost or liability to Purchaser, or to accept title subject thereto. This instrument may for convenience be executed in any number of original counterparts, each of which shall be an original and all of which taken together shall constitute one instrument.

[The remainder of this page is intentionally left blank.]

IN WITNESS WHEREOF, Seller and Purchaser, acting through their duly authorized representatives, have made and entered into this Memorandum as of the Effective Date.

SELLER:

**THE THOMAS J. CONGLETON
REVOCABLE TRUST**


Thomas J. Congleton, Trustee

**THE DARNETTA W. CONGLETON
REVOCABLE TRUST**


Darnetta W. Congleton, Trustee

PURCHASER:

SUSTAINABLE PROPERTY HOLDINGS, LLC
a Delaware limited liability company

By: _____
Name: _____
Title: _____

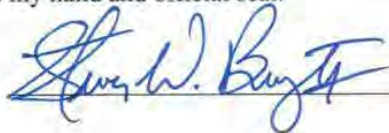
ACKNOWLEDGEMENT OF SELLER

STATE OF KENTUCKY }
COUNTY OF MADISON } S.S

On [REDACTED], [REDACTED] before me, STEVEN W. BURGESS II Notary Public, personally appeared, THOMAS J. CONGLETON, TRUSTEE, who proved to me on the basis of satisfactory evidence to be the person(s) whose name(s) is/are subscribed to the within instrument and acknowledged to me that he/she/they executed the same in his/her/their authorized capacity(ies), and that by his/her/their signature(s) on the instrument the person(s), or the entity upon behalf of which the person(s) acted, executed the instrument.

I certify under PENALTY OF PERJURY under the laws of the State of Kentucky that the foregoing paragraph is true and correct.

WITNESS my hand and official seal.

Signature: 



(Notary Seal)

ACKNOWLEDGEMENT OF PURCHASER

STATE OF UTAH)
 §
COUNTY OF SALT LAKE)

On _____, [REDACTED] before me, _____, personally appeared _____ who proved to me on the basis of satisfactory evidence to be the person whose name is subscribed to the within instrument and acknowledged to me that he executed the same in his authorized capacity, and that by his signature on the instrument, the person, or the entity upon behalf of which the person acted, executed the instrument.

I certify under PENALTY OF PERJURY under the laws of the State of Utah that the foregoing paragraph is true and correct.

WITNESS my hand and official seal.

Signature _____ (seal)

EXHIBIT A

LEGAL DESCRIPTION

APN 0130-0000-0002-A in Madison County, Kentucky

Parcel C:

TRACT NO. 1: A certain tract or parcel of land lying and being in the County of Madison and State of Kentucky, and bounded as follows: BEGINNING at a stone on the line of Ab. Stivers tract and corner to the 125 acres sold to M. Edwards thence N 62-1/2 deg. E. 30 poles, to a stake in the branch below a big spring, thence down the branch N 71-1/2 deg. E 9 poles to a stake, thence N 58 deg. E 34.6 poles to a stake in said branch at (4) (see plat) thence leaving the branch N 38 W 14 poles to a stake on the side of a cliff of rocks, thence N 25 E 10 poles to a stake in a chasm between the rocks that have fallen apart, at 6 thence N 18 W 5 poles to a stake, thence leaving the cliff N 11 E 18 poles down a steep hill to a stake in the branch at 8, thence down the branch as it meanders N 79 E 11 poles, to a stake, S 56 E 10 poles, S 35-1/2 E 16 poles to the forks of the branch at 11, thence S 74 E 9 poles to a stake corner to the lands of Jason Walker at 12, thence with his line, S 4-1/2 W 178 poles to a black locust post or stob in the ground near a gate, thence along the road N 87 W 74 poles to a stone corner to Edwards 125 acres at 14, thence with a line of the said Edwards tract N 4-1/2 W 114 poles to the beginning, containing 82-1/4 acres, more or less.

TRACT NO. 2: A certain tract or parcel of land in Madison County, Kentucky, on the waters of Muddy Creek and bounded and described as follows: BEGINNING on a stone near a stump on the south edge of a dirt road known as the Big Road a

corner in W. L. Clarke's line, thence with his line and along the edge of the road S 85 E 6.08 chains to a stake opposite Clarke's corner thence crossing the road and with Clarke's line N 2-3/4 W 29.12 to a stake a corner of rail fence a corner to said Clarke and Joseph Alexander thence with Alexander line along a fence S 64-1/4 W 8.34 chains to a small walnut about 8 inches in diameter S 87-1/4 W 0.93 chains to a stone thence leaving the fence with new lines with Chambers home tract S 8-3/4 E 13.74 chains to a stake in a line fence 15 inches from a marked post on the north side of a small pond thence S 8-1/2 E 11.54 chains to the beginning, containing 19.82 acres.

Being the same property conveyed to Tommy J. Congleton and Darnetta W. Congleton, husband and wife, by Master Commissioner's Deed dated the 2nd day of May, 1988, and of record in Deed Book 392, Page 475, in the Madison County Clerk's Office.

REAL ESTATE PURCHASE OPTION AGREEMENT

THIS REAL ESTATE PURCHASE OPTION AGREEMENT (this "Agreement") is made as of the Effective Date (as defined below), by and between **ROBERT B. CONGLETON and KATHY L. CONGELTON (50%) and THOMAS J. CONGLETON, TRUSTEE, OF THE THOMAS J. CONGLETON REVOCABLE TRUST (25% interest), and DARNETTA W. CONGLETON, TRUSTEE, OF THE DARNETTA W. CONGLETON REVOCABLE TRUST (25% interest)** (collectively "Landowner"), and **SUSTAINABLE PROPERTY HOLDINGS, LLC**, a Delaware limited liability company ("Purchaser"). The latest date indicated on the signature page of this instrument shall be the "Effective Date" of this Agreement.

1. Grant of Option. For and in consideration of Purchaser's agreement to make to Seller the payments set forth in Section 3 below (the "Option Payments"), Seller hereby grants to Purchaser an exclusive and irrevocable option (the "Option") to purchase approximately [REDACTED] of real property legally described on Exhibit A attached hereto and made a part hereof, in the county of Madison, State of Kentucky (the "Property"), on the terms and conditions set forth in this Agreement.

2. Term of Option. The term of the Option (the "Term") shall be for a [REDACTED] period beginning on the Effective Date, together with Purchaser's option to extend said Term for an additional [REDACTED] upon written notice provided to Seller prior to the expiration of the initial Term, provided however, that Purchaser shall have the right at any time prior to exercising the Option to terminate this Agreement as to all or any portion of the Property by giving written notice to Seller. Upon termination of this Agreement for any reason, Purchaser's obligations to Seller hereunder (including but not limited to Purchaser's obligations to make any remaining Option Payments) shall become null and void and of no further force or effect.

3. Option Payments. In consideration of the rights granted hereunder, Purchaser will pay to Seller the Option Payments set forth in the table below, on the payment dates set forth in such table. If any scheduled payment date falls on a day which is not a business day in the State of Utah, then the due date for such payment shall be extended to the next succeeding business day. The Option Payments shall be non-refundable to Purchaser in the event that this Agreement is terminated, unless Seller is in default or breach of this Agreement. The amount of all Option Payments made by Purchaser shall be applied against the Purchase Price at the Closing.

<u>Option Payment Due Date</u>	<u>Amount of Option Payment Due on Such Date</u>
Effective Date	[REDACTED]
[REDACTED] following Effective Date	[REDACTED]
[REDACTED] following Effective Date	[REDACTED]
[REDACTED] following Effective Date	[REDACTED]
[REDACTED] following Effective Date	[REDACTED]
[REDACTED] following Effective Date	[REDACTED]
[REDACTED] following Effective Date	[REDACTED]

██████████ following Effective Date	██████████
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██████████ following Effective Date	██████████
██████████ following Effective Date	██████████
██████████ following Effective Date	██████████
In the event Purchaser extends initial Term, Option Payments are scheduled as follows:	
██████████ following Effective Date	██████████
██████████ following Effective Date	██████████
██████████ following Effective Date	██████████
██████████ following Effective Date	██████████

It is acknowledged and understood that the table set forth above reflects that the period commencing on the Effective Date and continuing for ninety (90) days shall constitute a due diligence period for Purchaser (“Due Diligence Period”). The initial payment of ██████████ (the “Deposit”) shall be deposited into an escrow account with Escrow Holder (as defined below) along with a signed copy of this Agreement. Nothing contained in this Section shall in any way limit or otherwise affect Purchaser’s right to terminate this Agreement at any time pursuant to Section 2. If Purchaser terminates this Agreement prior to the expiration of the Due Diligence Period, the Deposit, less an amount equal to ██████████ (the “Independent Consideration”), shall be immediately returned to Purchaser by Escrow Holder. If this Agreement is not so terminated, the Deposit shall be released to Seller from escrow upon expiration of the Due Diligence Period. Future Option Payments shall be made by Purchaser to Escrow Holder for credit to Seller, and Escrow Holder shall forward such future Option Payments to Seller promptly following Escrow Holder’s receipt thereof. Purchaser’s obligation to make the applicable Option Payment to Seller shall be considered complete when such payment has been made to Escrow Holder. The “Escrow Holder” shall be McBrayer Firm, 201 East Main Street, Suite 900, Lexington, Kentucky 40507, Attention: James H. Frazier, III, Telephone: (859) 231-8780, ext. 1303, E-mail: jfrazier@mcbrayerfirm.com. Escrow Holder shall execute a joinder to this Agreement evidencing Escrow Holder’s agreement to act as Escrow Holder in accordance with the provisions hereof. Concurrently with execution of this Agreement, Seller and Purchaser will execute a memorandum in the form of Exhibit B attached hereto and made a part hereof by reference, or any other reasonable form of memorandum, and Purchaser shall cause such memorandum to be recorded in the public records.

4. Method of Exercising Option. Purchaser may exercise the Option at any time during the Term by giving written notice to Seller (the “Exercise Notice”). Upon the timely and proper exercise of the Option, Seller agrees to sell and convey, and Purchaser agrees to purchase, the Property, in accordance with and subject to the terms and conditions of this Agreement.

5. Inspections; Use of Property. From and after the Effective Date, Purchaser or its designated agents may enter upon the Property upon reasonable prior notice to Seller to conduct, at

Purchaser's sole cost and expense, any inspections, tests, surveys, engineering, environmental, and/or market and economic feasibility studies, and due diligence matters related thereto, concerning the Property. Any activities of Purchaser on the Property shall be conducted in such a manner so as to not cause any material damage to the Property and so as to not unreasonably interfere with the current use of the Property. Purchaser shall be responsible for any material damage to the Property caused by Purchaser in connection with Purchaser's activities on the Property, which damage shall be assessed immediately upon occurrence, or by a third-party consultant as soon as possible after occurrence. Purchaser shall indemnify Landowner for any loss, costs, claims, actions or damages caused by activities of Purchaser on the Property except those caused by Seller's gross negligence or willful behavior. Subject to the foregoing rights of Purchaser, prior to the Closing (as defined in Section 9 below), Seller, or its affiliated or contracted parties, shall be permitted to continue to use the Property in a manner consistent with its existing use, including but not limited to cattle grazing. Seller shall provide Purchaser, prior to the expiration of the Due Diligence Period, with copies of all field tiling surveys, plans and other geotechnical and other site assessments, surveys, plans, entitlement-related studies, environmental assessments, reports, test results, correspondence to or from any governmental agency, and other such records of Seller relating to the Property. Seller represents and warrants to Purchaser that, to the best of Seller's knowledge, all information contained in any such materials provided by Seller to Purchaser shall be accurate and complete.

6. Purchase Price. The price (the "Purchase Price") to be paid by Purchaser to Seller for the Property shall be [REDACTED]

[REDACTED]

7. Costs; Prorations; Credits.

7.1. [REDACTED]

7.2. [REDACTED]

[REDACTED]

7.3. [REDACTED]

[REDACTED]

8. Title.

8.1. At Closing, Seller shall convey to Purchaser marketable and insurable fee simple title to the Property, free from any (i) mortgage, deed to secure debt, deed of trust, security agreement, judgment, lien or claim of lien, or any other title exception or defect that is monetary in nature, Seller hereby agreeing to pay and satisfy of record any such title defects or exceptions prior to or at Closing at Seller's expense, (ii) lease, rental agreement, or other right of occupancy of any kind, whether written or oral (it being acknowledged and understood that any lease, rental agreement or right of occupancy in existence as of the date hereof shall be fully and completely terminated by Seller prior to Closing), (iii) recorded or unrecorded right or interest first attaching subsequent to the Effective Date, or (iv) matter encompassed by any standard exception under the Title Commitment (other than as to matters of survey), including the standard "gap" exception, the standard mechanic's lien exception and the standard parties in possession exception (the "Non-Permitted Exceptions").

8.2. Prior to Closing, Purchaser shall obtain a current title commitment (the "Title Commitment") applicable to the Property, from the Title Company (as defined below), whereby the Title Company agrees to issue at Closing an ALTA Owner's Policy of Title Insurance (the "Title Policy"), in the amount of the Purchase Price, insuring Purchaser's marketable fee simple title to the Property, including all appurtenances thereto and improvements thereon, and including such additional title endorsements in form and content as Purchaser may reasonably request. Notwithstanding anything to the contrary contained in this Agreement, it shall be a condition precedent to Purchaser's obligation to close the transaction herein described that the Title Company shall have unconditionally indicated in writing that upon recording of the Deed and payment of its premiums (at ordinary rates), the Title Company will issue the Title Policy to Purchaser as herein required, insuring that fee simple title shall be vested in Purchaser, without exception for the Non-Permitted Exceptions. If the parties are unable to cause the satisfaction of the aforesaid condition precedent, Purchaser, in its discretion, may elect, by written notice to Seller, either to accept such title as Seller is capable of delivering or to terminate this Agreement. If this Agreement is so terminated, Seller shall immediately return to Purchaser all Option Payments previously made by Purchaser. The "Title Company" shall be McBrayer Firm, 201 East Main Street, Suite 900, Lexington, Kentucky 40507, Attention: James H. Frazier, III, Telephone: (859) 231-8780, ext. 1303, E-mail: jfrazier@mcbrayerfirm.com.

9. Closing. The closing of the transaction contemplated by this Agreement ("Closing") shall occur through escrow at the offices of the Escrow Holder within ninety (90) days following Purchaser's delivery of the Exercise Notice on such date as Purchaser may select by advance written notice to Seller or on such other date or at such other location as the parties may mutually agree. If the Escrow Holder requires the execution of an escrow agreement, Seller and Purchaser will promptly execute and deliver the same in such form as the Title Company or such escrow agent may reasonably request.

10. Closing Deliveries. At Closing, the following shall occur:

10.1. Seller shall deliver actual possession of the Property to Purchaser and Seller shall deliver or cause to be delivered to Purchaser such documents as are reasonably required by Purchaser to close the transaction that is the subject of this Agreement, all fully executed by Seller and acknowledged as necessary, including the following enumerated documents, all of which documents shall be subject to the reasonable approval of Purchaser:

10.1.1. Counterpart of closing statement;

10.1.2. Grant Deed (the "Deed"), conveying to Purchaser the Property, including any and all water rights, and warranting title against the Non-Permitted Exceptions and against all persons whomsoever;

10.1.3. Certificate of Non-Foreign Status, evidencing that Purchaser shall not be liable for transfer liability under Section 1445 of the Internal Revenue Code, as amended;

10.1.4. A general assignment (the "General Assignment") assigning to Purchaser all of Seller's right, title and interest in, to and under any or all of the following intangible property relating to the Property (the "Intangible Property"), as determined by Purchaser in its sole discretion: (i) all licenses, permits, certificates of occupancy, approvals, dedications, subdivision maps and entitlements issued, approved or granted by governmental authorities or otherwise in connection with the Property, including any water rights or permits; (ii) all licenses, consents, easements, rights of way and approvals required from private parties to make use of utilities and to insure vehicular and pedestrian ingress and egress to the Property; and (iii) any and all service contracts, agreements, maintenance contracts and like contracts and agreements relating to the Property, together with all supplements, amendments and modifications thereto;

10.1.5. Real Estate Withholding Certificate, if applicable;

10.1.6. Title affidavits and indemnities in form and content as may be reasonably required by Purchaser and the Title Company to delete all of the Title Commitment's standard exceptions (other than as to matters of survey), including the standard "gap" exception, the standard mechanic's lien exception, and the standard parties in possession exception and any exceptions for judgment, state or federal tax, environmental, broker, or other liens;

10.1.7. Instruments reasonably satisfactory to Purchaser and the Title Company reflecting the proper power, good standing, and authorization for the sale of the Property from Seller to Purchaser and the execution and delivery of all documents hereunder;

10.1.8. Such corrective instruments as may be required to deliver marketable and insurable title as required hereunder;

10.1.9. Seller certification confirming that all representations and warranties stated herein are in full force and effect as of Closing; and

10.1.10. Such other instruments as may be reasonably necessary to effect the conveyance of the Property in accordance with, and effectuate the other provisions of, this Agreement.

10.2. Purchaser shall deliver or cause to be delivered to Seller such documents as are reasonably required by Seller to close the transaction that is the subject of this Agreement, all fully executed by Purchaser and acknowledged as necessary, including the following enumerated documents, all of which documents shall be subject to the reasonable approval of Seller:

10.2.1. Counterpart of closing statement;

10.2.2. An acceptance of the General Assignment, if Purchaser has elected to receive assignment of any of the Intangible Property; and

10.2.3. Such other instruments as may be reasonably necessary to effect the conveyance of the Property in accordance with, and effectuate the other provisions of, this Agreement.

11. Road Maintenance. Purchaser understands and agrees that the gravel portion of Pine Grove Road that abuts the Property shall be Purchaser's responsibility to maintain, unless the portion of the road is under the jurisdiction of local city or county governance and maintenance. Maintenance shall include keeping the road in passable condition, including keeping potholes filled if required.

12. Property Improvements. Any improvements affixed to the Property will be included in the purchase of the Property. The Seller may at its own discretion remove the metal hut, trough, water tanks, fence posts, gates, or fencing material prior to selling the Property. After Closing, title to any personal property or items affixed to the Property shall pass to Purchaser and Seller shall retain no rights thereto, with the exception of fencing material. After Closing, Purchaser shall contact Seller prior to any fencing material removal. Seller shall have the option to keep any fencing material removed from the Property, including posts and gates, if Seller wishes. Any fencing removed and received by Seller shall be at no charge to Seller, but must be taken from the Property immediately.

13. Timber Removal. Seller may harvest and remove any timber prior to Closing in a manner that comports with Kentucky and all local laws and regulations. After Closing, Purchaser shall obtain rights to all timber on the Property.

14. Brokers. Seller and Purchaser each warrant and represent to the other that neither has employed or dealt with a real estate broker or agent in connection with the transaction contemplated hereby. Seller and Purchaser covenant and agree, each to the other, to indemnify the other against any loss, liability, costs, claims, demands, damages, actions, causes of action, and suits arising out of, or in any manner related to, the alleged employment, engagement or use by the indemnifying party of any real estate broker or agent. The foregoing obligation shall survive Closing.

15. Seller Representations, Warranties, and Covenants. Seller represents, warrants, and covenants, as follows:

15.1. Seller holds the fee simple interest in and has the exclusive right to purchase and sell the Property as of the Effective Date. Seller shall not enter into, permit, or suffer, nor purport to enter into or permit, any encumbrance of the Property that is not subordinate to the Option and Purchaser's rights under this Agreement and the title conveyed to Purchaser at Closing. There are no

leases, rental agreements, or other rights of occupancy of any kind, whether written or oral, currently affecting the Property, except as follows: _____ **[to be completed by Seller]**. Seller shall terminate any leases, rental agreements or other rights of occupancy (whether such leases, rental agreements or rights of occupancy are presently in existing or are hereafter created) prior to Closing.

15.2. No condemnation proceeding is pending or, to Seller's knowledge, threatened with respect to any part of the Property.

15.3. Seller has not used, generated, treated, stored, released, discharged, or disposed of Hazardous Substances on or from the Property at any time; nor, to the knowledge of Seller, has any such event occurred upon or within the Property. To the knowledge of Seller, no notification of release of a Hazardous Substance has been filed as to the Property, nor is the Property listed or formally proposed for listing on the National Priority List promulgated pursuant to federal law or on any state list of hazardous substance sites requiring investigation or clean-up. Seller has complied with all reporting requirements under any applicable federal, state, or local environmental laws and there are no existing violations by Seller of any such environmental laws. To the knowledge of Seller, there are no claims, actions, suits, proceedings, or investigations related to the presence, release, discharge, spillage, or disposal of any Hazardous Substance or contamination of soil or water by any Hazardous Substance pending or threatened with respect to the Property or otherwise against Seller in any court or before any state, federal, or other governmental agency or private arbitration tribunal. To the knowledge of Seller, no PCB, PCB-contaminated, friable asbestos, or formaldehyde-based insulation items are present at the Property. Seller shall indemnify and hold harmless Purchaser from and against any and all losses arising from or related to the breach by Seller of any warranties or representations contained in this subsection. "Hazardous Substance" shall refer to any hazardous or toxic substance or waste as those terms are defined by any applicable federal or state law or regulation, including, without limitation, the Comprehensive Environmental Recovery Compensation and Liability Act, 42 U.S.C. 9601 et seq. and the Resource Conservation and Recovery Act, 42 U.S.C. 6901 et seq., and petroleum, petroleum products, and oil.

15.4. Seller has no knowledge, nor has Seller received any notice of any actual or pending litigation or proceeding by any organization, person, individual, or governmental agency against Seller with respect to the Property or any portion thereof or with respect thereto, nor does Seller know of any basis for any such action; and Seller has no knowledge, nor has Seller received any notice, of any violations of law, municipal or county ordinances, or other legal requirements with respect to the Property (or any part thereof) or with respect to the use or occupancy of the Property nor does Seller know of any basis for such violations.

15.5. No assessments have been made against the Property (or any part thereof) that are unpaid (except property taxes or special assessments which will be paid in full or prorated as an adjustment to the Purchase Price at the time of Closing in accordance with this Agreement), whether or not they have become liens.

15.6. Seller shall cooperate with Purchaser in Purchaser's efforts to seek governmental approvals desired by Purchaser for Purchaser's intended use and acquisition of the Property including (i) the granting to Purchaser of full authority to seek any and all permits, entitlements, licenses, and approvals (collectively, "Approvals") necessary or convenient for the development of the Property for Purchaser's intended use thereof (including, as necessary, rezoning, general plan amendment, environmental permit, building permit, variance, and/or vacation applications) and for the division (whether by certified survey map or otherwise) of the Property so

as to cause the Property to be recognized as a single lawfully subdivided parcel, and (ii) the execution of consents and applications in connection with Purchaser attempting to obtain such Approvals. Without limiting the generality of the foregoing, Seller shall not oppose, in any way, whether directly or indirectly, and shall fully cooperate with Purchaser in connection with any application by Purchaser for any Approvals at any administrative, judicial, legislative, or other level. It is acknowledged and agreed by Seller that Purchaser intends to utilize the Property (if Purchaser acquires the Property pursuant to Purchaser's exercise of the Option) as a solar energy generation facility, and for uses related and incidental thereto. Purchaser shall pay all fees and costs in connection with Purchaser's applications for any Approvals. Purchaser will obtain Seller's prior written consent to any all submittals to be made by Purchaser in connection with the process of obtaining any Approvals, which consent shall not be unreasonably withheld, conditioned or delayed. In the event that Seller unreasonably withholds, conditions or delays its consent to any such submittals desired to be made by Purchaser, then Purchaser shall have the right, in its sole discretion, to terminate this Agreement upon written notice to Seller, and upon any such termination pursuant to this sentence, Seller shall immediately refund to Purchaser any Option Payments previously made by Purchaser to Seller hereunder. If this Agreement is terminated pursuant to the provisions hereof, Seller may withdraw or terminate any applications for Approvals.

15.7. Seller agrees that Purchaser shall not and does not assume any of the following liabilities, and Seller shall promptly pay and perform, and indemnify and hold Purchaser harmless from and against: any liability or obligation of Seller in respect of any state, local, federal, or foreign taxes (whether in the nature of income, transfer, sales, withholding, employee, excise, property, customs, gross receipts, or other taxes or other duties of any kind whatsoever), or penalties, interest, and fines in respect thereof, or any reporting requirement or estimated tax payable with respect thereto, relating to events or transactions occurring on or prior to Closing involving Seller or the transactions contemplated hereby; any litigation, investigation, or other proceeding pending or threatened with respect to Seller or the Property on or prior to Closing, or subsequently asserted, which is attributable to facts existing, or events, or omissions occurring on or prior to Closing; and all liabilities or claims of any nature relating directly or indirectly to the Property, whether accrued, absolute, contingent, or otherwise arising out of or relating to (or alleged to arise out of or relate to) any state of facts, omissions, or events existing or occurring on or before Closing (whether known or unknown to Purchaser or Seller).

15.8. Seller shall not enter into any transaction, take any action, or by inaction, permit any event to occur, which would result in any of the representations, warranties, and covenants of Seller herein contained not being true, correct, and satisfied at and as of the time immediately after the occurrence of such transaction or event.

15.9. If as of the Effective Date the Property is subject to any mortgage or deed of trust, then concurrently with the execution of this Agreement, Seller shall obtain from the holder of such mortgage or deed of trust and deliver to Purchaser, the written agreement of such holder ("Subordination Agreement") in recordable form subordinating such mortgage or deed of trust to this Agreement. Any such Subordination Agreement shall be in form and substance reasonably acceptable to Purchaser.

Seller agrees to take such actions at its expense as may be necessary to cause the representations, warranties, and covenants in this Agreement to be true, correct, and satisfied as of the date of Closing; provided, however, if an event or circumstance which is neither caused by Seller nor within the reasonable control of Seller causes any such representation, warranty, or covenant to be untrue as

of the date of Closing, Seller shall not be required to take any action with respect to such event or occurrence. Subject to the preceding sentence, Seller shall affirm the foregoing representations, warranties, and covenants at (and as of the date of) Closing, all of which shall survive Closing. Notwithstanding the foregoing, or anything to the contrary contained in this Agreement, it shall be a condition precedent to Purchaser's obligation to close the transaction herein described that all of Seller's representations, warranties, and covenants under this Agreement be true, correct, and satisfied, in all material respects, as of the date of Closing, and shall survive closing.

16. Purchaser's Representations, Warranties and Covenants. Purchaser warrants, represents and covenants to and with Seller that the following are true and correct on the date hereof and the Closing:

16.1. Purchaser has the requisite power and authority to enter into and to perform the terms of this Agreement. To Purchaser's actual knowledge, Purchaser is not subject to any law, order, decree, restriction, or agreement which prohibits or would be violated by this Agreement or the consummation of the transactions contemplated hereby.

16.2. To Purchaser's actual knowledge, neither the execution, delivery and performance of this Agreement nor the consummation of the transactions contemplated hereby is prohibited by, or requires Purchaser to obtain any consent, authorization, approval or registration under any law, statute, rule, regulation, judgment, order, writ, injunction or decree which is binding upon Purchaser.

16.3. To Purchaser's actual knowledge, there are no judgments, orders, or decrees of any kind against Purchaser unpaid or unsatisfied of record, nor any actions, suits or other legal or administrative proceedings pending or, to the best of Purchaser's actual knowledge, threatened against Purchaser, which would have any material adverse effect on the business or assets or the condition, financial or otherwise, of Purchaser or the ability of Purchaser to consummate the transactions contemplated by this Agreement.

17. Eminent Domain. If, after the Effective Date and prior to Closing, Seller receives notice of the commencement or threatened commencement of eminent domain or other like proceedings against the Property or any portion thereof, Seller shall immediately give written notice thereof to Purchaser, in which event Purchaser, in its discretion (whether or not Purchaser has then exercised the Option), may elect, by written notice to Seller, either to (i) terminate this Agreement or (ii) keep this Agreement in effect and, if applicable, close the transaction contemplated hereby in accordance with its terms, but subject to such proceedings, in which event the Purchase Price shall not be reduced but Seller shall assign to Purchaser Seller's rights in any condemnation award or proceeds, as they pertain to this Agreement or the Property.

18. Damage to Property. Except as provided in this section and except as otherwise provided in Section 5, the risk of loss or damage to the Property and all liability to third parties until the Closing shall be borne by Seller. If, after the Effective Date and prior to Closing, all or any part of the Property is damaged by flood or other casualty, Seller shall immediately give written notice to Purchaser of such damage and of Seller's insurance coverage with respect to such damage, if any, in which event Purchaser, in its discretion (whether or not Purchaser has then exercised the Option), may elect, by written notice to Seller, either to (i) terminate this Agreement, or (ii) keep this Agreement in effect and, if applicable, close the transaction contemplated hereby in accordance with

its terms, in which event the Purchase Price shall not be reduced but Seller shall assign to Purchaser Seller's rights in any insurance proceeds, as they pertain to this Agreement or the Property.

19. Notices. All notices or other communications required or permitted hereunder shall, unless otherwise provided herein, be in writing, and shall be personally delivered, delivered by reputable overnight courier, or sent by registered or certified mail, return receipt requested and postage prepaid, addressed as follows:

If to Seller:

Thomas J. and Darnetta W. Congleton

[REDACTED]
[REDACTED]
[REDACTED]

Robert B. Congleton & Kathy L.
Congleton

[REDACTED]
[REDACTED]
[REDACTED]

If to Purchaser:

Sustainable Property Holdings, LLC

Attn: Land Manager
2180 South 1300 East, Suite 600
Salt Lake City, UT 84106
Phone: (801) 679-3500
Email: Land@spower.com

Notices personally delivered shall be deemed given the day so delivered. Notices given by overnight courier shall be deemed given on the first business day following the mailing date. Notices mailed as provided herein shall be deemed given on the third business day following the mailing date. Any party may change its address for purposes of this section by giving written notice of such change to the other party in the manner provided in this section.

20. Default Remedies. [REDACTED]

[REDACTED]

21. Entire Agreement, Amendments and Waivers. This Agreement contains the entire agreement and understanding of the parties in respect to the subject matter hereof, supersedes all prior agreements in respect to the subject matter hereof, if any, between the parties, and the same may not be amended, modified, or discharged nor may any of its terms be waived except by an instrument in writing signed by the parties. Nothing herein shall be construed to supersede any ongoing lease or easement agreement between the parties.

22. Further Assurances. The parties each agree to do, execute, acknowledge, and deliver all such further acts, instruments, and assurances, and to take all such further action before or after Closing as shall be necessary or desirable to fully carry out this Agreement and to fully consummate and effect the transactions contemplated hereby. The foregoing covenant shall survive Closing.

23. No Third-Party Benefits. This Agreement is for the sole and exclusive benefit of the parties hereto and their respective successors and assigns, and no third party is intended to or shall have any rights hereunder.

24. Assignment, Successors. Purchaser may freely assign its rights under this Agreement on written notice to Seller. This Agreement shall be binding upon and inure to the benefit of the parties hereto and their respective heirs, successors, and assigns. Seller may not assign any rights under this Agreement to any other person or party without consent of Purchaser.

25. Governing Law. This Agreement shall be governed by and construed in accordance with the laws of the State of Kentucky.

26. Mandatory and Binding Arbitration. Any dispute arising between the parties to this Agreement, which cannot be settled amicably by the parties, concerning the Property, any provision of this Agreement, or the rights and duties of the parties in regard thereto, including any alleged breach of this Agreement, shall be resolved by arbitration as provided in this section. All such disputes shall be settled exclusively and finally through arbitration conducted by the American Arbitration Association (the "AAA") before a single arbitrator in Madison County, Kentucky in accordance with the Commercial Arbitration Rules of the AAA (the "Rules"), as such Rules are in effect on the date of delivery of a Demand for Arbitration, provided, however, that notwithstanding anything contained in the Rules, the arbitrator shall not have the power to authorize more than ten (10) document requests. Further, no interrogatories shall be allowed during the course of the arbitration proceeding, and each party shall be allowed only one deposition absent a showing of good cause. "Good cause" in this context shall mean that despite the fact that the parties are agreeing to arbitration as an alternative to judicial proceedings because arbitration is intended to be a quicker, less expensive, more efficient dispute resolution mechanism, the party cannot establish its *prima facie* case without taking more than one deposition. In no case does the arbitrator have the power to authorize more than three (3) depositions per party. The arbitration proceedings provided hereunder are hereby declared to be self-executing, and it shall not be necessary to petition a court to compel arbitration. The expedited arbitration will be concluded within [REDACTED] of the date of the Demand for Arbitration. The arbitrator shall determine all questions of fact and law relating to any controversy, claim or dispute hereunder, including but not limited to whether or not such controversy, claim or dispute is subject to the arbitration provisions contained herein. The arbitrator shall have the power to issue an injunction or require specific performance as the arbitrator finds necessary. Should arbitration result in a monetary award to either party, the party owing the award shall have [REDACTED] to pay such award. The arbitrator may apportion the costs and expenses of the arbitration proceeding, including attorneys' fees and arbitrators' fees, between the parties in any manner deemed reasonable by the arbitrator. The arbitrator is required, under the Agreement between the parties, to strictly construe this Agreement and may not grant an award or any relief to a party that is inconsistent with the express terms of this Agreement. The determinations of the arbitrator shall be subject to judicial review to the maximum extent allowed by federal law or the law of the state in which the arbitration occurs. Any award or determination rendered by the arbitrator may be entered and enforced in any court of competent jurisdiction. Any party shall have the right to apply to a court of competent jurisdiction for an injunction to protect its interests under

this Agreement only if: (a) one of the parties has already filed a demand for arbitration under this section; and (b) no arbitrator has yet been appointed by the AAA.

27. Waiver of Jury Trial. **EACH PARTY HERETO HEREBY WAIVES ANY AND ALL RIGHTS IT MAY HAVE TO DEMAND THAT ANY ACTION, PROCEEDING, CLAIM, COUNTERCLAIM OR CAUSE OF ACTION ARISING OUT OF OR IN ANY WAY RELATED TO THIS AGREEMENT OR THE RELATIONSHIP OF THE PARTIES HEREUNDER BE TRIED BY JURY. THE SCOPE OF THIS WAIVER IS INTENDED TO BE ALL ENCOMPASSING OF ANY AND ALL DISPUTES THAT MAY BE FILED IN ANY COURT. EACH PARTY HEREBY ACKNOWLEDGES THAT IT IS KNOWINGLY AND VOLUNTARILY WAIVING THE RIGHT TO DEMAND TRIAL BY JURY.**

28. Enforcement Expense. In the event that either party hereto commences an enforcement action against the other to enforce its rights hereunder, the prevailing party in such enforcement action shall be entitled to recover from the other its reasonable attorney's fees and expenses incidental to such enforcement action, whether incurred before or after a final decision on such enforcement action.

29. Severability. If any clause or provision of this Agreement is held by a court having jurisdiction to be illegal, invalid or unenforceable under any present or future law, the remainder of this Agreement will not be affected thereby. It is the intention of the parties that if any such provision is held to be illegal, invalid, or unenforceable, there will be added in lieu thereof a provision as similar in terms to such provision as is possible and be legal, valid, and enforceable.

30. Time. Time is the essence of each provision of this Agreement.

31. Gender. Words of any gender used in this Agreement shall be held and construed to include any other gender, and words in the singular shall be held to include the plural.

32. Captions. The captions in this Agreement are inserted for convenience of reference and are not intended to define, describe or limit the scope of any provision of this Agreement.

33. Counterpart Execution. This Agreement may be executed in counterparts, each of which will be deemed an original document, but all of which will constitute a single document.

34. Confidentiality. Seller will (i) treat this Agreement and all oral discussions related hereto in strict confidence and (ii) except to the extent included in any memorandum recorded in the public records, shall not disclose any of the particulars hereof to any third parties without the prior written consent of Purchaser; provided, however, that Seller may disclose such information to (x) Seller's personal advisors, (y) any prospective purchaser of the Property, or (z) pursuant to lawful process, subpoena, or court order; so long as in making such disclosure Seller advises the person receiving the information of the confidentiality thereof and obtains the agreement of said person not to disclose such information. Excluded from the foregoing is any information that is in the public domain by reason of prior publication through no act or omission of Seller.

[*The remainder of this page is intentionally left blank.*]

IN WITNESS WHEREOF, the undersigned parties have set their hands and seals hereto as of the day and year indicated next to their signatures.

SELLER:

Dated: _____

Robert B. Congleton
Robert B. Congleton

Dated: _____

Kathy L. Congleton
Kathy L. Congleton

**THE THOMAS J. CONGLETON
REVOCABLE TRUST**

Dated: _____

Thomas J. Congleton
Thomas J. Congleton, Trustee

**THE DARNETTA W. CONGLETON
REVOCABLE TRUST**

Dated: _____

Darnetta W. Congleton
Darnetta W. Congleton, Trustee

PURCHASER:

SUSTAINABLE PROPERTY HOLDINGS, LLC

a Delaware limited liability company

Dated: _____

By: _____
Name: _____
Title: _____

IN WITNESS WHEREOF, the undersigned parties have set their hands and seals hereto as of the day and year indicated next to their signatures.

SELLER:

Dated: _____
_____ **Robert B. Congleton**

Dated: _____
_____ **Kathy L. Congleton**

**THE THOMAS J. CONGLETON
REVOCABLE TRUST**

Dated: _____
_____ **Thomas J. Congleton, Trustee**

**THE DARNETTA W. CONGLETON
REVOCABLE TRUST**

Dated: _____
_____ **Darnetta W. Congleton, Trustee**

PURCHASER:

SUSTAINABLE PROPERTY HOLDINGS, LLC

a Delaware limited liability company


Dated: _____
By:  _____
Name: Sean McBride
Title: Authorized Person

EXHIBIT A

LEGAL DESCRIPTION OF THE PROPERTY

Parcel 0130-0000-0023 located in Madison County, Kentucky.

A certain tract of land located in Madison County, Kentucky at the end of Pine Grove Road approximately nine-tenths of a mile east of the Bybee-Brassfield Road, and shown as Tract No. 2 on a plat of Subdivision for Miller-Patton Auction Co., Inc. recorded in Plat Book 8, Page 332 of the Madison County Clerk's records at Richmond, Kentucky, and being more particularly described as follows:

Beginning at a point in the center of Pine Grove Road where the blacktop ends approximately nine-tenths of a mile east of the Bybee-Brassfield Road and running: thence South 03 degrees 58 minutes 00 seconds West a distance of 11.30 feet to a point for a corner; thence South 88 degrees 30 minutes 00 seconds East a distance of 1018.32 feet to a point; thence South 88 degrees 30 minutes 04 seconds East a distance of 144.98 feet to a point; thence South 83 degrees 04 minutes 51 seconds East a distance of 143.71 feet to a point; thence South 78 degrees 10 minutes 23 seconds East a distance of 413.17 feet to a point; thence South 78 degrees 10 minutes 23 seconds East a distance of 471.04 feet to a point; thence South 78 degrees 10 minutes 23 seconds East a distance of 420.00 feet to a point for a corner; thence North 56 degrees 17 minutes 35 seconds East a distance of 929.74 feet to a point for a corner; thence North 10 degrees 45 minutes 14 seconds West a distance of 354.75 feet to a point, a corner to Tract No. 3; thence North 23 degrees 22 minutes 36 seconds West a distance of 886.47 feet to a point in the center of a 50 foot easement in the line of Tract No. 3; thence South 62 degrees 26 minutes 00 seconds West a distance of 577.94 feet to a point in the center of a 50 foot easement; thence South 54 degrees 45 minutes 00 seconds West a distance of 396.70 feet to a point, thence South 51 degrees 54 minutes 00 seconds West a distance of 707.54 feet to a point, a corner to Tract No. 1; thence South 55 degrees 11 minutes 00 seconds West a distance of 473.22 feet to a point in the center of a 50 foot easement; thence South 53 degrees 09 minutes 00 seconds West a distance of 220.40 feet to a point, thence South 69 degrees 29 minutes 00 seconds West a distance of 97.86 feet to a point in the center of a 50 foot easement; thence North 88 degrees 51 minutes 00 seconds West a distance of 887.40 feet to the point of beginning, and containing 2085652.8 square feet or 47.8800 acres of land, more or less.

Being the same property conveyed to Tommy J. Congleton, a married person, by deed dated the 13th day of December, 1990, and of record in Deed Book 411, Page 775, in the Madison County Clerk's Office.

EXHIBIT B

FORM OF MEMORANDUM

[the remainder of this page intentionally left blank]

Recording requested by and
when recorded mail to:

Sustainable Property Holdings, LLC
Attn: Land Manager
2180 South 1300 East, Suite 600
Salt Lake City, UT 84106

(space above this line for recorder's use)

MEMORANDUM OF REAL ESTATE PURCHASE OPTION AGREEMENT

THIS MEMORANDUM OF REAL ESTATE PURCHASE OPTION AGREEMENT (this "Memorandum") is made, dated and effective as of [REDACTED] (the "Effective Date"), between **ROBERT B. CONGLETON and KATHY L. CONGLETON (50%) and THOMAS J. CONGLETON, TRUSTEE, OF THE THOMAS J. CONGLETON REVOCABLE TRUST (25% interest), and DARNETTA W. CONGLETON, TRUSTEE, OF THE DARNETTA W. CONGLETON REVOCABLE TRUST (25% interest)** (collectively "Landowner"), and **SPOWER DEVELOPMENT COMPANY, LLC**, a Delaware limited liability company ("Seller"), and **SUSTAINABLE PROPERTY HOLDINGS, LLC**, a Delaware limited liability company ("Purchaser"), in light of the following facts and circumstances:

RECITALS:

WHEREAS, Seller and Purchaser have entered a Real Estate Purchase Option Agreement dated as of the Effective Date with respect to property more specifically described herein (as heretofore or hereinafter amended, restated, or supplemented from time to time, the "Option Agreement"); and

WHEREAS, Seller and Purchaser desire to set forth certain terms and conditions of the Option Agreement in a manner suitable for recording in the Official Records of Madison County, Kentucky in order to provide record notice of the Option Agreement and Purchaser's rights in and to the land subject to the Option Agreement, as provided herein.

NOW, THEREFORE, in consideration of the mutual covenants contained in the Option Agreement, and other good and valuable consideration, the receipt and sufficiency of which are hereby acknowledged, the parties hereto agree and stipulate as follows:

1. Description of Property. The land subject to the Option Agreement is described on Exhibit A attached hereto, and by this reference made a part hereof (the "Property").

2. Grant of Option. Seller hereby grants to Purchaser, pursuant to the Option Agreement, an exclusive and irrevocable option (the "Option") to purchase [REDACTED] of real property within the Property on the terms and conditions set

forth in the Option Agreement. The entire Option Agreement is hereby incorporated into this Memorandum by reference. Notwithstanding anything to the contrary contained herein, the provisions of this Memorandum do not in any way alter, amend, supplement, change, or affect the terms, covenants, or conditions of the Option Agreement, all of which terms, covenants, and conditions shall remain in full force and effect. In the event of any conflict between the terms of this Memorandum and the Option Agreement, the terms of the Option Agreement shall prevail.

3. Term of Option Agreement. Unless extended or earlier terminated, as provided in the Option Agreement, the term of the Option shall be for a [REDACTED] period beginning on the Effective Date, with an option to extend an additional [REDACTED]. Closing of the transaction contemplated by the Option Agreement shall occur within [REDACTED] following Purchaser's exercise of the Option, in accordance with the Option Agreement, or as the parties may otherwise mutually agree.

4. Names and Addresses of Parties. The names and addresses of the parties to the Option Agreement are as follows:

Seller:

Thomas J. and Darnetta W. Congleton

[REDACTED]
[REDACTED]
[REDACTED]

Robert B. Congleton & Kathy L.
Congleton

[REDACTED]
[REDACTED]
[REDACTED]

Purchaser:

Sustainable Property Holdings, LLC

Attn: Land Manager
2180 South 1300 East, Suite 600
Salt Lake City, UT 84106
Phone: (801) 679-3500
Email: Land@spower.com

5. Successors and Assigns. The terms of this Memorandum and the Option Agreement are covenants running with the land and inure to the benefit of, and are binding upon, the parties and their respective successors and assigns, including all subsequent owners of all or any portion of the Property. References to Seller and Purchaser include their respective successors and assigns. References to the Option Agreement includes any amendments thereto.

6. Miscellaneous. This Memorandum is executed for the purpose of recording in the Official Records of Madison County, Kentucky, in order to provide public record notice of the Option Agreement and Purchaser's rights in and to the land subject to the Option Agreement. All persons are hereby put on notice of and shall have a duty to inquire regarding the Option Agreement and all of the provisions thereof and the rights, title, interests, and claims of Purchaser in and to the Property. Any right, estate, claim, or interest in the Property first attaching to the Property and recorded from and after the Effective Date shall be subordinate to the terms of the Option Agreement. If Purchaser acquires fee simple title to any portion of the Property, Purchaser shall have the right, at Purchaser's option, to terminate any such subordinate right, estate, claim, or interest, at no cost or liability to Purchaser, or to accept title subject thereto. This instrument may for convenience be executed in any number of original counterparts, each of which shall be an original and all of which taken together shall constitute one instrument.

IN WITNESS WHEREOF, Seller and Purchaser, acting through their duly authorized representatives, have made and entered into this Memorandum as of the Effective Date.

SELLER:

LANDOWNER:

Robert B Congleton
Robert B. Congleton

Kathy L. Congleton
Kathy L. Congleton

**THE THOMAS J. CONGLETON
REVOCABLE TRUST**

Thomas J. Congleton
Thomas J. Congleton, Trustee *T.J.C.*

**THE DARNETTA W. CONGLETON
REVOCABLE TRUST**

Darnetta W. Congleton
Darnetta W. Congleton, Trustee

PURCHASER:

SUSTAINABLE PROPERTY HOLDINGS, LLC
a Delaware limited liability company

By: _____
Name: _____
Title: _____

IN WITNESS WHEREOF, Seller and Purchaser, acting through their duly authorized representatives, have made and entered into this Memorandum as of the Effective Date.

SELLER:

LANDOWNER:

Robert B. Congleton

Kathy L. Congleton

**THE THOMAS J. CONGLETON
REVOCABLE TRUST**

Thomas J. Congleton, Trustee

**THE DARNETTA W. CONGLETON
REVOCABLE TRUST**

Darnetta W. Congleton, Trustee

PURCHASER:

SUSTAINABLE PROPERTY HOLDINGS, LLC
a Delaware limited liability company

By: _____


Name: Sean McBride

Title: Authorized Person

ACKNOWLEDGEMENT OF SELLER

STATE OF Kentucky }
COUNTY OF Madison } S.S

On [redacted], [redacted] before me, Cherie Tracy Notary Public, personally appeared, Robert Congleton, who proved to me on the basis of satisfactory evidence to be the person(s) whose name(s) is/are subscribed to the within instrument and acknowledged to me that he/she/they executed the same in his/her/their authorized capacity(ies), and that by his/her/their signature(s) on the instrument the person(s), or the entity upon behalf of which the person(s) acted, executed the instrument.

I certify under PENALTY OF PERJURY under the laws of the State of Kentucky that the foregoing paragraph is true and correct.

WITNESS my hand and official seal.

Signature: Cherie Tracy

Commission expires 10/28/23

Notary ID# 634358



ACKNOWLEDGEMENT OF SELLER

STATE OF Kentucky }
COUNTY OF Madison } S.S

On [redacted], [redacted] before me, Cherie Tracy Notary Public, personally appeared, Kathy Congleton, who proved to me on the basis of satisfactory evidence to be the person(s) whose name(s) is/are subscribed to the within instrument and acknowledged to me that he/she/they executed the same in his/her/their authorized capacity(ies), and that by his/her/their signature(s) on the instrument the person(s), or the entity upon behalf of which the person(s) acted, executed the instrument.

I certify under PENALTY OF PERJURY under the laws of the State of Kentucky that the foregoing paragraph is true and correct.

WITNESS my hand and official seal.

Signature: Cherie Tracy

Commission expires 10/28/23
Notary ID # 634358



ACKNOWLEDGEMENT OF SELLER

STATE OF KENTUCKY }
COUNTY OF MADISON } S.S

On [REDACTED], [REDACTED] before me, STEVEN W. BURGESS II Notary Public, personally appeared, THOMAS J. CONGLETON, TRUSTEE, who proved to me on the basis of satisfactory evidence to be the person(s) whose name(s) is/are subscribed to the within instrument and acknowledged to me that he/she/they executed the same in his/her/their authorized capacity(ies), and that by his/her/their signature(s) on the instrument the person(s), or the entity upon behalf of which the person(s) acted, executed the instrument.

I certify under PENALTY OF PERJURY under the laws of the State of Kentucky that the foregoing paragraph is true and correct.

WITNESS my hand and official seal.

Signature: *Steven W. Burgess II*



(Notary Seal)

ACKNOWLEDGEMENT OF PURCHASER

STATE OF UTAH)
 §
COUNTY OF SALT LAKE)

On [REDACTED], before me, Sabrina Fuller, personally appeared Sean McBride who proved to me on the basis of satisfactory evidence to be the person whose name is subscribed to the within instrument and acknowledged to me that he executed the same in his authorized capacity, and that by his signature on the instrument, the person, or the entity upon behalf of which the person acted, executed the instrument.

I certify under PENALTY OF PERJURY under the laws of the State of Utah that the foregoing paragraph is true and correct.

WITNESS my hand and official seal.



Signature *Sabrina Fuller* (seal)

EXHIBIT A

LEGAL DESCRIPTION

Parcel 0130-0000-0023 located in Madison County, Kentucky.

A certain tract of land located in Madison County, Kentucky at the end of Pine Grove Road approximately nine-tenths of a mile east of the Bybee-Brassfield Road, and shown as Tract No. 2 on a plat of Subdivision for Miller-Patton Auction Co., Inc. recorded in Plat Book 8, Page 332 of the Madison County Clerk's records at Richmond, Kentucky, and being more particularly described as follows:

Beginning at a point in the center of Pine Grove Road where the blacktop ends approximately nine-tenths of a mile east of the Bybee-Brassfield Road and running: thence South 03 degrees 58 minutes 00 seconds West a distance of 11.30 feet to a point for a corner; thence South 88 degrees 30 minutes 00 seconds East a distance of 1018.32 feet to a point; thence South 88 degrees 30 minutes 04 seconds East a distance of 144.98 feet to a point; thence South 83 degrees 04 minutes 51 seconds East a distance of 143.71 feet to a point; thence South 78 degrees 10 minutes 23 seconds East a distance of 413.17 feet to a point; thence South 78 degrees 10 minutes 23 seconds East a distance of 471.04 feet to a point; thence South 78 degrees 10 minutes 23 seconds East a distance of 420.00 feet to a point for a corner; thence North 56 degrees 17 minutes 35 seconds East a distance of 929.74 feet to a point for a corner; thence North 10 degrees 45 minutes 14 seconds West a distance of 354.75 feet to a point, a corner to Tract No. 3; thence North 23 degrees 22 minutes 36 seconds West a distance of 886.47 feet to a point in the center of a 50 foot easement in the line of Tract No. 3; thence South 62 degrees 26 minutes 00 seconds West a distance of 577.94 feet to a point in the center of a 50 foot easement; thence South 54 degrees 45 minutes 00 seconds West a distance of 396.70 feet to a point, thence South 51 degrees 54 minutes 00 seconds West a distance of 707.54 feet to a point, a corner to Tract No. 1; thence South 55 degrees 11 minutes 00 seconds West a distance of 473.22 feet to a point in the center of a 50 foot easement; thence South 53 degrees 09 minutes 00 seconds West a distance of 220.40 feet to a point, thence South 69 degrees 29 minutes 00 seconds West a distance of 97.86 feet to a point in the center of a 50 foot easement; thence North 88 degrees 51 minutes 00 seconds West a distance of 887.40 feet to the point of beginning, and containing 2085652.8 square feet or 47.8800 acres of land, more or less.

Being the same property conveyed to Tommy J. Congleton, a married person, by deed dated the 13th day of December, 1990, and of record in Deed Book 411, Page 775, in the Madison County Clerk's Office.

REAL ESTATE PURCHASE OPTION AGREEMENT

THIS REAL ESTATE PURCHASE OPTION AGREEMENT (this "Agreement") is made as of the Effective Date (as defined below), by and between **ROBERT B. CONGLETON AND KATHY L. CONGLETON**, husband and wife as joint tenants ("Seller"), and **SUSTAINABLE PROPERTY HOLDINGS, LLC**, a Delaware limited liability company ("Purchaser"). The latest date indicated on the signature page of this instrument shall be the "Effective Date" of this Agreement.

1. **Grant of Option.** For and in consideration of Purchaser's agreement to make to Seller the payments set forth in Section 3 below (the "Option Payments"), Seller hereby grants to Purchaser an exclusive and irrevocable option (the "Option") to purchase approximately [REDACTED] of real property legally described on Exhibit A attached hereto and made a part hereof, in the county of Madison, State of Kentucky (the "Property"), on the terms and conditions set forth in this Agreement.

2. **Term of Option.** The term of the Option (the "Term") shall be for a [REDACTED] period beginning on the Effective Date, together with Purchaser's option to extend said Term for an additional [REDACTED] upon written notice provided to Seller prior to the expiration of the initial Term, provided however, that Purchaser shall have the right at any time prior to exercising the Option to terminate this Agreement as to all or any portion of the Property by giving written notice to Seller. Upon termination of this Agreement for any reason, Purchaser's obligations to Seller hereunder (including but not limited to Purchaser's obligations to make any remaining Option Payments) shall become null and void and of no further force or effect.

3. **Option Payments.** In consideration of the rights granted hereunder, Purchaser will pay to Seller the Option Payments set forth in the table below, on the payment dates set forth in such table. If any scheduled payment date falls on a day which is not a business day in the State of Utah, then the due date for such payment shall be extended to the next succeeding business day. The Option Payments shall be non-refundable to Purchaser in the event that this Agreement is terminated, unless Seller is in default or breach of this Agreement. The amount of all Option Payments made by Purchaser shall be applied against the Purchase Price at the Closing.

<u>Option Payment Due Date</u>	<u>Amount of Option Payment Due on Such Date</u>
Effective Date	[REDACTED]
[REDACTED] following Effective Date	[REDACTED]
[REDACTED] following Effective Date	[REDACTED]
[REDACTED] following Effective Date	[REDACTED]
[REDACTED] following Effective Date	[REDACTED]
[REDACTED] following Effective Date	[REDACTED]
[REDACTED] following Effective Date	[REDACTED]
[REDACTED] following Effective Date	[REDACTED]

██████████ following Effective Date	██████████
██████████ following Effective Date	██████████
██████████ following Effective Date	██████████
██████████ following Effective Date	██████████
██████████ following Effective Date	██████████
██████████ following Effective Date	██████████
In the event Purchaser extends initial Term, Option Payments are scheduled as follows:	
██████████ following Effective Date	██████████
██████████ following Effective Date	██████████
██████████ following Effective Date	██████████
██████████ following Effective Date	██████████

It is acknowledged and understood that the table set forth above reflects that the period commencing on the Effective Date and continuing for ██████████ shall constitute a due diligence period for Purchaser (“Due Diligence Period”). The initial payment of ██████████ (the “Deposit”) shall be deposited into an escrow account with Escrow Holder (as defined below) along with a signed copy of this Agreement. Nothing contained in this Section shall in any way limit or otherwise affect Purchaser’s right to terminate this Agreement at any time pursuant to Section 2. If Purchaser terminates this Agreement prior to the expiration of the Due Diligence Period, the Deposit, less an amount equal to ██████████ (the “Independent Consideration”), shall be immediately returned to Purchaser by Escrow Holder. If this Agreement is not so terminated, the Deposit shall be released to Seller from escrow upon expiration of the Due Diligence Period. Future Option Payments shall be made by Purchaser to Escrow Holder for credit to Seller, and Escrow Holder shall forward such future Option Payments to Seller promptly following Escrow Holder’s receipt thereof. Purchaser’s obligation to make the applicable Option Payment to Seller shall be considered complete when such payment has been made to Escrow Holder. The “Escrow Holder” shall be McBrayer Firm, 201 East Main Street, Suite 900, Lexington, Kentucky 40507, Attention: James H. Frazier, III, Telephone: (859) 231-8780, ext. 1303, E-mail: jfrazier@mcbayerfirm.com. Escrow Holder shall execute a joinder to this Agreement evidencing Escrow Holder’s agreement to act as Escrow Holder in accordance with the provisions hereof. Concurrently with execution of this Agreement, Seller and Purchaser will execute a memorandum in the form of Exhibit B attached hereto and made a part hereof by reference, or any other reasonable form of memorandum, and Purchaser shall cause such memorandum to be recorded in the public records.

4. Method of Exercising Option. Purchaser may exercise the Option at any time during the Term by giving written notice to Seller (the “Exercise Notice”). Upon the timely and proper exercise of the Option, Seller agrees to sell and convey, and Purchaser agrees to purchase, the Property, in accordance with and subject to the terms and conditions of this Agreement.

5. Inspections; Use of Property. From and after the Effective Date, Purchaser or its designated agents may enter upon the Property upon reasonable prior notice to Seller to conduct, at Purchaser’s sole cost and expense, any inspections, tests, surveys, engineering, environmental, and/or market and economic feasibility studies, and due diligence matters related thereto, concerning the

Property. Any activities of Purchaser on the Property shall be conducted in such a manner so as to not cause any material damage to the Property and so as to not unreasonably interfere with the current use of the Property. Purchaser shall be responsible for any material damage to the Property caused by Purchaser in connection with Purchaser's activities on the Property, which damage shall be assessed immediately upon occurrence, or by a third-party consultant as soon as possible after occurrence. Purchaser shall indemnify Landowner for any loss, costs, claims, actions or damages caused by activities of Purchaser on the Property except those caused by Seller's gross negligence or willful behavior. Subject to the foregoing rights of Purchaser, prior to the Closing (as defined in Section 9 below), Seller, or its affiliated or contracted parties, shall be permitted to continue to use the Property in a manner consistent with its existing use, including but not limited to cattle grazing. Seller shall provide Purchaser, prior to the expiration of the Due Diligence Period, with copies of all field tiling surveys, plans and other geotechnical and other site assessments, surveys, plans, entitlement-related studies, environmental assessments, reports, test results, correspondence to or from any governmental agency, and other such records of Seller relating to the Property. Seller represents and warrants to Purchaser that, to the best of Seller's knowledge, all information contained in any such materials provided by Seller to Purchaser shall be accurate and complete.

6. Purchase Price. The price (the "Purchase Price") to be paid by Purchaser to Seller for the Property shall be [REDACTED]

[REDACTED]

7. Costs; Prorations; Credits.

7.1. [REDACTED]

7.2. [REDACTED]

7.3. [REDACTED]

8. Title.

8.1. At Closing, Seller shall convey to Purchaser marketable and insurable fee simple title to the Property, free from any (i) mortgage, deed to secure debt, deed of trust, security agreement, judgment, lien or claim of lien, or any other title exception or defect that is monetary in nature, Seller hereby agreeing to pay and satisfy of record any such title defects or exceptions prior to or at Closing at Seller's expense, (ii) lease, rental agreement, or other right of occupancy of any kind, whether written or oral (it being acknowledged and understood that any lease, rental agreement or right of occupancy in existence as of the date hereof shall be fully and completely terminated by Seller prior to Closing), (iii) recorded or unrecorded right or interest first attaching subsequent to the Effective Date, or (iv) matter encompassed by any standard exception under the Title Commitment (other than as to matters of survey), including the standard "gap" exception, the standard mechanic's lien exception and the standard parties in possession exception (the "Non-Permitted Exceptions").

8.2. Prior to Closing, Purchaser shall obtain a current title commitment (the "Title Commitment") applicable to the Property, from the Title Company (as defined below), whereby the Title Company agrees to issue at Closing an ALTA Owner's Policy of Title Insurance (the "Title Policy"), in the amount of the Purchase Price, insuring Purchaser's marketable fee simple title to the Property, including all appurtenances thereto and improvements thereon, and including such additional title endorsements in form and content as Purchaser may reasonably request. Notwithstanding anything to the contrary contained in this Agreement, it shall be a condition precedent to Purchaser's obligation to close the transaction herein described that the Title Company shall have unconditionally indicated in writing that upon recording of the Deed and payment of its premiums (at ordinary rates), the Title Company will issue the Title Policy to Purchaser as herein required, insuring that fee simple title shall be vested in Purchaser, without exception for the Non-Permitted Exceptions. If the parties are unable to cause the satisfaction of the aforesaid condition precedent, Purchaser, in its discretion, may elect, by written notice to Seller, either to accept such title as Seller is capable of delivering or to terminate this Agreement. If this Agreement is so terminated, Seller shall immediately return to Purchaser all Option Payments previously made by Purchaser. The "Title Company" shall be McBrayer Firm, 201 East Main Street, Suite 900, Lexington, Kentucky 40507, Attention: James H. Frazier, III, Telephone: (859) 231-8780, ext. 1303, E-mail: jfrazier@mcbrayerfirm.com.

9. Closing. The closing of the transaction contemplated by this Agreement ("Closing") shall occur through escrow at the offices of the Escrow Holder within [REDACTED] following Purchaser's delivery of the Exercise Notice on such date as Purchaser may select by advance written notice to Seller or on such other date or at such other location as the parties may mutually agree. If the Escrow Holder requires the execution of an escrow agreement, Seller and Purchaser will promptly execute and deliver the same in such form as the Title Company or such escrow agent may reasonably request.

10. Closing Deliveries. At Closing, the following shall occur:

10.1. Seller shall deliver actual possession of the Property to Purchaser and Seller shall deliver or cause to be delivered to Purchaser such documents as are reasonably required by Purchaser to close the transaction that is the subject of this Agreement, all fully executed by Seller and acknowledged as necessary, including the following enumerated documents, all of which documents shall be subject to the reasonable approval of Purchaser:

10.1.1. Counterpart of closing statement;

10.1.2. Grant Deed (the "Deed"), conveying to Purchaser the Property, including any and all water rights, and warranting title against the Non-Permitted Exceptions and against all persons whomsoever;

10.1.3. Certificate of Non-Foreign Status, evidencing that Purchaser shall not be liable for transfer liability under Section 1445 of the Internal Revenue Code, as amended;

10.1.4. A general assignment (the "General Assignment") assigning to Purchaser all of Seller's right, title and interest in, to and under any or all of the following intangible property relating to the Property (the "Intangible Property"), as determined by Purchaser in its sole discretion: (i) all licenses, permits, certificates of occupancy, approvals, dedications, subdivision maps and entitlements issued, approved or granted by governmental authorities or otherwise in connection with the Property, including any water rights or permits; (ii) all licenses, consents, easements, rights of way and approvals required from private parties to make use of utilities and to insure vehicular and pedestrian ingress and egress to the Property; and (iii) any and all service contracts, agreements, maintenance contracts and like contracts and agreements relating to the Property, together with all supplements, amendments and modifications thereto;

10.1.5. Real Estate Withholding Certificate, if applicable;

10.1.6. Title affidavits and indemnities in form and content as may be reasonably required by Purchaser and the Title Company to delete all of the Title Commitment's standard exceptions (other than as to matters of survey), including the standard "gap" exception, the standard mechanic's lien exception, and the standard parties in possession exception and any exceptions for judgment, state or federal tax, environmental, broker, or other liens;

10.1.7. Instruments reasonably satisfactory to Purchaser and the Title Company reflecting the proper power, good standing, and authorization for the sale of the Property from Seller to Purchaser and the execution and delivery of all documents hereunder;

10.1.8. Such corrective instruments as may be required to deliver marketable and insurable title as required hereunder;

10.1.9. Seller certification confirming that all representations and warranties stated herein are in full force and effect as of Closing; and

10.1.10. Such other instruments as may be reasonably necessary to effect the conveyance of the Property in accordance with, and effectuate the other provisions of, this Agreement.

10.2. Purchaser shall deliver or cause to be delivered to Seller such documents as are reasonably required by Seller to close the transaction that is the subject of this Agreement, all fully executed by Purchaser and acknowledged as necessary, including the following enumerated documents, all of which documents shall be subject to the reasonable approval of Seller:

10.2.1. Counterpart of closing statement;

10.2.2. An acceptance of the General Assignment, if Purchaser has elected to receive assignment of any of the Intangible Property; and

10.2.3. Such other instruments as may be reasonably necessary to effect the conveyance of the Property in accordance with, and effectuate the other provisions of, this Agreement.

11. Property Improvements. Any improvements affixed to the Property, including the large barn, will be included in the purchase of the Property.

12. Road Maintenance. Purchaser understands and agrees that the gravel portion of Pine Grove Road that abuts the Property shall be Purchaser's responsibility to maintain, unless the portion of the road is under the jurisdiction of local city or county governance and maintenance. Maintenance shall include keeping the road in passable condition, including keeping potholes filled if required.

13. Brokers. Seller and Purchaser each warrant and represent to the other that neither has employed or dealt with a real estate broker or agent in connection with the transaction contemplated hereby. Seller and Purchaser covenant and agree, each to the other, to indemnify the other against any loss, liability, costs, claims, demands, damages, actions, causes of action, and suits arising out of, or in any manner related to, the alleged employment, engagement or use by the indemnifying party of any real estate broker or agent. The foregoing obligation shall survive Closing.

14. Seller Representations, Warranties, and Covenants. Seller represents, warrants, and covenants, as follows:

14.1. Seller holds the fee simple interest in and has the exclusive right to purchase and sell the Property as of the Effective Date. Seller shall not enter into, permit, or suffer, nor purport to enter into or permit, any encumbrance of the Property that is not subordinate to the Option and Purchaser's rights under this Agreement and the title conveyed to Purchaser at Closing. There are no leases, rental agreements, or other rights of occupancy of any kind, whether written or oral, currently affecting the Property, except as follows: _____ **[to be completed by Seller]**. Seller shall terminate any leases, rental agreements or other rights of occupancy (whether such leases, rental agreements or rights of occupancy are presently in existing or are hereafter created) prior to Closing.

14.2. No condemnation proceeding is pending or, to Seller's knowledge, threatened with respect to any part of the Property.

14.3. Seller has not used, generated, treated, stored, released, discharged, or disposed of Hazardous Substances on or from the Property at any time; nor, to the knowledge of Seller, has any such event occurred upon or within the Property. To the knowledge of Seller, no notification of release of a Hazardous Substance has been filed as to the Property, nor is the Property listed or formally proposed for listing on the National Priority List promulgated pursuant to federal law or on any state list of hazardous substance sites requiring investigation or clean-up. Seller has

complied with all reporting requirements under any applicable federal, state, or local environmental laws and there are no existing violations by Seller of any such environmental laws. To the knowledge of Seller, there are no claims, actions, suits, proceedings, or investigations related to the presence, release, discharge, spillage, or disposal of any Hazardous Substance or contamination of soil or water by any Hazardous Substance pending or threatened with respect to the Property or otherwise against Seller in any court or before any state, federal, or other governmental agency or private arbitration tribunal. To the knowledge of Seller, no PCB, PCB-contaminated, friable asbestos, or formaldehyde-based insulation items are present at the Property. Seller shall indemnify and hold harmless Purchaser from and against any and all losses arising from or related to the breach by Seller of any warranties or representations contained in this subsection. "Hazardous Substance" shall refer to any hazardous or toxic substance or waste as those terms are defined by any applicable federal or state law or regulation, including, without limitation, the Comprehensive Environmental Recovery Compensation and Liability Act, 42 U.S.C. 9601 et seq. and the Resource Conservation and Recovery Act, 42 U.S.C. 6901 et seq., and petroleum, petroleum products, and oil.

14.4. Seller has no knowledge, nor has Seller received any notice of any actual or pending litigation or proceeding by any organization, person, individual, or governmental agency against Seller with respect to the Property or any portion thereof or with respect thereto, nor does Seller know of any basis for any such action; and Seller has no knowledge, nor has Seller received any notice, of any violations of law, municipal or county ordinances, or other legal requirements with respect to the Property (or any part thereof) or with respect to the use or occupancy of the Property nor does Seller know of any basis for such violations.

14.5. No assessments have been made against the Property (or any part thereof) that are unpaid (except property taxes or special assessments which will be paid in full or prorated as an adjustment to the Purchase Price at the time of Closing in accordance with this Agreement), whether or not they have become liens.

14.6. Seller shall cooperate with Purchaser in Purchaser's efforts to seek governmental approvals desired by Purchaser for Purchaser's intended use and acquisition of the Property including (i) the granting to Purchaser of full authority to seek any and all permits, entitlements, licenses, and approvals (collectively, "Approvals") necessary or convenient for the development of the Property for Purchaser's intended use thereof (including, as necessary, rezoning, general plan amendment, environmental permit, building permit, variance, and/or vacation applications) and for the division (whether by certified survey map or otherwise) of the Property so as to cause the Property to be recognized as a single lawfully subdivided parcel, and (ii) the execution of consents and applications in connection with Purchaser attempting to obtain such Approvals. Without limiting the generality of the foregoing, Seller shall not oppose, in any way, whether directly or indirectly, and shall fully cooperate with Purchaser in connection with any application by Purchaser for any Approvals at any administrative, judicial, legislative, or other level. It is acknowledged and agreed by Seller that Purchaser intends to utilize the Property (if Purchaser acquires the Property pursuant to Purchaser's exercise of the Option) as a solar energy generation facility, and for uses related and incidental thereto. Purchaser shall pay all fees and costs in connection with Purchaser's applications for any Approvals. Purchaser will obtain Seller's prior written consent to any all submittals to be made by Purchaser in connection with the process of obtaining any Approvals, which consent shall not be unreasonably withheld, conditioned or delayed. In the event that Seller unreasonably withholds, conditions or delays its consent to any such submittals desired to be made by Purchaser, then Purchaser shall have the right, in its sole discretion, to terminate this Agreement upon written notice to Seller, and upon any such termination pursuant to

this sentence, Seller shall immediately refund to Purchaser any Option Payments previously made by Purchaser to Seller hereunder. If this Agreement is terminated pursuant to the provisions hereof, Seller may withdraw or terminate any applications for Approvals.

14.7. Seller agrees that Purchaser shall not and does not assume any of the following liabilities, and Seller shall promptly pay and perform, and indemnify and hold Purchaser harmless from and against: any liability or obligation of Seller in respect of any state, local, federal, or foreign taxes (whether in the nature of income, transfer, sales, withholding, employee, excise, property, customs, gross receipts, or other taxes or other duties of any kind whatsoever), or penalties, interest, and fines in respect thereof, or any reporting requirement or estimated tax payable with respect thereto, relating to events or transactions occurring on or prior to Closing involving Seller or the transactions contemplated hereby; any litigation, investigation, or other proceeding pending or threatened with respect to Seller or the Property on or prior to Closing, or subsequently asserted, which is attributable to facts existing, or events, or omissions occurring on or prior to Closing; and all liabilities or claims of any nature relating directly or indirectly to the Property, whether accrued, absolute, contingent, or otherwise arising out of or relating to (or alleged to arise out of or relate to) any state of facts, omissions, or events existing or occurring on or before Closing (whether known or unknown to Purchaser or Seller).

14.8. Seller shall not enter into any transaction, take any action, or by inaction, permit any event to occur, which would result in any of the representations, warranties, and covenants of Seller herein contained not being true, correct, and satisfied at and as of the time immediately after the occurrence of such transaction or event.

14.9. If as of the Effective Date the Property is subject to any mortgage or deed of trust, then concurrently with the execution of this Agreement, Seller shall obtain from the holder of such mortgage or deed of trust and deliver to Purchaser, the written agreement of such holder ("Subordination Agreement") in recordable form subordinating such mortgage or deed of trust to this Agreement. Any such Subordination Agreement shall be in form and substance reasonably acceptable to Purchaser.

Seller agrees to take such actions at its expense as may be necessary to cause the representations, warranties, and covenants in this Agreement to be true, correct, and satisfied as of the date of Closing; provided, however, if an event or circumstance which is neither caused by Seller nor within the reasonable control of Seller causes any such representation, warranty, or covenant to be untrue as of the date of Closing, Seller shall not be required to take any action with respect to such event or occurrence. Subject to the preceding sentence, Seller shall affirm the foregoing representations, warranties, and covenants at (and as of the date of) Closing, all of which shall survive Closing. Notwithstanding the foregoing, or anything to the contrary contained in this Agreement, it shall be a condition precedent to Purchaser's obligation to close the transaction herein described that all of Seller's representations, warranties, and covenants under this Agreement be true, correct, and satisfied, in all material respects, as of the date of Closing, and shall survive closing.

15. Purchaser's Representations, Warranties and Covenants. Purchaser warrants, represents and covenants to and with Seller that the following are true and correct on the date hereof and the Closing:

15.1. Purchaser has the requisite power and authority to enter into and to perform the terms of this Agreement. To Purchaser's actual knowledge, Purchaser is not subject to any law,

order, decree, restriction, or agreement which prohibits or would be violated by this Agreement or the consummation of the transactions contemplated hereby.

15.2. To Purchaser's actual knowledge, neither the execution, delivery and performance of this Agreement nor the consummation of the transactions contemplated hereby is prohibited by, or requires Purchaser to obtain any consent, authorization, approval or registration under any law, statute, rule, regulation, judgment, order, writ, injunction or decree which is binding upon Purchaser.

15.3. To Purchaser's actual knowledge, there are no judgments, orders, or decrees of any kind against Purchaser unpaid or unsatisfied of record, nor any actions, suits or other legal or administrative proceedings pending or, to the best of Purchaser's actual knowledge, threatened against Purchaser, which would have any material adverse effect on the business or assets or the condition, financial or otherwise, of Purchaser or the ability of Purchaser to consummate the transactions contemplated by this Agreement.

16. Eminent Domain. If, after the Effective Date and prior to Closing, Seller receives notice of the commencement or threatened commencement of eminent domain or other like proceedings against the Property or any portion thereof, Seller shall immediately give written notice thereof to Purchaser, in which event Purchaser, in its discretion (whether or not Purchaser has then exercised the Option), may elect, by written notice to Seller, either to (i) terminate this Agreement or (ii) keep this Agreement in effect and, if applicable, close the transaction contemplated hereby in accordance with its terms, but subject to such proceedings, in which event the Purchase Price shall not be reduced but Seller shall assign to Purchaser Seller's rights in any condemnation award or proceeds, as they pertain to this Agreement or the Property.

17. Damage to Property. Except as provided in this section and except as otherwise provided in Section 5, the risk of loss or damage to the Property and all liability to third parties until the Closing shall be borne by Seller. If, after the Effective Date and prior to Closing, all or any part of the Property is damaged by flood or other casualty, Seller shall immediately give written notice to Purchaser of such damage and of Seller's insurance coverage with respect to such damage, if any, in which event Purchaser, in its discretion (whether or not Purchaser has then exercised the Option), may elect, by written notice to Seller, either to (i) terminate this Agreement, or (ii) keep this Agreement in effect and, if applicable, close the transaction contemplated hereby in accordance with its terms, in which event the Purchase Price shall not be reduced but Seller shall assign to Purchaser Seller's rights in any insurance proceeds, as they pertain to this Agreement or the Property.

18. Notices. All notices or other communications required or permitted hereunder shall, unless otherwise provided herein, be in writing, and shall be personally delivered, delivered by reputable overnight courier, or sent by registered or certified mail, return receipt requested and postage prepaid, addressed as follows:

If to Seller:

Robert B. and Kathy L. Congleton

[REDACTED]
[REDACTED]
[REDACTED]
[REDACTED]

If to Purchaser:

Sustainable Property Holdings, LLC

Attn: Land Manager
2180 South 1300 East, Suite 600
Salt Lake City, UT 84106
Phone: (801) 679-3500
Email: Land@spower.com

Notices personally delivered shall be deemed given the day so delivered. Notices given by overnight courier shall be deemed given on the first business day following the mailing date. Notices mailed as provided herein shall be deemed given on the third business day following the mailing date. Any party may change its address for purposes of this section by giving written notice of such change to the other party in the manner provided in this section.

19. Default Remedies. [REDACTED]

[REDACTED]

20. Entire Agreement, Amendments and Waivers. This Agreement contains the entire agreement and understanding of the parties in respect to the subject matter hereof, supersedes all prior agreements in respect to the subject matter hereof, if any, between the parties, and the same may not be amended, modified, or discharged nor may any of its terms be waived except by an instrument in writing signed by the parties. Nothing herein shall be construed to supersede any ongoing lease or easement agreement between the parties.

21. Further Assurances. The parties each agree to do, execute, acknowledge, and deliver all such further acts, instruments, and assurances, and to take all such further action before or after Closing as shall be necessary or desirable to fully carry out this Agreement and to fully consummate and effect the transactions contemplated hereby. The foregoing covenant shall survive Closing.

22. No Third-Party Benefits. This Agreement is for the sole and exclusive benefit of the parties hereto and their respective successors and assigns, and no third party is intended to or shall have any rights hereunder.

23. Assignment, Successors. Purchaser may freely assign its rights under this Agreement on written notice to Seller. This Agreement shall be binding upon and inure to the benefit of the

parties hereto and their respective heirs, successors, and assigns. Seller may not assign any rights under this Agreement to any other person or party without consent of Purchaser.

24. Governing Law. This Agreement shall be governed by and construed in accordance with the laws of the State of Kentucky.

25. Mandatory and Binding Arbitration. Any dispute arising between the parties to this Agreement, which cannot be settled amicably by the parties, concerning the Property, any provision of this Agreement, or the rights and duties of the parties in regard thereto, including any alleged breach of this Agreement, shall be resolved by arbitration as provided in this section. All such disputes shall be settled exclusively and finally through arbitration conducted by the American Arbitration Association (the "AAA") before a single arbitrator in Madison County, Kentucky in accordance with the Commercial Arbitration Rules of the AAA (the "Rules"), as such Rules are in effect on the date of delivery of a Demand for Arbitration, provided, however, that not withstanding anything contained in the Rules, the arbitrator shall not have the power to authorize more than ten (10) document requests. Further, no interrogatories shall be allowed during the course of the arbitration proceeding, and each party shall be allowed only one deposition absent a showing of good cause. "Good cause" in this context shall mean that despite the fact that the parties are agreeing to arbitration as an alternative to judicial proceedings because arbitration is intended to be a quicker, less expensive, more efficient dispute resolution mechanism, the party cannot establish its *prima facie* case without taking more than one deposition. In no case does the arbitrator have the power to authorize more than three (3) depositions per party. The arbitration proceedings provided hereunder are hereby declared to be self-executing, and it shall not be necessary to petition a court to compel arbitration. The expedited arbitration will be concluded within [REDACTED] of the date of the Demand for Arbitration. The arbitrator shall determine all questions of fact and law relating to any controversy, claim or dispute hereunder, including but not limited to whether or not such controversy, claim or dispute is subject to the arbitration provisions contained herein. The arbitrator shall have the power to issue an injunction or require specific performance as the arbitrator finds necessary. Should arbitration result in a monetary award to either party, the party owing the award shall have [REDACTED] to pay such award. The arbitrator may apportion the costs and expenses of the arbitration proceeding, including attorneys' fees and arbitrators' fees, between the parties in any manner deemed reasonable by the arbitrator. The arbitrator is required, under the Agreement between the parties, to strictly construe this Agreement and may not grant an award or any relief to a party that is inconsistent with the express terms of this Agreement. The determinations of the arbitrator shall be subject to judicial review to the maximum extent allowed by federal law or the law of the state in which the arbitration occurs. Any award or determination rendered by the arbitrator may be entered and enforced in any court of competent jurisdiction. Any party shall have the right to apply to a court of competent jurisdiction for an injunction to protect its interests under this Agreement only if: (a) one of the parties has already filed a demand for arbitration under this section; and (b) no arbitrator has yet been appointed by the AAA.

26. Waiver of Jury Trial. **EACH PARTY HERETO HEREBY WAIVES ANY AND ALL RIGHTS IT MAY HAVE TO DEMAND THAT ANY ACTION, PROCEEDING, CLAIM, COUNTERCLAIM OR CAUSE OF ACTION ARISING OUT OF OR IN ANY WAY RELATED TO THIS AGREEMENT OR THE RELATIONSHIP OF THE PARTIES HEREUNDER BE TRIED BY JURY. THE SCOPE OF THIS WAIVER IS INTENDED TO BE ALL ENCOMPASSING OF ANY AND ALL DISPUTES THAT MAY BE FILED IN ANY COURT. EACH PARTY HEREBY ACKNOWLEDGES THAT IT IS KNOWINGLY AND VOLUNTARILY WAIVING THE RIGHT TO DEMAND TRIAL BY JURY.**

27. Enforcement Expense. In the event that either party hereto commences an enforcement action against the other to enforce its rights hereunder, the prevailing party in such enforcement action shall be entitled to recover from the other its reasonable attorney's fees and expenses incidental to such enforcement action, whether incurred before or after a final decision on such enforcement action.

28. Severability. If any clause or provision of this Agreement is held by a court having jurisdiction to be illegal, invalid or unenforceable under any present or future law, the remainder of this Agreement will not be affected thereby. It is the intention of the parties that if any such provision is held to be illegal, invalid, or unenforceable, there will be added in lieu thereof a provision as similar in terms to such provision as is possible and be legal, valid, and enforceable.

29. Time. Time is the essence of each provision of this Agreement.

30. Gender. Words of any gender used in this Agreement shall be held and construed to include any other gender, and words in the singular shall be held to include the plural.

31. Captions. The captions in this Agreement are inserted for convenience of reference and are not intended to define, describe or limit the scope of any provision of this Agreement.

32. Counterpart Execution. This Agreement may be executed in counterparts, each of which will be deemed an original document, but all of which will constitute a single document.

33. Confidentiality. Seller will (i) treat this Agreement and all oral discussions related hereto in strict confidence and (ii) except to the extent included in any memorandum recorded in the public records, shall not disclose any of the particulars hereof to any third parties without the prior written consent of Purchaser; provided, however, that Seller may disclose such information to (x) Seller's personal advisors, (y) any prospective purchaser of the Property, or (z) pursuant to lawful process, subpoena, or court order; so long as in making such disclosure Seller advises the person receiving the information of the confidentiality thereof and obtains the agreement of said person not to disclose such information. Excluded from the foregoing is any information that is in the public domain by reason of prior publication through no act or omission of Seller.

[*The remainder of this page is intentionally left blank.*]

IN WITNESS WHEREOF, the undersigned parties have set their hands and seals hereto as of the day and year indicated next to their signatures.

SELLER:

Dated: _____
_____ Robert B. Congleton
Robert B. Congleton, Husband

Dated: _____
_____ Kathy L. Congleton
Kathy L. Congleton, wife

PURCHASER:

**SUSTAINABLE PROPERTY HOLDINGS,
LLC**
a Delaware limited liability company

Dated: _____
By: _____
Name: _____
Title: _____

IN WITNESS WHEREOF, the undersigned parties have set their hands and seals hereto as of the day and year indicated next to their signatures.

SELLER:

Dated: _____
_____ **Robert B. Congleton, Husband**

Dated: _____
_____ **Kathy L. Congleton, wife**

PURCHASER:

**SUSTAINABLE PROPERTY HOLDINGS,
LLC**
a Delaware limited liability company

Dated: [REDACTED]

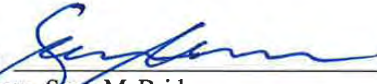
By: 
Name: Sean McBride
Title: Authorized Person

EXHIBIT A

LEGAL DESCRIPTION OF THE PROPERTY

APN 0120-0000-005-4 in Madison County, Kentucky



(blue line not representative of the parcel boundaries, does not affect acreage or sale)

EXHIBIT B

FORM OF MEMORANDUM

[the remainder of this page intentionally left blank]

Recording requested by and
when recorded mail to:

Sustainable Property Holdings, LLC
Attn: Land Manager
2180 South 1300 East, Suite 600
Salt Lake City, UT 84106

(space above this line for recorder's use)

MEMORANDUM OF REAL ESTATE PURCHASE OPTION AGREEMENT

THIS MEMORANDUM OF REAL ESTATE PURCHASE OPTION AGREEMENT (this "Memorandum") is made, dated and effective as of [REDACTED] (the "Effective Date"), between **ROBERT B. CONGLETON AND KATHY L. CONGLETON**, husband and wife as joint tenants ("Seller"), and **SUSTAINABLE PROPERTY HOLDINGS, LLC**, a Delaware limited liability company ("Purchaser"), in light of the following facts and circumstances:

RECITALS:

WHEREAS, Seller and Purchaser have entered a Real Estate Purchase Option Agreement dated as of the Effective Date with respect to property more specifically described herein (as heretofore or hereinafter amended, restated, or supplemented from time to time, the "Option Agreement"); and

WHEREAS, Seller and Purchaser desire to set forth certain terms and conditions of the Option Agreement in a manner suitable for recording in the Official Records of Madison County, Kentucky in order to provide record notice of the Option Agreement and Purchaser's rights in and to the land subject to the Option Agreement, as provided herein.

NOW, THEREFORE, in consideration of the mutual covenants contained in the Option Agreement, and other good and valuable consideration, the receipt and sufficiency of which are hereby acknowledged, the parties hereto agree and stipulate as follows:

1. Description of Property. The land subject to the Option Agreement is described on Exhibit A attached hereto, and by this reference made a part hereof (the "Property").

2. Grant of Option. Seller hereby grants to Purchaser, pursuant to the Option Agreement, an exclusive and irrevocable option (the "Option") to purchase [REDACTED] of real property within the Property on the terms and conditions set forth in the Option Agreement. The entire Option Agreement is hereby incorporated into this Memorandum by reference. Notwithstanding anything to the contrary contained herein, the provisions of this Memorandum do not in any way alter, amend, supplement, change, or affect the terms, covenants, or conditions of the Option Agreement, all of which terms, covenants,

and conditions shall remain in full force and effect. In the event of any conflict between the terms of this Memorandum and the Option Agreement, the terms of the Option Agreement shall prevail.

3. Term of Option Agreement. Unless extended or earlier terminated, as provided in the Option Agreement, the term of the Option shall be for a [REDACTED] period beginning on the Effective Date, with an option to extend an additional [REDACTED]. Closing of the transaction contemplated by the Option Agreement shall occur within [REDACTED] following Purchaser's exercise of the Option, in accordance with the Option Agreement, or as the parties may otherwise mutually agree.

4. Names and Addresses of Parties. The names and addresses of the parties to the Option Agreement are as follows:

Seller:

Robert B. and Kathy L. Congleton
[REDACTED]
[REDACTED]
[REDACTED]

Purchaser:

Sustainable Property Holdings, LLC
Attn: Land Manager
2180 South 1300 East, Suite 600
Salt Lake City, UT 84106
Phone: (801) 679-3500
Email: Land@spower.com

5. Successors and Assigns. The terms of this Memorandum and the Option Agreement are covenants running with the land and inure to the benefit of, and are binding upon, the parties and their respective successors and assigns, including all subsequent owners of all or any portion of the Property. References to Seller and Purchaser include their respective successors and assigns. References to the Option Agreement includes any amendments thereto.

6. Miscellaneous. This Memorandum is executed for the purpose of recording in the Official Records of Madison County, Kentucky, in order to provide public record notice of the Option Agreement and Purchaser's rights in and to the land subject to the Option Agreement. All persons are hereby put on notice of and shall have a duty to inquire regarding the Option Agreement and all of the provisions thereof and the rights, title, interests, and claims of Purchaser in and to the Property. Any right, estate, claim, or interest in the Property first attaching to the Property and recorded from and after the Effective Date shall be subordinate to the terms of the Option Agreement. If Purchaser acquires fee simple title to any portion of the Property, Purchaser shall have the right, at Purchaser's option, to terminate any such subordinate right, estate, claim, or interest, at no cost or liability to Purchaser, or to accept title subject thereto. This instrument may for convenience be executed in any number of original counterparts, each of which shall be an original and all of which taken together shall constitute one instrument.

[*The remainder of this page is intentionally left blank.*]

IN WITNESS WHEREOF, Seller and Purchaser, acting through their duly authorized representatives, have made and entered into this Memorandum as of the Effective Date.

SELLER:

Robert B. Congleton
Robert B. Congleton, Husband

Kathy L. Congleton
Kathy L. Congleton, wife

PURCHASER:

SUSTAINABLE PROPERTY HOLDINGS, LLC
a Delaware limited liability company

By: _____
Name: _____
Title: _____

IN WITNESS WHEREOF, Seller and Purchaser, acting through their duly authorized representatives, have made and entered into this Memorandum as of the Effective Date.

SELLER:

Robert B. Congleton, Husband

Kathy L. Congleton, wife

PURCHASER:

SUSTAINABLE PROPERTY HOLDINGS, LLC
a Delaware limited liability company

By: _____

Name: Sean McBride

Title: Authorized Person

ACKNOWLEDGEMENT OF PURCHASER

STATE OF UTAH)
 §
COUNTY OF SALT LAKE)

On [REDACTED], before me, Sabrina Fuller, personally appeared Sean McBride who proved to me on the basis of satisfactory evidence to be the person whose name is subscribed to the within instrument and acknowledged to me that he executed the same in his authorized capacity, and that by his signature on the instrument, the person, or the entity upon behalf of which the person acted, executed the instrument.

I certify under PENALTY OF PERJURY under the laws of the State of Utah that the foregoing paragraph is true and correct.

WITNESS my hand and official seal.

Signature *Sean Fuller* (seal)



EXHIBIT A

LEGAL DESCRIPTION

APN 0120-0000-0005-4 in Madison County, Kentucky



(blue line not representative of the parcel boundaries, does not affect acreage or sale)

Case No. 2022-00262
Pine Grove Solar, LLC
Responses to Siting Board Staff's First Request for Information

SITING BOARD DR 1-37:

List and provide details for any contracts by which Pine Grove Solar has paid, has negotiated to pay, or any compensation paid to non-participating landowners, whether cash or otherwise, near the project. Include the terms of the agreements and which properties are involved in terms of distance to the project boundaries.

Response: Pine Grove Solar has entered into one (1) Agreement of Good Will with non-participating landowners who live adjacent to the project. Please refer to the attached confidential agreement (Confidential Exhibit 1-37, "Agreement of Good Will") submitted in conjunction with a Petition for Confidential Treatment.

Witness: David Stimson

**COMMONWEALTH OF KENTUCKY
BEFORE THE KENTUCKY STATE BOARD
ON ELECTRIC GENERATION AND TRANSMISSION SITING**

In the Matter of:

**Application of Pine Grove Solar, LLC for a Certificate
of Construction for an Approximately 50 Megawatt
Merchant Electric Solar Generating Facility in
Madison County, Kentucky, Pursuant to KRS 278.700
and 807 KAR 5:10**

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Case No. 2022-00262

CERTIFICATION

This is to certify that I have supervised the preparation of the Pine Grove Solar's responses to the Kentucky Siting Board on Electric Generation and Transmission Siting's First Request for Information and that the responses to the request are true and accurate to the best of my knowledge, information, and belief after reasonable inquiry.

Date: 2/2/2023



David Stimson
Development Manager
AES Clean Energy